*This is an unedited transcript of this session. As such, it may contain omissions or errors due to sound quality or misinterpretation. For clarification or verification of any points in the transcript, please refer to the audio version posted at www.hsrd.research.va.gov/cyberseminars/catalog-archive.cfm or contact virec@va.gov*

*Moderator:* Welcome everyone and either good morning or good afternoon. This session is part of the VA Information Resource Center’s ongoing Clinical Informatics Cyberseminar Series. The series aims are to provide information about research and quality improvement applications in Clinical Informatics and also information about approaches for evaluating Clinical Informatics applications. Thank you to CIDER for providing technical and promotional support for this series. Questions will be monitored during the talk in the Q&A portion of Adobe Connect, and will be presented to the speaker at the end of this session. A brief evaluation questionnaire will pop up when we close the session. If possible, please stay until the very end and take a few moments to complete it. Let us know if there’s a specific topic area or suggested speaker that you would like us to consider for a future session. At this time I would like to introduce our speakers for today. Shane McNamee serves as the Associate Chief of Staff for Clinical Informatics at the Richmond VAMC. As a Clinical Informaticist in the Health Solutions Management Office in the VHA, his areas of expertise in Informatics include Health Data Interoperability, User Centered Design, Process Reengineering, and Data Management. As a Polytrauma Rehabilitation physician, he specializes in the recovery of traumatic brain injury and complex combat wounds. He has been instrumental in building the Polytrauma System of Care across the VA landscape to effectively transition the most severely combat wounded. Douglas Bidelspach currently serves as the Rehabilitation Planning Specialist for Rehabilitation and Prosthetic Services in VA Central Office. He received his Master in Physical Therapy degree from Heinemann University in 1996 prior to beginning his VA career as a Physical Therapist in the New York Harbor Healthcare System, and later serving as a Supervisor of Rehabilitation Therapy at the Lebanon, VA Medical Center. In his current position, Mr. Bidelspach is responsible for database development, utilization management as it pertains to planning, and administering the VA Rehabilitation and Healthcare Program for patient populations such as stroke, amputations, and traumatic brain injury. Without further ado, may I present Mr. Bidelspach.

*Douglas Bidelspach:* Thank you very much and good afternoon and good morning to you. I’ll take today’s opportunity to go through some of our experience in the Traumatic Brain Injury Toolbox: Clinical Decision Support system. This is going to provide an overview of a pilot that was completed at the Richmond Medical Center. Hopefully the presentation will provide adequate detail to our experience and we certainly look forward to questions and answers at the end as that obviously helps to shape the future of where all of these types of projects go. The objectives for today are that we’re going to give an Overview of the Polytrauma System of Care. Some of you may be very familiar with it, for those I apologize. Others may not be as familiar. We did want to give you the clinical framework and outline of our system of care as it relates to future plans in our focus for this Toolbox and Clinical Decision Support System. We’ll give an overview of our experience with the VA Innovation Initiative and the pilot project at Richmond as we stated. A part of that will be the Experience with the TBI Clinical Decision Support System. We will close the presentation today giving you an update of the Current Status and some Future Applications as we work towards further expansion of this tool. We do have a few polling questions, and I’d ask that we pull up the first poll. The intent here is to try to keep you engaged. It’s a very long forty of fifty minutes if you just listen to us speak. The first question is, “What is your primary role in the VA? Is it physician, rehabilitation therapist, behavioral health provider, IT or Informatics Specialist, researcher, other? If you select other, please type your role into the Adobe Connect Q&A section.” This will give us a little overview and an understanding of who’s on the call. It will help us to focus this towards your areas. Right now we’re split between research, behavioral health, rehabilitation therapist, and other.

*Moderator:* For other I can let you know that people are typing in Case Manager Social Worker, VAHSM Research Manager, RN in Mental Health, Blind Rehabilitation Specialist, Nurse Educator for nursing students and staff, Vocational Rehabilitation Specialist, Researcher at a TBI Clinic.

*Douglas Bidelspach:* Great. Slide three is just a visual representation of the expansion of our system of care. Traditionally prior to the conflicts, the VA system was very much a stateside system. But within TBI and Polytrauma Care, the need of treating the injured soldiers and service men and women resulted in the expansion of the system of care all the way to the theaters of operations in Iraq, Afghanistan. Patients were moved from those more acute and combat medical arenas to Landstuhl. Patients were stabilized at Landstuhl and then sent onto our military treatment facilities, Walter Reed, Bethesda, and then also onto Brook Army Medical Center. You can see on the VA side we had the four original Polytrauma Rehabilitation Centers at Minneapolis, Richmond, Palo Alto, and Tampa. There is a fifth Polytrauma Rehabilitation Center in San Antonio. Hopefully it allows you to appreciate the breadth of the system of care. It’s very important to anyone who’s been reading literature through the Wars, that the care that’s provided at the front line, stabilizing patients, moving them to Landstuhl and saving lives, is really the critical part of that initial phase of care. That results in very severely injured and complex cases that do come back to the United States in our VA Medical Centers for ongoing care. That’s the driver of the Polytrauma System of Care, more specifically on those acute and severely injured patients at the Polytrauma Rehabilitation Centers.

The System of Care on slide four consists of over a hundred specialized rehabilitation sites. As I mentioned previously, we have five Polytrauma Rehabilitation Centers, twenty-three Polytrauma Network Sites, which is primarily one per VISN. We do have two Polytrauma Network Sites in VISN eight, and two in VISN seventeen. I’ll go into a little bit more detail of what each of these levels consists of. There are Eighty-seven Polytrauma Support Clinic Teams, and those are generally two to eight per VISN. There are also thirty-nine Polytrauma Points of Contact. Slide five is the Integration of Comprehensive Rehabilitation Care. Rehabilitation is really a team-based system. We try to treat the patient and the family. The ultimate goal is to bring that person back to their prior level of functioning, bringing that person back to their prior life. When you have patients that come in with these complex injuries, there can be many different components that are treated. This slide gives a little visual representation of some of the conditions and of some of the care that needs to be coordinated for that rehabilitation team. Within TBI and Polytrauma you have head injuries, which are very common among the veteran population, specifically the OEF/OIF/OND Cohort. We have pain that comes into play, and so pain management has a critical role. Mental health is a very critical piece as well. There’s a very prevalent comorbidity involvement with both brain injury and mental health conditions. There’s also visual loss, complex orthopedic fractures, amputations that can occur from these injuries and conflict as well. Hearing loss is a big piece of the equation. When you have this many different specialty areas and different type of injury presentations, it’s critical to have very efficient and coordinated care management and military liaison overseeing to a certain extent the involvement of these teams and being that liaison between the patient and the family and the care providers at different periods of time in the rehabilitation continuum. This is the overarching goal of VA and the overarching team in rehabilitation care to make sure that we coordinate our services and ultimately provide the rehabilitation care needed to restore function and get this individual back to their prior level of functioning.

Slide six is Treating the Whole Person! Rehabilitating occurs in three stages. We have the acute inpatient phase, which is generally the period most immediate to the actual injury. We’re talking a lot right now about TBI and Polytrauma, but the same isn’t true for stroke care or following an orthopedic surgery. The acute inpatient phase is critical in the early stages of a patient’s recovery. In Polytrauma we also have transitional care, which is our Polytrauma Transitional Relocation Program. This is a bridge that covers from inpatient to outpatient and returning an individual to the community. You may have a patient that maybe is functioning at a high level in regards to the acute inpatient rehab. They may be able to ambulate fairly well and to do their own transfers. The piece that’s really missing is their ability to independently carry out their activities of daily living, so we focus on those pieces in our Transitional Rehabilitation Programs. Ultimately there’s the outpatient arena. Rehab isn’t unique in the sense of a lot of the care being transitioned to outpatient. On the rehab side this is really an ongoing effort in many instances to continue to build on the functional gains from the inpatient rehab timeframe, and just to make sure that that patient continues to make progress and reach their functional goals and gain independence in the community. The goal of rehab is trying to make sure that the patient is integrated back into the community. That integration back into the community includes the workplace and it includes the family and their social network otherwise. It’s very evident from the prior slide that this is a very resource intensive mission. It takes the input and the expertise from many clinical specialty areas to focus on the patient’s needs. Ultimately when we think about the success of rehab, each of those different areas may have instruments or tools that are useful in objectively measuring their outcomes. But it’s a Bio-Psychosocial model and sometimes it’s elusive to understand it. Is the end goal of the patient the same as the family? Is the family the provider? We may view success based on their ability to ambulate and return to the community, but they return to the community and maybe they’re not yet complete in the sense of returning to work or returning to a prior family status and social relationships. It’s important to keep that in mind. It’s a very complex presentation of these patients, and we do have to make sure we continue to treat the patient as a whole.

There’s a little bit more detail in slide seven, Polytrauma Rehabilitation Centers. As I’ve stated earlier these are the locations where the patients will come most immediately following their injuries in combat. They provide the highest echelon of comprehensive medical and rehabilitation services for the most complex and severely injured patients. As far as beds we have between twelve and eighteen beds on the PRC’s, providing that acute interdisciplinary rehabilitation care. We also have transitional rehabilitation programs with ten beds per site. Again that’s the bridge between your acute inpatient rehab and outpatient. Within the acute inpatient rehab programs there are dedicated beds for the Emerging Consciousness Program. We won’t get into great detail here, but these are the most severely injured patients that have not emerged from coma. They’re not responsive and there are specific programs in place that work to progress those individuals to a state where they do emerge and they are able to participate actively in the rehabilitation program. Those are located at the PRC’s as well. The PRC’s also have Assistive Technology Labs. These are dedicated locations that provide assistance with high-end wheel chairs, cognitive devices, communication devices. It’s focused on integrating technology into the rehabilitation plan, and ultimately integrating those tools into a plan to get that patient back into the community and back to their highest functional level. Another area that is growing across the VA and Polytrauma is no different. It’s the Polytrauma Telehealth Network. This helps to expand the availability of the expertise at the Polytrauma Centers to other locations throughout the system. Each of the PRC’s is CARF accredited for both inpatient TBI and for general rehab. We also collaborate with the Defense and Veterans Brain Injury Centers and the NIDRR-funded TBI model systems in research projects. You’ll see publications including VA data and contributions from VA researchers in these different areas.

Polytrauma Network Sites as I mentioned we’ve twenty-three of the regional polytrauma network sites. These provide follow-on medical and rehabilitative services for patients recovering from polytrauma and TBI. This is primary an outpatient focus program, but these locations do also have inpatient CARF accredited units. They serve as division leaders for education, monitoring outcomes, providing education and development for all of the facilities within their area. These have CARF accredited inpatient general rehab units and provide that level of rehab expertise that’s critical in coordinating the services at the network level. Our Polytrauma Support Clinic Teams are outpatient focused. Some of these locations will have CARF accredited inpatient units, but primarily its outpatient interdisciplinary teams that provide specialty rehab care closer to the veteran’s home. So an individual who goes into the Polytrauma Rehab Center, ultimately they will be discharged back to the community. Oftentimes the outpatient services will need to be provided at the Polytrauma Support Clinic Teams. These teams are able to provide that interdisciplinary rehabilitation care. They conduct comprehensive TBI evaluations, and develop the individualized rehabilitation and community reintegration care plans for those individuals as well. The Polytrauma Points of Contact are the remaining facilities that have a designated staff that’s knowledgeable of the Polytrauma System of Care in general. They coordinate the case management and referral within the Polytrauma System of Care. These are often more remote sites, and they help to coordinate the care of individuals reaching out and integrating the telehealth approaches and other expertise at the other levels of care to make sure the appropriate services are provided.

That brings us to slide eleven, and I think we have another polling question. This is just a quick overview. We just went through the Polytrauma System of Care. What level of designation is your facility in the Polytrauma System of Care? Is it Polytrauma Rehabilitation Center, Polytrauma Network Site, Polytrauma Support Clinic Teams, Polytrauma Points of Contact, and Not Known?” We’re pretty well represented across the board. Our largest is for Polytrauma Support Clinic Teams. It’s followed by Not Known, and then also the Polytrauma Rehabilitation Center. We have a good distribution across the system. With that I’ll turn the presentation over to Dr. McNamee.

*Dr. McNamee:* Greetings everyone. Let’s talk a little bit about how this project came out and fell into our laps and then we’ll walk through exactly the value stream of what was built and then talk through exactly what was built. When we get to the end of this we’ll go through some data in terms of user uptake and satisfaction and some user statistics and things along those lines. This was a VA Innovation Initiative (VAi2) Pilot. This came out of the VA Center for Innovation, which has changed names a couple of times over the years. From my understanding its charter is to bring private sector solutions and private sector expertise into the VA to help solve problems that we may have. It’s RFP –related. An RFP goes out and private sector folks put in for it. Potentially somebody gets selected and then we work directly with them to build this tool. The point of this is really to introduce innovative technologies, methods, and processes for the VA healthcare system. The VAi2 pilot for the TBI Toolbox started up just a couple of years ago. I’m going to say 2009, 2010 timeframe. The goal that we identified pretty quickly was to identify, codify, and operationalize the variety of different TBI and rehabilitation outcome measures across the system of care. By system at least for the pilot, it was just enrichment. So it would have been our continuum of care. We set out to provide user interface and built one that was built on a User Center design. It used standardized data collection processes, and then allowed for the ability from many different levels to track TBI and rehabilitation outcomes for different patients. It was the individual patient level on a daily basis up to Program Administrators and then the ability to be able to roll up data from different cohorts, injuries, and demographics in different programs along our continuum really developed a deep understanding of people’s recovery pathways as they were going through both individually and then with cohorts.

What is the TBI Toolbox? In the center there’s a term Clinical Decision Support. This means a lot of different things to a lot of different people. It is everything from what we would see to be relatively simple when we have the ability to order a medication in CPRS and there’s an allergy check. If you try to order a medication in HR there’s a warning that pops up and says, “Please don’t do this.” That would be considered a Clinical Design Support. There are other Clinical Design Supports that can actually not just identify negative things, or no-goes, but actually they can identify goes, “What is the best treatment. Give me information at my fingertips,” so I can help make a Clinical Decision in real time. Other people will see those as Clinical Decision Support systems. In the rendering of this project, the Clinical Decision Support that we’re looking at are much more in the day-to-day progress flow of a single patient through complex systems associated with different outcome measures and disease measures. And then the ability to then tailor those to Rapid Process Performance Improvement Models in order to incur not just a clinical flow of individual patients, but all of them as they go through. Is anybody having any trouble hearing me?

*Moderator:* We are getting questions about sound.

*Dr. McNamee:* I will have to say that nobody has ever told me I was too quiet before. This is actually a first. I will attempt to speak louder. Can somebody on the line let me know? I’m watching the Q&A right now. So Clinical Decision Support can mean a lot of different things. In the TBI Toolbox we use it as an outcome management and measuring system. There was another module associated with the Toolbox that came to us. It was first developed up at Walter Reed that allowed a little bit more what somebody would consider classic CDS solutions or a hand-over-hand ability to help drive clinical decisions in real time. We did not develop that any further in the pilot in Richmond. Where are we today? We’ll talk through this and this is a two-year pilot project, and Doug and I are both intimately involved. The pilot was run in Richmond. And a part of our reason is that we got a very mature rehabilitation system of care there all the way from what Doug had showed from initial intensive rehabilitation programs like the Emergent Consciousness Program all the way out to Community Based Vocational Rehabilitation Programs. That’s in a sense of why it was built there. We were able to build both a very useable front end of the system to capture clinical data and I’ll talk about it a little bit, the user flow through that. We were able to lay it across our system of care along the Polytrauma Continuum. It really gave a lot of benefits necessary with the ability to understand various outcomes as people go through it. But at the same time it’s far from perfect. As we get to the end we’ll talk about some of those things. Some of the back end integration pieces in terms of data management is still a challenge, and I’ll talk about that also a little bit more as we go through. Another challenge is that this is dependent upon end users, clinicians, and providers taking an extra couple of steps in their workflow and plugging data in different ways into a system. We attempted to make that as simple as possible with the constraints that we have, but anytime that you need to do that its obviously going to slow down end user adoption.

Doug and I were just talking about Sources of Value this morning in terms of the next phase of this project. It’s making sure that there’s a very clear value statement purpose for any project that’s going to stand up. The clinical value to this I think was pretty clear, which is the ability to codify clinical processes and understand really what is happening from an outcome perspective. Not just what we think is happening and what we want to believe is happening, but what’s actually happening from the day-to-day basis. Oftentimes there’s a great ability for folks when we’re treating patients, particularly in complex environments like a rehabilitation setting to believe that the cases that got better were due to the wonderful things that we did as a team. And those who did not get better were because of their makeup or their psychosocial structure or the complexity of their injury characteristics. So bringing data into that and understanding that really changes the clinical approach to things when you can aggregate that data. Improved patient outcomes are the most important one. If we can then target this thing and build this into our processing within rehabilitation units and show clinical outcomes over time with rapid cycle improvement, that’s really the key. The challenge in terms of doing what we’re talking about without the Health IT’s sitting behind it is the same thing that we run into in lots of areas where there is large amounts of data that’s longitudinal, so it’s getting collected at different times, and it may be varying in terms of who’s collecting, how they’re collecting, and generally speaking these things end up on pieces of paper. That doesn’t help drive and process and improve the system all that terribly well. There are a lot of errors in terms of transcribing the paper and working it through and moving it through. So I think the Sources of Value in Clinical Care is pretty clean. I’ll go into an example in a little bit on one of those.

For the Sources of Value on the Patient Side, God forbid, we hope these things happen. The better the rehabilitation machine is in terms of its communication ability to target specific functional outcomes and managing and tracking those things aggressively over time if you read the literature should and does relate specifically to better patient outcomes. It is important to note as Doug did talk about earlier is that we’re not talking about a relatively simple intervention and outcome system. The rehabilitation system, like a lot of mental health, is really a Biopsychosocial model. It is functional and dependent for someone’s ability to live independently in the community. It draws into things like quality of life and satisfaction with life. It is as much person-related as it is patient-related. The goal was to lay this kind of structure on programs so they can assess this and return to person I thought a little bit better. The Sources of Value-Operational provides structured data capture with little or no impact on workflow. I don’t know who wrote that one first, but it’s much less than it potentially is. We’ll go through that one. This conglomeration of paper that we sit under and try to use and try to evaluate for program outcomes obviously helps with that. As you move down the list there are a variety of different things here. I think one of the big ones is if and when we start to move to the second level of this, we can potentially start to identify optimal care pathways at our different sites based upon we have outcomes, and therefore we can start to identify and codify those best practices. We have a poll here up on the screen. Click away if you wouldn’t mind. That would be wonderful. The question is, “What are the greatest potential benefits in the Clinical Decision Support System?” You can go down and we’ve got our researchers popping and clicking here. Somebody likes to improve consistency of care. I’m going to tell you what my vote is, just so people know I’m not influencing too much, which is the top one, “To improve patient safety and outcomes.” But there’s obviously no right answer here. The implications across the board for a system like this within the research arena are tremendous. We have a good distribution here and I’m going to go ahead and end the poll. The top one was the winner. We have another poll.

At the same time in terms of implementing these things there are fears and anxieties associated and relayed upon them. What are your thoughts here? If you have any fears or anxieties or problems necessarily with putting these systems in what would it be? The system flow may not be consistent with preferred clinical practice seems to be up there. That’s obviously a usability concern. The top one, “System may be more time consuming,” is very similar to number three, “It’s going to have a negative impact on workflow.” Those two kind of sit together. Let me choose some clinical judgment on the overall technical system. You do see that at times. And I know that that’s a fear for people. I can’t say that I’ve actually ever seen a system which actually does that. Computer systems are too inflexible, which makes a lot of sense. The winner is, “System flow may not be consistent with preferred clinical practice.” For all those clinicians out there you know that your clinical practice and the way that you prefer to do your clinical practice are different than your neighbors or the persons up the street. When we do have an individual response to these things over time, I think it’s interesting. I do appreciate that. Let’s move back to the presentation.

The Development Process is really important for any folks out there who potentially are actively engaged in developing Health IT Systems to be used in a clinical or a research world at the same time. It really is the methodology in terms of which of things are developed, and I won’t lecture too far on this. There are many different methodologies, but there are two that are most frequently discussed. One would be considered the Waterfall Methodology, which is we as customers write everything up that we want to get done. We through it over the fence to the people on the IT side who take care of it and then they bring it back and we implement it. The other way to do it is to have a close relationship and a collaboration project that is really rapid cycle in terms of how it moves forward. That’s how we did develop the TBI Toolbox. MedRed was the Company who developed it with us. They did a really nice job. They came down and spent hours every week. They actually embedded a staff member on the development team within our clinical programs. There was lots of time that was spent with our end users who would be consumers of this to both look at the usability concerns, but then also really try to draw people into the process to make sure that they’re responsive to change. The planning obviously was very dynamic. It was a very interesting process. In terms of Stakeholder Input, we broke this down early on and we wanted to get a point of contact from each one of our major discipline with the rehabilitation scope. You can see some of them listed here. That’s by no means the end there. There were recreational therapists, physical therapists, psychologists, kinesiotherapists, rehabilitation specialists, and neuropsychologists. We had individual different disciplines identified. We also had individuals from each of the different program components identified to make sure it was meeting those different program needs.

The stakeholders were asked to develop a list of the outcome measures that they felt they would like to use the most and were most appropriate to their discipline. Some of these things are national measures that we use like the Functional Independence Measure, or the FIM on there. And then others are going to get a little bit more specific necessarily to the domains. We’ll display it by the time we get to the end all the different forms or the different outcome measures that were built into here. This was a really intensive and to me a very important process of making sure that we got buy-in so they can then use these tools at the backend for their clinical processes. We also developed these different categories for reporting, and I’ll touch on this a little bit later. We have such a heterogeneous mix in the rehab world. So it’s very difficult to say, “Just show me everything for all brain injuries.” If you do all brain injuries you know that there’s going to be a very different outcome course for those individuals with a traditional head injury with an anoxic brain injury with a penetrating brain injury. And then the other required brain injuries such as strokes and things along those lines, we know that they are very different recovery courses over time. So to try to get into the, “How well are we doing with specific populations,” and understanding what we’re doing and if our care is appropriate, you’re able to break these things down into different categories or flags for reporting.

In front of you are three big buckets of Demographics, Injury Characteristics, meaning what was the injury? Was it a brain injury? What type? And then by the different Rehabilitation Program that they were in for different timeframes so those people could pull those out of the system and be able to look at those. We also have a Patient Portal that was developed so we could attempt to capture outcome measures beyond a discharge from the hospital, or in our outpatient setting. This is VA security approved. There is a secure e-mail that goes out to participants and they can get their information back. We then are taking a screen shot of the actual system. For those systems people out here it’s important to note that we had this context managed from CPRS. It was a single sign-on. It exists in Richmond on the tools bar. Context management that means any time that you are in this record it is specifically a managed with the patient that you are in CPRS. There are a couple of different flows that we went through, but it was a pretty detailed analysis. We were making sure that people didn’t have to press too many buttons outside of their workflow. Let’s say you are an RN and you’re going to deal with a traumatic brain injury patient on an inpatient side of the house. By shift you have to document on the Agitated Behavior Scale, as the Behavior Scale helps very clearly guide day-to-day care. Physicians often change medications based upon that. They may even have PRN medications associated with that, and then it helps obviously to evaluate over time how populations are doing. In Joe Smith’s record there could be 2PRS. You click the tools bar and you click the TBI Toolbox off of there and it would immediately launch the DNF record. You have the ability to do it very quickly. The first time you would touch a patient there are a couple of different buttons you’d have to click to put them into the right place, to make sure that their demographics injury and different things are being captured appropriately. Then one would go into the form themselves, and go down and click down on the screen to see if you can capture these different outcomes.

And then at the backend when you’re done with it, what it would immediately do is it bifurcates. It actually writes a note with this information, the Scale information, which records it into CPRS and then all of the data was saved in a server, a house on campus, in a database that was accessible and querible for the backend. From front to back if a clinician would go in and had done one of these outcome measures, it would take them thirty to forty-five seconds to put the data into the system that can be captured both clinically in the clinical record system and then also in a database for outcome management. It’s pretty quick, but it’s still thirty to forty-five seconds. It’s still a chunk of time that somebody’s taking out of their day. At the backend if what you’re seeing now with the Population Report is that we wanted to make sure that we had the ability to get through and understand the different data that was in the system so we could use it. Here we have a couple of screen shots. All of the Reports that we have are listed there on the top left. It starts with All Patient Data and down. And then the right side there was a querible list that you can lay on those different flags. You can really hone into the type of data that you want. And then on the bottom is the report out that you get. This is still a work in progress. The system to report the data is one of the things that we were working on very aggressively before the first contract rolled out. It’s going to need some improvement over time. That goes into the fact that these pre-canned reports on the upper left hand side of the screen takes hours trying to understand and make these things better. So there are still limitations necessarily in getting changed data over time appropriate. To me that’s one of the things that we need to improve on. You can see who’s primarily used it. This data is old. There’s a behavioral scale pre-toolbox. It’s paper-based. We moved that into the electronics.

I’m not going to read through these on the screen of the Usability Criteria one by one. You should look at responsiveness, acceptability, what it did to a process, the continuity of care, and what the satisfaction was. Over time you can see that the majority of them exist to the left. There are quite a few in there that are in neutral, and there are some disagree or strongly disagree. That’s always going to be the case. But I was pretty pleased when we got to the end of this that it seemed with the majority of users that they were able to always see the value of this. By users this is anybody potentially could touch this system. There’s satisfaction with the tool itself in terms of the responsiveness of the system. This is really important in terms of making sure that the latencies are not too long, making sure that the tool is stable so when people go to it they can quickly get through it and quickly get to know what they need to do. A lot of time and effort is spent on this one. I think we did pretty well here. We pulled out a couple of these and I didn’t pull out all of the positive ones. This next one was, “Can it help improve the quality of care of the patients that are coming through?” I think that it’s really important here that the highest category here is Neutral. You don’t want a whole lot of people who disagree or strongly disagree, but there are more people than you’d like in Neutral. We spent a lot of time talking about that and trying to understand that, and that is probably because most of the end users were putting in the information into the system aren’t necessarily abstracting it out and seeing it come out of the backend of it. One way to improve this type of metric is to get people more involved in the steering committees or in the outcome committees that are really looking at data and communicating that data and its source back to the end users.

Here’s a big one, “Would you recommend the use of the TBI Toolbox at other facilities?” This was pretty big in terms of moving forward to the next steps of this project, with the exception of the one person who said no that had a really bad day that day. This next slide I believe shows 2012 data. It shows the rise in growth in just the amount of information that was stored on the server over time. You’d be very concerned if you looked at this and nobody was using it. It’s a good metric to show use. This next one is one where you always want to make sure that if there’s a run somewhere you try to develop an understanding of what’s there. We talked through this quite a bit. The red zones are a failure in the system sending data through, but most likely its due to the fact that there were based upon the nurse psychologists who wanted to make sure that all of the outcome measures that they were doing that they had a choice to write it into the health record or not to write it into the health record if it potentially was going to have a negative impact on the course. Some of these represent scales that were done and then put into the server for analysis, but not actually written into the health record and therefore not actually sent to VistA. The next slide shows the most frequently used forms. The ones that are on there that people use the most not surprisingly are because the leaders in the programs who are running the PI Committees set this up and got people to use this system to capture these specific outcomes. It comes back down to a truth in terms of IT systems and healthcare. It’s never usually an IT systems fault or problem or a gap in it. Those things can assist like any other tools are. It really comes down to people trying to improve processes in terms of the work that they’re doing. You need to make sure that you don’t just have this tool out there, that there’s a process reengineering the flow behind it to make sure that people are actually using it. I’m going to ask Mr. Bidelspach in for this one.

*Douglas Bidelspach:* I’ll just go through the last few slides and we may have a few minutes for Q&A. Our Experience to Date and Current Status as Shane mentioned is that the TBI Toolbox pilot ended in December 2012. We’ve gone through some of the preliminary results. Ultimately the feedback and the experience have been positive. We’ve been working with the VA Innovation Office and with contracting to try to move this forward. Up until very recently we’ve been waiting for some contracting pieces to fall into place. This slide goes through some other pieces. Contractually I’ll just mention that we actually found out last Monday that the contract was awarded. We are scheduled to have a kickoff meeting and begin work on promoting this to the other Polytrauma Rehab Centers. So we’ll have an opportunity to try to enhance and expand utilization. Obviously the ultimate end goal is to get a system-wide tool that is very useful and beneficial for the field. From the clinical aspect the programmers and the pilot have developed a lot of the initial assessment tools and incorporate those into the dataset and the available library or menu of instruments in the team in Richmond continues to use to gather this information. Ultimately as I said, if we have a system-wide tool and this information is available more broadly across the Polytrauma System of Care and really the Rehabilitation System of Care, it gives us a more enhanced documentation reporting outcomes-based system that can be utilized for a lot of the reasons that we mentioned earlier to try to improve patient outcomes, look at patient safety, look at our programs and program improvement opportunities, and ultimately enhance the functional rehab of the patients that we treat. With that we’ve come to the end of our discussion. Here are some pictures of some of the individuals treated at the Polytrauma Rehab Centers. You can see as we’ve mentioned it’s vital to incorporate the family and the social structure into their overall rehab. You can see them with some of their family members here.

*Moderator:* Hi this is Joanne. Thank you so much to both of you for providing this presentation. I found it extremely interesting myself. We do have several questions and one that I deleted by mistake. I remember the question being, “How do I find out the level of designation of Polytrauma at my facility?”

*Douglas Bidelspach:* You can e-mail me. The Polytrauma Internet site I believe there’s a listing of the facility levels. It’s also within the recently release Polytrauma Hand Book. So if you would Google VHA Directive Polytrauma, one of the top results will be the Polytrauma Hand Book. And towards the later third of the Hand Book I believe is where the table with the facility designations is provided.

*Moderator:* Thank you. The next question is, “How about optometrists in rehabilitating eye problems in TBI?”

*Douglas Bidelspach:* There is some work with the optometrists and the visual specialists. We have prosthetic services, and we work more closely with the blind rehabilitation specialists. But we do also collaborate with the optometrists and ophthalmologists in regards to some of the specialized eye exams that they’ve incorporated into their practice. When the pilot was implemented and actually more recent with some of the other projects, I don’t know that there is a standardized template that they’ve pushed out. Rather they’ve incorporated essential components, but it’s not in the form of a point and click type of template that would be very seamlessly integrated into this type of system. The biggest piece from our prospective is to make sure that the eye specialists are aware when a patient is admitted with a traumatic brain injury. Obviously when they come onto the rehabilitation unit there’s a comprehensive evaluation that occurs. We try to work as a team, but there are still silos of care where specialists exist. Individuals who need the eye examinations are referred onto get that specialized examination as well.

*Moderator:* Thank you. The next question is, “How does this interface with the Centers of Excellence TBI Toolbox?”

*Douglas Bidelspach:* It does not in the sense of directly transmitting any data. This is a VA project and a VA system, and we do not have any overarching data sharing agreements or data pushes that occur with their system. I think we’re all very aware that there are a lot of efforts to make progress in those areas. But this is not a trailblazer project that is ahead of the curve as far as the larger data sharing relationships and programs and policies that are being developed.

*Moderator:* Thank you. That is the last question we’ve received at this time. I’d like to ask Heidi to perhaps put up the Evaluation. And I would like to thank Dr. McNamee and Mr. Bidelspach for taking the time to develop and present this talk. Certainly feel free to forward any remaining questions to our presenters or to the VIReC help desk and we will be happy to pass those along as well, virec@va.gov. Our next session is scheduled for Tuesday, June 17th. The speaker is Dr. Jonathan Medford and the topic is Radiology Protocol Tool Recorder, also known as RAPTOR. We hope that you can join us. Again thank you everyone for joining today’s session.