AHRQ Quality Indicators Software for Windows and SAS Version 4.4 Webinar
Wednesday, May 9, 2012

Transcript

>> MAMATHA PANCHOLI: Thank you. Good afternoon, ladies and gentlemen. Thank you for standing by. On behalf of the Agency for Healthcare Research and Quality, also known as AHRQ, welcome to today's webinar, AHRQ Quality Indicators Software for Windows and SAS Version 4.4, sponsored by the AHRQ Quality Indicators Program. I'm Mamatha Pancholi, program officer for the AHRQ Quality Indicators program, and I will be facilitating today's event.

Before we get started I want to review some information about the webinar technology we are using today. I would like to remind you that today's audio and slide presentations will be delivered directly through your computer. If you experience any technical problems, please call Infinite's tech support at (888) 632-5061. Enter the conference different number listed on this slide followed by the pound sign.

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In addition I would like to encourage you to submit questions for our presenters by clicking the "Ask A Question" button at any time throughout today's presentations.

Your questions may then be addressed during the moderated question and answer session at the end of the webinar. Submit them as you think of them. Please do not wait until the end.

Next to the "Ask A Question" button there is a button that says "Supporting Material." If you click on that button you will find the slides for this event. Today's webinar includes captioning which appears in a box next to the slides. Also, as a reminder, this presentation is being recorded and will be made available on the AHRQ Quality Indicators Program website.

I'd like to take a moment to go over the agenda for this webinar. First John Bott, a senior analyst at AHRQ, will provide a brief overview of the Quality Indicators, also referred to as QI, including its origins, current modules, advantages, and challenges. Next, Jeff Geppert, a research leader at Battelle Memorial Institute will present a summary of the changes and improvements in the newest version of the AHRQ QI Version 4.4. He will also discuss the uses of the Quality Indicators for hospital quality improvement and public reporting. The last portion

of the webinar will feature presentations from two QI users from the University HealthSystem Consortium and the Bedford VA Medical System.

When all four speakers are finished presenting, we will have a moderated question and answer session, during which we will have some address questions submitted during the webinar. We will do our best to answer as many questions as we can. As a reminder, you can submit any questions you have for the presenters throughout their presentations. Please do not wait until the end. As you can see, we have a very knowledgeable line-up of great speakers for today's event, and we look forward to hearing from you through your questions. Many thanks for being here today. I'll now turn it over to you, John.

>> JOHN BOTT: Thank you. As Mamatha indicated, we have just a few slides to give a high level overview of the AHRQ Quality Indicators. The first slide goes back to the beginning.

The HCUP partners, which stands for the healthcare cost and utilization program, who partner to put their in-patient data sets together in coordination with AHRQ, in 1999, requested that AHRQ develop some indicators for use with the data sets that were being combined. So, this is a very high level picture. We will just touch on this briefly about how the measures initially go through development. So, just at a high level, it involves literature review to see what may be possible as far as measured development and appreciating the data source that we have.

And that leads to some initial empirical analysis and very early defining of measures. And it is furthered by bringing in appropriate one or more expert panels to evaluate this straw person, so to speak, measure definition. And that often times results in additional follow-up analysis based on questions asked by the expert panels, et cetera. And I should note at this point, at many points a measure can just drop out as no longer being considered. Eventually some measures then graduate to being more fully developed. So that's a very high level picture of how the measures started.

And this is where we are currently. We currently have four modules of measures, so to speak. And those four modules are, as you see here, the prevention quality indicators, that was the first measure set developed, which is measuring at a geographic area level, the typical unit of analysis being a county as the most prevalent example.

These are measures of potentially preventable hospitalizations with high quality and well coordinated care in the community. Folks often times call these ambulatory sensitive care conditions as well.

The next measure set that was developed, to go chronologically, would be the in-patient quality indicators. That came a couple years later. You'll see these are largely but not exclusively

mortality measures—measures of utilization and volume. These measures involve both some measures that are at the hospital level and some measures that are at the area level as well.

The patient safety indicators came shortly thereafter, and, again, these are some hospital level measures and area level measures as well. These measures are largely but not exclusively complications that occur in the in-patient side. A couple of them are unexpected deaths where higher quality care could avoid some of those deaths.

And then most recently was the pediatric quality indicator set that came a few years later. Again, these involve provider-level, hospital-level measures, and area level measures. And a few in these are neonate indicators or NQIs. And largely the TDIs were perform formed from measures from other measure sets, primarily being a number of the PSI complication measures were adapted, where appropriate, for the pediatric population. So it's a very high level picture of the modules.

So the measures are comprised of administrative claims data and these are the primary fields used, not all of the fields, but a fair number and the more prominent ones. The big fields being used are primarily procedure codes and diagnosis codes. Currently, of course, that's specified in ICD-9 with ICD-10 on the horizon.

A couple more recent fields that have been employed with the AHRQ QIs are the present on admission indication on each diagnosis code and, very recently, the point of origin code, which have been adopted.

So the measures produce results expressed a number of ways, depending on the measure. Most measures are expressed in rates where there is a numerator and a denominator, whether they be area level or hospital level measures. There are a number of measures that are expressed as a volume or a count, and the volume measures where the outcome is correlated with procedures; the more you do often times the better you do in performance for more complex procedures. And the count measures tend to be those events that should not be occurring at all. Some folks call those serious reportable events. And the measures then where they are risk adjusted, we'll have a risk adjusted rate, smooth rate, and expected rate to do that case mix adjustment to compare a hospital to a hospital.

And again, as I started at the top of this discussion, this could not be done without the Healthcare Cost and Utilization Project partners chipping in their data. We are up to 45 or so states as Healthcare Cost and Utilization Project partners that put their data into this data set that we use to not only develop the measures, but to maintain and improve the measures.

So a couple slides on some pros and cons of the measures.

First, some advantages: The measure sets, if you combine the four modules, currently total up to 91 measures and a number of composites as well.

There is a number of what we'll call canned stratifiers, where people if interested can look at performance in the measure results by a number of these canned stratifiers and some custom stratifiers can be performed as well. Here are some of the more canned stratifiers, as we refer to them.

The measures across the modules do touch on a number of priority populations that are of more interest, that people have expressed that they would like to be able to measure performance in.

And I touched on this the last bullet in discussing the across the modules and I pointed out for each one, that the majority of the measures are at the hospital level but there's a very strong minority of the measures that are also area level measures where those in-patient claims are used as a window in to what is occurring in the community.

A couple other advantages, the measures are open publicly available and this is a link, to the website where not only the software is housed, but all of the documentation in relation to the use of the software and more technical information about the measures is contained in all four modules. So there are a number of standardized indicator definitions that are applied to the measures that cut across a number of the measures. The measures can be computed with a number of administrative data sets, and some examples are given here. That then allows the hospitals and counties to be able to replicate the results, should they desire to on their own.

Some other advantages: where possible, we try to harmonize with other like measures. And that's been done in a number of cases worked with the National Perinatal Center, the Joint Commission, CMS, et cetera, to harmonize where possible on some numerator definitions or risk adjustment, or what have you. Much of that is facilitated by the National Quality Forum, which promotes harmonization of measures.

Technical assistance is available to users if people e-mail their questions in and those get a response about how to use the software and more technical questions about the measures.

The measures are updated and improved upon with each iteration which tends to be annual.

There are a number of benchmarks to look at performance against. These are some, but not all, of the opportunities to seek out and use benchmarks if somebody desires to.

These are challenges not only of the AHRQ quality indicators, but many of these are generalizable to many measure sets. And a common concern that people express is that while the public desires, where possible, to see outcomes, often times we will hear outcomes are less actionable than process measures, which gives you more specific guidance on a process measure what to improve upon.

We have recently launched in the last few months the AHRQ quality improvement toolkit, which is housed on the website, and trying to be responsive to this commonly expressed concern. That toolkit is then launched in regard to the IQIs, the in-patient quality indicators, and the PSI, the Patient Safety Indicators.

The next couple of challenges is administrative data contains less clinical detail than directly abstracting it from the chart. And the risk adjustment as always can always be improved upon, whatever the measure. That's always a common concern of any measure I've heard in my years of being involved in measurement.

On the horizon that will mitigate these two to some degree as, of course, is ICD-10 which will contain about eight to ten times the amount of coding specificity that we see in ICD-9. ICD-10 will have 155,000 codes and ICD-9, right now we have 18,000 codes as an example of greater granularity.

A number of measures, including the AHRQ QIs, they are somewhat subject to gaming as far as what ends up getting coded. A common concern with a number of measures, including the AHRQ QIs, is the time lag of when the data is received to when measures can actually be computed as a number, which is another challenge as well.

So I believe with that as a very high level overview I will turn it back over to Mamatha, if I have it right, to move to the next slide. Mamatha?

>> MAMATHA PANCHOLI: Thank you, John. As a quick reminder, we encourage you to submit questions for our presenters by clicking the "Ask A Question" button and submitting your e-mail. We'll answer as many questions as we can during the last 20 minutes of this webinar.

I now have the pleasure of introducing our second presenter, Jeff Geppert. He's a research leader at Battelle Memorial Institute and the leader of the AHRQ Quality Indicators Program at Batelle. Jeff will highlight the changes and improvements included in the newest version of the Quality Indicators. I'll hand it over to you, Jeff.

>> JEFF GEPPERT: Thank you, Mamatha. Good afternoon. I will be discussing some of the changes implemented in Version 4.4 of the AHRQ QI software and documentation.

The software and documentation were posted on the AHRQ QI website in March 2012. Version 4.4 was primarily a fiscal year coding update, so the specifications were revised to incorporate fiscal year 2012 codes, both ICD-9 codes and DRG codes, which were effective on October 1, 2011. As always, the software is maintained in order to be backwards compatible, which means that the current version of the QI software can be applied to data going back to basically fiscal

year 1997, which is what we recommend. Technically it goes back to fiscal year 1994, but there were some very substantial significant structural coding changes in the intervening years.

So it is backwards compatible. Overall there were about 125 coding changes. I am going to highlight a few key coding changes that were fairly more significant than some of the more routine updates. For example, for PSI-7, PSI-23, and PDI-12, which is a central venous catheter-related blood stream infection. The numerator definition in the previous version, Version 4.3, used a code 999.31, which was infection due to central venous catheter. In fiscal year 2012, that code was divided into three codes, 999.31, .32, and .33. The new specific incorporates both 999.31, which is other and unspecified infection due to central venous catheter and 999.32, which is bloodstream infection due to central venous catheter.

Another fairly material coding change was related to PSI-11, which is post-op respiratory failure, and also PDI-9. There, previous coding of the numerator for PSI-11 and PDI-9 is based on diagnosis and procedure codes. For the diagnosis code component of it, the previous coding relied on two 518 codes, 518.81 and 518.84, acute respiratory failure and acute and chronic respiratory failure following trauma and surgery. In Version 4.4 using the 2012 fiscal year, the codes are now 518.53, acute and chronic respiratory failure following acute trauma and surgery. Those codes have gotten more specific, and as a result, we anticipate a slight decline in the rates when the software is applied to discharges after October 1, 2011.

Finally for post-op sepsis, PSI-13 and PDI-10, there was a code included in the numerator, 998.0 for post-operative shock not otherwise classified. We received numerous comments over the years that this is a specific code that incorporates things other than post-operative shock due to sepsis.

And as a result, there has been an improvement in the code. This is a common event where measures are put into use, there's feedback in their application, and then that feedback is provided to the coding committees and codes are revised to make the measures more useful. So 998.0 was divided into four codes: unspecified, cardiogenic, septic, and other. Two of those codes are incorporated into the current specification for PSI-13: the unspecified and the septic.

So those are some of the more significant coding changes. There were, as I said, 125 total changes. One of the other indicators I wanted to bring to your attention is that there were some coding changes to the pediatric heart surgery mortality and volume measure. I think this is probably the most significant coding update we have had to those two measures since the measure was incorporated into the original PDI module. There were changes to both the procedure codes for congenital heart surgery and the diagnosis code for congenital heart disease.

There was one minor MSDRG change. There was a new set of MSDRGs related to skin debridement that were incorporated into the MSDRGs that are used for risk adjustment for the PSI and the PDI.

So those were the major significant coding changes that were implemented. I just wanted to mention for those who may not be familiar, there is a partial coding freeze in effect for ICD 9 in anticipation of the implementation of ICD-10, which was October 1, 2013. Now the proposed rule is for October 1, 2014. We don't know for sure how that would affect the partial freeze, but in the hospital in-patient prospective payment rule, the proposed rule that was just put in the Federal Register, there were no fiscal year 2013 ICD-9 coding changes. We do know we don't anticipate any ICD-9 coding changes for the next fiscal year.

Some of the other changes that went into Version 4.4 include some minor coding corrections for some of the pediatric indicators. A newer version of the 3M™ APR-DRG grouper was updated from version 48 to 49. In addition, as some of you know, there was an issue with the limited license grouper and the assignment of the risk and mortality subclass that impacted some of the inpatient quality indicator risk adjustment—basically the risk and mortality subclasses being assigned to the lowest level. That resulted in the lower than expected rate and higher risk adjusted rate. That issue was corrected and that correction is incorporated into Version 4.4 of the software.

Some of the other changes that went into Version 4.4 were the update to the population files and the comparative data. The population files, which are used in the area level measures as the denominator for the area level measures, were updated to take advantage of the 2010 census.

Essentially the U.S. census created a new intercensal file for 2000 to 2010. The intercensal estimates reconciled the numbers from the 2000 to 2010 census and that reconciliation is carried forward for the intervening years, and so that is a one-time reconciliation. Those years are now finalized for future updates.

In the in non-census enumeration years, they have what are called vintage files. The vintage files are projections based on a lot of sources of information that are used to update the county level population estimates. Currently, the most recent available file is pre-2010 census. Census is working on a 2011 vintage file. It is anticipated that the county level vintage 2011 file at the age, race, sex, Hispanic origin level will be available later this month.

Because we are applying the software to 2012 data and the most recent census data is 2010, we do a simple projection from 2010 to 2011 and 2012 using basically a simple growth rate projection method. But once the actual data is available we will update the census files to incorporate the actual data.

Some other changes that went into this installation of the software: There was an improvement to the way the prediction module, which is this separate module that's used for the present on admission data, the way that was implemented and installed in the Windows and the SAS version was streamlined and improved. There was some adjustment to the area level calculation in the

SAS module. Basically what we do is adjust the denominator to make sure that the discharge data and the census data are reconcilable to one another.

Some other functional related improvements: The first one related to weights for individual composite measures, component indicators. What this refers to is that, as you know, the default weights for the composites are what are referred to as NQF weights. The users are allowed to change the weights that are used in the composite calculation. Many users do this to set the weights at a level that is consistent with their input data file.

In Windows there was an issue that you had to specifically enter the weights for each one of the component indicators. Otherwise it would revert to the default weight. That was addressed.

The Windows application is still a 32-bit application developed in the Windows XP environment. We are often asked about using the environment in a 64-bit or Windows 7 environment. Basically we have run it in those environments. We haven't documented any particular issues with running in those environments. If you are running the Windows software in a 64-bit environment it still emulates like a 32-bit environment. So you are actually running it as a 32-bit application, but we haven't identified any issues with running it in Windows 7, but will document those if we do.

There is a separate module for some of the diabetes area level measures that, instead of using the county level population, use state level estimates of the number of diabetics by age. Those are available for your use. We are continuing to look at refinements and improvements for the area level measures in order to make them more condition-specific. As always, whatever issues that have come up from users related to their use of the measures and things that would make the software work better and more effectively, we have tried to incorporate those corrections.

Before we leave the software entirely and talk about some of the uses, and as we are beginning to think about some of these uses, I did want to just mention to people that we are in the process of planning for some major structural changes to the software that you will be hearing more about in the future. But one of the things that we will be looking at, for example, is creating a version of the software that would execute in the 64-bit environment. That will actually improve performance because there are some restrictions on memory allocation in 32-bit that will allow the data to work on larger data sets and to work more rapidly, but you should anticipate hearing more about that process going forward.

How the QIs are used in practice: The intention is to create tools that are useful for quality improvement and comparative reporting efforts. We continue to hear about applications of the measures in those two means all the time. There are individual hospitals and healthcare systems, such as the ones listed here that use them in their quality improvement efforts. As John mentioned we are pleased to have the Quality Improvement toolkit and we look forward to your input on how to make the tools more useful to you in your own efforts.

There are associations that use the QIs in their reports, and we are going to hear about a couple of examples of those shortly.

But finally, I just did want to mention that the QIs are used in several hospital quality reporting efforts. They are used in an aggregate fashion, so there's national level reporting in the national healthcare quality and disparities reports. There are entities like the Commonwealth funds that regularly produce reports on how the nation is performing from a quality perspective. More and more we're seeing applications related to value-based purchasing and payment for performance in CMS, Anthem of Virginia, and The Alliance.

The hospital level public reporting continues to expand both at the state level and at the federal level through Hospital Compare and the VA, and then as always there are hospital profiling activities for individual health plans and payers.

So, Mamatha, I'll turn it back to you.

>> MAMATHA PANCHOLI: Thank you, Jeff. I would like to now introduce to you Ann Borzecki from the Bedford VA Medical Center, who uses the QI for public reporting. Dr. Borzecki is a core investigator at the Bedford VA Medical Center's Center for Health Quality, Outcomes, and Economic Research and research associate professor at the Boston University School of Public Health and School of Medicine. Dr. Borzecki, the floor is yours.

>> ANN BORZECKI: Thank you, Mamatha. Today, I am going to present a quality improvement project we recently conducted in the VA. This was a Virtual Breakthrough Series focused on improving processes of care related to a single PSI, post-operative respiratory failure. This was part of a VA-funded study for which my colleague, Dr. Amy Rosen was the PI. It was performed in collaboration with quality improvement experts from the VA Center for Patient Safety, led by Ms. Julia Mili and Dr. Peter Mills.

This was part of a larger study that tested various dimensions of the validity of the PSIs, including the criterion validity we assessed using chart review. In this particular project we were interested in assessing what we called the utility validity of the PSIs. That is, we wanted to know whether they were useful for quality improvement. We also wanted to know whether a Virtual Breakthrough Series method would work as a quality improvement method. The Breakthrough method is accepted, and our National Center for Patient Safety colleagues previously used it with success to address issues such as decreasing faults. However, it hadn't previously been used in the VA for QI related to PSIs and normally includes face to face meetings. So, we wanted to find out how well we could engage teams in the quality improvement method by using this

method and doing it all virtually. I want to point out one caveat. We knew this was a short-term project with a pre-work and action phase of a total of eight months. So we didn't really expect to impact PSI rates by the study end, but we hoped that sites would undertake process improvements related to PSI which would have positive results on the PSI in the longer term.

So, the Breakthrough Series was developed by the institute for the IHI as a collaborative learning model designed to promote rapid spread of improvements in healthcare systems. I just want to touch a few key elements of the Breakthrough Series. In terms of topic selection we actually spent a fair bit of time going back and forth trying to decide which PSI to use. We had several conversations with VA stakeholders, including clinical and patient safety leaders. Their final selection was based on their perceptions of the importance of the complication and the feasibility of preventing it.

In addition, this PSI has a high sensitivity and specificity and is currently reported on CMS's Hospital Compare website. This was also an area where not a lot of QI resources were already being devoted. For example, we actually considered doing post-op PEDVT but there were clinical pathways in place and other initiatives addressing this.

For faculty recruitment we brainstormed among ourselves about whom to invite and then got ideas from VA stakeholders. We assembled an interdisciplinary panel of VA clinical and content experts which included representatives from surgery, anesthesia, nursing, intensive care, and those with QI expertise as well as measurement expertise. Expert panel members helped us develop a change package that I'll say more about in a minute. Several of them also participated in learning sessions. A few also helped with team coaching through conference calls and e-mails.

For team enrollment we reached out to one facility from each of the 21 VA regional healthcare networks by sending invitations to surgical leadership at the facilities with the highest number of procedures. If a site declined to participate, we asked the regional patient safety officer for an alternative site suggestion and then invited that site. We ended up with, through this process, a final sample of 16 sites from 16 different regional healthcare networks. The main difference with our process compared to the standard Breakthrough Series process was that our learning sessions and all contact occurred virtually by teleconference and e-mail.

Here is the flow diagram of the Breakthrough Series model used in this project. Like the typical Breakthrough Series, this was separated into three phases. There was a pre-work phase lasting two months, a six-month action phase, and a continuous improvement phase of six months.

During the pre-work phase, sites formed their interdisciplinary teams. The teams examined baseline processes and outcomes surrounding respiratory care in order to identify areas for improvement. They received a pre-work package that described the steps of the Breakthrough Series and participated in calls that explained the pre-work and were presented a change package

which contained evidence-based interventions to reduce post-op respiratory failure. Near the end of the pre-work phase, each team shared their composition and project aims by e-mail and they subsequently presented this information to the other teams by phone at the beginning of the faculty learning sessions during the early part of the action phase.

The action phase was a six month period, as I said, and including learning sessions which consisted of 11 topics that were presented by faculty as webinars. In order to maximize the number of team members who could attend every topic, we presented each topic twice. During this time teams submitted monthly reports outlining their progress and improvement plans. They shared these with other teams by e-mail.

National Center for Patient Safety quality improvement experts also gave them feedback and offered individual coaching. At the end of the action phase the teams presented final reports to each other through teleconferences, and team interaction by e-mail using a list serve was also encouraged throughout this phase.

The continuous improvement phase is currently ongoing. The goal during this phase is for teams to continue implementing changes as part of their usual care processes but there's no formal requirement to attend calls or submit reports.

So I wanted to go back to the change package for a minute. So I developed this preliminary package with help from my colleagues at the National Center for Patient Safety. We refined it using feedback from our expert faculty. As I mentioned, the change package includes evidence-based interventions for reducing post-op respiratory failure. It includes a process map for identifying problem areas, provides examples of areas that might be in need of improvement and potential interventions that sites could try, as well as ways to measure improvement. It is intended to be considered as a menu of areas to focus on with suggested interventions that users can pick and choose from as they see fit.

Here I've included a portion of a process map. This can help teams assess their baseline performance on a given process so they know where to focus improvement efforts. The idea is that you start with mapping the more general processes that may affect the outcome of interest, and then move on once the more general process is chosen as a potential area of focus, and this is broken down more finely into specific processes that can be analyzed and potentially modified. For example, if a team decided they wanted to focus on improving preoperative teaching, the map shows some examples in the second box of specific items related to that, they might analyze and try to improve. For example, they might want to look at the effectiveness of patient teaching with respect to spirometer use and choose an intervention from the accompanying menu directed at improving this.

So, we evaluated the project in several ways. We tracked participation through webinar conference call attendance and completion of reports. About three quarters of the teams had

representation at all of the learning webinars. About just over half of the teams submitted all their reports, and all but one team submitted a final report.

Teams submitted a final report and presented their results to each other on a call in January of this year. All of the teams implemented at least one intervention and there were a total of 14 unique interventions. Most of these were nursing related processes of care. Not surprisingly, given the relatively short duration of the project, improvements mainly had to do with increases in process measures as opposed to changes in patient outcomes.

I wanted to highlight some of the team projects. Several teams focused on improving incentive spirometer use, but they approached it from different aspects. This is an example of the interventions implemented at one site.

This site focused on preoperative teaching of incentive spirometer use by adding to a call note for patient to bring their incentive spirometer which they received at a preadmission clinic with them on the day of surgery. They increased the supply of spirometers available for pre-op teaching as there was previously a shortage and created a standardized order set for pre-op spirometry teaching. They added to the post anesthesia are unit note to include documentation of appropriate incentive spirometer use after surgery.

Using these methods, they found that most patients were able to use teach back on incentive spirometer use. There was better compliance with incentive spirometer use of spirometers, and there were some suggestions of decreased readmissions from the surgical ward to the ICU.

Several teams also focused on a pneumonia prevention bundle. This included developing order sets for use on either the surgical ward or the ICU, including cough and deep breathing exercises with incentive spirometry use, oral hygiene with Chlorhexidine, early ambulation, and head of bed elevation to at least 30 degrees. Other related interventions including engaging the family participate in teaching of the bundle elements to the patients and marking the floor to measure and better able to document ambulation distance. Examples of assessed outcomes included improved implementation and documentation of bundle elements, and before the Breakthrough Series, one site found that receivers of spirometry were not tracked or documented, and now were documented in 100 percent of patients.

There was a miscellaneous group of interventions. One site developed formalized SICU multidisciplinary rounds by including representation from surgery, critical care, respiratory therapy, and nursing to review daily goals of therapy in compliance with current protocols for post-op complications in all patients. Another site developed ventilator weaning program.

Another educated ICU staff on delirium prevention documented outcomes included decrease in ventilator associated pneumonia. One site reported in the month after at the implemented their

process measures that there were no ventilated associated pneumonias. A site also reported a decrease in ventilator days with initiation of their weaning program.

So, we administered questionnaires at the end of the action period to collect information about current site work involving the PSIs and other QI efforts as well as about general feelings regarding team functioning. This just shows some of the responses to the questionnaire that we administered. So agreement on items range from most teams agreeing that they had implemented changes to help prevent post op respiratory failure to only a third of teams feeling they had actually shared information on their tests with other teams. While individual teams did make a fair number of changes and did actually share information, presumably participants didn't perceive the project as being as collaborative as the standard Breakthrough Series is intended to be, because there weren't the face-to-face encounters.

In terms of next steps, teams are currently in the continuous improvement phase. At the end of the action phase we held a hand-off call involving Breakthrough Series faculty, QI team members, and facility leadership. The goals of this call was to highlight facility achievements and lessons learned, shift ownership for ongoing improvement from Breakthrough Series staff to facility leadership, and foster collaboration between the teams and their respective leadership.

For this phase, we developed and distributed a sustainability tool to help teams with respect to assigning tasks, identifying responsibilities, and coordinating team meetings. The tool encourages standardization of processes that they implemented during the action face, including development of checklists and templates for documentation, and ongoing data collection in order to provide feedback to leadership and unit staff with respect to achievements.

So going back to our original question, can the patient safety indicators be used for quality improvement? Yes, we believe they can, especially if they are connected to something actionable, like improving a clinical process of care. Can the Virtual Breakthrough series be used as a quality improvement method? Yes, although as we mentioned, performing the Breakthrough Series entirely virtually likely resulted in less perceived collaboration and sharing of ideas than is usual with this process. However, overall we were quite pleased with the level of engagement and the changes made by the individual teams. We hope they continue their good work and that we can show further improvements, including some improvements in the PSI rates, after another six months.

Thank you.

>> MAMATHA PANCHOLI: Thank you, Ann. Now I would like to introduce Leslie Prellwitz and Julie Cerese from the University HealthSystem Consortium. UHC is also using the QIs for hospital quality improvement efforts. Leslie Prellwitz is the Director of Analytics in the

Performance Improvement Department at UHC, and Julie Cerese is UHC's Vice-President for Performance Improvement. Take it away.

>> LESLIE PRELLWITZ: Thanks, and good afternoon, everyone. We are going to give you a little bit of information on UHC and how we help our members focus on improving these patient safety indicators. UHC is an organization that is focused on improving patient performance and safety for our academic medical centers. We have approximately 115 academic medical centers across the country who participate in our databases and performance improvement programs, as well as over 200 of their affiliate hospitals, many of them in systems.

So we use a lot of the QI software in some of our comparative databases, which we'll talk about how we use those in a minute. What it affords us is the ability to look at performance improvement in a wide variety of patient populations and to help our members improve their performance in a number of ways.

Now, in terms of how we use QI information, there are a number of different ways in which we use this information to help our members improve performance. We do have comparative databases that help in terms of ranking. There is an annual performance ranking that uses those PSIs as an integral portion of that. We also help our members track this performance on a quarterly basis with one of our quarterly management reports. We also work on focusing on documentation and coding as has been raised earlier. Much of the use of this data focuses on quality documentation and coding, so they can be properly applied. And we have activities to help our members in that area as well.

Once they understand their ranking and their performance, then the question is how to prioritize the effort to help improve that performance. So we will provide an overview of our Partnership for Patients program and how we use that AHRQ toolkit prioritization matrix, and some success stories about some of the members who actually improved their performance as well.

In terms of our annual ranking, and this has happened for a number of years here at UHC, back in 2005 our members asked the question of why do some organizations truly succeed in consistently providing high quality care? It's a question that hadn't been fully explored and answered, but the challenge was given to us to understand this better.

 So, we embarked on our Quality and Accountability Study. The whole goal was to identify structures and practices looking at high performance and quality and safety across a wide variety of populations. Many of our members have seen many other ranking schemes and practices out in the market and they gave us a particular challenge of don't reinforce preconceived notions. We want an objective assessment of which organizations have the better outcomes and then look at the organizational cultural characteristics that made them the best.

There were key findings from structural and performance reviews and studies that we have done that came out with these five key findings: really a shared sense of purpose; leadership style; an accountability system for quality, service, and safety; focus on results; and collaboration. Many of those are the structural elements that we saw went into high performing organizations.

What we found as a result of that was a number of issues and that it brought a light to many of our senior leaders to begin to think about quality differently. Many of our organizations took activities to help expand and share that information with their senior administrators, their physician leaders. There are also publications around the specific methodologies we employed, but overall what we found was an intense focus on improvement and performance, once they actually saw objectively where they stood.

Here at UHC we have one of our databases called the Clinical Database, which is patient-level, comparative data cross all patients and payers. We use the AHRQ QI software in identifying patients that have those conditions, and that was part of what we used when we actually ranked our academic medical centers on issues around quality and safety. So there are a number of different domains. If you are familiar with the steep domains of old you will see common themes here.

In terms of the different aspects of care that we rank our members on, they are listed, the AHRQ QIs are really what comprise our safety domains. As you can see, it has always had a significant weight, between 25 and 30 percent of that total score is put in that area. And over time as we worked with our members and explored issues and how these metrics are used and reported and comparable, we really have come down to a small set of approximately six PSIs that we focus on, that we feel have strong signal strength, reliability, and really represent core activities that our members should be focusing on in their improvement efforts.

So we've used these over time. You've seen some variability here. This is what we used for our 2011 study. We look at the observed over expected ratios for these to help account for differences in patient populations. Now, this data, again, is used for an annual ranking but we also report on it quarterly using the full set of AHRQ QIs, so members know where they stand on all of those metrics and how they compare to their peers, as well as some of our databases allow for more customized, in depth reporting as well.

As we are beginning to use these, obviously some of the questions that have been spoken to earlier regarding reliability piece are really dependent on consistent and accurate documentation and coding. So some of the activities we are currently taking with our members are to help work on making sure that those comparisons are relevant and particularly a documentation and guideline development project we've recently undertaken to help with our members in terms of developing consensus guidelines for documenting the PSIs and HACs. Obviously there's coding guidelines, but we found in many of our improvement initiatives that there can be a lot of

variability in the interpretation of much of this data. We are out to help our members get a more consistent understanding that is also compliant with national definitions and existing guidelines.

We also look for a promoting standardized reporting across members, where that's appropriate, and all of that is going to help enhance the accuracy and the comparability of the data, not just within our database, but as the software is used in other national databases and forums, it helps to improve the quality and the strength and use in those areas as well.

Now, in terms of our guidelines development process, we incorporate literature reviews, looking at current definitions, and guidelines, as well as analysis. It allows us to look at variability in coding across our organizations and find how these cases are identified for the QIs. We also hope to be developing some draft guidelines on documentation via conference calls and listserves with many of our members. Our members also will have the opportunity to submit comments on those draft guidelines. We actively take their input and insight into creating consensus documents that our members can gather around and use effectively.

As those final guidelines are published those for the ICD-9 coding decision matrixes—so it's not a guideline but things to think about—as well as ICD-10 issues, while they certainly will be more specific in their coding, the requirement that the documentation support that coding still exists. So much of what we are doing around documentation guidelines will translate well as we all move into ICD-10.

Along with that we will always have the ongoing education and training of our members, feedback into making sure that the measures are as robust as they can possibly be and that they are comparable to help improve the usability of that data within our member organization.

So that's a lot of what we are doing in terms of how we start to use the data in terms of assessing our members' performance, their positioning, and hoping to strengthen those measures so we make sure they are reliable and valid comparisons.

With that I'll turn it over to Julie Cerese, who is going to talk about some of the specific improvement initiatives that we have going on with our members and success stories.

>> JULIE CERESE: So we at UHC were afforded the opportunity to be acknowledged as one of the 26 hospital engagement network partners for CMS. And many of you know the Partnership for Patients is focused on two goals that support the Health and Human Services three-part aim. The three-part aim is to improve patient care, population health and reduce costs.

And it is through these two goals in support of that three-part aim. So the two goals are: To reduce preventable hospital acquired infection by 40 percent as compared to 2012–the baseline is 2010 and the evaluation period is 2013—and also to reduce preventable complications during a

transition, which will actually end up resulting in a decrease readmission rate to hospitals by 20 percent.

And so we are focused on these two goals. And the areas specifically that we are addressing are the conditions that are listed on this slide. So you can see that those that are listed in blue and purple on the right-hand side are the specific target areas as part of the Partnership with Patients initiative. These areas are areas that we actually worked have on for many years with our UHC members, so this is just a continued effort to push and move improvement around these areas.

I think what is interesting is that in each of these areas CMS has allowed us to identify the individual measurement for performance, and for as many as we possibly can, we have selected the PSIs as our metric. And so for catheter related bloodstream and pressure ulcers and DPTs we are going to be using the PSIs. We do know for some of these there are other measure sets, like those that come from NHSN, or CMS might have a hospital-acquired condition specification for that condition, and we realize that it's important for the individual organization to explore all of these metrics together to understand, where are the gaps in care? That's the ultimate goal: understand where the gaps in care are. I'll speak about that again in a minute.

One of the first steps in the process to move forward in this Partnership for Patients initiative is to identify the areas that an individual organization would like to work on. You can see that there are ten potential focus areas. And not all organizations need to work on all of the areas. So what we've asked each organization to do is use the AHRQ toolkit, QI toolkit. We are specifically focused on the prioritization matrix tool. The prioritization matrix tool allows an organization to list all of these metrics and then go through an exercise to understand exactly where their biggest gaps are. So, the first section allows an organization to just put their performance down and measure it against a benchmark. How do they feel relative to the benchmark? Actually I'm going to go to the next slide because it just demonstrates the matrix itself and I can talk through it.

The blue section allows you to identify your specific performance and the benchmark performance that you would like to achieve. The second section allows you to estimate costs associated with this condition. So UHC has the capability to identify the cost, and then you look at your volume, and then you extrapolate the cost to an annual overall cost.

The third section, the purple section, allows an organization to understand a little bit better about what is the strategic alignment or regulatory mandates associated with these conditions? So first of all, does it align with what you're looking at in your quality and safety plan? Are there external mandates around this? Are there public perceptions of care, either positive or negative? If you're in the middle of an RFI situation, you might be forced to actually address this condition, whether you may be interested in addressing it or not. So this just puts a little finer point on what is going on in your organization.

Then the fourth section allows you to kind of do a barrier assessment, an assessment of the things that will hold you up if you choose to undertake this initiative. So this is a tool that is used by organizational leaders. It allows you to put each of the PSIs into the tool, assess them for your performance, the cost to the organization, strategic alignment, regulatory mandates, and barriers to success. We've asked each organization to use this tool to identify the conditions they are going to work on as part of their hospital engagement network.

I'm going to move quickly to a quick success story. This is one of the organizations that has been working with us. It's part of our Partnership for Patients initiative. And this is a performance trend looking at pressure ulcer performance over time.

There are actually three metrics here. We have stage 2 through stage 4 pressure ulcers, and that is the line at the top, and it is the one with the greatest volume and the most significant change. Although, you can see the PSI tracks in the same way—that is the second line—going from 11 to 2 and the CMS hospital acquired condition going from 3.3 down to 0.42. So, all three metrics are aligning in the same way. Actually, I flipped those two. The hospital acquired condition and the PSI, I flipped, because one is a rate per 1,000, and the other is an N. But the fact of the matter is all three lines kind of tracking in the same direction. But again, it is important to be able to understand the differences between all three metrics.

So what does this organization do to improve performance? One of the first things they did was a bit of reorganization to set organizational priorities, and this new structure really sets forth the new approach to quality measurement. They also spent time focused on education and the need for increased awareness by all disciplines of the causes and preventive measures for pressure ulcer, not just that, but how they were going to write about it in the medical record—how they would document about it. They created unit-based dashboards.

One of the things that was probably the most influential or impactful was the quality variance meeting—monthly meetings where all these HACs are discussed and action plans determined, pressure ulcer being one of them. All HACs are discussed at the individual patient level, and to some degree a root cause analysis is done on each one of them. There's also monthly trending to identify improvement opportunities across the organization and, specifically at the unit level, they've identified staff nurse pressure ulcer experts. It's the combination of these things that has really resulted in a significant decrease in pressure ulcers.

So I know that was a quick overview. And I'm going to turn it back to AHRQ.

>> MAMATHA PANCHOLI: Thank you, Julie and Leslie. And thank you to all of our presenters.

We will now take a few questions. If you have not already submitting a question or would like to pose additional questions, type your e-mail address and the question into the Q&A box that pops up after pressing the "Ask A Question" button on the screen. Then click the submit button.

So the first question is: What version of AHRQ QI did CMS for the public reports to be released in July 2012?

John, can you take that question?

>> JOHN BOTT: In the forthcoming release of the Hospital Compare report, using the AHRQ QIs, they will be using version 4.3, whereas the measures that are currently posted use 4.2. I just want to note to folks, if you're not already aware, on Quality Net—which I believe is qualitynet.org—CMS lists a number of documents that provide more information about the calculation of the measures that are used in Hospital Compare, including the AHRQ QIs. It actually is fairly easy to navigate around and find the tab on the AHRQ QIs for further information, should you be interested in other types of related questions.

>> MAMATHA PANCHOLI: Thank you, John.

Our next question is about the 4.4 release. The question is: Is Version 4.4 different from the Version 4.3A just released two days ago in May?

Jeff, could you address that one, please?

>> JEFF GEPPERT: Sure. As I mentioned very briefly, in Version 4.4 we incorporated a version of the APR-DRG grouper—limited license grouper—that had a correction with the risk of mortality assignments, so we made that same correction for Version 4.3 and we called that Version 4.3A, so it includes the same version of APR-DRG grouper that is in 4.4, but is now in 4.3. There was one other change in Version 4.3A that had to do with the calculation of area-level indicators in 2010 and 2011, so there was a correction with respect to that.

>> MAMATHA PANCHOLI: Thank you, Jeff.

Now, please keep in mind we are running a little bit out of time.

We'll go through as many questions as we can. For questions we don't actually address here, we will do so via our website.

Next question: Do PQIs only consider the patient with age equal and greater than 18 for both numerator and denominator calculations? Is this true? Jeff?

>> JEFF GEPPERT: Yes, that's true. For the area level measures, the PQI is 18 and above. There are PDI versions for some of the area level measures for those under age 18.

>> MAMATHA PANCHOLI: The next one is for you too: the Windows QI doesn't have the subpopulation by payer type. Is it valid to use the stratified risk adjusted QI by payer type?

>> JEFF GEPPERT: You can, for the provider level measures, stratify by payer type and calculator a risk adjusted rate by payer type. You just have to be aware of the proper interpretation of a risk adjusted rate by payer type, but it is achievable with the software.

>> MAMATHA PANCHOLI: Okay, the next question: is the software made available to the public or to everyone?

Yes, the software is publicly available on the AHRQ Quality Indicator website. Within the AHRQ QI program, we do not provide data per se. It's the expectation that the software will be applied to your own data, but that software documentation is publicly available.

The next question: Is it possible to get a copy of the text of the current speakers about the changes that are from 4.4?

We are expecting to post a transcript from this webinar on our website, and that will include, I believe, the references to Jeff's presentation on the coding updates in the 4.4 software.

Next question is—I think I'm going to pose this to Jeff or John—what is the specific purpose of the point of origin variable?

>> JEFF GEPPERT: So you might recall that point of origin is relatively a new data element. It replaced a data element that was previously known as admission source.

One of the disadvantages from the QI perspective of admission source is it didn't identify transfers— patients that transferred from other institutional settings like skilled nursing facilities. Those patients often differ in their characteristics and in their risk of an adverse outcome, so it

was a characteristic that we would want to incorporate into our risk adjustment. But the way that hospitals coded admission source, it typically just identified people who entered through the emergency department as their entre into the hospital. The main purpose of the point of origin is to allow us to identify the source of the institution from where the patient comes from and allow us to identify transfers.

>> MAMATHA PANCHOLI: The next question is: some of the variables are required and some are optional. Is there a list or source of information of what functions the optional variables serve?

>> JEFF GEPPERT: There is identification of the optional variables in the data dictionary that is in the software documentation. Primarily, the purpose of the optional data elements is to facilitate analysis, in particular, stratification of the rates for particular types of patients—race being one example. So the optional data elements are not used in the calculation of the measures. They don't inform the numerator or the denominator or a covariate in the risk models, but they are beneficial for analysis, so they are incorporated in the software as optional elements.

One other point about that: there are some data elements, like date of procedure, which are in fact used in the calculation of some of the indicators, but there's an optional logic in case that data element is not available. The preference is to incorporate the data element, but because not all data systems have data elements, like date of procedure, there's an optional logic.

>> MAMATHA PANCHOLI: This one is for you, too, Jeff.

What is the variable present on admission used for (POA)?

>> JEFF GEPPERT: Present on admission is used for two things. One is to identify secondary diagnosis codes that are numerator-defining diagnosis codes, for the patient safety indicators and for the pediatric patient safety indicators, to identify those secondary diagnosis codes that are not hospital acquired but that were present on admission. So we use that data element to not flag those cases in the numerator of those events—of those indicators.

The second use of the present on admission data element is for the covariates and the risk model. It's kind of the opposite circumstance, where we want to incorporate, in the risk model, conditions that were present on admission, and we do not want to incorporate in the risk model things that were hospital acquired. So we use the POA data element to make that distinction.

>> MAMATHA PANCHOLI: Thank you. So next question: is there an introductory type of webinar for hospitals interested in implementing the SAS software for the PSIs specifically?

AHRQ is currently in its planning stages for a series of webinars and workshops focused on various topics related to the Quality Indicators. Yes, we are thinking we would do an introductory type webinar for hospitals. We are still in the planning stages for that, so stay tuned.

Next question is about QI definitions. This person says that they have run a couple of comparisons using identical data and parameters between 4.2 and 4.4 and are seeing a large increase in outcome, specifically PQI-5 and PQI-10 and large decreases in the outcomes for PQI-15 and PQI-16. Can you comment on any additional changes that might have contributed to this? Jeff?

>> JEFF GEPPERT: Sure. I might miss some of the details, but there was a fairly significant redefinition for two of the PQIs, PQI-5 and PQI-15, PQI-5 being related to COPD—chronic obstructive pulmonary disease—and PQI-15, which is related to asthma. So we went through a clinical panel process of reviewing the specifications of all of the indicators as we periodically do. And one of the recommendations from the clinical panel was to modify the specifications for PQI-5 (COPD) to include both COPD and asthma, but for older adults. The idea was that from a clinical perspective there wasn't a reason to discriminate between COPD and asthma in older adults.

So we used some evidence-based information to identify the proper age limit, so it's 40 years and older. The denominator was changed from 18, like the previous question, to 40 to limit the denominator to the older adults and to expand the numerator to include both COPD and asthma. Conversely, we modified the specification for PQI-15, which is asthma in younger adults, to include only those who are between the ages of 18 and 40, and those only include asthma in the numerator, since COPD is not a common condition for younger adults.

There were questions about two of the other indicators. Was it PQI-10?

>> MAMATHA PANCHOLI: I think it was PQI-15 and 16, and 5 and 10.

>> JEFF GEPPERT: Sixteen, I think we've only made some modifications to the procedure codes that are used in identifying those that have amputations, so I think that's the explanation

for any rate change there. I am not immediately thinking of a change that would explain a change in PQI-10, so we can get back to the user on that.

>> MAMATHA PANCHOLI: We have one user who would like some explanations on the software being backwards compatible for prior years' data.

>> JEFF GEPPERT: Right.

>> MAMATHA PANCHOLI: Jeff, can you take that?

>> JEFF GEPPERT: Basically the software looks at the quarter and year of the discharge date when it's applying the indicator logic; so it looks at the quarter and the year to identify the proper fiscal year coding to apply to that particular discharge, both for ICD-9 codes and for DRG codes.

As the coding changes and as the specifications are modified to incorporate the coding changes, the logic takes that into account and applies the specification that applied as of the date of that particular discharge.

There are often coding changes where a code gets divided into sub-codes, and so the code that was divided is no longer valid as of a certain date, but rather than remove that code from the software, we retain it. If the user applies software to data when that code was valid, that code is still used in the specification. That's the manner in which the software maintains backwards compatibility.

The reason we do that is so that users can always use the most current version of the software regardless of what data year they are applying the software to.

>> MAMATHA PANCHOLI: We have two more minutes. We'll do two or three more questions if we can fit them in.

We have a question for UHC. If we are a UHC member, can we use them as an official QI reporting source?

>> LESLIE PRELLWITZ: Yes, this is Leslie at UHC. The answer is if you are a UHC member and you are participating in our clinical data base, as your data begins to come in, it will have that QI software applied to it; so while we do not officially directly report to, say your state organization, for example, on your behalf, we do have many members who will run reports from our databases and compile that information and send it on to their states for areas where they need to report on those metrics. So we don't do it directly, but we do offer you the ability to capture that data for your organization and to send it on from you if that's appropriate.

>> MAMATHA PANCHOLI: Thank you, Leslie.

So we did have a question or two about this presentation being recorded and available for access later. Yes, it is being recorded, and both the recording the transcript and the slides will be posted on the AHRQ QI website very shortly.

I think we have time for one question. I think this is going to be for Jeff. What is the recommended use of the provider weights in the SAS software?

>> JEFF GEPPERT: The recommended use of the provider weights? Those sound like probably composite weights?

>> MAMATHA PANCHOLI: It wasn't that specific, but yes.

>> JEFF GEPPERT: Okay, it sounds like probably the composite weights. The software has a set of weights that it uses in computing the provider-level composites, and the initial recommendation is to use those weights that were determined through the NQF endorsement process—those are the NQF weights we referred to. But if the user wants to apply their own specific weights, the general recommendation is that for the PSI, the weights should reflect the relative prevalence of the numerator across the different indicators in their institution.

So you look at the numerator for each one of the PSIs included in the composite, calculate a relative weight based on the sum of the numerator events, and use that as your provider-level weight. For the IQI, the recommendation is to use what is called denominator weights, which is the relative size of the denominator for each one of the IQI measures that are included in the composite both for conditions and for procedures.

>> MAMATHA PANCHOLI: Thank you, Jeff. Our time is almost up. Thank you, everyone for joining us for this event. I would like to thank our presenter again for providing us with this interesting information and answering the audience's questions. As we wind down, I would like to request that, if you could, complete a brief evaluation about this event and your experience or any recommendations you have for AHRQ Quality Indicator Program. You can do so by clicking on the Evaluation button below the slides, and these four questions will appear.

For more information and additional resources, please visit our website posted on this slide, it's the http://www.qualityindicators.ahrq.gov/ website, and this is where you can access the QI documentation and the software. To stay informed about the QIs, we encourage you to sign up for our listserv also available via the website. If you have questions, please contact the support staff via the email address, support@qualityindicators.ahrq.gov, or our phone numbers listed on the slide. I would like to thank all of our speakers today: John Bott, Jeff Geppert, Ann Borzecki, Leslie Prellwitz, and Julie Cerese. I think that they did a great job.

I especially would like to thank our many participants for joining us today. We hope the information presented today was enlightening and demonstrated the recent improvements to the QIs, as well as their many uses for quality measurement and improvement.

We encourage you to use and share the tools and resources located on our website. Thank you again for participating in today's webinar. Let me remind you that this event will be archived and available in a few weeks on the AHRQ QI website. Thank you and have a nice today.

>> OPERATOR: This concludes the webcast.

You may now disconnect your lines and have a great day.

(The webinar concluded at 1:28 p.m. PDT.)