Hospital Value-Based Purchasing (VBP) Program

Support Contractor

Updates on Patient Safety Indicators (PSIs) for Use in CMS Programs

Presentation Transcript

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Bethany Wheeler-Bunch: Hello and welcome to the *Updates on Patient Safety Indicators for Use in CMS Programs* webinar. My name is Bethany Wheeler-Bunch from the Hospital Inpatient Value, Incentives and Quality Reporting Outreach and Education Support Contractor. I will be hosting today's event. Before we begin, I'd like to make our first few regular announcements. This program is being recorded. A transcript of the presentation, along with the questions and answers, will be posted to the inpatient website, www.qualityreportingcenter.com. If you registered for this event, a reminder email, and the slides, were sent out to your email about two hours ago. If you did not receive that email, you can download the slides at the inpatient website, www.qualityreportingcenter.com. If you have a question as we move through the webinar, please type your question into the chat window, with the slide number associated to your question at the beginning. The presenters will answer as many questions as time allows at the conclusion of the presentation. Applicable questions that are not answered during our question-and-answer session at the end of the webinar, will be posted to the qualityreportingcenter.com website in the upcoming weeks. I would like to welcome Dr. Alex Bohl and Dr. Joseph Clift as presenters of today's webinar. Dr. Alex Bohl is a Project Director of the Recalibration of the AHRQ PSIs for CMS Programs at Mathematica Policy Research. And Dr. Joseph Clift is a Measures Lead for the HAC Reduction Program at the Division of Quality Measurement at CMS. Thank you to Dr. Bohl and Dr. Clift for presenting today.

This webinar will provide an overview of the AHRQ PSIs used in CMS programs, including the following: background of all-payer AHRQ PSIs, update to PSIs in recalibrated version 6.0, purpose of recalibration, scientific acceptability testing, key resources, transitioning to ICD-10, and implications for CMS programs.

At the conclusion of the webinar, we hope that you will be able to perform the tasks displayed on the slide. As a reminder, as you type your questions into the chat window, please indicate which slide your question is

applicable to. I would now like to turn the presentation over to Dr. Joseph Clift for an opening statement. Dr. Clift, the floor is yours.

Joseph Clift: Hi, Bethany, thanks, and good afternoon. I'm Joseph Clift and I just want to provide a little bit of context for today's webinar. So today's webinar is going to be presented in two parts. The first part, Dr. Bohl from Mathematica will discuss changes to the PSI software and the modified or updated PSI 90 that is being used for FY 2018. Separately, but related, there was a software issue that impacted our work for the July public reporting, so my part is about the impacts of the software issue for IQR, HAC, and the HAC Reduction Program, and public reporting. So I just wanted to make sure that everybody was aware that the webinar is in two separate, but related, components, and with that, I will send it over to my colleague, Dr. Bohl, to discuss the PSI software, and PSI 90 changes and updates.

Alex Bohl: Thank you, Dr. Clift. And good afternoon, everyone. So before I launch into my slides, I want to make a distinction as Joe pointed out the different sections of the presentation. It's important to point out that there are different perspectives being represented in this webinar. First of all, there's the AHRQ perspective as the measure developer. So they are the ones who have developed and maintained the patient safety indicators outside and externally to the CMS programs. And then CMS, represented by Joe's team, uses the PSI measures to, in the programs that you're all aware of. And I represent the recalibration team. And recalibration is essentially the methodological bridge between the original measures developed by AHRQ and their use in the CMS programs.

So to start off, let's talk about the PSIs. So as a reminder, they are measures of potentially avoidable complications or adverse events occurring in hospitals. They were originally developed by the AHRQ and maintained by the AHRQ. And they cover all medical and surgical patients across all payers. They are not specific to Medicare. And that is why recalibration is performed; to try and make it specific to the Medicare Fee-for-Service population that's used in CMS programs. So over time, the PSIs have been refined to make improvements to the measure

specifications, to the risk-adjustment, for many different reasons. This includes stakeholder clinical input. So for example, almost every year, the PSIs are reviewed by the National Quality Forum, where different stakeholder viewpoints are heard. The team also reviews the published literature to see if there's any new evidence about the PSIs, and their utility, or the science of quality measures in general. And then, in addition, AHRQ and its contractors does, sorry, they perform empirical analyses, to examine, "Well, what's actually happening with the PSIs and are they capturing what's intended?" So this presentation today is going to focus on a subset of the PSIs that are used in CMS programs. That's PSI 4, the PSI 90 composite, and the indicators included within the PSI 90 composite.

So let's start off by talking about refinements to the PSIs, the all-payer PSIs. So these are the measures themselves. And all of these refinements will be reflected in the recalibrated PSIs used in CMS programs. The first is PSI 4. There are – PSI 4, very recently, December 2016, has an enhancement to its risk-adjustment programs, so now additional risk factors will be included in the risk-adjustment model for PSI 4. That is something that is incorporated into version 6.0, or the most recent version of the ICD-9, all-payer PSIs. And that will be included in the recalibrated version.

And then there are three other pieces that mainly impact PSI 90 and the component indicators. First, AHRQ revised the specifications for three component indicators. And, as mentioned, this was based on feedback from all of the things that I mentioned on the prior slide: stakeholder feedback, clinical input, literature review, and empirical analyses. Next, PSI 90, all the component indicators – Sorry, I shouldn't say all the component indicators, but they have changed the number of component indicators, going from eight to ten. And so we'll go over those components in a moment. And then they've also changed the methodology to weight the composite. And I'll give, provide more detail in the next slide. So that is separate from recalibration. And so many of you who have used the PSIs or are familiar with the PSIs as used in CMS

programs before would notice that, starting with version 5.0, or the last version used for the IQR and HAC Reduction Program, they were recalibrated to the Medicare Fee-for-Service population. And so now, going forward, the next version will be version 6.0, recalibrated to Medicare Fee-for-Service with all of these changes. So let's talk about these changes.

First, let's actually talk about the indicators included in PSI 90. So it's up from eight indicators in version 5.0 to 11 in version 6.0. And this is a change by adding PSIs 9, 10, and 11 to the indicators within the composite, as well as, removing PSI 7. And PSI 7 was removed mainly because of its overlap with the CDC measure for central line-associated bloodstream infections. And so now, the final PSI 90 composite, as you can see, includes ten indicators and, however, some of these components have changed in specification, and we'll see that here on the next slide.

There were three indicators with changes between versions 5.0 and 6.0. The first is PSI 8. PSI 8 previously was quite a rare event. And that was focused only on post-operative discharges. Sorry, looking at the hip fractures occurring after an operation. However, this measure denominator has been expanded to now include all hip fractures occurring in the inpatient setting, not just those post-operatively. And so, as a result, both the numerator and the denominator of PSI 8 events at your hospital and hospitals across the nation may increase because of this change. The second is a change to PSI 12, Perioperative Pulmonary Embolism or Deep-Vein Thrombosis. The main changes were that reductions to the number of codes used to trigger numerator events. In other words, there will be fewer, there might be fewer numerator cases at your hospital or hospitals across the nation for PSI 12 because an isolated calf vein DVT was removed from the definition. In addition, there was also a change in the denominator that removed patients with any diagnosis of acute brain or spinal cord injuries from the denominator. So in general this should reduce the number of events and, and it might also reduce the rate. However, because there are changes to both the numerator and denominator, it is unclear what the direction of that change will be, but

these are important changes to remember. The last is to PSI 15. So first off, you might notice that PSI 15 has a longer name now. It's been refocused as Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate. And so now, while this measure used to previously focus on all medical or surgical patients at a hospital, it's been refined so that it only focuses on the most serious interoperative injuries due to an accidental puncture or laceration. And this is mainly done by limiting the denominator. The denominator now focuses on patients undergoing abdominal or pelvic surgery. And the numerator is further limited to accidental punctures or lacerations that require a return to the operating room at least one day after the index procedure. And so this is going to dramatically reduce the number of numerator and denominator cases identified under PSI 15.

So all of these changes influence the composite weight, as well as, the methodology change. So under version 6.0, the composite weighting methodology now is a harm-based weighting methodology, where harm is a measurement of disutility. And the idea here is that events that are more associated with highly undesirable outcomes, such as, death, or complications, or institutionalization, those components and concepts are now incorporated into the weighting scheme. In the past, as of version 5.0, it was only a volume-based weighting scheme. So those of you who are familiar with the PSIs under version 5.0 might remember that PSIs 12 and 15 received the majority of the composite weight. Well, now, the weights are more evenly distributed over the indicators. And that's primarily because of the harm-based weighting, but it's also because of volume-based weighting still being a part of this. So you just have more indicators and so that's why the volume is spread over more indicators. And that's why the weights are furthermore spread over more indicators. So this will, this will have a substantial change in composite weight. And to learn more about the harm-weighting scheme, please visit the AHRQ QI website to get more details.

Okay, so now I want to shift from the refinements to the all-payer measures to recalibration. And remind you that recalibration is this

methodological bridge between the all-payer PSIs and the PSIs used in the CMS programs. So recalibration is all about the statistical components of the PSIs. So recalibration does not change numerator or denominator specifications. Instead, it's adjusting the statistical risk- and reliability-adjustment components of the PSIs themselves. And these changes are directly made to the PSI software. So whereas the original software and all these components were developed on an all-payer sample, now AHRQ uses a Medicare Fee-for-Service sample to reset all of these statistical pieces. And so the goal of recalibration is to try to increase the accuracy of the PSI risk- and reliability-adjustment, to generate composite weights that reflect the PSI volume in the Medicare population, and also improve the interpretability of the PSI smoothed rates and PSI 90 values. So now the resulting smoothed rates will be, they will be smoothed toward the Medicare Fee-for-Service national average, as opposed to the all-payer national average of an event, which might be very different. In addition, PSI 90 will be centered right around 1.0. If a hospital has a PSI 90 value of 1.0, it means that the observed number of events match the expected number of events, given the hospital's case mix. However, the rate – sorry – if the PSI 90 value is above 1.0, it means that the observed number of events is greater than the expected number of events. And, if it's below 1.0, then just quite the opposite; the observed number of events are lower than the expected number of events.

And so the way that this is implemented is an adjustment to the software. And so the measures, if you are not familiar, they are calculated using a publically available software. There are two versions. The SAS version and the WinQi version. And so recalibration focuses on the SAS version. And, it takes three major pieces of the software and makes them Medicare Fee-for-Service specific. One, are the risk-adjustment parameters, so those are the coefficients that go into the risk-adjustment models. Two, are the reliability-adjustment pieces. Those are the parameters that are used for smoothing. And those parameters are, one, the national, the national reference population rate and, two, the signal variance. And three, the composite weights are adjusted. And more specifically, the volume component of the composite weights are adjusted. So we're using

the harm component of composites that are used by the all-payer PSIs, but simply adjusting the volume component to be specific to the Medicare Fee-for-Service population. And so, eventually, when this version of the software is available, you will be able to request this from the *QualityNet* website. if you desire, and it will have the Medicare-specific components of risk-adjustment, reliability-adjustment, and composite weights that were used in recalibration.

Okay, scientific acceptability testing. So AHRQ has taken Medicare data and recalibrated the software. And what they then did is, they said, "Okay, if we have this Medicare data, what if we were to calculate the PSIs using the all-payer parameters?" So that means the all-payer risk-adjustment, the all-payer reliability, and the all-payer composite weights. And then, "What if we did it all over again using the recalibrated risk-adjustment, reliability-adjustment, and composite weights, based on our Medicare sample?" And they then compared the performance, in terms of validity and reliability, of these two sets of results. And so there will, we will be posting the results of these analyses on *QualityNet* when they become available, most likely by June of this year.

And so, if you were to go to this document, what you will be able to see is, you will be able to see the following summary results, which I have up here for you. One, is that recalibration provides similar to better predictive validity compared to the all-payer PSIs. And what I mean, compared to the all-payer PSIs, I mean compared to the all-payer PSI specifications, and risk-adjustment, reliability-adjustment, etc., applied to the Medicare population. Then you'll see that it has similar-to-lower reliability estimates. And this, however, is not necessarily a bad thing. In fact, it just means that these estimates are more specific to the Medicare population and have more validity. Next, you'll see that their composite weights will change between the recalibrated and all-payer version, with PSI 6, 10, 11, and 13 receiving more of the weight in the Medicare recalibrated version than in the all-payer version. Now what does this all mean for CMS programs? And the answer is that it has modest impacts. So recal – if you see changes between the PSI results at your hospital

between version 5.0 and version 6.0, and if you were using the same input data, it would be most likely because of change to the all-payer PSI specifications. Those are the things that are highlighted on the slides before. That would be because of changes to the measure specification. That would be because of changes to what components are included in the composite. That would be because of changes to the composite weighting scheme. Recalibration has a more modest impact and it has – the results under – if you use the recalibrated version and the all-payer version, are highly correlated.

So as I mentioned, if you want to learn more, I want to point you to a couple of key resources. First, the AHRQ QI website has a variety of resources on the all-payer PSIs, talking about their original development, detailing refinements over time. You can find detailed information on their specification. You can download the public version of the ICD-9, PSI software there, as well. And if you have any specific questions on the all-payer PSIs, so referring, if you have any questions on the specifications, etc., please reach out to the QI Help Desk. However, if you have questions specifically on the recalibrated PSIs or how those, the recalibrated PSIs are used in CMS programs, please visit the *QualityNet* website. On *QualityNet*, you can find things like, instructions on how to replicate the PSI results in CMS programs. You can find information on important details on how the software was used, like the number of diagnoses or procedure codes. And in addition, you can even request a version of the recalibrated PSI software. As I mentioned, it's not available yet, but it should be available in the next few months. And this will be the place where you'll be able to find the scientific acceptability memo when it's posted. Now if you have any detailed questions on those topics, please reach out to the *QualityNet* Help Desk, and I list the email there.

So thinking ahead, as many people know, we are transitioning to a world of ICD-10, or we're already in that ICD-10 world. And, the PSIs depend heavily on diagnosis and procedure codes, based on claims or discharge data. So everything I've just talked about was all about ICD-9, but in future reporting cycles, we will be using an ICD-10 version of the PSIs.

Now if you'd like to get a glimpse of what this looks like, you can go to the AHRQ QI website and see the ICD-10 specifications of the all-payer PSIs. Those are posted. You can also find an ICD-10 version of the PSI software on AHRQ's website. However, there are important things to point out. Number one, the ICD-10 software right now only calculates numerators, denominators, and observed rates. It does not go further to do risk-adjusted rates, smoothed rates, and composite weights. Those will be added in future versions. Hopefully by 2018. And the reason for this delay is that, because those are the statistical pieces that require a lot of data. And, there's just insufficient ICD-10 data right now available to AHRQ to build those models, although it is coming in soon and getting more and more available by the day. And so that future versions of ICD-10 will include these statistical components. I also encourage you to look at those ICD-10 documents, and any other documentation on ICD-10 there, because the measure specifications look quite different, as you can imagine, under ICD-10. There will be more codes, different codes, and AHRQ is working to map the concepts as best as they can between ICD-9 and ICD-10. But, of course, just by the nature of ICD-10, it's impossible to perfectly map that to ICD-9. However, there will eventually be an ICD-10 version of the recalibrated PSI software, and ultimately CSM programs will be moving to using an ICD-10 version of the PSIs. So that is in development now and we will probably be having another one of these webinars when that becomes available to introduce everyone to what's happened under ICD-10. So, with that, that ends my section. And I'd like to hand it over to Dr. Clift, who's going to talk about specifically some software issues affecting CMS programs.

Joseph Clift: Great. Thank you, Dr. Bohl. This is Joe Clift, and in my part, I'm going to go over some implications of the software for CMS programs.

So, first, to start off with, there was a software issue that was identified in the all-payer version of the PSI software. And, as Dr. Bohl was saying, the recalibrated software that CMS uses is based off of the all-payer version. The issue that we found out about was that there were two cardiac-related MS DRGs that were excluded from the software when they

should have been included. And, again, the recalibrated software that we use is based off the all-payer. So the all-payer software version had to be fixed, and then, the recalibrated software that CMS uses then had to be fixed, as well. So this is impacting the July public reporting and the hospital, Overall Hospital Quality Star Rating. So I'll go over these in the next few slides.

So since the two MS DRGs were not included, it led to an error, and an inaccurate representation of the numerators and denominators. So under the fixed software, the numerators and denominators will increase to account for the two cardiac-related MS DRGs. Under the software that contained the error, the numerators and denominators were smaller, thus inaccurate than they would have been without the error. So this is why the software had to be fixed, so that it was an accurate representation. And this impacted most of the indicators within the PSI 90 and also PSI 4, which is Death Rate among Surgical Inpatients with Serious Treatable Complications. And about eight percent of hospitals were impacted by the error, meaning that they experienced a change in their denominators. So this is why we had to go back and fix the software, and then, fix the recalibrated software. So because of that, it impacted our public reporting timeline. So we had to wait for the software to be fixed so that we could use the fixed software to calculate the measure scores for the PSIs. And I do want to point out that the Hospital Value-Based Purchasing Program was not impacted by this, because the VBP program is using version 5.0.1, which those two MS DRGs were already included in that software.

So the plan for, the upcoming plan for July 2017 public reporting is as follows. So in April, hospitals will be getting their Hospital Inpatient Quality Reporting Preview Report. This report that you will receive in April will have all of the normal reporting for all your IQR measures, except it will not include your new AHRQ PSI composite results. It will include the old eight-indicator PSI 90. It will not have the modified or updated PSI 90 in your April report. What does this mean for July public reporting? So for *Hospital Compare* and the star rating, we will use, we will publically report all of your measures in that IQR preview report, and

your star rating will be based on those measures, plus the old PSI 90 measure data. And that's because we don't have the fixed software to calculate your modified PSI 90 measure data yet. So for July 2017 public reporting, in April, you'll see all your normal measures, except that, you will have last year's PSI 90 measure data. For July public reporting, you will have all of the measure data that's in your April report, except that it will have, the star rating will be based off your last year's PSI 90 measure data.

CMS will reissue updated hospital IQR preview reports around July 2017, which will include the modified PSI 90 measure, based off the fixed software. So this will be the first time that you will see your scores on the new, modified PSI 90. In addition, public reporting on *Hospital Compare* will be updated with the new AHRQ, modified AHRQ PSI 90 measure data. In addition, your star rating will also be updated to include the modified PSI 90. So in July you will see your report, and then in October, they will be publically recorded. The HAC Reduction Program, those hospital-specific reports are normally issued around July. Those are not going to be issued. So around July, you will see two reports. You will see your hospital IQR report, which is the updated report with the PSI measure, and then you will also receive your HAC reduction report, which will have, you know, your normal HAC Reduction Program measure data in it. [Momentary pause.] And, that is the end of my presentation, and I will send it over to Bethany.

Bethany Wheeler-Bunch: Thanks, Joe. I think we are ready for our question-and-answer session. You guys have been diligent and have sent in many, many questions, so let's get started. Alex, the first question is for you. This is in reference to slide 12. I would say about the next five to eight questions are probably in reference to slide 12. The question is, for PSI 12, please define time frame for perioperative?

Alex Bohl: So Pam, do you mind covering this? This is a definition question.

Pam Owens: No problem. So this is Pam Owens. I'm the Scientific Lead of the AHRQ Quality Indicators. And I am so thrilled that so many of you are on the call today. And, I know you're very invested in the answers to these questions. So there are a lot of – I'm going to answer these somewhat in a bulk. There are a lot of very specific questions that get at understanding the nuances of each of the indicators and the refinements that have been made to 8, 12, and 15. My recommendation to you, so that I am not misspeaking, and Alex is not misspeaking, is to first look on our QI website, so AHRQ QI Support at, I'm sorry, www.qualityindicators.ahrq.gov. And on there, you will see a PSI 90 fact sheet that goes through all the details of the changes to PSI 90, from an all-payer perspective. So you'll see exactly what the refinements were for 8, 12, and 15.

The other piece is that several of you have very specific questions about index procedure or identification of a particular condition. And these are really very nuanced questions, which AHRQ is more than happy to answer. I think for the benefit of this webinar, it would be better to answer those questions by either emailing QI support, or we can, in that place, we can actually walk you through what the algorithm is. Or to go on the QI website and look specifically at the technical specifications for the indicators. Those specifications actually hold whether it is the all-payer or the recalibrated Medicare Fee-for-Service. But in terms of its operationalization, you can read that in the SAS code. If you can't read SAS, we are more than happy to walk you through on an individual basis. But I think there must be 30-something questions that are very specific to the indicators, and I'm not sure that it would be useful for me to go through each one of those.

Alex Bohl: And, Bethany, I, this is Alex. I have a question. Are we able to send a web link to a different website to the group, because one place that's very helpful for all these changes is there's the PSI 90 fact sheet that's on the QI website. So do we, how could we, other than saying it to the group, how could we send that to people?

Bethany Wheeler-Bunch: Feel free, Alex, to type that into the chat window and select "broadcast to all," and that will send that out to all of the attendees on the webinar. We can also include that in the transcript and also on the qualityreportingcenter.com website where the information for this webinar is located.

Alex Bohl: Okay, thank you, Bethany. I'll send that out in just a minute.

Pam Owens: And, Alex, I think the other useful thing from what I'm seeing in the questions is, a lot of people have questions about the specific changes. On the AHRQ QI website is a document that lists all of the changes, and we call it the log of changes. And that is another very useful document to see what changed between version 5.0 and version 6.0.

Alex Bohl: Okay, I just, I put the FAQ in the chat box and now I'm about to send it, too, the log of changes in the chat box.

Pam Owens: Great. The other thing on the PSI 90 fact sheet, in addition to really spelling out the refinements for each of the indicators, it does provide the weights from an all-payer perspective. That is not the recalibrated perspective, but for those of you who want an instant list of the weights for each component indicator, you can see that in the PSI 90 fact sheet. The same fact sheet is being developed from a recalibrated perspective. And that's – the weights that will be in that fact sheet are the weights that CMS is using in the recalibration. So that's not out yet, but it will be forthcoming, and that fact sheet, which is based on all-payer data, will be replicated with a Medicare Fee-for-Service recalibrated perspective.

Joseph Clift: And this is Joe from CMS. I think I'll just add to that, is that, our aim is to, again, have this documentation on the *QualityNet* website, the information that Pam and Alex just talked about, in advance of you receiving your updated IQR preview report, and your HAC Reduction Program HSR, so that you will have those documents available when you receive your CMS report for the modified PSI 90 measure data.

Bethany Wheeler-Bunch: Thank you, Joe. I want to stick with slide 12 here, and we can probably finish this up pretty quickly for slide 12. These aren't specific questions, but they're just asking you, Alex, to repeat, just high-level, what were some of the changes with PSI 12 and PSI 15.

Alex Bohl: Sure, and just in spirit of full disclosure, I am actually on the FAQ website and I'm going to read off what they list. So everything I'm going to read here to the group is also available on the FAQ that I emailed in the chat box. So two changes were made to PSI 12. First is that isolated calf vein DVT codes were removed from the numerator specifications and so they are no longer considered a PSI 12 event. An isolated calf vein DVT event is more likely to be detected during screening and are often clinically insignificant events. In addition, patients with any diagnosis of acute brain and/or spinal injury were removed from the denominator specifications as PSI 12, as PSI 12 events in this population may be less preventable due to safety concerns with pharmacological prophylaxis in the hyperacute period. So again, if you want that change to PSI 12, that's on the FAQ.

And then here's for PSI 15. The specifications for PSI 15 were refined so that the indicator focuses on the most serious intraoperative injuries due to an accidental puncture or laceration. The denominator is now limited to abdominal and pelvic surgery. The numerator is limited to accidental punctures or lacerations that require a return to the operating room at least one day after the index procedure. Based on these new specifications, the indicator name has been changed from Accidental Puncture and Laceration Rate to Unrecognized Abdominopelvic Accidental Puncture or Laceration Rate. That's it, Bethany.

Bethany Wheeler-Bunch: Thank you, Alex. The next question, in which Pam just referenced where to find this, but just to make sure we're answering it fully, slide 13. Where can we go to access the new weights for the PSI 90 calculations?

Alex Bohl: I'll grab this. You can also go to the frequently asked questions URL that I sent out in the chat box. But to give you a preview for the all-payer population, which again is different, but just to give a sense, I'm going to, I'll go through and read what the weights will be for the all-payer PSI 90 that are listed in the FAQ. And these are, again, subject to change for recalibration, but they will give you a sense of what they look like now.

For PSI 3, the weight is 0.059. For PSI 6, it's 0.053. PSI 7 has a zero weight. PSI 8 has a weight of 0.01. PSI 9 has a weight of 0.08. PSI 10 has a weight of 0.04. PSI 11 has a weight of .30. PSI 12 has a weight of .20. PSI 13 has a weight of .21. PSI 14 has a weight of 0.01. And PSI 15 has a weight of 0.007.

So in summary, there were large increases to the weights on PSI 13, where now that takes on a much larger piece, as well as, PSI 8 and 3. And there were decreases or additions to other weights, and the biggest decrease was for PSI 15. That went from 0.439 to 0.007. And, again, this is all with the caveat that this is for the all-payer population. However, it will look, the distribution of weights will be somewhat similar for recalibration.

Bethany Wheeler-Bunch: Thank you, and, Alex, can you restate where those weights are located at?

Alex Bohl: They're on pages four and five of the PSI 90 fact sheet FAQ that's available on the PSI, on the AHRQ QI website under PSI Resources.

Bethany Wheeler-Bunch: Thank you, Alex. Sticking with the harm weights, we had a question come in. How do you determine the harm weights and who determines the harm weights?

Alex Bohl: So I'll start off and then I'll hand it over to Pam, but there is a detailed methodology used to determine harm weights that involves data analysis, literature review, and clinical input. And the fact sheet that I mentioned before, the PSI 90 fact sheet, also gives some information on how the, the harm weights are derived and used in the composite weights. So with that, I'll hand it over to Pam to provide more details.

Pam Owens: I think you described it well. It is on the fact sheet that we keep referring to. But just to be really concrete in terms of ranking the harms, so death would be an ultimate harm. That would be an excess harm, so that has what we call a higher disutility, a higher harm, than, say, function. If you lose function or if you're readmitted. At the very end of the fact sheet, it actually details what all of the harms are. It could be a 180-day readmission. It could be an all-cause mortality. It could be a complication from a hip fracture. Again, it depends on which indicator you're talking about as to which harm was evaluated. But there is a long list of harms on that fact sheet and it's the last two pages. Some additional things would be long-term, skilled-nursing facility stay, excess hospital days. So because people had an event, what was the harm associated with having that event? And it was an analytic model done and weights associated with that.

Bethany Wheeler-Bunch: Thank you, Pam. The next question, do the patient safety indicators apply to inpatients only?

Pam Owens: So basically –

Alex Bohl: So this is –

Pam Owens: Go ahead, Alex.

Alex Bohl: Oh, you go ahead, Pam.

Pam Owens: The patient safety indicators do apply to inpatient stays only. And, it was derived on all-payer data. And, the recalibration was using only Medicare Fee-for-Service data. So the all-payer PSIs apply to all inpatients, 18 years and older, and the Medicare Fee-for-Service, of course, applies to patients that have Medicare Fee-for-Service.

Bethany Wheeler-Bunch: Thank you, Pam. The next question is in regards to slide 14. Because of recalibration to Medicare samples, can PSI 90 still be utilized with all-payer data?

Alex Bohl: So –

Pam Owens: Absolutely.

Alex Bohl: So, yes.

Pam Owens: That is what AHRQ does. AHRQ, the software that AHRQ puts out, both the SAS and the WinQi version, are intended for use with all-payer data. Alex, I'll let you answer from a Medicare Fee-for-Service perspective.

Alex Bohl: Right, so, so there's nothing preventing someone from using all-payer data and putting that into the recalibrated PSI software. So that's possible, if you're doing research, or had a need to do that. But if you were, have an all-payer population and want to analyse your data, we recommend using the all-payer version. And, only using the recalibrated version with a Medicare sample unless you have a particular research need to do so.

Bethany Wheeler-Bunch: Thank you. The next set of questions is in regards to the software. Is the recalibration only in the SAS software of the version or also in the Win version?

Alex Bohl: So the recalibration is only done on the SAS version of the software. However, as a reminder, if you were to go to the AHRQ QI website and download the SAS software there, that is the software developed on the all-payer population. You would need to go and make a request at *QualityNet* to get the recalibrated version, and that would be the SAS-only version. There is no Windows version of the recalibrated software.

Bethany Wheeler-Bunch: Thank you, Alex. The next question could be either for you or Joe. Will CMS be using all-payer or fee-for-service only for PSI 90? And I think that could apply to IQR, to HAC reduction, to Hospital VBP, and to star ratings.

Joseph Clift: Yeah, this is Joe. So we're – for VBP, VBP is using version 5.0.1, which is a recalibrated fee-for-service version. For the upcoming FY 18 HAC

Reduction Program and IQR, we are using the recalibrated version 6.0. So I guess, to answer the question is, we are, we are using the recalibrated softwares, which are based off of the fee-for-service.

Bethany Wheeler-Bunch: Thanks, Joe. And to piggyback on that question, there are, there are some questions in here that I think are leading to a little bit of confusion. They are wondering why ICD-10 is not included in FY 2018. Could you comment on that in CMS's proposal?

Joseph Clift: Yes, I can. So in last year's IPPS rule, we identified this particular issue that the two-year performance period for the AHRQ PSI 90 measure overlapped the ICD-9 and ICD-10. We made a decision to, for FY 18, to only use the performance period that included ICD-9 only. So the performance period for the modified PSI 90 for FY 18, so again hospitals will see this in their updated IQR preview report that will go out around July, and also in July, their HAC Reduction Program HSR, and that will use the time period of claims from July first, 2014, through September 30 of 2015. More –

Bethany Wheeler-Bunch: Thank you, Joe.

Joseph Clift: Oh, sorry.

Bethany Wheeler-Bunch: Go ahead.

Joseph Clift: I was just going to say that the ICD-10 version of the software that Alex talked about is in development. That will be used for FY 2019 for IQR and the HAC Reduction Program, and that will have a performance period claims of October first, 2015, through June 30, 2017.

Bethany Wheeler-Bunch: Thank you, Joe. And then this final question also piggybacks on that. This question references the Hospital Value-Based Purchasing Program and the FY 2019 performance period being compared, which would be

ICD-10 included, being compared to a baseline period that includes ICD-9. Could you comment on CMS's statement and last year's rule in regards to the comparison of data between ICD-10 and ICD-9 for AHRQ PSI 90?

Joseph Clift: And this is in relation to VBP?

Bethany Wheeler-Bunch: Yes, VBP specifically. Comparing data from the baseline period, which would contain ICD-9 to data in the performance period that has ICD-10. I can comment a little bit on this, Joe.

Joseph Clift: Yes, please.

Bethany Wheeler-Bunch: Yes. So CMS stated in last year's rule that they intend to propose to remove the PSI 90 composite from the Hospital VBP Program in FY 2019 because of the comparison of ICD-9 to ICD-10. So I would recommend looking out for this upcoming proposed rule to see if there are any updates on that intention to propose to remove.

Joseph Clift: Great, thank you, Bethany. This is Joe. Yes, that's pretty much what I was going to say is that, in early April, we, CMS, intends, hopefully, should have the proposed IPPS rule out, and would encourage hospitals to look for that language in the proposed rule to see CMS's proposals regarding this.

Bethany Wheeler-Bunch: And just to hit on the last Hospital VBP Program question, for FY 2018, VBP will not be using the new version of the measure, as described earlier in the presentation. They will be using the old versions of the measure, and using software version 5.0.1, whereas the HAC Reduction Program and Hospital IQR Program will be using the new version and the 6.0 software. Joe, another question for you. When you were referencing the old data, do you mean last year's data?

Joseph Clift: Yes, that's correct. So that will be what you saw in year 2017, FY 2017.

Bethany Wheeler-Bunch: Okay, thank you. And for the next question, for the April preview report and July reporting, is the PSI 90 data going to be new dates, or same data dates as previous reports. I think that question is referencing, Will the new, the calculation that they'll be seeing on their preview reports, is that going to be the new data for their performance period with the old version of the measure, or is it just going to be the old data?

Joseph Clift: Right, yeah, it will just be their old data, which used the time period 7/1/13 through 6/30 of 15. That will be, basically you will be seeing what you saw on your FY 2017 IQR preview report last April; you'll see that again for the PSI measures in April of this year. And, it will be updated with a new IQR preview report in July, with the modified 10-indicator PSI 90. So just to summarize, no hospital will see their score on the modified PSI 90 until around July.

Bethany Wheeler-Bunch: Thank you. And one last question on the public reporting. Please clarify, the July star ratings will be the old version of the PSI 90, but the October release will have the revised version?

Joseph Clift: Yes, that is correct. For the April – the April star rating will have all of your IQR measures and everything, your HCAHPS, etc., will all be a part of that. The only piece that will be stagnant is your PSI 90 score component of the star rating will be your last year's eight-indicator PSI 90 score. And then, in October, we will take out, basically, that old PSI 90 measure data and insert your new PSI 90 measure data, and redo the star rating for public reporting in October.

Bethany Wheeler-Bunch: Thank you, Joe. I think this question could go to Alex or Pam. Could you give a high-level overview of what PSI 90 is as a measure?

Alex Bohl: Sure. Pam, do you want me to do that or…

Pam Owens: You go ahead, Alex. Thanks.

Alex Bohl: Sure, so PSI 90 is a composite, and so what that first means is that it's a – it's sort of a weighted average of multiple indicators. But what it's trying to reflect as a measure is, is…

First of all, there was a name change, and that name change, it might be, it might, to grasp what people are talking about, so first of all, it's, it was changed from Patient Safety of Selected Indicators to Patient Safety and Adverse Events Composite. And so what it's, what it's trying to do is, it's trying to take the eight indicators and across all – at a given hospital – and try to create one summary measure or composite. And, that one measure reflects, sort of, overall quality on these – for the specific domains – sorry – for the specific components – that are captured by the PSIs. And, in general, it's a ratio.

So it should be interpreted, based on an observed-to-expected ratio basis. So again, it's in the recalibrated version, you'll see that everything is centered at 1.0. So if a hospital has a value of 1.0, it means that the observed number of events equals the expected number of events. And then, hospitals with a ratio below one would have fewer observed events compared to expected events. And, hospitals above one would have more observed events compared to expected events.

Now, it's important to point out that, just because the ratio is above or below one, doesn't mean that hospital is doing worse or better than average, because there is statistical error around the composite. And so, that requires – if you are interested to assess that for your hospital, you can either look at how the IQR Program designates hospitals as better or worse than the national average. Or you can look at – there will be confidence intervals around the PSI 90 value and you can compare to get the values to determine the, the statistical difference. Pam, is there anything else to mention?

Pam Owens: No, that sounds good.

Bethany Wheeler-Bunch: Thank you. The next question is, Are the PSI claims data available now in *QualityNet*? Can you please give a quick synopsis of how to pull PSI data, or a resource that I can go to, to find that information?

Joseph Clift: Hi, this is Joe. I, I am not really understanding the question.

Bethany Wheeler-Bunch: I think the question is how do they find their hospital claims data for the PSIs. I think it could be referencing the data and HSRs.

Joseph Clift: I don't know if this is answering the question, but – so the hospitals received their claims that – the claims data within their – within their reports that they receive, and the claims that impacted the numerators and denominators. So that's – it's nothing that they would go to CMS's website to get per se, except that they would go to *QualityNet* to download their report when they obtain it – when they – when it's available for their use. And perhaps I'm not completely –

Bethany Wheeler-Bunch: Thank you. I think that – I think you answered their question. I –

Joseph Clift: Okay.

Bethany Wheeler-Bunch: – I'm thinking they – they weren't sure or didn't know about the HSRs and that's where they would get that data to be –

Joseph Clift: Correct. Right.

Bethany Wheeler-Bunch: – but – yeah.

Joseph Clift: Yeah, because they're getting patient-level, their own patient-level data within their confidential reports. So those will be, well, for the old measure data that was in, that would be in their April report and then they'll see it for their modified PSI 90 in July.

Bethany Wheeler-Bunch: Thank you, Joe. The next question is, When will the version 6.0 software include ICD-10 data and adjustments?

Joseph Clift: So our plan is that –

Pam Owens: So –

Joseph Clift: – I'm sorry.

Pam Owens: Yeah, you can answer from a Medicare Fee-for-Service perspective.

Joseph Clift: Yeah, our – for CMS's purposes, our plan is to have that for fiscal year 2019. So we're talking April of next year. Our plan is that hospitals will see the modified PSI 90, using the ICD-10 version of the recalibrated software in April of 2018.

Bethany Wheeler-Bunch: Thank you, Joe. Pam or Alex, would you like to answer that question for the all-payer model?

Pam Owens: So from an all-payer perspective, AHRQ expects to have ICD-10 software available; and later in 2018, it will actually come after the Medicare Fee-for-Service version. It will include SAS and WinQI. We currently have ICD-10 up, but it only calculates numerators and denominators. In order to get risk-adjusted software, you need a full year of complete ICD-10 coded data. We use calendar years. We're still getting in 2016 calendar year data. This is developed, the all-payer version is developed on the Healthcare Cost and Utilization Project. So once we have a full year of data, have looked at the data quality for ICD-10, we will create a risk-adjusted version.

Bethany Wheeler-Bunch: Thank you, Pam. The next question is, When you say the recalibrated version of PSI the, to refit Medicare sample, does that mean that only the Medicare Fee-for-Service patients will be included in the calculation of PSI 90 in reporting?

Alex Bohl So this is, this is Alex. So when, when we say we refit, that's mainly talking to how we derive the statistical pieces of risk-adjustment, reliability-adjustment, and composites to the Medicare Fee-for-Service sample. So the, that's, the first step is take a Medicare Fee-for-Service sample, do all the regressions and algorithms, etc., to get all these pieces. Then we load those pieces into a software, which is really just a series of SAS programs. And then, that's handed off to CMS that has the official database of Medicare Fee-for-Service discharges, and they then use that recalibrated software. So one that be in your reports, will be PSIs, based on Medicare Fee-for-Service data and the statistical components of the measures will be also based on Medicare Fee-for-Service data.

Bethany Wheeler-Bunch: Thank you. The next question. Do patient safety indicators apply to observation patients?

Alex Bohl No, they do not. Observation patients are considered, are considered outpatient at – according to payment system rules, and so no, they would not be included in the calculation. The only exception is, if an observation stay becomes an inpatient stay. And, under certain billing rules, there could be certain scenarios where that – what happens under that observation stay is rolled up into the bill for inpatient stay. But that, in, if someone just comes in for an observation stay, or if that observation stay is built separately from an inpatient stay, then no, observation stays are excluded.

Bethany Wheeler-Bunch: Thank you. The next question goes back to some of the modified patient safety indicators. This one is in specific reference to PSI 13, but I think the, the same question could apply to almost all the patient safety indicators that were modified. Based on the numerator and denominator change, with the change in version 6.0 from version 5.0.1, do you have any suggestions on how hospitals can gauge their performance from one year to the next with these changes?

Alex Bohl So from, from a statistical perspective, first off, if hospital should not – if – if they are comparing results between recalibrated version 5.0 and recalibrated version 6.0, any change should not be interpreted as a change in performance. So you can only do a comparison to see what changes, but it's not meaningful. So if your PSI 90 rate goes up over time, it doesn't mean that necessarily that the PSI 90 rate is getting worse over time, for example. So the, the first way to, to make a comparison would be if you have your Medicare Fee-for-Service data, to acquire a copy of, of, for example, the PSI, the version 6.0 recalibrated software, and then, use that to calculate rates, just based on your data, under the new version 6.0. That is, is, obviously, the most involved, that's probably the best way to make that comparison. Pam, can you think of any other advice here?

Pam Owens: No, I think that covers it. I mean in terms – the only other thing I'd say is looking at the log of changes. […] And, see if that, you know, if you're just looking at individual cases that, that may be being picked up.

Bethany Wheeler-Bunch: Thank you. We have another question regarding the harm weight. How often will the harm weight be reassessed and modified?

Pam Owens: Excellent question. When we get a full year of ICD-10 data, we will be reassessing the ICD-10 harm weight. They are – the harms actually are based on Medicare Fee-for-Service data, that's what they were built of off. We will be developing a harms weight that are only Medicare Fee-for-Service, but also a different harm weight for all-payer. You could envision harms for the younger population would be different than harms for the older population. For the purposes of CMS programs, the harms that's based on Medicare Fee-for-Service data is perfect. But we do need a full year of ICD-10 data because we do look longitudinally at the – in order to calculate the harms, so my expectation is that we have one for when we release the 2000 – the – in 2018 – later in 2018, the harms would have been updated, if not, it would be in the subsequent version.

Bethany Wheeler-Bunch: Thank you. We have another question. Alex, if you still have that document open, would you please be able to repeat the weights for the PSI 90 composite measures?

Alex Bohl Sure, I do have it open. So here we go. Starting with PSI 3 0.05, PSI 6 0.05, PSI 7 0, PSI 8 0.01, PSI 9 0.08, PSI 10 0.04, PSI 11 0.30, PSI 12 0.20, PSI 13 0.21, PSI 14 0.01, and PSI 15 0.007. And again, the, the caveat is that this is based on the all-payer population and is not exactly the same as what will be used for recalibration, but is similar. And, also I should note that I'm just – I'm not rounding. I just took the first two decimal points. So some of those might change at the 100th decimal point.

Pam Owens: And Alex, I'd like to just mention one other caveat in case people were writing it down, and then may go to look at the website in a month and that is, this is based on the software that had an error with MS DRGs and that was MS DRG 236 and 237. I know there were several questions about that. So you will actually see updated weights when we release the corrected software on the all-payer site.

Bethany Wheeler-Bunch: Thanks, Pam. The next question is also in relation to the AHRQ website. I can find the PSI fact sheet, but I cannot find the software to calculate PSI 90 in the AHRQ website. Can you give this specific link leading to the software or directions on how to get there?

Pam Owens: Well, excellent question and that's because we had to take it down a few weeks ago because of the error that we found. So you should be seeing it, hopefully, by May. We expect to receive the corrected version from our contractor today, and then, it's got to go into production mode, so hopefully, you will see it very shortly. Please check back.

Bethany Wheeler-Bunch: Thank you and I think that quite a few of the questions that we received today – I want to give the speakers a, a chance to say any final closing

remarks, or anything that has popped into their minds they didn't mention during their presentation. So Joe, Alex, or Pam, feel free if you have anything, any closing remarks.

Joseph Clift: I just want to thank everybody for their participation on this webinar and for the questions. I, I guess all these – I, I see a bunch of questions that keep coming through the chat box, so I think I'll just quickly take this opportunity to summarize what's happening in terms of CMS's programs. So just to summarize again. In April of this year, so next month, in a couple of days, when hospitals receive their IQR preview report, it will have last year, FY 2017, eight-indicator old PSI 90 data, along with all your updated measure data that will be used for public reporting in July. So that public reporting will use your old FY17 eight-indicator PSI 90 data, on *Hospital Compare* and also as part of your star rating. In July, you will receive an updated IQR report, which will have the modified PSI 90 10-indicator data, based off the recalibrated version 6.0 software, for the first time. And, that data will be, be used for public reporting in October, on *Hospital Compare*, and also refresh update your star rating to account for the modified PSI 90 data.

Later this year, we will have updated fact sheets on the, on the updated software. And, that is the ICD-9 version 6.0 software that we recalibrated for using CMS programs. We will have fact sheets. We will also have the weights. I know there have been a lot of questions about the weights. We will also have the weights. We will have a frequently-asked-questions document about the differences between version 5.0 and version 6.0, as well as, the differences in the old PSI 90, the eight-indicator, and the updated PSI 90 10-indicator. So all of that will be available to you on the *QualityNet* website that will be available before you receive your preview reports and your HAC reduction report in July. So we're aiming for some time around May. But it will be before you get your reports, so you will have those resources when you receive your hospital reports. Thank you.

Bethany Wheeler-Bunch: Thank you, Joe. Pam or Alex, do you have any closing remarks?

Alex Bohl I've, no, no. This is, this is Alex, I've one – two closing remarks as one, please. Visit those, the websites that we mentioned, as key resources, on the key resources slide. I – there is so much useful information on the quality indicators website. I work with the quality indicators every day, and I go to this website everyday because it's impossible to just remember everything about it unless you're someone like Pam. So please visit that website. And, the same thing with the *QualityNet* website. There is a lot of really good information on the resources tab for the AHRQ measures. So you'll have to go, navigate a little bit to get there, to Claims-Based Measures, to find the AHRQ PSIs, but that resources tab has a lot of detail and useful information, frequently asked questions, etc. So I encourage you to – if you're interested in learning more, please look there and then of course, email if you have any questions.

Bethany Wheeler-Bunch: Thank you, Alex.

Joseph Clift: Yeah and now, this Joe again, and I would just add that to what Alex said, and if there is specific questions about – and if there is a lot of questions that keep coming in that we – we're not able to get to, please send questions through the *QualityNet* Help Desk and we will get those answered. And again, I just want to thank everybody for their participation today. And, I want to also thank our speakers, especially Dr. Owens and Dr. Bohl for your help, and for speaking and answering the variety of questions today. And, Bethany, also; thank you so much for your help today, as well.

Bethany Wheeler-Bunch: Thank you, Joe. I think that pretty much wrap things up for today like Joe mentioned. There are different resources pages on the slides that can give you different areas to look, to find your questions, and the frequently asked question documents, and the fact sheet. Also, there are email boxes to send your questions to: the QI Support email box, *QualityNet* for CMS program questions, and also the inpatient Q&A tool on the *QualityNet* website. And, we can direct you to the, to the correct people. I want to thank everyone for joining today and submitting your questions. You

were a very active audience today, and we always thank you for that. I will now turn the presentation over to Dr. Deb Price, to present on the continuing education credit. Thank you, all.

Dr. Deb Price: Well, thank you, Bethany and thank you to all of our speakers today. Now, I will take the next couple of minutes just to go over the continuing education process.

Today's program has been approved for 1.5 continuing education credit for the boards listed on this slide.

We are now an online CE certificate process facility. You can receive your CE certificate two different times. If you registered and have been listening to this event, when my slides close out, a survey will pop up and then, we take your survey, and at the end of the survey, you will be directed to your certificate. If, however, you're in a room with other people, and only person registered, you will be receiving another survey within 48 hours. Take that survey, and pass it to the other people in the room.

When you register from that survey and you have any problems, it could be that your hospital or your, your facility has a firewall on your computer. If that's the case, and you do not immediately get a response from our links, please go back and register as a new user.

This is what your survey looks like. It will pop up in four more slides. At the very bottom, when you click at Done, this page pops open, and you'll see that there are two links on this page. The top one is the New User link. So if you have had any problems getting our certificates, please click the New User link. If, however, you haven't had any problem getting our, our certificates, click the Existing User link.

When you click the New User link, this is the page that pops up. Put your first name, your last name, your personal email, and a personal phone number. And, the reason we're asking for that is because personal emails do not have firewalls up.

If you have not had any problems getting our certificates, you would be clicking on the Existing User link and this is the page that pops up. Your user name is your entire email address, including what's after the @ sign and your password. If you have forgotten your password, just click in that box, and you will be directed to an area to create a new password.

And now, I'd like to thank everyone for attending today's event. We hope that you've learned something. And, remember that all the questions will be posted to our qualityreportingcenter.com website at a later date. Please enjoy the rest of your day. Good-bye.