Hospital Inpatient Quality Reporting (IQR) Program

Support Contractor

Hospital Quality Star Ratings on *Hospital Compare*
December 2017 Methodology Enhancements

Presentation Transcript

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Candace Jackson: Hello and welcome to the Hospital IQR Program's Hospital Quality Star Ratings on *Hospital Compare* December 2017 Methodology and Enhancements webinar. My name is Candace Jackson and I am the Hospital Inpatient Quality Reporting Program's Support Contract Lead from the Hospital Inpatient Values, Incentives, and Quality Reporting Outreach and Education Support Contractor. I will be hosting today's event. Before we begin, I would like to make a few announcements. This program is being recorded. A transcript of the presentation and the question and answers will be posted to the inpatient web site, www.qualityreportingcenter.com in the future. If you have registered for this event, a reminder email and the slides were sent out to your email address about two hours ago. If you did not receive that email, you can download the slides at the inpatient web site. Again, that's 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. As time allows, we will have a short question-and-answer session at the conclusion of the webinar. Applicable questions that are not answered during that question-and-answer session will be posted to the qualityreportingcenter.com web site in the upcoming weeks.

I would now like to welcome and introduce our guest speakers for today, Dr. Reena Duseja and Dr. Arjun Venkatesh. Dr. Duseja is the direction of the Division of Quality Measurements and the Quality Measurements and Value-Based Incentives Group, Center for Clinical Standards and Quality at the Centers for Medicare & Medicaid Services. She oversees major development and analysis for a variety of CMS quality reporting and value-based purchasing programs. She received her medical degree from George Washington Medical School, trained in emergency medicine and also holds a Master in Science in Health Economics from the Wharton School of Healthcare Economics and Management at the University of Pennsylvania. Dr. Vankatesh is Assistant Professor of Emergency Medicine and Science at the Yale Center for Outcomes Research and Evaluation at the Yale University School of Medicine. He has supported CMS quality measurement efforts as the lead of the Star Ratings

methodology development team at Yale CORE. Dr. Venkatesh has been funded by the NIH, AHRQ, and several foundations to study hospital quality and efficiency. He also served as principal investigator of the CMMI-funded Emergency Quality Network. He received his medical degree from Northwestern University, completed his emergency medicine training and chief residency at Brigham and Women's Hospital and Massachusetts General Hospital, and also holds a Master in Health Science from Yale University, as part of the Robert Wood Johnson Foundation Clinical Scholars program. I would now like to turn the presentation over to Dr. Duseja. Dr. Duseja, the floor is yours.

Reena Duseja: Hi, everybody. This is Reena Duseja. I'm very glad to have you all on the call today. So first of all, I really want to thank everybody for joining today's stakeholder call for the Overall Hospital Quality Star Ratings project. We have a very diverse set of organizations and individuals represented on this call that have expressed interested in the Star Ratings work here at CMS, which I think really shows a great enthusiasm for our Star Rating effort to improve patient understanding of quality measurement. The development of the Overall Star Ratings was meant to summarize the existing measures on *Hospital Compare* and to improve the accessibility of hospital quality information for patients and consumers. As many of you know, we have had many Star Rating efforts that have gathered publicity including *Dialysis Compare, Nursing Home Compare*, and *Physician Compare.* So, during the presentation today, I'm going to first give you a short introduction and background to the work so far and then the methodology developers will then review the previous methodology and the methodology enhancements for December 2017, as well as some of the impact analyses. We will then leave some time at the end for question and answers. So, moving on to the next slide, some brief introductory marks.

The Overall Hospital Quality Star Ratings publicly launched in July of 2016. There are three guiding principles that we're following to developing these Star Ratings and it was really into utilizing a very scientific and valid methodology. So, first, we wanted to make sure that

we were aligned with *Hospital Compare* and CMS programs. We also wanted to make sure that there was transparency in the methodological decisions we were making in developing Star Ratings. And, finally, and very importantly, we want to be responsive and inclusive to stakeholder input. So, *Hospital Compare* reports measures on over 4,000 hospitals and hospitals under the Star Ratings receive either a one, two, or five stars for their overall rating.

A couple of words on stakeholder engagement.

Moving on to slide 10, CMS has almost hit a variety of efforts to get stakeholders input in the Star Ratings for hospital stars. We have technical expert panels. We also have patient advocate workgroups, as well as provider leadership workgroups. The technical expert panels are comprised of stakeholders and experts who contribute to the direction and thoughtful input to the methodology development and maintenance and we've had actually four of these technical expert panels since 2015. We also have a workgroup for patients and patient advocates and family caregivers that discuss the patient and consumer priorities and the usability of the information on hospital stars. And, finally, we have a new workgroup that we started in 2017 that's comprised of hospital leaders and hospital associations that can help discuss the real-world implications of Star Ratings and give suggestions for improvement.

Slide 11 discusses a little bit more detail in terms of our engagement efforts. We also have public input periods. So, we've had three so far. Two in 2015 and one from August 30 to September 27 of 2017, and this really has generated broad stakeholder input on the development and reevaluation. We also have had a dry run and that was in December of 2015 and it allows hospitals to review their Star Ratings data prior to public reporting and we continue to do that for hospitals. And, finally, we have National Provider Calls, such as this, which includes one that we had in August of 2015, as well as in 2016, and then one for this year. And these calls really are used to disseminate the information about Star Ratings methodology or updates to the methodology.

So, I'll turn it over to Arjun to talk about the previous methodology of stars. Arjun?

Arjun Venkatesh: Thank you, Reena. I want to thank all of the various stakeholders that have joined today's call. It's a great opportunity to talk about the Star Ratings methodology and its evolution over the past couple of years. Before I get into some of the new enhancements to the methodology, I did want to take a moment to discuss the original methodology for which public reporting initially started.

If you look at slide 13, which describes the Star Ratings methodology along this kind of five-course steps. The first step in the Star Ratings is to select quality measures and so amongst the nearly hundred quality measures on *Hospital Compare*, we have standard inclusion, exclusion criteria from which measures are selected. They are then standardized so that the scores are comparable and included in the Star Ratings calculation. After those measures are selected in step two, they're put into seven groups based on each of the kind of Star Ratings domains or groups. The third step then calculates the separate statistical model. It's called a latent variable model for each of those groups to calculate a score specific to that group, so, for example, a mortality group score or a readmission group score. In step four, we use a weighted average to combine those group scores into a single hospital summary score. And then in the fifth step, that hospital summary score is clustered into five categories to result in a Star Rating between 1 and 5.

On slide 14, you can see this displayed pictorially. Step one, initially measures are selected. Step two, they go into seven groups. Step three, a statistical model to calculate a score. Step four, they collapse down into a single summary score. We then cluster them into five ratings and, what you'll notice here is that, there's an orange box on the far right that applies the reporting threshold. And, so, in order to ensure the validity of the Star Ratings and the reliability of the scores, the original methodology requires that a hospital have three measure groups reported, of which one is an outcome group, meaning mortality, safety of care, or readmission, and that they have at least three measures for those three groups in order to get a

Star Rating. This ensures that hospitals with very few measures or no outcome measures are not receiving the Star Rating that may be less comparable to the remainder of hospitals. I put that box separate because one of the enhancements that we'll discuss is a changing of where that step occurs.

For December 2017 public reporting of the Overall Hospital Star Rating, there's a variety of enhancements that have been made to the methodology. I'll walk through each of them here and I look forward to answering questions at the end about these.

Slide 16 summarizes these changes. Most of these steps all occur within the last step of Star Rating. Step five are calculating the Star Rating. We've changed the use of k-means clustering to now run through what's called complete convergence. The second change, the Winsorization of the hospital summary score, has been removed. And, in the third change, that reporting threshold I described to you has been re-sequenced or moved in the steps. Instead of happening at the very end after the clustering of hospitals and five stars, it's moved up to occur prior to clustering.

Slide 17 describes the changes that we have made to k-means clustering. As a reminder, k-means clustering is a statistical method that we use to assign the hospital to one of five star categories. The clustering algorithm is designed so that a hospital summary score is more similar to other hospitals in that category and different from hospitals in the other categories. So, for example, a hospital that receives four stars is similar in score to other four-star hospitals, but different than hospitals that got five stars, three stars, two stars, or one star and that's true for all five categories. Previously in the original methodology. we used a standard procedure in SAS software to perform this k-means clustering. The default setting was used for the standard software based on recommendations in the software package. That would complete the clustering approach in one iteration, or one step, to identify this star category. Based on stakeholder input and reevaluation activities we've conducted within the team, the improvement to the methodology that will begin in December 2017 is to utilize multiple iterations of clustering to maximize the stability of the

clusters, essentially to ensure that a hospital, regardless of how many times the clustering is performed, would get assigned to the same category.

Slide 18 describes the second change and this is the removal of the Winsorization step. Hospital summary scores, again this is the score calculated in step four of the methodology in which the seven group scores are put into a single hospital summary score by weighted average, were previously Winsorized. And they were Winsorized before any of the clustering occurred. What Winsorization is, is it takes the most extreme values at both ends of the distribution and gives them a value that is still at the end of the distribution but less extreme. And so, previously what would have happened is that the hospital at the 100th percentile score, the highest score in the entire distribution, was given the score at the 99.5th percentile, or, at the other end, a hospital at the lowest score amongst all 4,000-odd hospitals was given a score at the 0.5% percentile. That initial decision to Winsorize the most extreme values was done for a couple of reasons. The first reason is that it prevented those extreme values from creating extreme clusters in the clustering algorithm. What that resulted in, is by removing those most extreme hospitals to still an extreme value but not as extreme, has resulted in five clusters that had a more broad distribution, meaning it increased the number of 1-, 2-, 4- and 5-star hospitals. This was something that we heard loud and clear from consumers of interest. It is something that we reviewed with our technical expert panel originally and it was a policy-based decision to have this Winsorization. With the enhancements occurring in December 2017, including the complete convergence, as well as the changing of the reporting threshold order, we find that this Winsorization step is no longer necessary and it's being removed. We're able to maintain the same policy objectives, stay true to the initial consumer interest for broad distribution, and do so with the same properties of validity and reliability without this.

Slide 19 describes the third change occurring within step five or the clustering. This is the re-sequencing of the public reporting threshold. As I mentioned earlier, the current public reporting threshold requires that a

hospital have three measure groups; one of which must be an outcome group, meaning mortality or readmission or safety, and each of those groups have three measures. In reporting periods today, approximately 80% of hospitals have met this threshold and that is true again in December 2017. Previously, in the original methodology, the Star Ratings were assigned to hospitals prior to the application of the threshold. What that means is that hospitals that may not meet the three measure group requirements or may not have had three measures per group, were included in the clustering analysis and this was done to maximize the information available for the Star Ratings calculation. This is very similar to the approach used for individual measures where hospitals, with say fewer than 25 index admissions, are still included in the calculation of hospital risk-standardized mortality rates or readmission rates. This also allowed for the potential to provide hospitals that are smaller with feedback information regarding Star Ratings that may not be publicly reported. In further feedback from stakeholders, and reevaluation of this, and the solicitation of public input, however, we've increasingly learned that there's a preference instead to apply this public reporting threshold prior to the clustering algorithm. Part of this is because the k-means clustering algorithm has a comparative analysis. That means a hospital is assigned to a Star Ratings category based on their score compared to the scores of the hospital and the other categories. And so, we believe it may increase the states validity of the Star Rating to only include hospitals that are ultimately getting the Star Rating in the clustering analysis that assigns that Star Rating.

Slide 20 describes the culmination of these changes in a new figure. As you can see, step one is no different. The measures are selected. Step two is no different. They are grouped into seven groups. Step three is no different and each group has a measure group score calculated. Step four is no different, in that a hospital summary score is calculated at a weighted average of those scores and then, what is moved is the application of the reporting threshold at the end after clustering.

Slide 21 shows the movement of that threshold to before the clustering step. And then now is the final step six, when their calculation of Star Ratings occurs, so that clustering it is done to complete convergence. There is no Winsorization step in this figure at all.

Slide 22, again, summarizes what that combined enhancement means in its actual sequence. The Winsorization step is removed, the reporting thresholds are applied prior to clustering, and then clustering is run until complete convergence, meaning with multiple iterations.

Slide 23 describes this in a way that you will see in many of your two U.S. reports that are available, that is available on *Quality Net*. This is probably the figure that is most useful to use within hospitals to understand the methodology in its current sequence. Another change was made beyond the enhancements I just described for step five and that's with respect to what's called quadrature and it's shown on slide 24.

I promise this is the most technical aspect of the presentation and I hope that I don’t conjure up too many old images of high school calculus. The quadrature is the statistical technique used in step three, or the calculation of the latent variable model, for each of the seven groups. We've applied a technical modification to quadrature that's used within that step in December 2017 public reporting. The technical modification is to utilize a technique called adaptive quadrature, in addition to the current approach, which was called non-adaptive quadrature. What adaptive quadrature does is, it uses prior calculations of each hospital’s score in order to find a better solution to the latent variable model or the statistical model. Underlying the statistical model is the calculation of an integral, something I won't get into the details of. I know we have a broad audience on this call that ranges from technical experts to consumers to patients in hospitals, but I will simply say the purpose of this was to be additive to the current approach in a way that would provide for more stability and more reliability.

As you can see on slide 25, this enhancement occurs only within step three of the methodology.

And, on slide 26, is a summary of what occurs by making this change. Perhaps most important is, we believe that adding this to the methodology improves the stability of hospital estimates. What that means is, that if we were to try to calculate the hospital scores with more and more precision by using what are called more quadrature points, we see no change in the hospital score. Seeing and having a methodology in which the more and more you try to tune up the computer to do a more precise calculation results in no changes for a hospital score is reassuring because it tells us that we're getting closer and closer to an ideal approximation of that hospital score. Any statistical model is an approximation. We have in the case of Star Ratings individual measures for a variety of hospitals and we're trying to approximate a score for a given measure group based on those individual measures. By improving the quadrature approach in step three, we're able to get to a solution that we believe is as close as possible to that ideal approximation. As a result of this, we've also observed a modest improvement in the reliability of each measure group and, based on our simulations, we see a more reliable reclassification. We also noticed that there's a minimally different, albeit a broader distribution, of Star Ratings. The addition of this step results in somewhere between five and 20 hospitals moving outwards in the distribution. These are hospitals that historically have been right at the borderline, say between a three and a four and, as a result of this improvement in the methodology, will get assigned a four-star rating in the new methodology.

Slide 27 describes our assessment and the impact of these changes. Each of these methodological decisions were grounded in either a conceptual or a statistical basis for their change. One of the things that we have tried to avoid doing in the development of the Star Ratings methodology is to make decisions purely based on the ultimate impact or the way in which it may affect one kind of hospital or another kind of hospital. Rather, our hope is to create a methodology that is transparent and provides a summary of information that is already existing at the individual measure level on *Hospital Compare*.

Slide 28 shows the impact of these changes together on the distribution of Star Ratings. This is comparing the December 2017 reporting period using the older methodology, called the previous methodology, and then the new methodology, called the methodology enhancements, on the right. It's the same hospitals, the same individual measure scores, but what you can see is that the changes to the methodology result in a broadening of the distribution. More hospitals move to both one and five star as well, as two and four-star categories and fewer hospitals are classified as three star. This is not entirely surprising given a variety of the changes that were made and whether or not this distribution would remain the same in future reporting periods is unknown as hospitals performance on individual measures will change and the reporting of individual measures will change.

Slide 29 describes our reliability analysis. For reliability analyses, we have historically conducted a simulation analysis in which 5,000 simulated Star Ratings are assigned, based on the knowledge that no score is absolute. So, just as for an individual measure, a hospital may have a measure score with a 95% confidence interval or some uncertainty around that score. When we calculate those measures together into a group score, that group score similarly has a score with some uncertainty or a confidence interval and then when we combine those scores into a hospital summary score, that uncertainty still remains. When we do the reliability simulations, we allow ourselves to think that the hospital may have gotten a different score within its 95% confidence interval and look to see how much that affects the hospital Star Rating. As you can see, the hospitals classified as one and five star have greater than 80% reliability within that group. That's remarkably - that's considered very strong reliability from a statistical basis and is stronger than it was with the original methodology.

Another form of analysis we do is called reclassification that is shown in slide 30. The reclassification analysis seeks to understand how hospital Star Ratings change as a result of the methodology. You can see in the rows are the Star Ratings hospitals would have received in December 2017 under the old methodology, and in the columns are the Star Ratings

hospitals would receive under the new enhancements. Here again you see the broadening of the distribution where hospitals that are three star, about 178 of them, move down to two star, but 594 move up to four star. Similarly, some four-star hospitals are moved up to five stars and some two-star hospitals move to one star. This broadening of the distribution, we believe, is of much interest to patients and consumers based on feedback we have received and this is able to be maintained without sacrificing the validity and reliability testing we've traditionally conducted for the methodology.

I'm going to close there and thank you. I know that we've covered a variety of technical topics in this call. I hope that this is helpful for a variety of folks that have had the chance to join us. I know there will be many questions and we look forward to answering those either within this call today or we'll be sure to make sure that we are always available to provide answers regarding the methodology at our CMS Star Ratings inbox which is listed on this slide. Thank you and I'll turn it back over to Candace.

Candace Jackson: Thank you, Arjun. That was a lot of good information and I'm sure it will be beneficial for everyone. We do now have time to do a Q&A session. We will be responding to some of the questions that have come in through the chat box. These are done in no particular order. I would like to remind you that, if your question does not get responded to today, all questions will be answered and have a response and will be posted to our *Quality Reporting Center* website at a later date. So, we will go ahead and get started with the Q&A. The first question is, when is the date that the December preview report will be published on *Hospital Compare*?

Kristie Baus: Hi Candace. This is Kristie Baus from CMS. Our intention is to publicly report the December Star Rating results on December 20.

Candace Jackson: Thank you, Kristie. And our next question is congratulations. This is really not a question, but a comment that you might want to respond to. Congratulations to CMS and Yale for making needed changes to correct some original issues with the methodology. It is so important, that if CMS

is going to publish Star Rating, it is done as well as possible, including fidelity to the correct use of sophisticated statistical methods. Does CMS have a response or does Yale have a response to that comment?

Kristie Baus: Sure. This is Kristie from CMS again and we really thank you, Nancy, for all of your support with making these enhancements.

Candace Jackson: Our next question is in regards to slide 21. Could we go to slide 21, please? Will the hospital summary scores and/or measure group scores be available for all hospitals on *data.medicare.gov*?

Alisha Hutson: This is Alisha with Lantana. That information is available or will be available on *data.medicare.gov* after the *Hospital Compare* release.

Candace Jackson: Thank you, Alisha. Our next question. Is the only difference between the October 2017 preview of Star Ratings and the December 2017 preview of Star Ratings, the updated methodology?

Alisha Hutson: This is Alisha with Lantana again, There were two new measures also added to the program for outpatients, I believe, that will be added, as well, and those are included in the educational materials, a list of the measures.

Candace Jackson: Thank you, Alisha. Our next question: What is a score difference between one, two, three, four, and five stars? Would 0.02 points move hospitals from two stars to one star?

Arjun Venkatesh: So, it's Arjun from the Yale team here. I'm assuming that the question asking about a 0.02 change is talking about what we call the hospital summary score. It's the kind of final score that's calculated before hospitals are clustered into the five-star categories. It's possible that any small change in a hospital summary score could result in an increase or a decrease in their Star Rating, if that summary score that the hospital has is near borderline. Any approach or methodology that's used to do ratings has to create cut points between each of the star categories and there will always be hospitals that are near those cut points or near those borders.

In the case of the hospital summary score, I will say that the actual number doesn't have a unit to it, and so, what, in one reporting period may be a change of 0.02 or 0.2, results in a different Star Rating for a hospital may not be true in a future reporting period because all of the scores are recalculated each reporting period based on the distribution of individual measure scores and the number of hospitals reporting each of these measures.

Candace Jackson: Thank you, Arjun. Our next question: Do you see significant changes for hospitals with the changes from last report to be December report for a single hospital?

Arjun Venkatesh: So, I think that we don't have it conducted, and we don't really conduct, any analyses for single hospitals, but I think that there is a slide that shows the overall distribution of the Star Rating under the new methodology and, I think that what we've tried to show is, that as a result of the multiple changes that are made in this, with these enhancements, that there is a change in the overall distribution and so there are potentially many hospitals that change. Now, the actual distributions of the measures have changed, the number of measures included have also changed, and so I can't say that a hospital's individual Star Rating changed because of the methodology changes, as opposed to other changes that likely occurred over time, as well.

Candace Jackson: Thank you, Arjun. This next question I believe is for Arjun also. Can you please share with us why there are more hospitals receiving Star Ratings this year than last? Is it simply the fact that more hospitals had enough measures in enough categories to quality or is there something else going on?

Arjun Venkatesh: Sure, so we - I just did a quick calculation looking at our summary reports that are posted with public reporting each quarter and comparing December of 2016 to what was presented in this presentation. It looks like there are 63 more hospitals reporting the Star Rating. Looking back on prior quarters, there are always fluctuations quarter to quarter that are likely driven by changes in whether or not a hospital meets various and

different criteria for reporting of individual measures. None of the changes that have been proposed for the methodology change any of the reporting profiles of hospitals and so I don't think that any differences seen, be it 50 or 100 hospitals between quarters, are a result of methodological decisions, but rather there are likely differences in just public reporting overall.

Candace Jackson: Thank you, our next question. Where could we find the current overall weighted Star Rating ranges associated with each star score? In other words, a star - a score between blank and blank is one star. A score between blank and blank is two stars, etc.

Kristie Baus: All right. So, Candace, this is Kristie again. Just for everybody's information, there will be document - more documents to help with the enhancements to help summarize the enhancements, as well as a document that shows the national distribution and how that changed compared to the old methodology. They will be posted on *Quality Net* in the next coming maybe week or two. So, please be on the lookout for those and we can certainly make those documents - if they're posted to the public in time - we can also make them available with these materials if that's feasible, Candace.

Candace Jackson: Please. That would be feasible. Thank you, Kristie. Our next question: Are there 59 or 56 majors for the December release?

Alisha Hutson: This is Alisha with Lantana. I'm trying to get that exact number. Candace, could we come back to that one?

Candace Jackson: Sure. That would be fine. Our next question: How many hospitals were included in the final Star Rating scores?

Arjun Venkatesh: So, it's Arjun from the Yale team here. I believe the sum of the number of hospitals that were on the slide showing the distribution was 3692 hospitals that received a Star Rating for December of 2017. I will note a few things. That's obviously smaller than the total number of hospitals on *Hospital Compare*. That's why there's a public reporting threshold and also that number may sometimes slightly change as there are - and I'm not the

expert in this - details to hospital pledging status, closure, and other things where they may not ultimately be included in *Hospital Compare,* even though they are included in the original calculation, but those are fairly minor numbers usually.

Candace Jackson: Thank you. And our next question: How can hospitals validate their rating for accuracy?

Arjun Venkatesh: So, hospitals have…

Kristie Baus: Go ahead, Arjun.

Arjun Venkatesh: Sure. So, I'll speak to part of this and I think maybe CMS will probably want to add to this more. You know, there's a variety of kind of products, I guess, work products available during the Star Ratings process, including preview reports and hospital specific reports, where hospitals can see their individual standardized scores, as well as kind of each of the intermediate or inter-steps and scores that exist between an individual measure and the ultimate Star Rating. The other thing that we have made available is a publicly available fast pack, so the statistical software, as well as the data file, including all hospitals in the country. Because that includes all hospitals, it can only be released when all information is public at the time of public reporting. But, hospitals could use that software, the supporting documentation, and the data file to actually replicate the entire Star Rating if they're able to.

Candace Jackson: Thank you. Our next question: Are the measure groups reweighted in the new methodology for those groups that don't meet the minimum volume criteria to calculate a measure group score?

Arjun Venkatesh: So, the reweighting of measure groups, or the re-proportioning of weight, as I think is how it's described in prior documentation around the Star Ratings methodology, was not changed for December 2017, and so, if for example, a hospital only has five of the seven measure groups, then those five groups are re-proportioned to make up the entire 100% as it was done before and this is done kind of irrespective of the three measure counts. This is a topic that CMS did seek public input on very recently, a few

months ago. And so, it's an issue of active reevaluation where those - that input - will go back to CMS and will be reevaluated and get their alternative approaches to that. That will be reevaluated with a technical expert panel in the future.

Candace Jackson: Thank you. And our next question: With the existing methodology, approximately 50% of hospitals nationally received three stars and just approximately 2% to 3% getting one or five stars. Is this the same with this new methodology?

Arjun Venkatesh: So again, I think slide 28, hopefully, is the best description or way to view this in the - what that shows is that in the - with the changes to the mythology and these embankments it's 32% of hospitals that received three stars and then a higher proportion of hospitals that received one, two, four, and five stars than previously.

Candace Jackson: Thank you, Arjun. And our next question: Where can I get the new values of distribution or summary scores at various star levels?

Kristie Baus: So, this is Kristie again. Those documents that support the methodology enhancements will be posted in the next coming week or two.

Candace Jackson: Okay, thank you, Kristie. Our next question: What is the hospital summary score range for each Star Rating? Do we have anyone who can respond to that?

Kristie Baus: This is Kristie again. I believe that that information is in the updated support materials.

Candace Jackson: Thank you, Kristie. And our next question: Is this a yearly score? What month does this data incorporate?

Kristie Baus: So, this is Kristie again. Our intention is to update the Star Ratings twice a year, generally in July and December, and the applicable date ranges are available on the *Hospital Compare* website in the About the Data section. It goes through all of the different individual measures and the applicable performance periods. And the performance periods used will be those that

are aligned with the December public reporting periods. So, if you look on *Hospital Compare* About the Data, you'll see all of the date ranges.

Candace Jackson: Thank you, Kristie. Our next question: Currently on *Hospital Compare*, we can only view the Overall Star Rating. Are there any plans to publicly report the group scores and the overall summary score as well?

Kristie Baus: Hi. This is Kristie again and we are currently looking at different priorities for the upcoming year and we're going to pull the technical expert panel back together and talk about those priorities. Of course, the group level Star Ratings is a topic of interest. So, we're looking into it.

Candace Jackson: Thank you and our next question. The N in old versus new is 3692. I thought it was stated that the final Star Ratings calculation will only include hospitals that will ultimately receive a Star Rating score. Slide 21, so the movement of step five had no impact.

Arjun Venkatesh: Hi. It's Arjun from the Yale team here. The 36 - sorry the - 3692 number that you look at is the final number of hospitals that are included in the Star Rating and so there are roughly 4,500 hospitals that may report measures, at least one measure, let's say on *Hospital Compare*. And so, the movement of the clustering step that's referred to was that only 3692 hospitals were clustered in the new methodology. In the previous approach, what would have happened is that, all 4500 hospitals would have been clustered and then only 3,600 would have had their score actually reported because it was done after the reporting threshold. And so, by moving the reporting threshold up, we go from roughly 4,000-odd hospitals down to the 3,692 and then cluster the 3,692 in this reporting period.

Candace Jackson: Thank you and our next question: Will CMS be releasing the SAS pack along with the December 2017 ratings updates, so that we can replicate the analysis?

Kristie Baus: So, this is Kristie and yes, we will be releasing the SAS pack and the user guide.

Candace Jackson: And the next question: Does the five-star system relate to the Leapfrog report?

Kristie Baus: This is Kristie again. The Leapfrog report is different than our five-star system. I believe that there were some FAQs and other information posted earlier when we first rolled out with the Star Ratings that went over the differences between CMS Star Ratings and the ratings used in other systems, such as Leapfrog and U.S. News.

Candace Jackson: Thank you, Kristie. And our next question is: Please review the use interpretation of slide 30.

Arjun Venkatesh: Hi, it's Arjun from the Yale team. So, slide 30 is meant to try to show in some ways how the different methodology results in a different distribution of Star Ratings. And so, the rows here apply the previous methodology used prior to December 2017, but on December 2017 data. The columns represent a Star Rating assigned using the methodology with the enhancements on the same December 2017 data. And so, one way to interpret this would be, for example, in the case of three-star hospitals, using the previous methodology on December 2017 data, you can see that, at the end of row 3, there are 1,959 hospitals that would have received three stars. Using the new methodology on the same December 2017 data, at the bottom of the column for three, you can see there's 1,187 hospitals that receive three stars. So, the difference between that 1,959 and the 1,187 are hospitals that would have received three stars in the old methodology that now receive either two or four stars in the new methodology, And so, you see that 178 of them now receive two stars and 594 now receive four stars. The same is kind of true on this against other cells and you can kind of follow along in that way.

Candace Jackson: Thank you. And our next question: We have discovered several coding issues with our preview reports. Can we still write to CMS to challenge this?

Kristie Baus: This is Kristie from CMS. So, our - the preview period is intended to be a period for hospitals to look at their data before it goes public. It's not a

review and corrections period. I mean, you can always write to CMS about your issue and explain this to us, but there is no real process for appealing the Star Ratings.

Candace Jackson: Thank you, Kristie, and we have time for one more question. I am clear on my hospital Star Ratings that will now be published in December using the new methodology. Did we also receive the Star Ratings using the previous methodology that would have been published in December 2017?

Kristie Baus: This is Kristie again. Not with your current hospital specific report, no. We did not provide those.

Candace Jackson: Thank you, Kristie. And again, that concludes our question and answer session. I'd like to remind everyone that all questions will be responded to and posted to the *Quality Reporting Center* website at a later date. At this time, I'd like to turn the presentation over to Dr. Debra Price, who will go over the continuing education process. Debra?

Debra Price: Well, thank you very much. Today's webinar has been approved for one continuing education credit by the boards listed on this slide. We are now a nationally accredited nursing provider and, as such, all nurses report their own credits to their boards using the national provider number 16578. It is your responsibility to submit this number to your own accrediting body for your credits.

We now have an online CE certificate process. You can receive your CE certificate two ways. The first way is, if you registered for the webinar through ReadyTalk, a survey will automatically pop up when the webinar closes. The survey will allow you to get your certificate. We will also be sending out the survey link in an email to all participants within the next 48 hours. If there are others listening to the event that are not registered in ReadyTalk, please pass the survey to them.

After completion of the survey, you'll notice, at the bottom right hand corner, a little gray box that says “Done.” You will click the “Done” box and then another page opens up. That separate page will allow you to register on our Learning Management Center. This is a completely

separate registration from the one that you did in ReadyTalk. Please use your personal email for this separate registration so you can receive your certificate. Healthcare facilities have firewalls that seem to be blocking our certificate from entering your computer.

If you do not immediately receive a response to the email that you signed up with at the Learning Management Center, that means you have a firewall up that's blocking the link into your computer. Please go back to the new user link and register a personal email account. Personal emails do not have firewalls up. If you can't get back to your new user link, just wait 48 hours because, remember, you're going to be getting another link and another survey sent to you within 48 hours.

Okay, this is what the survey will look like. It will pop up at the end of the event and will be sent to all attendees within 48 hours. Click “Done” at the bottom of the page when you are finished. This is what pops up after you click “Done” on the survey. If you have already attended our webinar and received CEs, click “Existing User.” However, if this is your first webinar for credit, click “New User.” This is what the “New User” screen looks like. Please register a personal email like Yahoo or Gmail or AT&T, since these accounts are typically not blocked by hospital firewalls. Remember your password, however, since you will be using it for all of our events. You notice you have a first name, a last name, and the personal email and we're asking for a phone number, in case we have some kind of backside issues that we need to get in contact with you.

This is what the “Existing User” slide looks like. Use your complete email address as your User ID and, of course, the password that you registered with. Again, the user ID is the complete email address including what is after the @ sign. Thank you for taking the time spent with me.

Candace Jackson: That concludes our webinar for today and I hope you all found this beneficial and have a good afternoon.