PEPPER
PEPPER Sessions Chapter 4
Percents Percentiles ST, LT, CAH, IPF, IRF

In this session, I'm going to review how we calculate the target area statistics in the PEPPER. I'll review percent and percentiles, and how we use percentiles to identify outliers in PEPPER.

During this session, I'm going to focus on information that's applicable to short-term and long-term acute care hospitals, critical access hospitals, inpatient psychiatric facilities, and inpatient rehabilitation facilities.

The provider data are summarized by target area and by time period in three basic ways. We count the discharges that meet the target, or the numerator definition, as well as the denominator definition for each target area and for each time period. The numerator and denominator discharge counts are used to calculate the hospital's target area percent, which is an important statistic in PEPPER.

We also summarize payment information to provide the average Medicare payment and the sum of Medicare payments for the target for the numerator discharges — again, for each target area and for each time period. And, lastly, we provide statistics for the average length of stay for the numerator and the denominator. You will see these three basic statistics on the data table report for each target area.

The numerator and denominator counts are used to calculate target area percents. Target area percents are used to calculate percentiles. Percents and percentiles are at the heart of the PEPPER. However, it's easy to confuse these terms because they sound alike, and many people don't have a clear understanding of what percentiles mean. So I'm going to clarify the definition of percent and percentiles, and then I'll discuss how they relate to each other in the PEPPER.

Let's start with the calculation of a target area percent.

To calculate a target area percent, we need a numerator and denominator. In PEPPER, the numerator is the count of target area discharges. The denominator is the count of discharges against which the denominator is going to be compared. And remember that, due to the data restrictions imposed by CMS, the numerator and denominator will not display, and the statistics will not be calculated, if the numerator and denominator counts are less than 11.

The target area percents are calculated by dividing the number of target discharges, which is the numerator, by the number of denominator discharges, and then multiplying by 100.

Let's use, as an example, the *Septicemia* target area, which is included in the report for short-term, long-term, and critical access hospitals. The target area percent for inpatient psychiatric facilities and inpatient rehab facilities are calculated using the same manner for those target areas that are included in those reports, and the same concepts apply. In this example, the numerator is the number of discharges for septicemia or severe sepsis, which groups to DRGs 870, 871, and 872. In this example, we have 29 discharges in the numerator. The denominator is the number of discharges for DRGs 689, 690, 870, 871, and 872, which in this example is 33. Here we are comparing the number of discharges for septicemia to a larger comparison group, which includes urinary tract infections. Because this is a coding-focused target area, the higher the target area percent, the higher the risk of over-coding. Conversely, the lower percent, the higher the risk of under-coding. So 29, divided by 33, multiplied by

100, results in a target area percent of 88, which tells us that of all the denominator discharges filed during this period, 88% were for septicemia or severe sepsis. But when we sit back and think about it, what does it really mean that 88% of the discharges were billed to septicemia or severe sepsis? Is that high? Is that low? Standing alone, we have no way to gauge whether that should be of concern for us or not. So we really need some context to help us figure that out.

And that's where the percentile value becomes very helpful. It provides the context so that we can see the big picture of where we stand. The percentile tells us the percentage of all hospitals in a comparison group below which our hospital's percent values lay. So the percentile gives us a point of reference — a way to think about how our target area percent compares to the target area percent of all the other hospitals.

To calculate percentiles for all providers in a comparison group, which could be all providers in the nation, all providers in the jurisdiction, or all providers in the state, the target area percents for the providers in that group are sorted from highest to lowest for each time period. In thinking about what a percentile is, it's a number that relates to the percentage of hospitals that have a lower target area percent. So for example, if 40% of providers' target area percent were lower than Provider A, then Provider A would be at the 40th percentile.

Let's look at a simple picture to help reinforce this message. Here we have a ladder. And in this example, each rung of the ladder represents a hospital target area percent for one of the target areas and one time period. You can see in the box to the right of each those target area percents. Note that they are sorted from highest to lowest. Now keep in mind that this is a very simple example as we only have 10 hospitals in this comparison group. Because 80% of the hospitals in this group are below the target area percent of 90, 90% is at the 80th percentile. And any target area percent 90% would be at or above the 80th percentile. And so in the PEPPER, they would be identified as high outliers, or at a higher risk for improper payment.

Now, for the coding-focused target areas, we also identify low outliers-- those being at, or below, the 20th percentile. Here the 20th percentile is in the target area percent of 59. So any target area percent of 59% or less are going to be below the 20th percentile and would be considered low outliers. Again, remember the outliers are applicable only for the target areas that have a potential for under-coding.

Now it's time to talk about how the risk for improper Medicare payments is identified in the PEPPER. The target area percents for all providers in each of those three comparison groups are sorted from highest to lowest. Then, we calculate percentiles for each of the comparison groups.

We identify the target area percent that is at the 80th percentile for each comparison group for all of the target areas. And for the areas at risk for under-coding, we also identify the target area percent that is at the 20th percentile. If a provider's target area percent is at, or above, the national 80th percentile for any of the target areas, or if it's at, or below, the 20th percentile for the coding-related target areas, then it's identified as at risk. While we do compare the providers to all three comparison groups in the PEPPER, the risk status is determined using the national comparison group. And how will you know if you are at risk? Well your risk status is found by reviewing your Compare and Target Area Report.