PEPPER Sessions Chapter 4 Percents and Percentiles PHP

In this session, I'll review how we calculate the target area statistics in the PEPPER. I'll review percents and percentiles and how percentiles are used to identify outliers of the PEPPER.

The partial hospitalization programs data are summarized by target area and by time period in three basic ways. We count the episodes that meet the target or numerator definitions and the denominator definitions for each target area and for each time period. The numerator and denominator counts are used to calculate the PHP's target area percent, which is an important statistic in the PEPPER.

We also summarize payment information to provide the average Medicare payments and the sum of Medicare payment for the target episodes for each target area and for each time period. Lastly, we provide statistics for the average length of stay for both the numerator and denominator. So you'll see these three basic statistics on the data report for the target areas as applicable.

The numerator and denominator counts are used to calculate target area percents. Target area percents are used to calculate percentiles. Percent 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 percents and percentiles, and then discuss how they relate to each other in the PEPPER. Let's start with the calculation of the target area percent.

To calculate a target area percent, we need a numerator and a denominator. In the PEPPER, the numerator is the count of episodes of care that meet the numerator definition. The denominator is the number of episodes that meet the denominator definition. And remember that, because we have a data restriction imposed by CMS, the numerator and denominator will not display if they are less than 11.

The target area percents are calculated by dividing the numerator count by denominator count for the target area and time period and then multiplying by 100.

Let's use, as an example, the *60+ Days of Service* target area. The numerator is the number of episodes ending in the calendar year where the beneficiary received 60 or more days of service. In this example, we have 13 episodes with 60 or more days of service. The denominator is the count of all episodes at the PHP ending in the calendar year, which is 25 in this example. So here we are comparing the number of episodes with 60 or more days to a larger comparison group which includes all the episodes. So 13 divided by 25, multiplied by 100, results in a target area percent of 52. So that tells us out of all the episodes at the PHP during that time period 52% had 60 or more days of service.

But to sit back and think about it, what does it really mean that 52% of the episodes have 60 or more days of service. Is that high? Is that low? Standing alone, we have no way to gauge whether we should be concerned or not. We need some context to help us figure that out.

And that's where the percentile value becomes very helpful. The percentile gives us the context so we can see the big picture and where we stand. The percentile tells us the percentage of all PHPs in a comparison group below which a given PHPs percent value rank. So the percentile gives us a point of reference, a way to think about how our target area percent compares to those of other PHPs.

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

Let's look at a simple picture to help reinforce this concept. Here we have a ladder. And in our example, each rung of the ladder represents a PHPs' target area percent, which you can see in the box to the right of each rung. Note that the target area percents are sorted from highest to lowest. Now keep in mind this is a very simple example with only ten PHPs in the comparison group. Because 80% of PHPs fall below the target area percent of 52, 52% is at the 80th percentile. And in this example, any percents that are greater than 52% are above 80th percentile. And they would be identified as a higher risk for improper payment in the PEPPER.

Now it's time to talk about how the risk for improper Medicare payments is identified in the PEPPER.

The target area percent for all the PHPs in each of the three comparison groups are sorted from highest to the lowest, as we did with the ladder example. Then we calculate percentiles for each comparison group. We identify the target area of percent that is at the 80th percentile for each comparison group for all of the target areas. If a PHPs' target area percent is at or above the national 80th percentile for any of the target areas, then it is identified as an outlier, at higher risk for improper payment. While we do compare the PHPs to all the comparison groups, in the PEPPER we identify the risk status using the national comparison group, and your risk status would be identified in the Compare and Target Area Report.