

Use of “Roll-ups” to Report CAHPS Survey Results and Other Quality Measures

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Lise Rybowski

From the Agency for Healthcare Research and Quality, welcome to a podcast from TalkingQuality, a Web site about communicating comparative information on health care quality to consumers. I’m Lise Rybowski from the Severyn Group and I manage the TalkingQuality project.

Today I’m joined by two Senior Researchers at RAND: David Kanouse and Marc Elliott. David and Marc will be talking with us about the increasingly common practice of reporting summary measures. David and Marc, thanks so much for being here today. I’d like to start by asking you to define what you mean by a summary measure.

David Kanouse

Well, a summary measure is a measure that summarizes performance of a clinical entity of some sort across several more specific measures by combining them into a single score. There are two types of summary measures that we should distinguish. First is composites, which summarize measures within a single domain, and a roll-up score is the second, which summarizes measures across multiple domains.

Marc Elliott

In terms of thinking about examples, within the world of CAHPS, we might have a composite measure called “doctor communication” that would include items such as, did the doctor treat you with courtesy and respect? Did the doctors explain things in a way that you could understand? And then we might also have a roll-up measure, for example, that might evaluate your entire out-patient episode or in-patient stay, so it might include things like pain control and discharge information as well as doctor communication.

There are also examples that you might imagine in the clinical quality domain. So you might have a composite composed just of measures that have to do with care for diabetes, whereas you might have a roll-up measure that combines measures of clinical process for diabetes but also other conditions such as COPD or MI.

Lise Rybowski

Tell me a little bit about the benefits of combining measures into a single summary measure. Let's start by talking about the composite measures.

Marc Elliott

The primary advantage of forming composites is that it summarizes a large amount of information and makes it easier for people to evaluate and compare different providers or different entities because you're reducing the numbers of bits of information that people have to distinguish. It's also often the case that it will improve the quality of measurement and by that I mean your ability to accurately distinguish levels of performance between different providers or other entities.

Lise Rybowski

Are there any disadvantages to using composite measures?

David Kanouse

For composites, where you're summarizing information within a single domain, there really isn't much downside. There may be some loss of information contained in the more specific measures that wouldn't be apparent to people when it's summarized in the composite, but by and large, the gains that come from making the information more readily comprehensible and manageable offset any loss of the specifics.

So we do recommend the use of composite measures as a primary reporting strategy when using relatively limited domains. But it's quite important in constructing and using composites to make sure that they are constructed well. Our advice is that they really need to have a number of components in order for that to occur.

First of all, a good composite will have statistical integrity. That is, it would hold together statistically and there will be quantitative evidence that supports that, like factor analysis. And then second and probably even more importantly, the parts in the composite need to go together conceptually. They need to make sense theoretically and have face validity. And then third, related to the second but somewhat different, the composite must make sense to the target audience. That is, that they must relate to it and care about it, and it must make sense to them and seem important.

Marc Elliott

In addition, when you're thinking about composites, it's worth thinking about composites ahead of time when you're designing a survey or when you're collecting measures. And a lot of times the best composites are not ones that are constructed post hoc from available measures or from available survey items, but ones that are fundamental in your designing the set of measures or designing the survey.

The other thing I think I might mention is that when you're talking about the pros and the cons of this, a well-designed composite can often be easier to understand than the constituent items. For example, consumers may not understand what the HbA1c measure means, in particular, but if they

understand that you have a summary of measures having to do with diabetes quality, that can actually increase comprehension. I think at the same time it's also important that individual items be made available for people who need access to these measures.

Lise Rybowski

Okay great, thanks, Mark and David for talking about that issue. Now I want to talk a little bit about roll-up measures where you're combining several different kinds of measures to come up with a single score across all of them. Tell me some of the pros and cons of that approach.

David Kanouse

The principle advantages are similar to composites but even more so, that is, it introduces simplicity and reduces complexity by making the information easier to consider. [You're] reducing the number of separate dimensions that people have to think about, therefore making it easier to arrive at an overall decision in selecting, for example, among different entities that are available to somebody as a consumer. It's also especially important where you have to rank order entities, when you're using information, for example, for pay-for-performance.

Lise Rybowski

You were talking about the pros. Are there any disadvantages to these kinds of scores?

Marc Elliott

In a lot of ways, I think that the disadvantages of roll-up measures that summarize across multiple domains are the flipside of the advantages. So on the one hand, you get real simplification. You can reduce multiple numbers to a single number, which can be really helpful if you are comparing them across multiple providers or multiple plans or multiple hospitals.

But on the other hand, things can become so simplified in a roll-up measure that combines across multiple domains that people may lose sight of what specifically goes into these measures and they may think of these as just abstract measures of quality without thinking what goes into them. So you might have a roll-up measure about all experiences with a health plan and you might not realize that there are measures that have to do with your doctor as well as measures that have to do with plan representatives.

Likewise, you might have a measure of quality of care and you might not be cognizant of what the particular conditions are that mainly drive that summary measure. So there can be a disadvantage by not forcing people to engage with the specific individual measures.

Likewise, by necessity, when you come up with a single score for summarizing, for pay-for-performance, or for ranking, you have to come up with weights that you get to each of these components and you may be able to come up with weights that do a good job for the priorities that the people might have on average, but those might not tailor to the specific needs of somebody who's interested in how good is this hospital for the particular condition for which I'm having a planned

surgery. And so there can be simplification and generification that can be advantages also have flip sides in not being specific and not being as tailored.

Lise Rybowski

Okay great, thank you. Are there ways to have the best of both worlds -- so get some of the advantages of roll-up scores without the disadvantage that come from losing specific information?

David Kanouse

Yes, there are some ways to do that. First you can provide a roll-up score along with providing access to more specific information that people can drill down in order to get. So that essentially, you present both in a way that makes the specific information readily available. Indeed, if it seems especially important for people in order to see the specific information, in order to really understand what the roll-up quality score represents, you can even place that information in the report in such a way that the normal path through the report takes them through the specific information before they get to the roll-up score. And in that way just through designing the architecture of the report, you kind of ensure that people will walk through some of the specifics before they got to the roll-up score that helps them to integrate.

The second thing you can do is specifically in interactive reports where, [in] the type you can construct on a Web site, you can allow people to create their own roll-up scores. For example, you show them a list of the specific measures that go into a potential roll-up and allow them to check off the ones that they especially care about. Or you can have them assign their own weights to indicate which are most important and which are maybe a little less important but still they want to consider them.

And this kind of gets around some of the disadvantages of the roll-up score as a one size fits all roll-up that allows people to look at a report without thoughtfully engaging with the kind of information that it provides. It helps them to integrate but does so in a way that allows them to appreciate what goes into that integration.

Lise Rybowski

In light of everything we just discussed, what do you think are the most important takeaways for the organizations that are reporting quality information today?

Marc Elliott

I'd emphasize three points. The first is that well-designed composites are a really useful primary reporting strategy that allow people to summarize information and sometimes improve their ability to measure and compare. But at the same time, I'd emphasize that composites are only valuable if an organization has the expertise and resources to invest in constructing good composites.

Second, I'd emphasize that roll-up scores that combine multiple domains are often a very useful tool for summarizing information and in facilitating ranking or pay-for-performance or tiering -- but at the same time, they simplify to an extent that the results may not be as specific or as individually tailored

as one might need. So there I’d suggest that organizations think about the pros and cons of roll-ups in their specific situation.

And then finally, as David just mentioned, in a lot of situations there are hybrid approaches that will combine the ability to tailor or access to specific domain information with a roll-up information that summarizes across all the domains, and I think in a lot of settings, that will be the best approach for an organization.

Lise Rybowski

Thanks so much to both of you for talking with me today about both the roll-up and the composite measures. I think you’ve really brought a valuable perspective on the use of these measures that will be helpful to all the organizations who are reporting them.

More information on this topic is available in the “Create” section of the TalkingQuality Web site at www.talkingquality.a-h-r-q.gov [www.talkingquality.ahrq.gov]. I encourage our listeners to check out the subsection called “Translate Data into Information.” To hear about future podcasts, be sure to subscribe to the TalkingQuality e-mail list by clicking on the little red envelope at the top of our Web site.

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