

## What Is Quality Worth? Quantifying Potential Cost Savings

QUALITY IMPROVEMENT: ROBERT FOJUT

**CALCULATING THE COST OF POOR QUALITY HELPS FINANCE LEADERS UNDERSTAND THE PROFIT-AND-LOSS IMPACT OF INTERNAL FAILURES, EXTERNAL FAILURES, SURVEILLANCE, AND PREVENTION.**

How do you know if quality gains will improve your bottom line? The key is to calculate the cost of poor quality, says David Kashmer, MD, chair of surgery at Signature Healthcare, Brockton, Mass. Kashmer shares insights on the impact of quality improvement on cost containment efforts.

### How does poor quality impact a hospital's bottom line?

Everyone is talking about quality these days, but the scale to which quality impacts a healthcare organization's financials is appreciated by only some.

What is amazing to me is that everyone is focused on Centers for Medicare & Medicaid Services [CMS] withholdings for things like patient complications and readmissions. But when you do the math, the money that could potentially be withheld is not even close to the money you can save through a single quality project. For example, in fiscal year 2015, the average CMS readmission penalty was \$162,000 per penalized hospital. In comparison, research from Villanova University found that the average value of a Lean Six Sigma quality project was approximately \$250,000, and in my experience that is true.

Poor quality directly affects the bottom line for hospitals. The issue is that there is no line item on a profit-and-loss statement that says these are the costs of less-than-optimal quality. It is something we are never taught in business school or anywhere else. But in fact there is a mechanism that can help us get a sense of the profit-and-loss impact of quality. It is called the cost of poor quality, or COPQ, and it is made up of four buckets—internal failures, external failures, surveillance, and prevention.

### Explain "internal failures."

Internal failures are quality failures that occur but do not make it directly to the patient. An obvious example is a failure that leads to medication waste. The pharmacy prepares a medication, but when the nurse checks the order he sees that the dose was drawn wrong so he has to throw it out. That is an internal failure. It is not a failure that affected the patient, but there is a cost.

Internal failures can also be less obvious. From a Lean standpoint, we often look at wasted motion in the form of extra processing. Let's imagine that we have 10 surgeons in an operating room (OR), and each one requests 30 instruments for a certain procedure. Of the 30 instruments, approximately 20 are used only rarely. What's more, only a handful of instruments are standard across the entire department; the rest are preference items that are unique to each surgeon. All the effort that goes into processing, cleaning and transporting these unused and needlessly variable instruments is wasted. That is an internal failure. We spent all this time processing instruments that will never be used for a patient. No defect makes it to the patient, but those internal failures carry costs in the form of person hours, machine wear, etc.

### And what about "external failures?"

External failures are failures that make it to a patient. The patient gets a wrong medication or a wrong device is used, and costs are incurred. A less obvious example is a wrong diagnosis. A patient receives an incorrect or incomplete diagnosis, and when he or she finally does get the right diagnosis, we may need to spend a great deal of additional resources to take care of that patient.

Of course, this is where it gets tricky in medicine. Third-party payers are now focusing more on reimbursing for quality and not paying for care stemming from errors and other quality problems. But there is obviously still a strong element of fee-for-service in third-party payment. So while external failures are horrible from a patient safety standpoint, providers are often still reimbursed for that work.

### How is "surveillance" a cost of poor quality?

When people think about what poor quality is costing them, they typically do not think about the cost of surveillance. This bucket includes all the costs that go into checking your system for quality.

For example, you might hire someone to check medications before they are given to the patient. Basically, you have built a process to check on another process. This person's salary is a surveillance cost—money you would not have to spend if



your system just worked. It is like a patch on your system. Surveillance costs can be very high, especially if you find you have a lot of patches.

Another example is excess site surveys. Imagine a hospital is accredited for a certain service line, but it is not fully compliant with the accreditation standards or its compliance is just borderline. So the accrediting body steps up your survey schedule and requires a site survey in one year as opposed to three years out. That additional survey costs money. It may not be a lot in the grand scheme of things, but it could be \$30,000 or \$40,000 that you would not have to spend if quality was good in the first place.

### How does "prevention" fit into this analysis?

The cost of prevention is, strictly speaking, a cost of poor quality. However, spending money on a process in order to decrease [an organization's] defect rate can reduce the costs of internal and external failures and of surveillance. That is why prevention is the only category of COPQ that can generate a positive return on investment.

The cost of prevention often comes up when we look at technology. For example, there is the problem of retained instruments in surgery. One solution is to purchase a system that tags all the equipment that goes into the abdomen during surgery. The system allows you to check the patient before closing to make sure nothing was left behind. You can buy this technology for about \$50,000. In itself, it does not make sense financially, but from a quality standpoint spending that money on prevention will save you a great deal. Say a laparotomy pad is left in a patient. It only takes one of those events to show you how much that can cost, not only in terms of a lawsuit but in return trips to the OR.

There are also less obvious ways to look at prevention. Let's return to the example of a threatened program accreditation. One solution could be to hire a medical director who has the skills to raise the bar for that program. You will incur costs—salary, etc.—but you will prevent the costs of additional site surveys, plus all the costs tied to quality failures. Investments like these can actually be recouped many times over within the system. But again, your profit and loss does not usually show it like that.

### Explain how COPQ can help healthcare finance leaders.

A common criticism from hospital finance is, "We did this quality improvement project, but we did not see a bottom-line cost improvement or a bottom-line improvement in net revenue." Now that could mean that the quality improvement project did not actually improve quality, but it could also mean that the up-front cost savings estimate was probably not very good. Again, the tool to start getting to a better savings estimate is the COPQ.

### How do you calculate COPQ?

First, I recommend that every quality improvement project have a project charter. This document defines the scope and stakeholders of a quality initiative, and just as important, it defines the COPQ of the issues you are looking at. The COPQ will provide an expected bottom-line improvement from the quality project, and that provides something that everyone can rally around.

To calculate the COPQ for a quality project, you need a working partnership between clinical leadership and the finance department. I recommend that the two sides sit down together to clarify the cost impacts. Go down the profit-and-loss statement or another cost breakdown and label items as costs of internal failures, external failures, or surveillance. The goal is to look at the cost data and say, for example, "I consider this a cost of surveillance, and I expect that if we fix this quality issue, this cost will go away." That is the key—identifying the costs that will actually be impacted by the quality project. For prevention costs, you could factor in the risk-adjusted probability of a lawsuit.

One layer that needs to be added is the issue of third-party reimbursement. When you calculate the COPQ, you have to keep in mind what we said earlier—that even though external failures will generate costs, the organization may sometimes be reimbursed for those services. The point is that you cannot include things you get paid for in the COPQ, because then you would be overestimating how much you would save by improving quality. You need to be comfortable that the project charter reflects the hard savings you will achieve by improving quality.

### How does COPQ fit into current finance strategy?

The value of COPQ as a financial planning tool is that it makes a clear business case for why a healthcare organization should bother about quality. It shows you that quality is not *just* a thing, it is *the* thing. It is a strategic imperative. And as the reimbursement climate continues to change, understanding how to use the COPQ will only become more important.

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Publication Date: Tuesday, April 05, 2016



## Cost-of-Poor-Quality Analysis for Medication Dosing Process

This theoretical example illustrates potential savings from a project to improve medication and blood product dosing. Improving quality reduces costs related to internal failures (wrong doses or products discovered before administration), external failures (wrong medications, doses, or products actually given to patients), and surveillance (the cost of hiring someone to check for these errors). Prevention costs are driven by poor quality but are recouped many times over through system improvements. Note that this example does not include the cost of potential lawsuits resulting from medical errors.

COPQ item	Category	Annual
Wasted medications and blood products (prepared, not given)	Internal failure	\$65,000
Unreimbursed care related to medication/blood product errors	External failure	\$130,000
Labor costs of nurse to check doses before administration (0.25 FTE)	Surveillance	\$15,000
Patient banding/scanning system to prevent medication errors	Prevention	\$40,000
<b>Total</b>		<b>\$250,000</b>

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Published in HFMA's *Healthcare Cost Containment*, April 2016 (hfma.org/hcc).