The True Financial Impact of Hospital Readmissions

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IS THE FINANCIAL PENALTY FOR READMISSIONS A TRUE INCENTIVE TO IMPROVE CARE? INDEED, RESEARCH SHOWS THAT REDUCING READMISSIONS CAN HAVE AN OUTSIZED EFFECT ON HOSPITAL FINANCES.

When the Centers for Medicare & Medicaid Services (CMS) Hospital Readmissions Reduction Program (HRRP) went into effect in October 2012, we heard a curious refrain as we spoke with hospital financial leaders. Hospital CFOs believed the HRRP penalties and other costs of readmissions would be less than the revenue generated by the readmissions themselves, meaning there was little incentive to reduce them.[a]

We were surprised. CMS estimates that in FY15, 2,638 hospitals will be penalized a total of $428 million.[b] Could CMS have been so far off in creating a disincentive? We decided to analyze the true financial impact of readmissions.

Our goal was to develop a methodology that would make it easy for providers to understand the financial impact of readmissions in the current environment. Given the move toward outcomes-based versus fee-for-service reimbursement, we believe that even hospitals not currently being penalized under the HRRP should have a clear understanding of the economics related to readmissions.

Background

With the Affordable Care Act (ACA) came a focus on quality-driven health care and various related initiatives. One such initiative is the HRRP, under which a penalty is calculated as a percentage reduction to the base-operating DRG payments for all Medicare patients at hospitals that are deemed to have "excess readmissions." The HRRP was effective for discharges beginning Oct. 1, 2012, and applies to hospitals paid under the Medicare inpatient prospective payment system (IPPS).

For purposes of the HRRP, CMS defined a readmission as an admission to a subsection (d) hospital within 30 days of a discharge from the same or another subsection (d) hospital. Subsection (d) hospitals include short-term acute care hospitals that are paid under the IPPS and are located in one of the 50 states or the District of Columbia. Psychiatric, rehabilitation, children's, cancer, and long-term care hospitals are not subsection (d) hospitals.

CMS reviews hospital readmissions performance only for certain measures. The readmission measures for FY13 and FY14 pertained to three conditions: acute myocardial infarction (AMI), heart failure, and pneumonia.

In the FY14 IPPS final rule, CMS expanded the applicable measures for FY15 to include an additional condition and an additional procedure: chronic obstructive pulmonary disease (COPD) and total hip arthroplasty (THA)/total knee arthroplasty (TKA).

In the FY15 IPPS final rule, CMS added another procedure effective in FY17: coronary artery bypass graft (CABG) surgery.

CMS examines performance for each measure based on a three-year review period. For FY15, CMS used discharges occurring on or after July 1, 2010, through June 30, 2013.

For each readmission measure, CMS determines an "excess readmission ratio" for each hospital. This ratio compares a hospital's actual readmission performance for a measure, adjusted for demographic and clinical factors, with average hospital performance across the country. Hospital performance determined to be worse than average on a particular measure results in an excess readmission ratio of greater than 1, and that measure contributes to the hospital's penalty calculation. An excess readmission ratio of less than 1 indicates that the hospital's performance is better than average for that measure.

CMS provides each hospital with a report that presents the information used to calculate the hospital's excess readmission ratios. Hospitals have 30 days to submit corrections. The information is made available through a provider's QualityNet.org account and includes limited patient-level data for all discharges from the hospital for each of the applicable readmissions measures. The file identifies those patients readmitted to either the hospital or another subsection (d) hospital within 30 days of discharge. The file also indicates which readmissions were considered planned and which were considered unplanned.

Calculation of a Hospital's Readmission Penalty

CMS calculates and publishes a "readmissions adjustment factor" for each hospital in the IPPS final rule. This factor determines the amount of penalty imposed on a provider. The factor is presented as an adjustment to hospital base-operating DRG payments, so that a factor of 0.9800 reflects a 2 percent penalty. In FY15 and future years, the penalty is capped at 3 percent, after caps of 1 percent and 2 percent in FY13 and FY14, respectively.

The readmission penalty is applied not only to a hospital's readmissions, but also to all Medicare inpatient admissions reimbursed under Medicare Part A. In FY15, if a hospital is subjected to the maximum penalty of 3 percent, for example, all of its base-operating DRG payments are reduced by 3 percent.

Although CMS discloses the estimated combined financial penalty for all hospitals ($428 million in FY15), the calculation of the penalty on a hospital-specific basis is not provided.

To determine a hospital's readmissions adjustment factor, CMS first calculates a ratio using the following formula:

> 1 – (aggregate payments for excess readmissions/aggregate payments for all discharges)

The readmissions adjustment factor is the higher of the ratio above or the minimum readmissions adjustment factor for the year (0.9700 in FY15 and future years).

To calculate the penalty for a hospital, the formula is:

> (base-operating DRG amount for all admissions X readmissions adjustment factor) - base-operating DRG amount for all admissions

The base-operating DRG amount is the wage-adjusted DRG operating payment plus any applicable new-technology payment. The base-operating DRG payment amount does not include the payment adjustments for indirect medical education (IME), disproportionate share hospitals (DSH), outliers, or low-volume hospitals.

To estimate a hospital's total readmission penalty, the Medicare case mix index can be used in place of the DRG weights for each case. The calculation for the base-operating DRG amount for all admissions thus becomes:

> [[case mix index X (labor share X wage index) + (nonlabor share X cost-of-living adjustment)] + new-technology payments, if applicable] X total Medicare cases

This newly calculated base-operating DRG amount figure is then plugged into the penalty formula to calculate an estimated total readmission penalty. Sources for the factors used in this final penalty calculation are shown in the exhibit below.

Sources for the Factors Used in the Final Penalty Calculation

An Error in the Penalty Calculation? In the above formula for the readmissions adjustment factor, the numerator is "aggregate payments for excess readmissions."

In section 3025(4)(A) of the ACA, *aggregate payments* for excess readmissions is defined as "the product, for each applicable condition, of (i) the base-operating DRG payment amount for such hospital for such applicable period for such condition; (ii) the number of admissions for such condition for such hospital for such applicable period; and (iii) the excess readmissions ratio … minus 1."

This value can be shown as:

> Sum of base-operating DRG payments for the measure X (excess readmission ratio for the measure -1)

This calculation overly penalizes hospitals relative to what they are paid for excess readmissions. An example from the June 2013 Report to the Congress from the Medicare Payment Advisory Commission (MedPAC), shown in the exhibit below, will help to clarify.

Example from the June 2013 Medpac Report to Congress

For the two excess readmissions, the hospital received $20,000 ($10,000 X 2) in base-operating payments.

However, the definition in the ACA of *aggregate payments for excess readmissions* multiplies the excess readmissions ratio by the operating payments for *total admissions* for the measure, not the operating payments related to the *expected readmissions*. In the example above, the result is $100,000 (100 X $10,000 X [1.1000 - 1]), five times the actual payments received for the excess readmissions.

Because that $100,000 flows into the calculation of the readmissions adjustment factor, the hospital is penalized at a much higher rate than it would be if the ratio were multiplied by operating payments related to expected readmissions.

In the FY12 and FY13 IPPS final rules (*Federal Register*, Aug. 18, 2011, and Aug. 31, 2012, respectively), CMS indicated that it received a number of comments on what many consider a flaw in the language describing the calculation of the readmission penalty in the ACA. This "flaw" causes the readmission penalty to increase by a factor that is the inverse of the Medicare-wide readmission rate.

For example, in FY15, when THA/TKA was added, the measure had an overall readmission rate of only about 5 percent, but the calculation of the penalty imposes a reduction in Medicare payment of approximately 20 times the payments hospitals receive for excess readmissions. We believe the addition of this measure, and the outsized impact the penalty formula has on it, is a substantial part of the explanation for the significant increase of the total readmissions penalty amount from FY14 to FY15 ($227 million to $428 million).

In its June 2013 report, MedPAC proposed that CMS eliminate the multiplier effect described above and set the readmissions penalty as the cost related only to the excess readmissions. To date, CMS has not proposed any changes to the readmission penalty calculation, as doing so would require a legislative change.

The Financial Impact of Reducing Readmissions

The calculation described above that appears to establish an outsized penalty for hospitals with excess readmissions also creates a substantial incentive for hospitals to reduce their readmissions.

In the example above, the hospital would need to reduce its pneumonia readmissions by only two to eliminate the entire penalty related to pneumonia, all else being equal.

To return to our original purpose, we are seeking to determine whether the savings resulting from a reduction in the readmissions penalty is greater than the associated reduction in revenue that results from fewer readmissions. We can now calculate a hospital's readmission penalty, and determining the revenue associated with a specific group of admissions is straightforward.

However, it is not enough for a hospital to calculate its annual readmission penalty and then compare it with the revenue that would be lost as a result of reducing its excess readmissions. The reduction in expenses as a result of reducing readmissions should also be considered.

The Cost of Readmissions

When a hospital implements a readmission reduction initiative, the primary focus is to reduce the *excess readmissions*. It would be impossible for a hospital to eliminate all readmissions because certain readmissions within 30 days have no connection to the original admission. Based on the assumption that the excess readmissions are the readmissions that can and should be eliminated, a hospital needs to look at the cost that can be saved by reducing these readmissions.

It is not appropriate to calculate an average cost per case (either overall, or by specific readmission measure) and assume that amount will be saved for every readmission that is eliminated. The vast majority of a hospital's costs are fixed, at least in the short term.[c] A hospital cannot expect that preventing a pneumonia readmission will help reduce the cost of hospital buildings and beds or labor costs (although in rare instances, there could be a slight reduction in labor costs, due to the avoidance of a need to call for additional staffing).

For the most part, all that is saved when that patient doesn't return is the cost of supplies and drugs. Put another way, variable costs are saved, but fixed costs remain.
Literature on the subject of fixed versus variable costs in hospitals is inconsistent in the estimate of the breakdown. Studies have calculated variable cost to be anywhere from 16 to 40 percent of a hospital's total cost.[d] The actual number is hospital-specific, and is driven by factors such as the mix of contracted versus employed caregivers and overall efficiency.

For the purpose of our calculations, we have used the assumption that 20 percent of a hospital's costs are variable.

Cost-per-readmission sources. A number of sources can potentially be used to determine the cost of readmitted patients to a hospital. The best option is a well-maintained cost-accounting system, which allows a hospital to calculate the fixed and variable cost of specific readmissions.

Absent a reliable cost-accounting system, the next best option is the hospital's cost-to-charge ratios. Ideally, they would be applied to the specific readmission claims at the facility, to take into account any differences in costs between index (original) admissions and readmissions.

Our Methodology

Ultimately we sought to answer this question: Is excess readmission revenue, minus the variable cost related to those admissions, greater or less than the readmissions penalty? To determine the answer, we reviewed publicly available nationwide claims, cost-to-charge ratios, and readmissions penalty data.

The sources we used are described below.

Readmission claim revenue. For each measure with an excess readmissions ratio greater than 1, we calculated the readmissions claim revenue as:

> Number of excess readmissions X average payment per claim

The number of excess readmissions for each measure was calculated as:

> (excess readmissions ratio - 1) X number of expected readmissions for the applicable measure

The excess readmissions ratio and the number of expected readmissions for each measure for every U.S. provider subject to the HRRP were obtained from the Medicare Hospital Compare website. At the time of this writing, the most recent available data set was the December 2013 release. These data applied to FY14 and included only the original three readmission conditions: AMI, heart failure, and pneumonia.

The average payment per claim for each readmission measure was calculated for each provider using data in the 2015 Proposed Rule Medicare Provider Analysis and Review (MedPAR) data. This data file includes Medicare inpatient claim data for FY13.

The payment data taken from the FY13 MedPAR file were brought up to FY14 payment levels using CMS's calculated annual changes to operating and capital payments.

Readmission claim variable cost. The average claim cost was calculated by applying the operating and capital cost-to-charge ratios (CCRs) from the FY14 IPPS final rule impact public use file (PUF) to the average charges per readmission measure for each provider in the FY13 MedPAR data and multiplying the result by our assumption of 20 percent for variable cost:

> Average charges per claim for each measure X (operating + capital CCRs) X 20 percent

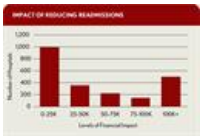
The cost data calculated from the FY13 MedPAR data were inflated to FY14 using the CMS-issued market basket rate for FY14.

Readmission penalty. The readmission penalty for FY14 was calculated based on the data released with the FY14 IPPS final rule and subsequent correction notices. Each provider's base-operating DRG payment rate was calculated, adjusted by its transfer-adjusted case mix index, and then multiplied by the total cases from the FY14 IPPS final rule impact PUF. The total case mix-adjusted base-operating DRG payments were multiplied by (1 2 readmission adjustment factor) to calculate the penalty for FY14 based on the final rule.

Results

We found that, of the 2,225 facilities penalized under the HRRP based on the FY14 IPPS final rule, 502 would have been substantially better off financially (by at least $100,000) by eliminating excess readmissions. Other hospitals would have had a smaller positive financial impact, and no hospital in the country would have had a negative impact.

Impact of Reducing Readmissions



The good news is that only a fairly small improvement in readmissions performance is required to reduce readmissions penalties.

The total combined average number of Medicare readmissions and excess readmissions for each of the three conditions per year, based on the FY14 data, was calculated to be the following:

- AMI—28,440 readmissions and 986 excess readmissions
- Heart failure—87,667 readmissions and 3,109 excess readmissions
- Pneumonia—55,241 readmissions and 1,927 excess readmissions

As these numbers show, an individual hospital's efforts to reduce readmissions, focused on a relatively small number of excess readmissions, can have a substantially positive impact on the amount of the penalty incurred by the hospital.

Of course, these numbers don't take into account how reducing readmissions helps patients. In addition, if a hospital is near full capacity, reduced readmissions may mean more patients can be served. Given the low marginal cost of treating additional patients and the elimination of the HRRP penalty, reducing excess readmissions can provide a substantial opportunity for hospitals to increase their bottom line.

Other Reasons to Focus on Readmissions

A focus on reducing readmissions and understanding their underlying causes is important even for hospitals that are not currently being penalized under the readmissions reduction program.

Bundled payments. In 2013, CMS initiated the Bundled Payments for Care Improvement (BPCI) initiative, which includes four different models. The bundled payment models reimburse participants for an "episode of care," which incorporate the fees for multiple services in one payment.

A summary of the four models included in the BPCI initiative is shown in exhibit 4. Note that three of the four models in the BPCI initiative include readmissions in the bundled payment, which means hospitals are not paid extra for readmissions. As of now, participation is voluntary and in most cases involves only selected DRGs or clinical conditions, but CMS clearly is moving in the direction of bundling payments for multiple services as a broad payment strategy for the future. Other payers have piloted similar programs.

The Four Models of Care Under the Bundled Payments for Care Improvement Initiative

A CMS-driven increase in the industry's focus on reducing readmissions. Through its various payment and performance-tracking methodologies and its process for releasing new measures, CMS is promoting a broad, ongoing effort among providers to reduce readmissions. CMS measures excess readmissions against national hospital performance. According to CMS, 30-day readmissions were down approximately 8 percent across the board in 2013.[e] Hospitals that are not improving at least as much as the average hospital may be subject to higher penalty amounts in the future.

When CMS announces a new readmissions measure, we are already well into the initial three-year review period used to measure performance. For example, CABG, the new measure that will become effective in FY17, was finalized in August 2014. The measure review period for FY17 will be from 2012 to 2015. Thus, a hospital that focuses on measures only after they are announced by CMS will constantly be playing catch-up.

Other payer actions. Finally, we've seen efforts across the country by managed care companies to eliminate reimbursement for medically related 30-day readmissions based on a proprietary medical review. It's clear to us that there are many compelling reasons to reduce readmissions.

A Means to Improve Financial Performance

Our analysis points to an important conclusion: Because CMS's HRRP penalizes hospitals to a greater degree than hospitals can expect to be paid for excess readmissions, hospitals can improve financial performance while reducing readmissions.

Hospital executives should consider the impact of a continuing move to bundled payment methodologies by CMS and other payers and of the potential new ways these payers might further penalize hospitals for excess readmissions. Between these trends and the magnitude of the HRRP penalties, even facilities not currently being penalized should be mindful of their readmission statistics.

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footnotes

a. Weeks, W.B., "Marginal Complications and Healthcare Costs," *hfm*, July 2013.

b. *Federal Register*, Oct. 3, 2014.

c. Roberts, R.R., et. al, "Distribution of Variable vs Fixed Costs of Hospital Care," *JAMA*, Feb. 17, 1999.

d. CMS, "Fact Sheets: Bundled Payments for Care Improvement Initiative."

e. U.S. Department of Health and Human Services, "New HHS Data Shows Major Strides Made in Patient Safety, Leading to Improved Care and Savings," May 7, 2014.

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