

Introduction to the Hospital-Acquired Condition Reduction Program for Pharmacy

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ABSTRACT

Objectives: This manuscript addresses pharmacist understanding of and/or involvement with the Hospital-Acquired Condition Reduction Program (HACRP) at their institutions. This program has significant financial and clinical ramifications that do not seem to be well understood. Given the magnitude of the potential penalty assessed, pharmacy managers should be motivated to understand the program components and how their department can get involved. The purpose of this paper is to provide a high-level view of the structure of the program, highlighting how pharmacy can have the greatest impact.

Study Design: Total net patient revenue and CMS revenue for hospitals penalized in fiscal year 2016 was sourced from the American Hospital Directory and aggregated for purposes of estimating the financial impact. The author reviewed all resources and linked references found on the CMS website for HACRP,¹ and extracted the key scoring elements and associated management tools.

Methods: In order to develop a tool for estimating the financial impact of a 1% CMS penalty, data were extracted from the American Hospital Directory and pooled by bed size to yield national averages. The HACRP scoring methodology is summarized assuming all data elements are available in order to highlight the impact of each measure.

Results: The reader should be able to estimate the magnitude of the HACRP penalty risk and identify program measures that have the greatest influence on the total score.

Conclusions: For the majority of hospitals, the 1% of CMS revenue at risk via the HACRP is significant and worthy of the effort to obtain a high level understanding of the program. Given that healthcare-associated infections are now nearly 90% of the total HACRP score, pharmacy has an opportunity to assume a leading role in monitoring and reporting on the key metrics involved.

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There is no denying that CMS is leading the charge toward value-based payments. It is difficult to keep pace with the sheer number of programs for hospitals that have corresponding incentives and/or penalties. Additionally, some of the programs, such as Hospital Consumer Assessment of Healthcare Providers and Systems and Hospital Readmission Reduction, are challenging because there are so many confounding variables. Conversely, the Hospital-Acquired Condition Reduction Program (HACRP)¹ is well-defined and all measurements occur prior to discharge. Still, the program is rather nuanced and has evolved over time. If you are a subsection (d) hospital^a, as defined under the Social Security Act, it is worthwhile to have a high-level understanding of the program.

Hospital-Acquired Condition Reduction Program Penalty Risk

It is not necessarily easy to access the financial information required to determine the magnitude of the 1% penalty risk. If you are fortunate, then you are privy to the exact amount of CMS revenue generated at your hospital and can easily determine the 1% risk. Or if you know your hospital's net patient revenue and your CMS payer mix, you can calculate the number $([\text{net patient revenue} \times \% \text{ CMS revenue}] \times 1\%)$. If that information is not readily available to you, or you want to know how you compare to other similarly-sized hospitals, **Figure 1** contains information based upon averages gleaned from American hospital directory data. The HACRP penalty risk was calculated based upon the net patient revenue and the Medicare/Medicaid revenue reported. Although the penalty tends to scale linearly with the number of beds, this penalty has significant bottom line ramifications regardless of the size of hospital.

HACRP Evolution

The HACRP was first launched in fiscal year (FY) 2015 (October 1, 2014) and has evolved a bit each year. Participating hospitals receive an overall score between 1 – 10, with 1

PRACTICAL IMPLICATIONS

- To introduce a framework that reasonably estimates the magnitude of the financial consequences of scoring above the 75% Hospital-Acquired Condition Reduction Program (HACRP) threshold.
- To outline a brief history of HACRP and its evolution in order to provide context for pharmacy's involvement.
- To provide references to current HACRP resources that can provide further guidance.

indicating top tier performance and 10 indicating bottom tier performance. Hospitals in the bottom performance quartile are assessed the 1% penalty. The performance threshold for penalty decreased from 7.0 in FY2015 to 6.75 in FY2016 and is currently 6.57. If the hospital HAC score is greater than, or equal to, the threshold, then the hospital is subject to the 1% penalty. The fact sheets for each year are available on the QualityNet: HAC Reduction Program² website in the Resources section.

The program has always comprised 2 broad categories, or “domains.” The first domain reflects patient safety measures. The second domain addresses healthcare-associated infections. Although the data sources for these domains are different, and reflect different performance periods, they both use 2 years’ worth of data for their respective calculations.

Domain 1

Domain 1 includes 8 patient safety indicators (PSI). These 8 indicators are the basis of the PSI 90 composite measure collected and reported by the Agency for Healthcare Research and Quality (AHRQ).⁴ The AHRQ PSI 90 composite is a weighted average of the smoothed (risk- and reliability-adjusted) values of the 8 PSIs. The 8 PSI measures are:

- PSI 03 – Pressure Ulcer Rate
- PSI 06 – Iatrogenic Pneumothorax Rate
- PSI 07 – Central Venous Catheter-Related Bloodstream Infection Rate
- PSI 08 – Postoperative Hip Fracture Rate
- PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate
- PSI 13 – Postoperative Sepsis Rate
- PSI 14 – Postoperative Wound Dehiscence Rate
- PSI 15 – Accidental Puncture or Laceration Rate

Although these individual quality measures are all important, in the context of reducing HACRP penalty risk, they have very little influence. If you want to understand

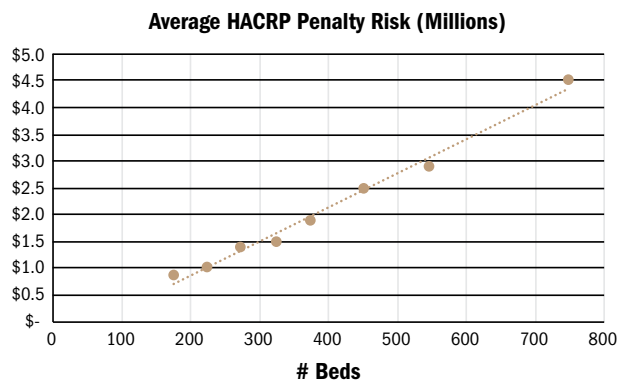
how each measure is normalized and weighted, the Hospital Specific Reports (HSR) section of the QualityNet: HACRP website contains several resources. The most detailed description of the individual influence of each of these patient indicators on the total Domain 1 score can be found in either of the “Mock HSR” documents available for download. Once the composite PSI 90 score is calculated, a decile ranking between 1 and 10 is assigned. In essence, the decile ranking indicates what percent of hospitals are performing better than your facility. For example, if your hospital received a 4, then 40% of hospitals perform better and 60% perform worse. That single number is the value reported as the HACRP score for Domain 1.

The Domain 1 patient safety indicators have not changed since the inception of the program; however, the weight of Domain 1 in the overall calculation of the HACRP score has decreased year-over-year. In FY2015, Domain 1 was 35% of the total score. In FY2016, it was lowered to 25% of the total. For FY2017, these patient safety measures represent only 15% of the calculation (see **Figure 2**). Consequently, it was possible that a low score on Domain 1 in the first year offset a high score on Domain 2 and kept the hospital off the penalty list. That is much less likely with the current scoring methodology.

Domain 2

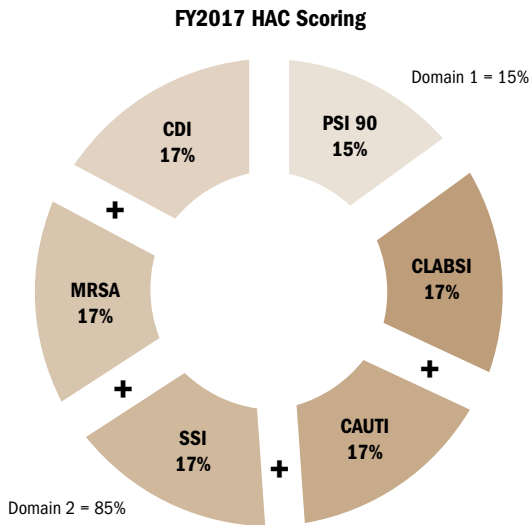
Because Domain 2 experienced changes in core measurements, as well as changes in overall HACRP score weighting over the 3 years of the program, understanding it is a bit more challenging. Domain 2 calculations are based on data reported to the National Healthcare Safety Network of the CDC.

Figure 1. Average HACRP Penalty Risk vs Number of Beds.



Data summarized from American Hospital Directory data. Each point represents the average for at least 50 hospitals in the following bins: 151-200, 201-250, 251-300, 301-350, 351-400, 401-500, 501-600, and 601-1000.



Figure 2. Weighting of Measures Included in Total HACRP Score.

In FY2015, Domain 2 included only 2 measures: central line-associated bloodstream infection (CLABSI) and catheter-associated urinary tract infection (CAUTI). Furthermore, these data are based on reports from select intensive care units (ICUs) only. For FY2016, surgical site infection (SSI) was added to the calculation. The SSI measure is based upon outcomes associated with colon or abdominal hysterectomy procedures only. Finally, methicillin-resistant *staphylococcus aureus* (MRSA) and *clostridium difficile* infection (CDI) were added in FY2017. Both of these measures include data from all hospital inpatient units. Just like with Domain 1, the actual incidence of each of the measures is normalized. The CDC calculates standardized infection ratios (SIRs) for each Domain 2 measure.

“SIRs are ratios of observed-to-predicted numbers of healthcare-associated infections (HAIs). The CLABSI and CAUTI measures are risk-adjusted at the hospital level and the patient care unit level, the SSI measures are risk-adjusted at the procedure level, and the MRSA bacteremia and CDI measures are risk-adjusted at the hospital level.”⁴

After the scores are normalized, a decile ranking is applied to each (very similar to Domain 1). It is the decile score that is used in the overall Domain 2 score calculation. Each core measure carries equal weight in the Domain 2 calculation; however, if 1 or more of the core measures is not reported, the contribution of each of the remaining measures is adjusted upward proportionally. Assuming all data are complete, each of the 5 HAI measures contributes 20% to the Domain 2 calculation, which equates to 17% of the overall calculation as depicted in Figure 2. If 1 measure is missing, the remaining 4 measures each contribute 25%

to the Domain 2 calculation and so on. The adjustments made to the scoring algorithm for circumstances where data reports are incomplete, or waivers were granted, are covered in detail in the FAQ⁵ for each year.

HACRP Key Metrics Today

FY2017 hospital-specific reports (HSRs) were released to hospitals in July 2016, with review and comment open through the end of September and penalties enforced as of October 1, 2016. When the annual HSRs were released, the new penalty threshold was also announced. For FY2017, the penalty cutoff is 6.57. Because performance is graded on a curve, and the threshold continues to decrease year after year, even hospitals that were “safe” in prior years have to ask whether business as usual is sufficient. The public reporting of FY2017 is scheduled for December 2016 and will be available via the Medicare.gov/Hospital Compare⁶ website. It will then be possible to see how hospitals compare to each other. Until then, the National and State Healthcare-Associated Infections Progress Report⁷ may shed some light on the “business as usual” question. The data measures are not completely identical to the HACRP, but some of the trends reported are relevant and noteworthy.

“The report describes significant reductions reported at the national level in 2014 for nearly all infection types when compared to the baseline data. CLABSI and abdominal hysterectomy SSI show the greatest reduction. Some progress is shown in reducing both hospital-onset MRSA bacteremia and hospital-onset CDIs. The previous 2 reports showed an increase in CAUTI from the prior year, signaling a strong need for additional prevention efforts. CAUTI did decrease from 2013 to 2014, but continued prevention efforts are essential to improve patient safety.”

Part of the challenge in assessing progress toward goals is the time elapsed between data collection and publication of reports. The national and state HAI progress report just referenced was published in 2016, using 2014 data. The penalties assessed for HACRP FY2017 are based on data that was reported 6 to 24 months prior. Of course, it would be helpful to know how the score would compare if calculated today. Tools are provided to assist with replicating the HACRP assessment in the FY 2017 HACRP HSR User Guide found on the QualityNet website⁵; however, the entire process is complex and still relies on normalized values from several years ago. Alternatively, pharmacy has an opportunity to inform executive and departmental leadership of relevant trends in a more real-time manner.

Since the HAI measure plays such a significant role in this program, and pharmacy has a front row seat in the pharmaceutical war against HAIs through antibiotic

stewardship initiatives, it stands to reason that pharmacy should be involved. Consider that Domain 2 is entirely based upon HAI data and 2 of the 8 indicators included in the Domain 1 score are also infections (PSI 07 – Central Venous Catheter-Related Bloodstream Infection Rate, PSI 13 – Postoperative Sepsis Rate); therefore, HAIs actually represent 88.75% of the total HAC score for FY2017.

Additionally, pharmacy is in the unique position of being involved with treating HAIs throughout the facility. This affords them the opportunity to address one of the other challenges associated with managing the HACRP: the compartmentalization of data. The various ICUs may not have visibility to each other's performance regarding CLABSI and CAUTI, but pharmacy systems can track that information. SSIs can also be linked back to the specific procedures reported for purposes of this program (colon procedures and abdominal hysterectomy).

Pharmacy is also going to be involved immediately in all cases of MRSA and CDI. Ideally, pharmacy would be part of a comprehensive approach to overall antimicrobial stewardship, which involves medical staff, infection control, laboratories, and information systems. The strongest evidence for improving antimicrobial use, reducing antimicrobial resistance, and improving infection-related outcome measures is in implementing a hospital-wide, medical staff-approved antimicrobial stewardship program (AMSP). Robust AMSPs present hospitals with the

unique opportunity to improve the quality of care, as well as the associated cost of care.⁸

Given the holistic perspective of pharmacy, the insight and support this department has to offer can have considerable impact on HACRP results. Hospital leadership should welcome such timely and relevant internal measures in helping them drive continuous improvement in the HACRP.

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*Certain hospitals are exempt from the HACRP: critical access hospitals; rehabilitation hospitals and units; long-term care hospitals; psychiatric hospitals and units; children's hospitals; Prospective Payment System (PPS)-exempt cancer hospitals; short-term acute care hospitals located in Guam, the US Virgin Islands, the Northern Mariana Islands, and American Samoa; and religious nonmedical healthcare institutions.²

