

# THE SOURCE

ON HEALTHCARE PRICE & COMPETITION

Report on Useful Rate Setting Methods and Techniques from the  
Maryland Hospital All-Payer Rate Setting System

## Part 3A: Complementary Rate Setting Programs: Quality of Care Pay-for-Performance Incentive Program

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## Part 3A - Supplementary Programs for State Rate Setting

### A. Introduction and Overview of U.S. Programs to Improve Hospital Quality

#### 1. Introduction

Part 3 of this report discusses two important and productive add-on programs that a state can incorporate into its hospital rate setting system. These programs are: 1) a state-specific Quality of Care incentive program designed to improve hospital performance on several key quality of care outcome measurements. This program closely parallels the quality programs implemented by the Centers for Medicare and Medicaid Services (CMS) for its hospital payment system, but is tailored to an all-payer system, based on Maryland's quality program, first implemented in 2009, using base revenues from Medicare, Medicaid and Commercial payers to leverage the revenue incentives applied; and 2) a state-specific model to finance reasonable levels of hospital Uncompensated Care (UC) which is also based on a similar program implemented and used successfully in Maryland since the mid-1970s. Both programs can be very productive add-ons to a core rate setting system.

We would however recommend that states implementing rate setting systems along the lines of what we recommend (i.e., transition from a set of RBP Caps to the establishment, oversight and regulation of a hospital base rates and eventually to an all-payer rate system with the approval of a Medicare Waiver). Both the recommended Quality program and the UC financing program will be more effective if applied in the context of an all-payer system.

Due to the current federal administrations lack of support for the granting of Medicare Waivers for states, it is recommended that states postpone implementation of these two programs until they can apply for and receive a Medicare Waiver. This would allow a state to set rates and apply useful additional adjustments, such as a Quality Pay for Performance (P4P) program and an UC financing program applied to all payers. The use of a broad all-payer revenue base for these programs will amplify the financial incentives involved and reduce the level of surcharges required to generate the funding needed.

States that attempt to implement such programs when regulating just the rates paid by private insurers, will run into difficulties operating these two programs, because attempting to spread the rate add-ons across a smaller rate base that did not include Medicare and Medicaid, will

reduce the magnitude of the financial incentives applied in a Quality P4P program or result in very high surcharges in the case of UC financing applied to private payers only. The application of very high surcharges applied to private sector payers in states that lost their Medicare Waivers caused self-funded plans to challenge state hospital rate setting authority claiming that it was pre-empted by the federal ERISA statute, which prohibits state insurance regulation of these self-funded plans.

The sections that follow provide a discussion of Quality Improvement programs in the U.S., including an overview of both Maryland's and CMS's Quality Incentive programs. This section also provides a detailed description of past efforts at both the state and national levels to assist hospitals with the funding of "reasonable" amounts of hospital UC.<sup>i</sup> Again, while these are both important and potentially very effective program that states can implement, based on both federal and Maryland experience, both programs will be most effective if implemented in an all-payer rate setting system made possible by the approval of a federal Medicare Waiver.

## 2. Background on Quality Improvement Programs in the U.S.

Rapid growth in U.S. hospital prices and spending in the late 1960s and early 1970s led to the development of government administered rate models at both the state and federal levels. These mandatory (i.e., enforced by law and regulation) hospital rate regulation programs have been effective in slowing the growth in state and federal hospital spending for Medicare, Medicaid and commercial payers and their beneficiaries.<sup>1,2</sup> Government regulated prospective payment systems also created financial incentives for hospitals to control their costs and improve their operating efficiency.<sup>ii</sup> Hospitals that managed their cost growth under the fixed prospective payment, could generate financial surpluses which allowed them to maintain or improve their profitability during a year.

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i Throughout our discussion of a UC funding system, we advocate that states attempt to fund what they believe are "reasonable" amounts of hospital UC as opposed to attempting to fund all hospital bad debt and charity care. The New Jersey rate setting system essentially funded all hospital bad debt and charity care. This led to a gradual spiraling up of the magnitudes of UC in the New Jersey system because hospitals stopped devoting resources to their bill credit and collection activities because they knew they could receive funding directly from one of the several UC pools established. The elimination of hospital bill collection activities inevitably increased the amount of UC in the system over time. We advocate placing limits on the amount of bad debt and charity care financed in a UC funding system to avoid this phenomenon.

ii Unlike the earlier "cost-based" payment methods used by Medicare, Medicaid and most commercial payers in the 1960s and 1970s, which paid hospitals retroactively for most all cost increases they incurred in a prior year, prospective payment paid providers a fixed predetermined price per service or overall budget at the beginning of a year and that price or budget stays in effect the entire year. Hospitals being paid prospectively can generate profits under this fixed payment by managing and reducing their costs of the service under the fixed payment.

However, the price and affordability of a good or product is only one dimension of what is important to consumers in healthcare markets. Patients and policymakers are equally concerned about the quality and the overall “value” of the care they receive (i.e., a term which implies the maximization of positive health outcomes and patient satisfaction per dollar spent on care). While mandatory government administered rate setting models constrained the growth of hospital prices and spending, these models have been less successful in establishing financial incentives for hospitals to improve the quality of care they provide.

Indeed, policymakers in the 1970s and 1980s expressed concern that the early prospective rate setting models, which placed financial pressure on hospital revenues, could have a negative effect on their quality of care. Morrissey hypothesized that the hospital “product” was viewed as a bundle of services (particularly under diagnosis related group (DRG)-based payment per case) and rate setting established a limit on the value of that bundle. This limit or “ceiling” on payment for this bundle of services could create an incentive to remove components from the bundle, or in other words, erode quality.<sup>3</sup>

Studies on the impact of hospital rate setting on patient quality of care in the 1980s and 1990s were mixed. The first studies on prospective and mandatory rate regulated systems found no statistically significant effect on quality of care.<sup>4</sup> However, some studies found a relationship between rate setting and higher mortality rates but a mixed association between the stringency of a rate setting program and patient mortality.<sup>5</sup> In 1993, one study on prospective rate setting and quality indicated that while rate setting may create small and inconsistent increases in patient mortality, these programs did not significantly change mortality rates for elective surgeries.<sup>6</sup> Evaluations of the Medicare Prospective Payment System (PPS), the federal government’s regulated payment model for hospitals, have generally found little or no deterioration in the quality of care rendered to Medicare beneficiaries as measured by either increases in readmission or mortality rates.<sup>7</sup>

While financial pressure applied to hospitals in the form of price and revenue constraints under prospective rate setting could theoretically cause hospitals to withhold medical resources or discharge patients before they have recovered, there is little evidence that either state-based rate setting or the Medicare PPS undermined hospital quality in any significant way. However, this mixed result may have been in part due to the absence of reported quality metrics and a reliable template for identifying high versus low quality of care.

### 3. Early Focus on the Structure, Process and Outcomes of Care Delivery to Improve Quality

Early mandatory state rate setting systems in Maryland, New York, New Jersey, and Massachusetts were interested in promoting improvements in hospital quality. However, these early systems were hampered by difficulties in identifying which factors contributed to the provision of appropriate or high-value care and how to best measure hospital quality.

To address such uncertainties, Avedis Donabedian, a physician and a leader in the study of outcomes research published articles in the 1960s and 1970s identifying three approaches to assessing care quality. These included an evaluation of three factors: 1) the structure of care delivery; 2) the processes employed in patient care; and 3) the measured patient outcomes and information on patients' experience during their treatments. In this construct, structure was defined as the context, resources and organizational components of a health care system. This included the physical facilities and equipment, the human resources and the training/ experience of those delivering care and the organizational structure of a health care provider. Process in this construct was defined as the set of activities, actions and interactions that take place between providers and patients during an episode of care. That is, what is actually done to the patient, including diagnostic, therapeutic and educational interventions. Finally, health outcomes were defined as the changes in a patient's health status representing the final measurable effect of care. These included functional patient improvements, whether the patient was readmitted, the presences of negative clinical complications, patient satisfaction and even patient mortality, resulting from the structural and process elements of care.<sup>8,9</sup> This analytic template provided a basis for later methods used to evaluate and improve healthcare quality.

### 4. Overall Importance of Health Outcomes

While improvements in both the structure of health care delivery and beneficial processes of care (such as the use of surgical and other checklists similar to those used in aviation) have been helpful in promoting improved quality, the federal Medicare payment program and state-based quality improvement efforts have focused primarily on incentivizing providers to improve health outcomes, such as risk-adjusted readmissions, complications, mortality rates and patient-reported experience of care while hospitalized. This is because there appeared to be less of direct link between structural and process-based elements and improved care outcomes, which are the most meaningful measure of quality to hospital patients.

The focus on outcome measurement accelerated following the Institute of Medicine (IOM) report defining healthcare quality as the "degree to which health services for individuals and

populations increased the likelihood of desired health outcomes and are consistent with current professional knowledge.”<sup>10</sup> The goal of this policy shift was to move from just tracking “what was done” to “evaluating and rewarding what was achieved,” ensuring that care is not just provided but care that was found to be effective and meaningful to the patient.<sup>11</sup> Structure and process measures focus on what was done while outcome measures focus on the result of what was done.

## **5. Fee-for-Service Payment and a Shift to Payment Structures that Promote the Value of Care**

The type or “basis” of hospital payment (i.e., itemized fee-for-service, bundled or capitated payment) was also found to influence hospitals’ care of patients creating incentives for hospitals to either improve or worsen care quality. The reimbursement structure that was viewed as having a negative impact on the overall cost and quality of care was the itemized Fee-for-Service (FFS) payment system. FFS payment has been the predominant payment system used by both governmental and private insurers paying them for each and every service they provide. As we discussed in previous sections, hospitals’ cost structure and their high proportion of fixed costs result in financial incentives that payment strongly encourage the over-provision of hospital services under FFS payment. This is because hospitals were able to generate additional profit margins when they increase the amount of services provided<sup>iii</sup> – whether these services are needed or not.<sup>12</sup> This over-production of services both increased hospital costs and eroded care quality because they exposed patients to potential harm (e.g., unnecessary CT imaging carries radiation risks for patients, unnecessary admissions exposes more patients to infection and other hospital treatment complications).

In the U.S. in the early 2000s, academics and policymakers became increasingly concerned that the U.S. was spending an unsustainable portion of its Gross Domestic Product (GDP) on healthcare, while at the same time health outcomes in the U.S. lagged behind other developed nations.<sup>13</sup> In their 2006 book “Redefining Health Care,” Porter and Teisberg recommended that

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iii As explained in the article cited above, hospital costs are either fixed (buildings, heavy and sophisticated equipment, and fixed staffing for crucial areas like the Emergency Room or an Intensive Care Unit) and variable (variable personnel, supplies, drugs, and other costs that vary with volumes). Hospitals have very high proportions of fixed costs ranging from 50 to 80 percent). The more fixed costs a hospital has, the more lucrative every new admission or service is and the more the hospital loses when patient volumes decline. As an example, if a hospital’s costs are 50% fixed and 50% variable, each new service provided above baseline volumes costs the hospital 50 cents on dollar to produce. But under FFS payment, the hospital is reimbursed 100 cents on the dollar. This results in a large excess of marginal revenue over marginal cost when volumes increase and provides extremely strong financial incentives for hospitals to increase their volumes (i.e., more lab tests, scans, sleep studies, surgeries, admissions and the like). Conversely, when volumes decline, due to better managed care or a declining service area population, the hospital still must fund its fixed costs but will only eliminate 50 cents on the dollar in variable costs, thus generating a loss.

healthcare delivery should be reorganized to provide better overall value to patients, emphasizing the need to design the delivery and payment system to induce providers to improve the overall “value” of care delivered by structuring payment to incentivize both low-cost and high-quality care.<sup>14</sup> This emphasis on improving the overall value of care was also motivated by the observed weaknesses of the predominant FFS payment system utilized by government and private insurers since the 1980s.

Porter, Tiesberg and others argued for the development of payment approaches that would both move our healthcare payment and delivery system away from FFS to the development of Value-Based Payment (VBP) payment, with the primary goal of rewarding the delivery of low cost, high quality and appropriate healthcare services.

Although Value-Based care is touted as a new way to reduce the cost and increase the quality of healthcare services, the failure of the VBP models to mandate participation in such programs, to enforce compliance and to place hospitals at substantial financial risk for failure to improve their cost and quality of care, has greatly reduced the success of early VBP programs.<sup>15,16, 17</sup>

Beyond what seems like largely an aspirational emphasis on improving the overall value of care delivered, CMS has implemented several more tangible quality reporting and “Pay-for-Performance” financial incentive programs in an effort to drive better quality of care in the context of what remains largely a FFS-based payment system.

## **6. Early State Rate Setting and Medicare Pay-for-Performance Quality Incentive Programs**

Leading up to and following the enactment of the Patient Protection and Affordable Care Act (PPACA) in 2010, both the Medicare hospital payment program and Maryland’s all-payer mandatory hospital rate setting system began to link hospital payment incentives to hospitals’ use of structural care elements and processes of care that were thought to be consistent with improved care quality. These programs were also accompanied by payment incentives that encouraged hospitals to report on a set of prescribed structural care elements, care processes, patient outcomes and patient experience of care.

## **7. Hospital Inpatient and Outpatient Quality Reporting Programs**

An early effort to improve hospital care quality was Medicare’s Hospital Inpatient Quality Reporting Program (IQR) which was established via federal legislation in 2003.<sup>18</sup> Although not linked to payment, this program, along with the mandatory Hospital Outpatient Quality Report-



ing (OQR) Program<sup>19</sup> encouraged most acute care hospitals to submit data on quality structural elements, processes of care and some outcome measures to Medicare for public reporting purposes. Hospitals that failed to provide the requested data were subject to up to a 2.0% reduction in their annual inpatient and outpatient Medicare rate updates.

The quality-related data collected through these two programs are made publicly available through the federal government's Medicare "Care Compare," a CMS-developed website that allows patients to compare the quality of care, patient experiences and other performance metrics for over 4,000 acute care hospitals, including Veterans and military facilities. The website summarizes over 50 quality measures, including: 1) a survey of patient's experiences; 2) timely and effective care; 3) complications and deaths (e.g., health care– associated infections and mortality); 4) hospital readmissions; 5) use of medical imaging; and 6) payment and value of care (e.g., Medicare spending per beneficiary).<sup>20</sup> The website presents a summary "Star" rating system (from one to five stars, with five stars being the highest rating) combining measures from all of CMS's quality improvement programs.

While this program helped improve the transparency of hospital care quality performance there is mixed evidence that public reporting of quality data and performance has had substantive impact on improving hospital care delivery. A 2012 study showed that publishing data on hospital quality led to reductions beyond existing secular trends for hospital mortality.<sup>21</sup> A review of the literature on hospital quality reporting and hospital mortality in 2016 suggested there may have been a positive impact of public reporting and improved hospital mortality; however, the results were mixed and there was concern over the efficacy of the surveyed studies.<sup>22</sup> This conclusion was reinforced by a 2021 review of 27 studies that showed only "moderate evidence" to support the role of public reporting in incentivizing quality improvement activities by hospitals, particularly a positive relationship between public reporting and patient experience of care and the selection of hospitals by patients, payers and other providers. And a 2024 report by CMS showed that while public reporting initiatives such as Hospital Compare increased standardization and improved process-of-care measures, they showed limited impact on reducing mortality rates.<sup>23</sup>

## **8. Overall Assessment of State and Federal Hospital Quality Pay-for-Performance Programs**

Around the time the PPACA was passed by Congress, both the Maryland all-payer hospital rate setting system and Medicare implemented a system of mandatory financial incentives applied to hospital rates, to motivate and mandate hospitals focusing efforts on improving care quality. These efforts started with linking payment incentives to the presence of both structural and



process elements that were believed to promote better quality, but quickly evolved into linking hospital outcomes, such as risk-adjusted readmission, complication and mortality rates directly to hospital payment levels.

Although the Medicare quality programs applied primarily negative incentives (i.e., payment reductions for poorer performance on these measures), in Maryland hospitals were subject to both positive (payment add-ons) and negative (payment reductions) incentives to hold them accountable for reducing their rate of hospital-acquired complications. Mandating participation and compliance in programs that focused on outcome measures, initially appeared to motivate Maryland hospitals to put in place clinical methods and protocols to reduce the incidence of hospital-acquired complications, (including falls and hospital-acquired infections) and showed some promise for the idea that hospital outcomes could be improved by linking payment rewards and penalties to hospital performance.<sup>24</sup>

Although these programs have demonstrated some limited ability to improve beneficial processes and structural elements of care delivery associated with improved hospital quality in both the Medicare and Maryland Quality P4P incentive programs, as will be discussed there is limited evidence that these programs have had a large measurable positive impact on hospital quality of care since implementation based on rigorous evaluation studies performed primarily on the national Medicare P4P programs. There is also concern that these programs have become very complex with the incentives difficult to discern and created significant administrative burdens on hospitals. After an in-depth review of the both the federal and Maryland programs, we are less sanguine about the potential that individual states can construct quality of care incentive programs that effectively “move the needle” forward on hospital care quality. There is also evidence from the Medicare Quality P4P programs that these efforts may have resulted impaired the ability of safety-net hospitals and those residing in low-income and underserved areas to improve their quality because these programs have resulted in financial penalties which take resources away from these hospitals and undermines their ability to improve their care processes.

Overall, this continues to be a complex area of activity and study, and it is not at all clear if the past and current efforts to reward and penalize hospitals for their performance on a set of limited quality metrics have truly resulted in measurable quality improvements. There are also concerns that these programs may are not sufficiently adjusted to account for more patient populations that are more difficult to treat because of socio-economic barriers to care and other factors. Thus, some programs may have unfairly penalized hospitals operating in low-income and underserved areas of the country. The purpose of the following discussion, however, is to describe the mechanics and results of these programs and let states decide if it is worth the

administrative effort and burdens placed on hospitals whether to pursue specific state-based hospital quality of care improvement programs using rate incentives to reward improved and penalize poor hospital outcomes. At this stage, there is only mixed evidence that these programs actually result in a board-based improvement of hospital quality.

## **B. Quality-Based Reimbursement Programs Designed by Medicare**

### **1. General Mechanics of Hospital Quality Incentive Programs**

Both Medicare's and the State of Maryland's hospital quality incentive improvement programs modified the traditional and largely FFS hospital payment models by adjusting payments up and down incrementally based on hospital annual performance on various quality, safety and efficiency metrics. Both approaches make use of a percentage withhold from hospital payments, with the opportunity for hospitals to earn this "withhold" back through improved performance on monitored quality metrics. The Maryland hospital rate setting system has moved to the regulation of largely fixed hospital budgets starting in 2014.

The Medicare program is structured to be "budget neutral," meaning that the withhold creates a pool of funds that are redistributed to fund bonuses for the best performing hospitals and penalties for poor performance. The Maryland program, in contrast, is not structured to be budget neutral overall, and hospitals can earn rewards net of any payment reductions. Both programs employ a risk-adjustment mechanism that calculates an expected result based on each hospital's mix of patients stratified by diagnosis, age, sex and other patient categories. Neither model adjusts results for social determinants of care, such as patients residing in low income or under-served communities, the number of low income/dual eligible patients, etc. The Medicare Quality P4P programs also apply to just Medicare patients and payments, are structured to be budget neutral for participating hospitals and uses a "tournament" scoring model which ranks hospitals relative to each other.

The Maryland Quality P4P applies to all payers and all patients (governmentally insured, privately insured and self-responsible patients), uses a pre-set scale with absolute quality standards which are known in advance with all hospitals being able to earn net bonuses if they meet performance standards. The use of pre-set scales (scales established in advance of a given measurement period to inform hospitals of their intended quality performance measures and performance targets) in the Maryland QBR means that hospital performance is judged against known performance standards and creates greater predictability for regulators and hospitals.<sup>25, 26, 27</sup>

The following section provides an overview of the Medicare quality reimbursement programs. These federal hospital quality programs include the following: 1) the Premier Hospital Quality Incentive Demonstration (HQID) 2003-2009; 2) the Medicare Hospital Value-Based Purchasing Program (HVBP) 2013-present; 3) the Hospital Readmission Reduction Program (HRRP) 2013-present; and 4) the Hospital Acquired Conditions Reduction Program (HACRP) 2014-present. These programs and their reported results are briefly summarized below.

## **2. Premier Hospital Quality Incentive Demonstration (HQID) 2003-2009**

CMS launched its first major hospital pay-for-performance demonstration, a six-year pilot program involving hundreds of hospitals. Premier Hospital Quality Incentive Demonstration (HQID) focused on three medical conditions (acute myocardial infarction, congestive heart failure, and pneumonia) and two surgical procedures (coronary artery bypass grafting and total hip/knee replacement).

The purpose of the demonstration was to improve the quality of inpatient care for Medicare beneficiaries by giving financial incentives to almost 300 hospitals for high quality. Under this demonstration, CMS collected data on 34 quality measures relating to the five clinical conditions discussed above. Hospital specific performance was publicly reported on CMS's web site. Hospitals scoring in the top 10% for a given set of quality measures received a 2% bonus payment on top of the standard DRG payment for the relevant discharges. Those scoring in the next highest 10% received a 1% bonus. In the third year of the demonstration, those hospitals that did not meet a predetermined threshold score on quality measures were subject to reductions in payment. Starting in 2006, the program also introduced penalties for poor performers. This demonstration provided evidence and operational experience that informed the design of the permanent Medicare HVBP program.<sup>28</sup>

In 2012 Jha and his colleagues showed that although the HQID was associated with slightly greater adherence to process measures, other studies of the Premier HQID showed that the early gains in process quality had mostly dissipated after 5 years under the program. The Jha study showed at best "mixed results," with little evidence that the financial incentives applied resulted in decreases in risk-adjusted mortality beyond results achieved with just public reporting. Pay-for-performance programs implemented by CMS were intended to improve outcomes for all participating hospitals, but an important consideration of quality-improvement efforts is to motivate the poorest performers to improve their quality performance. Even though Jha et. al. found that poorly performing hospitals improved under the Premier HQID program, with the exception of the pneumonia mortality measure, the improvements experienced in the HQID were similar to those seen under public reporting alone.<sup>29</sup>

Jha and his colleagues' findings of a weak relationship between the financial payment incentives provided under the HQID and improved patient mortality were further substantiated by a study by Ryan et al. which found there were few statistically significant associations between the use of bonus payments and subsequent quality performance.<sup>30</sup> Overall, these researchers found little evidence that the use of hospital quality bonuses was associated with improvement in performance on the selected mortality measures. This result raised questions about whether pay-for-performance programs, such as Hospital Value-Based Purchasing, would lead to subsequent quality improvement.

The HQID was a precursor to Medicare's mandatory Hospital Value-Based Purchasing (HVBP), Hospital Readmission Reduction Program (HRRP) and Hospital Acquired Condition Reduction Program (HACRP). These and other studies evaluating the HQID raised concern in the research community as to whether the use of payment incentives could be successful in inducing improved hospital quality.

### 3. Medicare Hospital Value-Based Purchasing Incentive Program (HVBP) 2013-Present <sup>31,32</sup>

The Medicare Hospital Value-Based Purchasing Program was established with the passage of the PPACA in 2010 and begun implementation in 2013. The Medicare HVBP was the first mandatory pay-for-performance program with application to a majority of acute care Inpatient Prospective Payment System (IPPS) hospitals.

CMS hoped that the program would help achieve the desired move from Medicare FFS payment that rewarded increased volumes of care to a system that rewarded quality and patient outcomes. The HVBP withheld a percentage of Medicare payments from participating hospitals and redistributed these funds based on hospital performance scores from four quality domains to score hospitals on quality: 1) Clinical Care (formerly referred to as Clinical Processes of Care); 2) patient experience of care, as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey tool; 3) patient safety including hospital-associated infections and complications; 4) an efficiency measure that reflected Medicare hospital spending per beneficiary.

Performance was assessed through a combination of achievement (ranking of hospitals relative to a fixed benchmark) and improvement (comparing hospitals to their baseline performance), with hospitals receiving the higher of the two scores. The program was structured to be budget neutral; that is, the total pool of withheld payments (currently equal to 2 percent of base inpa-

tient DRG payments) were to be redistributed to hospitals based on their performance on the VBP Program's four quality domains (described above).

Research findings on HVBP's effectiveness have generally been disappointing. In 2017, Ryan et al. published one of the most comprehensive evaluations in the *New England Journal of Medicine*, examining mortality outcomes for acute myocardial infarction, heart failure, and pneumonia—conditions targeted by the program. The study found no evidence that HVBP reduced 30-day mortality rates for these conditions compared to control hospitals not subject to the program.<sup>33</sup>

While Papanicolas and others found some modest improvement in patient experience of care resulting from the Medicare HVBP,<sup>34</sup> and Figueroa et al. found that HVBP was associated with modest improvements in some process measures but no significant changes in patient experience scores or 30-day mortality rates during the program's first two years.<sup>35</sup>

After more than a decade of implementation, peer-reviewed evidence suggests that Medicare's Hospital Value-Based Purchasing Program has achieved limited success in improving clinical outcomes or patient experience, despite redistributing substantial Medicare funds. The program has documented modest improvements in some process measures but has not demonstrated the mortality reductions or patient experience improvements that were hoped for. One concerning result from evaluations of the Medicare HVBP is that the program may unfairly penalize hospitals serving larger numbers of low-income and otherwise vulnerable patient populations. These later findings have prompted debates about whether Medicare's HVBP and other quality programs should be adjusted by factors that account for social risk factors affecting patients.<sup>36</sup>

Perhaps most concerning, research consistently shows that the program may worsen health care disparities by penalizing hospitals serving vulnerable populations. These findings have prompted ongoing debates about whether Medicare's HVBP should be reformed, redesigned, or potentially replaced with alternative value-based payment models that better account for social risk factors and demonstrate clearer evidence of benefit.

#### **4. Medicare Hospital Readmission Reduction Program (HRRP) 2013-Present**

Unplanned hospital readmissions within 30 days after discharge have been a focus of national policy attention because they are very costly and because high rates of readmission can be indicative of substandard hospital care. In 2008, MedPAC estimated that Medicare expenditures

for potentially preventable readmissions might be as high as \$12 billion per year, demonstrating significant potential for cost savings had these programs been more successful.<sup>37</sup>

The Hospital Readmission Reduction Program (HRRP) program, which was authorized by the PPACA, was created to apply payment penalties to hospitals with higher-than-expected risk-standardized readmission rates starting in 2013. This program initially targeted three conditions (acute myocardial infarction (AMI), heart failure, and pneumonia) but was expanded to include chronic obstructive pulmonary disease (COPD) and elective total hip/knee arthroplasty in 2015, and coronary artery bypass graft surgery in 2017. HRRP rate penalties can reduce hospital payments by up to 3% of total Medicare reimbursements. CMS calculates excess readmission ratios by comparing a hospital's actual readmissions to expected readmissions based on patient case mix and comorbidities. Hospitals performing worse than the national average face financial penalties proportional to their excess readmissions.<sup>38</sup>

After enactment of the HRRP, a number of studies found that hospital readmission rates declined at a statistically significant rate. MedPAC's 2016 March report found that the HRRP was associated with a statistically significant decrease in readmissions for the conditions targeted by the policy. From 2010 to 2016 rates of unplanned 30-day readmission decreased from 19.0% to 15.4% for AMI, 23.6% to 20.6% for heart failure, and from 18.7% to 16.4% for pneumonia. This change was accompanied by a smaller, but statistically significant, decrease in readmissions for conditions not covered in the HRRP (16.3% to 14.9% over the same period). According to MedPAC, the HRRP was successful in providing hospitals an incentive to reduce inappropriate readmissions. MedPAC analyses showed that the decline in readmission rates was in part attributed to the incentives in the HRRP. Because both raw and risk-adjusted readmission rates were generally flat or declining along with increased patient severity of illness over this period, MedPAC has concluded that readmission and mortality rates have generally improved since the introduction of the HRRP.<sup>39</sup> These results were supported by other analyses that showed reductions in both targeted and untargeted hospital readmissions.<sup>40, 41, 42</sup>

Overall, the decline in readmissions across all conditions resulted in net savings to the Medicare program of more than \$1.5 billion per year by 2016. MedPAC concluded that the HRRP contributed to a decline in readmission rates without causing a material increase in ED visits, a material increase in observation stays, or a net adverse effect on mortality rates.<sup>43</sup>

Despite these initial favorable results the HRRP is characterized by concerns that: 1) the HRRP wasn't as effective as initially estimated due to measurement issues;<sup>44</sup> 2) the policy had unintended adverse consequences such as increased mortality, particularly for heart failure and pneumonia patients;<sup>45,46</sup> 3) participating hospitals may have attempted to improve their scores

on the HRRP by misclassifying more patients as either Emergency Room cases without an admission or observation stays or delaying readmission until after the 30-day window;<sup>47,48</sup> and 4) hospitals that serve large proportions of low-income and underserved patients, facing both health-related and social impediments to receiving timely and effective care were unfairly penalized by the HRRP.<sup>49</sup>

In response to this last concern, in 2019, CMS changed the program to stratify participating hospitals into peer groups based on the proportion of dual eligible patients (generally lower income and disabled or elderly patients eligible for both Medicare and Medicaid). Originally, risk adjustments were made based solely on demographics such as age. However, hospitals with higher proportions of low-income patients may have been penalized the most under the program. For this reason, Congress passed legislation that divided hospitals into peer groups based on the socioeconomic status of their patient populations starting in 2019. The results of this use of hospital peer groups are just now being analyzed; however, preliminary analysis suggests the use of peer-groups may have introduced additional scoring issues that may undermine program results.<sup>50</sup>

Overall, the HRRP has generated a mixed yet positive impressions of the ability of financial rewards linked to risk-adjusted readmission rates to induce hospitals to improve their clinical operations to reduce their rates of readmissions. While readmission rates for both targeted and non-targeted readmissions did fall after 2012, with most of that decline credited to the financial pressure the HRRP imposed on hospitals with high readmission rates, the largest critique of the program is that it inadvertently and excessively penalizes hospitals serving low-income and high health-risk populations.

A second major concern is that a portion of the reduction in readmissions may reflect gaming by hospitals in how they code and classify patients, rather than improved hospital care quality due to actual reduction of unnecessary readmissions. The ability of hospitals to classify patients as Observation cases, rather than an admitted patient, keeps these patients from being counted as readmissions and may artificially result in improved results. However, despite these concerns, the program is one potential bright spot that provides encouragement about the efficacy of linking hospital payment incentives to improved hospital quality.

## **5. Medicare Hospital Acquired Conditions Reduction Program (HACRP) 2014-Present**

Hospital acquired conditions and complications such as infections, pressure ulcers and falls occurring during a hospitalization are sources of patient harm and added costs. The Hospital Ac-



quired Conditions Reduction Program (HACRP) was created by the PPACA to provide financial incentives in Medicare hospital rates to create financial incentives for hospitals to take efforts to prevent these conditions/complications which are believed to be largely under the control of the hospital. Conditions acquired while a patient is hospitalized can result in longer lengths of stay, harm to patients, and increased mortality. The program ranks hospitals on their total rate of preventable conditions in two domains: 1) claims-calculated patient safety indicators such as pressure ulcer and sepsis rates and 2) hospital-reported health care–associated infections such as surgical site infections and catheter- associated urinary tract infections.

There are 14 categories of hospital-acquired conditions monitored with hospital rates of occurrence tracked and used as the basis for the payment decrements.<sup>iv</sup> Hospitals with a score in the worst-performing quartile (top 25%) are penalized with a 1% reduction in all Medicare fee-for-service payments for the fiscal year.<sup>51</sup>

In 2017, the HACRP reduced payment to 742 hospitals, with penalties totaling roughly \$370 million. According to the Agency for Healthcare Quality and Research (AHRQ) Hospital Acquired Condition (HACs) rates decreased over 20% between 2010 and 2015 resulting in an estimated \$2.9 billion in savings and the prevention of an estimated 8,000 deaths.<sup>52</sup>

Despite these encouraging early results, subsequent evaluations of the HACRP have been less favorable. While improvement on claims-data-based measures accelerated post-HACRP implementation, the program did not improve patient outcomes. A study by Sheetz et al. evaluating clinical registry data for a large surgical collective in Michigan found that while rates of HACs did decline from 2010 to 2018, the authors conclude that the program did not improve patient safety and outcomes beyond existing secular trends.<sup>53</sup> These preliminary conclusions were substantiated by later studies such as Arntson et al. in 2021 which found that although targeted hospital-acquired conditions in the HACRP did decline at a faster rate after implementation of the program, associated 30-day mortality was unchanged. Finally, a very recent study conducted in 2025 evaluating the impact of the HACRP for two targeted conditions, surgical site

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iv These 14 categories of HACs include: Foreign Object Retained After Surgery, Air Embolism, Blood Incompatibility, Stage III and IV Pressure Ulcers, Falls and Trauma (e.g., Fractures, Dislocations, Intracranial Injuries, Crushing Injuries, Burn, Other Injuries), Manifestations of Poor Glycemic Control, Catheter-Associated Urinary Tract Infection (UTI), Vascular Catheter-Associated Infection, Surgical Site Infection, Mediastinitis, Following Coronary Artery Bypass Graft (CABG), Surgical Site Infection Following Bariatric Surgery for Obesity, Surgical Site Infection Following Certain Orthopedic Procedures, Surgical Site Infection Following Cardiac Implantable Electronic Device (CIED) Deep Vein Thrombosis (DVT)/Pulmonary Embolism (PE) Following Certain Orthopedic Procedures (Total Knee Replacement and Hip Replacement) and Iatrogenic Pneumothorax with Venous Catheterization. *ICD-10 HAC List, CTRS. FOR MEDICARE & MEDICAID SRVS.*, <https://www.cms.gov/medicare/payment/fee-for-service-providers/hospital-aquired-conditions-hac/icd-10>.

infection (SSI) for abdominal hysterectomy and colon procedures, concluded that the HACRP had no direct impact on SSIs.<sup>54</sup>

Research evaluators also identified a number of potential program flaws such as inadequate risk adjustment leading to higher penalties for hospitals that care for larger proportions of economically and socially disadvantaged patients, similar to concerns associated with other CMS quality Improvement programs.<sup>55</sup> The program may also rely on inaccurate, unreliable HAC data and frequent changes to scoring methodology have created instability in which hospitals are penalized.<sup>56</sup>

In addition to these less favorable evaluations, MedPAC has been critical of the HACRP due to the use of a “tournament scoring model” where hospital scores are evaluated relative to one another rather than against clear, absolute, and prospectively established standards. The Commission has also criticized the program’s design for penalizing 25 percent of hospitals every year even if all hospitals significantly reduced their rates HACs in a given year. MedPAC has also criticized the existing overlap and duplication of measures in the various Medicare Quality P4P programs. The same quality measures are used in multiple programs — for example, hospital-acquired infection measures are used in both the Medicare HACRP and the HVBP Programs. Such overlapping creates unnecessary complexity for hospitals and the Medicare program and may unfairly double-count hospitals’ performance on certain measures when determining penalties or rewards. MedPAC has also noted that the current programs, including the HACRP, do not adequately account for differences in providers’ patient populations — a concern reported in research on the HACRP and other Medicare quality programs indicting that these programs may disproportionately penalize safety-net hospitals serving large proportions of low income and socially disadvantaged patients.<sup>57</sup> Just as is the case with Medicare’s HRRP there are also concerns that hospitals may have “gamed” this system by changing the way they code whether a HAC was “present on admission.”

## 6. Medicare’s Spending Per Beneficiary

Medicare Spending Per Beneficiary (MSPB) attempts to measure the relative efficiency of hospital care, not volume of services, and seeks to reduce fragmentation of care. By pairing this per capita spending measure with mortality and readmissions, hospitals have an incentive to maintain episode quality while reducing episode costs. The measure shows 30-day episode spending at an individual hospital compared with Medicare spending nationally for hospitals with comparable patients. The model uses the MSPB measures CMS computes for the HVBP Program: price-standardized, risk-adjusted (e.g., age, sex, severity of illness) measures that include all Medicare Part A and Part B claims paid during the period from 3 days before an

inpatient hospital admission through 30 days after discharge, divided by the episode-weighted median MSPB amount across all hospitals (the median MSPB measure equals 1.0). The model uses the MSPB values calculated with three years of data (2014 to 2016).<sup>58</sup> While the Maryland hospital rate setting Commission, the HSCRC, has made extensive use of similar relative efficiency metrics for their hospitals and parlaying the relative rankings on these efficiency measures into annual rewards and penalties, the federal Medicare system applies only limited financial rewards and penalties for relative hospital performance.

## **7. Overall Assessment of the Medicare Quality P4P Programs**

Overall, the four programs to incentivize hospitals to improve their performance on patient safety, outcomes and overall care quality have likely contributed to improved awareness of the need to measure and make hospitals accountable for the quality of care they deliver. However, these programs appear to be compliments to, rather than drivers of, broad and sustained hospital quality improvements. The programs are plagued by overlap of measures, inconsistent and sometimes counterproductive scoring mechanisms and the inability to adjust hospital performance adequately for factors that may impede any hospital's ability to reduce acquired complications/conditions and improve patient outcomes for patients afflicted by socio-economic and other environmental challenges. Some believe that many of the changes observed during these programs' operation may have occurred naturally due to broader quality improvement and other secular trends. Despite CMS' move to establish peer-group stratification to the HRRP scoring methodology, the inability to account adequately for the impact of socially and economically disadvantaged patient populations that may impede hospitals' ability to improve care quality remains the largest issue for these programs.

These programs are also likely hampered by inadequate financial rewards and penalties resulting in well-resourced hospitals easily absorbing payment decrements while less-wealthy hospitals, often the ones with the most difficult patient populations to treat and needing the most improvement in quality performance, being disadvantaged by a reduction in financial resources needed improve their quality performance. Finally, the administrative burden of these programs is also a substantial issue for hospitals, particularly smaller hospitals that lack funds for both the effective treatment of patients and for the administrative burdens imposed by these federal programs.

## **8. MedPAC Recommendations to Improve CMS Quality Program Performance**

In 2019, given the lackluster results of the various Medicare Hospital Quality Incentive programs, MedPAC recommended that Congress replace the Medicare HVBP, HRRP and the

HACRP with a single and streamlined hospital quality incentive program, the Hospital Value Incentive Program (HVIP) which would be designed to reward or penalize hospitals based on performance against prospectively set, absolute targets — rather than relative rankings — and would use peer grouping to account for the differing complexity of patient populations. Although the consolidation of Medicare’s hospital quality programs has not yet been accomplished, Congress did pass legislation in 2019 requiring Medicare to create peer groups in the context of evaluating hospital performance on Medicare’s Hospital Readmission Reduction Program in order to account for the impact of low income and other social deprivation factors for hospitals treating low-income and underserved populations. Hospital peer grouping methodologies have not yet been adopted for other CMS Hospital Quality programs, however. MedPAC has also recommended the retirement of the current Inpatient Hospital Quality Reporting Program (IRQP) as virtually all hospitals currently meet the reporting requirements and receive their full annual payment update.

Finally, in addition to this emphasis on tracking and rewarding providers for improved outcomes and patient experience of care, MedPAC has recommended that the Medicare program reorganize its hospital quality improvement programs to: 1) focus primarily on health outcomes and patient experience; 2) greatly increase the financial incentives included in their programs; 3) move away from the use of “tournament models” of evaluation and move to scoring models that are relative to pre-established, clear and prospective performance standards; 4) eliminate duplicative and overlapping programs and measures that may result in double rewards or penalties for hospitals and unneeded complexity and reporting requirements; 5) move to the use of all-condition, rather than condition-specific measures; and finally 6) make use of “population-based” measures such as Potentially Preventable Admissions (admissions that are considered preventable with appropriate ambulatory and primary care are provided in a timely way) and Home and Community Days (a measure that quantifies the number of days a patient spends in a hospital, nursing home, emergency department and the number of “mortality days”<sup>v</sup>) evaluated against absolute performance thresholds.<sup>59</sup>

## C. The Maryland Quality of Care Incentive Programs

### 1. Introduction

Like the Medicare program, Maryland’s hospital rate setting authority allowed the Health Services Cost Review Commission (HSCRC) to set payment levels that hospital could charge

<sup>v</sup> “Mortality Days” refers to the number of days in a given period (such as a calendar year or a 30-day window) that a Medicare beneficiary is no longer alive, essentially counting the days elapsed between their date of death and the end of the evaluation period.

payers. Setting and regulating rates for patient care in this fashion allowed both the Medicare program and Maryland's HSCRC the ability to link payment incentives (both incremental additions and rate reductions) to induce hospitals to improve the quality of care they provide.

Although Medicare set rates only for Medicare beneficiaries, prior to the state's planned transition to the Center for Medicare and Medicaid Innovation (CMMI) Achieving Healthcare Efficiency through Accountable Design (AHEAD) program, scheduled to occur from 2026 to 2028, the all-payer Maryland hospital rate setting system applied to Medicare, Medicaid, Commercial and self-pay patients. The all-payer feature of the Maryland system has a leveraging effect because it applies financial incentives provided to hospitals under its quality improvement program across all payers and overall system revenue (rather than just Medicare).

Prior to 2008 the Commission did not attempt to adjust Maryland hospital rates for hospital quality performance because it lacked data on what factors contributed positively. Following the introduction of the Donabedian template of encouraging hospitals to improve the structural, process and outcome elements of hospital care, the HSCRC first linked hospital payments to how closely they adopted identified beneficial processes of care. For example, for patients suffering from Acute Myocardial Infarction (AMI) hospitals were recommended to administer aspirin (a common blood thinner) and beta-blockers upon hospital admission and discharge and to use timely perfusion therapy (through the use of thrombolytics or "clot-reducing" drugs) and other interventions to restore blood flow to the heart.

Other identified process measures to improve patient safety and infection control included the use of standard protocols for hand washing, catheter-associated urinary tract infections (CAUTI) prevention, and medicine reconciliation to check for the use contra-indicated drugs. Hospitals were also encouraged to emphasize patient education, discharge instructions and post-hospital care planning. Other measures, such as "door-to-needle" time for antibiotic use, and the implementation of clinical pathways and checklists to reduce variability in care delivery were also highly recommended.<sup>60</sup> In this first phase of quality-based P4P, Maryland hospitals that documented improvements in employing these beneficial processes of care could receive payment bonuses in their regulated rates.

Later on, when it was determined that the use of beneficial processes of care provided only an indirect link between such efforts and care outcomes, both Medicare and Maryland focused efforts on measuring and rewarding hospitals for improved patient outcomes and reported patient experiences of care.<sup>61</sup> Accordingly, later iterations of Maryland's hospital quality incentive program emphasized the use of various outcome metrics, such as Hospital Acquired Conditions

(HACs), unplanned hospital readmission rates, patient mortality rates, and patient-reported experience of care.

## 2. Circumstances Leading to the Development of Maryland's Quality Programs

One factor that contributed to the HSCRC's decision to implement its Quality P4P programs was the implementation by the HSCRC of largely Fixed Hospital Global Budgets for smaller and rural 10 hospitals in the state also starting in 2009. The simultaneous development of the HSCRC Quality P4P was in part motivated by the perceived need to maintain and improve hospital quality particularly given the very strong incentives of largely fixed HGBs for hospitals to reduce both inpatient and outpatient utilization. The HSCRC had concerns that this new payment model might result in hospitals inappropriately rationing or stinting on hospital care. Other countries that experimented with fixed or largely fixed hospital budgets, particularly France and Germany, experienced some stinting on care which increased wait times for Emergency Room and elective referral services. Strict annual revenue limits imposed on hospitals by fixed budgets might have made hospitals more complacent and less responsive to patient care needs.<sup>62, 63</sup> As a result of this concern, Maryland gradually expanded its Quality P4P incentive programs in subsequent years, particularly post-2014 when the state entered into an agreement with CMS and the CMMI related to its Hospital Global Budget Demonstration for all 48 hospitals in the state.

## 3. Overview of Current HSCRC Pay-for-Performance Quality Improvement Incentives

Since 2009, the HSCRC has implemented four distinct hospital quality incentive programs designed to provide both rewards and penalties in the rates set by the HSCRC that apply to all payers, both governmental, private and self-responsible patients. These programs are as follows:

- 1. The Maryland Hospital Acquired Conditions (MHAC) Initiative** - MHAC aims to reduce the number of Potentially Preventable Complications (PPCs) through individual hospital and statewide rewards and penalties. PPCs are post-admission complications that may result from hospital care and treatment. This Maryland program is the corollary to the Medicare Hospital Acquired Condition Reduction Program. Both programs focus on providing incremental incentives in hospital payment to encourage hospitals to reduce their risk-adjusted rates of hospital-acquired complications, including hospital-acquired infection rates.



- 2. The Quality-Based Reimbursement (QBR) Program** - The QBR program incentivizes quality improvement on a wide variety of quality measures, including measures of Person and Community Engagement, Clinical Care, and Safety. This Maryland program is the corollary to the Medicare Quality P4P program Hospital Value Based Purchasing program. Both programs provide incremental financial incentives for hospitals to improve their performance on patient experience of care (as measured by CMS patient surveys), patient safety and clinical outcomes.
- 3. The Readmissions Reduction Incentive Program (RRIP)** - RRIP was implemented to reduce preventable 30-day hospital readmissions in the All-Payer Model and is closely aligned with federal readmissions programs. Hospitals can receive rewards or be assessed penalties based on readmission rates.
- 4. The Potentially Avoidable Utilization (PAU) Savings Program** - Hospitals can receive savings for reducing potentially avoidable utilization, including readmissions, preventable admissions, and preventable observation stays.

The first three of these programs mirror the federal Medicare hospital quality programs: the Hospital Acquired Conditions Reduction Program (HACRP), Hospital Value-Based Payment Program (HVBP) and the Hospital Readmission Reduction Program (HRRP). As noted, a key difference in how the financial incentives are applied in each program, is that the financial incentives are applied only to Medicare hospital rates in the federal program, while the HSCRC programs apply financial incentives across all payers (given the presence of Maryland's Medicare Waiver which allowed the HSCRC to apply its rate setting techniques to payments by Medicare and Medicaid, as well as all private insurers). The fact that incremental quality-based payment incentives are applied on an all-payer basis, may provide Maryland hospitals with stronger and more consistent financial incentives to improve quality of care. This is because an All-Payer system would allow a state to leverage the revenue base from Medicare, Medicaid, Private insurer and self-responsible patients which can give hospitals stronger incentives (i.e., the applicable rewards and penalties will be larger), relative to a rate system that regulated just Private insurer payments alone.

The HSCRC staff also strives to monitor and improve the equity of the quality program for all payers and patients, seeking to make payment adjustments to account for hospitals that serve higher proportions of lower-income and disabled populations. The HSCRC also strives to align their Quality P4P programs with national measures and policy priorities.



#### 4. Maryland Hospital Acquired Conditions (MHAC) Program

The Maryland Hospital Acquired Conditions (MHAC) program was the first one of several quality pay-for-performance initiatives that provide incentives for hospitals to improve and maintain high-quality patient care. The program currently places 2 percent of hospital revenue at-risk for hospital acquired complications that occur as a result of treatment rather than the underlying progression of disease. The presence of Hospital Acquired Conditions (also referred to as Potentially Preventable Conditions or “PPCs”) can lead to lower quality patient outcomes, including longer lengths of stay, permanent patient harm, mortality and increased hospital costs. Examples of the types of hospital acquired conditions include accidental laceration during a procedure, improper administration of medication, and hospital-acquired pneumonia.<sup>64</sup>

The MHAC program is designed to provide incentives to improve patient care by adjusting hospital budgets based on performance on Potentially Preventable Complications (PPCs). Case-mix adjustment is used to calculate observed to expected ratios that are then converted to a standardized point-based score based on each hospital’s attainment levels using a similar scoring methodology to that used for CMS Value-Based Purchasing and Maryland’s QBR program. Maryland uses a list of 65 different PPC measures developed by 3M Health Information Systems (recently renamed to Solventum<sup>TM</sup> vi). Like the Medicare Hospital Acquired Conditions (HACs), PPCs rely on hospital administrative coding of clinical inpatient and outpatient hospital cases relying on “present-on-admission” codes which identify whether these conditions were afflicting the patient prior to receiving hospital care or if they resulted from the hospital’s treatment of the patient rather than from the natural progression of the illness. Table 10 below, provides a comparison of the MHAC program, and its federal counterpart Hospital Acquired Condition Reduction Program (HACRP):

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vi See: <https://www.prnewswire.com/news-releases/3m-completes-spin-off-of-solventum-302104399.html>.

**Table 10: Maryland MHAC Program vs. Medicare HACRP** <sup>65</sup>

|                                                              | <b>Maryland MHAC Program</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <b>Medicare HACRP Program</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Revenue at Risk (i.e., withheld and applied to rates)</b> | Up to 2 percent of inpatient revenue for rewards or penalties based on a pre-set scale                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1 percent of Medicare hospital revenue for the worst performing quartile of hospitals                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Rewards/Penalties</b>                                     | Hospitals receive up to 2 percent additional payment and up to 2 percent reduction in payment based on their risk-adjusted rates of PPC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The worst performing hospitals receive a reduction in payments of 1 percent scaled based on their performance on risk adjusted rates of HACs used in the program                                                                                                                                                                                                                                                                                                                                    |
| <b>Measures Used</b>                                         | 16 Clinically “Significant” Potentially Preventable Conditions <sup>66</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 5 CDC NHSN Hospital Acquired Infection (HAI) measures <sup>vii</sup><br>AHRQ’s Patient Safety Indicators (PSI)-90 Composite measure of HACs <sup>viii</sup>                                                                                                                                                                                                                                                                                                                                         |
| <b>Scoring Calculation</b>                                   | <p>Hospitals are assigned a PPC “Composite” score which is calculated based on the sum of hospital observed PPCs times the estimated “cost weight” of each PPC. The cost weight is used as a proxy for the magnitude of potential harm inflicted by the PPC. The Scoring methodology (described below) is a complex method that sets a “threshold” and a “benchmark” set at the 20<sup>th</sup> and 80<sup>th</sup> percentiles of the resulting distribution.</p> <p>Maryland and CMS both calculate each hospital’s score based on the comparison of hospital performance in a current year relative to their performance in an identified “base year.”</p> | <p>CMS calculates a Standardized Infection Ratio (SIR) of observed infections divided by expected infections (based on the target hospital’s risk-adjusted infection incidence) for each of the 5 CDC NHSN HAI measures. CMS uses a Composite of the PSI-90 measures.</p> <p>CMS transforms hospital scores to limit the distribution of results to the 5<sup>th</sup> and 95<sup>th</sup> percentiles to eliminate outlier observations. CMS calculates a HAC score for each eligible measure.</p> |

vii The Centers for Disease Control and Prevention (CDC) National Healthcare Safety Network (NHSN) Hospital-Acquired Infection (HAI) composite measure—often referred to as an Infection Composite Score (ICS) or used within the framework of the Hospital-Acquired Condition (HAC) Reduction Program—is a comprehensive metric designed to evaluate a hospital’s overall performance in preventing infections. Rather than looking at individual infection types in isolation, this Composite merges data on 5 key, publicly reported HAI metrics into a single, aggregated score to provide a more holistic view of patient safety. These include: 1) Central Line-Associated Bloodstream Infection (CLABSI) Standardized Infection Ratio (SIR) measuring infections in ICU and select wards; 2) Catheter-Associated Urinary Tract Infection (CAUTI) SIR measuring infections in ICU and select wards; 3) Site-Specific Infection (SSI) for Colon and Abdominal Hysterectomy: A combined (pooled) measure, often referred to as HAI-3 and HAI-4; 4) Methicillin-resistant Staphylococcus aureus (MRSA) Bacteremia Laboratory-Identified (LabID) Event SIR; 5) Clostridium difficile Infection (CDI) Laboratory-Identified (LabID) Event SIR See <https://www.cdc.gov/nhsn/2022rebaseline/sir-guide.pdf>.

viii The AHRQ Patient Safety Indicator (PSI) and Adverse Events Composite index (PSI-90) is a weighted, risk-adjusted measure that summarizes ten different patient safety indicators to evaluate hospital-level safety. It focuses on potentially preventable, in-hospital complications and adverse events, frequently used by CMS for value-based purchasing and quality reporting. The Composite calculates the measure at the individual hospital level based on the following PSI measures: 1) PSI 03 Pressure Ulcer rate; 2) PSI 06 Iatrogenic Pneumothorax rate; 3) PSI 08 In-Hospital Fall with Hip Fracture; 4) PSI 09 Perioperative Hemorrhage or Hematoma rate; 5) PSI 10 Postoperative Acute Kidney Injury rate; 6) PSI 11 Postoperative Respiratory Failure rate; 7) PSI 12 Postoperative Pulmonary Embolism or Deep Vein Thrombosis rate; 8) PSI 13 Postoperative Sepsis rate; 9) PSI 14 Postoperative Wound Dehiscence rate; and 10) PSI 15 Unrecognized Accidental Puncture or Laceration rate. See <https://www.cms.gov/priorities/innovation/files/fact-sheet/bpciadvanced-fs-psi90.pdf>.

While some of the PSIs in the AHRQ measure set evaluate the same complications as the Solventum™ PPCs, there is a difference in patient scope such that PSIs are limited to surgical cases, while PPCs also assess these complications for medical patients who meet the measure specification inclusion criteria. Thus, the HSCRC MHAC program may be slightly more comprehensive than the federal hospital acquired conditions program because it applies to all payers and all hospital patients and b) the incremental revenue rewards and penalties are a function of hospital all-payer revenue (so potential penalties are about 60% higher for Maryland hospitals than for hospitals nationally).

#### **a) Maryland MHAC HSCRC Scoring Methodology**<sup>67</sup>

As noted previously, both the Medicare HACRP and Maryland MHAC programs measure each hospital's performance in reducing the incidence of select hospital acquired complications and hospital acquired infection rates as identified by the coding of whether a particular complication was "present on admission" (POA) in each patient's medical record. If the POA indicator for a particular secondary diagnosis is indicated as "yes" (present for the patient when admitted), then the complication is not included in the MHAC and the federal HACRP analysis and scoring (because the condition is not attributed to the care received while the patient was hospitalized). In Maryland, hospital discharges used in the analysis are also excluded in the MHAC methodology if a patient has more than 6 PPCs in which case it is classified as a "catastrophic case, which are likely less preventable") and in situations of small cell size where the statewide basis of comparison for a particular PPC category is less than 31 discharges statewide. The 15 PPCs used in the HSCRC MHAC analysis are shown in Table 11 below.

PPC Composite index created by the HSCRC is composed of what the HSCRC believes to be 15 "clinically significant" PPCs which correspond roughly to Medicare's use of the 5 CDC NHSN HAI measures and 10 Patient Safety Indicators in the HACRP.

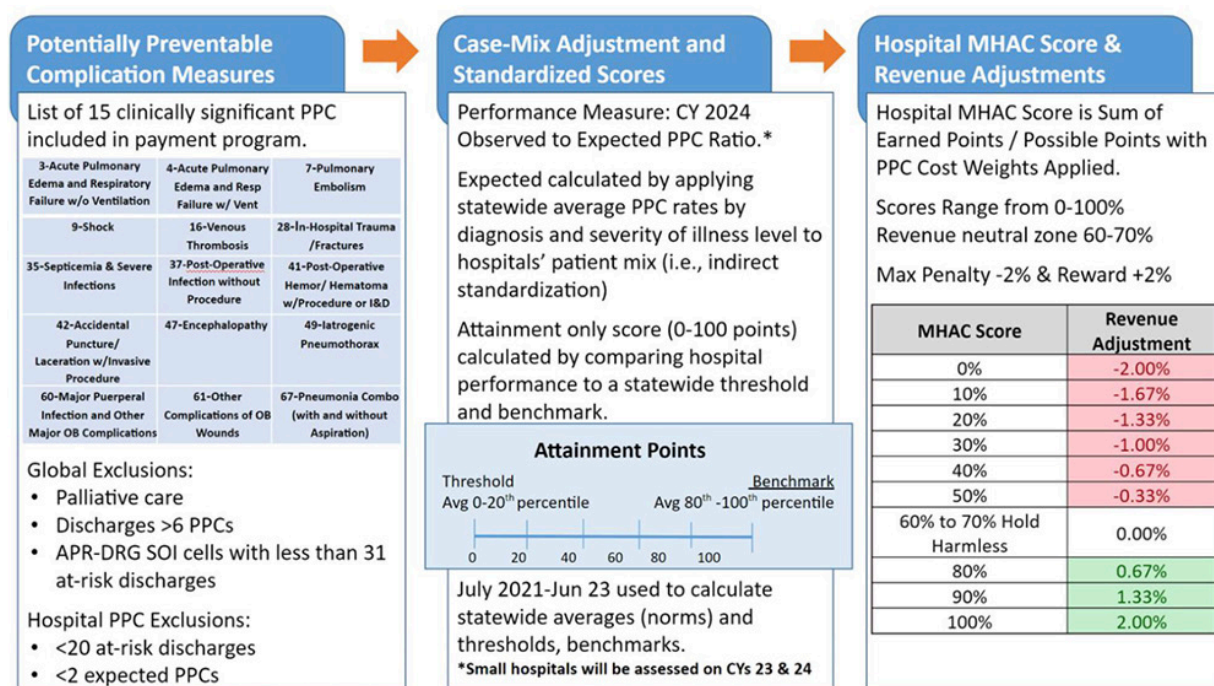
**Table 11: Potentially Preventable Complication (PPC) Measures included in the HSCRC MHAC**

| <b>PPC Number</b><br><small>ix</small> | <b>PPC Description</b>                                                      |
|----------------------------------------|-----------------------------------------------------------------------------|
| 3                                      | Acute Pulmonary Edema and Resp Failure w/o Ventilation                      |
| 4                                      | Acute Pulmonary Edema, Resp Failure w/ventilation                           |
| 7                                      | Pulmonary Embolism                                                          |
| 9                                      | Shock                                                                       |
| 16                                     | Venous Thrombosis                                                           |
| 28                                     | In-Hospital Trauma and Fractures                                            |
| 35                                     | Septicemia & Severe Infections                                              |
| 37                                     | Post-Operative Infection & Deep Wound Disruption Without Procedure          |
| 41                                     | Peri-Operative Hemorrhage & Hematoma w/ Hemorrhage Control Procedure or I&D |
| 42                                     | Accidental Puncture/ Laceration During Invasive Procedure                   |
| 47                                     | Encephalopathy                                                              |
| 49                                     | Iatrogenic Pneumothorax                                                     |
| 60                                     | Major Puerperal Infection and Other Major Obstetric Complications           |
| 61                                     | Other Complications of Obstetrical Surgical & Perineal Wounds               |
| 67                                     | Pneumonia Combo (with and without Aspiration)                               |

ix 3M Health Information Systems (now Solventum™) developed a list of over 60 PPCs developed which are defined as adverse events that arise during an inpatient hospitalization stemming from the process of care, including infections (e.g., C. difficile), injuries (e.g., lacerations) and complications from treatment (e.g., pulmonary embolism, sepsis, renal failure). The HSCRC MHAC program uses 15 of these PPC categories in its MHAC Program. See <https://multimedia.3m.com/mws/media/784213O/population-health-and-potentially-preventable-events-eguide.pdf>.

Figure 2 below, provides an overview of the key steps in the MHAC methodology.<sup>68</sup>

**Figure 2: MHAC Methodology Schematic**<sup>x,xi</sup>



**Step 1 - Exclusions:** For the PPCs used in the payment algorithm the HSCRC removes the HSCRC designated excluded cases from the analysis. These exclusions include Palliative Care cases, hospital discharges with greater than 6 PPCs (categorized as a “catastrophic case” for which a hospital is not held responsible), and situations where cells from the APR SOI Grouping logic suffer from small cell size (see Figure 2).

x This diagram is reproduced from the HSCRC’s Draft Recommendations for the MHAC Program for Rate Year 2028.

xi In previous years, hospitals were scored on their performance at the individual PPC level. However, starting in Rate Year 2028 (the calendar year beginning 2027) the HSCRC MHAC analysis measures hospital performance using an overall Composite index that accumulates hospital overall performance based on this Composite. This single Composite is calculated by weighting each PPC in the analysis by estimated cost weights (the Solventum cost weights) associated with cases with a Septicemia SOI diagnosis. These cost weights are based on historical data on how costly cases in a particular APR-DRG and SOI category have been to treat. The cost-weight then is a measure of the resource use required to treat these patients. According to the HSCRC, the move to using a Composite PPC measure was done to address concerns about construct validity as the use of a Composite allowed for the inclusion of lower volume Complications while weighting hospital scores by the areas of “largest opportunity.”

**Step 2 - Use of a Case-mix Adjustment:** The HSCRC uses an overall “case-mix” adjustment methodology (in the state’s rate setting system which uses the Solventum™ All-Patient Refined Diagnosis Related Groupings (APR-DRGs).<sup>xii</sup> This case classification and case-mix adjustment method is similar to Medicare’s Severity-Adjusted DRGs (MS-DRGs), although the APR-DRGs classification system was developed for an “all-payer” population (i.e., reflecting resource usage and other patient characteristics for both Medicare and non-Medicare patients). The APR-DRG SOI case-mixing approach adjusts hospital PPC performance based on each hospital’s profile of cases by APR-DRG and SOI category, such that an individual hospital’s performance is adjusted based on their specific profile of cases and case severity of illness (i.e., hospitals that treat sicker patients have their performance compared to the experience of hospitals statewide for the same mix of patients based their rates of PPCs).<sup>xiii</sup> This approach is illustrated in the example described below.

**Step 3 - Observed to Expected Comparison** (refer to Table 12, shown below): Similar to the previous scoring approach (performed for each individual PPC) hospital scores on the Composite PPC Index measure are calculated on an “Observed” PPC to “Expected” PPC ratio basis. The Observed number of PPCs reflect the number of complications actually observed for each case treated by this hospital for cases grouped into an Index APR-DRG and subcategory SOI cell). The Expected number of PPCs for a hospital are the number of PPCs one might “expect” this hospital to have, had it performed the same as hospitals statewide for patients with the same diagnoses and SOI classifications.

If, say, for Index APR-DRG 190 (Acute Myocardial Infarction), Severity of Illness (SOI) category 1 (the lowest or least severe SOI category), a hospital had 10 cases that experienced the complication of Septicemia (PPC number 35), when statewide, one might expect (based on all hospitals with similar cases) the hospital that is the subject of the analyses would have 14 cases with a Septicemia complication. In this example, the HSCRC will calculate a ratio of Observed PPCs

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xii Note the Solventum APR-DRG logic groups each hospitalized patient into both a specific APR-DRG (overall patient clinical diagnosis – such as Heart Failure, or Acute Myocardial Infarction “AMI” or “Heart Attack”) along with a subclassification of the patient into one of four subcategory severity of illness categories. Each hospitalized patient is “grouped” or allocated into one APR-DRG and one of four Severity of Illness (SOI) subcategories based on clinical ICD-10 patient coding classifications. There are approximately 335 “base” DRG categories used by the APR-DRG grouping logic with each DRG divided into four SOI levels 1-4, which creates over 1,300 different patient diagnoses categories (“cells”). The Solventum APR-DRG patient classification and grouping system is similar to the MS-DRG patient classification system used by Medicare although the APR-DRG were developed for an All-Patient population. See <https://www.solventum.com/en-us/home/health-information-technology/solutions/apr-drg/>.

xiii Statewide rates for each PPC (i.e., normative value or “norm”) are calculated for each diagnosis and severity level. These statewide norms are applied to each hospital’s case-mix to determine the expected number of PPCs, a process known as indirect standardization.



of 10 cases (in APR-DRG 190 SOI 1) to the number of Expected cases, assumed here to be 14 cases based on statewide experience. The ratio of Observed to Expected cases would be 10/14 for the hospital in question or a ratio of 0.7143 (a ratio that indicates performance more favorable than what would be expected given statewide hospital experience for this APR-DRG SOI category and a complication of Septicemia).

This same Observed to Expected case analysis is performed for each of the target hospital's cases as shown in Table 12 below. The table shows this example hospital's experience for all patients for APR-DRG 190 across all four SOI categories.

**Table 12: Example of Observed to Expected Calculation Example for one APR-DRG across four SOIs**

| A<br>Severity<br>of illness<br>Level | B<br>At-risk<br>Discharges | C<br>Observed<br>Discharges<br>with<br>PPCs | D<br>PPCs per<br>discharge<br>(unadjusted<br>PPC Rate) | E<br>Normative<br>PPCs per<br>discharge         | F<br>Expected<br># of<br>PPCs | G<br>Observed:<br>Expected<br>Ratio            |
|--------------------------------------|----------------------------|---------------------------------------------|--------------------------------------------------------|-------------------------------------------------|-------------------------------|------------------------------------------------|
|                                      |                            |                                             | = (C / B)                                              | (Calculated<br>from<br>Normative<br>Population) | = (B x E)                     | = (C / E)<br>rounded to<br>4 decimal<br>places |
| 1                                    | 200                        | 10                                          | .05                                                    | .07                                             | 14.0                          | 0.7143                                         |
| 2                                    | 150                        | 15                                          | .10                                                    | .10                                             | 15.0                          | 1.0000                                         |
| 3                                    | 100                        | 10                                          | .10                                                    | .15                                             | 15.0                          | 0.6667                                         |
| 4                                    | 50                         | 10                                          | .20                                                    | .25                                             | 12.5                          | 0.8000                                         |
| <b>Total</b>                         | <b>500</b>                 | <b>45</b>                                   | <b>.09</b>                                             |                                                 | <b>56.5</b>                   | <b>0.7965</b>                                  |

**Step 4 Scoring:** The hospital's calculated score is then compared to a linear scale to calculate the revenue adjustment percentage. This linear scale is set prospectively so that hospitals can track potential revenue adjustments during the performance period. This scaling approach differs from national Medicare HACRP which relatively ranks hospitals after the performance period and compares hospital performance on a "tournament model" approach.<sup>xiv</sup> The MHAC scaling also differs from the federal HACRP scoring in that the HSCRC method provides an op-

<sup>xiv</sup> As noted in the discussion of the federal Medicare HACRP, MedPAC has recommend moving away from this "Tournament Model" approach which ranks each hospital's performance relative to other hospitals and instead move to an approach that establishes a "pre-set" scale prospectively so that hospitals know in advance the scoring scale and can better predict their actual performance in a performance year.

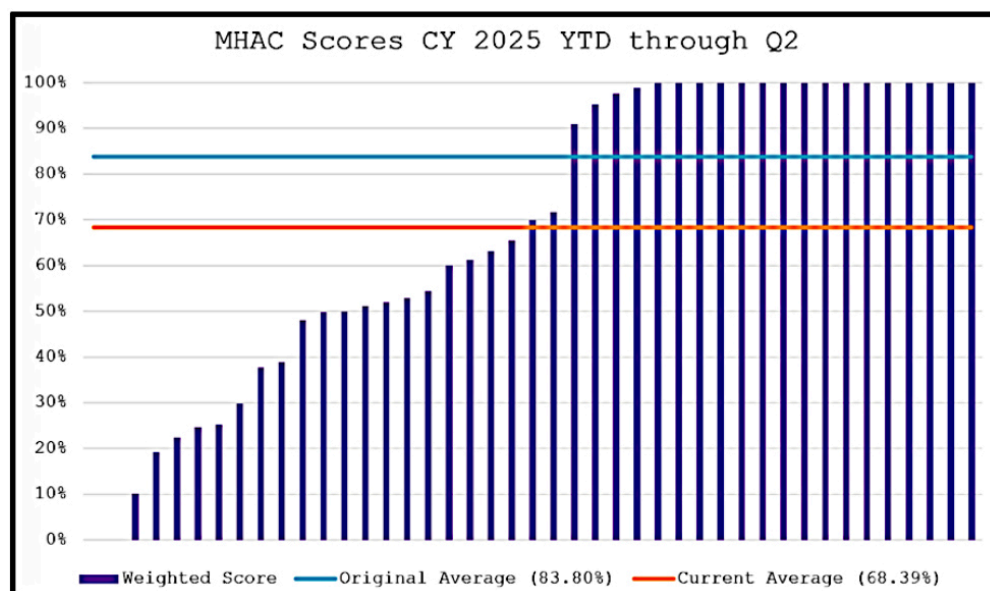


portunity for rewards (up to a maximum of 2% of eligible revenue), as opposed to HACRP that reduces payments by 1 percent for hospitals in the worst-performing quartile.

A hospital's total MHAC score is then determined by comparing the PPC composite results to a "Threshold" (20<sup>th</sup> percentile score) and "Benchmark" (80<sup>th</sup> percentile). Hospitals scoring below Threshold get a score of 0; those scoring above the Benchmark get a score of 100. Hospitals scoring in between receive a MHAC performance score relative to the calculated Threshold and Benchmark. Figure 3 provides RY 2027 YTD through June results by hospital (hospital names are not listed in this figure), along with each hospital's average score.

Under past MHAC methodologies, Maryland hospitals received a score that was the greater of a calculated "attainment score" (i.e., the hospital's absolute score relative to other hospitals) and an "improvement score" (i.e., the magnitude of annual improvement realized by the hospital's MHAC score relative to a previous period). The purpose of this approach was to focus on the improvement of poor clinical outcomes which may have been a function of socio-economic disparities of different hospital patient populations. Hospitals are now only scored on the basis of Attainment.<sup>69</sup>

**Figure 3: Maryland Hospital Performance on MHACs Showing Calculated Threshold and Benchmark** <sup>xv</sup>



In order to convert the scores to revenue adjustments, a linear scale from 0 to 100 percent is used and the "cut point" is the average hospital score. Each year, the MHAC policy also rec-

<sup>xv</sup> Maryland HSCRC Rate Year 2028 MHAC Draft Recommendation.

ommends a preliminary cut point (a specific and pre-determined point on the scoring scale that determines whether a hospital's numerical score is either positive "a reward in rates" or negative the application of "penalties"). In the MHAC program this cut point is typically calculated based on the average hospital score and has been around the 60-80% level (as shown in Figure 3. Also as shown in Figure 3, previous MHAC policies included a "hold harmless" around this cut point. This hold-harmless zone was removed in the most recent MHAC policy recommendation.

### **b) MHAC versus HACRP Scoring Methodologies**

According to the HSCRC's Rate Year (or Fiscal Year beginning each July) 2028 Draft Recommendation for the MHAC program, the Medicare HACRP scoring and revenue adjustments differ significantly from the MHAC approach. In the HACRP, the performance period covers two years, and each eligible Hospital Acquired Condition (HAC) measure is weighted equally. In the national program, measure results are truncated at the 5<sup>th</sup> and 95<sup>th</sup> percentiles and results are statistically standardized using "z-scores" that compare each hospital's result to the national mean, divided by the standard deviation and summed across eligible measures. Hospitals with a total HAC score greater than the 75<sup>th</sup> percentile (i.e., the poorest performing quartile of hospitals) are subject to the full 1% payment reduction applied to the inpatient revenue for all of their Medicare patients. Unlike the MHAC program, the HACRP does not apply rewards for exceptionally positive performance.

### **c) Maryland MHAC Performance**

While the HSCRC has monitored state-wide hospital performance on reducing PPCs over the period CY 2019 to CY 2024, we are not aware if any external peer-review analysis of the MHAC program has been published or whether the HSCRC has performed any such rigorous comparative statistical analyses of Maryland hospital performance relative to a peer group of hospitals nationally. Although the HSCRC has reported decreases in the number of HACs at Maryland hospitals since 2009, there is no objective and independent analysis available that confirms this result.

The HSCRC evaluates Maryland hospital MHAC performance by monitoring the PPC Observed to Expected (O/E) ratios by quarter. Again, an O/E ratio greater than 1.0 indicates for an individual hospital indicates that there were more PPC than Expected (based on what occurred statewide for hospitals for the specific APR-DRG and SOIs included in the analysis). An O/E ratio less than 1.0 indicates there were fewer PPCs for a given hospital than expected. The HSCRC has monitored these O/E ratios for all hospitals in the state from 2018 to the present

and witnessed a decline in statewide O/E ratios over this period (moving from a statewide O/E ratio of about 1.5 in 2018 to an O/E ratio of just under 0.8 by 2025).<sup>70</sup>

Because Maryland (per the terms of the Maryland Medicare waiver) is exempt from the Quality P4P programs administered by CMS, the HSCRC finds it important to evaluate Maryland performance on the Agency for Health Quality and Research's (AHRQ) PSI-90 composite patient safety measure. The PSI-90 composite, which accounts for one sixth of the Medicare HACRP program score, focuses on a subset of 10 AHRQ-specified patient safety indicators (PSIs) of in-hospital complications and adverse events following surgeries, procedures and childbirth. Based on results from CY 2023 and CY 2024, compared to the U.S., Maryland performed more favorably on the overall PSI-90 composite and on eight of 10 PSI indicators (this Maryland result was evaluated on an all-payer basis). Compared to 2023, Maryland improved on the overall PSI-90 composite and on seven of 10 indicators in 2024, again across all payers and patients. Nominally, when compared to the nation, Maryland has performed better than or on a par with the overall national PSI-90 composite in four of six years in the period 2019-2024. Medicare's Hospital Care Compare publishes the PSI-90 Composite indicator rates per 1,000 for Medicare patients for the nation and by state. Based on the data available for FY 2026, Maryland rates are lower (better) or on par with the nation for all component indicators for both the base and performance periods with exception of PSI 3 Pressure Ulcer.<sup>71</sup>

The HSCRC also monitors Maryland's performance on the NHSN Healthcare-Associated Infections. As noted, this measure is derived from the CDC's National Healthcare Safety network (NHSN) initiative, which tracks healthcare-associated infections, such as central-line bloodstream and catheter-associated urinary tract infections. According to the HSCRC, for the most recent time period for which data nationally were available, Maryland's performance is favorable compared to that of the nation on MRSA. Maryland is worse (a higher Standardized Infection Ratio or "SIRs") on SSI-hysterectomy, SSI-colon, and slightly worse on CAUTI, CDIF and CLABSI but given small sample sizes for some of these measures, most differences are not statistically significant.

Again, according to the HSCRC, both Maryland and the nation improved from the base to the performance period on four of the six HAI categories—CAUTI, CLABSI, CDIF and MRSA, and worsened on Site-Specific Infections (SSI)-colon and SSI-hysterectomy. The HSCRC includes the NHSN HAIs in its Quality Based Reimbursement (QBR) program whereas the NHSN measures are included in both the Medicare HVBP and the HACRP programs. However, the HSCRC staff has concerns regarding small cell-size issues and "surveillance bias" (i.e., higher testing for infections results in higher rates of identified infections). Given these concerns, staff has not attempted to formally evaluate Maryland versus U.S. performance on these measures.

## 5. The Maryland Quality-Based Reimbursement Program (QBR) <sup>72</sup>

### a) Background

The Maryland Quality-Based Reimbursement program is the original quality-based pay-for-performance initiative implemented by the HSCRC beginning in CY 2009-2010.<sup>73</sup> The HSCRC's QBR is now the state's corollary program to Medicare's HVBP program (implemented in 2012) and was implemented as an attempt to maintain or improve Maryland hospital patient quality, particularly given concerns that the very strong incentives that hospitals faced to restrict hospital utilization under the largely fixed HGBs for Maryland hospitals beginning in 2014.

Maryland is exempt from the national quality P4P programs under the terms of its Medicare waiver, although Maryland must consistently demonstrate to CMS and the CMMI that Maryland hospital patient quality is keeping pace with or exceeding hospital quality performance nationally. Similar to the MHAC and RRIP programs, the QBR payment incentives apply to all payers and all hospital patients, which theoretically increases the power of the financial incentives that Maryland hospitals face (relative to the federal programs which apply only to Medicare patients and Medicare hospital revenue) to maintain or improve their care quality.

### b) QBR Program Structure and Key Elements

Both the Maryland QBR and the Medicare HVBP hold 2 percent of hospital inpatient revenue at-risk for performance by hospitals in three domains of hospital quality: 1) Person and Community Engagement; 2) Clinical Care; and 3) Patient Safety. In the Maryland QBR, each of these domains is assigned a weight that determines how heavily each domain is emphasized by the HSCRC in the overall payment incentive structure implemented by the Commission.

Other distinctive features of the Maryland QBR include all-payer applicability, a prospective and transparent preset revenue adjustment scale (avoiding the zero-sum relative ranking of the federal quality programs), a broad multi-domain structure spanning patient experience, clinical outcomes, and patient safety, and deep integration with Maryland's global hospital budget system. Together, these design elements were created in the hope that they would induce Maryland hospitals to continuously improve care quality across all patient populations, regardless of insurance status. As part of Maryland's new Total Cost of Care Agreement with CMS, the state will be transitioning to federal HVBP program and incentive structure beginning in calendar year 2028 over a period of 60 months, Table 13 provides a comparison of the key features of the Maryland QBR and the federal Medicare HVBP programs.

**Table 13: Maryland QBR Domain Descriptions & Revenue Weights Compared to the Medicare HVBP<sup>74</sup>**

| Domain                                 | Maryland Rate QBR Domain Weights and Quality Measures                                                                                                                                                                                           | CMS Medicare Fee-for-Service (FFS) HVBP Domain Weights and Quality Measures                                                                                  |
|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Person and Community Engagement</b> | 60 percent weight <ol style="list-style-type: none"> <li>1. Six HCAHPS categories “top box” scores;</li> <li>2. Timely Follow-up (TFU) of Chronic Patients post-discharge;<sup>xvi</sup></li> <li>3. Emergency Department Wait Times</li> </ol> | 25 percent weight<br><br>Six HCAHPS <sup>xvii</sup> measures “top box” scores and consistency                                                                |
| <b>Clinical Care</b>                   | 10 percent weight<br><br>Three measures: all-cause, all-condition inpatient mortality; all-cause, all-condition 30-day mortality & Total Hip and Total Knee Arthroplasty risk adjusted complication rates <sup>xviii</sup>                      | 25 percent weight<br><br>Six measures: Five condition-specific mortality measures and Total Hip and Total Knee Arthroplasty risk adjusted complication rates |
| <b>Patient Safety</b>                  | 30 percent weight<br><br>Six measures: Five CDC NHSN hospital-acquired infection (HAI) measures <sup>xix</sup> and All-Payer PSI 90 Composite measure <sup>xx</sup>                                                                             | 25 percent weight<br><br>Six measures: Five CDC NHSN HAI measures and Sepsis Bundle Measure                                                                  |
| <b>Hospital Spending</b>               | N/A <sup>xxi</sup>                                                                                                                                                                                                                              | 25 percent<br><br>One measure: Medicare spending per beneficiary                                                                                             |

xvi The Timely Follow-Up component of the PCE Domain evaluates the percentage of Emergency Department (ED) visits, observation cases and admissions for one of six conditions for which a follow-up visit by a clinician occurred with a recommended timeframe for certain categories of Chronically Ill patients. The five conditions and follow-up timeframes are Hypertension (7 days); Asthma (14 days); Heart Failure (14 days); Coronary Artery Disease (14 days); COPD (30 days); and Diabetes (30 days).

xvii The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) is a national, standardized and publicly reported survey measuring adult inpatients’ evaluation of hospital care. It evaluates patient experience while hospitalized on care giver communication, responsiveness and cleanliness.

xviii In Rate Years 2026 and 2027 the HSCRC removed these THA and TKA complication measures from the QBR due to concerns regarding shifting proportions of cases being performed in the hospital versus in an outpatient setting outside of a hospital.

xix The Centers for Disease control (CDC) National Health Safety Network (NHSN) is a web-based system for tracking Healthcare-Associated Infections (HAIs).

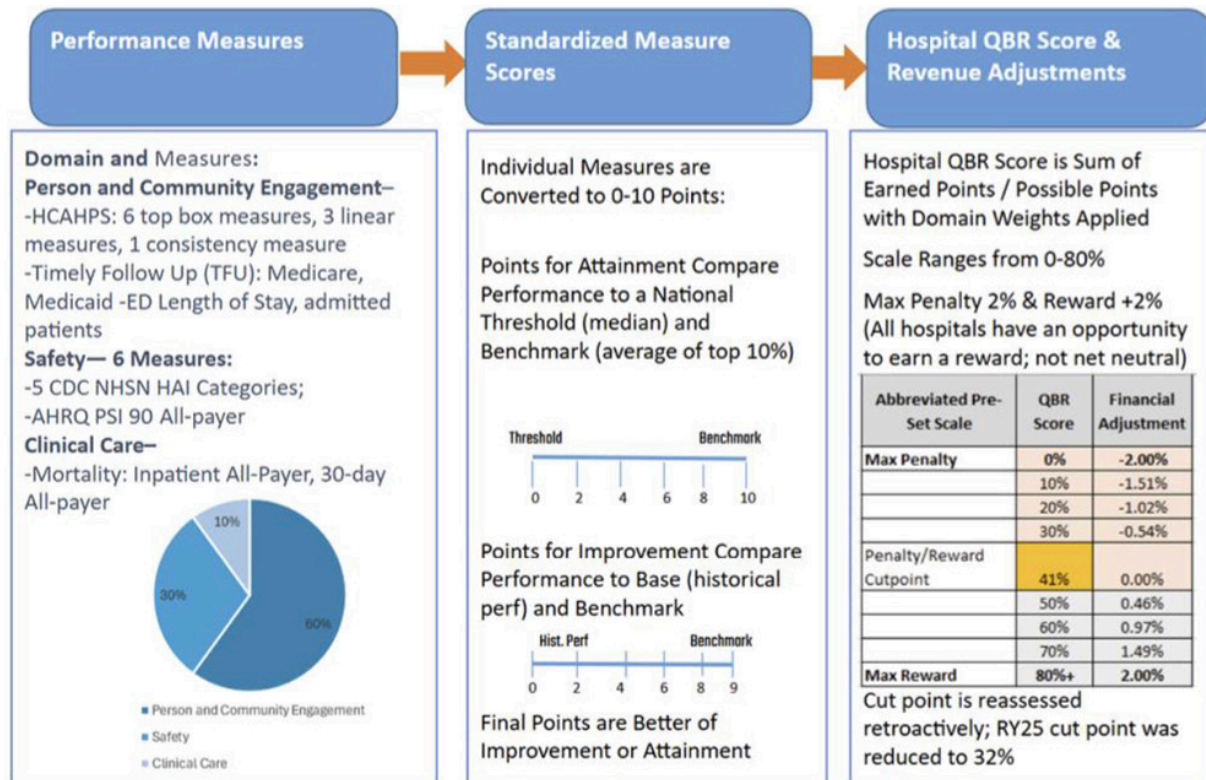
xx The Agency for Health Research and Quality’s (AHQ) PSI-90 Composite is a quality measure that combines 10+ hospital-acquired complications summarized into a composite index.

xxi HSCRC monitors hospital case-mix adjusted Charge Per Hospital Discharge and Charge per Hospital Outpatient Visit in a separate program referred to as the “Reasonableness of Charges” methodology.

### c) Overview of the QBR Methodology

Figure 4 Illustrates the Key Components and Methodological Steps in Calculating the QBR Scores<sup>75</sup>

**Figure 4: Schematic of QBR Methodology** <sup>xxii</sup>



These steps and the overall methodology are described in more detail below, however, this schematic shows the three Domains used in the QBR and generally illustrates the conversions of hospital scores on all QBR measures (across the three Domains) and conversion of scoring to a reward/penalty scale, the use of a “cut-point” (the point on the scale where hospital scoring turns from negative to positive – shown here to be around 41%).

### d) Person and Community Engagement Domain

The Person and Community Engagement Domain is the most heavily weighted quality domain in the HSCRC’s hospital quality programs now accounting for 60% of a hospital’s overall QBR score for the program. The HSCRC established a higher weight (and has increased the weight-

xxii Reproduced from the HSCRC Final Recommendations for Updating the Quality-Based Reimbursement Program for Rate Year 2028.



ing) for this Domain because of Maryland's performance on the HCAHPS survey being consistently less favorable than survey results nationally, particularly regarding responsiveness, cleanliness, and overall rankings of hospitals.<sup>76</sup>

This Domain includes an assessment of hospital patient satisfaction surveys implemented by CMS (the Hospital Consumer Assessment of Healthcare Providers and Systems or "HCAHPS"),<sup>xxiii</sup> measures of "Timely Follow-up" (TFU) after patient discharge for an acute exacerbation of a chronic condition for Medicare FFS beneficiaries and a measure of Hospital Emergency Department (ED) wait times.

### **e) The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS)**

The HCAHPS survey attempts to measure patient experiences across six categories of care delivery: 1) nurse communication; 2) doctor communication; 3) communication regarding medicines; 4) hospital cleanliness and quietness; 5) discharge information; and 6) overall hospital rating. The Timely Follow-up measure measures whether certain patients with chronic conditions received timely and proper and proven follow-up by hospital clinical staff post-acute hospital discharge. The last component of this Domain includes measurement of hospital performance on Emergency Department wait times – the "ED Length of Stay (LOS)" Measure, which is a recently added performance measure that assesses Maryland hospital performance for non-psychiatric patient seen Maryland hospital Emergency Departments (ED).

Similar to the federal HVBP, the Maryland QBR scores hospitals on the percent of respondents who indicate the highest performance scores (referred to as "top box" scores)<sup>xxiv</sup> and a measure of consistency across the six categories of care delivery listed above. The HSCRC scoring for this Domain differs from the scoring used in the Medicare HVBP in that it also uses an alternative scoring method referred to as "linear measure performance" which is a scoring method that assigns performance points based on a hospital's performance along a direct linear scale

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xxiii The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS, pronounced "H-caps") is a national, standardized, public survey measuring adult inpatients' perspectives on hospital care. Implemented by CMS, beginning in 2005, it allows all users of hospital services to compare hospital performance in treating and improving the overall care experience for hospitalized patients. These HCAHPS surveys provide the basis for a component of both CMS' and Maryland's Hospital Quality of Care P4P programs. HCAHPS: Patients' Perspectives of Care Survey, CTRS FOR MEDICARE & MEDICAID SERVS, [https://www.cms.gov/medicare/quality/initiatives/hospital-quality-initiative/hcahps-patients-perspectives-care-survey#:~:text=The%20Hospital%20Consumer%20Assessment%20of%20Healthcare%20Providers,care%20\\*%20Enhance%20accountability%20in%20health%20care](https://www.cms.gov/medicare/quality/initiatives/hospital-quality-initiative/hcahps-patients-perspectives-care-survey#:~:text=The%20Hospital%20Consumer%20Assessment%20of%20Healthcare%20Providers,care%20*%20Enhance%20accountability%20in%20health%20care).

xxiv "Top Box" scoring refers to a performance metric that calculates the percentage of patient survey respondents who selected the most positive rating. It acts as a measure of excellence where only the highest score ("always" or "definitely yes") counts toward a hospital's performance.



relative to pre-established benchmarks. This approach rewards or penalizes hospitals based on their specific, ranked performance rather than just meeting a threshold, allowing for a more precise, continuous adjustment of payment. According to the HSCRC, the use of a pre-set scale gives hospitals predictability and an incentive to “work together” to improve quality, rather than competing with one another to achieve a better ranking.

#### **f) Timely Follow-Up After Discharge Measure**

The timely follow-up (TFU) measure was introduced in the Rate Year 2023, independent of the Medicare HVB program which does not use TFU measures in its scoring. As noted above, the measure assesses the percentage of ED visits, observation stays, and inpatient admissions for one of six conditions in which a follow-up was received within the time frame recommended by clinical practice. The five conditions and follow-up timeframes are Hypertension (7 days); Asthma (14 days); Heart Failure (14 days); Coronary Artery Disease (14 days); COPD (30 days); and Diabetes (30 days).

Beginning in RY 2025, the HSCRC introduced the Medicaid TFU measure into the QBR program as a stand-alone (non-Medicare) measure due to the large differences in performance across Medicaid versus Medicare patients. This TFU measure has no direct analog in the Medicare HVB program.

#### **g) Emergency Department Wait Times (ED LOS)**

Since CMS started collecting data on and tracking hospital Emergency Department wait times, Maryland’s ED wait times have been noticeably longer than U.S. average wait-times and Maryland has recently posted the longest average ED wait times of any state. This relatively poor performance pre-dates the implementation of largely fixed Hospital Global Budgets in 2014, however, since 2014, there is evidence that fixed HGBs provide excessively strong financial incentives for hospitals to reduce or restrict the care they deliver, particularly in an Emergency Room setting.<sup>77, 78, 79</sup>

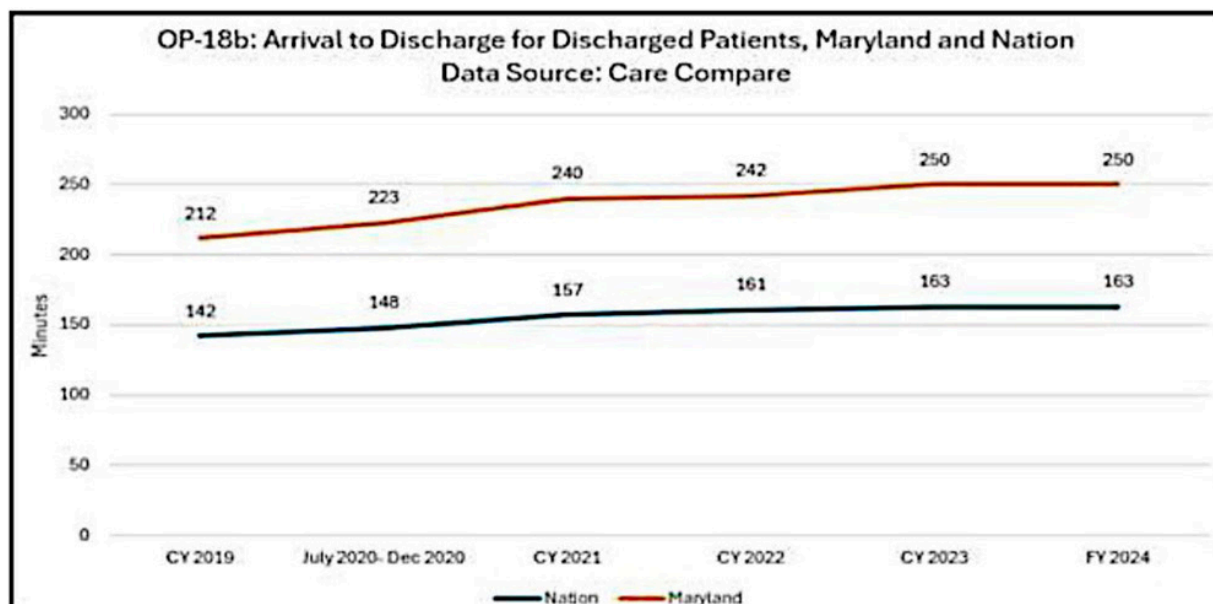
In response to these long-standing concerns, the HSCRC included an “ED LOS” measure weighted at 10 percent, in the QBR program beginning in Rate Year 2026. This measure is also specific to Maryland (although various hospital ED wait times are reported for hospitals nationally on Medicare’s Hospital Compare website).<sup>xxv</sup> Data reported on Medicare Care Compare

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xxv CMS tracks several emergency department measures, including the average (median) time patients spent in the ED before being admitted to the hospital as an inpatient, and the time after a doctor decided to admit a patient but before the patient left the ED for an inpatient room. The reporting of these data is technically “voluntary,” hospitals that provide these and other patient data receive higher Medicare rate updates for their timely reporting of data.

shows Maryland's less favorable performance on ED wait time measures for discharged patients. Figure 5 below, shows this performance from 2019 to 2024.

**Figure 5: Maryland and National Performance on ED Wait Times for Discharged Patients** <sup>xxvi</sup>



In past years, Maryland hospitals have frequently ranked as having the longest ED wait times in the nation, with average times of approximately four hours and hospitals with the longest wait times in excess of 16 hours.<sup>80</sup>

#### **h) Maryland Performance on the Person and Community Engagement (PCE) Domain**

Maryland has traditionally ranked lower than hospitals nationally on overall patient satisfaction and patient experience of care as measured by the HCAHPS, often ranking near the bottom of U.S. states. As of 2025 Maryland ranked 48<sup>th</sup> in the U.S. with scores about 7 percentage points below the national average.<sup>81</sup> According to HSCRC staff, both Maryland and the nation experienced little change in performance from the base to the performance periods for all of the HCAHPS categories in the most recent years. HSCRC staff analysis of HCAHPS measures showed that Maryland's performance continues to lag the U.S. and has improved only slightly or remained the same over the past 4 years.

<sup>xxvi</sup> Reproduced from the HSCRC's staff's analysis on ED wait times.

Based on CMMIs concerns over HCAHPS performance, the HSCRC increased the weight of the PCE Domain over the years and has convened work groups consisting of hospital, payer, and HSCRC staff representatives to identify additional steps that can be taken to improve state-wide performance on the HCAHPS surveys and other PCE measures, particularly the ED Wait Time measure.

In terms of the state's performance on the timely follow-up measures, for all chronic conditions tracked under TFU, there was a slight drop from 2018 to 2021 in measured wait time for patient follow-up (from about 70.85% to 70.07%), meaning Maryland did not meet its Year 3 statewide improvement goal of 72.38% timely follow-up.<sup>82</sup>

Statewide Medicare rates from in SFY 2023 to CY 2024 were flat (71.56% to 71.55%) across all conditions combined. For Asthma, CAD and CHF there were increases in the rates of timely follow-up by 3.61 percent, 0.07 percent and 0.55 percent, respectively. However, for CAD, CHF, Diabetes and Hypertension there were slight decreases in follow up.<sup>83</sup>

Maryland recently added an ED Wait Time (ED ALOS) measure to the PCE Domain in the QBR. ED wait times have, as noted, consistently been much higher than hospitals nationally with the state ranking last in the U.S., along with hospitals in the District of Columbia. It remains to be seen if the incorporation of the ED wait time measure will help incentivize Maryland hospitals to devote more resources (particularly ER staffing) to help improve overall Maryland hospital ED efficiency and throughput.

### **i) The Clinical Care Domain**

The Clinical Care Domain comprises a scoring weight of 10 percent of each hospital's overall QBR score and includes two key outcome measures: 1) an inpatient all-payer, all-condition mortality measure; and 2) a 30-day (post discharge) all-payer mortality measure. These measures differ from the mortality measures used in the Medicare HVBP, which monitors and applies financial incentives to hospitals for mortality performance on five condition-specific 30-day mortality for Medicare beneficiaries.<sup>xxvii</sup> HSCRC began reporting the 30-day, all-payer, all-condition, all-cause mortality measure in CY 2023. The move to use a 30-day measure in the QBR Program was, according to HSCRC staff, to "better capture and incentivize hospitals improve the

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xxvii 1) Acute Myocardial Infarction (AMI) 30-Day Mortality Rate; 2) Heart Failure (HF) 30-Day Mortality Rate; 3) Pneumonia (PN) 30-Day Mortality Rate; 4) Chronic Obstructive Pulmonary Disease (COPD) 30-Day Mortality Rate; 5) Coronary Artery Bypass Graft (CABG) Surgery 30-Day Mortality Rate. See: [https://www.qualityreportingcenter.com/globalassets/listserves/2024/iqr/2024-63-ip-fy-2025\\_hvbp-mort-comp-listserv\\_email-blast-508.pdf](https://www.qualityreportingcenter.com/globalassets/listserves/2024/iqr/2024-63-ip-fy-2025_hvbp-mort-comp-listserv_email-blast-508.pdf).

overall quality of care delivered to their patients beyond just the hospital setting. This is a priority of the Maryland's Total Cost of Care model, which measures Maryland cost performance on both hospital and non-hospital expenditures for Medicare patients.

The HSCRC has recently reinstated two additional measures of complications that are also tracked in the Medicare VPB: 1) Total Hip Arthroplasty Complication Rate (THA); and 2) the Total Knee Arthroscopy Complication Rate (TKA). These measures were added to the Maryland QBR to further align it with the Medicare HVBP which has included these complication measures for several years.

### **j) Maryland Performance on the Clinical Care Domain Measures**

Maryland's performance on Clinical Care has generally been at or above national levels, in contrast to the state's generally poor relative performance on patient experience (HCAHPS). As noted, Maryland uses a state-specific inpatient all-payer, all-cause mortality measure rather than benchmarking directly against CMS. However, HSCRC staff has tracked Maryland hospital performance on the CMS condition-specific mortality measures.

Despite Maryland's use of an overall 30-day all-payer, all-cause, mortality measure (as opposed to the CMS condition-specific mortality measures) Maryland performs essentially on par with the nation. In particular, Maryland performs slightly better on 30-day mortality for AMI, CABG, HF, COPD, and PN, and slightly worse on stroke. For the QBR all-payer inpatient mortality measure, the DRGs with the top 80% of deaths), the Maryland statewide risk-adjusted survival rate increased from 95.27 percent in the base period of Rate Year 2023 to 95.66 percent in the CY 2024 performance period.

In CY 2024, for the 30-day, all-payer, all-condition mortality measure, survival rates in Maryland ranged from 96 percent to 97 percent with 24 hospitals improving and six hospitals declining compared to SFY 2023. The statewide average survival rate for the measure improved by 0.10 percent in 2024.

Previous analysis of the newly reinstalled THA/TKA complication rates indicates that based on an analysis of weighted average rates for Maryland and the nation, Maryland hospitals performed better than hospitals nationally.<sup>84</sup>

## k) The Patient Safety Domain

This Domain includes five of the six CDC National Healthcare Safety Network hospital-acquired infection (NHSN HAI) categories and AHRQ Patient Safety Index Composite measure (see footnotes ii and iii above for a description of these two measure categories). This Domain accounts for 30 percent of a hospital's overall QBR score. The Medicare HVBP assesses hospital performance on complication rates for both the CDC NHSN HAI categories and the PSI-30 Composite measure).

As noted, the CDC NHSN tracks healthcare-associated infections, such as central blood-stream infections and urinary tract infections. This domain also measures Maryland hospital performance on the PSI-90 Composite index, which is a weighted, risk-adjusted measure that summarizes ten different patient safety indicators to evaluate hospital-level safety. It focuses on potentially preventable, in-hospital complications and adverse events. CMS removed the PSI-90 composite measure from the Medicare HVBP but retained the measure for the Medicare HACRP. Maryland does not have a PSI-90 measure in its MHAC program but retains this measure in the QBR program.

### 1) Maryland Performance on the Patient Safety Domain

There is evidence from the 2018-19 period that Maryland hospitals ranked only 38th in patient safety, based on analyses conducted by the Leapfrog Group. The Leapfrog Hospital Safety Grade uses national performance measures from CMS, the Leapfrog Hospital Survey and other sources. Metrics for the Hospital Safety Grade include medical errors, hospital acquired infections (including the virulent *C. diff* infection), hospital-caused accidents and injuries. The Leapfrog Group notes that most hospital errors can be prevented. Maryland hospitals need to work harder to protect their patients from errors, injuries, accidents and infections that can result in disability or death.<sup>85</sup>

While Maryland's historical performance on the CDC NHSN HAI measures has been mixed, Standardized Infection Ratios (SIRs) for five of the six HAI categories improved both nationally and for Maryland in recent performance periods, relative to a base period. HSCRC staff determined Maryland's performance on the measures used in the Patient Safety Domain appears to be on a par with the nation for the NHSN HAI measure. Maryland's improvement was better than the U.S. for three of the six HAI measures (SSI, MRSA and *C. diff*), and on par with the nation for other measures.

Maryland's PSI-90 performance showed a temporary decline during the COVID-19 pandemic (in the 2020–2021), consistent with national trends, but has since recovered and improved. As of the most recent data, Maryland performs better than the national average on the all-payer PSI-90 composite — a positive sign for the state's patient safety programs. There remains notable variation across individual hospitals, indicating room for continued improvement at the facility level. Table 14 shows how the state has performed on the PSI-90 Composite in 2024 and 2023.

**Table 14: AHRQ PSI-90 Composite Index Performance: Maryland versus the U.S.**

| PSI Name                                            | Maryland 2024 Compared to the Nation 2024 | Maryland 2024 Compared to Maryland 2023 |
|-----------------------------------------------------|-------------------------------------------|-----------------------------------------|
| PSI 90 Composite                                    | Better                                    | Improved                                |
| PSI 3 Pressure Ulcer                                | Worse                                     | Improved                                |
| PSI 6-Iatrogenic pneumothorax                       | Better                                    | Improved                                |
| PSI 8 In Hospital Fall and Fracture                 | Better                                    | Worse                                   |
| PSI 9 Perioperative Hemorrhage or Hematoma          | Better                                    | Improved                                |
| PSI 10 Postoperative Acute Kidney Injury w/Dialysis | Better                                    | Worse                                   |
| PSI 11 Postoperative Respiratory Failure            | Better                                    | Improved                                |
| PSI 12 Postoperative Pulmonary Embolism or DVT      | Better                                    | Improved                                |
| PSI 13 Postoperative Sepsis Rate                    | Better                                    | Improved                                |
| PSI 14 Postoperative Wound Dehiscence               | Better                                    | Worse                                   |
| PSI 15 Abdominopelvic Accidental Puncture or Lac    | Worse                                     | Improved                                |

### m) QBR Scoring Methodology

The QBR Program calculates hospital performance by comparing each measure used in each domain of the QBR relative to either national or state performance standards. For all measures, (except for the ED Wait Time measure) the performance standards range from the 50th percentile of hospital performance (which determines a “threshold” for earning positive points) to the mean of the top decile (labeled the “benchmark” or the level of maximum score potential). Each measure is then given a score of zero to ten points. The points are then summed and divided by the total number of points possible and weighted by the Domain weight. A score of 0 percent means that performance on all measures is below the performance threshold. A total score of 100 percent means performance on all measures is at or better than the mean of the top decile or “benchmark” (about the 95th percentile). This scoring method is the same as that used for the HVB Program.

However, the QBR uses a pre-set scale to determine each hospital's reward or penalty which may not be “revenue neutral” (i.e., the sum of the penalties matches the sum of all rewards). In



contrast, the federal HVBP uses a “tournament” scoring approach which is based on each hospital’s performance, relative to other hospitals, and is forced to be revenue neutral. As noted, the purpose of the pre-set scale is to give hospitals a predictable set of targets to achieve as they go through the year and attempt to improve their performance on the various QBR quality measures.

There is a five-step process for calculating hospital QBR scores across all three QBR Domains: 1) assessing each hospital’s performance on each measure in the domain relative to the corresponding pre-set scale; 2) standardizing measure scores relative to performance standards; 3) calculating the total points a hospital earned divided by the total possible points for each domain; 4) finalizing the total hospital QBR score (using a scale of 0 to 100 percent) by weighting the domains; and 5) converting the total hospital QBR scores into revenue adjustments using the preset revenue adjustment scale (range of 0 to 80 percent) which also includes the determination of a “cut-point” (i.e., the point on the revenue adjustment scale at which a hospital earns rewards or receives a penalty). The determination of this “cut-point” is based on an analysis of the federal HVBP program and how hospitals nationally would perform on in the Maryland QBR program.<sup>xxviii</sup> The cut-point is calculated prospectively on an initial basis and then recalculated later in the year based on the most recent national HVBP performance data.

A further element to the Maryland QBR program is that hospitals’ point totals are calculated on the basis of the better of “improvement” (i.e., how much a hospital improved on its calculated measures relative to a base period) or “attainment” (a hospital’s absolute score relative to all other hospitals). For each measure, a hospital that has a rate at or above the benchmark receives 10 attainment points. For attainment, a hospital that has a rate below the attainment threshold receives 0 attainment points. A hospital that has a rate at or above the attainment threshold and below the benchmark receives 1–9 attainment points.

Improvement points are assigned by comparing a hospital’s performance on QBR measures during the performance period to the hospital performance in a base period. A hospital that has performance at or above the attainment benchmark receives 9 improvement points. A hospital that has performance at or below the baseline period rate receives 0 improvement points. A hospital that has a rate between the baseline period rate and the attainment benchmark receives 0–9 improvement points.

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xxviii The current methodology for determining the cut-point is to estimate QBR scores for all hospitals nationally and calculate the mean score. This mean score is used as the cut-point. This method uses HCAHPS and NHSN data for hospitals nationally but state averages for Maryland specific measures and applies the QBR measure weights. For RY 2026, staff has shifted to using the median values for Maryland measures, less sensitive to outliers.

Maryland hospitals are also eligible to earn “consistency” points. The use of Consistency points is intended reward hospitals that have scores above the national 50<sup>th</sup> percentile in all eight HCAPS measures. In this circumstance, a hospital will receive a full 20-point credit. If it does not, it will receive a lower score based on a range between the national 0 percentile (floor) and the 50<sup>th</sup> percentile (threshold) and is awarded points proportionately.

For each domain of the QBR, a hospital will receive a point score that reflects the higher of its attainment and improvement scores. A hospital’s total performance score is calculated by multiplying each domain score by each domain’s specified weight and then summed across all domains.

## n) Maryland QBR Revenue Adjustments

Table 15, below, shows a side-by-side comparison of the Maryland QBR and the federal corollary program, the Medicare HVBP.

**Table 15: Side by Side Comparison of the Maryland QBR and HVBP Programs** <sup>86</sup>

| Feature                                        | Maryland QBR (RY 2028 Proposed)                                        | CMS HVBP (FFY 2028)                                         |
|------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------|
| <b>Revenue at risk</b>                         | 2% of all-payer Inpatient Revenue                                      | 2% of Medicare Inpatient Revenue                            |
| <b>Patient population</b>                      | All-payer                                                              | Medicare Fee-for-service only                               |
| <b>Patient and Community Engagement Domain</b> | 60%                                                                    | 25%                                                         |
| <b>Patient Safety Domain</b>                   | 30%                                                                    | 25%                                                         |
| <b>Clinical Care Domain</b>                    | 10%                                                                    | 25%                                                         |
| <b>Efficiency Domain</b>                       | NA                                                                     | 25%                                                         |
| <b>ED Wait Time Measure</b>                    | Included                                                               | Not Included                                                |
| <b>Timely Follow-Up Measure</b>                | Included                                                               | Not Included                                                |
| <b>Revenue and Penalties</b>                   | Not Revenue Neutral (total rewards can exceed penalties or vice versa) | Revenue Neutral (rewards must equal penalties in aggregate) |
| <b>Hospital Ranking</b>                        | Prospective: Absolute Pre-set Scale                                    | Retrospective: Tournament Relative Ranking                  |

In the Rate Year 2028 final recommendation for the QBR, the HSCRC accomplished a simulation of how U.S. hospitals would have performed on the QBR scoring and Domain weight structure to compare the revenue impacts of both programs. These results are shown in Table 16.<sup>87</sup> Given that the QBR incentives are not “revenue neutral” this analysis shows that under the

HSCRC QBR program and scoring rules, hospitals nationally would have generated total state-wide net payments of over \$51 million in Rate Year 2026, compared to the actual net incentives generated by Maryland hospitals of -\$20.5 million. Staff attributes the largest difference to the revenue “scaling factors” used by the national HVBP as the primary reason for the difference in incentive revenues provided under the HVBP versus the QBR. This analysis illustrates the large variation in incentive payments that can result from relatively minor variations in a program’s scoring methodology. Given the documented poor performance of the federal HVBP program<sup>88</sup> and the absence of any peer-review analysis that shows the QBR program has had an overall positive impact (beyond secular trends),<sup>89</sup> this perhaps strengthens a perception that the incremental rate incentives provided by both programs have not had a direct and substantial impact in improving hospital quality.<sup>90</sup>

**Table 16: HSCRC Analysis of Maryland vs U.S. Hospital Performance per the QBR Methodology** <sup>xxix</sup>

| Program    | Statewide Net Total Incentives | Percentages | Statewide Penalties Applied | Percentages | Statewide Rewards Applied | Percentages |
|------------|--------------------------------|-------------|-----------------------------|-------------|---------------------------|-------------|
| <b>QBR</b> | -\$20.5 mill.                  | -0.16%      | -\$34.9 mill.               | -0.28%      | \$14.4 mill.              | 0.11%       |
| <b>VBP</b> | \$51.2 mill.                   | 0.41%       | -\$17.4 mill.               | -0.14%      | \$68.6 mill.              | 0.54%       |

## 6. The Maryland Readmission Reduction Incentive Program

### a) Overview

The Commission’s hospital Readmission Reduction Incentive Program (RRIP) is the third major component of the HSCRC’s overall quality incentive initiative.<sup>91</sup> This RRIP was initiated in Rate Year 2014, commensurate with the implementation of the Maryland “All-Payer Model” agreement with CMS and the CMMI (this agreement also effectively required Maryland to transition all hospitals to largely fixed hospital global budgets). The Maryland RRIP has continued through the state’s transition to its “Total Cost of Care” Agreement with CMS (an extension of the All-Payer model to include limits on the growth in Medicare total expenditures including both hospital and nonhospital providers), beginning in Rate Year 2019. Under Maryland’s Total Cost of Care Agreement with CMS, the state’s Medicare all-cause hospital readmission rate was required to remain at or below the national readmission rate for Medicare beneficiaries nationally.

<sup>xxix</sup> This analysis assumes that the Maryland VBP program rewards/incentives were applied to U.S. Hospitals on an All-Payer basis for comparison to Maryland hospital performance on the VBP.

The HRRP is intended to continue until Rate Year 2028, when Maryland hospital rate setting will conform to a new agreement with CMS and CMMI, under the federal AHEAD model. The AHEAD model was created by the CMMI to allow states to experiment with the implementation of hospital global budgets. Maryland is expected to modify the key methodologies of the RRIP, and its other hospital quality incentive programs, the QBR and MHAC, to align with the federal Medicare hospital quality programs, the HRRP, HVBP and HACRP.<sup>92</sup>

## **b) Hospitals and Readmissions Included in the RRIP**

The RRIP applies to both acute care and some specialty hospitals regulated by the HSCRC. A hospital readmission occurs when a hospitalized patient has been readmitted to the hospital within 30 days of having been originally discharged by the hospital within 30 days of the “in-dex” admission. Readmissions can occur to either the same hospital that originally treated and discharged the patient or to a different hospital within the 30-day post initial discharge period.

While some hospital readmissions are unavoidable, high rates of readmissions may indicate substandard care. Less-effective inpatient hospital care, poor discharge planning, or ineffective post-acute care may cause patients to be readmitted to the original or another hospital.

To focus hospitals’ administrators and clinical personnel on the need to improve in-hospital care quality, the RRIP and the federal HRRP hold hospitals at-risk financially. Maryland holds 2 percent hospital all-payer inpatient revenue at risk in the RRIP. By comparison the federal HRRP is a “penalty only” policy that applies reductions (capped at 3 percent) for failing to meet federal readmission reduction goals. The federal HRRP tracks national hospital Medicare risk-adjusted readmission rates on 30-day hospital readmission reduction performance across six targeted conditions (heart attack, heart failure, pneumonia, COPD, elective hip and knee replacement). The “all-cause” design of the Maryland RRIP allows the program to apply to a larger share of preventable hospital readmissions and revenue, whereas the federal program incentives apply only to Medicare inpatient revenues and Medicare readmission hospital performance. The hospital readmission measure used in the Maryland RRIP captures both within-hospital and between-hospital readmissions across the state’s regulated hospitals. A readmission is counted when a patient is admitted to any Maryland regulated hospital within 30 days of a prior inpatient discharge.

The Maryland RRIP program provides incentive rewards or penalties, based a hospital’s performance on risk-adjusted 30-day all cause hospital readmissions, scoring hospitals based on the better of a hospital’s readmission rate improvement (i.e., the hospital’s ability to reduce its readmission rate from one year to the next) or its attainment (the achievement of the lowest abso-

lute readmission rate across all Maryland hospitals) scores. Under the Maryland RRIP, hospitals can earn rewards or penalties on a non-revenue neutral basis (i.e., aggregate statewide rewards can exceed aggregate statewide penalties, or vice versa).

The Maryland program also includes an adjustment that factors in hospital patients' socio-economic status using a measure referred to as the Patient Adversity Index (PAI). The PAI is a composite social risk index developed by HSCRC, which uses patient level data on various factors that may indicate lower socio-economic status such as race, Medicaid status, and the factors correlated with factors that measure socio-economic "deprivation" for the area surrounding the patient's address. It is believed by the HSCRC (and more recently MedPAC) that hospitals that serve disproportionately large percentage of patients from economically disadvantaged patient populations may have higher readmission rates because of the barriers their patients face. Under the RRIP Disparity Measure, Maryland hospitals can earn a reward of up to 0.5% of inpatient revenue for reductions in year-over-year overall readmission rate disparities related to socioeconomic status, with the goal of a 50% reduction in disparities over 8 years.<sup>93</sup> Table 17 provides a comparison of the Maryland RRIP and the federal Medicare HRRP programs.

**Table 17: Summary Comparison of the Maryland RRIP relative to the Medicare HRRP**

| Feature                               | Medicare HRRP                                 | Maryland RRIP                                                                         |
|---------------------------------------|-----------------------------------------------|---------------------------------------------------------------------------------------|
| <b>Authorizing Agency</b>             | Center for Medicare & Medicaid Services (CMS) | The Maryland HSCRC                                                                    |
| <b>Patient Population</b>             | Medicare Fee-for-Service patients             | All-payer patients                                                                    |
| <b>Readmission Conditions</b>         | Six Condition Specific 30-Day Readmissions    | All-Cause 30-Day Readmissions                                                         |
| <b>Risk Adjustment</b>                | Hierarchical Logistic Regression              | APR-DRG "Indirect Standardization"                                                    |
| <b>Incentive Structure</b>            | Penalty Only (up to - 3.0%)                   | Two sided: Penalty (up to -2.0% and Rewards up to 1.0%)                               |
| <b>Equity/Disparity Adjustment</b>    | Peer Grouping by Dual Eligibility Category    | Separate Disparity Reward Component of up to 0.5%                                     |
| <b>Treatment of Observation Stays</b> | Not Included                                  | Not Included                                                                          |
| <b>Performance Scoring</b>            | Relative to National Average Performance      | Better of Attainment and Improvement relative (but using a pre-set performance scale) |

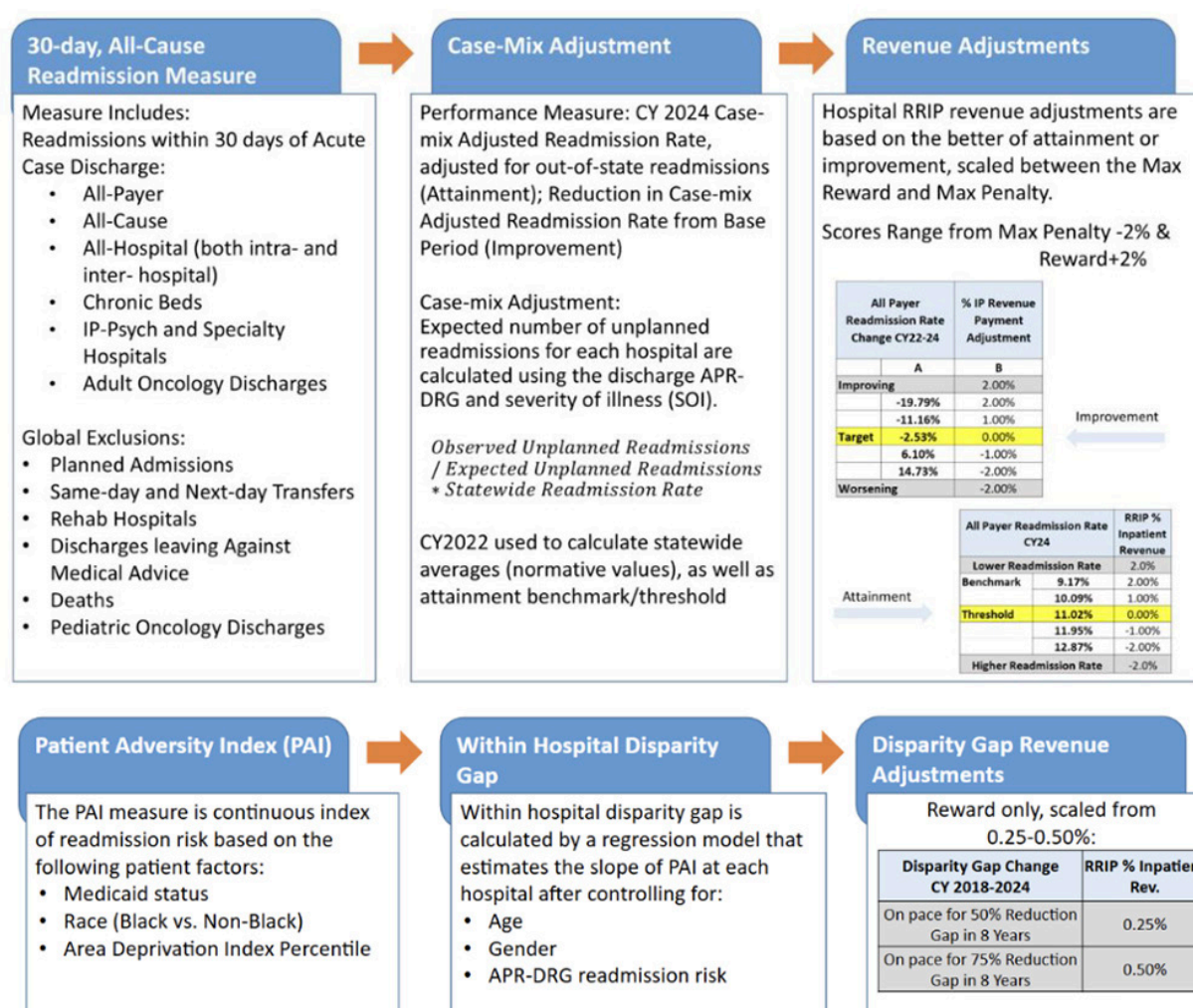
Just as is the case with the other Maryland hospital quality programs, Maryland hospitals are currently exempt from the federal HRRP due to the state's all-payer waiver with Medicare. Since the RRIP was implemented in 2014, Maryland hospitals appear to have consistently reduced

their rate of readmissions. These results are important particularly given Maryland's historically poor performance, having experienced readmission rates that have been among the highest of all states nationally.<sup>94</sup>

### c) The Maryland RRIP Methodology

Figure 6 below, provides an overview of the Maryland RRIP overall structure and scoring methodology including an illustration (including an outline of the Patient Adversity Index adjustment) of how the HSCRC factors in patient disparities into the incentive structure.

**Figures 6: Overview of the HSCRC Rate Year 2027 RRIP Methodology and Scoring** <sup>xxx</sup>



xxx Reproduced from the HSCRC's Rate Year 2027 RRIP Policy Recommendation.



## d) Steps in the RRIP Scoring and Incentive Revenue Allocations

There are several key steps in the RRIP Methodology. First, is to identify categories of cases that are excluded from the RRIP. These exclusions are: 1) planned readmissions; 2) certain defined cases with small cell size; 3) newborn cases; 4) bone marrow transplant and liquid tumor patients; 5) patients that left the hospital “against medical advice,” 6) Rehabilitation cases grouped to APR-860; 7) cases that cannot be grouped in the APR-DRG SOI case mix methodology; and 8) admissions that result in transfers to other hospitals and 9) other excluded cases (as defined in the 2027 HSCRC RRIP final recommendation Appendix I.<sup>95</sup> It should be noted that the HSCRC accounts for readmissions that occur out-of-state. Because the HSCRC does not have data to directly observe out of state readmissions, it must estimate these readmissions based on a ratio developed using Medicare patient data, which can be tracked across states.<sup>xxxi</sup>

Second, Maryland uses its APR-DRG SOI case-mixing logic and data (which allows the HSCRC to track individual patient readmissions across Maryland hospitals) and calculate RRIP included readmissions in a base year. Usually, this base year is 2 to 3 years prior to a given “Performance” year (the year for which hospital readmissions are accounted for and used in the RRIP scoring methodology). Like the case-mix adjustment methodology used in the MHAC program, the HSCRC calculates a “Case-mix Adjusted Readmission Rate” for each hospital which is accomplished by creating a ratio of each hospital’s Observed (O) Readmissions to their “Expected” (E) Readmissions (i.e., their O/E ratio). Observed readmissions are a hospital’s total RRIP-eligible unplanned readmissions.

The HSCRC then multiplies the O/E ratio for each hospital times the statewide base year readmission rate. Multiplying the O/E ratio by the base year state rate converts it into a readmission rate that can be compared to unadjusted rates and case-mix adjusted rates over time. A hospital’s “Expected” readmissions is the number of readmissions the HSCRC would expect a given hospital would have experienced had its rate of readmission been the same as that by statewide hospitals with a similar patient profile as measured by APR-DRG and SOL category.

## e) Scoring Methodology and Revenue Adjustment

The RRIP evaluates both hospital improvement in readmission rates from a base period (typically a two-year period to smooth out variations from year to year, particularly during the Pandemic Health Emergency), and its attainment readmission rates for the performance period, with an adjustment for out-of-state readmissions using Medicare patient data as noted previously.

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xxxi The HSCRC effectively applies derived readmission ratios for Medicare patients from in-state to out-of-state hospitals as a proxy for each hospital’s out-of-state readmissions. For more information, see page 28 of the HSCRC2027 Final RRIP Recommendation.

The Attainment component rewards hospitals that maintain low readmission rates over time. The RRIP's reward threshold for Attainment, begins at the 65<sup>th</sup> percentile of statewide performance. For Rate Year 2027, the threshold was calculated as 11.25%, which means that hospitals with a case-mix adjusted readmission rate of 11.25 or below can earn positive Attainment points (which increase as a hospital experiences progressively lower readmission rates relative to this threshold). A hospital can earn full Attainment scores by having a readmission rate that is at or below 8.83%, which is the 95<sup>th</sup> percentile of the performance distribution. The methodology calculates a hospital-specific revenue adjustment based on the better of the hospital's improvement versus its attainment scores.

As noted, the RRIP isolates up to 2 percent of hospital inpatient revenue that can be allocated to either rewards or penalties for hospital readmission performance. Unlike the federal HRRP, the application of total penalties and rewards are not forced to be revenue-neutral for the Maryland hospital rate system. Reward or penalty rate adjustments are administered as slight add-ons or subtractions from a hospital's unit rates and its approved HGB. To protect hospitals from what the HSCRC considers to be "excessive" penalties across all of the HSCRC's Quality Programs (including the HSCRC's Potentially Avoidable Condition methodology), Maryland uses a maximum penalty "guardrail" of about 3.5%.

Once each hospital's higher of Improvement and Attainment scores have been calculated, the RRIP policy calculates each hospital's revenue adjustment (applying the better of their Improvement and Attainment scores) with scaled rewards up to 2% of inpatient revenue and scaled penalties. Again, Figure 6 shown above, provides a description of the HSCRC RRIP methodology with cut points established for both scales (at -2.53% for Improvement and at 11.02% for Attainment).

#### **f) Revisits to the ED and Observation Stays**

The RRIP methodology only counts a readmission if a patient returns to a hospital and is re-admitted as a hospital inpatient. A "revisit" to a hospital ED after an initial admission and the assignment of "Observation" status to patients after ED visits are not included in the HRRP calculations.

Many policymakers have noticed that the incentives of the HRRP (and by extension the Maryland RRIP) create strong incentives for hospitals to attempt to "game" the programs, through patients returning to the hospital being classified as ED or Observation cases. In some cases hospitals have also been observed delaying readmissions past the 30<sup>th</sup> day after an Index admission.<sup>96</sup>

This circumstance illustrates a significant concern with both the federal and Maryland readmission programs because coding repeat visits as ED or observation cases can result in more rewards or smaller deductions. One study demonstrated that of 3.8 million Index admissions in the HRRP, 11% were observation stays and 18% of returns to the hospital for treatment by patients were undetected by the HRRP due to the visit being classified by hospitals as observation cases.<sup>97</sup>

According to MedPAC's analyses, as inpatient readmission rates declined, after the implementation of the HRRP, observations cases increased, which may indicate that some of U.S. hospitals' improvement on readmission rates may reflect coding changes rather than actual care improvement.

Despite evidence from private insurers that increases in the coding of observation cases directly largely offset gains by reduced hospital readmissions,<sup>98</sup> and other evidence supporting a link between the increased coding of cases as observation cases and lower hospital readmission rates,<sup>99</sup> MedPAC concluded that only a small share of Observation and ED use was related to the incentives of the HRRP.<sup>100</sup> As a result CMS has no plan to include observation cases in the HRRP, although many credible sources believe this feature of the HRRP allows hospitals to enhance their performance on the HRRP, inappropriately.

### **g) Efforts to Reduce Disparities**

The federal HRRP has been criticized for unfairly penalizing hospitals serving large proportions of low-income and socially disadvantaged patients in its scoring of hospital readmission performance.<sup>101,102</sup> It has also been alleged that the penalties imposed on hospitals serving a large percentage of low-income and socially disadvantaged patients could limit these hospitals' resources to make investments in care structures that could reduce their rate of unnecessary readmissions.<sup>103</sup>

Similar observations persuaded MedPAC in its June 2013 Report to Congress to recommend to CMS that it perform the HRRP analysis on the basis of hospital peer groups stratified by the proportion of each hospital's number of Dually Eligible (DE) patients, (patients that are eligible for both Medicare and Medicaid due to low income and either age or disability).<sup>104</sup> In response to these concerns, beginning in FY 2019, HRRP penalty calculations made use of peer grouping which adjusts the standards for readmission performance of hospitals to those hospitals with similar proportions of DE patients.<sup>105</sup>

In Maryland, the HSCRC has attempted to address this “disparity” issue by introducing a within-hospital disparities readmissions measure. Hospitals can earn up to 0.5% of their inpatient revenue for demonstrating year-over-year reductions in the gap between readmission rates for higher-adversity and lower-adversity patients, (as measured by using a Patient Adversity Index or “PAI”).<sup>xxxii</sup> The PAI is a composite measure developed by the HSCRC that incorporates patient race, Medicaid status and an Area Deprivation Index score, with each component weighted by its association with the risk of a readmission. The HSCRC has a stated goal of reducing this “disparity gap” by 50% over the course of the Total Cost of Care Agreement (running from 2019 until 2028).<sup>106</sup> CY 2023 HSCRC data shows that 22 hospitals saw a reduction in their within-hospital disparities in readmissions, ranging from a 0.55% reduction to a 34.87% reduction, compared to a base year of CY 2018. In Rate Year 2025 the Disparity Gap Program (based on Rate Year 2023 performance) provided scaled rewards to two of these 22 hospitals. The HSCRC has not provided any additional results on its program to reduce disparities.

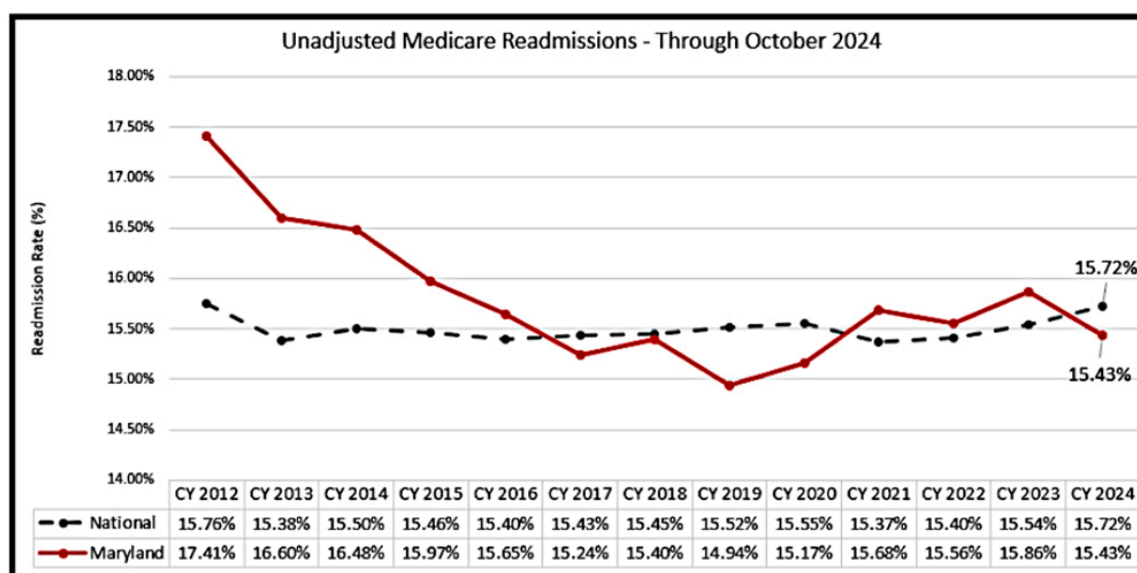
### **h) Maryland Hospital Performance in Reducing Readmissions**

As noted, Maryland historically has performed poorly compared to the nation on readmissions. However, since the implementation of the RRIP in CY 2014, Maryland has demonstrated consistent improvements in its adjusted and unadjusted readmission rates and meeting the required (per the All-Payer Agreement) CMS targeted readmission rate reduction levels. Although the state had mixed results in CY 2014 and 2015, its performance improved in the period CY 2016 through CY 2018, when Maryland had an unadjusted FFS Medicare Readmission rate of 15.40% which was below Medicare’s required targeted rate for the state, of 15.45%. Figure 7 shows this favorable relative experience for Maryland relative to the nation on these unadjusted Medicare readmission levels. Although since 2019, Maryland’s performance relative to the nation (in unadjusted Medicare Readmissions) has slowed, as shown in the graph below, in the most recent measurement period (CY 2024) Maryland once again registered an unadjusted Medicare Readmission rate that was below the nation (15.43% for Maryland vs. 15.72% for the nation).

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xxxii Final Recommendation for the Readmission Reduction Incentive Program for the Rate Year 2027, *supra* note 92 and 96 (The Patient Adversity Index (PAI) is a composite index, calculated at the discharge record level that weights the association of a patient’s race, Medicaid enrollment status and the Area Deprivation Index score for a patient’s home neighborhood. Each of these components is assigned a weight that indicates the strength of its statistical association with the potential for readmission. A high PAI score indicates a greater chance of socioeconomic adversity).

**Figure 7: Maryland versus the National Medicare FFS Unadjusted Readmission Rate Performance** <sup>xxxiii</sup>



According to HSCRC staff in its 2027 Final RRIP Recommendation, Maryland has performed well on the RRIP on all-payer readmissions rates. As of CY 2024 year-to-date, all-payer, Medicare FFS and Medicaid Managed Care Organization (MCO) readmission rates were reduced 7.8%, 8.1% and 9.9% respectively, from a CY 2018 base. As noted in an earlier section, there have been no independent peer-review analyses of Maryland state performance on reducing readmissions.

However, overall based on these statistics, Maryland successfully closed a 1.22 percentage point gap relative to the national Medicare average — ultimately falling below it — by the end of the original 2014–2018 All-Payer Model period. Readmission rates continued declining through CY 2019, and the program has been adapted to address challenges faced by the state post-COVID 19, and the state is continuing to evolve the program to improve measurement of health equity disparities, and to align the program with the CMMI AHEAD model, which the state will transition to beginning in CY 2028.

<sup>xxxiii</sup> Reproduced from HSCRC Final Recommendation for the Readmission Reduction Incentive Program for the Rate Year 2027, [https://hscrc.maryland.gov/Documents/Quality\\_Documents/RRIP/RYP202027/Final%20RRIP%20RYP202027%20recommendation.pdf](https://hscrc.maryland.gov/Documents/Quality_Documents/RRIP/RYP202027/Final%20RRIP%20RYP202027%20recommendation.pdf).

## 7. Conclusions Regarding Hospital P4P Quality Improvement Programs

Both the federal and Maryland hospital quality incentive P4P programs have been criticized by hospital, payer and policy personnel as being excessively complicated, with significant overlap in the quality measures used. Both factors may obscure the incentives applied to these programs to induce improved performance on the selected outcome measures. In particular, the complex scoring methodologies hamper hospital efforts to respond to the financial incentives in rational and productive ways. Critics of the Maryland and federal quality programs have recommended increasing the magnitude of the financial incentives applied to hospitals to induce a more focused and successful result. However, others worry that placing hospitals at additional financial risk for their measured quality performance may only induce more concerted efforts to up code and reclassify outcomes in order to improve their scores on the various methodologies.

Overall, while the need to incorporate incentives into hospital rates in the context of the Medicare IPPS and OPDS or a state-based rate setting system is important, the experience of the past 15+ years seems to indicate disappointing progress of the incentive programs of Medicare or in Maryland, to improve overall hospital quality. This may be due to a myriad of factors such as: 1) the excessive complexity of these governmental quality improvement programs and their scoring methodologies, 2) the choice of the wrong or an inadequate list of outcome measures; 3) the lack of expertise of hospital administrative personnel and a lack of priority to invest sufficient resources in these programs; 4) the ability of hospital managers to “game the program” through changes in coding or other administrative practices, or other reasons.

The evidence thus far shows only modest and empirically verified improvements in hospital readmission rates. However, the other CMS and Maryland program have not demonstrated results that justify the investment of time, energy and money into improving hospital quality of care thus far. These disappointing results also extend to the Maryland quality programs – which have the advantage under an all-payer system to apply rate rewards and penalties across the revenues of all payers – potentially amplifying the financial incentives facing hospitals to improve care quality. Therefore we recommend that states implementing rate setting systems that choose to venture into the quality area should: a) focus on creating a system of financial incentives to promote reduced risk adjusted readmission rates and possibly lower risk adjusted mortality rates; and b) to the extent possible piggyback on the results of the Medicare quality programs and/or rely on the results from the CMS Hospital Compare website on hospital quality performance, possibly rewarding hospitals with favorable Medicare Star Ratings with nominal rate rewards or reducing the rates of hospitals that experience diminutions in their Star ratings.



## Technical Appendix: Data for the HSCRC Quality Pay-for-Performance Programs

All three HSCRC quality programs rely on core hospital claims data, collected by the HSCRC directly from Maryland hospitals on a monthly basis, and other quality performance data submitted by hospitals to the state's Health Information Exchange (HIE) the Chesapeake Regional Information System for our Patients (CRISP).

The following section describes these and other core data sources for the HSCRC quality programs:

### Hospital Inpatient Claims Data and the Solventum Case Mix Grouper<sup>xxxiv</sup>

A primary data source for all 3 programs (the MHAC, the QBR and the RRIP) is the HSCRC inpatient claims data. The HSCRC inpatient claims data are classified based on the all-payer DRG system (All-Patient Refined "APR" DRGs) originally developed by 3M Health Information Systems (now Solventum<sup>TM</sup>). The Solventum inpatient classification system were developed for an "all-payer" population and are analogous to the Medicare Severity-Adjusted (MS) DRGs. However, the APR-DRGs make use of a severity of illness (SOL) sub-classification system utilizing four Severity of Illness (SOI) subcategories for each APR-DRG. Patients are "grouped" (i.e., classified by the APR-DRG patient classification logic into each APR-DRG and SOI categories. The APR-DRG system consists of 328 root APR-DRGs. Each APR-DRG has four SOI categories. This creates 1,312 (328 x 4) different categories or classification "cells" into which patients can be grouped (or assigned) based on the APR-DRG SOI logic.

This system allows the HSCRC to adjust hospital performance based on its mix of cases. This allows the HSCRC to perform its "indirect standardization" calculation (which uses case mix-adjusted individual hospital data to generate fairer comparisons of performance).<sup>xxxv</sup>

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xxxiv *Hospital Data and Reporting*, Health Services Cost Review Commission (The HSCRC collects data from all acute care hospitals and licensed specialty hospitals. Under legislative authorization [COMAR 10.37.04, 10.37.01.08, and 10.37.06], these hospitals are required to submit both financial and confidential patient-level administrative data — referred to as "case mix data" — on all inpatient and outpatient hospital visits. Maryland hospitals upload Case Mix data files to the HSCRC server on a monthly basis. Under HSCRC regulation, hospitals that fail to file required data on a timely and accurate basis face fines of up to \$1,000 per day for each day the filing is delayed), <https://hscrc.maryland.gov/Pages/data.aspx>.  
xxxv Under Indirect Standardization, a statewide rate for each PPC is calculated for each diagnosis and severity level. These statewide norms are applied to each hospital's Case Mix to determine the expected number of PPCs, a process known as indirect standardization. This ensures hospitals are not penalized simply for treating more severely ill patients.

The HSCRC also collects similar claims data for outpatient hospital services. However, these outpatient data are currently not utilized extensively for the HSCRC's quality programs. Both the Inpatient and Outpatient claims data (including primary and secondary diagnoses and procedure data) are submitted by Maryland hospitals to the HSCRC and are processed through the Solventum APR-DRG case grouping logic for inpatient cases and the Enhanced Ambulatory Patient Grouping (EAPG) logic for hospital cases. Both the Inpatient and Outpatient claims or "Case Mix" data are also foundational to the HSCRC original unit rate setting and DRG-based payment systems.

Medicare (and some Medicaid programs) also collect similar hospital inpatient and outpatient claims data. Commercial insurers also collect these data, which are generated by insurer payments to hospitals on the basis of DRGs or individual services using CPT or HCPCS coding.

### **Maryland Statewide Information Exchange Data**

Core hospital quality performance data is made available to the HSCRC and hospitals through the state's Health Information System (HIS) which is administered by the Chesapeake Regional Information System for our Patients (CRISP). All monthly and quarterly MHAC summary reports and case-level data are made available to hospitals through the CRS portal. Similarly, RRIP and QBR reporting is delivered through this same portal infrastructure.

The sections that follow describe in more detail the key data elements used in each of the HSCRC's three quality programs:

### **The Maryland Hospital Acquired Complications (MHAC) Program Data**

In addition to making extensive use of the HSCRC's inpatient Case Mix claims data, the MHAC program also uses the Solventum Potentially Preventable Complication (PPC) Grouper. The Solventum APR-DRG SOI grouper assigns each Maryland patient discharge to an APR-DRG category, and the PPC grouper identifies whether a PPC occurred while the patient was hospitalized. The Solventum "cost weights" are another input to the quality analysis for the MHAC program, used as a proxy for patient harm. These cost weights allow the HSCRC to assign greater weight to more severe complications, which influences the reimbursement incentives that hospitals face based on their performance in the MHAC payment program.

Performance standards (the threshold and benchmark against which hospitals are scored) are set using normative data from a historical base period drawn from the same HSCRC Case Mix dataset. For RY 2025, 24 months of data (July 2020–June 2022) is used to establish the nor-

mative values that are used to calculate a hospital's expected PPC rate, and to determine the threshold and benchmark for scoring hospital performance.

## **The Quality Based Reimbursement (QBR) Program Data**

For quantifying hospital performance on its Patient and Community Engagement Domain the QBR program makes use of the Medicare Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey results. The HCAHPS survey is a standardized, publicly reported survey that measures patient's opinions regarding their experience while being hospitalized, through the discharge process. As noted, the QBR scores hospitals on either improvement or attainment, whichever is highest, across the following HCAHPS domains: (1) communication with nurses, (2) communication with doctors, (3) responsiveness of hospital staff, (4) communication about medicine, (5) hospital cleanliness and quietness, (6) discharge information. Maryland HCAHPS data is collected by the Maryland Health Care Commission (MHCC) and cross-referenced with data on CMS Care Compare. HSCRC will conduct or facilitate data analysis of HCAHPS data to stratify hospital-specific reporting on levels and rankings of performance on both top box scores, and on linear scores newly added to the QBR program as of rate year 2024.

To implement performance incentives for the Patient Safety Domain, the HSCRC makes use of the CDC's National Healthcare Safety Network (NHSN), and its Hospital Associated Infection (HAI) tracking system. The QBR Safety domain includes measures for CLABSI, CAUTI, MRSA, C. difficile, and surgical site infections (SSI — colon and hysterectomy), all sourced from NHSN. These data are published on CMS Care Compare, from which HSCRC downloads the standardized infection ratio (SIR) values for each hospital. If NHSN data are unavailable on CMS Care Compare for the relevant time periods for some or all hospitals, the HSCRC may obtain these data directly from CMS, or may download the data directly from the NHSN by MHCC. Finally, The Safety Domain also includes the AHRQ Patient Safety Indicator Composite (PSI-90), which is calculated using the HSCRC inpatient case mix data and the AHRQ software.

The Clinical Care Domain makes use of the HSCRC all-payer inpatient Case Mix data to calculate the in-hospital all-cause mortality measure. This measure is risk-adjusted using the APR-DRG SOI Case-Mix grouper. This Domain also makes use of the Hip and Knee Arthroscopy measures (THA and TKA) that account for complications arising from these replacement procedures in hospitals and also makes use of HSCRC data and Medicare claims.

## The Readmission Reduction Incentive Program (RRIP) Data

Again, the primary data set for the RRIP is the HSCRC inpatient Case Mix database which accounts for all inpatient discharges across all payers from all Maryland hospitals. The RRIP methodology measures hospital performance on readmission rates using the 30-day all-payer, all-hospital (both intra- and Inter-hospital) readmission rates with adjustments for patient severity based on the APR-DRG SOI data and grouper.

A key data set also employed in this analysis is the CRISP Unique Patient Identifier (UPI) which allows cross-hospital patient tracking of readmissions. The RRIP defines a readmission as all-payer, 30-day, all-cause inpatient readmissions at acute care hospitals, with the CRISP UPI allowing the HSCRC to track patients across hospitals. The Solventum APR-DRG and SOI grouper (run on the Case Mix data) is used to risk-adjust readmission rates for patient severity and case mix, enabling fair comparisons across hospitals with different patient populations.

The RRIP also incorporates the HSCRC-developed Patient Adversity Index (PAI), a composite social risk measure used in the program's disparity gap component. The HSCRC staff developed the Patient Adversity Index (PAI), a composite social risk index incorporating information on patient race, Medicaid status, and the Area Deprivation Index (ADI) for the area surrounding the patient's address. This index, derived from information in the claims data itself supplemented by geographic area deprivation data, allows HSCRC to measure and incentivize reductions in within-hospital disparities in readmission rates.

A separate measure, Excess Days in Acute Care (EDAC), has also been developed using the HSCRC Case Mix data. The EDAC measure is an alternative to the traditional readmission measure, which assesses the time spent in the emergency room, observation status, and inpatient status in the 30-days after discharge. HSCRC has developed through our contractors an all-payer, all-cause measure. This measure has been recognized by MedPAC as a potentially useful population-health measure and the HSCRC's EDAC is a similar measure now being collected and tracked by the HSCRC.

For the purposes of benchmarking Maryland's aggregate performance against national standards under the Total Cost of Care Model, CMS Medicare claims data is used to calculate an unadjusted Medicare readmission rate for comparison to the national Medicare rate.

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## About The Source

The Source on Healthcare Price & Competition ("[The Source](#)") works to address failing health care markets by providing up-to-date and easily accessible information about healthcare markets in the United States to a diverse array of stakeholder perspectives. The Source aims to bridge the gaps between health policy, law, and economics through its curated repository of news articles, policy papers, academic articles, litigation documents, and legislative/regulatory materials. Through analysis of these materials, The Source develops evidence-based policy solutions that promote healthcare affordability, access, equity, and quality to serve as a catalyst for change within the U.S. healthcare system.

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