

Why Orthopedic Surgery for Elderly indicates that The Maryland Total Cost of Care Model Should Be Universally Adopted

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1. Introduction

Medicare expenditures are driven by a variety of factors, including the demand for care, the complexity of medical services provided, medical inflation, and life expectancy. The Medicare program has two separate trust funds—the Hospital Insurance (HI) Trust Fund and the Supplementary Medical Insurance (SMI) Trust Fund. Under the Hospital Insurance Trust, payroll taxes from workers and their employers go towards paying for the Part A benefits for today's Medicare beneficiaries. In 2019, Medicare provided benefits to over 60 million at an estimated cost of \$796 billion [1].

While excluding the significant decrease in payroll taxes during the COVID-19 pandemic, the latest 2020 projections calculate Medicare Hospital Trust insolvency by 2026 [2]. The 2020 report declared that funds would be sufficient to pay for only 90 percent of Part A expenses at the time of this writing.

Since inception, the Hospital Insurance Trust has never been insolvent, because there are no provisions in the Social Security Act that govern what would happen if insolvency were to occur. Ten of the last twelve years has witnessed expenditure outflows outpacing the Hospital Insurance Trust inflows, resulting in total Medicare spending obligations outpacing the increasing demands on the federal budget, as the number of beneficiaries and the per capita health care costs continue to grow [3].

A recent *Journal of Rheumatology* article projects Medicare will finance approximately 2.67 million joint replacement surgeries by 2035, plus an additional 2.35 million joint replacement surgeries

by 2040 [4]. We believe that the current nationwide Diagnostic Related Groups (DRGs) system that helps determine how much Medicare pays the hospital for each “product” needs to be phased out as soon as possible. Our research shows that prior to Medicare implementing the DRGs payment system, Maryland proved that their total cost model of statewide rewards and penalties compensated “efficient and effective” hospitals, providing care as defined by metrics set up by the Health Services Cost Review Commission (HSCRC). The Maryland legislature granted this independent government agency the broad powers to insulate the HSCRC from conflicts of interests, regulatory capture, and political meddling in the long term. In exchange, the HSCRC had the freedom to design a system that must deliver on three areas: cost reduction of hospital services, health improvement for all Maryland residents, and quality of life care improvements.

Since inception of the HSCRC, all stakeholders are legally required to comply with robust auditing and data-submission requirements that allow the agency to collect data on the costs, patient volume, and financial condition of all inpatient, hospital-based outpatient, and emergency services in Maryland. This level of transparency allows the agency to set prices for hospital services, and hospitals must obey because it is Maryland law. Because of this methodology, HSCRC-approved average Maryland hospital markups ranged from 18 percent in 1980 to only 22 percent in 2008. During that same period, the average hospital markup nationally skyrocketed from 20 percent in 1980 to more than 187 percent in 2008. This strong evidence is the primary reason why the HSCRC has contin-

ued to receive a federal waiver from the Centers for Medicare and Medicaid Services, which requires both Medicare and Medicaid to pay the HSCRC-approved rates statewide. No discounts are given because of volume, nor any shifting of costs to other payers. There is a mandate: same price for the same service at the same hospital, no exceptions. Adjustments for uncompensated medical care are automatically bundled into the HSCRC-approved rates, as thus, this financial burden is shared by all hospitals in Maryland.

This article explores the important milestones taken by the state of Maryland and how the lessons learned are responsible for the impressive results of their program today. The authors believe that by applying the Maryland Total Cost of Care Model (Maryland TCOC Model) nationwide will yield financial savings of at least \$227 billion by 2035, plus another \$280 billion by 2040, exclusively from joint replacement surgeries reimbursed at HSCRC-approved rates and not any other method.

2. Joint Replacement Surgery Statistics

A study by the Peterson-KFF Health System Tracker concluded that prices vary drastically depending on the location of hospital services [6]. In this study, the price refers to the allowed charges, which is the amount paid including markup and cost-shifting under the plan for a given service, including both the plan's and the enrollee's share, but excluding any balance billing that may occur if the providing clinicians were out-of-network.

For joint replacements, the average 2018 price in the New York metro area (\$58,193) was more than double the average price in the Baltimore, Maryland region (\$23,170) for identical surgeries. Under the DRGs that help determine how much Medicare pays the hospital for each "product," the New York metro area and the Baltimore region offer identical "product" to clinically similar patients who use the same level of hospital resources. As previously explained, the only difference between the two states is the waiver of federal law that required Medicare to pay hospitals in the Maryland region according to HSCRC-approved rates. In other words, average prices for New York metro area come exclusively from DRGs and the average prices for the Maryland region come exclusively from HSCRC-approved rates.

We have performed a detailed study of the Consumer Price Index (CPI) over the last 50 years in the area of medical inflation [7]. Because excessive hospital markups continue unconstrained, the category of hospital services had the highest exponential growth in the last twenty-two years. We believe that both Medicare and Medicaid will bear most of the financial burden from forthcoming medical inflation in the coming decades, as American Baby Boomers continue to age and live longer. We fear that retaining the status quo will push these programs closer to bankruptcy and at a faster pace. We believe that the current nationwide Diagnostic Related Groups (DRGs) system that determines how much Medicare pays the hospital for each "product" needs to be phased out as soon as

possible. We favor focusing all resources towards a nationwide implementation of the Maryland Total Cost of Care Model (Maryland TCOC Model).

Our detailed analysis of just two surgeries in high demand by elders pointed out the following savings from applying the Maryland Total Cost of Care Model nationwide:

- The average 2018 price in the New York metro area (\$58,193) grows exponentially to equal \$141,371 in 2035 and \$198,672 in 2040 respectively [8].
- The average 2018 price in the Baltimore, Maryland region (\$23,170) grows exponentially to equate to only \$56,288 in 2035 and \$79,103 in 2040 respectively [9].

Joint replacement includes both knee replacements and hip replacements. In medical terms, these are known as Total Knee Arthroplasty (TKA) and Total Hip Arthroplasty (THA) surgeries. According to the Journal of Rheumatology, the future projections are as follows [10]:

- Total Knee Arthroplasty (TKA): 2.6 million TKAs by 2035; 3.4 million TKAs by 2040.
- TKAs covered by Medicare: 1.9 million TKAs by 2035; 2.3 million TKAs by 2040.
- Total Hip Arthroplasty (THA): 1.1 million THAs in 2035; 1.4 million THAs in 2040.
- THAs covered by Medicare: 770,000 THAs in 2035; 951,000 THAs in 2040

Because the Journal of Rheumatology projects Medicare will cover approximately 2.67 million joint replacements by 2035, multiplied by the approximate financial savings of at least \$85,000 per surgery in 2035, we believe that Medicare will save at least \$227 billion by reimbursing hospitals at HSCRC-approved rate schedule, instead of the Medicare DRGs model rates [11].

The Journal of Rheumatology projects Medicare will cover approximately 2.35 million joint replacement surgeries by 2040, multiplied by the approximate financial savings of at least \$119,000 per surgery in 2040, we believe that Medicare will save at least \$280 billion by reimbursing hospitals at HSCRC-approved rates, instead of the Medicare DRGs model rates [12].

3. The Maryland Model (1971 – 2013):

Historically, had the nation's hospital costs grown at the Maryland's rate of growth, the cumulative savings would have exceeded \$1.8 trillion between 1976 and 2007 [13], nearly \$2.3 trillion in 2021 dollars. This savings includes the "reasonable costs" of uncompensated care in the Maryland payment rates that grew from \$36 million in 1977 to \$927 million in 2007, shared across all hospitals statewide. Additionally, the American Hospital Association data illustrates that the average hospital markup of charges over costs nationally had increased from 20 percent in 1980 to more

than 187 percent by 2008. During the same period, the HSCRC approved Maryland average hospital markups ranged from 18 percent in 1980 to only 22 percent in 2008 [14]. A former executive director of the HSCRC boiled down its impressive success to three main reasons.

First, uniform approach. The HSCRC system ties all the stakeholders together under a common set of rules; it provides clear mandates and allows for flexibility of design. Since 1971, the HSCRC collected data on the costs, patient volume, and financial condition of hospitals, as well as patient-level inpatient and outpatient data. Their innovation was creating robust auditing and compliance to ensure pricing and data-submission requirements. Today, these detailed databases monitor forty-seven general acute, three specialty, and three private psychiatric hospitals in Maryland. The uniform approach, coupled with strong incentives for acting quickly, contributes to the commission's cooperative rule making among Medicare, Medicaid, and commercial payers.

Second, insulated from conflicts of interests. All parties are accountable to the public. Harold Cohen was the founding executive director of the HSCRC and worked there for 38 years. During his tenure, the HSCRC had political, legal, and budgetary independence as a freestanding agency, therefore insulating its work from conflicts of interests, regulatory impositions, and political meddling. This freedom allowed the HSCRC to solicit input from all interested parties and work in the broad "public interest." From an operational viewpoint, the agency remains governed by seven volunteer commissioners appointed by the governor for four-year staggered terms. Commissioners are recruited from an array of health care backgrounds and expertise, but no more than three can have provider affiliations. Day-to-day operations are performed by less than 30 full-time staff with expertise in accounting, data systems, hospital financing, and policy development. Its annual budget is funded through user fees and is not subject to the constraints of Maryland's general fund [15].

Third, flexible approach. Eugene Feinblatt wrote the law that created the Health Services Cost Review Commission (HSCRC), giving broad responsibilities regarding the public disclosure of hospital financial and trustee relationships [16]. At the time, the Maryland legislature envisioned an independent government agency to create a system that would provide financial stability and focus on constraining hospital costs, rather than controlling hospital profits. These broad powers would assign the everyday details up to the HSCRC, as it adapted this rate system to the changing dynamics of the times [17]. The HSCRC provided consistent payment incentives and laser-focused on cost control via overall hospital budgets. Hospital managers had freedom and flexibility to allocate resources towards boosting operational improvements, rewarding the more "efficient and effective" hospitals with resulting savings, and directly boosting their financial solvency. This new methodol-

ogy aligned statewide rewards and penalties in the direction of the financial solvency of the "efficient and effective" hospitals.

4. The HSCRC's Regulatory Approach

With its innovative database, the HSCRC had a tool to monitor hospitals providing "efficient and effective" care (as defined by the HSCRC) to operate on a solvency basis alone. There were no discounts to specific payers, and the financial burden uncompensated care is shared by all providers. The HSCRC developed clear, attainable, and strong financial incentives for hospitals to improve their operations in defined areas, and because the hospitals could keep all the savings from the operational improvements, the hospitals constantly worked on improving their financial health and solvency.

Except for Maryland, the Medicare DRGs tend to make hospitals in competitive markets earn profits by the application of artificially high markups and shifting costs to other payers. The HSCRC enforces a true "all-payer" model whereby the same services at the same hospital carry the same price. Because of this standardization, there are no discounts to specific payers. Additionally, the HSCRC has always enforced this "no cost-shifting" policy. As a result, Maryland hospitals have remained competitive by managing costs and utilization.

The HSCRC constrains overall hospital budgets by giving hospital managers maximum flexibility to allocate resources to control hospital costs. At its own discretion as an independent government agency, the HSCRC has a long-term focus for policy goals over time and avoids wasting resources on major short-term disruptions in the hospital delivery system.

The HSCRC does not control hospital profits because each hospital is rewarded internally by keeping their savings by efficient management. Outside of Maryland, cost-based payment systems exist in all states. In a system with 100 percent prospective payment, hospitals are completely at risk regarding their spending decisions. The Medicare DRGs focus on a "per case" payment system that does not measure how much time passes between the start and finish of each hospital admission. We believe that the main disadvantage of the DRGs is their incorrect assumption that all patients regardless of age will demand the "same level of hospital resources" based on a composition of DRGs, even if patients are clinically similar to receive the same "product" at the same hospital. The length of time between the start and finish of each patient hospital stay per DRG directly impacts hospital resources and its operating costs in each case.

Maryland does not use a "per case" system, but a superior "service-specific unit rate" as the basis of payment. For example, joint replacement surgeries include both knee replacements (total knee arthroplasty - TKA) and hip replacements (total hip arthroplasty - THA) surgeries. By using MINUTES as the "service-specific unit

rate,” the HSCRC measures operating room charges in a reasonable, equitable, and transparent way. These “servicespecific unit rates” include costs, markups for services provided, and adjustments for all hospitals sharing the financial burden of uncompensated care.

One former executive director of the HSCRC commented recently that hospital revenues in Maryland are controlled through the use of per case constraints (case-mix adjustments using all patient refined diagnosis-related groups [APR-DRGs] for inpatient and Ambulatory Patient Groups [APGs] for outpatient services). Like the Medicare system, it was developed to control utilization per encounter and adjusted for case-mix. Unlike the Medicare system, the reward and penalties for performance are aggregated through adjustments to overall hospital approved revenues each year. This system has important payer-equity advantages over a “per case” system because it reflects actual resources used. It also aligns the incentives across payers and hospitals (both entities have strong incentives to control utilization of resources). These and other rate mechanisms were developed to support models of managed care in the state.

The HSCRC system uses a “Federal Inflation Adjustment System” implemented in 1977. It is like Medicare in adjusting for input-price inflation, productivity, and new technology factors, but the Maryland advantage is that the HSCRC includes rewards and penalties based on hospital-to-hospital comparisons of standardized charges per hospital admission. The creation of the HSCRC as an independent agency by the legislature was developed to find the best solution for the problem of financing the cost of uncompensated care in a reasonable, equitable, and transparent way. In 2002, the HSCRC enforced an assessment on hospital rates that subsidized premiums to 17,000 medically uninsurable individuals. That money went to Maryland’s “high-risk” insurance pool. During the financial crisis of 2008, the HSCRC added an “Uncompensated Care Pooling” mechanism that would increase the fairness of financing uncompensated care by dividing the financial burden across all hospitals. In conclusion, the Maryland system must be adopted nationwide to avoid the train wreck that is inevitably waiting to happen.

5. Maryland Global Budget Model (2014 – 2018): Results of Policy

Cost containment in the five years between 2014 and 2018 surpassed its initial targets in the following ways [18]:

1. Maryland maintained the 2nd lowest nationwide Employer-Sponsored Healthcare Spending, for both inpatient and outpatient services.
2. Maryland targeted to save the federal Medicare program at least \$330 million on hospital care over five years. Instead, Maryland surpassed the goal and Medicare saved \$1,421 million over these five years.
3. Maryland agreed to shift from a “per case” rate system, transitioning at least 80 percent of hospital revenue, to population-based “global budgets” by 2018. Actual results were 95 percent of all hospital revenue came from the “global budgets” over these five years. The remaining 5 percent excluded from “global budget revenue” accounts for drug costs, which are funded based on volume.
4. All-Payer hospital spending growth per capita targeted nearly 20 percent cumulative increase over five years. Instead, the actual results were 10 percent cumulative increase over five years, less than half.
5. Maryland’s hospital readmission rate for Medicare fee-for-service beneficiaries were required to be at or below the national readmission rate. Over five years, this metric went from 1.22 percentage points higher than the national average to 0.05 percentage points lower than the national average for Medicare FFS.
6. Maryland targeted a 30 percent reduction in All-Payer Potentially Preventable Complications (All-Payer PPCs). This metric decreased 51 percent over these five years, an astonishing improvement considering the rest of the nation’s hospitals following the DRG system.

As a final gesture, the previous Trump Administration implemented transparency rules for the 500 most “shoppable” hospital services by January of 2023 [19], we strongly believe that price transparency alone will not change the practices of excessive hospital markups, discounts, and cost-shifting. Nor will this transparency alone reverse the continuous upward spike in total hospital costs per capita. Transparency rules if followed, will fail to bring together all stakeholders under a common set of rules, provide clear mandates without political meddling, and will fail to make all participants accountable to the public.

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