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GOVERNOR

March 26, 2013

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TTY USERS CALL VIA MD RELAY

The Honorable Kathleen Sebelius
Secretary
U.S. Department of Health and Human Services
200 Independence Avenue, SW
Washington, DC 20201

Dear Secretary Sebelius,

Attached is Maryland's proposal to the Centers for Medicare & Medicaid Services for an unprecedented effort to improve health care outcomes and control costs across the state. The proposal builds upon decades of innovation and equity in health care payment and delivery in Maryland by modernizing our all-payer rate setting system for hospital services. It complements our State's efforts to build an electronic platform for medical records, develop an innovative approach to community health and primary care, and expand access to health insurance through a state-based exchange and Medicaid expansion.

We recognize that additional discussion will take place before the proposal is approved. We thank you and your staff for your support of state flexibility and innovation in confronting some of the most important challenges in health care.

Sincerely,

A handwritten signature in black ink, appearing to read "Martin O'Malley".

Governor



STATE OF MARYLAND

DHMH

Maryland Department of Health and Mental Hygiene
201 W. Preston Street • Baltimore, Maryland 21201

Martin O'Malley, Governor – Anthony G. Brown, Lt. Governor – Joshua M. Sharfstein, M.D., Secretary

March 26, 2013

Marilyn Tavenner
Administrator
Centers for Medicare & Medicaid Services
7500 Security Boulevard
Baltimore MD 21244

Dear Administrator Tavenner:

I am pleased to submit the State of Maryland's model proposal under Section 1115A and other applicable provisions of the Social Security Act. The proposal envisions an innovative, all-payer approach to hospital payment and health care delivery to achieve the three part-aim of enhanced patient experience, lower costs, and improved outcomes. By promoting integration and coordination of care and aligning incentives for value, the proposed model will improve the health and well-being of Marylanders and provide significant cost savings to the federal government, State, and private payers of health insurance.

We deeply appreciate the time spent by staff at the Centers for Medicare & Medicaid Innovation in consultation to the State. We also recognize that there will be further discussions on the details in this proposal. We are prepared to work closely with CMS officials and others to improve the model design and its legal structure before it is finalized and -- if all goes well -- adopted.

Thank you for your consideration.

Sincerely,

Joshua M. Sharfstein, M.D.
Secretary

Maryland's Model Design

Model Design Proposal to the Center for Medicare and Medicaid Innovation

March 26, 2013

Submitted by the Maryland Department of Health and Mental Hygiene

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Section 1. Executive Summary

Background

In Maryland, as in the United States, health care is in urgent need of transformation to achieve the three-part aim: a better patient experience of care, improved population health, and lower costs.

While many Americans receive lifesaving treatments each day, health care in our country remains largely fragmented, inefficient, and poorly coordinated. We miss countless opportunities to prevent complications, and inadequate communication within the delivery system leads to redundant diagnostic tests and unnecessary interventions. Health outcomes in the United States are substantially worse than in countries with high-performing health care systems, and disparities are severe and unacceptable. At the same time, U.S. health care expenditures are high and growing at unsustainable rates.

Health care in Maryland, despite a number of unique strengths, also confronts critical challenges. Rates of infant mortality, cardiovascular disease, and HIV infection are unacceptably high, with significant racial, ethnic, and geographic disparities. The delivery system tilts towards acute treatment, as evidenced by the fact that Maryland was among the states with the highest admission and readmission rates in the Medicare program in 2011. Affordability is an increasing concern, with health insurance premiums for family coverage in Maryland rising 51 percent from 2003 to 2010. Health care expenditures now substantially outpace the growth in the state's economy.

With this model design proposal, Maryland intends to build on existing strengths of its health care system to transform health care payment and care and achieve an unprecedented level of value and health for Maryland residents.

All Payer Rate Setting in Maryland

Since the late 1970s, Maryland's independent Health Services Cost Review Commission (HSCRC) has set hospital rates for all public and private payers. This structure has eliminated cost-shifting between payers and allowed for creative uses of incentives to improve quality and outcomes. Maryland has substantially limited the growth of hospital per-case costs, provided for lower costs on an all-payer basis within our region, provided a stable and predictable payment system for hospitals, promoted financial stability for efficient and effective hospitals, and supported equitable funding of uncompensated care and medical education.

Maryland's current rate-setting system, however, has important limitations. The rules date back to a time when inpatient services were predominant, and cost per discharge and average length of stay were the only measures for efficiency. The current system's focus on per-case costs

does not provide the incentives aligned to population health and **comprehensive coordinated care across different settings.**

In this model design proposal, Maryland intends to modernize the rate-setting system to overcome these limitations and provide an innovative and creative solution to critical health care challenges. Our overarching hypothesis is that an all payer system that is accountable for the total cost of care on a per capita basis is an effective model for establishing policies and incentives to drive system progress toward achieving the three-part aim of enhanced patient experience, better population health and lower costs.

Model Design

Maryland's proposal starts with accountability for the total cost of care on a per capita basis. For Phase 1, over the next five years, the state commits to limiting inpatient and outpatient hospital costs for all payers to a trend based on the state's long-term Gross State Product (GSP). There would be a separate guarantee of inpatient and outpatient hospital cost growth below a Medicare benchmark. No other state has made such a commitment. Because Maryland is the only rate-setting state in the nation, no other state has the ability to do so.

In order to organize around the goal of constraining per capita cost growth, Maryland will accelerate a broad range of delivery reform efforts. These include:

- Gain-sharing between hospitals and physicians as patient outcomes improve and overall costs decline.
- Accountable Care Organizations, with rules that can be established in Maryland on an all-payer basis.
- Readmission programs, which provide powerful incentives for improved coordination of care.
- Global budgeting, for rural hospitals that can gain net revenue with innovative partnerships with community physician and public health agencies.
- Population-based budgeting, for suburban and urban hospitals shifting out of fee-for-service payment to accountability for health outcomes and cost.

To encourage savings below the guaranteed expenditure ceiling, Maryland's proposal introduces the concept of the shared savings lockbox. When hospitals participate in innovative payment and delivery reform programs and achieve savings, the portion of savings returned to payers is set aside to lower overall expenditures. There will also be savings for health care providers that will support the financial stability of efficient and effective health care systems. The rules governing the shared savings lockbox and other elements of the proposal will be set by the Health Services Cost Review Commission through a transparent and public process.

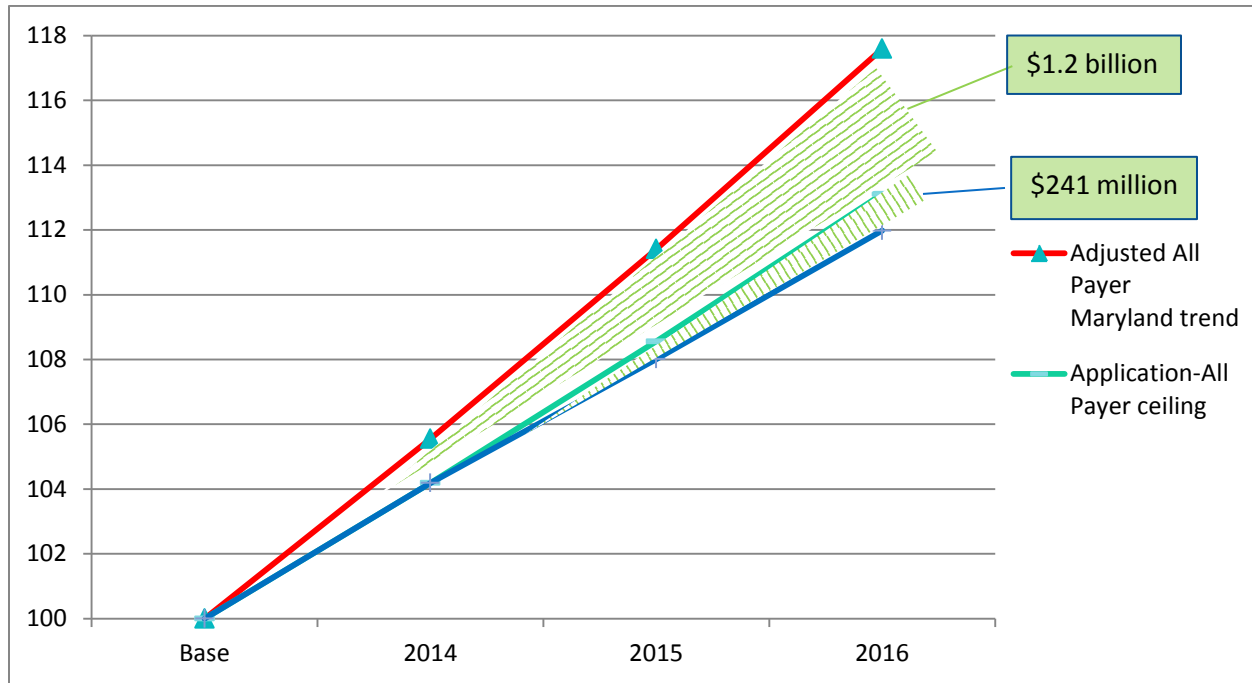
Maryland's model design proposal integrates with other critical health reforms underway in the state. It aligns hospital incentives with those of medical homes, a key feature of Maryland's State Innovation Model proposal. It aligns with major investments made in information technology, including the state's Health Information Exchange. It also aligns with the public health goals of the State Health Improvement Process. These efforts will all come together in a Phase 2 proposal, to be submitted in Year 4. This proposal will further advance the three-part aim, including constraining the overall cost of care per Maryland resident.

Measuring Success

This proposal includes detailed measures of success covering the three-part aim.

- For the patient experience of care, Maryland will measure patient satisfaction, the effectiveness of care transitions, physician participation in public programs, and complication rates.
- For population health, Maryland will measure life expectancy, hospitalizations for ambulatory care sensitive conditions, primary and secondary prevention for cardiovascular disease, and behavioral health emergencies, including racial and ethnic disparities in these measures.
- For health care costs, Maryland will measure overuse of diagnostic imaging, inpatient and outpatient costs, and total costs. The state will track expenditures for specific payers, including Medicare, Medicaid, CHIP, the federal employee program, and CMS subsidies through the Maryland Health Benefit Exchange. Compared to anticipated trends, implementing this design proposal is anticipated to save all payers more than \$1.4 billion over the first three years (Figure 1.1).

Figure 1.1: Measures of Success for Health Care Costs



Maryland's Proposal

Maryland's Model Design Proposal is divided into 10 parts. Section 1 is this *Executive Summary*.

Section 2, *Problem and Hypothesis*, describes the challenges facing Maryland's health care system and the hypothesis driving this model design application.

Section 3, *Background and History*, explains the unique history and benefits of Maryland's all payer rate setting system. It also explains the challenges facing the current system and the need for modernization.

Section 4, *Model Design and Methods*, explains the key tools Maryland will use to implement the model as well as how the model fits with other reform efforts underway in the State.

Section 5, *Logic Model Overview*, provides a summary of evidence for the key reforms embodied in the design proposal.

Section 6, *Budget and Financial Test*, explains the mechanics of how the state will control per capita inpatient and outpatient hospital expenditures and provides information on cost trends, the Medicare benchmark, the key financial metrics to be measured, and the thresholds for financial success and failure.

Section 7, *Target Outcomes*, covers specific measures to be measured with respect to patient experience of care, health outcomes, and costs.

Section 8, *Evaluating and Reporting Model Success*, explains Maryland's strategy for data collection and monitoring.

Section 9, *Assumptions and Limitations*, reviews the strengths and weaknesses of the model, assesses contingencies, and covers legal elements of the proposal.

Section 10, *Operational Considerations and Implementations*, explains synergies with present and future innovations in Maryland and explains the roles of key state agencies in implementation.

Three appendices cover the generation of an expenditure ceiling trend, data security, and specific requested authorities from CMS for the success of the model.

Section 2. Problem and Hypothesis

In Maryland, as in the United States, health care is in urgent need of transformation to achieve the three-part aim: a better patient experience of care, improved population health, and lower costs.

While many Americans receive lifesaving treatments each day, health care in our country remains largely fragmented, inefficient, and poorly coordinated. We miss countless opportunities to prevent complications, and inadequate communication within the delivery system leads to redundant diagnostic tests and unnecessary interventions.¹ Health outcomes in the United States are substantially worse than in countries with high-performing health care systems,² and disparities are severe and unacceptable.³ At the same time, U.S. health care expenditures are high and growing at unsustainable rates.⁴

Health care in Maryland, despite a number of unique strengths, also confronts critical challenges. Rates of infant mortality, cardiovascular disease, and HIV infection are unacceptably high, with significant racial, ethnic, and geographic disparities.⁵ The delivery system tilts towards acute treatment, as evidenced by the fact that Maryland is among the states with the highest admission and readmission rates in the Medicare program in 2011.⁶ Affordability is an increasing concern, with health insurance premiums for family coverage in Maryland rising 51 percent from 2003 to 2010.⁷ Health care expenditures now substantially outpace the growth in the state's economy.

Improving the value of Maryland's health care system and the health of Maryland residents are core policy goals, with a number of innovative efforts underway. These include:

¹ Institute of Medicine. *Best Care at Lower Cost: the Path to Continuously Learning Health Care in America*, Washington DC: Institute of Medicine, 2012.

² Nolte E., McKee CM. In *Amenable Mortality – Deaths Avoidable Through Health Care – Progress in the US Lags That of Three European Countries*. *Health Affairs*, 31, no.9 (2012): 2114-2122.

³ Agency for Healthcare Research and Quality. *National Healthcare Disparities Report 2011*. Washington DC: AHRQ, 2011.

⁴ Bipartisan Policy Center. *What is Driving U.S. Health Care Spending? America's Unsustainable Health Care Cost Growth*. Washington DC: Bipartisan Policy Center, 2012.

⁵ Maryland Health Care Quality and Cost Council. *Health Disparities Workgroup: Final Report and Recommendations*. 2011. Available online at

<http://www.governor.maryland.gov/ltgovernor/documents/disparitiesreport120117.pdf>

⁶ [Data provided by Maryland's QIO, Delmarva Foundation]

⁷ Schoen C, Fryer AK, Collins SR, Radley DC. *State Trends in Premiums and Deductibles, 2003-2010: the Need for Action to Address Rising Costs*. Washington DC: Commonwealth Fund, 2011. Maryland's health insurance premiums as a percentage of median personal income of those under age 65 are the lowest in the country and is growing at a slower rate than the rest of the country ("Paying the Price: How Health Insurance Premiums are Eating Up Middle-Class Incomes" The Commonwealth Fund, August 2009).

- The State Health Improvement Process, which focuses efforts on 39 health measures in six focus areas; 17 regional public-private health coalitions are working to improve these outcomes.⁸
- Patient-centered medical home projects, which involve thousands of Maryland physicians and hundreds of thousands of Maryland patients.
- Innovative payment structures and partnerships for delivery reform in hospitals and physicians' offices across the state.⁹
- The state's Health Information Exchange, which has connected all of Maryland's acute care hospitals and provides such services as automatic notification to primary care clinicians when their patients are seen in the Emergency Department or admitted.
- A new Health Enterprise Zone program, which will invest state resources in community health in defined geographic areas to address health disparities.¹⁰
- The Maryland Health Connection, our state-based insurance exchange under the Affordable Care Act.¹¹
- Several significant Health Care Innovation Awards were made by CMMI in Maryland.¹²

The linchpin of Maryland's health care system is the all payer approach to hospital finance. Since the late 1970s, the independent Health Services Cost Review Commission (HSCRC) has set hospital rates for all public and private payers, which has eliminated cost-shifting and allowed for creative uses of incentives to improve quality and outcomes. As described more fully in Section 3, this system has substantially limited the growth of hospital per case costs, provided for lower costs on an all payer basis within our region, and supported equitable funding of uncompensated care and medical education.

Over the last several years, the HSCRC has adopted pilot payment innovations to align hospital efforts with the three-part aim. These innovations include an all payer global budget program for rural hospitals and an all payer, all-cause readmission incentive program for suburban and urban hospitals. In addition, Maryland's hospital quality programs—Quality Based Reimbursement (QBR) and Maryland Hospital Acquired Conditions (MHAC)—demonstrate our

⁸ Maryland's State Health Improvement Process is online at <http://dhmh.maryland.gov/SHIP>.

⁹ Examples of three-part aim health innovations are available online at <http://dhmh.maryland.gov/innovations>.

¹⁰ Information on Maryland's Health Enterprise Zone program is available online at <http://dhmh.maryland.gov/healthenterprisezones/SitePages/Home.aspx>.

¹¹ Information on Maryland's health benefit exchange is available online at <http://www.marylandhealthconnection.gov>.

¹² Information on Maryland recipients of CMMI Health Care Innovation grants can be found at: <http://innovations.cms.gov/initiatives/Innovation-Awards/maryland.html>.

state's innovation in the application of financial incentives to promote effective and efficient hospital care.

Maryland is poised to more fully align incentives for high value across the health care system. Over the time period requested in this Model Design approach, Maryland will maintain the state regulatory authority of the HSCRC to use the all payer system as a launch pad to develop and implement a wide range of incentives and care transformation initiatives that will bring better health to Marylanders and savings to employers, families, the state, and the federal government.

Our overarching hypothesis is that an all payer system that is accountable for the total cost of care on a per capita basis is an effective model for establishing policies and incentives to drive system progress toward achieving the three-part aim of enhanced patient experience (including quality and satisfaction), better population health, and lower costs.

This application proposes a wide-ranging model for use of Maryland's all payer system. As described in Section 4 below, the model incorporates direct financial incentives, such as bonuses for improving performance on quality measures. It includes indirect financial incentives favoring care integration that lowers inpatient volume. And it facilitates delivery system transformation by encouraging hospitals to share savings, to participate in Accountable Care Organizations, and to work with medical homes. The model is designed to evolve over time, as focus shifts from hospital expenditures to total cost of care expenditures for state residents.

This proposed statewide all payer model test provides unique evaluation opportunities for CMS. The agency will be able to assess whether leveraging the broad participation of all payers, providers, and patients leads to more rapid and systemic improvements in health care experience, quality, outcomes, and costs. CMS will also be able to identify areas for replication both in the individual initiatives pursued through the model and in the process by which public payers work with others to achieve progress in care transformation and population health.

As described in detail in Section 7, we intend to achieve results in each of the three areas of the three-part aim.

Patient experience of care. We hypothesize that an all payer model that is accountable for the total cost of care can improve the quality of care. Maryland intends to enhance care transitions, sustain high physician participation in public programs, and broaden engagement in innovative models of care. Maryland intends to reduce complications and readmissions and increase quality scores.

Population Health. We hypothesize that an all payer model that is accountable for the total cost of care can establish incentives that drive significant population health improvement. Maryland intends to improve population health outcomes and reduce health disparities.

Health care costs. We hypothesize that an all payer model that is accountable for the total cost of care can control the growth in health care expenditures at a reasonable level and align incentives for shared savings beneath a hard expenditure ceiling. We intend to achieve meaningful savings for all payers, including to Medicare, Medicaid, and CHIP, and to CCIIO in the form of reduced expenditures for insurance subsidies in Maryland's health benefit exchange. In addition, monitoring and reduction of the overuse of diagnostic testing is a specific area of focus for controlling overall cost.

Section 3. Background and History

Background

Maryland's all payer system was established over 30 years ago with specific goals in mind – to control hospital costs, to provide access to care by funding uncompensated care for hospitals, to provide sufficient revenue for efficient and effective facilities, and to provide that funding with equity across payers. Maryland was one of five states initially granted the authority to test all payer systems; its version is the only one to survive the test of time. The state's governance structure and enabling legislation provide independent oversight and flexibility that has allowed the system to evolve and innovate. Maryland's all payer system can support the three-part aim of lower costs, better population health, and improved patient experience; however, achieving this goal requires modernizing the incentives and methods in Maryland's payment system.

An essential component of Maryland's all payer system is the state's Medicare waiver, exempting Maryland from national Medicare payment methodologies and allowing the HSCRC to set rates for all payers – governmental, commercial, and self-pay. Under Section 1814(b) of the Social Security Act, Maryland is able to maintain its exemption as long as Maryland's cumulative rate of growth in Medicare expenditures per inpatient discharge is lower than the cumulative rate of growth nationally – also known as the waiver test.

The system has demonstrated success in achieving its original goals and has provided many additional benefits to the Maryland Health Care System.

- *Cost Containment* – At the inception of the waiver, Maryland costs per equivalent inpatient admission (EIPA) were 25 percent above the national average, but today costs per EIPA are near the national average on an all payer basis. In addition, all payer per capita Maryland hospital costs are lower than costs in a number of surrounding states.
- *Equitable Financing of Uncompensated Care* – Maryland's system has provided unparalleled equity in distributing the costs of the uninsured across all Maryland payers without the need for public hospitals.
- *Lower Markups for All Maryland Payers* – Markups in Maryland are about 127 percent of costs, while nationally, markups averages 232 percent. This huge difference stems directly from the all payer system in Maryland and the requirement that all payers reimburse at rates established by the HSCRC, instead of the patchwork of negotiations across payers that is the pattern nationally. The Maryland rate setting system assures that the relative difference in resource use is precisely reflected in payments to hospitals. The economic distortions resulting from complex negotiations and differential payments for similar services at the same facility are not present in Maryland's system.

- *Stable and Predictable Payment System for Hospitals* – Maryland's Medicare waiver has allowed Maryland to achieve its policy goals over time and avoid major short-term disruptions while establishing a more stable system of hospital financing. Nationally, hospitals must adjust to abrupt swings in hospital payment. The all payer system allows Maryland to adjust to changing economic circumstances more gradually and with less disruption.
- *Robust Data and Comprehensive Analytic Tools* – Over its 30 year history, the HSCRC has developed robust data sets to establish and monitor hospital payments. Maryland has led the nation in testing and adopting refined payment methodologies. Payments in Maryland are based on extensive analysis of actual case mix data and are not subject to arbitrary negotiations between payers and providers.
- *Transparency* – The HSCRC collects and makes available to the public a tremendous amount of all payer hospital data. These data sets are more robust than in virtually any other state.

Barriers to Change

Although the system has been successful historically, it was not designed to provide the payment incentives necessary to support population-based health care goals. Over the 30 year history of the waiver, Maryland's rate setting authority has focused on controlling growth in cost per case and has achieved the lowest rate of growth in the nation, with cost per case on an all payer basis near the national average.

However, the current regulation of per case inpatient costs is not optimized to address overall health care spending. In fact, the tight constraint on per case inpatient payments may have induced providers to increase the volume of inpatient services or shift costs to outpatient settings. The current payment system lacks the necessary incentives for comprehensive and coordinated care across different settings to support better health outcomes. Integrating hospital services with medical homes, Accountable Care Organizations, disparity-focused health enterprise zones, and other innovative structures is challenging.

Further, section 1814(b) establishes a test for Maryland's hospital system to continue its exemption from the Medicare Inpatient Prospective Payment System (IPPS) and Outpatient Prospective Payment System (OPPS) that is not well suited for achieving Maryland's goals of system-wide cost containment and quality and service improvement. This test measures the state's progress on a payment per case basis relative to the nation; it dates back to a time when inpatient services were predominant, and cost per discharge and average length of stay were the accepted measures for efficiency. The 1814(b) exemption from the CMS payment structures is the linchpin for Maryland's all payer system, but its antiquated structure and the incentives

flowing from that structure are a barrier to progress toward the three-part aim, despite the substantial benefits attributable to the all payer system.

A modernized all payer system can serve as a unique vehicle to support transformation of the health care system. The new incentives and methods sought in this Model Design proposal will allow Maryland to broadly and systematically improve quality, lower health care costs, and improve population health.

We seek to modernize hospital payment in alignment with this vision.

Maryland Health Care and Hospital Expenditures and Utilization — A Comparison with Other States

Given the overarching goals of this model proposal with respect to health care expenditures, it is important to understand Maryland's starting place in this regard. The state's Maryland's Medicare and Medicaid per capita expenditures and utilization rates for personal health care and hospital services are higher than the national average. This section discusses several reasons for the difference. As Maryland applies population health methods to transform and improve our health care system for all payers, appreciating these differences provides an understanding of baselines for judging improvement.

Maryland's regulatory system creates a unique process for hospital payment that differs from the rest of the nation. Fundamental tenets of Maryland's all payer hospital payment system, such as inability to cost shift among payers and the inclusion of the costs of uncompensated care in hospital rates, drive much of the price difference. Comparing Maryland to other states in the region demonstrates that Maryland expenditures and utilization, while higher than the national average, are not out of alignment with regional expenditures and utilization.

Public Payers Reimburse Hospitals the Same Rates as Commercial Payers; Inability to Cost Shift

Under Maryland's all payer hospital payment system, all payers—Medicare, Medicaid, and commercial payers—reimburse essentially the same amount for identical services delivered at a hospital. Mark-ups, approximately 127 percent above cost in Maryland, do not differ by payer as they do in other states. In many other states, public programs, especially Medicaid, reimburse hospitals for substantially less than the full cost of the services provided. To compensate for the public payers cost-to-reimbursement gap, the hospitals negotiate above-cost rates with commercial payers. Thus, Maryland's public payers spend above the national average for hospital services and private payers less.

Maryland's All Payer Hospital Expenditures Are Lower than the Region

Maryland all payer expenditures are higher than the national average but fall below per capita expenditures in the Mideast Region. In calendar year 2009, per capita spending on hospital

care was \$2,767 compared to national average of \$2,475 and the Mideast regional average of \$2,823. This pattern is similar for personal healthcare spending, with Maryland averaging \$7,492 while the United States spends \$6,815 and the Mideast Region spends \$7,790 on average (see figure 3.1).

Figure 3.1: All-Payer Per Capita Expenditures, Mideast Region and National Average

Item	Y2006	Y2007	Y2008	Y2009
Personal Health Care				
District of Columbia	\$9,019	\$9,476	\$9,835	\$10,349
Delaware	\$7,350	\$7,750	\$8,111	\$8,480
New York	\$7,417	\$7,722	\$7,966	\$8,341
<i>Region</i>	<i>\$7,074</i>	<i>\$7,399</i>	<i>\$7,664</i>	<i>\$7,970</i>
Pennsylvania	\$6,860	\$7,207	\$7,483	\$7,730
New Jersey	\$6,803	\$7,110	\$7,356	\$7,583
Maryland	\$6,534	\$6,881	\$7,205	\$7,492
<i>United States</i>	<i>\$6,028</i>	<i>\$6,318</i>	<i>\$6,566</i>	<i>\$6,815</i>
Hospital Care				
District of Columbia	\$4,467	\$4,625	\$4,779	\$4,948
Delaware	\$2,680	\$2,858	\$2,944	\$3,109
New York	\$2,661	\$2,770	\$2,827	\$2,949
Pennsylvania	\$2,537	\$2,666	\$2,764	\$2,858
<i>Region</i>	<i>\$2,528</i>	<i>\$2,641</i>	<i>\$2,717</i>	<i>\$2,823</i>
Maryland	\$2,374	\$2,520	\$2,680	\$2,767
<i>United States</i>	<i>\$2,172</i>	<i>\$2,279</i>	<i>\$2,374</i>	<i>\$2,475</i>
New Jersey	\$2,169	\$2,238	\$2,261	\$2,351
Physician & Clinical Services				
New Jersey	\$1,714	\$1,885	\$2,000	\$2,049
Delaware	\$1,796	\$1,851	\$1,952	\$1,978
Maryland	\$1,610	\$1,685	\$1,732	\$1,792
<i>Region</i>	<i>\$1,539</i>	<i>\$1,624</i>	<i>\$1,720</i>	<i>\$1,777</i>
District of Columbia	\$1,641	\$1,803	\$1,790	\$1,770
New York	\$1,486	\$1,522	\$1,629	\$1,696
Pennsylvania	\$1,448	\$1,551	\$1,641	\$1,694
<i>United States</i>	<i>\$1,480</i>	<i>\$1,535</i>	<i>\$1,599</i>	<i>\$1,650</i>
Source: Centers for Medicare & Medicaid Services (2011). Health Expenditures by State of Residence. Retrieved at http://www.cms.gov/NationalHealthExpendData/downloads/resident-state-estimates.zip				

Maryland's Medicare and Medicaid Expenditures Per Capita are Comparable to Other States in the Region

Maryland is geographically in a high-cost and high-utilization region. CMS' National Health Care Expenditures Data places Maryland in the Mideast region, along with Delaware, the District of Columbia, Pennsylvania, New Jersey, and New York. Per capita expenditures reflect both price and utilization. Maryland's per capita personal health care costs for Medicare are slightly above the regional average. Maryland's per capita personal health care costs for Medicaid are slightly below the regional average. See Figures 3.2 and 3.3.

Figure 3.2: Medicare Per Capita Expenditures, Mideast Region and National Average

Item	Y2006	Y2007	Y2008	Y2009
Personal Health Care				
New Jersey	\$10,151	\$10,880	\$11,382	\$11,903
New York	\$9,955	\$10,530	\$11,103	\$11,604
Maryland	\$10,274	\$10,597	\$11,178	\$11,449
<i>Region</i>	<i>\$9,762</i>	<i>\$10,306</i>	<i>\$10,844</i>	<i>\$11,297</i>
District of Columbia	\$10,269	\$10,289	\$10,771	\$11,157
Pennsylvania	\$9,157	\$9,645	\$10,134	\$10,555
Delaware	\$8,845	\$9,371	\$10,125	\$10,421
<i>United States</i>	<i>\$9,012</i>	<i>\$9,418</i>	<i>\$9,930</i>	<i>\$10,365</i>
Hospital Care				
Maryland	\$5,873	\$5,986	\$6,289	\$6,352
District of Columbia	\$5,965	\$5,886	\$6,118	\$6,133
New York	\$5,084	\$5,251	\$5,477	\$5,650
<i>Region</i>	<i>\$4,976</i>	<i>\$5,139</i>	<i>\$5,332</i>	<i>\$5,452</i>
New Jersey	\$4,856	\$5,144	\$5,287	\$5,362
Delaware	\$4,460	\$4,637	\$4,965	\$4,966
Pennsylvania	\$4,609	\$4,718	\$4,844	\$4,950
<i>United States</i>	<i>\$4,416</i>	<i>\$4,514</i>	<i>\$4,688</i>	<i>\$4,847</i>
Physician & Clinical Services				
New Jersey	\$2,652	\$2,786	\$2,903	\$3,107
New York	\$2,388	\$2,506	\$2,656	\$2,794
<i>Region</i>	<i>\$2,332</i>	<i>\$2,438</i>	<i>\$2,565</i>	<i>\$2,694</i>
Pennsylvania	\$2,094	\$2,211	\$2,340	\$2,451
Maryland	\$2,335	\$2,335	\$2,406	\$2,441
<i>United States</i>	<i>\$2,125</i>	<i>\$2,178</i>	<i>\$2,297</i>	<i>\$2,407</i>
Delaware	\$2,118	\$2,171	\$2,240	\$2,278
District of Columbia	\$2,165	\$2,116	\$2,144	\$2,271

Source: Centers for Medicare & Medicaid Services (2011). Health Expenditures by State of Residence. Retrieved at <http://www.cms.gov/NationalHealthExpendData/downloads/resident-state-estimates.zip>

Figure 3.3: Medicaid Per Capita Expenditures, Mideast Region and National Average

Item	Y2006	Y2007	Y2008	Y2009
Personal Health Care				
New Jersey	\$11,211	\$10,582	\$10,911	\$10,825
New York	\$10,208	\$10,733	\$10,799	\$10,708
District of Columbia	\$8,678	\$9,532	\$10,125	\$10,487
<i>Region</i>	\$9,535	\$9,929	\$9,945	\$9,821
Maryland	\$8,022	\$8,556	\$8,496	\$8,533
Pennsylvania	\$8,037	\$8,525	\$8,311	\$8,049
<i>United States</i>	\$6,226	\$6,632	\$6,705	\$6,826
Delaware	\$6,095	\$6,493	\$6,779	\$6,679
Hospital Care				
New Jersey	\$4,393	\$4,348	\$4,250	\$4,049
District of Columbia	\$3,896	\$4,284	\$3,957	\$3,969
New York	\$3,864	\$3,969	\$3,942	\$3,903
<i>Region</i>	\$3,549	\$3,728	\$3,655	\$3,587
Maryland	\$3,186	\$3,484	\$3,455	\$3,225
Pennsylvania	\$2,625	\$3,034	\$2,909	\$2,903
<i>United States</i>	\$2,418	\$2,623	\$2,618	\$2,688
Delaware	\$2,088	\$2,249	\$2,097	\$2,011
Physician & Clinical Services				
District of Columbia	\$1,754	\$2,000	\$2,603	\$2,272
Maryland	\$854	\$832	\$763	\$1,307
Delaware	\$702	\$802	\$1,012	\$1,088
New Jersey	\$711	\$708	\$851	\$913
<i>United States</i>	\$693	\$729	\$756	\$789
<i>Region</i>	\$712	\$718	\$719	\$782
Pennsylvania	\$778	\$803	\$736	\$745
New York	\$630	\$619	\$604	\$628

Source: Centers for Medicare & Medicaid Services (2011). Health Expenditures by State of Residence. Retrieved at <http://www.cms.gov/NationalHealthExpendData/downloads/resident-state-estimates.zip>

HSCRC Rates Build in the Cost of Uncompensated Care

A fundamental HSCRC tenet of Maryland's rate-setting system, as articulated in state statute, is to include an amount for the provision of uncompensated care costs in HSCRC-established rates.¹³ The inclusion of uncompensated care in hospital rates allocates the overall expenditure

¹³ In addition to uncompensated care, HSCRC rates include several assessments including nurse support programs, HSCRC user fees, Maryland high-risk pool assessment, and a Medicaid expansion assessment.

amount to all payers, including the public programs. Recently, the portion of rates due to uncompensated care has trended near 7 percent. To provide a valid comparison with other states, we used CMS' National Health Care Expenditures to decrease Maryland's Medicare per capita hospital expenditures by 7 percent in 2009. As indicated in Figure 3.4, this resulted in Maryland's Medicare per capita personal care expenditures falling below the regional average.

As a consequence of Maryland's uncompensated care provision, Maryland requests minimal Medicaid DSH funding. Also, as discussed earlier in this section, Maryland, unlike other states, does not have a two-tier hospital system in which the poor, uninsured, and Medicaid beneficiaries are disproportionately utilizing services at a single state-supported hospital.

Figure 3.4: Medicare per Capita Expenditures Reduced by the Average Uncompensated Care Provision in Rate, Mideast Region and National Average, 2009

Item	Per Capita Expenditures Y2009	Uncompensated Care Component in Rates	Y2009 Regional Comparison with Uncompensated Care Component Removed
Personal Health Care			
New Jersey	\$11,903		\$11,903
New York	\$11,604		\$11,604
<i>Region</i>	<i>\$11,297</i>		<i>\$11,297</i>
District of Columbia	\$11,157		\$11,157
Maryland	\$11,449	\$445	\$11,004
Pennsylvania	\$10,555		\$10,555
Delaware	\$10,421		\$10,421
<i>United States</i>	<i>\$10,365</i>		<i>\$10,365</i>
Hospital Care			
District of Columbia	\$6,133		\$6,133
Maryland	\$6,352	\$445	\$5,907
New York	\$5,650		\$5,650
<i>Region</i>	<i>\$5,452</i>		<i>\$5,452</i>
New Jersey	\$5,362		\$5,362
Delaware	\$4,966		\$4,966
Pennsylvania	\$4,950		\$4,950
<i>United States</i>	<i>\$4,847</i>		<i>\$4,847</i>
Source: HSCRC, December 2012. Using base data from Centers for Medicare & Medicaid Services (2011). Health Expenditures by State of Residence. Retrieved at http://www.cms.gov/NationalHealthExpendData/downloads/resident-state-estimates.zip			

Maryland's Hospital Utilization is Comparable to Other States in the Region

Using data from the Institute of Medicine's (IOM) Geographic Variation Data Request (June 2012 Update), we reviewed Medicare utilization in Maryland and the other Mideast states (see Figure 3.5). As with the per capita expenditures, Maryland falls in a geographic region that utilizes hospital services at a higher rate than the national average.

A number of factors could affect regional utilization patterns, including population health status and ethnic composition. Differences in regional health care practitioner practice patterns are known to impact utilization rates. The culture of regionalized graduate medical education may institutionalize these practice patterns.

Figure 3.5: Medicare Inpatient Service Utilization 2011

Percent of Medicare Beneficiaries Using Inpatient			Inpatient Covered Admissions Per 1000 Beneficiaries			Inpatient Covered Days Per 1000 Beneficiaries		
State	Percent	State Rank	State	Count	State Rank	State	Count	State Rank
PA	20.60%	4	DC	361	1	NY	2,252	1
DC	19.81%	15	PA	343	10	DC	2,245	2
NY	19.78%	16	NY	335	12	NJ	2,023	4
NJ	19.53%	19	NJ	333	13	PA	1,875	8
MD	19.47%	20	MD	331	15	MD	1,823	13
National	18.93%		National	312		National	1,689	
DE	17.63%	35	DE	281	33	DE	1,598	27

Source: Institute of Medicine's Geographic Variation Data Request (January 15 2013 Update)

Maryland Utilizes Post-Acute Services at a Lower Rate than the Nation and the Region

IOM data show that utilization rates for post-acute care services are relatively low in Maryland. For example, Maryland is ranked 44th in the use of hospice services as indicated by hospice-covered days per 1000 Medicare beneficiaries. A tendency to utilize hospital services rather than post-acute care services may be a contributor to the data on higher use of hospital services. We believe that this is an area where better alignment of financial incentives would positively impact the patient experience, enhance quality, and reduce the total cost of health care.

Maryland's High Readmission Rate is Comparable to Other States in the Region

Maryland has a high readmission rate. Through its all payer hospital payment system, Maryland is actively engaged in programs to reduce readmissions. In July 2011, the state implemented a readmission reduction program to align incentives to better coordinate care transitions for all payers. However, in acknowledging Maryland's high rate, we note that IOM data show that

readmission rates in the Mideast region states are higher than for the nation as a whole. See Figure 3.6.

Figure 3.6: Medicare Hospital Readmissions Rates 2011

State	Rate	State Rank
DC	23.60%	1
MD	21.37%	2
NJ	21.14%	4
NY	20.72%	6
National	19.12%	
PA	19.07%	20
DE	17.86%	30

Source: Institute of Medicine's Geographic Variation Data Request (January 2013 Update)

The §1814(b) Waiver Test Incentivizes Cost Controls at Case-Level

Case-level cost incentives cannot curb volume growth. Under §1814(b), Maryland hospitals controlled per case cost growth for over 30 years. The unintended consequence is volume growth. Under the proposed model, Maryland aims to focus the system on population health and controlling per-capita expenditures.

Impact of the Proposed Model on Stakeholders

Establishing the Model Design in Maryland is aimed at reducing cost, improving patient experience (quality and satisfaction), and enhancing the population health. The means to achieving these aims include patient centered medical homes, ACOs, gain sharing, and bundled payments. The expectation is that implementing these system changes will produce incentives that reward providers for achieving efficiency and higher quality through integration of services, choice of the most appropriate cost-effective methods and sites of treatment, and providing just the level and amount of services that patients need. If successful, the results will be far reaching, affecting not only patients but providers—including, most obviously hospitals—and payers, both government payers and private insurers.

Impact on Hospitals

- *Variable effect on margins.* If, as expected, the new methods promote integration and substitution of lower-cost services for some existing hospital care, profit margins for some hospitals may decline, at least initially. Fewer services will be provided in the hospital setting, which means that the fixed costs will be spread over fewer patients, and the patients who are treated there are likely to be sicker and therefore more costly to treat. Average costs per patient and per episode of care are likely to rise, but this is a desirable outcome because hospitals will not be treating patients than can be more appropriately

cared for in less resource-intensive settings. Hospitals that are further along in the transformation process may be able to gain margin more quickly through effective use of shared savings programs.

- *Broader integration with rest of health care delivery system.* If the proposed methods are to work, it will be critical to integrate hospital care in a more effective way with care from lower-intensity service providers. Necessarily, patients will need to move among service providers and service settings as the acuity of their condition changes. This can happen only if all providers are seen as part of a whole integrated system rather than as sets of discrete caregivers, if there is someone managing care, and if providers have effective and efficient means to securely exchange health information.¹⁴
- *Innovation to reduce costs and deliver improved care.* Integration will not happen automatically simply by putting new labels, such as medical homes or ACOs, on parts of the system. Innovation will be necessary, though perhaps not easy to achieve. But the expectation is that when the financial incentives are properly designed to reward cost-effective high-quality care delivery, providers will find ways to innovate to produce the desired results.

Impact on Payers

- Governmental
 - *Slower growth in program costs, all else equal.* This model will slow the rate of health care cost increases, assuming no unpredictable cost-producing events, such as natural disasters or major epidemics.
 - *Improved quality of services received.* The research evidence is clear that more care and more intensive care are not clearly associated with better outcomes. When care is provided in the most appropriate cost-effective setting, quality improves. When services are well integrated so that patient can move easily from one appropriate level of care to another as their needs change, patients benefit.
- Private insurers
 - *Slower growth in premiums.* If successful, our proposed method will curtail health care cost increases. Private insurers will share in these savings, which will allow them to lower the rate of premium increases while maintaining profitability.

¹⁴ Maryland is a leader among states in implementation of a state Health Information Exchange. All Maryland hospitals have submitted, at a minimum, admission, discharge, and transfer information on all inpatients since December 2011. See Section 10 for more information.

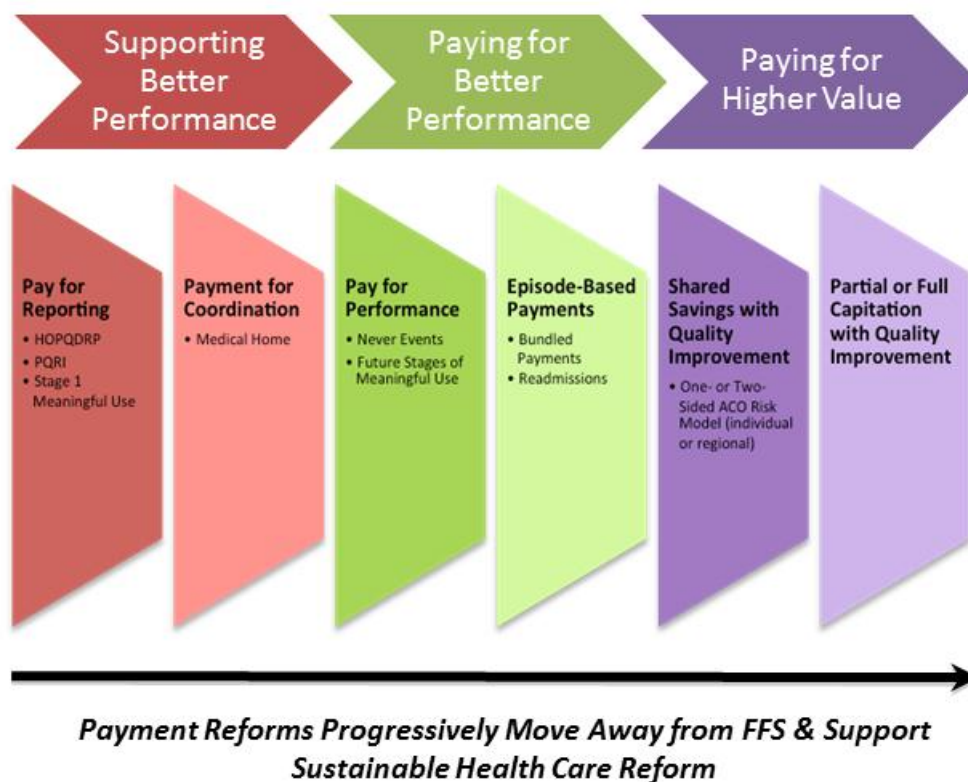
Section 4. Model Design and Methods

Maryland hypothesizes that an all payer system that is accountable for the total cost of care on a per capita basis is an effective model for establishing policies and incentives to drive system progress toward achieving the three-part aim of enhanced patient experience, better population health, and lower costs for all Maryland residents.

Figure 4.1 depicts a number of steps on the path towards models that pay for performance and value. Maryland will employ a range of innovative incentives and payment reforms along this continuum to drive improvements in the health care system—including payment for performance, episode based payments, shared savings with quality improvement for inpatient and medical home initiatives, and some capitation with quality improvement. Moreover, the state will adopt these on an all payer basis.

Figure 4.1: Preparing for an Era of Greater Accountability

Source: Engelberg Center for Health Care Reform at Brookings



This section discusses in detail the model the state proposes to implement and the methods the state will deploy to achieve success.

Model Description: All Payer System

As discussed in Section 3, Maryland understands the value of and remains fundamentally committed to its unique all payer system for hospital payment. With a wide range of specific methods, some of which will be newly authorized under this Model Design proposal, Maryland will test an all payer model that includes a range of strategies to achieve overall health care system improvements.

In parallel, Maryland will build upon its current medical home initiatives and implement a statewide multi-payer Community Integrated Medical Home (CIMH) program. This program will move to a personalized, team-based approach in the primary care practice that is integrated with an enhanced community health infrastructure. This infrastructure will include enhanced capacities for local health improvement coalitions and local health departments, and robust data infrastructure of health care utilization data and population health indicators to facilitate local health planning.

The new conceptual framework to modernize the existing all payer hospital waiver complements the all payer vision of a new Community-Integrated Medical Home. The advantage of facilitating system-wide delivery and payment reform will shift the focus of reform efforts away from particular institutions to the broader community. A greater focus on prevention and management of conditions in primary care settings, as well as home- and community-based settings, and care coordination across all settings will establish shared accountability for improving population health and bending the health care cost curve.

Model Design Period

Maryland proposes the model operation in two phases that would run consecutively. CMS will judge success under the model at designated intervals during each Phase.

Figure 4.2: Model Phases



Phase 1 Methods

The proposed model encompasses the full spectrum of services for Maryland residents, including Medicare, Medicaid, and CHIP beneficiaries. Phase 1 deploys methods strategically targeted to impact hospital financial incentives under the state's all payer system. The state has designed these methods to leverage those hospital financial incentives to drive better coordination of care across all health care services. The Phase 1 methods include global

payment methods not available in Maryland today, methods under current Maryland authority that will be accelerated and strengthened under a per capita goal, and direct incentives for improved quality and outcomes in hospital care. These methods aim to enhance population health and improve quality while reducing the total cost of care.

Figure 4.3: Proposed Phase 1 System Transformation Methods

Methods: Initiatives Aimed at System Transformation – Phase 1			
Global Payment Methods Currently Unavailable in Maryland		Methods Under Current Maryland Authority	
Accountable Care Organizations (with Hospital Conveners)		Total Patient Revenue	Admissions/ Readmissions Revenue
Bundled Payment Strategies		Quality Programs with Revenue at Risk	Population Based Revenue Structure
		Balanced Update Factors	Volume Controls

Global Payment Methods Currently Unavailable in Maryland

Payment methods that involve sharing of risk with healthcare entities align incentives for better outcomes at lower costs. These include hospital-based ACOs (i.e., ACOs with hospitals as the conveners) and bundled payments. Under the model, Maryland would adopt all payer rules for these methods. These approaches offer tremendous potential to transform health care service delivery and achieve the three-part aim. As described below, Maryland seeks authority from CMS to pursue these innovations.

ACOs with Hospital Conveners

The all payer system offers a framework for implementing care coordination with powerful incentives. Creating and coordinating the infrastructure for an ACO is complex and costly. A large payer like Medicare can encourage the adoption of this methodology to coordinate care across the healthcare continuum with appropriate opportunities for shared savings and better health for a defined population. That potential is magnified in an all payer system where the fixed costs of this organization can potentially be applied to other populations treated in Maryland hospitals.

One concern in other states is that ACOs may come together and exert market power to drive increases in prices. Maryland's all payer hospital rate system is a natural counterweight to this

potential concern. In fact, Maryland can facilitate effective ACO development by initiating real delivery system change more rapidly as all payers have the opportunity to participate in the ACO. Our hypothesis is that the impact on total costs will be more rapid than ACO implementation without an all payer model. The research is scant on ACOs, as they are too new, but there are articles on Blue Shield’s Alternative Quality Contract (AQC) in Massachusetts. The AQC model, which provides global budgets that cover the entire continuum of patient care, was associated with modestly lower spending and improved quality in the first year after implementation.¹⁵ The changes in delivery systems required of ACOs – better care coordination, strong relationships with patient centered medical homes, etc. – will occur on a more systemic basis when the ACO is part of the all payer model.

Target Populations

As discussed above, the strength of deploying hospital-convened ACOs in Maryland’s all payer model stems from the ability to provide opportunities for shared savings and better health coordination for the entire population served by the ACO regardless of the payer. This includes Medicare, Medicaid, CHIP, and private payers.

Key Implementation Considerations and Proposed Milestones

Figure 4.4 displays the key steps in developing and implementing the methodology for hospitals to convene ACOs in Maryland.

Figure 4.4: Proposed Initial Implementation Milestones

Accountable Care Organizations Proposed Initial Implementation Milestones		
Process	Timeline	Comments
HSCRC engages stakeholder workgroup	Upon initiation of Model Design	Workgroup of interested parties staffed by HSCRC staff
Workgroup provides preliminary report to Commission with one month provided for public comment	+3 months	Workgroup report delivers data requirements, timelines, task lists, and processes for hospital participation in ACOs
Commission staff with workgroup provide proposed rules to HSCRC	+7 months	
Public comment period	+ 1 month	Commission rules require public comment
HSCRC adopts rules for hospital ACO participation	Approximately one year after Model Design initiation	

¹⁵ Zirui Song, B.A., Dana Gelb Safran, Sc.D., Bruce E. Landon, M.D., M.B.A., Yulei He, Ph.D., Randall P. Ellis, Ph.D., Robert E. Mechanic, M.B.A., Matthew P. Day, F.S.A., M.A.A.A., and Michael E. Chernew, Ph.D. “Health Care Spending and Quality in Year 1 of the Alternative Quality Contract” in *The New England Journal of Medicine* 2011; 365:909-918 September 8, 2011 DOI: 10.1056/NEJsa1101416

Bundled Payments

Maryland has a long-standing process in place for approving Alternative Method of Rate Determination (ARMs) that provides a foundation for the state to review and approve shared savings models. ARMs allow hospitals to participate in innovative payment relationships designed to lower costs and improve quality. Under ARM arrangements, hospitals are able to participate in defined and approved risk-sharing relationships through related entities.

The ARM statutory authority allows organizations related to hospitals to assume risk for combined hospital and physician payments ('case rate') for discrete DRGs with a payer. Hospitals are required to demonstrate that the negotiated bundled case rate (between the hospital and the payer) was 'reasonable and achievable.' Maintaining the commitment to the all payer principles of equity and access, only separate 'risk-bearing' entities (a related entity to the hospital) receive the lump-sum or case-rate payment negotiated with the payer and approved by the HSCRC. The related entity then pays the hospital its approved rates. Alternative pricing arrangements must also be made available to all payers on the same terms and conditions.

The ARM review process provides a framework for a structured evaluation of specific innovative payment relationships that assures they do not undermine broad policy goals or allow one provider or payer to benefit unduly.

Today Maryland does not have the authority to approve gain-sharing relationships as part of ARMs. With such authority, Maryland proposes to build on its current ARM process to consider broader initiatives to align payment incentives between hospitals and other health care providers.¹⁶

Maryland proposes through the model to undertake gain sharing with hospitals in the context of bundled payments. In a review of 58 previously unpublished studies of bundled payment programs, the Agency for Healthcare Research and Quality (AHRQ) found that the introduction of bundled payment programs was associated with "reductions in health care spending and utilization."¹⁷ Cutler and Ghosh found that "setting the patient-based global payment at the level of average spending in the 25th percentile regions would save \$35 billion nationally. If

¹⁶ See Appendix C.

¹⁷ Hussey PS, Mulcahy AW, Schnyer C, Schneider EC. "Bundled Payment: Effects on Health care Spending and Quality. Closing the Quality Gap: Revisiting the State of the Science." Evidence Report/Technology Assessment No. 208. (Prepared by the RAND Evidence-based Practice Center under Contract No. 290-2007-10062-I.) AHRQ Publication No. 12-E007-EF. Rockville, MD: Agency for Healthcare Research and Quality. August 2102. www.effectivehealthcare.ahrq.gov/reports/final.cfm.

spending were set at the 50th percentile level, the savings would be \$18.2 billion nationally.”¹⁸ The potential for savings in Maryland is greater than in other states as Maryland intends to implement certain bundled payment arrangements on an all payer basis – ensuring that hospitals will make the necessary delivery system changes system-wide to help them manage spending across an entire episode of care.

Target Populations

Developing bundled payment arrangements in Maryland’s all payer model provides opportunities for better health coordination for the entire population served by hospitals, regardless of the payer. This includes Medicare, Medicaid, CHIP, and private payers. Based on selected bundling payment arrangements from CMMI Bundled Payments for Care Improvement Initiative episode list, Maryland developed the estimated target populations in Figure 4.5.¹⁹

**Figure 4.5: Target Population for Bundled Payments
 Total Counts of Cases and Costs by Target Population**

Target Population	Number of Cases	Percent of Maryland Target Population Admissions	Total 30 Day Hospital Episode	Percent of Maryland Target Population Total Hospital Cost
Medicare	24,426	9.05%	\$687,909,166	12.12%
Medicaid	2,821	1.88%	\$93,634,876	3.75%
Dual Eligible	3,078	4.89%	\$91,524,843	0.07%
Privately Insured	21,477	8.80%	\$563,473,227	10.69%
Other	3,138	1.29%	\$86,605,797	0.08%
TOTAL	51,862	7.20%	\$1,431,623,065	9.86%

¹⁸ David M. Cutler, Ph.D., and Kaushik Ghosh, Ph.D. “The Potential for Cost Savings through Bundled Payment Episode Payments” in *The New England Journal of Medicine* 2012, 366: 1075-1077/March 22, 2012/DOI: 10.1056/NEJM1113361.

¹⁹ HSCRC analysis of the most common 16 episodes from the CMMI preliminary list of episode anchors using CY 2011 HSCRC casemix data. Assumed 100% participation rate for hospitals with 50 or more cases in each episode. The list of episodes includes Major joint replacement of the lower extremity, Major bowel, Spinal fusion (non-Cervical), Percutaneous coronary intervention, Coronary artery bypass graft surgery, Cardiac valve, Hip and femur procedures except major joint, Cervical spinal fusion, Lower extremity and humer procedure except hip, foot, femur, Revision of the hip or knee, Pacemaker, Back and neck except spinal fusion, Combined anterior posterior spinal fusion, Major joint upper extremity, Double joint replacement of the lower extremity, Fractures femur and hip/pelvis.

Key Implementation Considerations and Proposed Milestones

As part of the model, HSCRC intends to initiate the process displayed in Figure 4.6 to develop bundled payment on an all payer basis.

Figure 4.6: Proposed Initial Implementation Milestones

Bundled Payments		
Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC engages stakeholder workgroup	Upon initiation of Model Design	Workgroup of interested parties staffed by HSCRC staff
Workgroup provides preliminary report to Commission with one month provided for public comment	+3 months	Workgroup report delivers data requirements, timelines, task lists, and processes for establishing bundles
Workgroup and HSCRC staff develop bundling application process	Ongoing after preliminary report	HSCRC will collect and analyze data
Commission staff with workgroup provide proposed rules to HSCRC	+7 months	
Public comment period	+ 1 month	Commission rules require public comment
HSCRC provides bundling application requirements and process for hospitals	Approximately one year after Model Design initiation	

Methods Under Current Maryland Authority

Maryland, through state authority granted to the HSCRC, has implemented a number of hospital payment methodologies that move the Maryland payment system towards a population-based financing system for all payers. While these are hospital-focused methods, Maryland understands that as a large driver of health care resources, the state can leverage hospitals to promote improvement across the spectrum of health care services. The current policies are designed to increase coordination of care across the inpatient-ambulatory continuum by removing incentives for inappropriate increases in volume of inpatient services and establishing global payment methodologies that provide incentives for lowering overall health cost growth and improving outcomes.

As part of the model, under a per capita approach, Maryland can expand the use of these methods.

One of the strengths of the Maryland payment system is that it is able to respond quickly to changes in the health system and develop payment methodologies. The HSCRC's unique governance structure allows design and pilot testing of new payment methodologies that meet the unique needs of local market environments. Maryland has developed global payment strategies that align incentives to control costs and improve care. Over time, Maryland has

increasingly put more hospital revenue at risk under global payment strategies that use broader incentives to control costs and improve quality.

HSCRC Decision Making Process

Under Model Design, the HSCRC will retain authority to develop and implement a variety of methods (listed in Figure 4.7 below). The HSCRC will also retain responsibility for reviewing and approving policies integral to these methods, such as shared savings decisions. When the HSCRC reviews potential methods and methodologies, the HSCRC accounts for a large number of factors such as performance to financial evaluations of success (all payer, Medicare), financial performance of efficient and effective hospitals, costs in Maryland relative to outside benchmarks, economic indicators, and intended outcomes of the methods and methodologies. Consistent with the Maryland Administrative Procedure Act, all HSCRC rule and policy making must be conducted through a public deliberative process allowing for public comment prior to adoption. The HSCRC generally provides between 30 and 60 days for a public comment period. To further facilitate public comment, HSCRC is reviewing potential opportunities to develop a patient engagement advisory group.

Figure 4.7: Global Payment Strategies

Method	Services Included	Hospital Participating	Estimated Percent of Revenue at Risk
Total Patient Revenue (TPR)	All regulated services	10	~100%
Admission/Readmission Revenue (ARR)	All-cause readmissions for 30 days	31	~10%
Population Based Revenue (PBR)	Core services for specific DRGs in hospital community	TBD	~ 30% to 50% (estimated)
Quality Programs with Revenue at Risk	All inpatient regulated services <i>State will expand to all regulated services in future years</i>	All	FY 14: 2.5% inpatient revenue FY 15: 3.5% inpatient revenue <i>State will continue to add to magnitude at risk</i>
Balanced Update Factors	All regulated services	All	N/A
Volume Controls	All regulated services	All non-TPR hospitals	N/A

Total Patient Revenue (TPR)

Total Patient Revenue (TPR) payment arrangements are voluntary three-year rate arrangements between the HSCRC and individual hospitals, which establish fixed global (and guaranteed) revenue levels for hospitals for all inpatient and outpatient revenues regardless of

volumes. These arrangements are most applicable to more isolated rural facilities with defined catchment areas. Ten hospitals began operating under this structure in FY 2011.

The TPR arrangement encourages hospitals to play a role in ensuring that care is provided in less expensive and more appropriate settings. This requires the hospital to work collaboratively with community providers—for example, to ensure that patients are not going to emergency rooms for non-emergent care. In turn, the Commission expects to see reduced hospital visits, admissions, readmissions, less duplicative testing, and improved efficiency.

TPR provides strong incentives for coordinating care across hospital and non-hospital settings, thereby reducing unnecessary utilization, enhancing quality, and improving efficiency. Hospitals operating under the TPR incentives have moved low-intensity cases from the hospital to more appropriate outpatient settings. These hospitals have also responded in new and innovative ways with community-based physicians, long-term care organizations, and the public health system.

Under the current arrangement, the TPR hospitals are able to keep a constant revenue base, updated by the annual update factor. The savings from improved performance are retained by the hospital, with the understanding that the facility will invest in opportunities to improve population health and reduce hospital utilization. Payers and consumers share in these savings through lower annual update factors and rate base adjustments at the end of the contract period.

TPR is one of the few global payment systems in the country. Implementation on an all payer basis means that TPR ensures that the incentives for participating hospitals is more uniform and, thus, provides a greater incentive to reduce spending and improve quality.

As part of the Model Design, Maryland intends to enhance the TPR program. These enhancements will include:

- Focused coordination with local health improvement coalitions that are working to address health outcomes and disparities. This element provides the assistance of community organizations and public health to achieve lower health care costs through improved health.
- Opportunities for gain sharing with physicians.
- Integration with ACOs and ARMs, by expanding the reach of these savings programs.

Target Populations

A TPR hospital achieves financial success by efficiently providing health care services and by promoting the health of the entire population in the catchment area of the TPR hospital. Therefore, the target population for the TPR method is all Maryland residents living in areas

served by TPR hospitals. These Maryland residents are generally living in the more rural regions of our state. Using TPR hospital market share analysis and population data from Maryland's Department of Planning, we estimated the target population for the TPR method in state fiscal year 2013. See Figure 4.8.

Figure 4.8: Target Population for TPR, SFY 2013

Target Population	Estimated Population Count	Percent of Maryland Residents
Medicare	123,081	2.1%
Medicaid	142,226	2.4%
Dual Eligible	17,762	0.3%
Private/Other	522,682	8.9%
TOTAL	805,751	13.7%

Source: HSCRC, 2013. Hospital market share evaluation of Maryland's Department of Planning population tables.

Target Providers

Under Model Design, we anticipate that nine to ten hospitals will participate in TPR arrangements. We anticipate that the financial incentives under Model Design will encourage hospital collaboration with providers across a continuum of care. We anticipate an acceleration of collaborative arrangements such as those with nursing facilities, physician practices, and home health and hospice agencies. Figure 4.9 lists the hospitals targeted by TPR.

Figure 4.9: Target Providers for TPR

Target Providers	Geographic Region
Calvert Memorial	Southern Maryland
Chester River Hospital Center	Eastern Shore
Dorchester General	Eastern Shore
Garrett County	Western Maryland
McCready Foundation	Eastern Shore
Memorial at Easton	Eastern Shore
Meritus Medical Center	Western Maryland
Union of Cecil	Eastern Shore
Western Maryland	Western Maryland

Key Implementation Considerations and Proposed Milestones

The following timeline, Figure 4.10, describes the expected modifications and their associated timeframe for the TPR program.

Figure 4.10: Proposed Initial Implementation Milestones

Total Patient Revenue Proposed Implementation Milestones		
Process	Timeline	Comments
Upon		
HSCRC establishes rebased revenue, develops draft TPR proposals. Provides for one-month public comment period.	Discussions ongoing	Baselines to capture program shared savings
HSCRC and hospitals sign TPR agreements	+1 month	HSCRC anticipate similar group of TPR hospitals as in previous cycle; potential conversion of one hospital to PBR
Hospital – community health plans developed in TPR areas	Development on going	In tandem with local planning coalitions
HSCRC initiates new agreements	Start date identified in agreements	

Admissions/Readmissions Revenue (ARR)

The Admission/Readmission Revenue Structure (ARR), like TPR, is a ‘guaranteed inpatient revenue’ rate constraint; however, the ARR limits the institutional bundle to a per episode payment constraint to include admissions and readmissions within 30 days of discharge. Under this approach, hospitals are ‘at risk’ for all-cause readmissions within a 30-day window under a voluntary arrangement with the HSCRC. Currently, 31 hospitals participate in ARR. Other hospitals have applied for or expressed interest in this payment methodology.

The advantages of this method are similar to those of TPR, except that ARR is focused on reducing inpatient readmissions and encouraging hospitals to work with community providers to ensure that patients are receiving appropriate post-acute care. Hospital activities that are critical to reducing unnecessary readmissions must focus on improving the transition out of the hospital.

The development of this payment method is a foundational effort for HSCRC to redesign its payment incentives to focus on population-based health strategies. Maryland began this voluntary relationship with its hospitals to begin to refocus payment methodologies towards episodes of care and bundled payment strategies. Given the significant change in direction of this new payment methodology and the infrastructure needs of Maryland hospitals to effectively reduce readmissions, initial funding was provided to support hospital efforts to redesign care management systems. With the methodology and payment incentives established, expectations to achieve and share savings with all Maryland payers (and ultimately the patients) can be realized.

In the current program, allowable revenue for a case is based on the DRG of the index admission. The total allowable revenue for a case is the average charges associated with the

index admission, and all-cause readmissions for 30 days are bundled into that index case. The hospital will receive no additional allowable revenue for any readmission during the 30-day period. However, the hospital keeps the all allowable revenue associated with the index admission and associated readmissions. If the hospital is able to reduce readmissions, it retains the same revenue for the DRG, allowing the hospital to increase its profitability.

ARR has been effective in reducing readmissions. Having the same incentives across all payers optimizes the opportunity to reduce readmissions. As part of the model, Maryland plans to enhance the ARR method as a foundation of episode-based payment. These plans include:

- Focused coordination with local health planning coalitions. These coalitions can mobilize public health and community resources to reduce readmissions.
- Permitting gain sharing with physicians to reduce readmissions.
- Coordination with ACO and ARM payment methodologies.
- Enhance detection of area admissions at other hospitals through use of the health information exchange (HIE).

Target Populations

An ARR hospital is financially incentivized to reduce hospital readmissions. Increasingly, hospitals are deploying strategies targeted at the health of the entire population served by the hospital. Therefore, we identify the target population for the ARR method as all Maryland residents living in areas served by ARR hospitals. Using ARR hospital market share analysis and population data from Maryland's Department of Planning, we estimated the target population for the ARR method in state fiscal year 2013. In this analysis, we assumed that all hospitals not participating in TPR or PBR arrangements will be engaged in ARR. See Figure 4.11.

Figure 4.11: Target Population for ARR

Target Population	Estimated Population Count	Percent of Maryland Residents
Medicare	580,277	9.9%
Medicaid	769,974	13.1%
Dual Eligible	96,160	1.6%
Private/Other	3,518,596	59.8%
TOTAL	4,965,007	84.4%

Source: HSCRC, 2013. Hospital market share evaluation of Maryland's Department of Planning population tables.

Target Providers

Under Model Design, we expect 35 to 36 hospitals to participate in ARR. In addition to hospital participation in ARR, we anticipate an acceleration of collaborative arrangements with providers across a continuum of care such as physician practices, nursing facilities, and home

health and hospice agencies. Several care transition symposiums sponsored by the HSCRC, the Maryland Hospital Association, and Delmarva (Maryland's QIO) have facilitated and encouraged these arrangements.

Key Implementation Considerations and Proposed Milestones

The following timeline describes the expected modifications and their associated timeframe for the ARR program.

Figure 4.12: Proposed Initial Implementation Milestones

Admissions Readmissions Revenue Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC staff provides draft recommendation to Commission; provide for one-month public comment period	Discussions ongoing	Move toward explicit shared savings model. Preliminary discussions with Commission in November 2012 with ongoing discussions.
Commission decision on final ARR policy	+1 month	
HSCRC issues new ARR documentation, weights	+1 month	
Hospital-community health plans developed	Development on going	In tandem with community health coalitions
HSCRC implements ARR program modifications	+1 month	Modifications timed to correspond with the new rate year

Population Based Revenue Structure (PBR)

The HSCRC is in the development phase of a Population Based Revenue (PBR) method that is intended to be implemented in FY 2014. The goal of this project is to design a virtual capitation payment system that would incorporate the comprehensive incentives of the TPR but would be applicable to hospitals with less self-contained catchment areas. This initiative would involve assigning primary market areas to each hospital, where the hospital is held at risk for efficiency and effectiveness in the provision of inpatient and outpatient health care services and quality performance.

PBR is intended to be a modified and more flexible version of the Total Patient Revenue (TPR) system. Like TPR, PBR will be a voluntary arrangement with hospitals that provides for selected services that are provided by the PBR Hospital, or by other Maryland hospitals, to residents of one service area of the PBR hospital. PBR is designed to encourage hospitals that have a majority of the market share for specific services to operate under broader population-based incentives where they are accountable for providing services more efficiently. The PBR methodology would define the parameters for hospital participation but is intended to be broad in scope.

Maryland plans to continue to develop the PBR method as part of its strategy to adopt population-based financing systems. The HSCRC expects to implement the first pilot of the methodology in FY 2014.

In an all payer setting, implementation of PBR would have a better chance of generating savings by providing greater incentive for providers to change their delivery systems. Key aspects of this program will include:

- coordination with local public health planning coalitions.
- opportunities for gain sharing.
- opportunities for post-acute care coordination.

Target Populations

Maryland anticipates one to two hospitals piloting PBR in the first year of this model. Thus the method will apply to a limited target population.

Figure 4.13: Target Population for PBR

Target Population	Estimated Population Count	Percent of Maryland Residents
Pilot Year		
Medicare	18,300	0.3%
Medicaid	10,816	0.2%
Dual Eligible	1,351	0.02%
Private/Other	82,632	1.4%
TOTAL FOR PILOT	113,099	1.9%

Target Providers

Similar to TPR and ARR, the financial incentives of PBR encourage coordination between the PRB hospitals and other providers across the continuum of care.

Key Implementation Considerations and Proposed Milestones

The following timeline describes the expected modifications and their associated timeframe for the PBR program.

Figure 4.14: Proposed Initial Implementation Milestones

Population Based Rate Setting Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC engages pilot hospital	Ongoing	
HSCRC provides draft proposal on PBR program, provides for one-month comment period	TBD	HSCRC intends this as 1 to 2 hospital pilot
HSCRC approves final PBR program	+1 month	
HSCRC discuss PBR with other potential hospitals	+5 month	
Hospital-community health plans developed	Development on going	In tandem with community coalitions
HSCRC expands PBR under revised terms with interested hospitals	+6 months	

Quality Programs with Revenue at Risk

Consistent and powerful incentives to drive quality and improve outcomes are a critical component to a health care system designed to achieve value. Over the last several years, Maryland has steadily expanded the magnitude and scope of its hospital quality payment reform initiatives. In July 2008, HSCRC implemented the Quality Based Reimbursement Initiative (QBR), which allocates rewards and penalties for hospitals based on their performance in clinical process-of-care measures. A year later, Maryland Hospital Acquired Conditions Program (MHAC) was implemented and resulted in adjustments to hospital rates based on potentially preventable complication rates. We describe these quality programs in detail in Section 7. These efforts lay a foundation for Maryland’s future strategy to achieving the three-part aim.

- Quality based reimbursement. This program is Maryland’s version of the Value Based Purchasing initiative. In FY 2014 and FY 2015, 0.5 percent of hospital inpatient revenue is at risk.
- Preventable complications. This program is known as Maryland Hospital Acquired Conditions (MHAC). In FY2014, 2 percent of hospital inpatient revenue is at risk under this program. HSCRC has expanded the magnitude to 3 percent for FY 2015.

Maryland is committed to strengthening its all payer incentives for quality and outcomes and focusing its pay-for-performance initiatives on patient-centric outcome-based measures. Under this proposed model, Maryland will place additional hospital revenue at risk based on quality measures. Maryland’s goal is to have broad measures of performance that are supported by strong and consistent financial incentives, fundamentally linked to our all payer system. Maryland’s access to robust case mix data allows the development and testing of new

measures of performance. In collaboration with the QBR/MHAC work group, we will continue to design and implement new approaches to measuring and rewarding performance.

Implementing quality improvement strategies on an all payer basis can ensure more rapid improvement of care for all patients.

Key Implementation Considerations and Proposed Milestones

Maryland is committed to aggressively pursuing quality improvements. The following table outlines anticipated improvements and expansions in existing quality programs.

Figure 4.15: Proposed Initial Implementation Milestones

Quality Programs with Revenue at Risk Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC staff provide final recommendation to Commission; Commission decision on final policy	Completed January 2013	HSCRC staff recommending 2014 and 2015 scaling amount for QBR and MHAC; program modifications (adding mortality and improvement domains to MHAC)
HSCRC requires hospitals to sign the CMS OQR Pledge	Completed January 2013	
Hospitals required to report all CMS IQR and OQR measures	January 2014	

Balanced Update Factors

The HSCRC can control the amount of revenue in the hospital system through two basic methods already in use – the annual update factor and the volume adjustment. The cost of Maryland’s hospital admissions has increased significantly less than in other states since the inception of the all payer system. In 2007, the average hospital cost per case for all payers was 2 percent below the national average.²⁰ Controlling the update factor and other methods that Maryland has attempted over the years in an all payer setting has enabled it to curb costs.

The HSCRC currently determines hospital inflationary price adjustments on an annual basis through the annual update factor. The annual update factor takes into account a variety of items. The starting point for consideration is generally the Medicare market basket forecast. The HSCRC makes a series of adjustments to this factor to capture current economic conditions, including required productivity improvements, case mix growth adjustments, and revenue restriction achievements from the previous year. The process is depicted in Figure 4.16. During annual update factor policy discussions, the HSCRC estimates the impact of each component. The sum of these components determines the annual update factor for system revenue in the

²⁰ Robert Murray, “Setting Hospital Rates to Control Costs and Boost Quality: The Maryland Experience” in *Health Affairs*, 28, no. 5 (2009), p. 1399.

coming state fiscal year. The HSCRC regularly monitors revenue and is authorized to make mid-year adjustments, if required.

Figure 4.16: Annual Update Factor Component Examples and HSCRC Actions

Component	HSCRC Action
Market Basket Forecast	<ul style="list-style-type: none"> • Review Medicare market basket forecast. • Establish starting point for Maryland hospital annual update factor.
Productivity Improvements	<ul style="list-style-type: none"> • Determine the level of productivity improvements required of the state's hospitals. <p>This is similar to the productivity requirements established by the Affordable Care Act for Medicare fee-for-service reimbursement in each of its prospective payment systems.</p>
Case Mix	<ul style="list-style-type: none"> • Calculate the previous year's case mix growth. • Determine how much growth should be recognized in the system overall. <p>In recent years, the HSCRC has recognized case mix growth systemwide of 0.5 percent, although hospitals could achieve more or less than this amount individually. If the budget for case mix was exhausted, the HSCRC applied a revenue governor to recapture some of the revenue associated with case mix growth to achieve a 0.5 percent increase overall.</p>
Revenue Restriction Achievements	<ul style="list-style-type: none"> • Determine success in controlling revenue in the previous fiscal year. • Adjust system revenue by lowering the update factor to correct the revenue base going forward. This adjustment would reset the permanent revenue base to the level desired under the Commission's policy.

Via the update factor, HSCRC is able to control revenue growth. If in a prior year revenue was not constrained under the budget as developed, the HSCRC can adjust system revenue by lowering the update factor to correct the revenue base going forward. This adjustment would reset the permanent revenue base to the level desired under the Commission's policy. As described in Section 6, the update factor can be adjusted on a hospital-by-hospital basis, aligning incentives for each hospital with the overall system goal of per capita expenditure control.

In this policy discussion, the impact of each of these factors is estimated, and the sum of these components determines the update factor for system revenue in the coming state fiscal year.

The update factor is a critical component of Maryland's financial model described in Section 6. It allows the state to control expenditures beneath the hard expenditure ceiling, in tandem with the shared savings lockbox.

Key Implementation Considerations and Proposed Milestones

The following table describes the process and expected timeline for developing the FY2014 update factor.

Figure 4.17: Proposed Initial Implementation Milestones

Balanced Update Factors		
Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC engages stakeholders in preliminary discussions	6 months prior to beginning of rate year	HSCRC holds several workgroups, provides modeling
HSCRC staff provide draft recommendation to Commission, provide one-month comment period	Anticipated 3 months prior to rate year	
Commission decision on final policy	Anticipated 2 months prior to rate year	
HSCRC implements update factor in rates	Rate years begin each July	HSCRC rate year aligns with the Maryland state fiscal year

Volume Controls

The volume adjustment is an important method to influence hospital behavior by disincentivizing unwarranted volume growth. Unlike the update factor, which updates revenue by the final rate determined by policy, the volume constraint is designed to influence hospital behavior and reduce the incentive for increased volume.

Under the current policy, hospitals receive 85 percent of revenue for incremental increases in volume above the budgeted amount in the hospital's rate base for the year. Instead of the full revenue in the subsequent year, the HSCRC provides the hospital with 85 cents per dollar of revenue charged for the incremental volume growth. We provide simplified examples in Figure 4.18.

Many analysts argue, however, that short run marginal costs are likely to be much lower than 85 percent of revenue, providing hospitals with full variable costs for incremental volume plus some additional amount that is pure profit. Therefore, the HSCRC has been analyzing the most appropriate volume adjustment under this model.

Figure 4.18: Allowable Revenue Without and With an 85 Percent Volume Adjustment

Using revenue and volumes from the Base Year, the HSCRC applies a volume adjustment when establishing a hospital's allowed revenue for Year 2.

Year 1: Base Year			
	Volume, Count of Cases	Revenue Per Case	Total Revenue
Historic Volume	1000	\$10,000	\$10,000,000
Volume Growth	100	\$10,000	\$1,000,000
Total Hospital Revenue		\$10,000	\$11,000,000

Year 2: Allowed Revenue Without a Volume Adjustment			
	Volume, Count of Cases	Revenue Per Case	Total Revenue
Historic Volume	1000	\$10,000	\$10,000,000
Volume Growth	100	\$10,000	\$1,000,000
Total Allowed Revenue	1100	\$10,000	\$11,000,000

Year 2: Allowed Revenue With an 85 Percent Volume Adjustment			
	Volume, Count of Cases	Revenue Per Case	Total Revenue
Historic Volume	1000	\$10,000	\$10,000,000
Volume Growth	100	\$10,000 x .85	\$850,000
Total Allowed Revenue	1100	\$9,864	\$10,850,000

The volume adjustment reduces a hospital's allowed revenue in Year 2. In this example, the hospital will receive less revenue per case than in the Year 1 due to volume growth in Year 1.

Prior to year 2000, the Commission used various volume adjustments, ranging from a 50 percent variable cost factor to an 85 percent variable cost factor. However, when the Commission changed to a charge-per-case target methodology, the HSCRC altered policies to provide hospitals 100 percent variable costs, with projections at the time indicating that the introduction and expansion of managed care would curtail volume growth. The projections of volume reductions did not materialize. Instead, hospital utilization rates in the state grew as the hospitals received full revenue for incremental volume increases above budget levels. This 100 percent variable cost factor in a charge-per-case system encouraged high utilization, high readmissions, and high use of short-stay admissions.

In current discussions with interested parties in the state, the use of a volume constraint more stringent than the current 85 variable cost factor is recognized as a potent method for controlling revenue. Various cost factors have been discussed, ranging from a 60 percent

variable cost factor (with the intent of neutralizing incentives for volume growth) to a 40 percent variable cost factor (with the intent of providing disincentives for volume growth). Disincentives for volume growth have to be approached carefully, however, to be sure that providers of care achieve patient-centered outcomes instead of reducing costs by inappropriately shedding patients. The HSCRC may also develop and apply alternatives to symmetric and continuous volume adjustment such as the following:

- **Asymmetric volume adjustment:** The HSCRC has applied the volume adjustment in a symmetric manner. That is, the variable cost factor X percent and credit given for fixed costs is $(100-X)$ percent. As discussed above, in current policy, hospitals received 85 percent of incremental volume increases, and if volume declines, the hospital retains 15 percent of the lost revenue to cover fixed costs. As hospitals' permanent revenue bases have increased since 1999 (first at 100 percent variable and later at 85 percent of variable costs), some have argued that hospitals should not retain reductions in volume in a symmetric fashion. Should the HSCRC reduce the variable cost factor to 60 percent for volume increases, the HSCRC may select an asymmetric (not 40 percent) volume adjustment for volume decreases.
- **Discontinuous volume adjustment:** In the description above, we have discussed the variable cost factor as a single number. However, there is no reason that this adjustment could not be calibrated to change incentives for different levels of growth. For example, hospitals may reasonably expect volume growth due to increases in population, even if utilization were constant. Suppose that population grew 1 percent. If variable costs increase due by 60 percent (as an example) annually with incremental growth over the previous year, the volume adjustment could be set to accommodate 60 percent variable cost growth for this incremental growth due to volume. If volume growth above this level were associated with increased utilization, however, this may be undesirable from a policy perspective. This could be discouraged by reducing the variable cost factor for incremental volumes greater than the 1 percent attributable to population. The HSCRC could calibrate this step function to achieve policy goals desired within the system.

In reviewing the literature, we found very few articles on volume adjustments and on hospital marginal costs related to reimbursement. As fewer and fewer states have had regulatory frameworks for hospital reimbursement, there are fewer articles. Two states (Illinois and Arizona) had high-volume payment adjustments, although they were not related to costs. They were in effect additional payment to support high-volume Medicaid providers. Medicare also has a low-volume adjustment for sole community and Medicare dependent hospitals. Once again, the payment adjustment does not appear to be tied to costs.

The range of relationships between volume and cost was found to be large in the literature. An article from 1999 analyzing data from 1993 found that variable costs are only 16%; however, it included employee salaries and benefits in its definition of fixed costs.²¹ An article from 1996 found that marginal costs and their distribution vary across jurisdictions and size of hospital.²² An older study from 1983 found that the cost of “unexpected admissions is about half of average cost, while marginal cost of forecasted admissions is about equal to average cost.”²³

The lack of evidence for a specific strategy supports the Model Design’s approach of flexibility and frequent evaluation of and, if necessary, adjustment to volume methodologies.

We discuss volume adjustments as they apply to the financial model in detail in Section 6.

Key Implementation Considerations and Proposed Milestones

The following table describes the process and expected timeline for developing the FY2014 volume adjustment, expected to be decided in tandem with the update factor.

Figure 4.19: Proposed Initial Implementation Milestones

Volume Controls		
Proposed Implementation Milestones		
Process	Timeline	Comments
HSCRC engages stakeholders in preliminary discussions	6 months prior to beginning of rate year	HSCRC holds several workgroups, provides modeling
HSCRC staff provides draft recommendation to Commission, provide for one-month comment period	Anticipated 3 months prior to rate year	
Commission decision on final policy	Anticipated 2 months prior to rate year	
HSCRC implements update factor in rates	Rate years begin each July	HSCRC rate year aligns with the Maryland state fiscal year

Other Methods To Be Developed

As Maryland moves forward with this model of a population-focused health care delivery system, we will continuously analyze outcomes and provide a feedback mechanism to incorporate evaluation findings into our current methods. Section 8 discusses Maryland’s

²¹ Rebecca R. Roberts MD, Paul W. Frutos BS, Ginevra G. Ciavarella RN, MPH, MBA, Leon M. Gussow MD, Edward K. Mensah PhD, Linda M. Kampe, BS, RRA, Helen E. Straus MD, MS, Gnanaraj Joseph, MD, Robert J. Rydman PhD, “Distribution of Variable vs. Fixed Costs of Hospital Care,” *JAMA* 1999;281(7): 644-649.

²² K.K. Hansen and J. Zwanziger, “Marginal costs in general acute care hospitals: A comparison among California, New York and Canada,” *Health Economics*, 5:1950216.

²³ B. Friedman and MV Pauly, “A new approach to hospital cost functions and some issues in revenue regulation,” *Health Care Financing Review*, 1983 Mar;4(3): 105-14.

approach to evaluation and feedback. In addition, Maryland will seek opportunities to improve population health under new methods not yet developed. HSCRC will maintain state regulatory authority to develop and implement new methods.

Relationship to Other State Initiatives

The modernization of the hospital payment system supports Maryland's broader vision for its health care delivery system and aligns with initiatives already under way in Maryland to integrate the health care service delivery system.

Maryland is pursuing a Community-Integrated Medical Home program that will provide the infrastructure that will support paying for better performance and higher value. We envision a transformed health system that integrates patient-centered, advanced primary care with innovative community health initiatives. In this model, patients receive preventive and disease management services in the primary care setting and then are directed to an array of wrap-around, community-based services between care visits to help them maintain their health. Care coordination – a hallmark of medical home models – will incorporate these community-services to result in an integrated, advanced primary care system that extends out of the primary care office and into the community.

Maryland recently received Model Design funding from CMMI to more fully develop this medical home model, and we received support from private payers and other major stakeholders in the state for the proposal. Over the course of a six-month planning period in 2013, a governance structure will be established, and this group will develop standards for patient attribution, risk adjustment, patient selection, and other processes that are required for shared savings calculations. This balanced approach will assure that incentives all point in the same direction while preserving innovation in payment. Additionally, meeting quality standards will be a requirement for receipt of shared savings. The governance structure will also establish a core set of quality metrics that will result in consistent expectations and quality improvement activities across participating medical homes.

During Phase 1 of the model, the development of all specific payment programs – including hospital-convened ACOs, bundled payments, TPR, ARR, and PBR – will include alignment with the medical home efforts. Maryland will also engage in systematic planning for additional steps for model Phase 2, which will be submitted at the start of year 4.

Beyond medical homes, Maryland is pursuing a standard for value-based insurance design, increased transparency in cost and quality, innovative programs through the Health Information Exchange, and other major initiatives. Using the state's other health care regulatory and advisory bodies, including the Health Care Quality and Cost Council, the Maryland Health Care Commission, and the health care delivery reform workgroup, the state will propose a strategy to CMS.

We more fully discuss relationships with other state initiatives in Section 10.

Timeline and Critical Steps for Model and Methods Implementation

Maryland is committed to the methods outlined to support the model and achieve the goals of this proposed model. We are poised to implement or accelerate the implementation of a number of initiatives and to begin the development of broader methods upon approval of this application.

The HSCRC is the governing body that establishes policy for the rate-setting system. To implement these policies in a balanced manner that takes into account concerns from all interested parties, the Commission has a professional staff to develop rates for each hospital, based on detailed financial data, and to develop policies to achieve its statutory obligations. The Commission staff brings proposed policies before the Commission after working with interested parties to obtain multiple viewpoints and to understand the concerns about policy goals, anticipated effects, and risks. The staff presents the policy for Commission action, and public sessions allow interested parties to voice concerns and make requests directly to the Commissioners. The final decision for each policy choice rests with a majority vote of the Commission.

The Commission's legal authority and the composition of the Commission are described in Section 10 of this document, along with a short biographical sketch of the senior leadership of the HSCRC staff.

Section 5. Logic Model Overview

Introduction

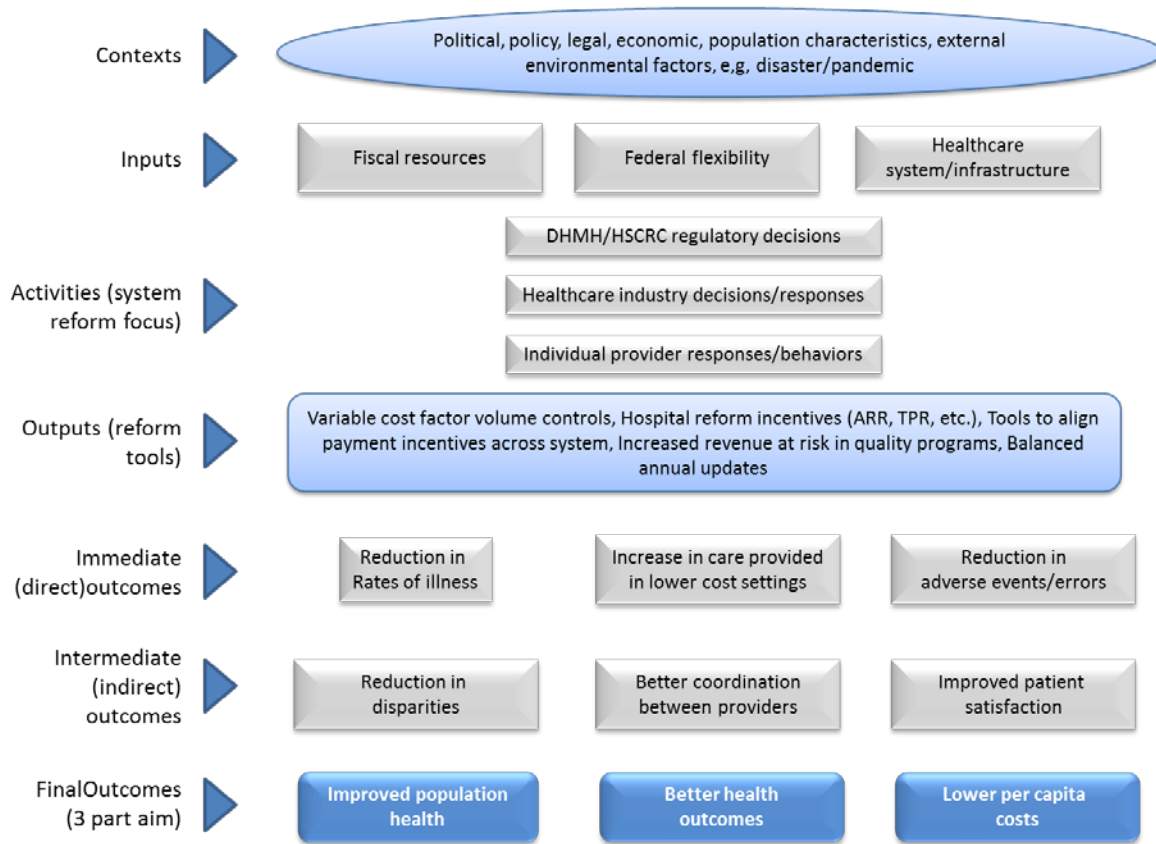
Maryland's new design approach will leverage strengths of powerful population-based methods such as Accountable Care Organizations (ACOs) and bundled payments to drive improvements in all aspects of the three-part aim. The effectiveness of our model will be enhanced by the unique all payer nature of our health care system, meaning that Maryland will be able to reap enhanced benefits from these strategies while mitigating the possibility for unintended consequences such as exertion of monopoly power and lack of sufficient incentives for quality. This section explains the mechanics of the proposed model in the form of a logic model and accompanying driver diagrams, and lays out a review of the existing literature on the potential effectiveness of our proposed methods.

Logic Model and Driver Diagram

Maryland recognizes that logic models and driver diagrams may be the most useful tools for understanding and illustrating the relationships between outputs, inputs, methods, and outcomes. This section discusses a logic model, with references to literature support of the model, and introduces model contingencies. Section 9 in this model testing proposal provides further detailed discussion of assumptions and limitations.

Logic models are useful tools for illustrating the causal relationship between elements of a program or set of activities or policies. The theory behind Maryland's design of a per capita, all payer system that moves the state toward achieving the three-part aim is laid out in the logic model displayed in Figure 5.1.

Figure 5.1: Logic Model



The ultimate desired outcomes, displayed on the bottom row, are the elements of the three-part aim: enhanced population health, better quality, and lower per capita costs. In the bubble at the top are the contexts that must be considered in terms of their potential impact and their implications for program design. These include policy, political and legal environments, economic conditions, characteristics of the population to be served, and external environmental factors outside the state's control. The inputs row illustrates that along with fiscal resources and a healthcare system already poised to engage in an all payer per capita model, a degree of federal flexibility is a necessary input to produce the outputs/methods to drive desired outcomes.

The logic model displays the actors and actions that are important to consider, including the regulatory decisions as well as system and individual provider responses. The outputs or methods are at the heart of Maryland's model. These include various methods to align incentives so that the state can build on its efforts and achieve the immediate and intermediate results/outcomes that are planned for both Phase 1 and Phase 2.

Driver Diagrams

Per Capita Costs

While the logic model illustrates the major moving pieces at a high level, individual desired outcomes can be explained in more detail in one or more driver diagrams, depending upon the level of detail that is desired. For example, the hard expenditure ceiling set forth and modeled in Section 6 commits Maryland to reducing the growth of per capita inpatient and outpatient hospital expenditures across Phase 1 of this model. The specific actions necessary to achieve this goal can be depicted in a driver diagram (Figure 5.2) focused on the model outcome of reducing per capita hospital inpatient and outpatient expenditures. This diagram is explained below.

Fundamental economic principles dictate that two primary drivers impact expenditures: volume and price. The methods employed by the state to impact these drivers then move the state toward the model outcome. Below we discuss the primary and secondary drivers and the methods targeted to impact the drivers.

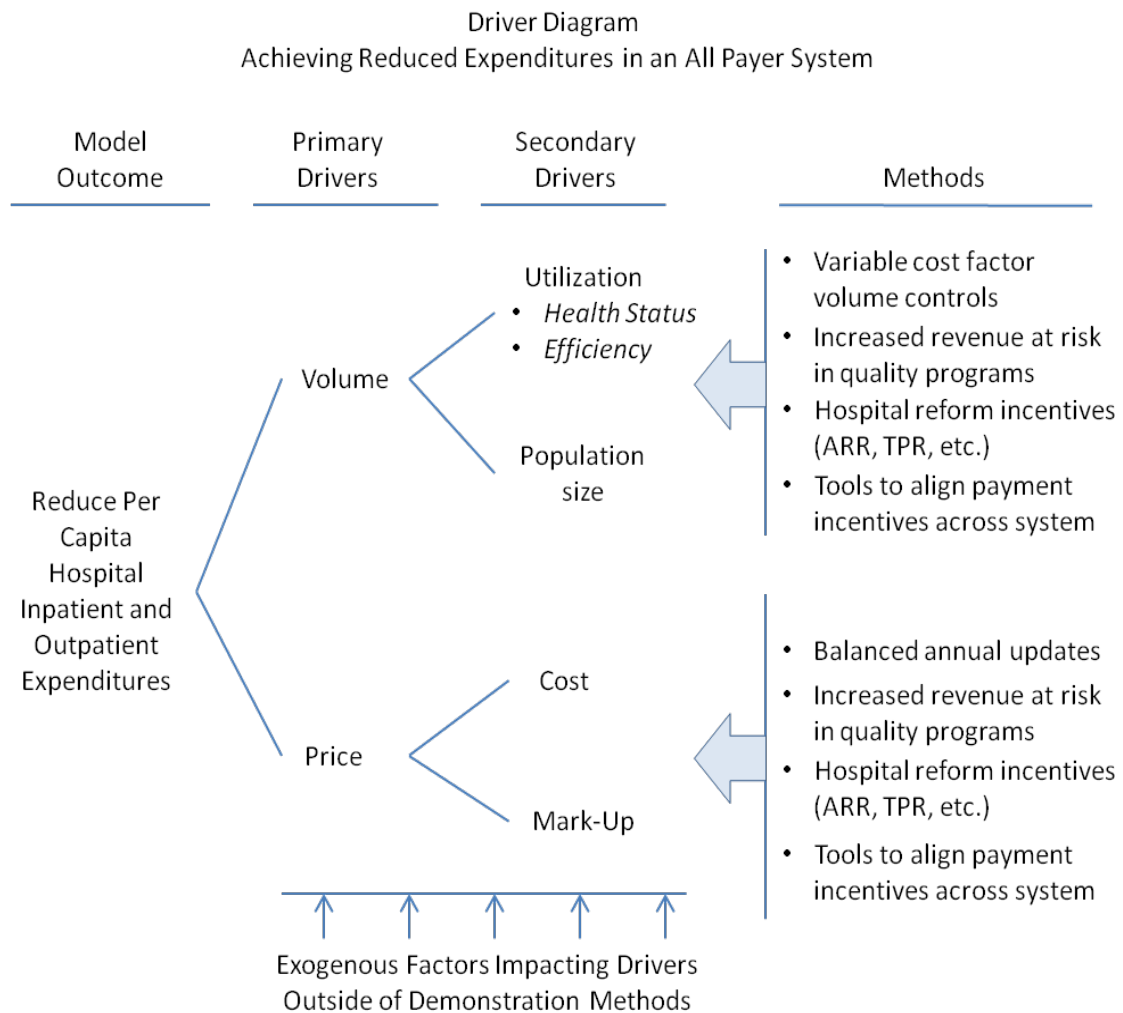
Volume

Volume is the quantity of health services provided to the population. Volume is determined by two secondary drivers: utilization rates and population size.

Utilization rates are affected by two elements: health status and health system efficiency. Health status—the disease burdens among a population—clearly affects utilization rates. Efficiency refers to multiple aspects of appropriate health care use, including effective use of primary care, reductions in imaging and diagnostic testing duplication, and increased quality to reduce complications, readmissions, and other unnecessary services.

The other secondary driver of volume is population size. Growth in population will obviously affect volume, other things being equal.

Figure 5.2: Per Capita Cost Driver Diagram



Price

For this model we deconstruct price into two components, cost and mark-up. Cost is the actual direct and indirect cost of providing the service.

The long-established track record of collecting and utilizing audited and unaudited financial data place Maryland in a unique position to assess reasonable hospital costs under this all payer model. State statute provides the HSCRC with broad authority over public disclosure of data related to cost.²⁴ Over the HSCRC's 40-year history, the Commission has developed robust monthly and annual hospital financial reporting.

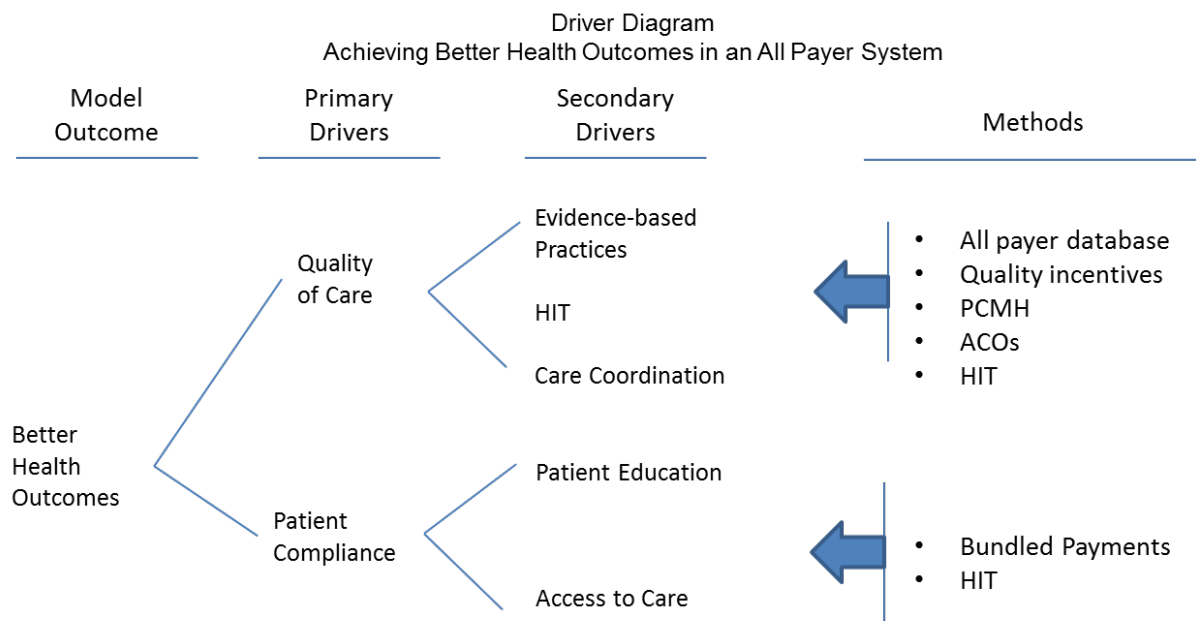
²⁴ Health-General Article §19–207 and §19–212, Annotated Code of Maryland

Mark-up includes all other components of price, including profit, assessments, and provisions for uncompensated care. Fair sharing of uncompensated care by all payers as a component of price is a fundamental tenet in Maryland as articulated in Maryland State statute.²⁵

Methods

We have incorporated the model methods in the driver diagram as discussed in Section 4. The variable cost factor provides the Commission with a direct way to influence system volumes, while balanced annual update factors provide a direct avenue for the Commission to address price. The methods that affect both volume and price are those related to hospital reform incentives, tools to align payment incentives across the system, and alterations in the portion of revenue that is paid on an at-risk basis in quality programs.

Figure 5.3: Better Health Outcomes Driver Diagram



* Adequate resources for state and local health departments to screen for communicable diseases, promote food safety and smoke-free laws, identify disease outbreaks & provide prevention & primary care for people with no regular source of care.

²⁵ Health-General Article §19–214, Annotated Code of Maryland

Better Health Outcomes

Figure 5.3 is a driver diagram focusing on the model goal of better health quality. In this case, there are two primary drivers: quality of care and patient compliance.

Quality of Care

Breaking down the quality driver further, there are several contributing factors: the use of evidence-based practices by health care providers, the appropriate use of health information technology, and effective care coordination. The methods in our model that will both incentivize these behaviors and allow us to measure the degree to which we are successful include the all payer database, quality incentives, development of the patient-centered medical home, and the use of ACOs.

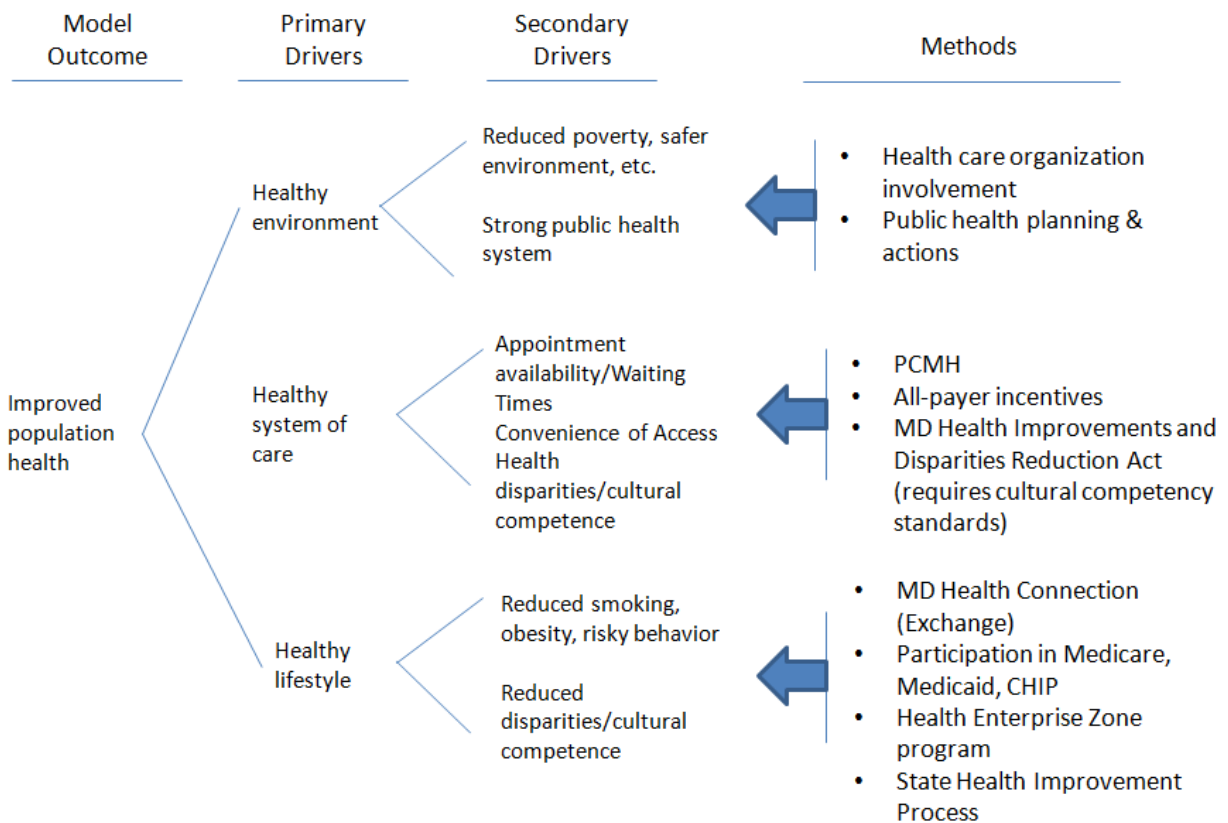
Patient Compliance

In the realm of patient compliance, there are two main drivers: education, meaning that patients know what actions to take and fully understand the consequences of not taking them, and access to care, including pharmacy care, so that patients can follow their care protocols. The Maryland model aims to impact patient compliance by incentivizing providers to provide the necessary education and by making services appropriately available through such methods as bundled payments.

Enhanced Population Health

Figure 5.4 focuses on the model goal of enhanced population health. There are three primary drivers to meeting this overall goal: a healthy environment, a healthy system of care, and a healthy lifestyle.

Figure 5.4: Improved Population Health Driver Diagram



Healthy Environment

A healthy environment is also an important contributor to improved population health. It is difficult for any model to address all the components of a healthy environment, but they still bear mentioning here. Some of the secondary drivers contributing to a healthy environment are an environment that is physically safer, provides better housing, and reduces poverty. Another important contributing factor is a robust public health system. The methods that contribute at least partially to some of these drivers include health care organization involvement in public health planning efforts.

Healthy System of Care

A healthy system of care means care that is accessible – short waiting times, available appointments, and convenient access. An important element of a ‘healthy’ system of care is a system that is culturally competent and in which access disparities by race, ethnicity, or income are minimal.

Healthy Lifestyle

A healthy lifestyle includes behavior that fosters good health – no smoking, proper eating, etc. It also means that individuals have health insurance and are able to access care when they need it.

Literature Review

In this section, we will review the evidence supporting care innovations that the Maryland model will support. Then we will explain why Maryland's all payer approach to these models will address key concerns and limitations.

Evidence on Bundled and Global Payment

The proposed model will allow Maryland to implement, on an all payer basis, a number of innovative arrangements with demonstrated potential to achieve the three-part aim:

- CMS's analysis of the bundled payment Medicare Participating Heart Bypass Demonstration found that it saved Medicare an estimated \$50.3 million in its five-year duration (1991-96).²⁶
- The Geisinger Health System in Pennsylvania saw improved trends in clinical outcomes and a 5 percent reduction in hospital charges under a bundled payment program for non-emergency coronary artery bypass graft (CABG) procedures in 2006.²⁷
- In a review of 58 previously unpublished studies of bundled payment programs, the Agency for Healthcare Research and Quality (AHRQ) found that the introduction of bundled payment programs were associated with "reductions in health care spending and utilization."²⁸

The research evidence suggests that bundled and global payment systems could play important roles in generating healthcare savings in Maryland. David Cutler in the *New England Journal of*

²⁶ J. Cromwell, D.A. Dayhoff, et al, "Medicare Participating Heart Bypass Demonstration: Final Report," CMS, (1998), p. 25. Accessed at http://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Reports/downloads/oregon2_1998_3.pdf (December 9, 2012)

²⁷ Casale A, Paulus RA, Selna MJ, Doll MC, Bothe AE Jr, McKinley KE, Berry SA, Davis DE, Gilfillan RJ, Hamory BH, Steele GD Jr, "ProvenCareSM': A Provider-Driven Pay for Performance Program for Acute Episodic Cardiac Surgical Care," *Annals of Surgery*, October 2007. Accessed at http://www.geisinger.org/provencare/as_pc.pdf (December 10, 2012)

²⁸ Hussey PS, Mulcahy AW, Schnyer C, Schneider EC. "Bundled Payment: Effects on Health Care Spending and Quality. Closing the Quality Gap: Revisiting the State of the Science." Evidence Report/Technology Assessment No. 208. (Prepared by the RAND Evidence-based Practice Center under Contract No. 290-2007-10062-I.) AHRQ Publication No. 12-E007-EF. Rockville, MD: Agency for Healthcare Research and Quality. August 2012. www.effectivehealthcare.ahrq.gov/reports/final.cfm.

Medicine projected that bundled and global payments could create Medicare savings of up to \$29 billion and \$35 billion, respectively, on an annual basis nationally.²⁹

On the other hand, much of the positive results attributed to ACOs and PCMHs are based on projected savings rather than evidence from existing programs. The Congressional Budget Office actually projected that *initially* Patient Centered Medical Homes would create additional expenditures for the federal government rather than generate savings.³⁰

The literature on population-based program notes that many programs, especially ACOs and PCMHs, began only recently, and so few pilot programs were available to study. The AHRQ's study of 58 bundled payment programs cited earlier—which aligned with many other findings about savings generated from bundled payments—characterized the studies as having low “strength in the body of evidence” overall.³¹ No ACO has existed long enough to measure significant savings or quality improvements, but the initial results of Blue Cross Blue Shield's Alternative Quality Contract, a global payment model that “uses a broad set of approaches to help practices develop the capacity to function as an ACO,”³² are promising. The model was associated with modestly lower spending and improved quality in the first year after implementation.³³

Few students of the health care system believe that the current dominant fee-for-service payment structure and fragmented delivery system is sustainable. Even without a large amount of concrete evidence showing success for incentive-based programs, leaders throughout the health policy field consistently pointed towards bundled payments, ACOs, and PCMHs as approaches to reduce healthcare costs.

²⁹ David M. Cutler, Ph.D, and Kaushik Ghosh, Ph.D “The Potential for Cost Savings through Bundled Episode Payments” in *The New England Journal of Medicine* 2012; 366: 1075-1077 | March 22, 2012 | DOI: 10.1056/NEJMp1113361. Estimate of episode of care bundled payment assumes that Medicare costs across 245 types of episodes are lowered to the 25th percentile level. If the 50th percentile were used, savings from a global payments system would still be \$18.2 billion nationally. If Medicare begins a bundled payment approach with just the 17 most expensive conditions, it would still save \$10 billion annually.

³⁰ Congressional Budget Office “Budget Options, Volume 1: Health Care.” December 1, 2008, accessed at <http://www.cbo.gov/publication/41747> (December 3, 2012)

³¹ *Ibid*

³² Elliott S. Fisher, M.D., M.P.H., Mark B. McClellan, M.D., Ph.D., and Dana G. Safran, Sc.D. “Building the Path to Accountable Care” in *The New England Journal of Medicine*, 2011; 365:2445-2447 December 29, 2011 DOI: 10.1056/NEJMp1112442 Accessed at <http://www.nejm.org/doi/full/10.1056/NEJMp1112442> (December 2, 2012)

³³ Zirui Song, B.A., Dana Gelb Safran, Sc.D., Bruce E. Landon, M.D., M.B.A., Yulei He, Ph.D., Randall P. Ellis, Ph.D., Robert E. Mechanic, M.B.A., Matthew P. Day, F.S.A., M.A.A.A., and Michael E. Chernew, Ph.D. “Health Care Spending and Quality in Year 1 of the Alternative Quality Contract” in *New England Journal of Medicine* 2011; 365:909-918 September 8, 2011 DOI: 10.1056/NEJMsa1101416

A Congressional Budget Office Report that evaluated past CMS demonstration projects involving many of the population-based health initiatives Maryland is considering listed the following approaches as helpful in attaining the goals of curbed costs and improved quality:

- Gather timely data on the use of care, especially hospital admissions.
- Focus on transitions in care settings
- Use team-based care
- Target interventions toward high-risk enrollees
- Limit the costs of intervention³⁴

A 2012 article in the *New England Journal of Medicine* by various health policy leaders condemns the fee-for-service payment system, noting that it “encourages wasteful use of high-cost tests and procedures.”³⁵ As these experts note, bundled and global payments can offer a solution to some of the problems built into the fee-for-service model: “Instead of paying a fee for each service, payers could pay a fixed amount to physicians and hospitals for a bundle of services (bundled payments) or for all the care that a patient needs (global payments).”³⁶ Bundled payment options have created significant savings according to past studies.³⁷ Robert Murray wrote in *Health Affairs* that “The development of more bundled payment structures is a useful first step in curtailing volume growth [for Maryland].”³⁸

Accountable Care Organizations and the Alternative Quality Contract Model

The Accountable Care Organization, a relatively new innovation, is comprised of coordinated networks of healthcare providers who attempt to provide high-value care to patients. ACOs establish a spending benchmark based on expected saving. If an ACO can improve patient outcomes while slowing spending growth, resulting savings are shared between providers and payers.³⁹ Thus an ACO offers “health care providers flexible financial support for improving care

³⁴ Congressional Budget Office “Lessons from Medicare’s Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment” (January 18, 2012) Accessed at <http://www.cbo.gov/publication/42860> (December 3, 2012), p. 7-8

³⁵ “A Systemic Approach to Containing Health Care Spending” in *NEJM* 2012

³⁶ *Ibid.*

³⁷ “ProvenCareSM’: A Provider-Driven Pay for Performance Program for Acute Episodic Cardiac Surgical Care,” *Annals of Surgery*, October 2007; “Bundled Payment: Effects on Health Care Spending and Quality. Closing the Quality Gap: Revisiting the State of the Science.” AHRQ 2012; “Medicare Participating Heart Bypass Demonstration: Final Report” CMS 1998

³⁸ “The Maryland Experience” in *Health Affairs* 2009, p. 1403

³⁹ “ACO Model Principles” *The ACO Learning Network*, 2012. Accessed at <http://www.acolearningnetwork.org/why-we-exist/aco-model-principles> (December 11, 2012)

in return for accepting accountability for its overall quality and cost.”⁴⁰ Care coordination services and wellness programs—health care that achieves “better outcomes with less resource use”—should result in greater provider reimbursement under the ACO model.⁴¹

Blue Cross Blue Shield of Massachusetts Alternative Quality Contract

In *Health Affairs* 2011 ‘ACO’ issue, Michael E. Chernew, Robert E. Mechanic, Bruce E. Landon, and Dana Gelb Safran profiled a new payment system begun in January 2009 through Blue Cross Blue Shield of Massachusetts, the Alternative Quality Contract (AQC). The Alternative Quality Contract is also a modified global payment model – so it does not operate on the traditional fee-for-service basis of other ACOs – and it “uses a broad set of approaches to help practices develop the capacity to function as an ACO, including in-kind data support, shared-savings and quality payments, and in some cases, direct financial support for initial infrastructure needs.”⁴² Under the AQC model, “annual payments to medical groups are linked to a per member per month budget,” and providers must “share some or all of the risk if spending exceeds the target.” Global payments under the AQC allow purchasers to control for price and quantity “and thus achieve predictability and control over aggregate spending and, potentially, spending growth.” The model is also defined by “incentive payments to improve quality and technical support for participating groups.”⁴³

The transition to the Alternative Quality Contract group model is relatively simple. In curbing spending, “Blue Cross does not seek to reduce a group’s initial budget below its current spending levels. Rather, it focuses on controlling future growth rates.”⁴⁴ Furthermore, Blue Cross has negotiated contracts that narrow payment differences over time between providers who have an initially high baseline budget and those with initially low baseline budgets. Providers are also relatively protected from exorbitant costs under the AQC model:

- Budgets are “adjusted annually for changes in patients’ health status.”
- “Groups can choose to participate in the Alternative Quality Contract on a risk-sharing basis rather than a full-risk arrangement.”
- “All groups are required to have reinsurance—a separate insurance policy that protects them in the event of high-cost cases, in which a patient’s medical spending exceeds a specific threshold.”

⁴⁰ “Building the Path to Accountable Care” in *The New England Journal of Medicine*, 2011

⁴¹ “ACO Model Principles” *The ACO Learning Network*, 2012

⁴² “Building the Path to Accountable Care” in *The New England Journal of Medicine*, 2011

⁴³ Michael E. Chernew, Robert E. Mechanic, Bruce E. Landon, and Dana Gelb Safran “Private-Payer Innovation in Massachusetts: The ‘Alternative Quality Contract’” in *Health Affairs* 30, No. 1 (2011), p. 52

⁴⁴ “Private-Payer Innovation in Massachusetts” in *Health Affairs* (2011), p. 52

- A 'unit cost corridor' increases or decreases a group's negotiated global budget "if Blue Cross negotiates higher (or lower) fees with providers than originally projected."
- In certain cases an 'overall cost-trend corridor' that takes into account the experiences of all Blue Cross HMO patients allows "Alternative Quality Contract group budgets to be increased to protect groups against significant trends that affect all HMO business."⁴⁵

Providers seem to find the Blue Cross AQC model financially appealing: "more than two-thirds of physicians in Massachusetts are now participating."⁴⁶

Blue Cross Blue Shield's AQC model shows promising results in terms of spending and quality after the first year of enrollment. A study published in the *New England Journal of Medicine* concludes that "Health care spending increased for both AQC and non-AQC enrollees in 2009, but the increase was smaller for AQC enrollees." Significant for Maryland, however, "Models with standardized prices showed that there was no significant effect of the intervention on utilization... Thus, the observed savings reflect differences in price." The lowered prices that accounted for the lower increase in spending among AQC enrollees "could have resulted either from the providers in the intervention group receiving smaller increases in fees or from enrollees in the intervention group being shifted to providers who charged lower fees." The study showed, however, that referral shifts represented "more than 90% of the AQC-associated relative decrease in quarterly spending in 2009." The savings were also seen "primarily among high-risk enrollees" and "were larger among providers who were previously paid by BCBS in a fee-for-service system."⁴⁷

The *NEJM* study on the successes of Blue Cross Blue Shield's AQC model had several limitations, including a young population that "included only members enrolled in a BCBS HMO or point-of-service program." The results of study may therefore not apply to "the Medicare population, enrollees in a preferred-provider organization or indemnity plan, or persons who live in other states." Overall, "the magnitude of savings was modest." The authors of the *NEJM* study write, "Sustainability of the AQC and the financial viability of the model for providers will ultimately depend on identifying and addressing clinically inefficient care and changing utilization patterns."⁴⁸

⁴⁵ Ibid, p. 53

⁴⁶ "Building the Path to Accountable Care" in *The New England Journal of Medicine*, 2011

⁴⁷ Zirui Song, B.A., Dana Gelb Safran, Sc.D., Bruce E. Landon, M.D., M.B.A., Yulei He, Ph.D., Randall P. Ellis, Ph.D., Robert E. Mechanic, M.B.A., Matthew P. Day, F.S.A., M.A.A.A., and Michael E. Chernew, Ph.D. "Health Care Spending and Quality in Year 1 of the Alternative Quality Contract" in *New England Journal of Medicine* 2011; 365:909-918 September 8, 2011 DOI: 10.1056/NEJMsa1101416

⁴⁸ Ibid

Nevertheless, the study's "findings on changes in referral patterns and improvements in quality" under the AQC model "suggest that provider groups changed their behavior in 2009." While most of the reductions in spending in the Alternative Quality Contract's first year were a result of changes in referral patterns (to lower-priced providers), these changes could eventually decrease the volume in high-price facilities and affect overall healthcare pricing. "Future [AQC] studies will need to assess whether changes in utilization and the broader market lead to larger savings." The study reinforces the belief that "quality need not be threatened by global payment, and providers can increasingly meet the criteria for performance of process measures if they are given clinically aligned incentives."⁴⁹

The Alternative Quality Contract in Massachusetts combines provider accountability for quality and for costs, just as ACOs in Maryland might operate under the state's new model. On the whole, the AQC and similar models "create stronger financial incentives for improving the value of care. By requiring that members have a primary care physician, they also give medical groups more ability to engage patients and coordinate care."⁵⁰ Yet "even with [the AQC model's] strong financial incentives, utilization will not change rapidly. Slowing the growth rate of health care spending will ultimately depend on budget updates and the ability of providers to practice in this new environment."⁵¹ Over longer periods, Massachusetts' Alternative Quality Contract and similar ACO models can "reduce spending growth by influencing delivery system structures and processes." Health information technology, emphases on primary care, and more efficient care models could poise ACOs to "operate profitably under future budget growth rates that track the growth of the rest of the economy."⁵²

Patient Centered Medical Homes

Patient Centered Medical Homes (PCMHs) are health care delivery models that attempt to improve the primary care experience and long-term health outcomes for patients, often through the team-based coordination of physicians, registered nurses and nurse practitioners, licensed social workers, and pharmacists. The Agency for Healthcare Research and Quality defines PCMH as having five major attributes: (1) patient-centered, (2) comprehensive care, (3) coordinated care, (4) superb access to care, and (5) a systems-based approach to quality and safety.⁵³

⁴⁹ Ibid

⁵⁰ "Private-Payer Innovation in Massachusetts" in *Health Affairs* (2011): 60

⁵¹ "Health Care Spending and Quality in Year 1 of the Alternative Quality Contract" in *New England Journal of Medicine* (2011)

⁵² "Private-Payer Innovation in Massachusetts" in *Health Affairs* (2011): 58

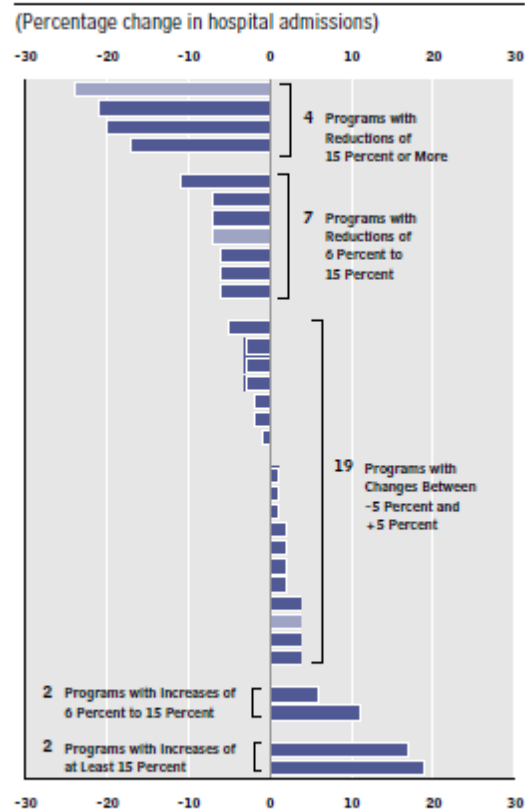
⁵³ "The Patient-Centered Medical Home Resource Center" *The Agency for Healthcare Quality Research and Quality* (2011). Accessed at http://pcmh.ahrq.gov/portal/server.pt/community/pcmh_home/1483/what_is_pcmh (December 11, 2012)

The Congressional Budget Office's (CBO) 2008 report on potential U.S. federal healthcare spending reductions and quality improvements cites the patient-centered medical home as a concept that "has the potential to improve the health and health care of chronically ill Medicare beneficiaries." The effects of PCMHs on spending would be case-dependent, and CBO thus had difficulty estimating "whether the net result of those effects would be to increase or decrease spending for the Medicare program."⁵⁴

CBO also noted the limited body of evidence on PCMH's. Many studies have considered only specific elements of the medical home and its effects, and the majority of studies on medical homes have been "conducted in such settings as Medicaid programs, publicly funded clinics, pediatric clinics, and integrated care systems (typically large health care organizations that provide a wide range of services, including hospital and physician care, in a coordinated manner)." It is thus difficult to apply prior evidence on PCMH's to new, broadly implemented programs and situations. CBO argues for testing PCMH's through demonstration projects and pilot studies "to determine whether the approach is an effective way to improve care and reduce costs."⁵⁵

Four years later (January 2012), the Congressional Budget Office published "Lessons from Medicare's Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment." CBO's report describes how disease management and care coordination programs under Medicare demonstrations – primarily involving PCMHs – failed to generate significant savings or improve quality. In six major demonstrations that the report reviewed, "organizations were paid to provide disease management or care coordination to beneficiaries in Medicare's fee-for-service

Effects of 34 Disease Management and Care Coordination Programs on Hospital Admissions



Source: Congressional Budget Office.

Note: Bars with lighter shading represent programs with fewer than 400 enrollees. The estimates for those programs are less precise than the estimates for the other programs.

⁵⁴ Congressional Budget Office "Budget Options, Volume 1: Health Care" (December 1, 2008), p. 78

⁵⁵ Ibid, p. 79

program.” The programs “used nurses as care managers to educate patients about their chronic illnesses, encourage them to follow self-care regimens, monitor their health, and track whether they received recommended tests and treatments.” However, “In most programs, the care managers were not integrated into physicians’ practices, and their contact with patients was primarily by telephone.” All the demonstrations attempted to “reduce hospital admissions by maintaining or improving Medicare beneficiaries’ health, and because hospitalizations are expensive, that reduction was expected to be the key mechanism for reducing Medicare spending.” On average, the 34 studies reported “little or no effect on hospital admissions or regular Medicare spending” and “no systematic effects on measures of the process of delivering healthcare.” However, for the majority of the programs the effects on hospital admissions, spending, and quality are imprecise because the studies had so few enrollees.⁵⁶

Programs whose fees were at risk had “greater financial incentives to reduce hospital admissions and spending,” yet the 18 programs with fees at risk “produced little or no effect on hospital admissions or regular Medicare spending” and were similar to the remaining programs whose fees were not at risk.⁵⁷ Other factors like the extent to which care managers (typically nurses) had “substantial direct interaction with physicians and significant in-person interaction with patients” proved more effective in reducing Medicare spending.⁵⁸ In programs in which care managers had “little or no direct interaction with physicians,” there was no significant effect on hospital admissions or spending. When care managers had “substantial direct interactions with physicians,” hospital admissions fell by an average of 7 percent, and regular Medicare spending fell by an average of 6 percent. However, “the estimated average reductions in regular spending for those programs were insufficient to yield net savings for Medicare” because the programs needed to reduce regular expenditures even further (by 13 percent) to offset their additional fees.⁵⁹

The CBO report points out that programs that attempt to reduce spending and increase quality of care face “significant challenges in overcoming the incentives inherent in Medicare’s fee-for-service payment system, which rewards providers for delivering more care but does not pay them for coordinating with other providers. PCMHs also face challenges “in the nation’s decentralized health care delivery system, which does not facilitate communication or coordination among providers.” CBO writes that “substantial changes to payment and delivery

⁵⁶ Congressional Budget Office “Lessons from Medicare’s Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment” (January 18, 2012) Accessed at <http://www.cbo.gov/publication/42860> (December 3, 2012), p. 1-2

⁵⁷ Ibid, p. 4

⁵⁸ Ibid., p. 2

⁵⁹ Ibid, p. 4

systems will probably be necessary” for PCMH programs “to significantly reduce spending and either maintain or improve the quality of care provided to patients.”⁶⁰

Maryland's Model Addresses Concerns about Innovative Payment Structures

There is clearly great potential for increased savings through more bundled and global payments in Maryland's new model, but it is important to consider that the structure of Maryland's all payer system mitigates concerns that have been expressed about this approach.

Concerns about volume. In their *New England Journal of Medicine* article, David Cutler and Kaushik Ghosh explain the different models of bundled payments: (1) medical reimbursements aggregated to the person-year level (the model under the ACA), and (2) reimbursements aggregated for episodes of care. Cutler and Ghosh then go on to estimate the costs associated with both models. “Bundling payments for care episodes does not provide incentives to reduce the number of episodes. If limiting the number of episodes of care is a major consideration in reducing costs, bundling care at the patient level would be preferred.”⁶¹ However, a tradeoff exists “between the relative ease of bundling at the episode level and the additional savings incentives from bundling at the patient level.”⁶²

While global payments do help address the problem of ‘too many episodes,’ our model contains other elements that can complement bundled payments to prevent this from happening. These include the strong PCMH programs in both the public and private systems, the Shared Savings with Quality Improvement Program, incentives for meaningful use of HIT, and the Quality Based Reimbursement Initiative.

Like other states, Maryland faces concentrated market power in some of the major markets such as insurance and hospital care, along with the manufacturing of health care products such as pharmaceuticals and medical devices, a process largely exogenous to the state's policy making. But the state's commitment to setting strong limits on overall spending growth creates ‘market power’ on the demand side of the market—and across all payers. This ‘monopsony power’ can serve as an effective counterweight to the strength of certain highly concentrated sectors on the service supply side of health care markets.

Concerns about Quality. A volume from the Congressional Budget Office in 2008 presenting options for “reducing federal spending on health care, altering federal health care programs, and making substantive changes to the nation's health insurance system,”⁶³ discusses bundled

⁶⁰ Ibid, p. 2

⁶¹ “The Potential for Cost Savings through Bundled Episode Payments” in *The New England Journal of Medicine* 2012, p. 1075

⁶² Ibid

⁶³ CBO “Volume 1,” 2008 p. 1

payment options – specifically for Medicare – at length. The report states that bundled payments create incentives for providers to reduce costs of services and increase their efficiency.⁶⁴ CBO proposes redefining the unit of payment for acute care under bundled payments, expanding from just hospitals to include “post-acute care provided both in acute care hospitals and nonhospital settings.” Hospitals would receive a full bundled payment (the sum of the current rate paid for each Medicare severity diagnosis related group [MS-DRG] and the average post-acute care costs for patients in that MS-DRG) regardless of whether a patient received post-acute care.⁶⁵ Under CBO’s projections, if bundled payments were applied to one-third of post-acute Medicare admissions starting in 2013 and all admissions beginning in 2011, federal outlays could be reduced by an estimated \$0.7 billion over a four-year period.⁶⁶

CBO finds that any reductions in the cost of care under bundled payments would occur because of “reductions in the volume or intensity of post-acute care, or through hospitals’ contracting with lower-cost providers.”⁶⁷ An advantage of bundled payments that include post-acute care is that “hospitals would become more involved in coordinating post-discharge care and in arranging post-acute care” and would “have flexibility in determining whether and how the costs of post-acute care should be reduced.” CBO notes a possible disadvantage of bundled payments: because of economic incentives for providers to reduce the cost of care, “hospitals might reduce medically beneficial post-acute care services, which could be detrimental to beneficiaries’ health outcomes.”⁶⁸

In Maryland’s model, however, ACOs and other forms of shared savings approaches, along with global caps on the growth of total health care spending, all feature quality and patient safety targets. In other words, provider systems cannot get shared savings by skimping on quality. They must show both that they are reducing costs relative to a baseline trend, and also that they are improving quality and patient safety in order to participate in various bonus pools or rate increases. This is also true of the PCMH models in the public and private sectors in Maryland.

Inadequate incentives. A 2012 Congressional Budget Office (CBO) report found that a demonstration program using a bundled payment structure as part of its value based payment initiative (the Medicare heart bypass initiative) was the only program to see significant savings. The CBO report evaluated many demonstrations (six disease management and care coordination demonstrations will be discussed in a later section), including four major

⁶⁴ Ibid, p. 62

⁶⁵ Ibid

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid, p. 62-3

demonstrations “that tested interventions designed to improve the quality and efficiency of care delivered in the Medicare fee-for-service program by altering the financial incentives available to providers.”⁶⁹

Three of the value-based payment demonstrations attempted to “increase quality and efficiency [of healthcare] by giving bonuses to health care providers that met several criteria for the quality of care or reduced Medicare spending.” Two of these demonstrations “slightly improved quality of care,” but none had a net effect on Medicare spending.⁷⁰

The Heart Bypass demonstration, on the other hand, aligned the financial incentives “offered to hospitals and physicians through a system of bundled payments; participating institutions and physicians were not eligible for bonus payments tied to quality of care or efficiency of delivery.” Under the demonstration’s bundled payments, Medicare’s expenditures for heart bypass surgeries were reduced by about 10 percent without any apparent adverse effects on patient outcomes.⁷¹

The CBO report attributes the Heart Bypass Demonstration’s savings to the bundled-payment rates that Medicare negotiated with participating hospitals and relevant physicians on their medical staff. The rates “were lower than the separate payments that [the hospitals and physicians] otherwise would have received.” Hospitals were chosen for the demonstration partially based on “the savings projected on the basis of their proposed bundled-payment rates. .[H]ospitals and physicians were willing to accept discounted payments because of competitive pressures in their markets.” Each hospital also “anticipated that being named a Medicare Participating Heart Bypass Center would help boost its volume of bypass surgeries; that participating in the demonstration could improve its chances of being chosen by Medicare to participate in any subsequent national program of bundled payments;” and that “the alignment of [hospital] financial incentives with those of physicians would result in more efficient delivery of care.”⁷²

The CBO report concludes that “The key factor associated with success in the demonstrations of value-based payments was the nature of the incentive offered to providers.” Variation existed among the estimated savings for each of the participating hospitals in the Heart Bypass demonstration (20 percent savings for two hospitals compared with 5 percent to 10 percent savings for the other five). The CBO report states that these differences “were attributable to

⁶⁹ Congressional Budget Office “Lessons from Medicare’s Demonstration Projects on Disease Management, Care Coordination, and Value-Based Payment” (January 18, 2012) Accessed at <http://www.cbo.gov/publication/42860> (December 3, 2012), p. 1-2

⁷⁰ Ibid, p. 5-6

⁷¹ Ibid

⁷² Ibid, p. 6

variations in the discounts that hospitals and physicians were willing to offer Medicare in their bundled-payment rates, which depended on such factors as the competitiveness of the local markets and providers' strategic business decisions."⁷³

In Maryland's model, because of the all payer nature, the incentives will be cross-cutting and strong.

⁷³ Ibid, p. 7

Section 6. Budget and Financial Test

Overview of Model to Achieve Per Capita Expenditure Control

While Section 5 describes the logic model as a construct for how the methods described in Section 4 will bring about positive changes in the health care environment in Maryland, this section presents a detailed discussion of how the state will guarantee that per capita expenditure growth is contained with the use of these methods. HSCRC has regulatory authority to control price and, at its discretion, will exercise this regulatory authority. The HSCRC may employ additional levers to influence provider behaviors concerning volume growth and integration. The combination of direct price controls and indirect levers will guarantee control of expenditure growth. Year-over-year adjustments to the various levers assures that if system expenditures are greater than expected in a given year, the overage can be recouped in the following year across all payers. Moreover, there are incentives for savings beyond the expected level to result in a permanent adjustment to the baseline, further curtailing expenditure growth.

The remainder of Section 6 provides a brief review of the methods to be employed, an explanation (supplemented by the technical discussion in Appendix A) of how the HSCRC uses the methods in carrying out its responsibilities under the model, a discussion of the strengths of the model, and a summary of some additional key considerations Maryland has incorporated into its model.

Review of Tools

As described in Section 4, Maryland has a number of methods at its disposal to keep growth under a hard expenditure ceiling. These include the annual price inflationary adjustment, a variable cost factor tied to volume targets, and hospital-specific revenue adjustments.

By virtue of its unique existing waiver, Maryland differs from other states in that it actively manages hospital price inflation. This is the chief function of the HSCRC, which determines hospital inflationary price adjustments each year through the annual update factor. In setting the update factor each year, the Commission takes into account a variety of factors including the market basket forecast, productivity improvements, case mix, and past performance.

Of course, setting the price across payers is only one piece of applying constraint over expenditures – volume is another factor driving cost growth. The HSCRC does not dictate hospital volume but rather influences it by applying financial incentives. The main incentive is the variable cost factor (VCF), which works as a system constraint by reducing a hospital's revenue in the subsequent year following volume growth.

Under the current policy, subject to change in the new model, hospitals receive only 85 percent of the revenue for incremental increases in volume above the budgeted amount in the

hospital's rate base for the year. The HSCRC can further correct for volume growth through price modifications in the subsequent year.

HSCRC also uses hospital-specific revenue adjustments, such as an efficiency standard, that impacts only those facilities deemed as inefficient under the methodologies set forth by the Commission.

There are also other methods under HSCRC's authority, including:

- Total Patient Revenue (TPR): This establishes fixed global and guaranteed inpatient and outpatient revenue levels irrespective of volume.
- Admissions-Readmissions Revenue (ARR): This is a system that bundles a per-episode payment constraint to include hospital admissions and readmissions for all causes within 30 days.
- Population-based Revenue (PBR): This is a virtual capitation payment system assigning primary market areas to each participating hospital. The hospital is held at risk for the provision of inpatient and outpatient health care services in the primary market area.

Maryland also desires to use new methods in the model, such as Accountable Care Organizations (ACOs) and bundled payment. Because these methods are described in detail in Section 4, the explanations are not repeated here.

Financial Model

The proposed model will establish a maximum allowable per capita growth rate for health care expenditures covered under each phase. This is known as the hard expenditure ceiling. The model also establishes a mechanism to capture savings through shared savings program that guarantees lower cost growth than the hard expenditure ceiling. This mechanism is known as a 'shared savings lockbox.' The model further allows for lower growth than anticipated to be built into the baseline. This is known as 'underage.' Actual savings results from the hard expenditure ceiling, the lockbox, and the underage.

Hard Expenditure Ceiling

The first step in ensuring that the hard expenditure ceiling will be met is to calculate the allowable aggregate revenue growth. In doing this, HSCRC will consider the established per capita growth rate and population growth. The product of these factors yields an allowable aggregate revenue number. The Commission will maintain its current prospective rate setting system, as it both promotes fiscal stability and encourages efficiency. A summary table is below; the Technical Appendix includes spreadsheets showing a more detailed explanation of the calculations.

Figure 6.1: HSCRC Calculates Allowable Aggregate Revenue Growth Under the Hard Expenditure Ceiling

	Calculate Total Revenue from Per Capita Hard Expenditure Ceiling			Calculate Maximum Total Approved Revenue	
	% Per Capita Growth Ceiling	Estimated Population Growth Rate	Maximum Allowable Total Revenue Growth Rate	Base Permanent Revenue	Maximum Approved Revenue
	A	B	$C=(1+A)*(1+B)-1$	D	$E=D*(C+1)$
Base					
Year 1	3.57%	0.60%	4.19%	\$10,000,000	\$10,419,142
Year 2	3.57%	0.60%	4.19%	\$10,419,142	\$10,855,852
Year 3	3.57%	0.60%	4.19%	\$10,855,852	\$11,310,866
Total					\$32,585,860

** Permanent Revenue =Total Maryland Hospital Revenue associated with MD residents

** Estimated population growth rate is for modeling purposes only. Assumed to be the same over years for simplicity.

Shared Savings Lockbox

As explained in Section 4 and 5, the proposed model will apply incentives across the system that will lower cost growth beyond merely using direct price controls to meet the hard expenditure ceiling. To capture additional savings, the state has proposed the concept of a shared savings lockbox.

Shared savings at any hospital will accrue to all payers, independent of performance at other hospitals. The revenue impact of shared savings lockbox strategies will be calculated by HSCRC by methods that will differ according to each initiative's specific design.

For example, TPR hospital's shared savings will be based on the financial gains from reducing overall utilization both inpatient and outpatient, while the ARR hospital's calculation will include financial gains from reductions in readmissions only. A portion of the calculated financial gains will be permanently removed from base revenue of each hospital in the subsequent year; hence savings to the payers are guaranteed to grow over time. Providers will retain a portion of the calculated savings.

Figure 6.2 demonstrates the mechanics of how shared savings lockbox reduces the total revenue growth rate below the hard expenditure ceiling. The modeling shows the application of shared savings methods at the end of each rate year—allowing each hospital to capture the financial benefit of that hospital's program success fully during the year, but adjusting the base revenue for the following year to provide savings to the payers. The amount of reduction is determined by having the HSCRC staff calculate the financial impact of shared savings programs

for each hospital and then applying a shared savings allocation to that dollar amount (e.g., 50 percent to providers and 50 percent to payers/public).

For example, in Year 1 in Figure 6.2, the HSCRC calculates the financial impact of success under the methods to be \$208,382. By applying a 50 percent/50 percent shared savings allocation, the HSCRC then removes \$104,191 from the permanent revenue for the following year. This establishes a diminished permanent base total revenue in Year 2 and reduces the effective total revenue growth rate to 3.15 percent rather than 4.19 percent hard expenditure ceiling that is applied to the adjusted base revenue.

Figure 6.2: Implementation of Shared Savings Lockbox with Hard Expenditure Ceiling

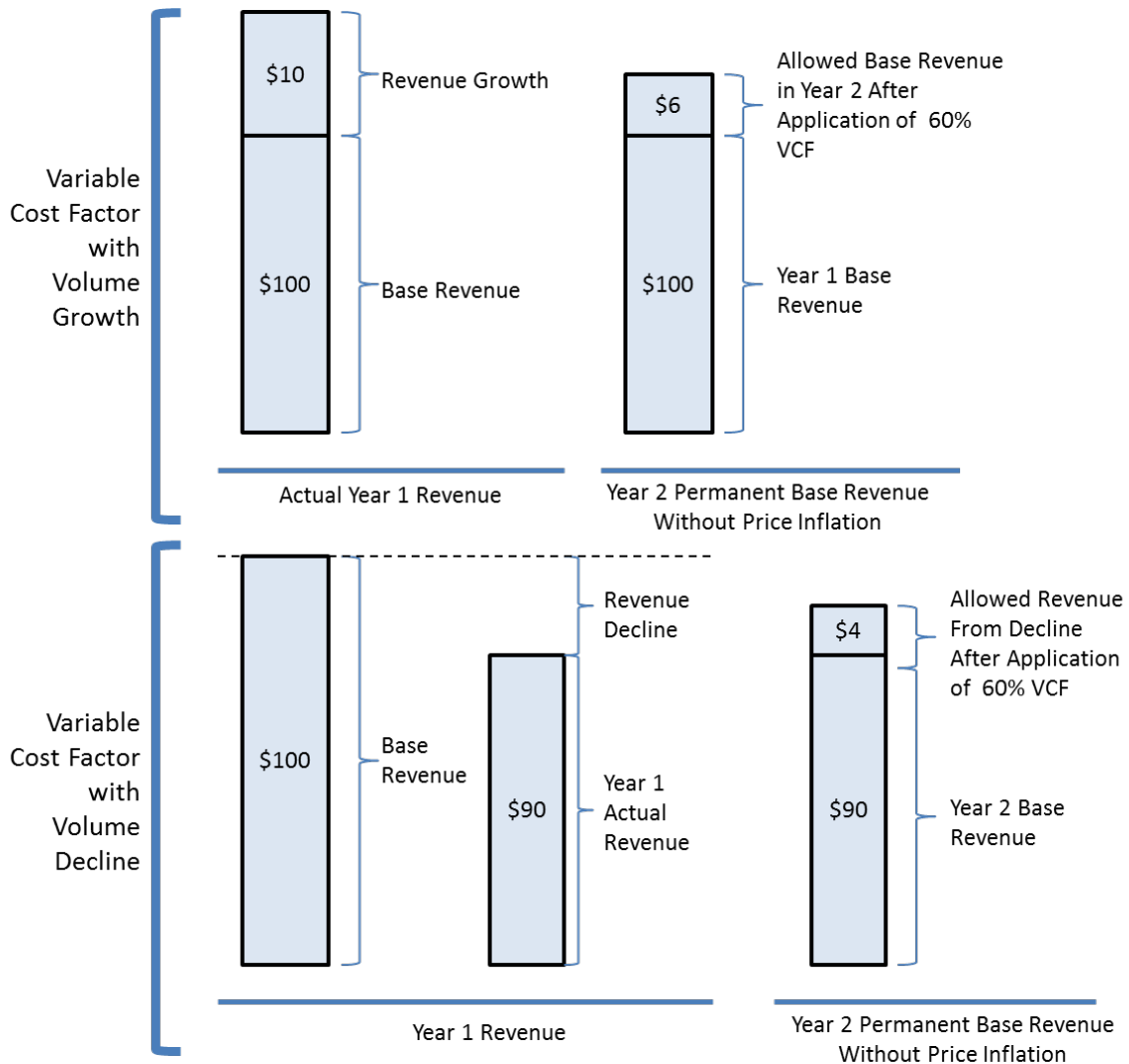
	Total Revenue Hard Ceiling	Permanent Base Total Revenue	Approved Total Revenue	Approved Effective Total Revenue Growth Rate	Shared Savings Lockbox %	Shared Savings Lockbox \$
	A	B	C=B*(1+A)	D	E	F=E*C
Base						
Year 1	4.19%	\$10,000,000	\$10,419,142	4.19%	1.00%	(\$104,191)
Year 2	4.19%	\$10,314,951	\$10,747,293	3.15%	1.00%	(\$107,473)
Year 3	4.19%	\$10,639,821	\$11,085,780	3.15%	1.00%	(\$110,858)
Total			\$32,252,216			
Variance from Hard Expenditure Ceiling						(\$322,522)

In this model, the HSCRC has structured the shared savings methods to provide a one-time full financial benefit to the hospital for success under the shared savings methods. While not modeled here, the HSCRC may structure shared savings methods to prospectively remove estimates of financial success from each hospital's approved total revenue. This method would prospectively guarantee savings to the payers under the shared savings lockbox. The HSCRC will make these policy decisions with a full appreciation of economic and market conditions, as well as an understanding of the most optimal incentive structures for potential payment method successes.

Volume Adjustment as a Behavioral Intervention

As suggested above, it is important to both account for unexpected volume growth in subsequent years and to discourage volume growth associated with the financial incentives under fee-for-service payment methods. Figure 6.3 models the dynamics of volume growth and volume reductions with a variable cost factor at 60 percent variable.

Figure 6.3: Variable Cost Factor Modeling for Volume Increases and Volume Decreases



***Figure assumes price-level revenue. All revenue change is due to volume increase. Dollar values are for illustrative purposes only with no bearing on expected revenue and volume growth.*

The current share of revenue from incremental volume increases above the assumed growth is 85 percent. In current discussions with interested parties in the state, the use of a volume constraint less than the current 85 variable cost factor is recognized as a potent method for controlling overall and per capita revenue. Various cost factors have been discussed, ranging from a 60 percent variable cost factor (with the intent of neutralizing incentives for volume growth) to a 40 percent variable cost factor (with the intent of providing disincentives for volume). Disincentives for volume growth have to be approached carefully, however, to be sure that patient-centered outcomes are achieved instead of reduced costs due to inappropriate

changes in patient referral patterns. Attention must be paid to regional dynamics, such as the differences between rapidly growing areas and others.

Volume controls in an all payer setting reduce the incentives to grow volume with one payer when another payer's volume has been curbed. Volume controls can be modified by hospital, based on demographic trends, hospital performance, and other factors.

In addition to behavioral impact of VCF for individual hospital's volume growth, the HSCRC can use VCF and price update factors as main policy levers to achieve the desired total revenue growth in the state. Figure 6.4 illustrates the relationship between VCF and price update factor for various levels of VCF. For example, assuming 2.30 percent volume growth in the state and 4.19 percent total revenue growth rate hard expenditure ceiling, HSCRC can provide 4.19 percent as price update with 0 percent VCF (i.e., no additional revenue for additional volume) or 1.85 percent update factor with 100 percent VCF (i.e., full revenue for additional volume).

Figure 6.4: Implementation of Shared Savings Lockbox with Hard Expenditure Ceiling

Maximum Allowable Total Revenue Growth Rate	Estimated Revenue Growth from Additional Volume	Variable Cost Factor (VCF)	Maximum Allowable Price Update
A	B	C	$D=(1+A)/(1+B*C)-1$
4.19%	2.30%	100%	1.85%
		85%	2.19%
		60%	2.77%
		50%	3.01%
		40%	3.24%
		0%	4.19%

Underage

In developing the model, it is important to have mechanisms in place to adjust, in a targeted and appropriate fashion that promotes stability, any unexpected deviations above or below the expected revenue for the state. This subsection explains how downward deviations or underages would be considered and addressed; the following subsection explains the treatment of upward deviations or overages. Should there be additional statewide savings, other than lockbox shared savings, in a given year, the HSCRC will address what portion will be maintained in the baseline, allowing for further cost savings, and what portion will be returned to the hospital system in the following year. The decision would be part of the annual update factor process. The Commission would address general issues such as:

- The source of the underage (economic recession, PCMH, etc.)
- Performance relative to the All-Payer hard expenditure ceiling

- Performance relative to the Medicare benchmark
- Cost in Maryland relative to outside benchmarks
- Financial performance of efficient and effective hospitals

In general, the state would expect to share underages between payers and providers, with these considerations determining the degree of the sharing in any given year. The HSCRC may use several mechanisms to distribute the savings among hospitals based on their relative efficiency and quality as a means to reward hospitals that contribute to the success of the financial model. Figure 6.5 provides an illustration of 50 percent sharing between payers and providers for underage of \$50,000 in Year 1 assuming no other variation from the approved revenue in subsequent years. For simplicity, the lockbox shared savings are removed from this table. (Full model can be found in appendix). As indicated, 50 percent of \$50,000 underage will be added as a permanent adjustment for the underage to level the base total revenue to apply the revenue hard expenditure ceiling for the following year. In addition, the same amount is applied as one-time adjustment to Year 2 revenue to provide the savings from Year 1, which is taken out from the base revenue for Year 3. Overall, as the portion of the adjustment is applied to the base revenue, the total savings to the payers is compounded by the annual growth rates in Year 2 and Year 3 as so on.

Figure 6.5: Adjustment for Underage with Hard Expenditure Ceiling

Calculate Approved Revenue (Rev.) for Current Year					Actual Rev. During Rate Year		Calculate Permanent Rev. Base for Next Year			
Total Rev. Hard Cap	Permanent Base Total Rev.	One-Time Adjustment for Variance	Approved Rev. for Current Year	Approved Effective Growth Rate	Actual Total Rev.	Variance from Approved Rev.	Permanent Adjustment for Variance	Reversal of One-Time Adjustments	Permanent Base Rev. for Next Year	
A	B	C	D=(1+A)*B+C	E	F	G=F-D	H=G*Restoration Factor	I	J=F+H	
Base					\$10,000,000				\$10,000,000	
Year 1	4.19%	\$10,000,000		\$10,419,142	4.19%	\$10,369,142	(\$50,000)	\$25,000	\$0	\$10,394,142
Year 2	4.19%	\$10,394,142	\$25,000	\$10,854,804	4.68%	\$10,854,804	\$0		(\$25,000)	\$10,829,804
Year 3	4.19%	\$10,829,804	\$0	\$11,283,727	3.95%	\$11,283,727				
Total					\$ 32,507,673					
Variance from Hard Expenditure Cap					\$	(78,187)				

Address Overage

Just as state total hospital revenue may come under the approved amount for a given year, there may also be instances where state total revenue may be above the approved amount. In order not to exceed the hard expenditure ceiling and push cost growth unacceptably high on a per capita basis, the HSCRC would need to budget to recoup this entire amount in the following year. The HSCRC may do this by adjusting the state-wide price update factors and VCF policy to ensure that the unexpected overage does not become a permanent part of the baseline. In addition, as the source of overage will most likely be from volume growth (HSCRC levies fines from deviations from the approved rate for price), VCF adjustments for each hospital will lower the effective price update for each hospital based on their volume growth. At its discretion,

HSCRC may also apply further hospital specific adjustments for the overage to ensure that overage does not end up drawing revenue away from other hospitals in subsequent years. Hospital-specific adjustments include individual consequences for hospitals that had excess volume or inefficiency. The HSCRC has a long history of adjusting individual hospital rates based on relative efficiency and quality rankings. Further, these methods could be extended to address efficiency modified to population-based concepts.

Figure 6.6 models the overage adjustment for the statewide revenue growth. In this model, the HSCRC addresses the overages through permanent adjustments to rates to re-establish the revenue limits. Overages in the previous years would be recovered for payers by one-time adjustments to rates to recover amounts overpaid in previous years. Overage adjustments would not affect the savings established through the lockbox.

Figure 6.6: Adjustment for Overage with Hard Expenditure Ceiling

	Calculate Approved Revenue (Rev.) for Current Year					Actual Rev. During Rate Year		Calculate Permanent Rev. Base for Next Year		
	Total Rev. Hard Cap	Base Permanent Total Rev.	One-Time Adjustment for Variance	Approved Rev. for Current Year	Approved Effective Total Rev. Growth Rate	Actual Total Rev.	Variance from Approved Rev.	Permanent Adjustment for Variance	Reversal of One-Time Adjustments	Base Permanent Rev. for Next Year
	A	B	C	D=(1+A)*B+C	E	F	G=F-D	H=G	I	J=F+H
Base						\$10,000,000				\$10,000,000
Year 1	4.19%	\$10,000,000		\$10,419,142	4.19%	\$10,469,142	\$50,000	(\$50,000)	\$0	\$10,419,142
Year 2	4.19%	\$10,419,142	(\$50,000)	\$10,805,852	3.22%	\$10,805,852	\$0		\$50,000	\$10,855,852
Year 3	4.19%	\$10,855,852	\$0	\$11,310,866	4.67%	\$11,310,866				
Total						\$ 32,585,860				
Variance from Hard Expenditure Cap						\$ -				

Strengths of Financial Model

The Maryland model possesses a number of strengths that guarantee its success while creating a laboratory for CMS to test approaches that could be replicated in other states or regions of states over time. One key feature is that the model rewards hospitals that integrate care by allowing them greater price increases and shared savings. The unique combination of price controls coupled with behavioral incentives will bring about the types of changes CMS is aiming to achieve with other initiatives such as ACOs and the Medicare Shared Savings Program.

The Maryland model also has real consequences for hospitals that over-grow on volume. Across the country, hospitals have historically seen volume increases, particularly in profitable treatment areas, as an important driver of revenue growth. Even with its unique structure, Maryland has been no exception, as the per-case test has not by itself done anything to address volume. The volume constraints applied by HSCRC, which will be strengthened in the new model, make this a strong proposal.

It is also important to point out that by allowing individual hospital adjustments, behavioral economics will line up individual incentives with overall incentives. The importance of this feature cannot be overstated – this is what differentiates the Maryland proposal from the

Sustainable Growth Rate (SGR) policy in Medicare. The weaknesses of SGR, where cuts have to be made across the board, are avoided in Maryland.

Key Considerations

Rate of Overall (All Payer) Growth in Hard Expenditure Ceiling

Based on a smoothed per capita GSP growth trend, the state will set the hard expenditure ceiling for maximum growth in hospital spending each year. This is the 3.57 percent per capita growth rate. (See Appendix A for the development of this number.) The established GSP growth trend remains in place until CMS and Maryland evaluate the financial success of Model Design and subsequently re-base the hard expenditure ceiling.

Shared Savings Lockbox

The shared savings lockbox is a mechanism serving two functions. First, it assures that the hard expenditure ceiling is an upper limit on revenue growth, not a floor. Second, the lockbox serves as an approach to accelerate the transition from fee for service to more promising payment approaches.

The state will set a minimum of 0.5 percent of total revenue in lockbox savings each year. Under its authority, the HSCRC will develop rules for shared savings within lockbox programs to achieve this minimum. The HSCRC will have discretion to develop, implement, and modify policies and programs to achieve the state's required shared savings percent.

Figure 6.7 provides the effective total expenditure growth rate with the lockbox guarantee. As the lockbox savings are incorporated in the second year, the effective per capita growth rate at the hard expenditure hard cap declines to 3.05 percent for all payer and to 1.92 percent for Medicare spending. As a result, the cumulative growth rate would be 1.1 percent lower than the hard expenditure cap at the end of Year 3 of the demonstration. As a result, overall savings from projected trend will be \$1.4 billion for all payer.⁷⁴

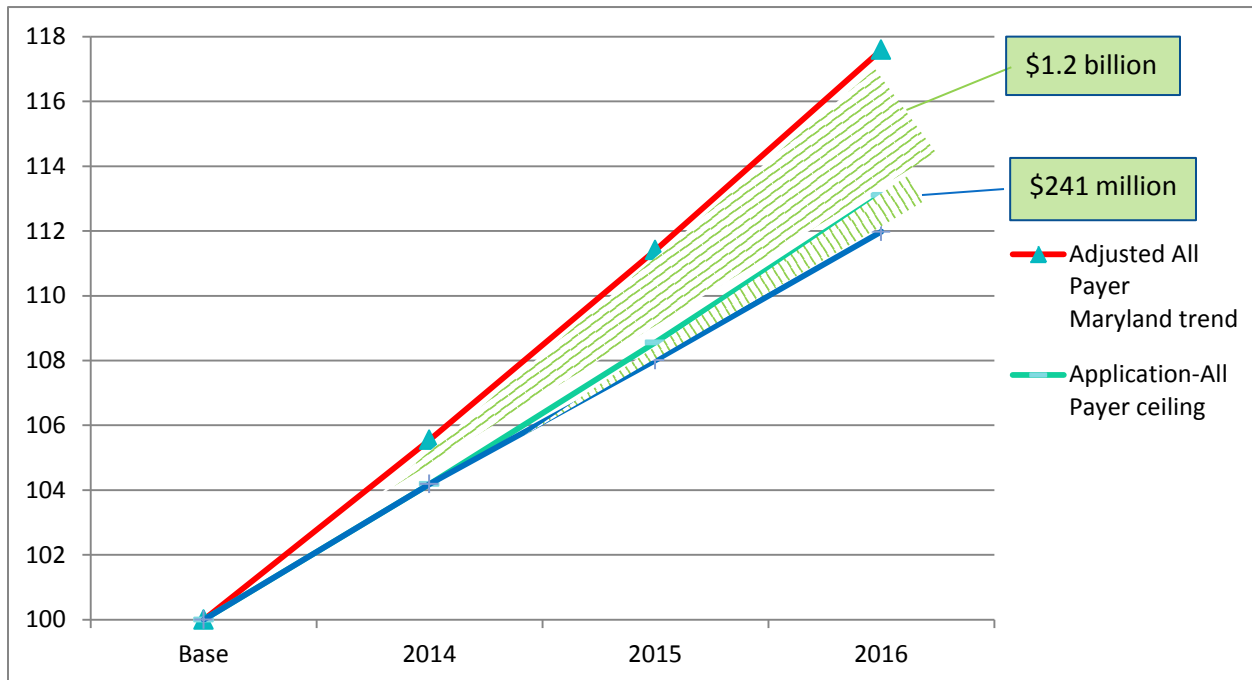
⁷⁴ Projected revenue trend is determined by adjusting projected Medicare payment growth trends, as determined by the CMS Office of Actuary, to reflect the historical difference between national Medicare growth and Maryland's all payer revenue growth. An average annual growth rate for Maryland all payer per capita revenue between CY2009-CY2012 is estimated to be 3.05 percent compared to the national Medicare per beneficiary payment growth rate of 1.47 percent. The national Medicare payments are expected to grow 2.37 percent between CY 2014 and CY 2016. We calculate a ratio of the historical Maryland all payer growth to the historical national Medicare growth and apply this ratio to the projected growth in national Medicare payments. This provides a projection of Maryland's per capita growth rate for all payers. $(3.05\%/1.47\%)*2.37\%=4.92\%$.

Figure 6.7: All Payer Total Revenue Growth Trends with Lockbox Savings

Year	Total All Payer Revenue at Hard Cap with Lockbox Savings	Effective All Payer Total Revenue Growth Rate	Effective All Payer Per Capita Revenue Growth Rate
2013	\$14,377,450,603	Base Year	Base Year
2014	\$14,980,069,943	4.19%	3.57%
2015	\$15,529,907,852	3.67%	3.05%
2016	\$16,099,927,359	3.67%	3.05%
3-Year Cumulative Growth Rate		11.98%	9.99%
3-Year Hard Expenditure Cap Cumulative Growth Rate		13.11%	11.10%
Variance from Hard Expenditure Cap		-1.13%	-1.11%

Source: Monitoring Maryland Performance, Dec 2012 Update. Actual CY2012 total revenue is adjusted for the expected growth rate in CY2013 and out of state patients in Maryland (estimated to be 9.13 % of total revenue using HSCRC Casemix Data CY 2008-CY2012 average).

Figure 6.8. All Payer Projected Savings with Per Capita Expenditure Hard Cap and Lockbox



Medicare Benchmark

The Medicare benchmark will be the projected 2014-2016 inpatient and outpatient growth rate of 2.5 percent per year, less the amount of minimum lockbox savings. We anticipate a 3.57 percent overall per capita hard expenditure ceiling will correspond to a 2.43 percent benchmark in Medicare expenditures, based on the recent history of the relationship between Medicare growth and all payer growth. (See Appendix A below for the development of this number.) With the lockbox savings, the Medicare benchmark will grow 6.4 percent cumulatively over three years from the 2013 base, resulting in estimated total savings of \$220 million from projected historical trend (Figure 6.9 and 6.10).⁷⁵

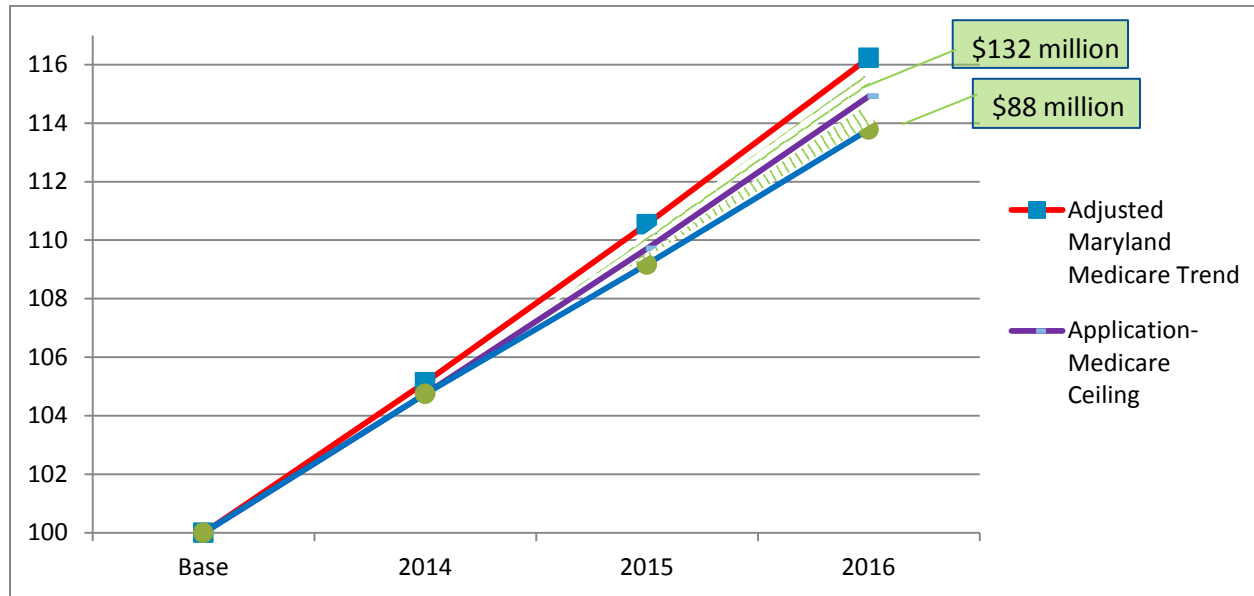
Figure 6.9: Medicare Total Payment Growth Trends with Lockbox Savings

Year	Total Medicare Payments at Hard Cap with Lockbox Savings	Effective Medicare Total Payment Growth Rate	Effective Medicare Per Capita Revenue Growth Rate
2013	\$5,214,629,698	Base Year	Base Year
2014	\$5,462,059,601	4.74%	2.43%
2015	\$5,692,623,701	4.22%	1.92%
2016	\$5,932,920,357	4.22%	1.92%
3-Year Cumulative Growth Rate		13.77%	6.40%
3-Year Hard Expenditure Cap Cumulative Growth Rate		14.92%	7.47%
Variance from Hard Expenditure Cap		-1.15%	-1.07%

Source: HSCRC Casemix. Actual CY2012 first six month Medicare charges for MD residents is annualized and adjusted for out of state care (estimated to be an additional 10.8 percent of total revenue based on analysis of Medpar data for CY08-CY10) and charge to payment ratio (estimated to be 88.81 percent based on the MD Waiver Letters from CMS). Adjusted CY 2012 total revenue is inflated by the expected growth rate in CY2013.

⁷⁵ Projected Medicare payment trend in Maryland is determined by adjusting national projections for Medicare payments, as determined by the CMS Office of Actuary, to reflect the historical difference between national Medicare growth and Medicare payment growth rate for Maryland beneficiaries. An average annual growth rate for Medicare per capita payment for Maryland beneficiaries between CY2009-CY2012 is estimated to be 1.75 percent compared to the national Medicare per beneficiary payment growth rate of 1.47 percent. The national Medicare payments are expected to grow 2.37 percent between CY 2014 and CY 2016. We calculate a ratio of the historical Maryland Medicare payments to the historical national Medicare growth and apply this ratio to the projected growth in national Medicare payments. This provides a projection of Medicare payments per Maryland beneficiary growth rate. $(1.75\%/1.47\%)*2.37\%=2.82\%$.

Figure 6.10. Medicare FFS Projected Savings with Per Capita Expenditure Hard Cap and Lockbox



Rebasing

Assuming that the model operates successfully, we would look to rebase the state’s hard expenditure ceiling growth rate subsequent to CMS and Maryland evaluating the financial success of Model Design. Rebasing would calculate a new smoothed GSP trend and take into account the most recent model period experience and expected growth going forward.

Subsequent to evaluating the financial success of Model Design, Maryland would also reset the Medicare benchmark based on historical and future national Medicare expenditures. Under normal circumstances, if national Medicare expenditures were determined to be lower than projected, rebasing would take account of this difference in expectation. Likewise, if national Medicare expenditures were determined to be higher than projected, the difference would be taken into account when rebasing.

Key Metric

The key metric for the first three years is inpatient and outpatient hospital expenditure for all Maryland residents. The proxy for management is regulated revenue at Maryland hospitals for Maryland patients. Periodically, CMMI and the state would examine the relationship between performance using the HSCRC data and Medicare adjudicated claims. Every three years, we would realign the goal against actual all Maryland patient data for Medicare.

Multi-Year Approach to Evaluating Financial Success

A successful model requires meeting the overall budget target at various intervals during Model Design. During the five years of Phase 1, Maryland suggests evaluating financial success after Year 3 and Year 5. This target will be all savings from the hard expenditure ceiling, lockbox, and underage from all of the first three years are captured. Note that due to the model's financial construction, financial success in Year 3 also accomplishes the appropriate budget targets in Year 1 and Year 2. Likewise, financial success in Year 5 accomplishes the appropriate budget target in all preceding years.

Consequences of Failure to Meet CMS Financial Expectations

There are three scenarios for failure to meet the Medicare benchmark. We have constructed these scenarios for the Year 3 test of financial success. However, the concepts would continue in Year 5, as well.

- Scenario 1: Maryland meets the all payer budget target in Year 3, including the lockbox and underage. However, because of a misestimate in relative expenditures, Medicare expenses are higher than CMS expectation for first three years. The HSCRC will need to review options and take action to ensure Medicare's financial compensation for the overage. Among other options, Maryland may consider permitting a payback made in Year 4 through, for example, lower Medicare, and also Medicaid, payments to Maryland hospitals.⁷⁶ The HSCRC may opt to permit rates increases to other payers to compensate for the loss of revenue within the budget goals (with an understanding that the rate increase may only compensate for the misestimate in relative expenditures).
- Scenario 2: Maryland fails to meet the all payer budget target in year 3 but stays within the hard expenditure ceiling, and Medicare expenditures are higher than the Medicare benchmark for the first three years. The HSCRC will need to review options and take action to ensure that Medicare is financially compensated for the overage. Actions here might be similar to those described above. However, as Maryland also failed to meet the all payer budget as well, the HSCRC will not shift this portion of the overage to other payers.
- Scenario 3: Maryland fails to stay within the all payer hard expenditure ceiling in Year 3. This is model failure. If CMMI chooses not to continue this model demonstration, a smooth transition to regular Medicare payment rates would be scheduled. There would

⁷⁶ HSCRC will comply with Medicaid Upper Payment Limit requirements.

be no additional payback requirements based on provisions under the current 1814(b)(3) waiver.⁷⁷

- Scenario 4: Maryland fails to meet the hard expenditure ceiling but contains growth under the Medicare benchmark for the first three years. Maryland requests that under this scenario, CMS would provide for continuation of Model Design with agreement that the state must apply methods to successfully meet the hard expenditure ceiling all-payer target budget and Medicare benchmark by the subsequent financial success evaluation in Year 5.

Uncontrollable Exogenous factors

In the event of a major change that cannot wait for rebasing, such as due to pandemic influenza, Maryland would seek to work with CMS to negotiate a new cost target based on expected cost trends. See Section 9.

Stub Period

Maryland begins its Fiscal Year 2014 on July 1, 2013, and this is the period for which the HSCRC is preparing to set hospital rates. However, a decision regarding approval of this proposed model is unlikely to be made before the beginning of the state fiscal year. In the meantime, hospital executives, insurance company executives, the state Medicaid program, and self-insured businesses must develop budgets for the upcoming year with some expectation for hospital rates. The current status of our proposal introduces uncertainty for planning.

The HSCRC must develop its annual update factor proposal so that these interested parties know what to expect for SFY2014. This proposal often includes not only the update factor but amendments to existing policies and programs. All of these changes affect system revenue.

If a decision around the proposed model cannot be provided before the beginning of the state fiscal year, the HSCRC will need to develop a stub period for an interim update factor, with consideration for implementing other policy changes related to this proposed model. Because the state will continue to operate under 1814(b)(3) status, the Commission's decisions will need to reflect the impact of updates and related policy changes on the existing waiver status.

Maryland requests an effective date for the proposed model on January 1, 2014.

⁷⁷ Methods under this Model Design aim toward better population health. These methods incentivize the appropriate transition of low-acuity cases out of hospitals, thus increasing the average charge per admission for the remaining higher-acuity cases. As 1814(b)(3) evaluates financial success on a per case basis, the methods under Model Design have an indirect effect of potentially breaching the per case waiver evaluation. Therefore, under Model Design, CMS would not require additional payback based on provisions under the current 1814(b)(3) waiver.

Medicaid and CHIP

Medicaid (Title XIX) and CHIP (Title XXI) cover certain populations (e.g., children) and services (e.g., specialty mental health and addiction treatment) that are frequently associated with growing service volumes in hospital outpatient departments and would be outside the Medicare benchmark for growth discussed above. Nevertheless, Medicaid and CHIP expenditure growth would be sufficiently protected inside the overall all payer hard expenditure ceiling. In addition, as described in the consequences of failure to meet CMS financial expectations for Medicare, Medicaid payments would follow Medicare payments.

Phase of Implementation and Evaluation

The state is committed to thorough evaluations of our Model Design. We expect that evaluation to occur in accordance with standard CMMI procedures for other models. See Section 8 for more information on Model Design evaluation.

Phase 2 of Model Design broadens Maryland's test of financial success from a hospital focus to total cost of care. Likewise, the methods employed in Phase 2 will transcend hospital services to target service provision across the continuum of care. Phase 2 will integrate this model with the outpatient models under development through the State Innovation Model efforts.. Maryland's development of the Phase 2 proposal will require substantial efforts and involvement of a wide variety of interested parties, including appropriate lead time for state statute and regulatory changes, as required. As such, we propose that during Phase 1, Maryland will develop a Phase 2 proposal for delivery to CMS at the start of Year 4.

Section 7. Target Outcomes

The Model Design proposed by Maryland leverages the power of population-based methods such as hospital-convened ACOs and bundled payments to drive improvements in all aspects of the three-part aim. We believe these strategies will be strengthened by the unique all payer nature of our health care system. Through this model, Maryland will test the hypothesis that an all payer system that is accountable for the total cost of care on a per capita basis is an effective model for establishing policies and incentives to drive system progress toward achieving the three-part aim of enhanced patient experience, better health, and lower costs. This section discusses the metrics that will be tracked in each of the three aspects of the three-part aim, as well as the data sources and specific goals.

As noted in Section 2, the state expects the outcomes in the three categories below to result from the model. It is important to note that the measures listed in each category most certainly relate to/influence performance in one or both of the other categories, for example:

- Overuse of a diagnostic test, while constituting a negative patient experience with the healthcare system, also helps to drive up costs and exposes the patient to additional radiation needlessly.
- One study of patients' perceptions of hospital care, including inpatient care and discharge planning, suggests that higher patient satisfaction may be associated with lower 30-day readmission rates.⁷⁸

Patient experience of care. We hypothesize that an all payer model can help overcome the fragmentation that undermines patient care and improve the quality of care. With a broad view of patient experience that encompasses the sum of all care interactions, shaped by care delivery culture, that influence patient perceptions across the continuum of care, Maryland intends to improve the quality of care, thereby increasing patient satisfaction and improving patient experience by:

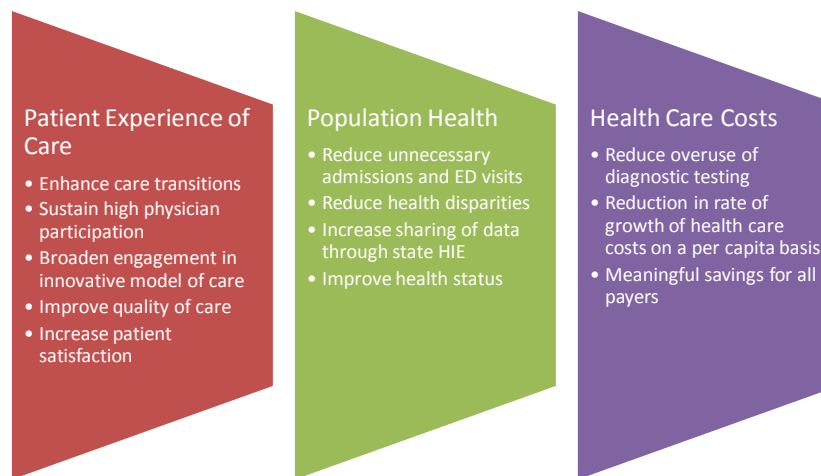
- enhancing care transitions,
- sustaining high physician participation in public programs,
- reducing readmissions, and
- broadening provider engagement in innovative models of care.

⁷⁸ Boulding, W., S. W. Glickman, M. P. Manary, K. A. Schulman, and R. Staelin. 2011. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. *The American Journal of Managed Care* 17(1):41-48.

Population health. We hypothesize that an all payer model can establish incentives that drive significant health improvement. Maryland intends to reduce unnecessary admissions and emergency room visits, improve population health outcomes, and reduce health disparities.

Health care costs. We hypothesize that an all payer model can control the growth in health care expenditures at a reasonable level and align incentives for shared savings beneath a hard expenditure ceiling. We intend to achieve meaningful savings for all payers, including Medicare, Medicaid, and CHIP, and to CCIIO in the form of reduced expenditures for insurance subsidies in Maryland's health benefit exchange. Reducing the overuse of diagnostic testing will support overall cost reduction goals. In the Phase 1, our primary focus will be on hospital costs. In Phase 2 of Model Design, our focus will broaden to all costs. These concepts are depicted graphically in Figure 7.1.

Figure 7.1: Population Health



Approach to Quality Measurement

Consistent and powerful incentives to drive improved quality and outcomes are a crucial component of a health care system designed to achieve higher value and lower cost. Over the last several years, Maryland has steadily expanded the magnitude and scope of its hospital quality payment reform initiatives linked with performance. Maryland will integrate into the proposed model its methods currently used to continuously improve quality and outcomes.

It is important to note that Maryland's quality improvement initiatives are fundamentally linked to the payment incentives of its all payer system. One of the core tenets of the all payer system is that consistently applied incentives across all payers are the most likely way to achieve

system transformation to improve quality and population health and lower costs. Maryland's quality initiatives build on what CMS has proposed in the Hospital Acquired Conditions (HAC), Value Based Purchasing (VBP), and Hospital Readmission Reduction Program (HRRP). Maryland's quality programs include the Quality Based Reimbursement (QBR), Maryland Hospital Acquired Conditions (MHAC), Total Patient Revenue (TPR) and Admission Readmission Revenue (ARR) initiatives. In many respects, Maryland policy and data reporting requirements for these initiatives mirror CMS requirements, and in others, Maryland's policy is conceptually similar but adapted to the all payer framework. Maryland's objective is to continuously expand best practices in its quality initiatives, and as new measures and refinements are added to Maryland's process, they are continually evaluated and refined through a collaborative process with a broad array of relevant stakeholders. The overarching goal is to create and maintain appropriate all payer incentives that are effective in enhancing the quality of care provided in the state, and, in turn, improving outcomes for every person who uses health care services in Maryland.

The following subsections present details on the specific measures that will be tracked under each of the three general areas of patient experience of care, population health, and health care costs.

Patient Experience of Care

As previously stated, Maryland's broad view of patient experience is shaped by a transformation in the care delivery culture that encompasses all patient care interactions, resulting in increased patient satisfaction and improved patient experience.

Patients with complex care needs who require care across different health care settings are more vulnerable to experiencing serious quality problems and increased readmission rates. Maryland will monitor care transition interventions that are designed to improve communication and coordination between providers and will encourage patients and their caregivers to assert a more active role during care transitions.

Patient experience in accessing and engaging in care is driven by provider availability and approach to care delivery, as well as the 'right' payment incentives. Maryland will monitor the number of Medicaid participating physicians per Medicaid enrollee, Medicare participating physicians per Medicare enrollee, and participation of providers in patient centered medical home models, Accountable Care Organizations, and bundled payment models.

Consumer Assessment of Healthcare Providers and Systems (CAHPS®) is a comprehensive, valid, reliable family of surveys that ask consumers and patients to evaluate the interpersonal aspects of health care. CAHPS surveys probe those aspects of care for which consumers and patients are the best and/or only source of information, as well as those that consumers and patients have identified as being important. HCHAPS (Hospital-CAHPS) surveys capture patient

experience in hospitals. Performance on HCAHPS measures is a needed focus area, as Maryland's HCAHPS scores currently lag behind the national median performance levels. Beginning with January 2013 discharges, hospitals participating in HCAHPS are required to use an expanded survey that includes three new Care Transition items (resulting in seven total care transition measures), which will help monitor achievement of the care transition enhancement component of the patient experience goal.⁷⁹ Maryland will monitor patient satisfaction and experience for hospitals through HCAHPS, for home health providers through the Health Care CAHPS Survey, and for Nursing homes through a state administered family survey based on the Nursing Home CAHPS survey. Maryland will consider the timing for adding a Clinician and Group CAHPS (CGCAHPS) survey, a standardized tool that measures patient perceptions of care provided by a physician in an office. Assessing patient experience in ambulatory settings will be increasingly important as Maryland's model shifts more care from inpatient settings to the community.

As stated previously, Maryland's hospital quality initiative started in 2008 with the Quality Based Reimbursement initiative (QBR), which is based on the public and well-established CMS/Joint Commission clinical process of care measures. Hospital incentive payments, up to 0.5% of total regulated inpatient revenue, are based on hospital performance on identified clinical process of care measures in four care domains, including heart attack, heart failure, pneumonia and surgical care. In the third year (FY 12), patient experience-of-care measures were added to the QBR Initiative to strengthen incentives for patient centered care. During FY 2013, Maryland hospitals will be required to report Hospital Outpatient Quality Reporting measures.

Maryland quickly moved to programs focusing on outcomes. In 2009, the HSCRC implemented Maryland Hospital Acquired Conditions (MHAC) and began linking payments to hospital performance on a set of approximately 50 conditions across all payers and patients. Up to 2 percent of total regulated inpatient revenue is based on performance on these measures.

Maryland will work with ACO and PCMH providers to measure and report physician-focused measures as part of the Model. Maryland will consider building on the CMS Physician Quality Reporting System, which offers incentives to eligible professionals for reporting the quality measures through claims or registry-based reporting.

The Admission Readmission Revenue (ARR) and Total Patient Revenue (TPR) programs have been effective in reducing readmissions through use of financial incentives. Under these

⁷⁹ New HCAHPS Care Transition measures are: 1-During this hospital stay, staff took my preferences and those of my family or caregiver into account in deciding what my health care needs would be when I left. 2-When I left the hospital, I had a good understanding of the things I was responsible for in managing my health. 3-When I left the hospital, I clearly understood the purpose for taking each of my medications.

programs, hospitals are incentivized the same across all payers, which optimizes the opportunity to reduce readmissions. Maryland will continue to enhance measurement of readmissions to hospitals and nursing homes as key indicators of achieving patient experience (as well as cost and population health) goals. Maryland will use HSCRC Hospital Inpatient discharge abstracts, Medicare claims, and the CMS Home Health Compare website. Figure 7.2 outlines Maryland's approach to measuring patient experience of care in the model. During Model Design, Maryland expects to see improvement across our patient experience of care measures.

Figure 7.2: Patient Experience of Care

Goal	Description of Measure	Data Source	Considerations/ Comments
Increase patient satisfaction- Hospital	HCAHPS: Patient's rating of the hospital HCAHPS: Communication with doctors HCAHPS: Communication with nurses	Survey	(NOTE: Most recent HCAHPS average improvement rate is 3.06%)
Increase patient satisfaction- Home Health	Home Health CAHPS: Patient's rating of home health agency Home Health CAHPS: Communication with the home health team	Survey	Home Health Based- This measure will be monitored in Phase 1 with the intent to add targets in Phase 2.
Increase patient satisfaction- Nursing Homes	State-administered survey based on Nursing Home CAHPS: Family members' perceptions of nursing home care	Survey	Nursing Home Based- This measure will be monitored in Phase 1 with the intent to add targets in Phase 2. Maryland will consider transitioning to Nursing Home CAHPS survey instrument during the initial 3 year period of the model.
Increase patient satisfaction- Ambulatory Care	Clinician and Group CAHPS: Patient's perceptions of care provided by a physician in an office.	Survey	Physician Office Based- This measure will be monitored in Phase 1 with the intent to add targets in Phase 2.
Enhance care transitions – patient experience- Hospital	HCAHPS : Three-item care transition measure (CTM-3)	Survey	New HCAHPS measures for 2013; as a new measure, historic data not available

Goal	Description of Measure	Data Source	Considerations/Comments
Enhance care transitions – patient experience- Short Stay Nursing Homes	Short Stay Nursing Home Resident’s discharge needs met Short Stay Nursing Home Resident’s Discharge planning and information about medicines and symptoms	Survey	Short Stay Recently Discharged Nursing Home Resident- This measure will be monitored in Phase 1 with the intent to add targets in Phase 2.
Enhance care transitions – coordination with primary care	Rate of physician follow up after discharge	Claims	Medicare and Medicaid; later state all payer database
Enhance care transitions – coordination with primary care	Discharges with PCP identified	To be developed	
Sustain high physician participation in public programs	Medicaid participating physicians per Medicaid enrollee; Medicare participating physicians per Medicare enrollee	Medicaid/Medicare provider enrollment; Survey	Concerns regarding participating physicians not accepting new patients
Broaden engagement in innovative models of care	Participation of providers in patient centered medical home models, ACOs, bundled payments	Administrative	
Improve process of care – Inpatient	Quality score using process of care measures in AMI, HF, SCIP, PN, CAC	Hospital Inpatient Quality Reporting Program	NOTE: QBR clinical score improvement: +0.82% (2009- 2011 average), +2.4 % in 2011
Improve process of care – Outpatient	Quality score using process of care measures in outpatient setting	Hospital Outpatient Quality Reporting Program	Maryland hospitals currently developing processes to collect outpatient process measures, expect to incorporate in Phase 2

Goal	Description of Measure	Data Source	Considerations/Comments
Reduce high priority hospital complications	Potentially Preventable Complications (PPC): PPC24/25: Renal Failure with/without Dialysis PPC5: Pneumonia & Other Lung Infections PPC35: Septicemia & Severe Infections PPC6: Aspiration Pneumonia PPC16: Venous Thrombosis PPC37:Post-Operative Infection & Deep Wound Disruption Without Procedure PPC 7:Pulmonary Embolism PPC31:Decubitus Ulcer PPC54:Infections due to Central Venous Catheters PPC25:Renal Failure with Dialysis PPC38:Post-Operative Wound Infection & Deep Wound Disruption with Procedure PPC 66:Catheter-Related Urinary Tract Infection PPC28:In-Hospital Trauma and Fractures	HSCRC Hospital Inpatient Discharge Abstract	NOTE: Inpatient only
Reduce readmissions-Home Health	Admission Rates from Home Health Agencies to Acute Inpatient Hospital Unplanned, urgent visits to the Emergency Departments for patients receiving Home Health care	Home Health Compare	This measure will be monitored in Phase 1 with the intent to add targets in Phase 2.
Reduce readmissions-Nursing Homes	Readmission rates from nursing home to acute care hospital	HSCRC Hospital Inpatient Discharge Abstract	As several hospitals have nursing home interventions as part of their ARR intervention plans, there should be a reduction in readmissions.
Reduce readmissions-Hospital	Hospital wide all cause 30-day readmissions	HSCRC Hospital Inpatient Discharge Abstract; Medicare Claims	HSCRC data is limited to discharges from Maryland hospitals, Medicare data provides access to discharges outside of state NOTE: Inter-hospital Medicare Readmissions: 0.3 percentage points decline in FY2012

Population Health

Maryland understands that improving the health care system must include patient-centered care that goes beyond direct patient-clinician interactions and extend to the clinic, unit, health care organization, system, and community levels. Maryland has established a State Health Improvement Process with 39 health benchmark measures, and 17 regional planning councils have developed action plans for improvement. Re-aligning hospital incentives through this Phase 1 model design will encourage hospital participation in these efforts.

In addition, the model will explore methods to incentivize and support practices such as creating patient and family advisory councils, establishing portals that allow patients to access their health information, and developing policies that ensure timely access to care, as well as promoting preventive care and healthy lifestyles. It will additionally be important to supplement Maryland's current measures of population health with new metrics that more directly quantify the outcomes or success of these incentives.

As key indicators of population health that are expected to improve as the model evolves, Maryland will continue to measure population health through the State Health Improvement Process (SHIP)⁸⁰, hospital admission rates (as well as readmission rates), overall ED visits, and admissions and ED visits for ambulatory sensitive conditions.

Maryland will consider a range of population health measures developed by quality measurement experts/groups such as NCQA for ACOs and other new delivery/care models. Many such measures have been endorsed by consensus organizations such as the National Quality Forum (NQF) and are being used in numerous initiatives including the CMS Shared Savings program and Meaningful Use incentive program. These include:

- Screening Mammography
- Colorectal Cancer Screening
- Persistence of beta-blocker treatment after a heart attack
- Optimal Diabetes Care
- Screening for future fall risk
- Blood Pressure Control
- Million Hearts ABCs (a composite of NQF measures)
- Screening for Clinical Depression and Follow-Up Plan
- Medication reconciliation post-discharge

⁸⁰ The SHIP website is <http://dhmh.maryland.gov/ship/SitePages/Home.aspx>

- Adult influenza immunization: Influenza immunization received
- Pneumonia Vaccination for Patients 65 Years and Older
- Smoking Cessation, Medical assistance: a. Advising Smokers to Quit, b. Discussing Smoking Cessation Medications, c. Discussing Smoking Cessation Strategies
- Annual monitoring for patients on persistent medications

Beginning in June of 2012, HSCRC staff convened the *Hospital Race and Ethnicity Disparities Work Group*, a multi-stakeholder group of individuals working to reduce or eliminate disparities in Maryland healthcare, to guide HSCRC staff efforts and work to analyze the status of hospital patient race and ethnicity data collection and consider how this data may be used in payment incentive programs. Maryland will continue to analyze race and ethnicity data using hospital discharge and quality datasets and will use race and ethnicity data in its quality incentive programs as appropriate.

Finally, Maryland understands that advances in computing and connectivity have the potential to improve population health by expanding the reach of knowledge, increasing access to clinical information when and where needed, and assisting patients and providers in managing chronic diseases. Maryland will monitor encounter data flow through its HIE, CRISP (Maryland's state information exchange). During Model Design, Maryland expects to see improvement across a broad range of population health measures.

Figure 7.3: Population Health Measures

Goal	Description of Measure	Data Source	Considerations/Comments
Improve life expectancy	Average life expectancy in Maryland by race and gender	Vital Statistics	SHIP #1
Reduce the rate of hospitalizations for ambulatory care sensitive conditions	AHRQ PQI composite measures <ul style="list-style-type: none"> • PQI 90 – Overall composite • PQI 91 – Acute Composite • PQI 92 – Chronic composite 	HSCRC	Drives improvement towards SHIP goals #25-35
Improve cancer screening	<ul style="list-style-type: none"> • PQRS 112: Mammography • PQRS 113: Colorectal Cancer 	Claims, registry	Drives improvement towards SHIP goals SHIP goal #26
Improve primary prevention of infectious disease	<ul style="list-style-type: none"> • PQRS 110 – Influenza immunization • PQRS 111 –Pneumonia vaccination for patients ≥ 65YO 	Claims, registry	Drives improvement towards SHIP goals SHIP goal #24
Improve primary prevention for diabetes and cardiovascular	<ul style="list-style-type: none"> • PQRS 226 – Smoking screening/cessation • PQRS 317 – Blood pressure screening and follow up 	Claims, registry	Drives improvement towards SHIP goals #25, 28, 30, 32

Goal	Description of Measure	Data Source	Considerations/Comments
disease	<ul style="list-style-type: none"> • PQR 300 – Blood pressure control • PQR 128 – BMI measurement and counseling 		
Improve secondary prevention for diabetes	PQRS Diabetes Measures Group <ul style="list-style-type: none"> • #1. Diabetes Mellitus: Hemoglobin A1c Poor Control in Diabetes Mellitus • #2. Diabetes Mellitus: Low Density Lipoprotein (LDL-C) Control in Diabetes Mellitus • #3. Diabetes Mellitus: High Blood Pressure Control in Diabetes Mellitus • #117. Diabetes Mellitus: Dilated Eye Exam in Diabetic Patient • #119. Diabetes Mellitus: Urine Screening for Microalbumin or Medical Attention for Nephropathy in Diabetic Patients • #163. Diabetes Mellitus: Foot Exam 	Claims, registry	Drives improvement towards SHIP goals SHIP goal #27
Improve secondary prevention for cardiovascular disease	PQRS Cardiovascular Prevention Measures Group: <ul style="list-style-type: none"> • #2. Diabetes Mellitus: Low Density Lipoprotein (LDL-C) Control in Diabetes Mellitus • #204. Ischemic Vascular Disease (IVD): Use of Aspirin or Another Antithrombotic • #226. Preventive Care: Tobacco Use: Screening and Cessation Intervention • #236. Hypertension (HTN): Controlling High Blood Pressure • #317. Preventive Care and Screening: Screening for High Blood Pressure • #241. Ischemic Vascular Disease (IVD): Complete Lipid Panel and Low Density Lipoprotein (LDL-C) Control 	Claims, registry	Drives improvement towards SHIP goals SHIP goals #25 and 28 Aligned with Million Hearts initiative

Goal	Description of Measure	Data Source	Considerations/Comments
Reduce risk of recurring heart attack through secondary prevention and the meaningful use of data and data exchange	NQF 0071 – Beta blocker persistence: Percentage of patients 18 years and older during the measurement year who were hospitalized and discharged alive with a diagnosis of acute myocardial infarction (AMI) during the measurement year whose days' supply of beta blockers dispensed is > 135 days in the 180 days following discharge.	Claims or encounter data for visits, pharmacy, and procedures	Drives improvement towards SHIP goal #25
Promote behavioral health integration in primary care	Reduce behavioral health related ER admissions	HSCRC	Drives improvement towards SHIP goals SHIP goals #29 and 34
Promote health through safe physical environments	PQRS 154 – Screening for future fall risk PQRS 155 – Plan of care	Claims, registry	Drives improvement towards SHIP goals SHIP goal #14

AHRQ = Agency for Healthcare Research and Quality
 PQI = prevention quality indicators
 SHIP = State Health Improvement Process
 PQRS = Physician Quality Reporting System
 NQF = National Quality Forum

Health Care Costs

Maryland understands that the delivery system innovation we are proposing to test must forge partnerships and collaborations aimed at high value and high quality, with a consequent reduction in the total cost of care. Maryland will monitor trends in per capita expenditure growth for Medicare, Medicaid, CHIP and all other payers. Maryland will also monitor utilization of certain diagnostic tests and procedures to assess and decrease unnecessary and wasteful practices (i.e., duplicate imaging). Other measures related to cost such as complication rates and readmissions were discussed above in the Patient Experience section.

Maryland will work diligently to complete implementation of a state all payer database in order to monitor per capita health expenditure growth for inpatient and outpatient services across all payers. Detailed information about the data sources and monitoring is outlined in Section 8.

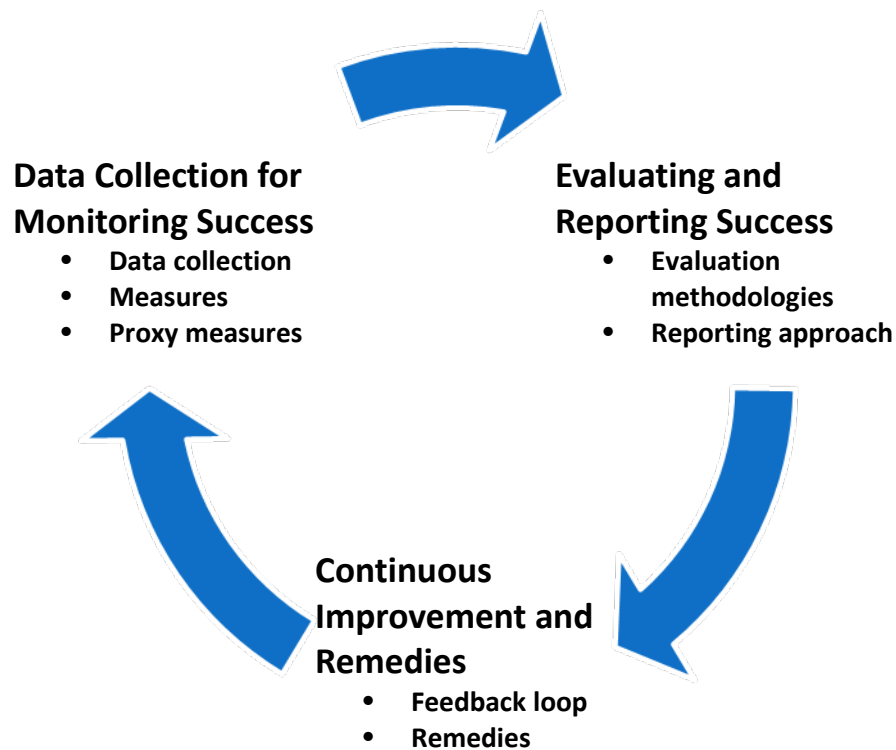
Figure 7.4: Health Care Costs

Goal	Description of Measure	Data Source	Considerations/ Comments
Reduce overuse of diagnostic testing – imaging	OP-8 : MRI Lumbar Spine for Low Back Pain OP-9: Mammography Follow-up Rates OP-10: Abdomen CT - Use of Contrast Material OP-11:Thorax CT - Use of Contrast Material OP-13: Cardiac Imaging for Preoperative Risk Assessment for Non Cardiac Low Risk Surgery OP-14: Simultaneous Use of Brain Computed Tomography (CT) and Sinus Computed Tomography (CT)	Claims	Medicare (Hospital Compare) and Medicaid; later state all payer database
Control expenditure growth – hospital	Per capita hospital expenditure growth (inpatient and outpatient) for: <ul style="list-style-type: none"> • All-payer • Medicare • Medicaid/CHIP • Private payer • Dual Eligibles 	HSCRC Hospital Inpatient and Outpatient Discharge Abstract; Medicare and Medicaid enrollment files	For all expenditures, risk adjustment for in and out of state services
Control expenditure growth – all services	Per capita health expenditure growth (inpatient and outpatient) for: <ul style="list-style-type: none"> • All-payer • Medicare • Medicaid/CHIP • Private payer • Dual Eligibles 	Claims	Medicare and Medicaid; later state all payer database

Section 8. Evaluating and Reporting Model Success

Maryland's Model Design approach guarantees that the state will constrain health care spending growth to a rate below the current trend while continuing to improve patient care experiences and health care quality. In this section, we discuss Model Design evaluation and reporting to CMS. As displayed in Figure 8.1, the following section discusses data collection for monitoring, evaluating and reporting, and continuous improvement and remedies. The final discussion in this section addresses the transition from Model Design Phase 1 to Phase 2.

Figure 8.1: Maryland Will Collect Data for Monitoring, Evaluate, and Continuously Improve the Model Design



We divide our descriptions of data collection, evaluating and reporting, and continuous improvement into two focus areas:

- *Financial*

Section 6 discusses Maryland's financial model. This section continues the discussion of the financial model by addressing how Maryland will employ Medicare and HSCRC datasets to evaluate financial success (the Model financial 'test').

- *Quality*

As specified in Section 7, through this Model Design, Maryland will collect and report data on measures that demonstrate achievement of **enhanced and improved patient experience and outcomes of better health while lowering costs.**

Data Collection for Monitoring Model Success

Maryland integrates frequent and regular monitoring into our Model Design relying on a number of datasets. Data collection intervals and timelines correspond to established or developing data collection processes. The following sections discuss Maryland's data sources for monitoring with an explanation of collection procedures, quality checks, timelines, and data lags.

Data Collection for Financial Monitoring

For Phase 1 of Model Design, Maryland's financial monitoring relies both on robust data collection processes already established by the HSCRC and on Medicare claims and beneficiary data. Maryland requests CMS to provide timely, quarterly Medicare claims and beneficiary data for monitoring.

Financial Success Test: Measuring All Payer Rate of Growth

To calculate all payer financial success under the Model Design, Maryland will rely on HSCRC datasets with population numbers provided by Maryland's Department of Planning. As discussed in Section 6, in proposing a Model Design that addresses population health, it follows for Maryland to propose a per capita financial success test. A per capita financial success test drives the appropriate incentives as the deployed methods aim to provide effective and efficient care delivery for Maryland residents.

Figure 8.2 outlines the major datasets HSCRC will employ to monitor all payer rate of growth. Maryland will continue to house datasets for Model Design monitoring at the HSCRC. The HSCRC has collected these datasets for many years and applied these data in payment methodologies. Through years of collection and application, the HSCRC is confident that the data are robust and complete and we maintain appropriate infrastructure to house and analyze the data. HSCRC incorporates a large number of front end univariate and multivariate edit checks to identify incomplete or inconsistent data (e.g., missing required fields, dollars without units). HSCRC analysts conduct intra-hospital and inter-hospital congruency checks and reconcile quarterly between the financial and case mix data. In addition, HSCRC requires auditing of financial data annually through special audit processes established by the HSCRC and conducted by private accounting firms. We contract with a medical records auditing firm to review sampled inpatient and outpatient cases for complete and accurate coding. Reference Appendix B for more information on data security at the HSCRC.

Figure 8.2: Maryland Will Employ HSCRC Data to Monitor All Payer Financial Success

Dataset	Financial Monitoring Use	Collection Schedule	Data Lag
Unaudited financial data, monthly submissions	Rapid revenue trend monitoring	Monthly	One month from end of reporting period
Audited financial data, annual filing	Revenue trend monitoring	Annually	Four months from end of reporting period
Inpatient and outpatient case mix data	CMI monitoring, trends for out of state patients	Quarterly	Two months from end of reporting period
Maryland population (Provided by the Maryland Department of Planning)	Establish Maryland's population; potential for use in population attribution methods	Annually	Projections based on US Census

Financial Success: Measuring Medicare Rate of Growth

The methodology described in Section 6 explains how Maryland will constrain Medicare per beneficiary growth. To measure this financial success, Maryland will monitor Medicare claims and beneficiary data.

- **Datasets**: Test based on data sources available to both Medicare and Maryland. No black box. Publicly available data sources.
- **Collection timeline and data lags**: As addressed later in this section, Maryland requests that CMS provide the CMS beneficiary and claims data for Maryland on a timely basis. Currently, HSCRC receives claims level Medicare data via the ‘research use request’ route and is granted access to research identifiable data files. However, these datasets typically lag two years.
- **Data storage**: Maryland will house datasets for Model Design monitoring at the HSCRC. The HSCRC has a long history of safeguarding sensitive information, with procedures and protocols for secure physical and electronic storage and use. HSCRC will safeguard all datasets discussed in the Model Testing design. Reference Appendix B for more information on data security at the HSCRC.

Data Collection for Quality Monitoring

As indicated previously, for Phase I of the model, HSCRC has built a rich inpatient and outpatient administrative data submission and analysis infrastructure that mirrors the standard claims data set, and has worked with our sister Commission, the Maryland Health Care Commission (MHCC) to use established quality data collection and submission mechanisms for

both public reporting and payment purposes. These data are used to calculate results for the QBR, MHAC and readmissions reductions initiatives.

HSCRC undertakes several efforts and activities to ensure and validate the clinical and administrative data accuracy that serves as the basis for the QBR and MHAC initiatives, as well as to evaluate and update the programs' accuracy and relevancy.

- The MHCC oversees ongoing audit and validation activities of an audit contractor for the chart abstracted core process measures used for the QBR program.
- HSCRC monitors Present on Admission (POA) coding data accuracy and requires hospital data submissions to fit within the established thresholds, e.g., coding all diagnosis codes as POA is not permitted.
- HSCRC evaluates, on an ongoing basis, the accuracy of coding, especially POA, through hospital level screening tools (developed by Michael Pine & Associates) and targeted chart reviews (Optum Insight routine diagnosis code audit).
- HSCRC updates the list of PPCs included in the MHAC program every two years based on the statistical significance of additional cost estimates for each PPC using a regression analysis.

Maryland Seeks CMS Authority to Receive Data for Enhanced Monitoring

For both financial and quality monitoring purposes, Maryland requests that CMS provide timely Medicare beneficiary and claims data to Maryland at no cost. Foremost, Maryland requests quarterly data submissions from CMS (as opposed to annual data currently available) to monitor Maryland's performance and provide continuous program improvement.

Maryland has previous experience working with Medicare data. To evaluate and develop bundled payment initiatives, the HSCRC already requested and received Medicare claims level data via the 'research use request' route and is granted access to research identifiable data files. These files are helpful for developing methods and analyzing historic trends. We currently have access to the following files and years and we request future data updates to these files (or similar datasets) on a quarterly basis.

- Medpar National Calendar Years (CYs) 2008, 2009, 2010
- Beneficiary Summary File National CYs 2008, 2009, 2010
- Carrier File 5 % National Sample CYs 2008, 2009, 2010
- Carrier (MD Cohort) CYs 2008, 2009, 2010
- Outpatient SAF National CYs 2008,2009,2010
- Beneficiary Annual Summary File CYs 2008, 2009, 2010

Evaluating and Reporting Model Success

Financial Evaluation

Using HSCRC data, Maryland will evaluate the Model Design's financial success using a per capita cumulative rate of growth test. Maryland and CMS will compare Maryland's rate of growth to the hard expenditure ceiling as indicated in this Model Design application. In a similar fashion to current monitoring practices, the HSCRC will continue to monitor the financial condition of hospitals.

Maryland will make available to CMS the Maryland datasets and methodologies used for this financial evaluation. To evaluate Model Design's financial success for Medicare, Maryland and CMS will use a per beneficiary cumulative rate of growth test. CMS will make available to Maryland the CMS Medicare datasets and methodologies used for this financial evaluation.

While Maryland will report to CMS regularly during the duration of Model Design testing (discussed later in this section), CMS will judge financial success based on a cumulative evaluation in the Year 3 and Year 5 of Model Design Phase 1.

Establishing the All Payer and Medicare Rate of Growth

Employing the datasets discussed above, Maryland will establish the actual all payer and Medicare rate of growth during the duration of Model Testing. Figure 8.3 outlines the metrics Maryland and CMS will use in the financial evaluation for all payer and Medicare rate of growth.

Figure 8.3: Model Design Phase 1 Financial Success Evaluation

	All Payer	Medicare
Summary	Hospital inpatient and outpatient revenue per capita	Medicare fee-for-service hospital inpatient and outpatient spending per Medicare beneficiary
Denominator	Number of Maryland Residents	Number of beneficiaries residing in Maryland
Exclusions	<i>None</i>	<i>Any beneficiary enrolled in Medicare Advantage plans for at least one month</i>
Numerator	MD acute care hospital inpatient and outpatient revenue associated with Maryland residents	Inpatient and hospital-based outpatient spending for Maryland resident beneficiaries
Exclusions	<i>Rehabilitation Hospitals Psych Hospitals Chronic Hospitals Federal Emergency and Non-Emergency Hospitals</i>	<i>Rehabilitation Hospitals Psych Hospitals Chronic Hospitals Federal Emergency and Non-Emergency Hospitals Spending for beneficiaries who are excluded from the denominator</i>

	All Payer	Medicare
Adjustments		Number of beneficiaries is adjusted for the number of months they were enrolled during the measurement period
Test	Cumulative Growth Rate per capita calculated as (Total MD hospital inpatient and outpatient revenue as specified above/MD Population)	Cumulative Growth Rate Per beneficiary spending calculated as (Total Inpatient Spending/Weighted Part-A beneficiaries) + (Total Hospital-based Outpatient Spending/Weighted Part-B Beneficiaries) as specified above
Data Sources	HSCRC Financial Data Base and Hospital Discharge Abstract, Maryland Department of Planning Population Estimates	Confidential MEDPAR, Outpatient Standard Analytical File and Beneficiary Summary Files
Review Periods	Quarterly Reports and Annual Reports (lagged Approximately 90 days)	Quarterly and Annually Reviews (lagged approximately 90 days)

Notes: Text in red indicates outstanding decision points.

All Payer Rate of Calculation Caveats

Maryland will employ HSCRC’s financial data to provide gross patient revenue for the numerator in the all payer financial success calculation. However, the current financial reports do not distinguish between resident and non-resident revenue.⁸¹ Therefore, HSCRC will employ our patient-level case mix datasets to establish regulated charge ratios of resident and non-residents. HSCRC staff will apply these ratios to the financial revenue numbers to establish the numerator in the calculation. Note that Maryland cannot capture revenue for care provided to Maryland residents outside the state. Therefore, the all payer numerator differs from the numerator we have established for the Medicare calculation.

In routine Model Design monitoring, Maryland will rely on monthly financial data without adjustments for in- and out-of-state revenue as a proxy. This will provide Maryland the ability to manage the system in something close to real time. Analysis by the HSCRC indicates the appropriateness of proxy measures that are closely correlated with the performance of the system as measured by the appropriately defined population. We believe these data are a good proxy for monitoring the system over time, however, because in-migration and out-migration in recent years appears to offset and to be relatively stable over time (see Section 9 for in- and out-migration discussion).

⁸¹ HSCRC is reviewing the potential to require hospitals’ monthly financial data submissions to distinguish between revenue from in state and out of state residents.

Evaluating Model Design Success

As described in Section 6, success is meeting the budget target, which includes the hard expenditure ceiling, the lockbox savings, and appropriate underage adjustments, in Phase 1 Year 3 and Year 5. Because of the way the model is designed, financial success in Year 3 will accomplish the appropriate budget targets in Year 1 and Year 2 as well. Likewise, financial success in Year 5 accomplishes the appropriate budget target in all preceding years.

Quantification of Savings under Model Design

Maryland will quantify savings under Model Design by comparing the dollars associated with the current rate of growth to the actual rate of growth.

Quality Evaluation

We note that the QBR program utilizes as core measures the data that hospitals are already reporting to CMS, the Joint Commission and the state, and that are publicly reported by the MHCC on the Hospital Performance Evaluation Guide website.

The MHAC policy relies on administrative data hospitals report to the HSCRC that parallel the claims data submission. Utilizing the administrative data allows the HSCRC to measure performance on 65 preventable, hospital acquired conditions across most of the 314 APR DRG categories⁸² for all payers, rather than a sample of the hospital's Medicare patients. The MHAC program is based on a list of 65 Potentially Preventable Complications (PPC), a software product developed by 3M Health Information Systems. PPCs are identified based on the present on admission (POA) information on the hospital discharge abstract data set submitted to HSCRC. MHAC performance scaling and ranking of hospitals and allocation of rewards and penalties, calculated by HSCRC staff, is determined by two components: (1) incidence of complications and (2) amount of additional charges for each PPC.

Maryland proposes to report annually the quality and cost measure results for the QBR, MHAC and readmissions reduction programs with a specific focus on the progress in selected high priority PPCs. In Phase I of the model, Maryland will establish the data collection and analysis infrastructure for reporting the quality measures proposes across the care continuum that will be reported to CMS in Phase II of the mode.

Maryland Seek CMS Authority to Streamline Reporting

The Maryland performance initiatives linked with payment individually and taken together are advancing the quality of healthcare in Maryland by improving patient outcomes and reducing cost. In its annual reports to CMS on the QBR, MHAC and readmissions programs requesting

⁸² MHAC categorical exclusions include patients with HIV, major malignancies, and multiple trauma, and patients under 18 years of age.

and receiving individual exemptions from these programs, HSCRC has demonstrated the value that patients and payers are accruing as a result of these initiatives.

HSCRC desires to continue this progress as these programs will be incorporated into methods used in the model and will be continuously strengthened and evaluated for their effectiveness and outcomes/results. Therefore, as part of the Model Design, Maryland requests that reporting on our performance initiatives linked with payment be incorporated in the routine reporting to CMS as part of the model. Without inclusion of the reporting of these programs as part of the Model Design (and should CMS not grant an exemption from one or more of the programs in a given year), it is not clear how payment incentives would be applied under the CMS VBP, HAC and readmissions reduction programs in conjunction with those the model is concurrently implementing. Although there is no additional data reporting burden on providers, overlapping State and national payment reward and incentive programs would create difficulties for providers in managing their programs.

Reporting for Model Design Phase 1

Within one month of CMS' approval of Maryland's Model Design, Maryland will engage with CMS to finalize a reporting schedule for Model Design Phase 1. Maryland intends to report to CMS measures of patient experience, population health, and health care costs as described in Section 7.

Model Continuous Improvement and Remedies

Maryland understands that continuous feedback mechanisms build successful programs. Continuous feedback provides opportunities to enhance successful method components, while quickly correcting for unintended outcomes. While Maryland fully intends for Model success, this section also addresses remedies in the event that the Model is deemed unsuccessful at the close of the Model Design period.

Financial Continuous Improvement and Remedies

Continuous Improvement

Through monthly financial monitoring of system performance, HSCRC staff provides feedback to the HSCRC at the monthly public meetings. Regular financial monitoring by HSCRC staff provides early indicators of policy impacts. Based on feedback from staff, the HSCRC may implement course corrections, methodology refinement, and policy alterations. In the past, the HSCRC has also eliminated ineffective policies. Each time the HSCRC implements a new policy, the staff implements monitoring routines and provides process and outcome feedback on the impacts of the policy to the HSCRC.

The HSCRC also provides feedback to the hospitals and payers of care. For example, HSCRC staff provides feedback to hospitals identifying financial price compliance. Under this Model Design,

HSCRC staff will develop a feedback mechanism to provide per capita performance indicators for system and hospital-specific revenue.

Financial Remedies

If Model Design fails, Maryland and CMS would devise a schedule for smooth transition to national Medicare payment rules. Methods under this Model Design aim toward better population health. These methods incentivize the appropriate transition of low-acuity cases out of hospitals, thus increasing the average charge per admission for the remaining higher-acuity cases. As 1814(b)(3) evaluates financial success on a per case basis, the methods under Model Design have an indirect effect of potentially breaching the per case waiver evaluation. Therefore, under Model Design, CMS would not require payback based on provisions under the current 1814(b)(3) waiver.

Quality Continuous Improvement and Remedies

Since the inception of the QBR, MHAC and readmissions reduction performance initiatives, HSCRC has on a regular basis convened formal technical/clinical and payment work groups comprised of providers, payers, the Maryland Hospital Association staff, labor union representatives and other interested stakeholders to ensure that Maryland's initiatives reflect local priorities for health care improvement, are not causing unintended consequences, and are ultimately achieving our goals of patient experience and health outcomes improvement, while decreasing cost. The work groups review and achieve consensus on changes to the measures, key methodology components, and payment reward and penalty magnitudes and scaling options. HSCRC will look to include additional consumer representatives on these groups going forward. The Work Groups also discuss changes to the related Medicare programs as well as other state and federal priority measures and initiatives. Staff evaluates and recommends to the Commission initiative modifications to ensure that any recommended changes maximize efficacy by targeting procedures of high cost, and/or frequency, or necessity for improvement.

Continuous Improvement

The HSCRC takes steps each year to provide timely data to hospitals, which are useful and actionable in quality improvement, as well as to the public. Examples of these activities are outlined below.

- HSCRC provides quarterly reports to each hospital with their total count of each PPC, ranking in the state, and case level information.
- HSCRC and the MHCC publish data on the QBR and MHAC Programs on their websites.

Phase 1 to Phase 2 Transition

In Model Design Phase 2, CMS will evaluate Maryland's financial success through a total cost of care test. To implement this, Maryland is in the process of developing a robust and timely all payer database.

Section 9. Assumptions and Limitations

This section of the proposal lays out a series of important contexts in which the model should be considered. Included are discussions of underlying assumptions, general strengths of the model, and weaknesses/risks. Finally, there is a discussion of various contingencies that could occur, with consideration of how and when revisions should be made to the model in response to challenges that cannot be anticipated or quantified at this time, but that would affect not only the success of the model, but also Maryland's health care system in general.

Model Design Assumes Federal Authority

The major underlying assumption that should be clearly understood is that the financial modeling in this Model Design assumes CMS will grant Maryland authority to engage in initiatives such as ACOs and bundled payments. The state has taken care to request the minimum authority that we believe will be needed to afford the flexibility necessary to meet the goals outlined herein; any alterations to these authorization requests may require changes to the modeling assumptions.

Strengths Underlying the Model

The strengths of our model are: (1) a clear analytic framework recognizing the need to transition from a volume-driven system to a value-driven system in an expedited fashion; (2) more than three decades of experience with public/private cooperation and federal/state cooperation; (3) the authority and ability to implement change rapidly, through such mechanisms as the Alternative Method of Rate Determination (ARMs) providing a foundation for the state to review and approve shared savings models, and the Total Patient Revenue (TPR) payment arrangements; and (4) a track record of building consensus across payers to achieve maximum leverage for implementing change. Following are discussions of specific strengths related to these overarching concepts.

All Payer Model Does Not Rely Upon Cost Shifting

Many so-called cost savings approaches are really cost-shifting arrangements—federal to state or vice-versa, public to private sector, or employer to employee. These policies do not address the underlying cost drivers in the system, such as poorly managed chronic illness, excessive and inappropriate use of services, the inability to assess the value of advanced medical technology, work force shortages, and cost-generating payment models. Our model does not shift costs, but drives change in the delivery of care, redirects people away from higher-cost settings and provides them with a regular source of primary care, and reduces threats to patient safety. This translates into system-wide savings that will benefit Medicare at the same time as it produces savings for Medicaid, state employee benefits, and private insurance.

Per Capita Testing Supports Reductions in Admissions

Unlike a per case test or even readmission reduction efforts that rely on the presence of an initial admission, the per capita test creates incentives to actually reduce inpatient admissions in the first place, across the full population.

Unified Policy Goals Produce Strong Financial Incentives

Generally speaking, health reform in the U.S. proceeds with each payer conducting its own set of initiatives, with little if any coordination. Self-insured employers proceed one way, health plans another, while Medicaid makes greater use of managed care and tries to focus on the highest-risk patients such as dual eligibles, the frail elderly, and the non-elderly disabled population. Each payer asks providers for different quality metrics, and hospitals are frequently overwhelmed with multiple demands. In contrast, our model features multi-payer cooperation and integrated reforms across the whole system. We will get Medicaid, state employee programs, major carriers, and large employers on the same page. This will help drive change in the delivery of care, in particular toward the use of team-based care and following patients across sites of care, along with redirecting patients using ERs for non-emergent care to a medical home.

All Payer Model Avoids Price Distortions

An all payer system such as in Maryland greatly limits price distortions that may arise as providers, particularly hospitals, shift away from certain health services (for example move away from Medicaid - heavy services). Our all payer system helps get providers competing on the basis of reducing the underlying cost of care rather than over-pricing some services to cross-subsidize other services.

Regulations of Charges Provides Equity for Self-Paying Individuals

Self-paying individuals (the uninsured) have virtually no collective negotiating power. In other states, the uninsured may be the only patients leaving a hospital or a physician's office paying full or close-to-full charges, while others benefit from huge discounts negotiated by their health plans, or from the payment rates in public programs that are below commercial rates. In Maryland, hospitals are required to charge the same for all parties.

Strong System for and History of Public Disclosure

Price transparency is key to a competitive market. Yet in prevalent systems around the US, hospital prices bear little or no resemblance to actual costs. Many items are highly inflated to help the hospital recoup the cost of services with no clear 'business model' but that are vital to the community, such as helicopter services, burn units, and of course, teaching in academic medical centers. Our system of full disclosure can also help purchasers, public and private, make informed comparisons across providers. We can also match prices with quality and safety metrics to foster value-based purchasing.

Weaknesses and Risk Underlying the Model

There are several challenges to the model.

Stringent Model Expenditure Targets

Maryland has set tight targets for slowing the growth of health expenditures. Success will require substantial efforts across the health care system.

Demonstration Phase 1 Does Not Account for All System Costs

We proceed in two phases, and by design the first phase will not provide the mechanism for controlling system-wide costs. However, we think that setting a tight goal in Phase 1 for both inpatient and the regulated outpatient sector—a large chunk of total spending—will pave the way for our later endeavor to encompass all services. This latter phase will not only control what goes on inside the hospital and outpatient care, but create strong incentives to keep people from entering the hospital where possible, and from returning due to frequently avoidable complications. Our first phase will help us develop methods and monitoring tools, such as an all payer database.

Improvements in Outcomes Requires Hospital Culture Change

Achieving better health outcomes will require a culture change in hospitals, and for that matter, across the health care delivery system. The prevalent silo-based models of the past led to a business model based on managing within your own system's walls and not paying too much attention to what occurs outside of those walls. The issue of readmission is a good example. Strictly from a revenue and profit standpoint, higher readmissions in some cases could be beneficial to a provider. But under the new model hospitals that contribute to reductions in total spending will share in the rewards, whether through ACOs, bundled payment arrangements, or global payments. This will require a new mindset.

Model Assumptions Regarding In and Out Migration Between Rebasing

Maryland experiences a portion of residents receiving hospital care outside the state, while experiencing an in-flow of non-Maryland residents receiving care at Maryland hospitals. HSCRC analysis of Medicare data across time demonstrates that in- and out-migration are fairly balanced and stable across time. Figure 9.1 displays inpatient hospital services in- and out-migration across a three-year period. The Maryland all payer model and subsequent financial modeling assumes that the impact of in-migration of non-Maryland residents and out-migration of Maryland residents for hospital services is balanced and does not impact financial projections. Maryland will monitor in- and out-migration patterns over the course of this demonstration. Substantial changes of in- or out-migration patterns would require CMS and the state to further consider the impact on Model Design.

At points in which the state and CMS rebase the financial models, the state and CMS may account for changes due to in- and out-migration.

Figure 9.1: Inpatient Hospital Services Migration

Resident Status	CY2008	CY2009	CY2010
In Migration-Number of Patients	21,658	21,622	21,876
Out Migration-Number of Patients	24,140	24,581	24,268
Resident-Number of Patients	259,845	256,051	254,017
Number of MD Resident Medicare Enrollees*	744,564	764,123	784,770
In Migration-Total Payments	\$303,989,954	\$304,347,329	\$316,147,978
Out Migration-Total Payments	\$307,661,348	\$320,106,696	\$315,418,188
Resident-Number of Payments	\$2,867,735,874	\$2,881,908,947	\$2,932,078,202
Per Capita Medicare Spending-Facility	\$4,260	\$4,170	\$4,139
Per Capita Medicare Spending-Resident	\$4,265	\$4,190	\$4,138

Source: Medicare Medpar Files, CMS Medicare & Medicaid Statistical Supplement

Contingencies Necessary to Protect Against Major Alterations from the Base Trend

Managing to projections does not account for unexpected or unpredictable events, and we recognize the need to take unforeseen events into account. We discuss contingencies below.

Contingencies

Building upon the discussion and contingency agreement in Section 5, this section addresses potential exogenous factors that may impact the drivers of volume and price outside of the demonstration methods. Contingency planning acknowledges and attempts to mitigate risks of unpredictable and unforeseen events.

In Phase 1 of this demonstration, the State of Maryland will manage inpatient and outpatient hospital expenditures under a pre-determined growth trajectory. As a result, the past trends would not account for unforeseen events that would unexpectedly increase per capita costs beyond what the state could reasonably be expected to manage.

In modeling for this demonstration, we assume that the health care supply, demand, and marketplace practice are relatively stable and consistent with those used for establishing the base growth rate. Below we have organized examples of events that may impact this demonstration into supply, demand, and health marketplace practice alterations.

Supply Alterations

This demonstration assumes access to health care services such as those provided by hospitals, physicians, and other health services providers will be similar to the base period. We also

assume that financial incentives set forth under this demonstration will drive some supply alterations (such as increases in primary care providers and increases in home health resources), which will support transition of care to most appropriate settings. Major alterations in supply, such as large-scale physician departures from the state, unforeseen service stoppage from a provider with near market saturation, or other supply disruptions may require enactment of the contingency agreement. This includes large-scale disruptions that may occur nationally or regionally.

Demand Alterations

This demonstration also assumes relatively consistent per capita demand, with some demand transitioning out of more expensive care settings. Over multiple years/demonstration periods, as our delivery and payment system reforms are implemented, we expect the growth in per capita health spending to decline, particularly as a result of fewer ambulatory-sensitive ER visits, hospital admissions, and readmissions. This will not happen immediately but should unfold gradually over time. However, demand alterations may occur such as:

- Health reform: Changes occurring due to health reform will bring coverage increases. Medicaid enrollment will begin increasing in October 2013, with people entering the program in January 2014. The impact of health reform on short-term demand is difficult to predict. As more individuals gain coverage for routine care, their use of uncompensated care and preventable hospitalizations should decline.
- Natural disaster, terrorist attack: could strain hospital system and other services.
- Large-scale health outbreaks, pandemic: pressure on entire delivery system.

Health Marketplace Practice Alterations

The GSP trends set forth in this demonstration application assume that the costs associated with medical and technological advancement continue at a similar growth rate as in the base period. Major unexpected shifts, such as pharmaceutical, biotechnology, and medical device breakthroughs or other health advances that fundamentally alter the care delivery paradigm could add unforeseen costs, and this may require enactment of the contingency agreement.

Contractual Components and Legal Limitations

The demonstration creates a new payment model under which Medicare continues to waive the reimbursement methodology described in Section 1886(d) of the Social Security Act as the Inpatient and Outpatient Prospective Payment System, and replaces that methodology with the model payment methodology adopted by the State of Maryland and approved by the Secretary. In addition, due to the difference in payment methodologies, the existing agreement with respect to Recovery Audit Contractors (RAC) auditors would remain in effect – e.g., RAC auditors would not have the authority to review the application of DRGs to an inpatient stay.

The demonstration otherwise would not affect Medicare coverage determinations or requirements with respect to hospitals filing cost reports, and the ability of the federal government to audit them.

Except for the difference in the model, and the specific authorizations described in this document, all other Medicare rules and regulations and policies would remain in effect and continue to apply to Maryland healthcare providers.

Fraud and Abuse Compliance

Maryland acute care hospitals under this Model Design approach remain subject to all federal laws, but not including: (a) the payment methodology for inpatient and outpatient hospital care; (b) those exceptions granted by the Secretary with respect to bundled payment authorized under Section 3021 of the Affordable Care Act; and (c) an exception for payments approved by the Health Services Cost Review Commission. Under this exception, a hospital would share with other providers some of the reduced costs or increased efficiencies that it is able to achieve, which 'gainsharing' might otherwise be prohibited under section 1128A of the Social Security Act (42 U.S.C. 1320a-7a), as a payment intended to induce a physician to reduce or limit services to a patient entitled to benefits under Medicare or a State plan approved under title XIX of such Act.

Other than as described above, all acute care general hospitals in the state remain subject to all other state and federal laws governing the activities of hospitals, including licensure, conditions of participation, HIPAA, the Anti-Kickback Statute, the federal and state physician self-referral statute, the state and federal False Claims Act and the Civil Monetary Penalty Act. The State of Maryland will oversee any exceptions to any of these statutes that may be granted by CMS and coordinate as requested with CMS, the Office of the Inspector General of the Department of Health and Human Services, the Medicaid Fraud Control Unit and the Maryland Office of the Attorney General, and the US Department of Justice. The State of Maryland commits to taking such reasonable actions within its control and jurisdiction to cooperate fully with respect to any such exceptions, and to file an annual report to CMS identifying all actions taken and investigations performed with respect to the grant and oversight of any such exceptions.

Finally, the demonstration would establish a joint state-federal approach to the evaluation and approval of proposals intended to reduce the cost of health care, under which the state, through its regulatory processes, would initially evaluate each proposal and then submit those that it approves to CMS for its consideration.

Section 10. Operational Considerations and Implementation

Synergies with Present and Future Federal and State Programs

Although statutory authority provides the HSCRC with broad regulatory power over Maryland hospitals, the HSCRC has limited purview over other healthcare settings. Embracing an integrated health system, such as population-based health under this Model Design, will require coordination among multiple federal, state and private programs, as well as partnerships at the federal and state level. It is important that stakeholders align programs to ensure all efforts are working for a common goal. The Model Design described in this proposal complements many of the existing programs at the federal and state level. The following section describes how federal and state agencies and programs will support and benefit from the Model Design.

State Innovation Models (SIM)

The State of Maryland was awarded a State Innovation Models (SIM) Model Design grant by the CMMI in February 2013 to develop a State Health Care Innovation Plan (SHIP). Although Maryland recognizes that there will be significant stakeholder involvement during the design phase, in the proposal Maryland described its current vision: a transformed health system that integrates patient-centered primary care with innovative community health initiatives. The four pillars of this vision are (1) primary care, (2) community health, (3) strategic use of data, and (4) workforce development.

The centerpiece of the SHIP is a new statewide Community Integrated Medical Home (CIMH) program. The CIMH utilizes the patient-centered medical home (PCMH) model of increased access and care coordination and links it with expanded community health resources across localities in Maryland. Through the use of case management by the CIMH practice and community health workers, patients will be linked to appropriate preventive, disease management, and other supplemental services between their visits to their CIMH primary care physician. Care managers and community health workers will also coordinate with hospitals to link patients to appropriate community-based supports that will help reduce readmission rates.

Moreover, using new geographic information system (GIS) mapping tools that make use of admission, discharge and transfer data and other data from CRISP, the community health workers will be able to identify areas at a city block level that have high rates of readmissions, long lengths of stay, high utilization, and other indicators of inefficient care. These data and maps would be available for various health care conditions, including cardiovascular and other chronic diseases.

These community health workers would be employed by local health improvement coalitions, which include hospital executives, physicians, local health officers, and other local health

leaders and cover all Maryland counties. Notably, these coalitions are held accountable to meeting community health target measures through the Maryland State Health Improvement Process. With overlay maps of social and economic determinants of health available as well, these coalitions can develop targeted interventions to address both proximal and distal determinants of poor health outcomes and inefficient health care utilization.

The CIMH reinforces the underlying incentive structure and delivery system changes being proposed in this application. At a broad level, having community health workers that are employed by the local health improvement coalitions – which represent all local health care stakeholders – creates a shared asset that will help align efforts across settings. The CIMH will interact with Phase 1 of the new model by improving care coordination and providing community-based supports that will help prevent admissions and readmissions. In instances where admissions and readmission are necessary, lengths of stay may be reduced due to improved care coordination and availability of resources.

As ambulatory care is incorporated in Phase 2, CIMH and the new waiver model will be fully aligned. With care managers in CIMH practices and community health workers available, care coordination – often difficult in these settings – will be facilitated and incentivized. Community-based disease management and other supplemental services, which will also be facilitated by CIMH, may supplant unnecessary utilization in ambulatory settings. The payment changes proposed in this application will help encourage primary care physicians to refer their patients to these community supports, which reinforces the CIMH approach. Ultimately, the integration of the public health system with both inpatient and outpatient care will be necessary for the capitated/global budget payment system to function without limiting patient options.

Medicaid and CHIP

As discussed in the previous section, the CIMH program will move away from a medical model for improving health to a personalized, team-based approach in the primary care practice that is integrated with an enhanced community health infrastructure. Considering that CIMH program expands across all payers, Maryland Medicaid is an integral component to the overall effort. The program covers currently over 1 million individuals, and this number is expected to grow by close to 187,000 with the Affordable Care Act (ACA).

Throughout the process of developing the SHIP, Maryland has remained committed to leveraging all of benefits at the state's disposal, including the Maryland all payer hospital waiver. Without the right incentives in the hospital setting, Maryland will be unable to move away from a medical model. Maryland's proposed all payer hospital rate regulated system encourages payment reforms that focus on the entire care provided in the hospital setting, not just exclusively on an inpatient stay. The Medicaid and CHIP programs will benefit from Phase 1 of the model through the reduction in utilization of inpatient services for its beneficiaries, as

well as a reduction in costs associated with hospital admissions. The second phase of the model will benefit these programs by providing a mechanism for improving health outcomes through appropriate linkages to less costly preventative and disease management services.

Maryland wants to ensure that our hospital payment incentives control hospital volume growth, encourages lower cost settings, and prevents cost shifting across payers. Put simply, our laudable performance and outcomes goals under the CIMH will not be achieved without revisions to Maryland's all payer hospital system.

Center for Disease Control (CDC)

Maryland receives several grants from the Center for Disease Control (CDC) that contribute to the integration of public health and health care systems, which is key to reducing the burden of chronic diseases, improving overall population health, and reducing health care spending. These grants complement other state efforts and the plans outlined in this application.

CDC-funded public health programs include Chronic Disease Control, Coordinated Chronic Disease Prevention and Health Promotion, and Diabetes Control programs. These grants fund efforts to reduce disease and disability through prevention, assessment, and health promotion programs. The programs promote and guide the implementation of stroke, diabetes, and chronic disease prevention services in Maryland, working closely with multiple stakeholders including local health departments, the Maryland State Department of Education, the Governor's Advisory Council on Heart Disease and Stroke, the American Heart Association, the American Diabetes Association, professional societies, and other community groups.

This funding has also been used to establish statewide data collection and an analysis and surveillance system that allows for information sharing on the burden of chronic diseases in Maryland. The goal of these programs is to improve health outcomes for individuals at high risk for developing chronic disease through health promotion/disease prevention education, early detection, follow up monitoring, and counseling for high risk persons, minorities and the medically underserved. These programs help reduce the burden of some of the state's most costly health outcomes. In addition, the Community Transformation Grant supports statewide and community efforts to reduce chronic diseases in 19 of Maryland's smaller jurisdictions, with a total population of 1,900,000 residents.

Other chronic disease prevention efforts focus exclusively on tobacco. The CDC grant for Core Capacity Building for Tobacco Use Prevention is being used to build and support core tobacco use prevention capacities within Maryland, supplementing (and not supplanting) state-supported tobacco use prevention initiatives as well as non-governmentally supported programs. This project provides funding for core staffing and expertise, technical assistance to local and statewide tobacco use prevention and cessation programs, training and support for

community groups and coalitions, as well as additional statewide resources including support of the Quitline and statewide resource centers.

These CDC funded initiatives are vital to promoting healthy lifestyles and preventing chronic disease. By providing a robust public health prevention infrastructure in Maryland, these efforts help establish the public health infrastructure that is the keystone of the Community-Integrated Medical Home. Moreover, the focus on community-based prevention will complement the implementation of Phase 1 by helping reduce hospitalizations among those with chronic diseases, who tend to be the most costly to the health care system. At the same time, data collection and surveillance allows public health leaders to monitor progress and allocate resources more effectively. Moving into Phase 2, these CDC-funded prevention, health promotion and disease management activities will be integrated into the primary care setting through the CIMH, with community health workers and care managers providing the link between these public health programs and medical care for patients with chronic disease. By creating financial incentives for all providers that align closely with the goals of these public health programs, Maryland will be well positioned to meet the three-part aim.

CMMI Care Innovation Awards

Maryland has been granted a number of Health Care Innovation Awards from the Center for Medicare and Medicaid Innovation (CMMI), totaling \$49.1 million. Two of the larger projects include:

- Expansion of CareFirst's Total Care and Cost Improvement Program (TCCI), a Patient-Centered Medical Home model of care delivery and payment to 25,000 Medicare beneficiaries in Maryland per year. This approach aligns with the Model Design proposal in that it will enhance support for primary care physicians to coordinate care for multi-chronically ill Medicare beneficiaries and patients at high risk for chronic illnesses, while reducing avoidable hospitalizations, emergency room visits, and other problems caused by gaps in care.
- Johns Hopkins University, in partnership with the Johns Hopkins Health System and its member hospitals, as well as other stakeholders, received funding to create the Johns Hopkins Community Health Partnership, a comprehensive and integrated program designed to increase access to services for high-risk adults in East Baltimore. The intervention improves care coordination across the continuum, providing services such as patient education, interdisciplinary care planning post-discharge support and home care services; all of which complements the model demonstration proposal.

Both CareFirst and Johns Hopkins Health System have been engaged in the development of many of HSCRCs methodologies and will continue to play an important role under this Model Design approach.

Program Management Plan Outline

Department of Health and Mental Hygiene

As the state's health agency, the Department of Health and Mental Hygiene (DHMH) is the lead state partner working with the Center for Medicare and Medicaid Services and other federal agencies. The Department will work collaboratively with the HSCRC, Maryland Health Care Commission, hospitals, physicians, payers, and other key constituencies to effectively implement this model.

Mission

The Department's mission is to improve the health status of Maryland residents and to ensure access to quality health care. The Department pursues this mission directly through key programs and indirectly through partnerships with the private sector.

Administration

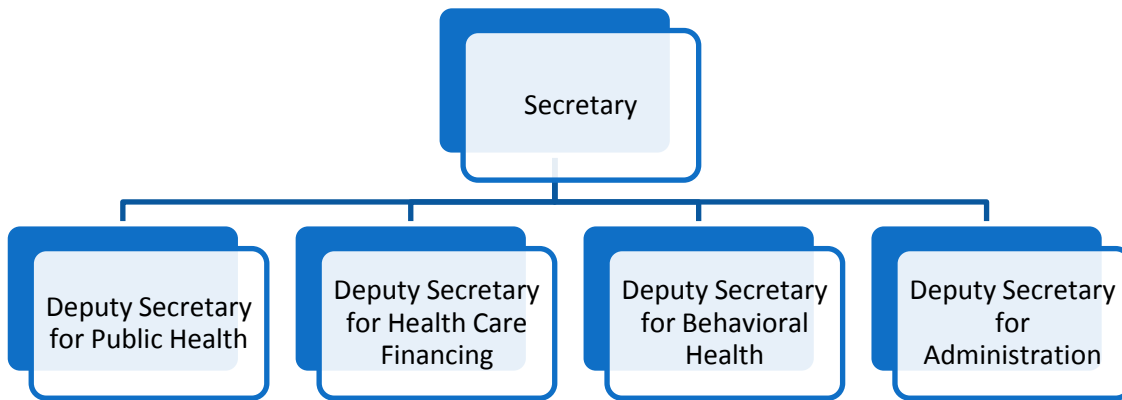
The Department is organized according to major divisions, each headed by a Deputy Secretary (Figure 10.1).

The Secretary of the Department is Dr. Joshua M. Sharfstein, the former principal deputy commissioner of the U.S. Food and Drug Administration and former Health Commissioner in Baltimore City. Dr. Sharfstein has worked closely with the staff and leadership of the HSCRC to develop this proposal.

The Deputy Secretary for Health Care Financing is Charles Milligan, one of the most respected Medicaid directors in the country. Mr. Milligan oversees the Medicaid program in Maryland and will be an integral participant in the model's implementation.

The Deputy Secretary for Public Health is Dr. Laura Herrera, a former senior public health administrator with the National Veterans Administration. Dr. Herrera oversees a broad range of public health programs as well as Department efforts to integrate the health care system with public health objectives. She is also the lead for the State Innovation Model design process. With respect to the proposed model, Dr. Herrera's public health team will work closely with the HSCRC to align the two parallel efforts. The team will also assist in the development of public health outcome measurements, including measurements of health disparities, for evaluation.

Figure 10.1: Organization of the Department of Health and Mental Hygiene



The Deputy Secretary for Behavioral Health is Dr. Gayle Jordan-Randolph, a child, adult, and forensic psychiatrist. Dr. Jordan-Randolph oversees the Mental Hygiene Administration, the Alcohol and Drug Abuse Administration, and the Developmental Disabilities Administration in Maryland. With respect to the proposed model, she will consult on the behavioral health aspects, such as how to provide appropriate incentives for integrated care across different levels of care.

The Deputy Secretary for Administration, Thomas Kim, oversees facilities, human resources, and budget. His office will assist in the logistical operation of the model as needed.

Budget

The Department's total budget in FY 2013 is \$10.0 billion, of which \$5.2 billion is federal funds. The Medicaid program's FY 2013 budget is \$7.1 billion.

Constituencies

The Department relates broadly to a wide range of constituencies, including health care providers, community health agencies, and the general public. One example of this broad public engagement is the Department's State Health Improvement Process (<http://dhmh.maryland.gov/SHIP>). Based on public comment, the Department identified 39 measures of health for the state and empowered 17 local planning coalitions with resources and the mandate to make progress. Each coalition includes the health officer, hospital leadership, physicians, private companies, the school systems, and others.

Assistance to Model Design

The Department has been fully engaged in the development of the proposal and is fully committed to the successful implementation of this model.

The Medicaid program is supportive of the model's focus on the three-part aim and will see better health for enrollees and savings as the goals are achieved. Medicaid will participate actively in the HSCRC processes for receiving input from key public and private payers. The public health team also sees tremendous benefit from the model's focus on population health; the team's strategic focus on integrating public health and clinical activities aligns perfectly with the goals of the model. Support from both programs will include technical assistance, data as needed, participation in relevant workgroups, and other types of support for HSCRC's role.

The Secretary of the Department of Health and Mental Hygiene will continue to work with the Governor's office, legislative offices, and leadership in key stakeholder organizations to explain the new model and support its implementation.

Maryland Health Care Commission

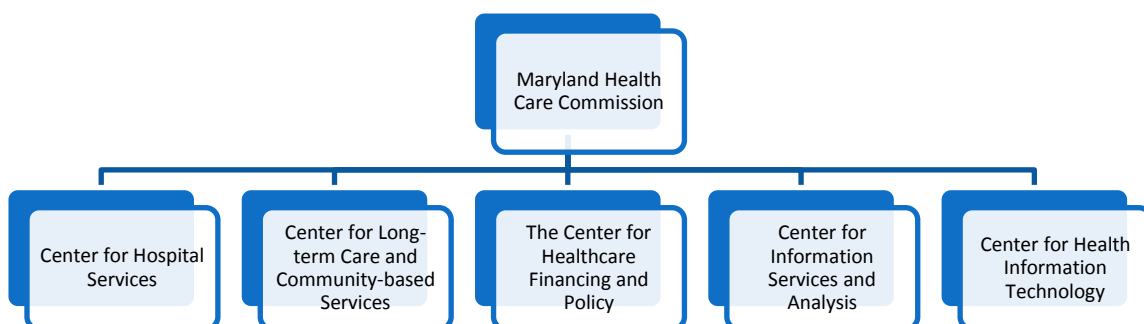
Mission

The mission of the Maryland Health Care Commission (MHCC) is to plan for health system needs, increase accountability, and improve access to cost effective services. MHCC pursues this mission through information gathering and dissemination, health policy analyses, regulatory authority and health planning.

Administration

Maryland Health Care Commission is an independent state agency within the Department of Health and Mental Hygiene. Its fifteen Commissioners, appointed by the Governor with the advice and consent of the Senate, represent both the state's citizens and a broad range of other stakeholders. The Chair of MHCC, Dr. Craig Tanio, is a former principal at McKinsey & Company and is now Medical Director at JenCare Neighborhood Medical Centers, an innovative managed care organization recently organized to serve the health care needs of seniors including Medicare beneficiaries.

Figure 10.2: Organization of the Maryland Health Care Commission



The MHCC is organized into five centers that focus on evaluating, regulating or providing guidance to health care providers and payers (Figure 10.2). Through its authority in Maryland law, MHCC utilizes an array of tools such as data gathering, public reporting, planning and regulation, to improve quality, address costs, and increase access.

The Center for Hospital Services and the Center for Long-term Care and Community-based Services focus on provider organizations, bringing together expertise and tools to address cost, quality, and access in those sectors of our health care system. The Center for Healthcare Financing and Policy deals with broad policy issues relating to the organization and financing of health care services as well as issues relating to the regulation of the small group health insurance market.

The Center for Information Services and Analysis conducts broad studies using both Maryland databases and national surveys, but also has specific responsibilities relating to physician services. The fifth center, the Center for Health Information Technology, has responsibilities that cut across sectors to facilitate the adoption of electronic health records and to enable the private and secure transfer of personal health information among sectors.

Budget

The MHCC's projected budget for FY 2014 is \$31,336,487, of which Operations account for 40 percent of the budget (Figure 10.3). The remaining 60 percent of the projected budget is allocated to MHCC initiatives: the Maryland Trauma Physician Services Fund, used to compensate physicians for providing uncompensated care to uninsured trauma patients; the Maryland Emergency Medical System Operations Fund; the Health Care Coverage Fund/Maryland Health Insurance Partnership Program, a health insurance subsidy program for micro employers; and Health Information Technology Initiatives. About 35 percent of the FY 2014 operating budget funds the 62 permanent staff positions and administration operations of MHCC. The remaining operating budget funds contracts that support MHCC's mandated requirements.

Figure 10.3: MHCC Projected FY 2014 Budget

MHCC Expenses	FY 2014 Projected
Operations	\$12,509,727
Maryland Trauma Physician Services Fund	\$12,300,000
Maryland Emergency Medical System Operations Fund	\$3,000,000
Health Care Coverage Fund/Maryland Health Insurance Partnership Program	\$2,600,000
Health Information Technology Initiatives	\$926,760
Total	\$31,336,487

Similar to the HSCRC, the MHCC's \$12.5 million operating budget is 100 percent special funds based on assessments of hospitals, nursing homes, private payers, and most health occupations licensed in Maryland. Each sector contributes to the MHCC budget consistent with staff workload associated with that sector. The workload analysis that is the basis for the assessments is re-estimated every four years.

Constituencies

The Commission's activities focus upon collaborative initiatives related to broadening Marylanders' access to high quality and cost effective health care services. Particular attention is given to areas such as access to health care services, quality and patient safety, innovative health care delivery, health information technology, and information for Maryland policymakers. The Commission's constituencies are Maryland residents and employers, as well as payers and health care providers (listed below) that are in the Commission's statutory and regulatory purview:

- acute care and specialty hospitals
- clinicians
- long term care facilities
- ambulatory surgical facilities
- commercial and public payers for health care services

Under the leadership of Chairman Craig Tanio, MHCC has committed to working with stakeholders to better align payment incentives with desired outcomes, while containing costs and stimulating linkages among providers, health care payers, and purchasers.

Collaboration with HSCRC on Model Implementation

Collaboration between MHCC and the HSCRC is mandated on four primary health system functions:

- health system planning
- performance and quality reporting
- payment and delivery reform
- health information technology adoption

Formal responsibilities in Maryland statutes are reinforced through longstanding and routine collaboration. Specifics of the collaboration as it relates to the model and the four primary health systems functions are described below.

Health System Planning

MHCC's longstanding collaboration is anchored in health system planning. MHCC develops policies and standards contained in the State Health Plan for Facilities and Services ('State Health Plan' or 'SHP') which address acute care general hospitals and other providers of acute and ambulatory care services. These policies and standards provide the foundation defining Maryland's approach for determining need for additional medical surgical inpatient services, pediatric inpatient services, obstetric inpatient services, and ambulatory surgical services. In addition to the broad capacity planning for the hospital industry, MHCC plans for specialized services in the areas of cardiac surgery and percutaneous coronary intervention (PCI), organ transplant, neonatal intensive care, and burn intensive care services. In developing chapter updates to the State Health Plan, MHCC routinely consults with the HSCRC.

The Certificate of Need (CON) program, administered by MHCC, involves the regulation of the supply and distribution of certain types of health care facilities and services, including hospitals. In general, the following types of capital projects require CON approval by MHCC before they can be implemented:

- Establishment, relocation or a change in the bed capacity of a health care facility.
- An increase in the number of operating rooms in a general hospital.
- Introduction of hospital-based cardiac surgery, percutaneous coronary intervention, organ transplantation, burn intensive care services, acute medical rehabilitation, or neonatal intensive care services by an existing health care facility.
- A capital expenditure by or on behalf of a health care facility, for any purpose, that exceeds a threshold established in law. Currently, that threshold for 2013 is \$11.35 million for hospitals (annually adjusted for inflation).

By regulation, MHCC currently considers the following criteria in reaching its decision: need, cost-effectiveness, viability, and the impact of proposed projects. To support the demonstration model, MHCC would require health care facilities to demonstrate that their capital projects are viable without reliance on continually growing service volume. MHCC would also have to establish regulatory policies that incentivize health care facilities to actively participate, with payers, practitioners, and other facilities, in financing and delivery models that reward more judicious use of the most expensive facility-based diagnostic and treatment services.

Health planning and the CON program, in conjunction with rate setting, offer effective policy tools for guiding provider behavior. During the model demonstration period, MHCC will test innovative CON approaches that, when combined with payment system changes and incentives that reward providers for high-quality care, may be the most effective in slowing spending growth and stimulating quality improvements. The CON program would support the success of

the demonstration model by considering the goals and objectives of the demonstration in its decisions to approve or deny health care facility capital projects. This can be achieved formally, through State Health Plan regulation, and informally, through the information obtained in project reviews.

Performance and Quality Reporting

In the Quality-Based Reimbursement (QBR) Initiative, HSCRC adjusts hospital reimbursement rates depending on each hospital's achievement or improvement on specified quality-of-care measures. MHCC and HSCRC collaborated closely in the development of the QBR program on the selection of the quality process measures. Additionally, MHCC annually reports Process of Care Quality, Outcome and HCAHPS measures to the public on the Hospital Performance Evaluation Guide (HPEG) website. The measures currently used for the QBR program are aligned with process of care and HCAHPS measures reported on the HPEG. Going forward, MHCC and HSCRC are aligning their measures used for reporting and payment adjustments with the process, outcome and HCAHPS measures used by the CMS IHQR and VBP programs. MHCC has played, and continues to play, a key role in the development and vetting of the QBR program methods and measures.

Payment and Delivery System Reform

High-quality primary care is one key to achieving the savings necessary to succeed under new payment mechanisms envisioned under the model demonstration. Planning and investment in advanced models of primary care, described below, are under way and will be ready for broader diffusion as the model launches.

In 2010, MHCC was charged by the Maryland General Assembly to establish a program that promotes the development of patient centered medical homes by adopting standards, forms and processes with consultation of stakeholders. Since the inception of the pilot program, 'Maryland Multi-Payer Patient Centered Medical Home,' or 'MMPP,' in 2011:

- 52 practices achieved NCQA Patient-Centered Medical Home (PCMH) Recognition Level I or better, with two-thirds of the practices achieving Level II or III;
- 52 practices submitted quality measure data to the Commission using electronic health records or registries;
- Medicaid funding for participation in FY 2012-2013 increased from \$1.5 to \$2.9 million; and
- The Shared Savings Methodology, for participating practices and commercial health insurance carriers, was confirmed using 2009-2010 data.

In the first year of the program, 23 of the 50 practices that met all requirements for shared savings were able to lower the total costs of care for privately insured patient attributed to the practices (Figure 10.4). Although total savings was modest, practices in the program were quick to point out that many PCMH programs in other parts of the nation were not able to show any savings in the first year.

Figure 10.4: MHCC Maryland Multi-Payer PCMH Program: First Year Shared Savings

Achieved Shared Savings	Total # of Practices	By Type of Practice		
		Pediatric	Adult	Both
Yes	23	1	6	16
No	27*	5	7	17

Note: 3 practices sites from one organization were considered as a single entity for shared savings computations, therefore the count of practices by practice type will not sum to the '# of practices' in the final row.

Health Information Technology Adoption

Capital investment in health information technology is essential to the success of the demonstration model. Interoperable electronic health records enable communication and coordination among providers; clinical decision support systems promote adherence to evidence-based practices; and patient registries support population health initiatives, chronic disease management and quality improvement. Ultimately, health information technology is also needed to measure provider performance and manage utilization and costs. MHCC and HSCRC have worked collaboratively in planning the establishment of a statewide health information exchange for Maryland hospitals. HSCRC provided \$10 million in initial grant funding for the Chesapeake Regional Information System for Our Patients (CRISP), the organization designated by the state to develop a Maryland-wide health information exchange. Under the state's strategy for diffusion of health information technology, MHCC provides ongoing technical direction and oversight to CRISP; including ensuring that funding by the HSCRC and Office of the National Coordinator for Health Information Technology is appropriated used. MHCC also provides guidance to hospitals in developing community-based health information exchange.

Aggressive efforts by the MHCC and CRISP teams are already paying dividends to hospitals and community providers. All 46 acute care and two specialty hospitals in the state have established a connection to CRISP and currently send admission, discharge, and transfer data.

Approximately 40 hospitals in Maryland are now exchanging select clinical information through CRISP. Providers are now able to receive alerts when patients are in the hospital through CRISP's Encounter Notification System (ENS), which provides real-time patient information to primary care and other community providers that participate in the ENS service. The information is securely sent electronically to a provider and enables them to be aware of their patients' condition and plan for care after discharge.

Data Contributions to Model Implementation

Hospital Performance Evaluation Guide (HPEG)

MHCC's Hospital Performance Evaluation Guide (HPEG) enables users to review information on various hospital facility characteristics and performance measures. Hospital characteristics include the location of the hospital, number of beds, services provided, and accreditation status. Fifty high-volume common medical conditions (All Patient Refined Diagnosis-Related Groups (APR-DRGs)) are also featured. Users are able to compare the volume and average length-of-stay by APR-DRG for each hospital. The HPEG also includes performance data on process of care measures endorsed by the National Quality Forum (NQF), and adopted by the Centers for Medicare and Medicaid Services (CMS), the Joint Commission, and the Hospital Quality Alliance. These nationally endorsed process measures address hospital compliance with evidence-based standards for the treatment of Acute Myocardial Infarction (AMI), Heart Failure (HF), Pneumonia (PN), Childhood Asthma Care (CAC) and surgical patients (SCIP), including the prevention of surgical site infections.

Medical Care Database (MCDB)

The Maryland Medical Care Data Base (MCDB) is an all payer claims database that has been developed by MHCC to support analyses of health care spending and the utilization of services. Gathering complete information on coverage for the privately insured has been the focus of this data system. Almost all fully-insured and a majority of self-insured claims are submitted to the data system. The database currently reflects the experience of 3.1 million privately insured and 720,000 Medicare beneficiaries. Claims for professional services and pharmacy have been submitted by commercial carriers and Medicare under Data Use Agreements (DUAs) with CMS for more than a decade. Eligibility records and claims for institutional care services were added in 2009. The importance of the MCDB will grow as health care reform initiatives take root in Maryland and as monitoring and assessment requirements for the ACA are implemented.

The Commission plans to expand data collection for the MCDB to include Medicaid data over the next few years, as well as data from all qualified health and dental plans approved to participate in Maryland's Health Benefit Exchange. Access to the expanded MCDB will benefit Maryland's Health Benefit Exchange, specifically, and Maryland more broadly by enabling the creation of utilization measures by insurance market and population health measures for insured Maryland residents. Over time, the Maryland MCDB will support the development of enhanced care delivery models, including Accountable Care Organizations (ACOs) and the backbone of ACOs, PCMHs.

Provider Performance Measurement Initiative

One key use of the Maryland MCDB will be analyzing claims for a new Provider Performance Measurement initiative that MHCC is developing. This initiative involves merging claims data

from public & private insurers, including the integration of Medicare claims. Maryland is in the process of applying for Qualified Entity certification from CMS and a state agency DUA to receive Medicare data quarterly.

Initially, the Commission plan to use accepted quality measures; however, the goal is to produce clinician cost and utilization measure results for use by physicians, payers, patients, and other stakeholders. These latter alternative measures will be developed in collaboration with stakeholders through newly-created workgroups. MHCC currently provides HSCRC with access to the privately insured data in the MCDB and will be sharing the results of the Provider Performance Measurement program with HSCRC for use in waiver model development and assessment.

[All-Resident Analysis Summary File \(RASF\)](#)

MHCC, HSCRC, Medicaid, and representatives from the Maryland Hospital Association, private payers, local health departments, and academic researchers have begun planning for the development of an all resident analysis summary file (RASF) similar to CMS's Beneficiary Summary File (BSF). Although all payer claim database systems offer much promise, the complexity of the data structures make use difficult. If all payer claim databases are to meet the vision of their advocates, simpler data structures must be developed to facilitate use by a broader range of organizations. The RASF system will meet these needs and support the demonstration model as well as other initiatives currently in the planning stages.

The RASF, when fully implemented, will contain detailed insurance information, utilization data, and quality metrics for all Maryland residents. These structures will largely align with BSF Base (A/B/D) segment, chronic conditions segment, and cost & utilization segment. MHCC, in collaboration with CRISP, will develop an encrypted identifier that will facilitate the aggregation of utilization and quality information for an individual, even when an individual changes coverage over time. The encrypted identifier will serve as principal patient ID on the MCDB beginning in 2014. Implementation will initially focus on the privately insured followed by Medicaid. The current Medicare BASF file will be added to system in manner consistent with our DUA agreements with CMS.

The RASF will be a key data construct to support the model demonstration project. This data base will enable HSCRC and CMS to more broadly examine trends in per capita spending for the entire Maryland population. As detailed information is available for most residents of the state, local health departments and community organizations will be able to use these data in conjunction with other data sources to monitor population health care and to target interventions.

Health Services Cost Review Commission

Statutory Authority and Mission

The statutory authority of the HSCRC is found in Title 19, Subtitle 2, of the Health-General Article of the Annotated Code of Maryland. The regulations established under this authority are published in the Chapter 10 of the Code of Maryland Regulations (COMAR Title 10, Subtitle 37, Chapters 01-12). The HSCRC approves recommendations and establishes policies pursuant to its authority under the statute and regulations.

The HSCRC is primarily charged with maintaining the hospital all payer system and managing hospital rates under that system. The HSCRC's authority and mission include, but are not limited to:

- Assuring purchasers of hospital care that the total costs of services are reasonable and that rates are set equitably among all purchasers.
- Monitor hospital financial indicators to ensure that each hospital has sufficient resources to meet financial requirements and develop solutions in collaboration with the hospital industry if solvency is threatened.
- Experiment with alternative methods of rate determination and payment, when appropriate.
- Establish methods for financing the reasonable total costs of hospital uncompensated care.
- Assure the integrity of the payment system.
- Assess and collect user fees.
- Provide access to hospital-related healthcare data that in the public interest.

The HSCRC is unique, in that it is the only agency in the country with the mission of setting the rates for hospital services that all payers pay pursuant to a Medicare waiver. The agency is also independent and autonomous; it has been given substantial authority to collect comprehensive data, with the flexibility to design a highly complex, yet effective, regulatory scheme and financing mechanism. The regulatory focus, however, is on establishing overall goals and financial targets and not micro-managing the hospital industry. Thus, the HSCRC system is very much 'formula-driven' and macro-regulatory in its orientation. The policies and formulas developed are highly technical and their efficacy is highly dependent on sound analysis and policy. This requires that the HSCRC possess specialized skills and expertise to develop and maintain these methods and approaches over time.

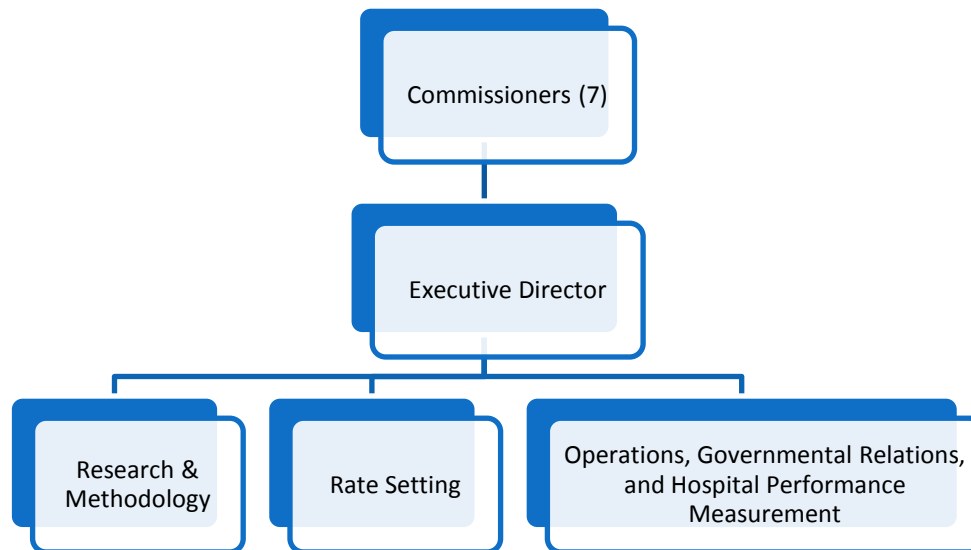
Administration

The HSCRC consists of commissioners and commission staff. The statute requires there be seven volunteer commissioners appointed by the Governor, who, in turn, serve the citizens of Maryland at large. Of the seven commissioners, four must lack a connection with the management or policy of a hospital; however, each commissioner must have an interest in health care. Commissioners who serve two consecutive full four-year terms may not be reappointed until at least four years after the completion of the two terms. The Commission is led by a chairman appointed by the Governor, and a vice chairman appointed by the chairman. The senior staff members employed by the Commission serve at the pleasure of the commissioners. Unfavorable HSCRC decisions can be appealed directly to the Maryland courts, not through administrative processes.

The HSCRC was deliberately organized to be a small agency and to operate in a flexible and efficient fashion. The jobs that exist within HSCRC staff have evolved over time in response to the changing mission of setting rates for hospital services in a dynamic health care environment. The management, professional, and mid-management duties of the Commission require substantial industry knowledge (hospital, health services, insurance) and are complex in nature. Because of its unique mission and responsibilities, the HSCRC requires the services of individuals with highly specialized professional skills and experience.

The structural organization of the HSCRC include three primary functions: (1) Rate Setting; (2) Research and Methodology; and (3) Operations, Governmental Relations and Hospital Performance Measurement (Figure 10.5). The research and methodology division, headed by the Deputy Director of Research & Methodology, is responsible for designing and applying the methodologies that go into the rate setting process. The rate setting division, headed by the Deputy Director of Rate Setting, implements the rate orders of the hospitals, conducts audits, and ensures compliance with the rate orders that have been implemented. The third division headed by Deputy Director of Operations, Governmental Relations, and Hospital Performance Measurement, oversees the quality measurement and rate adjustment programs, manages budgetary and personnel matters of the Commission, conducts intergovernmental relations activities, and leads coordination with the Department of Health and Mental Hygiene and other affiliated agencies.

Figure 10.5: Organizational Chart of the Health Services Cost Review Commission



Dr. D. Patrick Redmon, as the Executive Director, oversees and directs HSCRC staff in developing, refining, and implementing HSCRC policy geared toward achieving its mandate of providing maximum efficiency and effectiveness at Maryland hospitals. Dr. Redmon possesses unique knowledge and skills to perform these duties including very strong quantitative, analytical, negotiation, leadership, and decision-making skills. Before joining the HSCRC in January 2012, Dr. Redmon served as the Deputy Director of Research and Methodology from 1999 to 2006 when he left the HSCRC for a position as an Associated Professor of health economics at Xavier University in Cincinnati, Ohio. While serving as a Professor at Xavier, he continued to conduct work on a contractual basis that related to the activities of the HSCRC.

Mr. Jerry Schmith is the Deputy Director of Rate Setting and he oversees the rate setting, audit and compliance activities of the HSCRC. Mr. Schmith has been in a senior leadership role at the HSCRC for 34 years, and during that period, has led the rate setting division through various and differing payment strategies. Mr. Schmith is widely regarded as one of the most knowledgeable individuals in the state in terms of how the Maryland rates are set, and how the methodologies have been altered over the years. He oversees Maryland's unique uncompensated care provision, evaluates the impact of various policies and methodologies on hospital revenue and costs, and negotiates individual hospital adjustments, among many other critical functions of the HSCRC.

Ms. Mary Pohl is the Deputy Director of the Research and Methodology (R&M) division of the HSCRC that responsible for the research, policy development, and information systems activities of the HSCRC. Ms. Pohl came to the HSCRC two years ago with broad experience as a consultant with Lewin Group primarily working on Medicaid data and payment issues. Prior to that, she worked with the Maryland Medicaid program. Her experience has proven invaluable

to the HSCRC as Medicaid issues (such as the impact of Medicaid expansion and availability of Medicaid data) have become more prominent in hospital rate setting policy discussions. This background will prove very useful since the HSCRC will be evaluating Medicaid savings as part of this application.

Mr. Stephen Ports is the Deputy Director of Operations, Governmental Relations, and Hospital Performance Measurement, and as the title indicates, has three major functions:

- Supervise and assist in the design of the HSCRC hospital performance measurement and quality initiatives.
- Oversee the governmental relations aspects of the HSCRC.
- Oversee administrative and operational functions of the HSCRC including managing budgetary, personnel, procurement, regulatory, and audit issues.

Mr. Ports has been with the HSCRC for more than 11 years and has led the Commission through several reforms. The most significant of those is the implementation of the HSCRC's quality initiatives (QBR and MHACs), which have established payment incentives for hospitals to improve on a series of process measure and outcome measures. Since the inception of these programs, adherence to best practices and outcome results has improved significantly.

The HSCRC's current management structure has served it well for many years. If the model, however, is extended beyond hospital services, more emphasis will need to be placed on intergovernmental activities since the HSCRC will not have the direct levers to impact costs/payments of the non hospital providers. Under this scenario, the HSCRC would institute more formalized ties with other DHMH entities, including the Medicaid program and MHCC, to play a role in establishing incentives to reduce costs of non-hospital providers and the collection and analysis of non-hospital data. The HSCRC will also work closely with the representatives of the physicians around the state to understand and nurture the appropriate synergies for overall cost containment.

Budget and Cost Structure

The HSCRC is an independent state entity of the Department of Health and Mental Hygiene and, as such, its budget is a non-lapsing state special fund, consisting of annual user fees assessed on 58 regulated Maryland hospitals. The HSCRC's administrative appropriation for FY 2013 is \$6,100,176 and the HSCRC expects to collect \$4,960,727 in user fees during the course of the year (Figure 10.6).

Due to the nature of the HSCRC's work, expenses are driven primarily by personnel costs. Salaries, wages, and fringe benefits account for 65 percent of the overall administrative budget. The HSCRC currently employs 29 full-time staff and may employ up to 34 staff in accordance with its appropriation. HSCRC also contracts for certain technical services to manage the

HSCRC's datasets and to assist the HSCRC with specific policy issues. Contracts represent another 20 percent of the HSCRC's budget.

Figure 10.6. FY 2013-2015 Expected HSCRC Expenses and User Fee Assessments

HSCRC Expenses	FY 2013 Actual	FY 2014 Projected	FY 2015 Projected
Personnel	\$ 3,974,043	\$ 4,040,489	\$ 4,121,299
Contracts	\$ 1,195,000	\$ 1,359,579	\$ 1,563,516
Other	\$ 931,133	\$ 1,076,323	\$ 1,130,139
Total	\$ 6,100,176	\$ 6,476,391	\$ 6,814,954
User Fees	\$ 4,960,727	\$ 6,499,022	\$ 6,816,969

The total user fee assessment is determined after the HSCRC's fiscal year budget appropriation is established. Those user fees are applied proportionately across all regulated hospitals (half based on admissions and half based on hospital revenues). Therefore, the amount of a hospital user fee is dependent on the volume and revenue achieved by the hospital in previous years. These user fee assessments are passed through to payers through a small increase in rates so that it is revenue neutral to hospitals. The user fee assessment represents about .03 percent of all hospital revenue or about \$4 on an average inpatient case costing \$13,255.

The HSCRC's statute limits the total amount of user fees that may be assessed in a year to \$7 million. The total user fees assessed by the HSCRC may not exceed the Special Fund appropriation for the HSCRC by more than 20 percent. The user fees are required to be used exclusively to cover the actual documented direct costs of fulfilling the statutory and regulatory duties of the HSCRC and may be expended only for purposes authorized by its statute.

Model Design Budget

Maryland is not requesting grant funding as part of this model design proposal. However, the state may incur added expenses to obtain additional technical assistance to study, implement and evaluate new programs, payment methods, and incentives that support the goal of reducing per capita costs over time. The state may also need to update or extend its existing data management contracts (or issue new ones) to ensure that the state is capturing the appropriate data elements and having them analyzed on a timely basis.

While the state is not requesting additional resources, the HSCRC is requesting access to quarterly Medicare claims and enrollment data at no cost (see Section 8).

Appendix A. Hard Expenditure Ceiling and Medicare Benchmark

Establishing a System-Level Hard Expenditure Ceiling Growth Trend

We divide Maryland's model testing period into Phases 1 and 2. During Phase 1, while Maryland is developing a robust all payer database to be used for Phase 2 measurement, Maryland will use a proxy for total cost of care by establishing the hard expenditure ceiling based on inpatient and outpatient hospital revenue. As Maryland's approach to controlling expenditures is applied to all payers, this Phase 1 hard expenditure ceiling reflects the state's extraordinary commitment to control hospital costs. Below we provide calculations and discussions around establishing the hard expenditure ceiling in Phase 1.

Calculating the Hard Expenditure Ceiling

Maryland selected per capita GSP as a benchmark for health care spending growth under this model testing application recognizing the growing share of resources devoted to health care across all states. By committing to limit hospital expenditures to long-term per capita GSP growth, this model would stabilize expenditures, first for hospitals, then for all health care services in the state.

Figure A.1: Average Annual Growth Rate in Maryland GSP Per Capita

Year	MD Annual Population Estimates (Jul 1) ¹	Maryland Gross State Product ²	% GSP Growth	GSP Per Capita	% Per Capita Growth
2001	5,374,691	\$195,603,000,000		\$36,393.35	
2002	5,440,389	\$206,624,000,000	5.63%	\$37,979.64	4.36%
2003	5,496,269	\$216,607,000,000	4.83%	\$39,409.83	3.77%
2004	5,546,935	\$231,963,000,000	7.09%	\$41,818.23	6.11%
2005	5,592,379	\$247,241,000,000	6.59%	\$44,210.34	5.72%
2006	5,627,367	\$259,792,000,000	5.08%	\$46,165.82	4.42%
2007	5,653,408	\$271,985,000,000	4.69%	\$48,109.92	4.21%
2008	5,684,965	\$281,112,000,000	3.36%	\$49,448.33	2.78%
2009	5,730,388	\$283,644,000,000	0.90%	\$49,498.22	0.10%
2010	5,785,681	\$293,349,000,000	3.42%	\$50,702.59	2.43%
2011	5,828,289	\$301,100,000,000	2.64%	\$51,661.82	1.89%
10-YEAR AVG ANNUAL GROWTH RATE			4.41%		3.57%

Sources:

1. Population data from Population Division, U.S. Census Bureau, release date April 5, 2012, Prepared by the Maryland Department of Planning, April 2012.

2. Bureau of Economic Analysis. Last updated: June 5, 2012.

The growth rate for Maryland GSP per capita averaged 3.57 percent since 2001 (Figure A.1) while Maryland hospital revenue per capita grew at 6.8 percent (Figure A.2).

Note that based on data currently available, the revenue numbers used to calculate all payer per capita gross patient revenue growth include all patients treated at Maryland hospitals, both residents and non-residents. However, as in- and out-migration is historically constant, we feel these revenue numbers are sufficient for trend development. We will measure financial success under the model by setting a hard expenditure ceiling consistent with this long-run Maryland per capita GSP trend of 3.57 percent.

Figure A.2: Per Capita Growth in Maryland All Payer Gross Patient Revenue

Date	Annual Population Estimates for MD (Jul 1) ¹	Regulated Gross Patient Revenue ²	Growth in Regulated Gross Patient Revenue	Revenue Per Capita ²	Per capita Growth
Jun-01	5,374,691	\$6,733,066,447		\$1,252.74	
Jun-02	5,440,389	\$7,390,327,928	9.76%	\$1,358.42	8.44%
Jun-03	5,496,269	\$7,910,080,083	7.03%	\$1,439.17	5.94%
Jun-04	5,546,935	\$8,774,895,279	10.93%	\$1,581.94	9.92%
Jun-05	5,592,379	\$9,640,758,014	9.87%	\$1,723.91	8.97%
Jun-06	5,627,367	\$10,557,002,143	9.50%	\$1,876.01	8.82%
Jun-07	5,653,408	\$11,456,831,700	8.52%	\$2,026.54	8.02%
Jun-08	5,684,965	\$12,308,251,660	7.43%	\$2,165.05	6.84%
Jun-09	5,730,388	\$13,034,665,054	5.90%	\$2,274.66	5.06%
Jun-10	5,785,681	\$13,386,719,157	2.70%	\$2,313.77	1.72%
Jun-11	5,828,289	\$14,070,047,171	5.10%	\$2,414.10	4.34%
10 YEAR AVG ANNUAL GROWTH RATE			7.65%		6.78%

Sources:

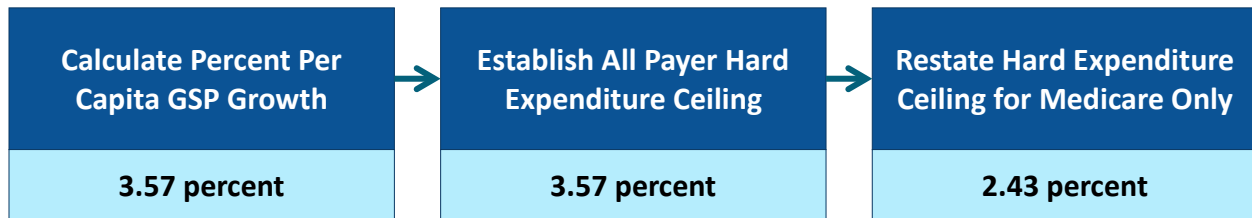
1. Source: Population Division, U.S. Census Bureau, release date April 5, 2012; Prepared by the Maryland Department of Planning, April 2012. http://planning.maryland.gov/msdc/Pop_estimate/Estimate_11/county/popest_cnty11.shtml. (Accessed 8/9/2012)
2. HSCRC Monitoring MD Performance (MMP), August, 2012. MMP uses monthly data from MS, NS, RS schedules. Figures are based on the data available as of June 2012 and includes all patients served by Maryland hospitals.

Restating the Hard Expenditure Ceiling as a Medicare Growth Rate and Benchmark

To evaluate model success, CMS requires that the model demonstrate savings to federal payers. Therefore, Maryland has restated the all payer hard expenditure ceiling for Medicare beneficiaries residing in Maryland. Across time, the growth rate in Medicare per beneficiary FFS spending for Maryland residents has been slower than the growth in all payer gross patient revenue per capita, with the Medicare growth rate averaging 68.2 percent of the all payer

revenue growth rate.⁸³ The growth rate at 3.57 percent per capita GSP translates into a hard expenditure ceiling for Medicare per beneficiary of 2.43 percent per year.⁸⁴ See Figure A.3.

Figure A.3: All Payer and Medicare Hard Expenditure Ceiling



As noted above, this hard expenditure ceiling is designed as a maximum growth rate. Additional methods applied under this model, as discussed in Section 4, aim to enhance the patient experience and provide higher quality of care, while also reducing health expenditures per capita. As discussed later in this section, savings generated from these methods will accrue to the shared savings lockbox, with saving that is shared between the providers of service and the payers. This model couples financial regulatory methods with population-based initiatives to generate savings underneath the hard expenditure ceiling.

⁸³ Historically, Medicare growth has trended below all payer growth, which could be explained by different growth trends in the Medicare beneficiary counts compared to general population and changes in the characteristics of the Medicare beneficiaries. For example, the population in Maryland grew about 0.80 percent compared to 1.45 percent in the Medicare beneficiaries. If we assume no change in the utilization rates, this change in the population numbers will result in reduced per capita growth rate as the denominator will increase much faster in the Medicare calculation than that of the all payer one. Furthermore, the utilization rates have different trends in general population compared to the Medicare ones as the relatively healthier population is aging into Medicare.

⁸⁴ We adjusted previous estimates by restricting the Medicare spending to the fee-for-service population since Medicare claims data that will be used to measure the model results will include only the FFS population.

Appendix B. Data Security

To ensure the protection of CMS data, the HSCRC has a dedicated standalone server that is not connected to the LAN. Only the designated staff has user accounts on this server. The data stored on the server is encrypted. The computer room where the server is housed has a locked door that requires a passkey access code to enter the room. The server is locked down in a rack and the hard drives are locked down on the server. The computer room is located in a building that requires card key access to enter the offices. The HSCRC confidential data server uses an uninterruptable power supply. Sprinkler systems in the building protect the server from fire damage. Physical media are used to back up the data. Once the backups are created they are stored in a room with a fire protection mechanism and secure access. Access controls on the door to enter the room uses card key access code. The technical resources used to house and secure CMS data are referenced in the National Institute of Standards and Technology Data Security publications and DHMH Data Security Policy and DHMH Policy to Assure Confidentiality, Integrity and Availability of DHMH information

All users that need access to the CMS files are required to sign a statement stating that they understand the terms of security outlined in the HSCRC Policy for the Use of Confidential Health Care Data Privacy and Security Plan. In addition, project staff that requires access to the data has to sign the CMS DUA signature addendum. As described in the HSCRC Policy for the Use of Confidential Health Care Data Privacy and Security Plan, signed statements will be held by legal counsel for HSCRC. Penalties for all breaches of confidentiality will be assessed in accordance with Maryland law and state personnel policies. Any intentional breach of confidentiality will result in disciplinary action up to and including termination and /or criminal penalties. An unintentional confidentiality breach will result in counseling to avert future occurrences. Repeated unintentional confidentiality breaches may result in disciplinary action up to and including termination.

Fortunately, Maryland has several advantages to create data structures to analyze the provision of health services across wide spectrum. The Maryland Health Care Commission already collects information from commercial payers for institutional, physician, and pharmacy services. The state is moving towards creating an All Payer Data Base by combining this data source with Medicaid and Medicare information.

Appendix C: Requested Authority from CMS

Table C.1: Requested Authority from CMS

Initiative	CMS Request	Discussion References
Model Financial Success		
New Performance Test	<ul style="list-style-type: none"> • Requesting exemption from §1814(b) of the Social Security Act regarding the cumulative growth test • CMS will instead evaluate financial success to under Model Design 	Section 6
Methods		
ACO and Hospital Risk-Taking	<ul style="list-style-type: none"> • Section 1899(h)(2) of the Act provides that for purposes of the Shared Savings Program, the term 'hospital' means a subsection (d) hospital as defined in section 1886(d)(1)(B) of the act, thereby limiting the definition to include only acute care hospitals paid under the IPPS. • Requesting exemption from the Section 1899(h)(2) of the Act definition of a hospital thereby allowing hospitals in Maryland to serve as ACO conveners 	Section 4
Bundled Payment	<ul style="list-style-type: none"> • Section 3021 of the Affordable Care Act authorizes the Secretary to test innovative delivery arrangements to reduce federal spending while preserving or enhancing the quality of care. The Bundled Payment Initiative is one such arrangement. • Requesting CMS provide an expedited avenue for determine Medicare's participation in HSCRC-approved bundling strategies 	Section 4
Gain Sharing	<ul style="list-style-type: none"> • Requesting an expedited avenue for federal approval of incentive payments made by a hospital to a physician in accordance with the provisions developed by the HSCRC and approved by regulation or policy of the HSCRC which shall not constitute: <ul style="list-style-type: none"> ○ A remuneration for purposes of section 1128B of the Social Security Act (42 U.S.C. 1320a-7b); -- the Anti-Kickback Statute; ○ A payment intended to induce a physician to reduce or limit services to a patient entitled to benefits under Medicare or a State plan approved under Title XIX of such Act in violation of section 1128A of such Act (42 U.S.C. 1320a-7a); -- the Civil Monetary Penalties Act – or ○ A financial relationship for purposes of section 1877 of such Act (42 U.S.C. 1395nn) – Stark. 	Section 4

Initiative	CMS Request	Discussion References
Consolidated Maryland Quality Reporting	<ul style="list-style-type: none"> • Requesting exemption from annual reporting requirements of CMS' Value Based Purchasing, Hospital Payments for Hospital Acquired Conditions, and Hospital Readmissions Reduction Program programs as set forth in: <ul style="list-style-type: none"> ○ Section 1886(o)(1)(C) (iv) of the Social Security Act ○ Section 1886(p)(2)(C) of the Social Security Act ○ Section 1886(q)(2)(B)(ii) of the Social Security Act • Instead, Maryland shall produce consolidated reporting as indicated in this Model Design. 	Section 7, Section 8
Data		
Timely and Current Access to Medicare Data	<ul style="list-style-type: none"> • Requesting provision of an avenue to receive Medicare comprehensive beneficiary enrollment files and claims data (confidential versions) similar to the avenue provided participants in the Bundled Payments for Care Improvement initiative and without charges for data provision. • The list Research Identifiable File (RIF) from Resdac website: <ul style="list-style-type: none"> ○ National level: <ol style="list-style-type: none"> 1. Beneficiary Summary (A/B/C/D) 2. Medpar or Inpatient 3. Outpatient ○ MD Residents and Providers: <ol style="list-style-type: none"> 1. Carrier 2. Home Health 3. Skilled Nursing Facility 4. Hospice 5. Durable Medical Equipment ○ Part-D Drug Event File 	Section 8
Other Considerations		
72-hour rule	<ul style="list-style-type: none"> • Requesting provision of an avenue to receive Medicare approval for hospitals engaged in approved HSCRC bundling methodologies to gain exemption from the 72-hour rule. • The rule states that all services provided for Medicare patients by a wholly owned or operated hospital entity (including a physician practice) within 72 hours of the hospital admission are considered to be part of the inpatient services and are to be billed on one claim. 	
Physician Loan Assistance Repayment Program (LARP)	<ul style="list-style-type: none"> • Requesting an avenue to receive Medicare approval for Maryland to implement a targeted LARP program to encourage physician recruitment and retention in underserved areas of the state. 	