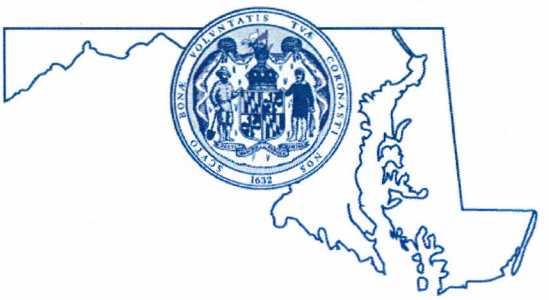

Health Services Cost Review Commission
4160 Patterson Avenue, Baltimore, Maryland 21215
Phone: 410-764-2605 · Fax: 410-358-6217
Toll Free: 1-888-287-3229
hscrc.maryland.gov

October 17, 2017

The Honorable Lawrence J. Hogan, Jr.
Governor of Maryland
100 State Circle
Annapolis, Maryland 21401

The Honorable Thomas V. Mike Miller, Jr.
President of the Senate
H-101 State House
Annapolis, MD 21401-1991

The Honorable Michael E. Busch
Speaker of the House
H-107 State House
Annapolis, MD 21401-1991

The Honorable Dennis Schrader
Secretary, Maryland Department of Health
201 W. Preston Street
Baltimore, MD 21201

RE: Monitoring Maryland's All-Payer Model: Biannual Report - Health General Article §19-207(b)(9)

Dear Governor Hogan, President Miller, Speaker Busch, and Secretary Schrader:

I am pleased to submit to you the sixth Monitoring of Maryland's All-Payer Model Biannual Report, prepared under Section 19-207(b)(9) of the Health-General Article of the Annotated Code of Maryland. This report discusses the State's progress during the period from January 1, 2017 through June 30, 2017, which encompasses through the second quarter of the fourth year of Maryland's agreement with the Centers for Medicare & Medicaid Services (CMS).

Effective January 1, 2014, the State of Maryland and CMS entered into a new initiative to modernize Maryland's unique all-payer rate-setting system for hospital services. This initiative which replaced Maryland's 36-year-old Medicare waiver allows Maryland to adopt new and innovative policies aimed at reducing per capita hospital expenditures and improving patient health outcomes. More information on the Health Services Cost Review Commission ("HSCRC") and Maryland hospital activities can be found on the HSCRC's website: http://hscrc.maryland.gov/.

Please contact me if you have any questions about this report, or you may contact Katie Wunderlich at katie.wunderlich@maryland.gov.

Sincerely,

Donna Kinzer
Executive Director

Monitoring of Maryland's New All-Payer Model

Biannual Report

Health Services Cost Review Commission
4160 Patterson Avenue
Baltimore, Maryland 21215
(410) 764-2605

October 2017

Table of Contents

Executive Summary

Introduction

Effective January 1, 2014, the State of Maryland and the Centers for Medicare & Medicaid Services (CMS) entered into an agreement to modernize Maryland's unique all-payer rate-setting system for hospital services. This initiative, replacing Maryland's 36-year-old Medicare waiver, allows Maryland to adopt new and innovative policies aimed at reducing per capita hospital expenditures and improving patient health outcomes. This biannual report, prepared in accordance with Maryland law, contains a summary of implementation, monitoring, and other activities during the time period from January 1, 2014 through June 30, 2017.[1] The purpose of this report is to inform the Maryland General Assembly on the status of the Maryland All-Payer Model.

Highlights

The following bullets highlight the Maryland Health Services Cost Review Commission's (HSCRC's or Commission's) progress in the nine reporting areas required by law, in addition to information related to the proposed Total Cost of Care Model progression.[2]

- **Inpatient and Outpatient Hospital Per Capita Cost Growth** – CMS requires Maryland to limit the annual growth in all-payer hospital per capita revenue for Maryland residents to 3.58 percent. To date, Maryland has met this target, with a growth rate of 1.47 percent between calendar years (CYs) 2013 and 2014, 2.31 percent between CYs 2014 and 2015, and 0.29 percent between CYs 2015 and 2016. Per capita revenue in CY 2017 through June grew 3.61 percent.[3]

- **Aggregate Medicare Savings** – CMS requires Maryland to achieve an aggregate savings in Medicare spending that is greater than or equal to $330 million over the five years of the agreement. Per CMS' calculation, Maryland realized $116 million in savings in CY 2014, $135 million in CY 2015, and $287 million[4] in CY 2016. The HSCRC is currently working with a Medicare analytics contractor to validate the aggregate Medicare savings calculation conducted by CMS.

- **Shifting from a Per-Case Rate System to a Global Budget** – CMS requires Maryland to shift at least 80 percent of hospital revenue to global or population-based budgets. Maryland exceeded this target and has shifted 100 percent of regulated hospital revenues to global budget structures.

- **Reducing the Readmission Rate among Medicare Beneficiaries** – While Maryland's readmission rate for Medicare beneficiaries remains slightly higher than the national average, it has steadily declined over the course of the All-Payer Model. Under the All-Payer Model, CMS requires Maryland's Medicare fee-for-service (FFS) hospital admission rate to be at or below the national readmission rate by the end of CY 2018. At the beginning of the model, Maryland's readmission rate was 1.24 percent higher

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[1] Health-General Article §19-207(b)(9) Maryland Annotated Code.

[2] *Id.*

[3] The all-payer per capita growth rate reflects a subtraction in all payer revenue of approximately $75.5 million. This neutralizes an adjustment to hospitals' revenues due to undercharging in July to December CY 2016

[4] The statewide savings noted here reflect an adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. This adjustment reduces the amount of statewide savings otherwise shown in CY 2016. CY 2016 hospital savings without the undercharge adjustment is $312 million.

than the nation. With the most recent twelve months of data through May 2017, Maryland's readmission rate is 0.09 percent higher than the nation. Should current improvement trends continue through December 2017, then the All-Payer Model test would be sufficiently met at the end of CY 2017. Additional analysis of HSCRC data show that Maryland continues to reduce readmissions on an all-payer basis. Compounded with previous reductions in readmissions since CY 2013, Maryland has achieved a 12.38 percent reduction in case-mix adjusted all-payer readmissions.

- **Reducing Hospital-Acquired Conditions (HACs)** – CMS requires Maryland to reduce the cumulative rate of HACs by 30 percent by the end of CY 2018. HSCRC measures HACs using a list of Potentially Preventable Complications (PPCs).[5] To date, Maryland has exceeded this target, with a compounded reduction of 45.84 percent in all-payer case-mix adjusted PPCs between CY 2013 and June 2017. This reduction in PPCs was even higher for Medicare FFS at 49.20 percent. Staff continue to incentivize reductions in HACs through the quality incentive program.

- **Monitoring Total Cost of Care (TCOC)** – Under the New All-Payer Model agreement, the total cost of care growth for Maryland Medicare beneficiaries may not exceed the national growth rate by more than one percent in any given year and may not exceed the national growth for two consecutive years. For CYs 2014, 2015, and 2016, Maryland TCOC fell below the one percent guardrail.

- **Workgroup Activities** – The HSCRC continues to broadly engage with stakeholders in guiding policy and methodology development through various Workgroup meetings throughout CY 2017. Stakeholders representing consumers, businesses, payers, providers, physicians, nurses, other health care professionals, and experts have participated in these Workgroups. All Workgroup meetings are conducted in public sessions and comments from the public are solicited at each meeting. The Commission also participates in Workgroups and related meetings aimed at establishing value-based models for patients dually eligible for Medicare and Medicaid.

- **Actions to Promote Alternative Methods of Rate Determination and Payment** – The All-Payer Model agreement allows Maryland to develop alternative methods of rate determination. The HSCRC developed the Global Budget Revenue (GBR) reimbursement model and has moved 100 percent of acute hospital revenue under global budgets as of April 2017. The HSCRC is also working on the Medicare Performance Adjustment (MPA) to assist the State in its transition to the Total Cost of Care Model.[6] Additionally, sixteen hospitals are participating in the first performance period of the Care Redesign Amendment programs.

- **Reports to CMS** – To date, the HSCRC has met all of CMS's reporting requirements.

- **Total Cost of Care Model Progression** – The All-Payer Model Agreement required Maryland to submit a proposal for a new model no later than January 2017, which shall limit, at a minimum, the Medicare beneficiary total cost of care growth rate. In early 2017, the federal government and State officials, with input from Maryland health care leaders, began negotiations with CMS for a new model beginning January 2019. The new model aims to move beyond hospitals, to address Medicare patients' care in the community. In May 2017, the HSCRC concluded negotiations with CMS over the "term sheet" which broadly establishes the goals and expectations for the new Total Cost of

[5] 3M Health Information Systems developed PPCs. The PPC software relies on "present on admission" indicators from administrative data to calculate the actual versus expected number of complications for each hospital.

[6] Also referred to as the Progression Plan, Phase II of the All-Payer Model, or Enhanced Model.

Care Model. This model is now in federal clearance for approval and, if approved, will be implemented in the beginning of CY 2019.

- **Reporting Adverse Consequences** – Under the All-Payer Model contract, CMMI monitors the total cost of care in Maryland to ensure that reductions in hospital potentially avoidable utilization (PAU) does not result in unreasonable increases in the total cost of care, which includes costs associated with all other health care providers. The All-Payer Model contract provides that in any one calendar year, Medicare total cost of care growth in Maryland may not grow more than 1 percent above Medicare total cost of care growth nationally. Additionally, in any two consecutive years, Maryland's Medicare total cost of care may not exceed the nation. While the growth of total cost of care in Maryland exceeded that of the nation's total cost of care growth rate in CY 2015, the growth rate in CY 2016 was below that of the nation's, ensuring compliance with the terms of the contract. In CY 2016, Maryland's total cost of care was approximately 0.70 percent below the national growth rate. The Commission continues to closely monitor this metric and will take action to ensure that the two consecutive year requirement is not breached. The HSCRC will continue to develop monitoring tools, measure performance, and engage stakeholders in order to identify and resolve any adverse consequences that may arise as quickly as possible.

Introduction

Effective January 1, 2014, the State of Maryland and the Centers for Medicare & Medicaid Services (CMS) entered into a new initiative to modernize Maryland's unique all-payer rate-setting system for hospital services. The Center for Medicare and Medicaid Innovation (CMMI) oversees the Model under the authority of CMS. This initiative replaced Maryland's 36-year-old Medicare waiver and allowed Maryland to adopt innovative policies aimed at reducing per capita hospital expenditures and improving patient health outcomes. Success of the All-Payer Model will reduce cost to purchasers of care—patients, businesses, insurers, Medicare, and Medicaid—and improve the quality of the care that patients receive both inside and outside of the hospital. The State, in close partnership with providers, payers, and consumers, achieved significant progress in this modernization effort in the past 45 months.

State and Federal Status Reporting Requirements for Maryland's All-Payer Model

State Reporting Requirements for Maryland's All-Payer Model

This report contains a summary of implementation, monitoring, and other activities to inform the Maryland General Assembly on the status of the Maryland All-Payer Model. This Maryland All-Payer Model Biannual Report, prepared in accordance with Maryland law, discusses the State's progress during the period from January 1, 2014, through June 30, 2017, based on the most recent available information.[7] The HSCRC will update the report every six months. Figure 1 provides an overview of the reporting required by law under the Maryland All-Payer Model.[8]

[7] Health-General Article §19-207(b)(9) Maryland Annotated Code.
[8] *Id.*

Figure 1. State Biannual Reporting of Maryland's All-Payer Model

Section	Achievement Requirement	Accomplishments	Ongoing Activities
I.1.	Limit the annual growth in all-payer hospital per capita revenue for Maryland residents to 3.58%	Per capita revenue for Maryland residents grew 1.47% between CYs 2013-2014; 2.31% between CYs 2014-2015; and 0.29% between CYs 2015-2016. CYTD 2017 shows a per capita growth rate of 3.61%.[9]	• Ongoing monthly measurement • Continued favorable performance is expected as global budgets result in predictable statewide revenue performance
I.2.	Achieve aggregate savings in Medicare spending equal to or greater than $330 million over 5 years	$116 million in Performance Year (PY) 1 (CY 2014), $135 million in PY 2 (CY 2015), and $287 million in PY 3 (CY 2016).[10] CY 2017 data is preliminary and has not yet been approved for release by CMS.	• HSCRC is working with an analytics contractor to examine and replicate CMS calculations of Medicare savings and per beneficiary growth rates for CY 2017
I.3.	Shift at least 80% of hospital revenue to a population-based payment structure (such as global budgets)	100% of hospital revenue shifted to global budgets.	• All hospitals are engaged in global budgets under Global Budget Revenue (GBR) agreements • HSCRC continues to refine global budget methodology
I.4.	Reduce the hospital readmission rate for Medicare beneficiaries to be below the national rate over the 5-year period of the agreement	At the beginning of the model, Maryland's readmission rate was 1.24 percent higher than the nation. With the most recent twelve months of data through May 2017, Maryland's readmission rate is 0.09 percent higher than the nation. Compounded with previous reductions, there has been a 12.38% reduction in all-payer case-mix adjusted readmissions since CY 2013.	• HSCRC is monitoring progress within Maryland using data it collects from hospitals and continues to see declines in all-payer, Medicare FFS, and Medicaid readmissions • HSCRC is updating its Readmission Reduction Incentive Program (RRIP) for rate year (RY) 2020
I.5.	Cumulative reduction in hospital acquired conditions (HACs) by 30% over 5 years	Compounded with previous reductions, there has been a 45.84% reduction in all-payer case-mix adjusted PPCs since CY 2013.	• HSCRC continues to incentivize PPC reductions through the Maryland Hospital Acquired Conditions (MHAC) program, despite having achieved the 30% required reduction
I.6	Monitor Total Cost of Care (TCOC) for Medicare and maintain growth within guardrails	The growth in TCOC for Maryland's Medicare beneficiaries was 0.70% below the national growth rate in CY 2016.	• HSCRC is continuing to closely monitor TCOC growth trends for hospital and total cost of care

[9] The all-payer per capita growth rate reflects a subtraction in all payer revenue of approximately $75.5 million. This neutralizes an adjustment to hospitals' revenues due to undercharging in July to December CY 2016.

[10] The statewide savings noted here reflect an adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. This adjustment reduces the amount of statewide savings otherwise shown in CY 2016. CY 2016 hospital savings without the undercharge adjustment is $312 million.

Section	Achievement Requirement	Accomplishments	Ongoing Activities
II	Workgroup Actions	The Payment Models and Performance Measurement Workgroups reviewed the annual update factor and associated quality policies that were approved by the Commission in Spring 2017. Joint Workgroups with the Maryland Department of Health and the Maryland Health Care Commission met in CY 2017 to address cross agency initiatives, including the Primary Care Council, Duals Delivery Workgroup, and the Consumer Standing Advisory Committee.	• Active workgroups continue to meet on a regular basis
III	New alternative methods of rate determination	100% of hospital revenue is now under global budget arrangements. The TCOC Workgroup continued discussion on Medicare Performance Adjustment.	• Global budget agreements are published on the HSCRC website • Stakeholders and CMS are still reviewing the Medicare Performance Adjustment (MPA). A final recommendation will be brought to Commissioners in December
III.5	Care Redesign Amendment	Sixteen hospitals are participating Care Redesign programs that began on July 1, 2017.	• Additional care redesign tracks are being considered and developed • Second performance period will begin on January 1, 2018
IV	Ongoing reporting to CMS of relevant policy development and implementation	The HSCRC provided CMS with the Annual Monitoring Report as required in the New All-Payer Model contract, as well as quarterly progress reports.	• HSCRC continues to provide reports to CMS on an ongoing basis
V.	Progress of Total Cost of Care (TCOC) Model	The HSCRC concluded negotiations and finalized a term sheet with CMS for the TCOC Model.	• Commission leadership is conducting various stakeholder meetings to ensure State and stakeholder alignment • HSCRC is pushing for prompt clearance of the model by CMS

Federal Reporting Requirements for Maryland's All-Payer Model

Maryland's All-Payer Model agreement with CMS establishes a number of requirements that the State must fulfill. CMS must evaluate and provide an annual report on Maryland's calendar year performance. The HSCRC submitted the Model's Annual Monitoring Report to CMS in June 2017 and will submit its end-of-year Annual Monitoring Report to CMS in December 2017.[11] In addition to the annual report, the HSCRC provides ongoing reporting to CMS on relevant policy and implementation developments. If Maryland fails to meet selected requirements, CMS would provide notification, and Maryland would have the opportunity to provide information and a corrective action plan, if warranted. At this time, CMS has not provided any failure notifications to Maryland.

[11] The annual report is currently submitted in two parts due to timeliness of data availability. A partial report detailing CY 2016 is submitted in June, and a final report with full CY 2016 data is submitted in December, as available.

Section I – Requirements under the All-Payer Model

Inpatient and Outpatient Hospital Per Capita Cost Growth

The Maryland All-Payer Model agreement requires the State to limit the average annual growth in all-payer hospital per capita revenue for Maryland residents to the average growth in per capita gross state product (GSP) for the period of 2002 through 2012 (a 3.58 percent growth rate). Per capita revenue for Maryland residents increased by 1.47 percent between CYs 2013 and 2014 and by 2.31 percent between CYs 2014 and 2015. Per capita revenue growth grew 0.29 percent between CYs 2015 and 2016. Based on preliminary data through June 2017, the all-payer hospital per capita growth rate is slightly higher than previous years at 3.61 percent. However, the HSCRC anticipates that the by the end of CY 2017, the hospital per capita growth rate will be within the 3.58 percent target. Continued favorable performance is expected as global budgets (discussed at greater length in Section III) result in predictable statewide revenue performance, enabling the HSCRC to actively manage compliance with the 3.58 percent target.

Aggregate Medicare Savings

The Maryland All-Payer Model agreement requires the State to achieve an aggregate savings in Medicare spending equal to or greater than $330 million over the five years of the agreement. Savings are calculated by comparing the rate of increase in Medicare hospital payments per Maryland beneficiary with the national rate of increase in payments per beneficiary. Currently, CMS completes this calculation and provides an aggregate monthly report to the HSCRC. Maryland realized $116 million in savings in CY 2014, $135 million in CY 2015, and $287 million in CY 2016.[12]

The HSCRC has been working with a new Medicare analytics contractor since February 2017 to validate the aggregate Medicare savings calculation conducted by CMS. It is in the interest of both parties that the calculation correctly captures hospital payments made on behalf of Medicare beneficiaries who are Maryland residents. The HSCRC's vendor is working on replicating CMS's analysis of Maryland's data for CY 2016. Prior years (CYs 2013 through 2015) were reconciled by a previous vendor.

The HSCRC has been tracking Medicare FFS per capita cost trends from its own Maryland data. Based on these data, the Medicare FFS per capita revenue declined by 1.12 percent between CYs 2013 and 2014, and grew by 1.14 percent in CY 2015. In CY 2016, the Medicare FFS per capita revenue declined by 1.47 percent over the same time period in CY 2015. Medicare FFS per capita has grown by 2.16 percent CYTD through June 2017, compared to the same time period in CY 2016.[13]

[12] The statewide savings noted in this paragraph reflect an adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. This adjustment reduces the amount of statewide savings otherwise shown in CY 2016. CY 2016 hospital savings without the undercharge adjustment is $312 million.

[13] The Medicare FFS per capita growth rate reflects a subtraction in revenue of $28.6 million. This neutralizes an adjustment made to hospitals' Medicare FFS revenues due to hospitals undercharging that occurred July to December CY 2016.

Shifting from a Per-Case Rate System to Global Budgets

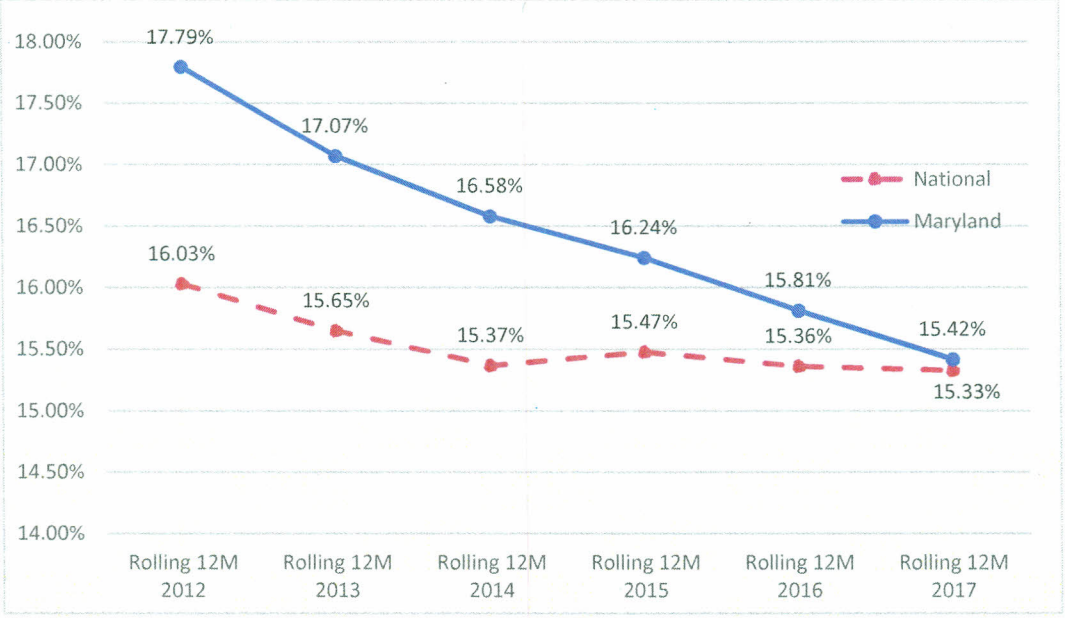
As of April 2017, 100 percent of Maryland regulated hospital revenues are contained within global budget structures. This exceeds the Maryland All-Payer Model agreement requirement of shifting at least 80 percent of hospital revenue to global or population based budgets. All regulated Maryland hospitals now operate under Global Budget Revenue (GBR) agreements, through policies approved by the Commission. Global budget agreements are available on the Global Budgets webpage of the HSCRC website.

The HSCRC continues to work with stakeholder Workgroups to refine the GBR methodology and develop a number of policies discussed in Section III.

Reducing the Hospital Readmission Rate among Medicare Beneficiaries

Reducing hospital inpatient readmission rates has been an objective of the HSCRC since 2011. While Maryland's readmission rate for Medicare beneficiaries remains slightly higher than the national average, it has steadily declined over the course of the All-Payer Model. The All-Payer Model agreement requires Maryland's hospital readmission rate for Medicare FFS beneficiaries to be at or below the national readmission rate by the end of 2018. This All-Payer Model requirement uses national Medicare data. To date, Maryland has experienced substantial improvements in its Medicare readmission rate relative to the national rate (Figure 2).

Figure 2. Medicare Readmissions – Rolling 12 Months Trend through May 2017

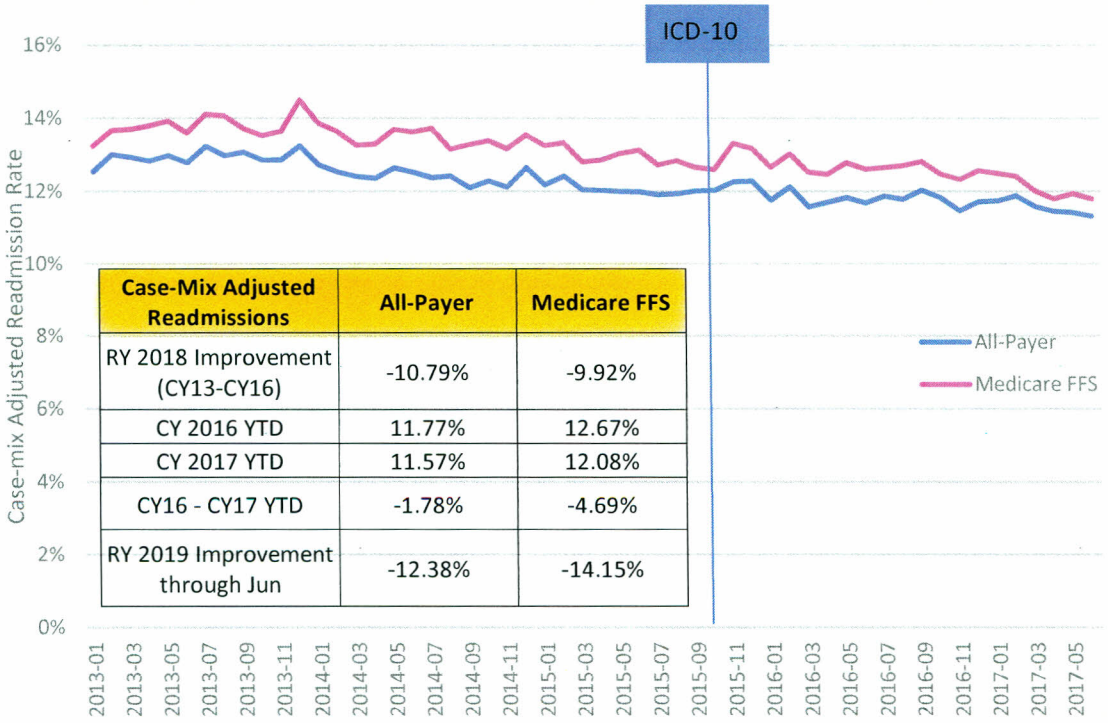


Additionally, HSCRC's hospital data show that the monthly case-mix adjusted readmission rate for the first six months of CY 2017 is substantially improved as compared to the same time periods from CY 2013 through CY 2016 (Figure 3). This analysis includes all Maryland inpatient stays, including Medicare FFS. Based on these HSCRC data, the all-payer, case-mix adjusted readmission rate CYTD through June 2017 was 11.57 percent, compared to 11.77 percent during the same time period in CY 2016,

a 1.78 percent reduction. Compounded with previous reductions in readmissions since CY 2013, the state of Maryland has achieved a 12.38 percent reduction in all-payer case mix adjusted readmissions. The corresponding readmission reduction for Medicare FFS beneficiaries was slightly higher at 14.15 percent. This reduction highlights the difficulty and time involved in reducing readmissions, as it requires significant effort, investment, and coordination across providers.

In the RY 2019 policy, hospitals will continue to be measured based on improvement and attainment. To help readmission reduction efforts, the HSCRC continues to improve its readmission reporting capability by leveraging resources available in the state Health Information Exchange and providing timely, monthly, and patient-specific data to hospitals.

Figure 3. Case-Mix Adjusted Readmission Rates in Maryland through June 2017



Case-Mix Adjusted Readmissions	All-Payer	Medicare FFS
RY 2018 Improvement (CY13-CY16)	-10.79%	-9.92%
CY 2016 YTD	11.77%	12.67%
CY 2017 YTD	11.57%	12.08%
CY16 - CY17 YTD	-1.78%	-4.69%
RY 2019 Improvement through Jun	-12.38%	-14.15%

Cumulative Reduction in Hospital Acquired Conditions

Maryland hospitals must achieve a 30 percent cumulative reduction in Hospital Acquired Conditions (HACs) by 2018 to comply with the Maryland All-Payer Model agreement. Maryland measures HACs using a list of PPCs.[14] PPCs are defined as harmful events (e.g. accidental laceration during a procedure) or negative outcomes (e.g. hospital-acquired pneumonia) that may result from the process of care and treatment rather than from a natural progression of underlying disease.

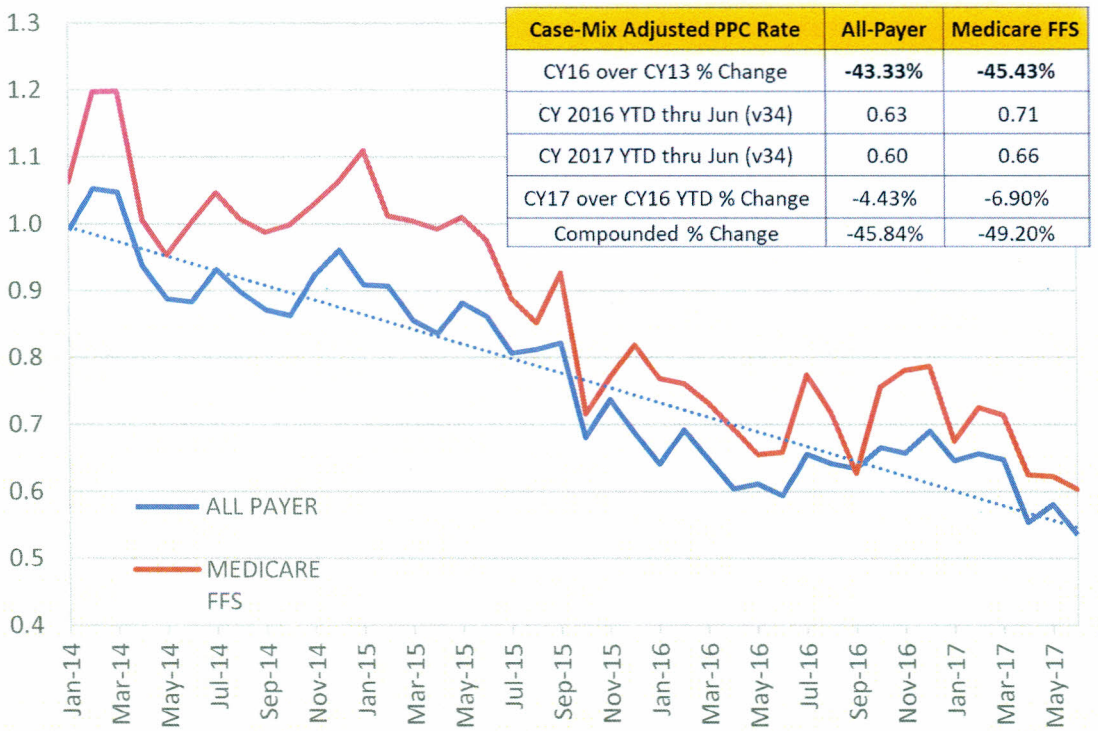
[14] 3M Health Information Systems developed PPCs. The PPC software relies on "present on admission" indicators from administrative data to calculate the actual versus expected number of complications for each hospital.

The HSCRC approved major revisions to the Maryland Hospital Acquired Conditions (MHAC) program in April 2014 in order to support the goal of reducing PPCs. The MHAC program calculates hospital rewards and penalties for case-mix adjusted rates of PPCs. Specifically, these calculations use observed-to-expected ratios as the basis of the measurement for all PPCs and preset positions on a scale constructed using the base year scores for all PPCs to determine penalties and rewards.

Figure 4 shows the all-payer and Medicare FFS case-mix-adjusted PPC rates by month and year. In the first six months of CY 2017, the all-payer case-mix adjusted PPC rate was 0.60 per 1,000, compared with 0.63 per 1,000 for the same time period in CY 2016, which is a 4.43 percent reduction. Compounded with previous reductions in complications since CY 2013, the state of Maryland has achieved a 45.84 percent reduction in all-payer case mix adjusted PPC rates. The reduction in the case-mix adjusted complication rate for Medicare FFS was even higher at 49.20 percent. While this reduction in the case-mix adjusted complication rate exceeds the new waiver target of 30 percent by 2018, the HSCRC will continue to incentivize hospitals to further reduce PPCs in future years. The HSCRC is currently considering how to best incentivize complication reductions in the Enhanced All-Payer Model.

The HSCRC staff review annual audits of approximately ten hospitals to ensure coding accuracy with the medical record documentation. If audit issues are found, staff will follow up with the hospital to understand the issue(s) and take appropriate action. Currently, the HSCRC is working with one hospital to further review audit results that exceeded HSCRC thresholds.

Figure 4. Case-Mix Adjusted PPC Rates in Maryland through June 2017



Case-Mix Adjusted PPC Rate	All-Payer	Medicare FFS
CY16 over CY13 % Change	**-43.33%**	**-45.43%**
CY 2016 YTD thru Jun (v34)	0.63	0.71
CY 2017 YTD thru Jun (v34)	0.60	0.66
CY17 over CY16 YTD % Change	-4.43%	-6.90%
Compounded % Change	-45.84%	-49.20%

Medicare Savings and Total Cost of Care Performance

Under the All-Payer Model agreement, the total cost of care growth for Maryland Medicare beneficiaries may not exceed the national growth rate by more than one percent in any given year and may not exceed the national growth for two consecutive years. The results for Medicare for the first year of the All-Payer Model were positive, while the second year results were mixed. Staff estimates that the results for the third year are positive (see Figures 5-7).

- In the first year of the Model, non-hospital costs were contained, and Medicare saved money on both hospital and non-hospital costs.
- In the second year of the Model, Maryland Medicare hospital cost growth remained stable, but non-hospital costs increased and even offset some of the hospital savings achieved in the first year. Maryland exceeded the national Medicare total cost of care growth rate in CY 2015 by approximately 0.70 percent.
- In the third year of the Model, hospital cost growth rate was favorable compared to the nation, but non-hospital growth continued to be a concern. Medicare total cost of care growth in Maryland was lower than the nation by 0.70 percentage points[15] in CY 2016. Staff is continuing to monitor growth trends for hospital and total cost of care.

The following figures represent actual growth trends for the current calendar year month versus the prior calendar year month.

[15] The total cost of care growth trend noted above for CY 2016 reflects an adjustment to account for undercharging that occurred in Maryland hospitals from July – December 2016. Without the adjustment noted Medicare total cost of care growth was lower than the nation by 0.90 percentage points.

Figure 5. Total Cost of Care per Capita

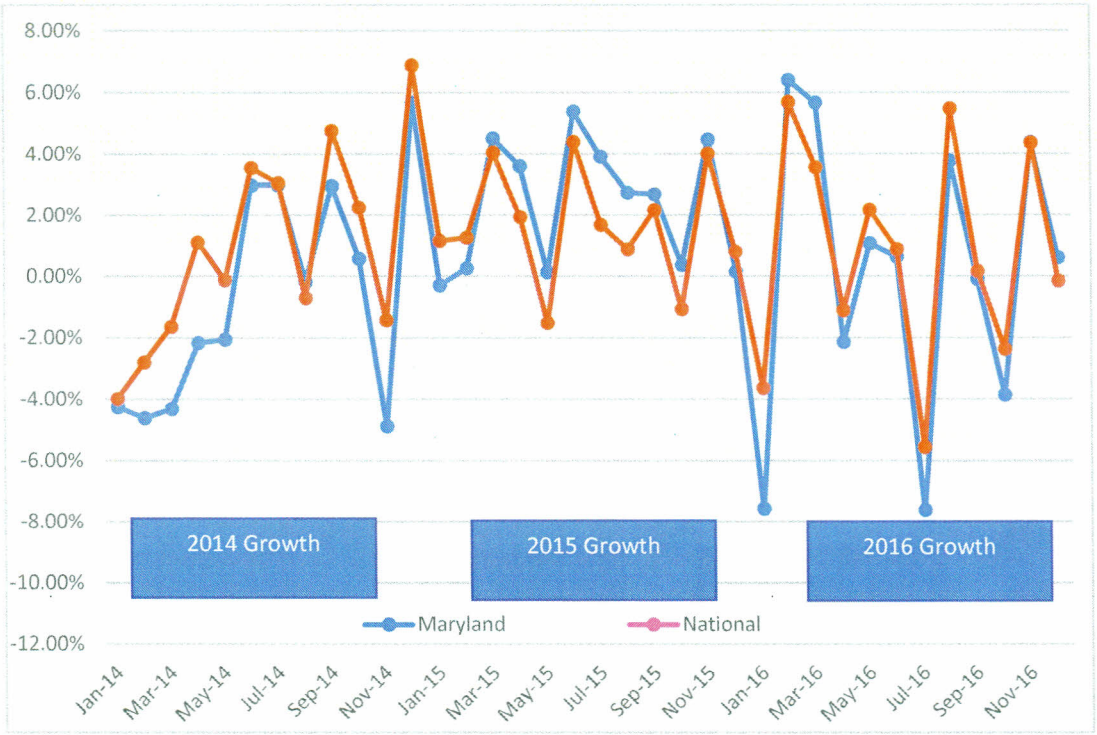


Figure 6. Medicare Hospital Spending per Capita

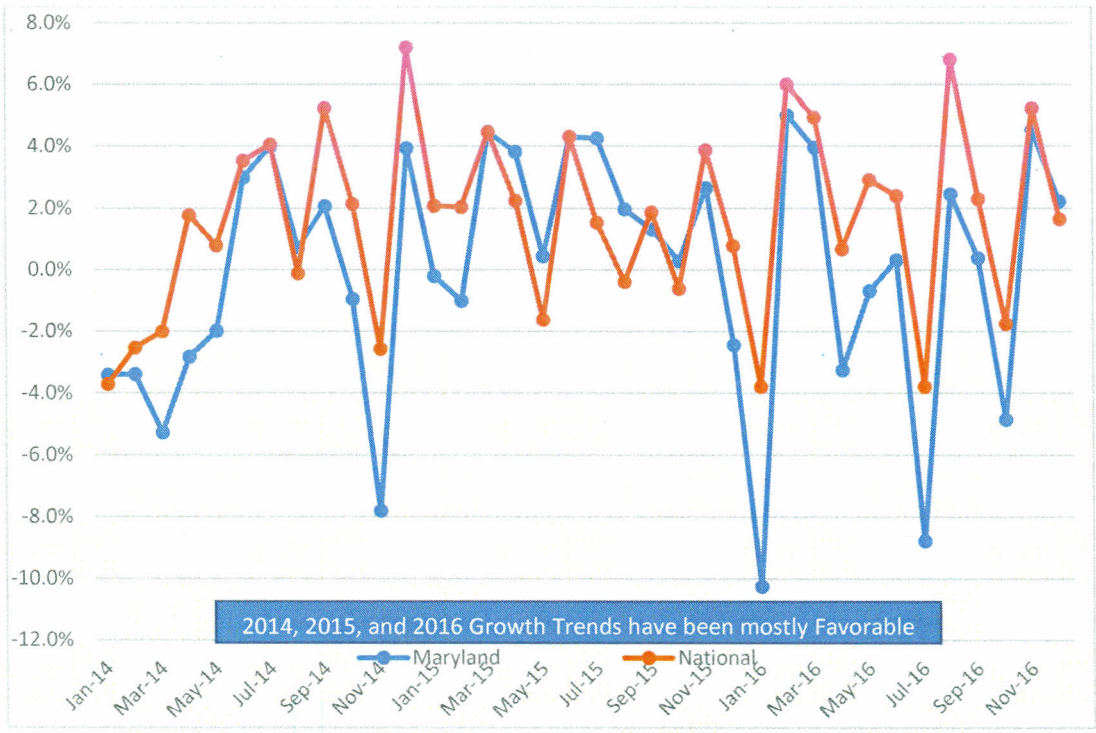
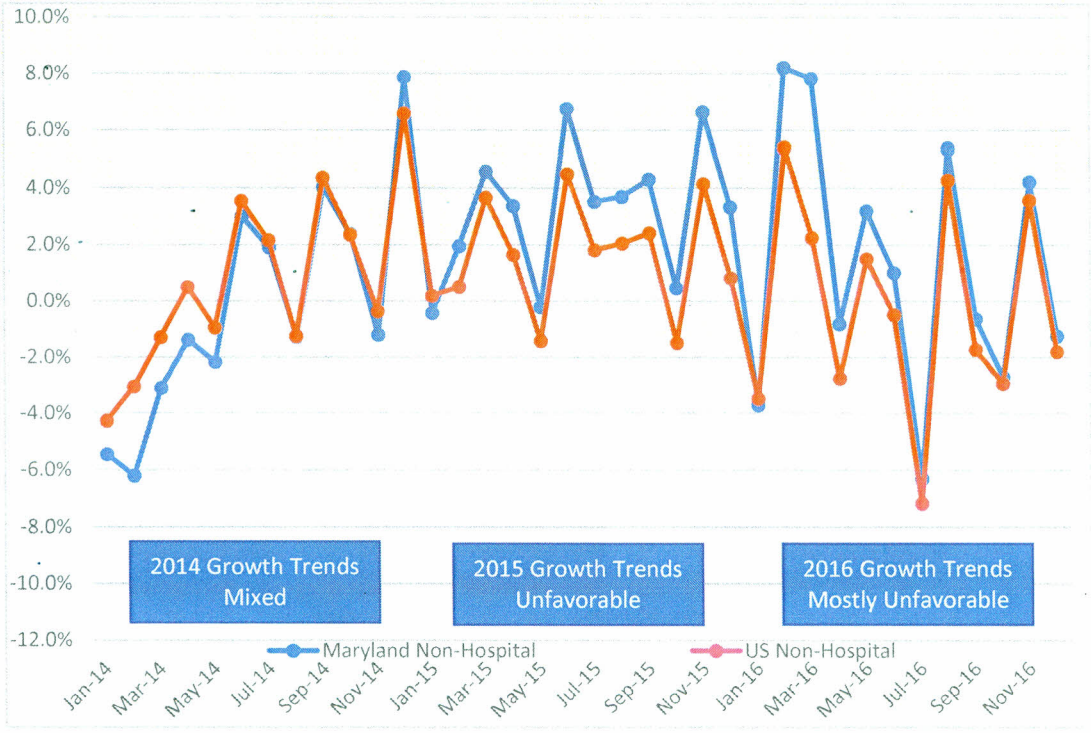


Figure 7. Medicare Non-Hospital Spending per Capita



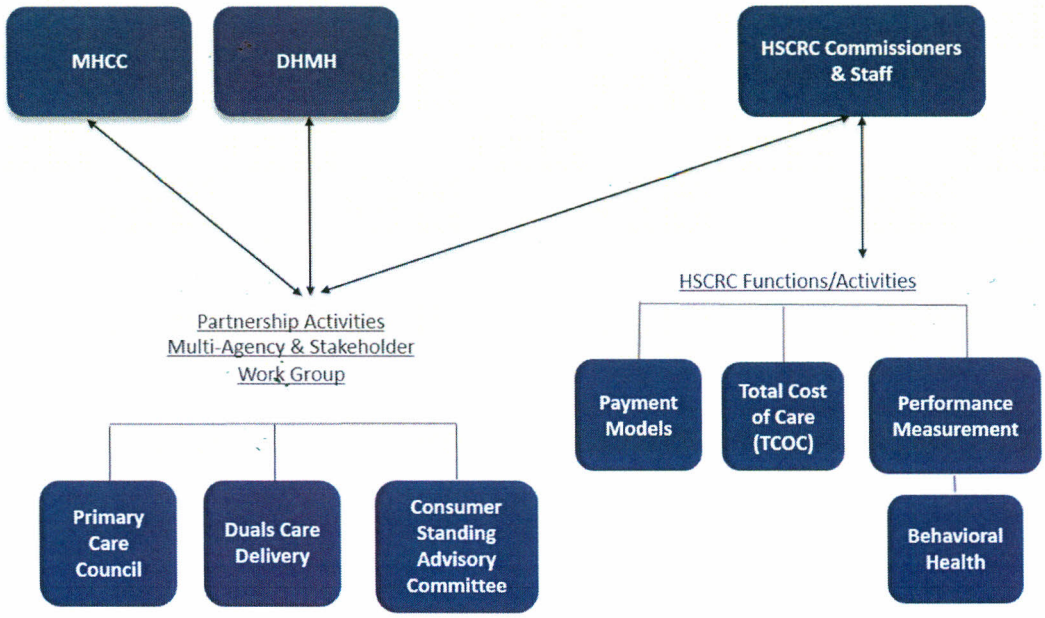
Section II – Stakeholder Engagement

The HSCRC continues to engage broadly with stakeholders in guiding policy and methodology development through various Workgroup meetings throughout CY 2017. As the All-Payer Model progression broadens to include providers and delivery systems beyond hospitals, the HSCRC has focused on coordinating Workgroup efforts across State agencies. In partnership with the Maryland Health Care Commission (MHCC) and the Maryland Department of Health (MDH), the HSCRC has participated in a Primary Care Council and the Duals Care Delivery Workgroup. The Payment Models, Performance Measurement, and Total Cost of Care Workgroups met monthly through June 2017. The Consumer Standing Advisory Committee met bi-monthly, and the Behavioral Health Performance Measurement subgroup met in December 2016.

Figure 8 depicts the current structure of the stakeholder engagement Workgroups. All Workgroup meetings are conducted in public sessions, and comments are solicited from the public at each meeting. There are also a number of sub-workgroup meetings and task forces to discuss technical, data-driven matters related to specific policies, which report back to the larger Workgroups. Input is also solicited in informal meetings with stakeholders.

All proceedings and reports of the Workgroup activities may be found on the Workgroups page on the HSCRC website.

Figure 8. Stakeholder Engagement Structure



Payment Models Workgroup

The Payment Models Workgroup is charged with vetting potential recommendations for HSCRC consideration on the structure of payment models and how to balance its approach to payment updates. During the first half of CY 2017, the Workgroup reviewed several policies, including the FY 2018 Annual Update Factor, the FY 2018 Uncompensated Care (UCC) Policy, and various quality-based policy recommendations. Additionally, the Payment Models Workgroup discussed market shift adjustments, which are included in rate orders, as well as increases in TCOC for Medicare. The Workgroup will re-commence meetings in early CY 2018 when staff begins to develop the FY 2019 Annual Update Factor and other payment policies.

Performance Measurement Workgroup

The Performance Measurement Workgroup develops recommendations for HSCRC consideration on measures that are reliable, informative, and practical for assessing a number of important quality and efficiency issues. In the first half of CY 2017, the Performance Measurement Workgroup reviewed several policies, including the Readmissions Reduction Incentive Program (RRIP) for RY 2019, the Maryland Hospital Acquired Conditions (MHAC) Program for RY 2019, the Quality-Based Reimbursement (QBR) Policy for RY 2018 and RY 2019, and the Potentially Avoidable Utilization (PAU) Savings for FY 2018. Current objectives include updating quality incentive program policies for RY 2020 and resolving data issues.

Behavioral Health Performance Measurement Subgroup

The Behavioral Health Performance Measurement Subgroup convened at the end of CY 2016 with the goal of identifying quality metrics, reliable data sources, and measurement approaches to monitor behavioral health care provided in psychiatric units in Maryland acute care and free-standing psychiatric hospitals. The group plans to

reconvene at a later date to continue exploring performance measurement in Maryland hospitals.

Consumer Standing Advisory Committee

The Consumer Standing Advisory Committee builds on existing consumer engagement and involvement across various HSCRC and MDH Workgroups in an effort to bring together a diverse cross-section of consumers, consumer advocates, relevant subject matter experts, and other stakeholders. Workgroup goals include: ensuring that the consumer perspective is reflected in and remains central to the All-Payer Model and ongoing modernization efforts; promoting understanding of the All-Payer Model and its impact on improving healthcare for patients; and gathering input from consumers to ensure those perspectives are used to inform the policymaking process. The group convened at the end of CY 2016 and has continued to meet in CY 2017.

Total Cost of Care Workgroup

The Total Cost of Care (TCOC) Workgroup is charged with providing feedback to the HSCRC on the development of specific methodologies and calculations for TCOC. The group convened at the end of CY 2016 and has continued to meet throughout CY 2017 to assist in determining the technical aspects of TCOC for the State's All-Payer Model. The TCOC Workgroup is particularly focused on the development of the Medicare Performance Adjustment (MPA) which will assist the State in the transition to the Total Cost of Care Model.

Section III – Alternative Methods of Rate Determination

The Maryland All-Payer Model agreement affords the State the ability to innovate by developing alternative methods of rate determination. During the first six months of the Maryland All-Payer Model, the HSCRC developed the global budget revenue (GBR) reimbursement model and engaged all hospitals not already under a total patient revenue (TPR) agreement in GBR. As of April 2017, 100 percent of Maryland regulated hospital revenues are contained within GBR agreements. In addition to regulated acute hospital revenue under global budgets, the HSCRC sets the rates of non-governmental payers and purchasers for psychiatric hospitals and Mount Washington Pediatric Hospital.

The GBR methodology is central to achieving the goals set forth in the Maryland All-Payer Model: promoting better care, better health, and lower cost for all Maryland patients. In contrast to the previous Medicare waiver that focused on controlling increases in Medicare inpatient payments per case, the Maryland All-Payer Model focuses on controlling increases in total hospital revenue per capita. GBR agreements prospectively establish a fixed annual revenue cap for each hospital to encourage hospitals to focus on care improvement and population-based health management.

Under GBR contracts, each hospital's total annual revenue is known at the beginning of each fiscal year. Annual revenue is determined from a historical base period that is adjusted to account for inflation updates, demographic driven volume increases, performance on quality-based or efficiency-based programs, changes in payer mix, and changes in the levels of approved uncompensated care. Annual revenue may also be

modified for changes in service levels, market shifts, population growth, or shifts of services to unregulated settings.

Refining Global Budget Methodologies

While the majority of Maryland hospitals transitioned to global budgets during the first six months of the Maryland All-Payer Model, a number of essential policies had not yet been finalized to address issues such as adjusting global budgets for market shifts or changes to inter-hospital transfer rates, establishing rates for new hospitals, and providing hospitals flexibility to achieve annual GBR revenue while reducing PAU. As shown in this report, HSCRC staff have worked closely with the Payment Models Workgroup, as well as a number of technical sub-workgroups to develop policies to address these issues. Additionally, HSCRC staff and Workgroup members have emphasized that these policies will continually progress as underlying data resources improve and the Maryland Model evolves.

Global Budget Charge Corridors

A unique feature of global budgets that has been refined is the capacity of a GBR hospital to increase or decrease its approved unit rates to achieve its overall approved global revenue. This mechanism allows a hospital the flexibility to compensate for fluctuations in service volume over the course of the year and still reach its annual revenue target. The hospital must vary these unit rates in unison and within a defined charge corridor or be subject to penalties. If a hospital is experiencing significant volume declines as a result of reduced PAU, it may submit a request to expand this corridor so that it can achieve the approved global revenue necessary for financial stability and population health investment. HSCRC staff review these charge corridor requests to determine the cause of hospital volume increases and the impact of the charge corridor expansion on the patient population, surrounding hospitals, and other factors related to the goals and requirements of the All-Payer Model.

Transfer Case Payment Adjustment Implementation

An early concern with the expansion of global budgets was the possibility that transfer rates to academic medical centers (AMCs) would increase, and high cost care would leave community hospitals with the associated revenue for cases that had been transferred. Global budget hospitals are encouraged to reduce PAU and promote care management and quality improvement. This could result in hospitals transferring a greater number of complex cases to AMCs in order to both provide patients with the advanced care they need, as well as to reduce the high costs associated with such cases. The Transfer Case Adjustment addresses these concerns by ensuring that "receiving" hospitals have the capacity to take on a possible influx of complex cases without facing financial penalties under a global budget. The HSCRC accomplished this objective by establishing a process to monitor and adjust for changes in transfer rates to AMCs and from sending hospitals on a periodic basis. The Transfer Case Adjustment Policy began in RY 2016.

Market Shift Adjustment (MSA) Development

In CY 2016, the HSCRC worked extensively with stakeholders to understand and adequately account for shifts in market volume, which are reflected in RY 2017 rate

orders. Staff believes it is important to move money when patients shift from one institution to another, whereby the receiving institution receives a marginal cost adjustment of 50 percent to care for the larger share of patients. Given the dynamic healthcare market in Maryland, the HSCRC has decided to make market shift adjustments on a semi-annual basis, instead of annually, beginning with the CY 2016 measurement period.

HSCRC staff continue to track emergency department volumes and alert trends, whereby patients may be diverted from one hospital's emergency department to another. Based on its findings, staff may incorporate these data into market shift adjustments. Additionally, staff continues to monitor any services shifting to unregulated sites, which is not represented by the current hospital market shift calculations. As always, the HSCRC will continue to make market shift adjustments when significant events occur (e.g., movement of a service, closure of a service, or other very large shifts).

Full Rate Reviews

A moratorium was issued on full rate reviews in November 2015 and is set to expire October 31, 2017. In anticipation of that date, the Commission voted in September 2017 to approve an amended process for full rate reviews. Full rate reviews allow staff to initiate or hospitals to apply for a full review of rates across all hospital rate centers. Staff may then adjust rates as appropriate based on review findings. Due to the unique nature of global budgets, former processes and methodologies under the previous rate setting system no longer provided adequate analysis for review. The amended process will allow for a more accurate comparison of hospitals under the new global budget system.

GBR Infrastructure Support

In FYs 2014 through 2016, the Commission included over $200 million in rates to support hospitals in developing services and mechanisms to improve care delivery, population health, and care management. Hospitals submitted reports on these investments with program descriptions, expenditures, and results.

Reports detailing FY 2016 investments were due in early October 2016. The HSCRC received infrastructure reports from hospitals detailing over 700 infrastructure investments made during FY 2016. Hospitals reported a total infrastructure investment of $199 million dollars over that time period.

Key areas of investment included: 1) disease management, 2) post-discharge and transitional care, 3) community care coordination, 4) case management, and 5) consumer education and engagement.

Reporting for GBR Infrastructure spending has been suspended for FY 2017 to encourage hospitals to focus on developing care redesign initiatives and divert staff attention to those efforts. The report may be incorporated into other hospital reporting requirements at a later time.

Transformation Implementation Awards

As part of its update factor process for FY 2017, the Commission authorized up to 0.25 percent of hospital rates to be used for intensive community-based care coordination activities for chronically ill patients. During the first round of a competitive application process, the Commission awarded $30 million to nine hospital partnerships to work with community partners to reduce PAU. These programs are above and beyond the care transitions initiatives that were funded in FYs 2014 and 2015. In October 2016, the Commission awarded an additional $6.5 million in funding to another five partnerships. The first report from awardees was due at the end of August 2017. Ongoing reporting will be required of all awardees, and the Commission maintains the authority to curtail funding if it is not used in accordance with the proposals as approved by the Commission.

Medicare Performance Adjustment

The HSCRC is also developing the Medicare Performance Adjustment (MPA) which will adjust hospital Medicare payments based on Medicare TCOC performance. This modifier will be implemented at the beginning of CY 2018, with payment adjustments beginning in July 2019 (RY 2020). This adjustment is expected to assist the State in the transition to the Total Cost of Care Model, which will focus on controlling TCOC. Commissioners will vote on the policy in November 2017 to allow for a January 2018 implementation date.

Care Redesign Amendment Programs

The Commission is also focusing on integrated care incentives, such as integrated care networks, pay-for-performance programs, and gain-sharing programs to achieve the goals of care coordination and provider alignment. In April 2017, the State received approval from CMS for an amendment to the existing All-Payer Model contract to implement specific care redesign strategies and to provide hospitals and providers with the tools and flexibility necessary to achieve the goals of the All-Payer Model.

This year, two care redesign tracks were designed to encourage hospital and provider alignment: the Hospital Care Improvement Program (HCIP) and the Complex and Chronic Care Improvement Program (CCIP). HCIP aims to facilitate care improvement and efficiency within hospitals, while CCIP focuses on improving care for high-risk and rising needs patients through increased care coordination among hospitals and community physicians. In the first performance period, ten hospitals are participating in HCIP and six hospitals are participating in CCIP. The Chesapeake Regional Information System for our Patients (CRISP) is serving as the administrator of the program. The first performance period began on July 1, 2017, with potential gain-sharing payment distributed in CY 2018 for those hospitals that opt for this portion of the given program. A second performance period for HCIP and CCIP will begin on January 1, 2018 with a significant increase in participation by hospitals across the State. The State and stakeholders are currently working on updates to the care redesign programs to support increased care transitions efforts between hospitals and primary care providers.

The HSCRC will continue to further develop payment policy and will report any future innovations in this section of the Biannual Report.

Section IV – Reports Submitted to CMS

The All-Payer Model agreement requires the HSCRC to report to CMS on relevant policy and implementation developments. To date, the HSCRC has met all of the reporting requirements outlined in the All-Payer Model agreement by submitting the following information to CMS.

- Maryland All-Payer Model Annual Monitoring Report: This annual report was submitted to CMS in July 2017. An updated report was submitted in December 2016. It contains data for performance years 2014, 2015, and 2016 as well as 2013 baseline measures.
- Maryland All-Payer Model Quarterly Monitoring Report: On a quarterly basis, HSCRC staff prepare a quarterly update report for CMS with brief updates on model tests, metrics and State activities in each fiscal quarter. This report was submitted in April and July 2017. For a copy of these reports, please contact HSCRC staff.

Please find the most recent annual report submitted to CMS attached to this biannual report.

Section V - Progression towards the Total Cost of Care Model

The All-Payer Model agreement called for Maryland to submit a proposal for a new model no later than January 2017, which shall limit, at a minimum, the Medicare beneficiary total cost of care growth rate. To prepare this proposal, the State engaged in a robust stakeholder process, working with hundreds of stakeholders representing consumers, hospitals, physicians, skilled nursing and post-acute care facilities, payers, experts, and various State agencies. The State also solicited comments from the public. On December 16, 2016, Governor Larry J. Hogan Jr. submitted the "Progression Plan" to CMS, describing Maryland's proposal to accomplish the Model's expanded system-wide goals. In early 2017, the federal government and State officials, with input from Maryland health care leaders, began negotiations for a new model that will begin on January 1, 2019. The new Model must move beyond hospitals to address the total costs of Medicare patients' care in the community.

Under the proposed new "Maryland Total Cost of Care Model," Maryland will be expected to progressively transform care delivery across the health care system with the objective of improving health and quality of care. At the same time, State growth in Medicare spending must be maintained lower than the national growth rate. The new Total Cost of Care Model will give the State flexibility to tailor initiatives to the Maryland health care context, and encourage providers to drive health care innovation. The Total Cost of Care Model also encourages continued Care Redesign, and provides new tools and resources for primary care providers to better meet the needs of patients with complex and chronic conditions and help Marylanders achieve better health status overall.

Total Cost of Care Model Builds on Existing Momentum

The new Total Cost of Care Model will leverage the foundation already developed by Maryland for hospitals and build on the investments that hospitals have made since

2014. Maryland will continue to encourage provider- and payer-led development of Care Redesign programs to support innovation. Maryland is also continuing efforts to implement a new Maryland Primary Care Program, which is intended to bring care coordination and support to approximately 400,000 Medicare beneficiaries and 2,000 physicians. The State will commit its public health resources to support population health improvements that are aligned with Model goals and Marylanders' needs.

At this stage, the State and the federal government have completed negotiations regarding the basic structure of the new Total Cost of Care Model, described in the Progression Plan submitted in December 2016, and the Model is now undergoing federal clearance and approval. As a result, Maryland's progression can evolve from concept to planning for the implementation activities necessary to assure successful progression over time. Throughout the development of implementation plans, the State will continue its commitment to privately led innovation, voluntary participation in Care Redesign programs, and meaningful and ongoing stakeholder engagement to achieve the State's vision for person-centered care, clinical innovation and excellence, and improved population health.

Key Elements of the New Model

Core requirements and expectations of the new model, which are subject to federal approval, include the following:

- The new Total Cost of Care Model will begin on January 1, 2019 for a 10-year term, so long as Maryland meets the model performance requirements.
- Hospital cost growth per capita for all payers must not exceed 3.58% per year. The State has the opportunity to adjust this growth limit based on economic conditions, subject to federal review and approval.
- Maryland commits to saving $300 million in annual total Medicare spending for Medicare Part A and Part B by the end of 2023. The Medicare savings required in the TCOC All-Payer model will build off of the ongoing work of Maryland stakeholders, which began in 2014.
- Federal resources will be invested in primary care and delivery system innovations, consistent with national and State goals to improve chronic care and population health.
- The Model will help physicians and other providers leverage other voluntary initiatives and federal programs to align participation in efforts focused on improving care and care coordination, and participation in incentive programs that reward those results. These programs will be voluntary, and the State will not undertake setting Medicare and private fee schedules for physicians and clinicians.
- Maryland will set aggressive quality of care goals.
- Maryland will set a range of population health goals.

The new Total Cost of Care Model is anticipated to begin on January 1, 2019; this provides a full year—calendar year 2018—for Maryland to engage stakeholders on planning and preparations prior to the new model's start. The State of Maryland remains committed to a robust process for input and feedback on the development and

implementation of the new model. Additional information on the new Total Cost of Care Model can be found at http://hscrc.maryland.gov/Pages/progression.aspx.

Section VI – Reporting Adverse Consequences

At this time, the HSCRC has not observed any adverse consequences on patients or the public generally as a result of the implementation of the Maryland All-Payer Model.

A number of policies developed in the past three and one-half years of implementation guard against potential adverse consequences that HSCRC staff and stakeholder workgroups identified as possible unintended outcomes of implementation. The GBR agreements initiated by the HSCRC for implementation of the global budgets contain consumer protection clauses. The HSCRC, in conjunction with the Payment Models Workgroup, developed the Transfer Adjustment Policy and a Market Shift Policy to help ensure that "the money will follow the patient" when shifts in utilization occur between hospitals or other health care settings. These policies aim to guard against hospitals inappropriately limiting the number of high-cost, high-risk cases admitted and to provide open access and resources when patients need to be transferred to receive highly specialized care offered in academic medical centers (AMCs).

Additionally, the HSCRC is continuing to refine tools to monitor changes in patterns of service, particularly shifts in utilization and expenditures across all healthcare providers. One area that has been under considerable scrutiny is the potential diversion of patients from one Emergency Department to other surrounding hospitals' Emergency Departments. In CY 2017, the HSCRC began to study the utilization of Emergency Department services, diversions from one hospital to another, and the efficiency of moving patients through the Emergency Department at a particular hospital. Although wait times and efficiency measures for Maryland Emergency Departments has been historically worse relative to the nation, the HSCRC has devoted time and resources to identifying any other causes of Emergency Department delays or diversions.

Other tools to measure market shifts potentially associated with the All-Payer Model include a Total Cost of Care Reporting Template, which was developed with the aim of compiling public and private payer hospital and non-hospital claims in order to assess the growth and shifts that occur within the regulated and unregulated hospital markets, as well as those changes that occur among non-hospital healthcare providers. Claims data is compiled from the All Payer Claims Data operated by MHCC and from data submitted to the HSCRC by public payers. The HSCRC continues to improve its processes with MHCC and payers to obtain the needed data in the most efficient and timely manner possible to appropriately monitor changes in utilization and expenditures.

In CY 2016 and CY 2017, the HSCRC also continued its work to engage consumers through a Consumer Standing Advisory Committee (CSAC), which builds on the foundation laid by the Consumer Engagement and Outreach Workgroup in 2015. Consumer advocacy organizations have described the HSCRC stakeholder engagement process as a model for consumer engagement in a major policy endeavor. Stakeholder engagement is key to the development and success of the next phase of the All-Payer Model that will expand to all care settings. The HSCRC has made significant efforts to be

as transparent as possible in its initiatives and policy developments by making these workgroup meetings open to the public and by posting the meeting materials and recordings on the HSCRC's website: http://www.hscrc.maryland.gov/.

One area of caution for our current contract is the fluctuation in trends of the total cost of care. In the All-Payer Model contract, CMMI monitors the total cost of care in Maryland to ensure that reductions in hospital potentially avoidable utilization do not result in unreasonable increases in the total cost of care, which includes cost related to all health care providers, not just hospitals. The All-Payer Model contract provides that in any one calendar year, Medicare total cost of care growth in Maryland may not grow more that 1 percent above Medicare total cost of care growth nationally. Further, the growth in Maryland may not exceed the national average in two consecutive years.

Since 2014, Maryland's total cost of care has fluctuated above and below the national rate as illustrated in Section I. In CY 2014, Maryland's total cost of care rate was lower than the nation. However in CY 2015, Maryland's growth exceeded the national rate by 0.70 percent. In CY 2016, Maryland's growth rate was once again below that of the national average by 0.70 percent. The data for CY 2017 is preliminary and unavailable for distribution at this time, but will be presented as soon as it is finalized. The HSCRC will continue to monitor this metric closely to ensure that the two consecutive year requirement is not breached.

The HSCRC will continue to develop monitoring tools, measure performance, and engage stakeholders in order to ensure compliance with the requirements of the All-Payer Model agreement.

Contact and More Information

For questions about this report or more information, please contact Katie Wunderlich, the HSCRC Director of the Center for Engagement and Alignment, at katie.wunderlich@maryland.gov.

More information is available on HSCRC's website: http://www.hscrc.maryland.gov.

Appendix 1. Maryland All-Payer Model Monitoring Report to CMS

Maryland All-Payer Model
Monitoring Report

June 30, 2017

Health Services Cost Review Commission

This report containing performance year 2016 data, with historical baseline measures from 2013-2015, is submitted by the Maryland Health Services Cost Review Commission to the Centers for Medicare & Medicaid Services, in compliance with the Maryland All-Payer Model Agreement.

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1.0 Introduction

The State of Maryland is leading a transformative effort to improve care and lower the growth in health care spending. On January 10, 2014, the Centers for Medicare & Medicaid Services (CMS) approved the implementation of a new All-Payer Model for Maryland. As the State's hospital rate-setting authority, the Maryland Health Services Cost Review Commission (HSCRC) plays a vital role in the implementation of an innovative approach to healthcare reform. The State's ultimate goal is to create a healthcare system that enhances patient care, improves health, and lowers total costs.

In the first year of the Model, the State was successful in shifting all hospitals from volume-based reimbursement systems to global budgets tied to populations of patients, ahead of the required schedule of five years.

In the second year of the Model, the State implemented changes in its value-based and quality-based payment approaches to tie into the new Model and developed some additional tools for global budgets. Hospitals—along with other providers, community organizations, consumers, and the State—also focused extensive planning efforts on the care delivery transformations and improvements that are necessary to succeed under the Model. These delivery improvements include care coordination, alignment, consumer engagement, and information technology and analytic infrastructure.

In the third year of the Model, the State continued to implement care redesign and infrastructure as it focused on population health and outcomes improvement goals. The State also developed and submitted a proposal for a second iteration of the Maryland All-Payer Model that will build upon Maryland's hospital per capita model by expanding efforts to align hospitals, physicians, and other providers in delivery system reforms that improve outcomes, engage patients, and contain costs. This proposal, known as the "Progression Plan," was submitted to CMS on December 16, 2016.

Successes of the All-Payer Model – 3rd Year

In the third year of the Maryland All-Payer Model, the State of Maryland expanded upon the first two years' successes and continued to improve cost savings and quality of care.

Preliminary results for Calendar Year 2016 show that Maryland saved $287 million in Medicare hospital expenditures. Combined with savings efforts through the first two years, the State achieved $538 million in aggregate hospital savings. The cumulative Medicare Total Cost of Care savings is $364 million.[1]

Maryland also continued to improve quality of care. The State lowered Potentially Preventable Conditions (PPCs) by an additional 8 percent (43 percent in aggregate, exceeding the Model goal of a 30 percent reduction in five years). Maryland also continued to reduce its all-cause readmissions, moving closer to its goal to be at or below the national readmission rate by 2018.

[1] Actual revenues were below the ceiling for CY 2016 and these numbers have been adjusted to reflect the hospital undercharge of approximately 1% that occurred in the second half of CY 2016.

In the current year of the Model, the State continues to limit all-payer hospital growth while developing a second iteration of the All-Payer Model which will limit all-payer hospital growth on a per-capita basis, as well as on Medicare total cost of care (TCOC) for Parts A and B basis. The new model will also expand private efforts for delivery system transformation beyond hospitals by connecting primary care providers, physicians and nursing homes. Maryland is engaging its stakeholders and working with CMS to develop this new model, the State aims to complete this process by January 1st, 2018.

The All-Payer Model utilizes a payment system that holds hospitals accountable for the total cost of hospital care on a per capita basis. The Model will be successful if it is able to enhance the quality of health care delivery, improve population health, and reduce costs. In contrast to the previous Maryland Medicare waiver, which focused on controlling growth in Medicare inpatient payments *per case*, the Maryland All-Payer Model focuses on controlling growth in total hospital revenue *per capita*. The Maryland All-Payer Model Agreement established a five-year period during which a series of key requirements must be met. These requirements include:

- All-payer per capita total hospital revenue growth is limited to 3.58 percent per year over the first three years of the Agreement;
- Five-year Medicare per beneficiary total hospital cost savings must equal or exceed $330 million;
- The aggregate Medicare 30-day all-cause readmission rate is reduced to at or below the national average; and
- The rate of hospital-acquired conditions (HACs) is reduced by 30 percent.

Figure 1 (below) presents progress on these All-Payer Model Agreement goals through 2016. Per HSCRC data, Maryland is on track to meet all Model Requirements through the third year of the Model.

Figure 1. Maryland All-Payer Model Performance, 2014-2016

Performance Measures	Targets	2014 Results	2015 Results[1]	2016 Results (preliminary)[2]
All-Payer Hospital Revenue Growth	**≤ 3.58% per capita annually**	**1.47% growth per capita**	**2.31% growth per capita**	**0.80% growth per capita[3]**
Medicare Savings in Hospital Expenditures	**≥ $330m over 5 years** (Lower than national average growth rate from 2013 base year)	**$116m** (2.15% below national average growth)	**$135m** **$251 cumulative** (2.22% below national average growth since 2013)	**$287m** **$538m cumulative[3]** (5.0% below national average growth since 2013)
Medicare Savings in Total Cost of Care	**Lower than the national average growth rate for total cost of care from 2013 base year**	**$133m** (1.53% below national average growth)	**$80m** **$213m cumulative** (0.85% below national average growth since 2013)	**$151m** **$364m cumulative[3]** (1.5% below national average growth since 2013)
All-Payer Quality Improvement Reductions in PPCs under MHAC Program	**30% reduction over 5 years**	**26%** reduction	**35%** reduction since 2013	**43%** reduction since 2013
Readmissions Reductions for Medicare	**≤ National average over 5 years**	**20%** reduction in gap above nation	**57%** reduction in gap above nation since 2013	**76%** reduction in gap above nation since 2013

Hospital Revenue to Global or Population-Based	≥ 80% by year 5	95%	96%	100%

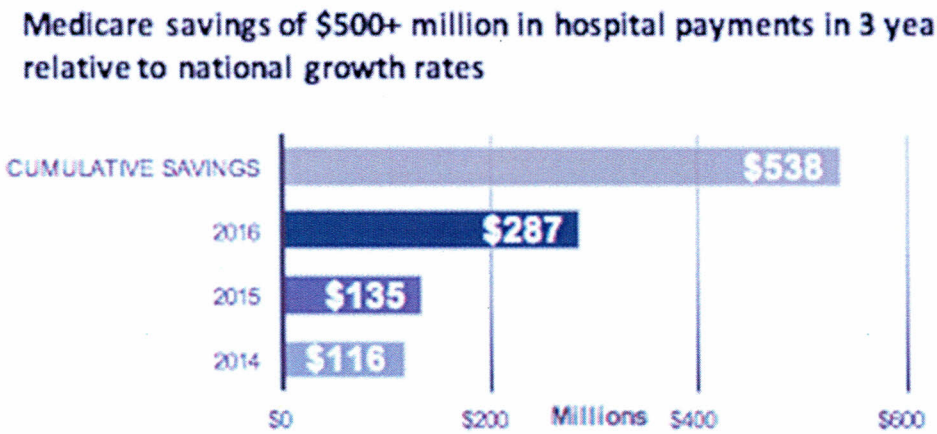
[1] 2015 figures for readmissions are preliminary because CMS is evaluating the readmission data after ICD-10.

[2]Preliminary results compare the performance available in calendar year 2016 to the same months in prior year or to the same months in the 2013 base year; these have not been validated by CMS.

[3]Actual revenues were below the ceiling for CY 2016 and these numbers have been adjusted to reflect the hospital undercharge of approximately 1% that occurred in the second half of CY 2016.

Figure 2 (below) highlights in particular the cumulative Medicare savings achieved under the All-Payer Model throughout the first three years. At the conclusion of 2016, Maryland had saved Medicare over $530 million across three years of the Model.

Figure 2. Cumulative Medicare Savings 2014-2016[1]



[1]Actual revenues were below the ceiling for CY 2016 and these numbers have been adjusted to reflect the hospital undercharge of approximately 1% that occurred in the second half of CY 2016.

In addition to the above-listed goals, the submission of this report meets the Maryland Model Agreement requirement that the State provide an annual monitoring report to CMS. This report is intended to catalogue State performance with respect to selected quality and financial goals as outlined in Agreement Appendices 7 and 8 under three domains: Patient Experience of Care, Population Health, and Costs and Efficiency. The June report is given in partial fulfillment of the annual monitoring report requirement; a full annual monitoring report, containing data for all required measures, will be submitted in December 2016.

2.0 Domains and Measures Included in Monitoring Report

Measures that are tracked in the Monitoring Report correspond to three domains: patient experience of care, population health, and health care costs.

- **Patient Experience of Care Measures**: Patient satisfaction, effectiveness of care transitions, physician participation in public programs, processes of care, high priority complication rates, prevention quality indicators, and readmissions;
- **Population Health Measures**: Life expectancy, hospitalizations for ambulatory care sensitive conditions, primary and secondary prevention for cardiovascular disease, and behavioral health emergencies; and
- **Health Care Cost Measures**: Overuse of diagnostic imaging, inpatient and outpatient cost trends, total cost of care for all residents and for specific payers including Medicare, Medicaid, and private insurance.

Data for the measures were compiled from existing publicly available national and state sources (e.g., CMS Hospital and Home Health Compare, Maryland Vital Statistics), as well as private-sector resources (e.g., Joint Commission Quality Check). In addition, several measures were developed using utilization and financial data from claims-based files obtained from CMS (e.g., Research Identifiable Files) and Maryland (e.g., HSCRC Hospital Abstract Data). As mentioned, the June 30 report presents available data through 2016 for the goals and measures outlined in Figure 3. The full report with all measures will be submitted in fulfillment of contractual reporting requirements by December 31, 2017.

Figure 3. Goals and Measures included in June 30 Report

Goal	Description	Measures
Goal 7	Enhance Care Transitions – Coordination with Primary Care	7B – Discharges with Principal Provider Notified
Goal 9	Broaden Engagement in Innovative Models of Care	9A – Participation of Clinicians in NCQA Accredited Patient Centered Medical Homes 9B – Participation of Providers in Accountable Care Organization 9C – Participation of Providers in Bundled Payment Initiatives
Goal 12	Reduce high priority hospital complications	12A – Potentially Preventable Complications
Goal 14	Reduce Readmissions – Nursing Homes	14 – Readmission Rates for Inpatient Discharges to Nursing Homes
Goal 15	Reduce Readmissions – Hospital	15A – 30-Day, All Hospital, All-Cause Readmission Rate 15B – Readmissions Per 1,000 Maryland Residents 15C – Heart Failure Readmission Rate 15D – Pneumonia Readmission Rate 15E – Acute Myocardial Infarction 15F – Chronic Obstructive Pulmonary Disease readmission rate 15G – Hip/Total Knee Arthoplasty readmission rate
Goal 16	Improve Life Expectancy	16 – Average Life Expectancy at Birth
Goal 17	Reduce the rate of Hospitalizations for Ambulatory Care Sensitive Conditions	17A – PQI Acute Composite Rate 17B – PQI Chronic Composite Rate 17C – PQI Overall Composite Rate
Goal 20	Improve Prevention for Diabetes and Cardiovascular Disease	20A – Diabetes-Related emergency department (ED) Visit Rate per 1,000 population 20B – Hypertension-Related ED Visit Rate per 1,000 population
Goal 21	Improve Prevention for Asthma	21 - Asthma-Related ED Visit Rate
Goal 22	Promote Behavioral Health Integration in Primary Care	22A - Mental Health-Related ED Visit Rate 22B - Substance Abuse-Related ED Visit Rate

Goal 25	Control Expenditure Growth – Hospital	25A – All-Payer Maryland Hospital Charges 25B – Medicare Maryland Hospital Charges 25C – Medicaid Maryland Hospital Charges 25D – Dual Eligibles Maryland Hospital Charges 25E – Private Payer Maryland Hospital Charges
Goal 25a	Control Expenditure Growth – Specialty Hospital	25aA – All-Payer Maryland Specialty Hospital Charges 25aB – Medicare Maryland Specialty Hospital Charges 25aC – Medicaid Maryland Specialty Hospital Charges
Goal 26	Control Expenditure Growth – All Services	26A – All-Payer Maryland Total Expenditure 26B – Medicare Maryland Total Expenditure 26C – Medicaid Maryland Total Expenditure 26D – Dual Eligibles Maryland Total Expenditure 26E – Private Payer Maryland Total Expenditure

Performance on several of the above-listed goals is tracked using more than one measure, as itemized in the table. Due to International Classification of Diseases, 10th edition (ICD-10) implementation, some measures in this report present interim measures because an ICD-10 version is not yet available (e.g., unadjusted prevention quality indicators), and some charts do not trend the data across the ICD-9 and ICD-10 time periods. As mentioned in the December 2016 report, some data have been re-run with identified ICD-9 to ICD-10 crosswalks, and other data are presented without trending across time periods that span the disease classification conversion.

In collaboration with CMS, the HSCRC plans to add new measures (such as additional efficiency measures) to this report as they are developed, and add any requested sub-group analyses if available. To this end, the HSCRC is developing the Medicare Performance Adjustment (MPA), which will adjust hospital payments based on Medicare total cost of care (TCOC) performance. Further measure development and reporting may also take place as the HSCRC works with CMS to adapt and enhance this monitoring plan for Total Cost of Care All-Payer Model. The HSCRC aims to ensure that CMS has the data it needs to show that the Maryland All-Payer Model is effective at achieving the goals of delivering better care and better health at lower cost, and the State will continue to work collaboratively with CMS to establish benchmarks or targets for other high-priority measures that are currently being monitored or that will be developed in the future.

3.0 Key Findings

This report presents results for each of the measures identified in Section 2.0, pursuant to Appendix 7 and 8 of the All-Payer Model Agreement. Along with the results, this section includes a brief description of each measure and a summary of the methods used to estimate each measure. Appendix A provides a table with results for all measures and the values of the numerators and denominators used to calculate these results, as applicable, organized by goal and year. Appendix B provides additional detail to support the description of methods in the main report.

3.1 Patient Experience of Care

Maryland believes that an all-payer model that holds providers accountable for the total cost of care can improve the quality of care and the patient's experience of care. Through the All-Payer Model, Maryland expects to enhance care transitions, sustain high levels of physician participation in public programs, and broaden provider engagement in innovative models of care. Through these efforts, as well as ongoing initiatives to reduce complications and readmissions, Maryland will improve quality outcomes and patient satisfaction.

3.1.7 Goal 7: Enhance Care Transitions – Coordination with Primary Care

Measures used to assess the improvement of care transitions consist of (A) the rate of physician follow-up after discharge and (B) the rate of discharges in which the principal provider was notified. The June report will present 2016 data for Measure 7B.

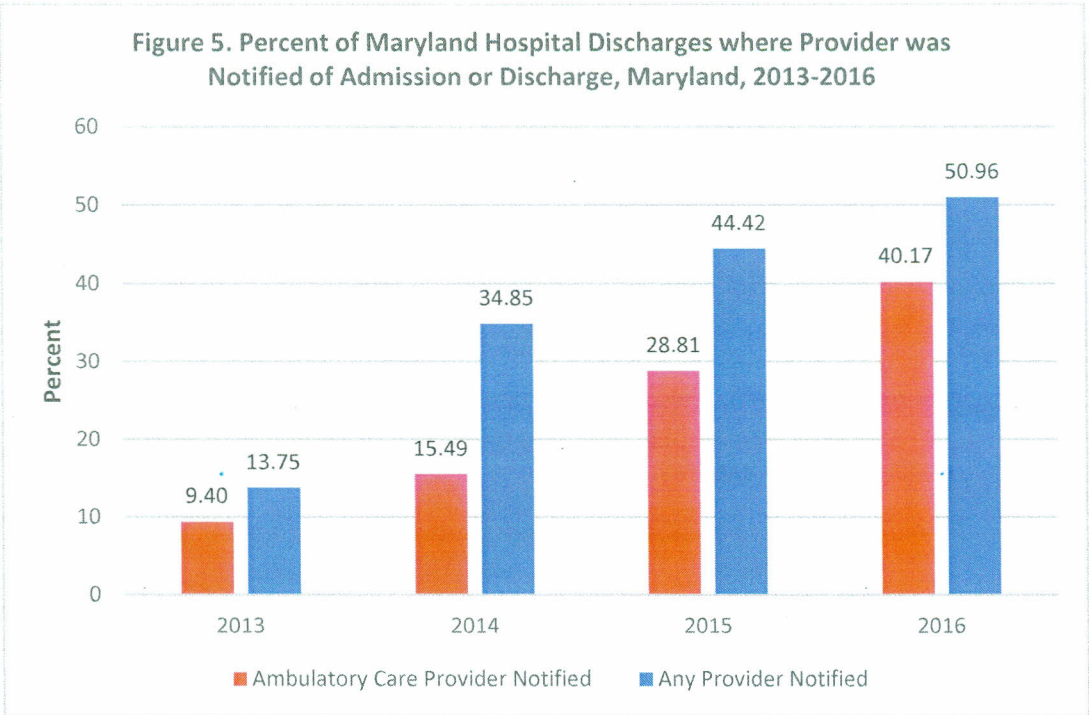
Goal 7. Enhance Care Transitions – Coordination with Primary Care	
Goal Summary	Management of transitions of care—from the hospital to a post-acute care provider or to home—including appropriate and timely outpatient physician follow-up is a key strategy to reduce hospital readmissions. This goal tracks the rate of physician

	follow-up after discharge, as well as the proportion of discharges for which a physician is notified of the admission and/or discharge.
Measurement Methodology	Discharges with Principal Provider Notification Chesapeake Regional Information System for Our Patients (CRISP), Maryland's Health Information Exchange, provides an Encounter Notification Service (ENS), which sends information to providers on a real-time basis when a provider's patient visits a hospital. Providers can choose to receive different types of notifications through CRISP, such as ED registration events, inpatient admissions, and inpatient discharges. ENS works by gathering patient panels directly from providers rather than relying on self-reported data from patients during the admission process, which is known to be less reliable in Maryland as well as nationally. CRISP encourages organizations to update their panels at least monthly. As ENS has demonstrated importance and reliability among the provider community, the types of organizations submitting ENS panels have grown. In addition to ambulatory physicians, CRISP now receives panels from long-term care facilities, care coordination entities, behavioral health organizations, and payers. HSCRC staff use data from CRISP to calculate the percentage of inpatient discharges for which there is any associated ENS alert sent to a provider. Measuring discharges with the provider notified via ENS is not exactly consistent with the original CMS requirement of simply identifying a primary care provider. However, HSCRC makes a strong case that this measure is a better indicator of supporting transitions in care and more consistent with meaningful use requirements. In addition to the ENS notification, CRISP also sends providers the patient's most recent contact information; providers find this to be extremely valuable in connecting with patients post discharge. CRISP is also looking at additional ways to engage ambulatory providers in ENS. As CRISP builds the volume of ambulatory connectivity with providers submitting Consolidated Clinical Document Architecture, the CRISP team is developing attribution methods for providers to auto-populate ENS panels.
Monitoring Results ***See Figures 4 and 5***	Discharges with Principal Provider Notified in Maryland ▪ Between 2013 and 2016, there was an approximately four-fold increase in the discharges for which a provider received an ENS notification, from 13.75 percent to 50.96 percent. ▪ During the same time period, the proportion of discharges for which an ambulatory care provider received an ENS notification also increased four-fold, from 9.40 percent to 40.17 percent.

Figure 4. Care Coordination with Primary Care, 2013-2016

Measures	Population	2013	2014	2015	2016
Discharges with principal provider notified in Maryland	Any Provider Notified	13.75	34.85	44.42	50.96
	Ambulatory Care Provider Notified	9.40	15.49	28.81	40.17

Source: CRISP ENS Notification Reports, 2017.



Source: CRISP ENS Notification Reports, 2017. Notification provider types include: ambulatory, behavioral health, care coordinators, long-term care, payers, and other.

3.1.9 Goal 9: Broaden Engagement in Innovative Models of Care

This report will evaluate Engagement in Innovative Models of Care in three measures using data on (A) participation of clinicians in NCQA-accredited Patient- Centered Medical Homes; (B) participation of providers in Accountable Care Organizations; and (C) participation of providers in Bundled Payment Initiatives.

Measure 9. Broaden Engagement in Innovative Models of Care	
Goal Summary	The All-Payer Model incentivizes the continued participation of providers in healthcare reform initiatives, such as patient-centered medical homes (PCMHs), accountable care organizations (ACOs), and bundled payment initiatives. Participation of Clinicians in NCQA-Accredited PCMHs PCMHs focus on the primary care practice as the central point of care. These models promote the core tenets of improving access, prevention, and care coordination, and improving patient outcomes and healthcare cost control. This measure tracks adoption of PCMH models in Maryland. Participation of Provider Organizations in ACOs According to CMS, "[ACOs] are groups of doctors, hospitals, and other health care providers, who come together voluntarily to give coordinated high quality care to their Medicare patients. The goal of coordinated care is to ensure that patients, especially the chronically ill, get the right care at the right time, while avoiding unnecessary duplication of services and preventing medical errors." For more information on ACOs, please visit the CMS website: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/ This measure tracks provider organization participation in ACOs in Maryland. Participation of Providers in Bundled Payment Initiatives The alternative rate-setting methodology (ARM) was developed to encourage innovative and cost-saving payment arrangements without compromising the Commission's long-standing principles of equity and access. This methodology assures that hospitals are paid HSCRC-approved rates under the arrangements. The entity involved assumes the risk associated with the ARM arrangement. There are two types of ARM arrangements: ▪ Capitation: This type involves significant risk to the hospital for a broad range of services, including regulated hospital services.

	▪ Global or Fixed Price: This type encompasses not only the hospital rates associated with a case, but also the professional services provided during the course of treatment.
Measurement Methodology	Participation of Clinicians in NCQA-Accredited PCMHs The HSCRC's Physician Alignment Workgroup recommended relying on the information available through the national accrediting organizations (primarily NCQA). Although NCQA will not capture all the providers participating in PCMH, it will allow the HSCRC, in the short term, to monitor trends that may reflect the broader PCMH environment. The following website was used to obtain the number of providers and practices participating in PCMH: http://recognition.ncqa.org/index.aspx. Limitations and concerns about these data are that they do not capture all PCMH programs, such as those by CareFirst. Additionally, these data are continuously updated by NCQA, and will therefore be considered up-to-date at the time they are pulled. Participation of Provider Organizations in ACOs The HSCRC staff obtained the number of ACOs located in Maryland and across the nation by conducting analysis of data from the following website: https://data.cms.gov/Special-Programs-Initiatives-Medicare-Shared-Savin/2017-Medicare-Shared-Savings-Program-Organizations/28pq-6hh8 Participation of Providers in Bundled Payment Initiatives The HSCRC reports the number of providers that were approved by the Commission to participate in an Alternative Rate-setting Methodology for each year.
Monitoring Results ***See Figures 6-9***	Participation of Clinicians in NCQA-Accredited PCMHs ▪ In 2016, there were a total of 1,091 NCQA-accredited PCMH clinicians in Maryland, a 177.6 percent increase from 2013. ▪ There was a total of 207 practices with NCQA-accredited PCMHs in 2016, a 183.6 percent increase from 2013. The majority of additional PCMHs, or 20 of the additional 23, are in the most comprehensive Level 3 accreditation. Participation of Provider Organizations in ACOs ▪ The total number of ACOs in Maryland increased to 26, up from 21 in 2014-2015. ▪ The number of provider organizations within these ACOs increased from 672 in 2016 from 506 in 2015, a 32.8 percent increase. Participation of Providers in Bundled Payment Initiatives

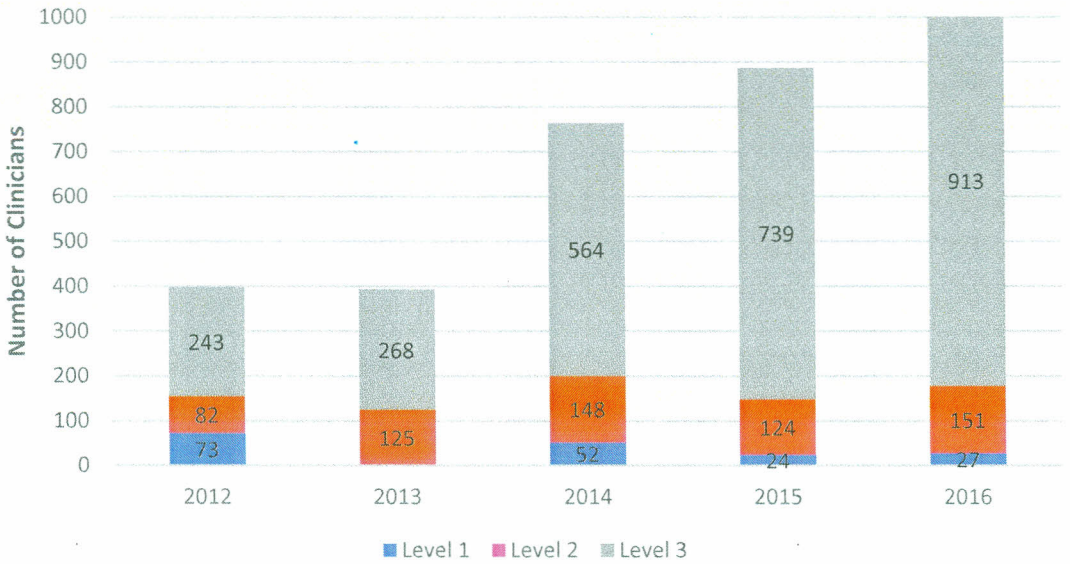
	▪ In 2016, 35 alternative rate-setting methodologies (ARMs) became effective, representing more than a 9 percent increase when compared to 32 ARMs effective during the 2013 base year of the model. ▪ Although between 2013 and 2015 the total number of ARMs increased, ARMs were highest during 2012 and decreased between 2014 and 2015. The number of ARMs remained unchanged in 2016. ▪ No national ARM participation rates are available.

Figure 6. Maryland Participation in Innovative Models of Care, 2011-2016

Measures	Population		2011	2012	2013	2014	2015	2016
Participation of Maryland clinicians in NCQA accredited patient-centered medical homes	By Clinician	Level 1		73	0	52	24	27
		Level 2		82	125	148	124	151
		Level 3		243	268	564	739	913
		Total		398	393	764	887	1091
	By Practice	Level 1		19	0	7	5	5
		Level 2		18	28	26	32	35
		Level 3		45	45	95	147	167
		Total		82	73	128	184	207
Participation of providers in accountable care organizations	Maryland ACOs		N/A	N/A	N/A	21	21	26
	Maryland Provider Organizations		N/A	N/A	N/A	482	506	672
	National ACOs		N/A	N/A	N/A	406	393	433
	National Providers		N/A	N/A	N/A	15,782	15,392	14,817
Participation of providers in alternative rate setting methodologies	Maryland		31	38	32	36	35	35
	National		N/A	N/A	N/A	N/A	N/A	N/A

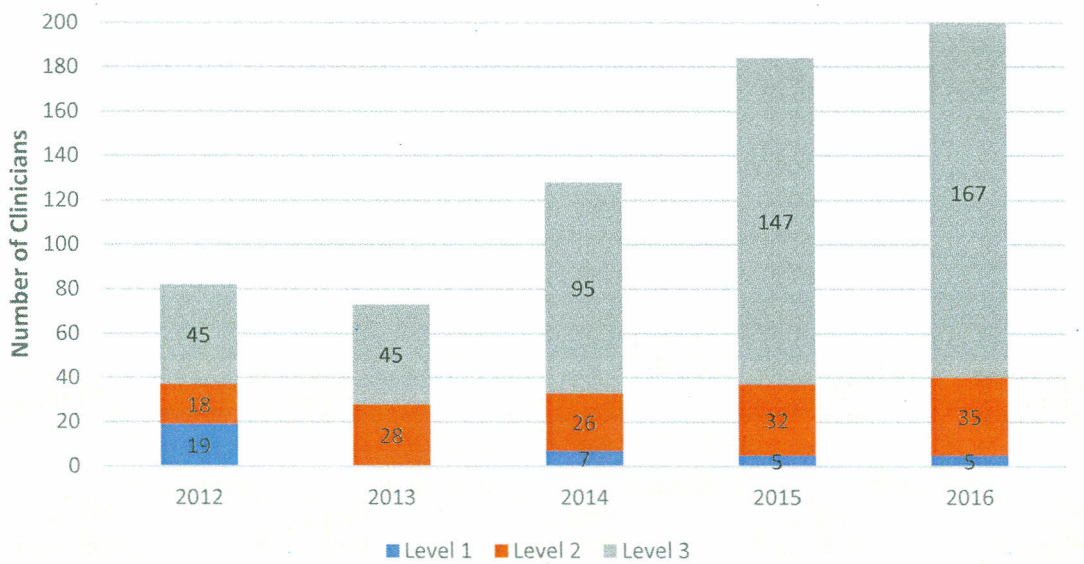
Source: HSCRC analysis of NCQA website, http://recognition.ncqa.org/index.aspx; HSCRC analysis of CMS ACO information: https://data.cms.gov/Special-Programs-Initiatives-Medicare-Shared-Savin/2017-Medicare-Shared-Savings-Program-Organizations/28pq-6hh8; Maryland HSCRC ARM data.

Figure 7. Number of Clinicians with NCQA PCMH Recognitions, Maryland, 2012-2016

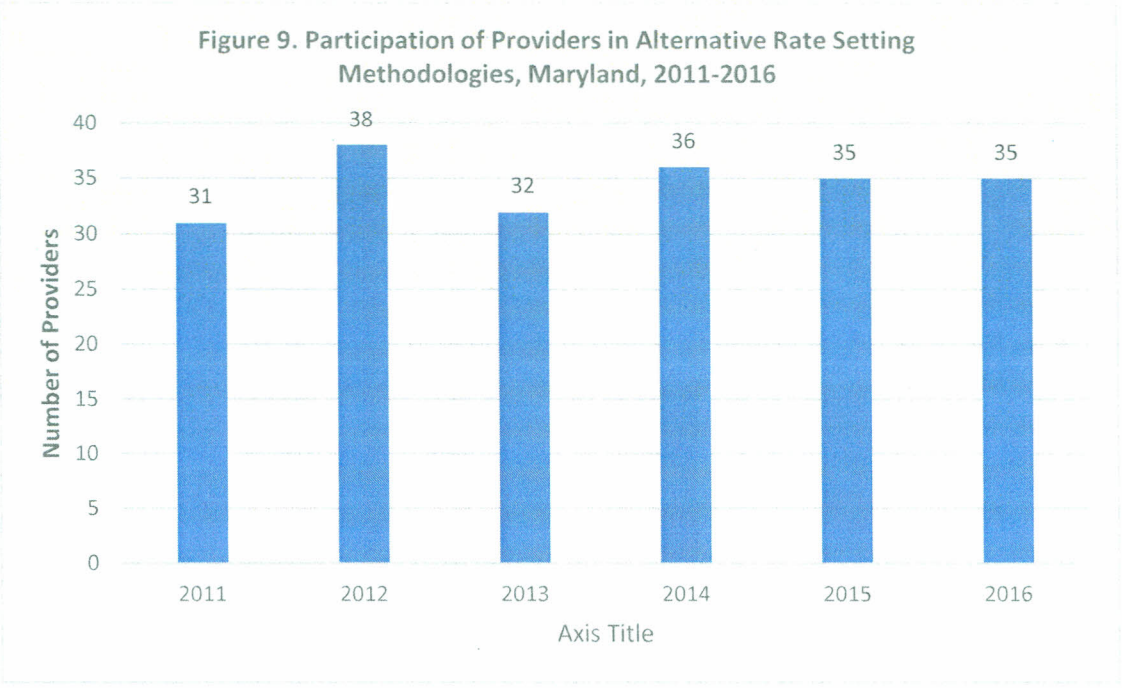


Source: HSCRC analysis of NCQA website, http://recognition.ncqa.org/index.aspx

Figure 8. Number of Practices with NCQA PCMH Recognitions, Maryland, 2012-2016



Source: HSCRC analysis of NCQA website, http://recognition.ncqa.org/index.aspx



Source: Maryland Health Services Cost Review Commission, 2011-2016 ARM data.

3.1.12 Goal 12: Reduce High-Priority Hospital Complications

The reduction of high priority hospital complications is assessed using two measures: (A) the potentially preventable complication (PPC) rate per 1,000 discharges, and (B) the central-line acquired bloodstream infections (CLABSI) standardized infection ratio (SIR). This June report will present data on measure 12A.

Measure 12A. Potentially Preventable Complications	
Goal Summary	Progress in reducing high-priority hospital complications is assessed using the rate of PPCs. PPCs are defined as harmful events or negative outcomes that may result from the process of care and treatment rather than from a natural progression of an underlying disease. Under the All-Payer Model, Maryland is expected to achieve an aggregate 30 percent reduction across an aggregated set of potentially preventable conditions that comprise the Maryland Hospital Acquired Condition Program.
Measurement Methodology	PPC Rate per 1,000 At-Risk Discharges and Case-Mix Adjusted PPC Rate The PPC rate per 1,000 discharges is calculated by dividing the number of observed PPCS by the number of at-risk discharges (one discharge may be at-risk for multiple PPCs) * 1,000 discharges. This is an unadjusted PPC rate that does not take into account changes in case-mix that may occur over time. For the purposes of the waiver test, the HSCRC reports additional data on the case-mix adjusted PPC rate. The case-mix adjusted PPC rate is calculated by multiplying the Observed / Expected ratio for each hospital by the statewide observed PPC rate. The expected number of PPCs for each hospital is calculated by taking the statewide PPC rate for each diagnosis and severity of illness category and multiplying it by the number of discharges at each hospital in each category.

	For additional information regarding the PPC measures, please refer to the RY 2018 MHAC Policy on the HSCRC Quality – MHAC website, http://hscrc.maryland.gov/Pages/init_qi_MHAC.aspx.
Monitoring Results ***See Figure 10***	▪ Between 2013 and 2016, the unadjusted all-payer PPC rate for the state of Maryland declined from 1.09 per 1,000 at-risk discharges to 0.69 per 1,000 at-risk discharges. This represents a reduction of 36.69 percent. ▪ Over the same time period, the case-mix adjusted all-payer PPC rate had a reduction of 44.02 percent. ▪ Between 2013 and 2016, the unadjusted Medicare PPC rate per 1,000 at-risk discharges declined by 41.47 percent. The unadjusted Medicaid PPC rate declined by 37.25 percent during the same period. ▪ Similarly, the case-mix adjusted rate for Medicare and Medicaid was reduced by 45.88 percent and 42.54 percent, respectively.

Figure 10. High-Priority Hospital Complications, 2013-2016

Measures	Population	2013	2014	2015	2016
All Payer Potentially preventable complications per 1,000 at-risk discharges	Maryland	1.09	0.84	0.76	0.69
Change from 2013 (%)			-22.92%	-30.11%	-36.69%
Medicare Potentially preventable complications per 1,000 at-risk discharges	Maryland	1.39	1.02	0.93	0.81
Change from 2013 (%)			-26.69%	-32.69%	-41.47%
Medicaid Potentially preventable complications per 1,000 at-risk discharges	Maryland	0.86	0.64	0.57	0.54
Change from 2013 (%)			-25.01%	-33.83%	-37.25%
All Payer Casemix-Adjusted PPC rate	Maryland	1.16	0.87	0.76	0.65
Change from 2013 (%)			-24.94%	-34.91%	-44.02%
Medicare Casemix-Adjusted PPC rate	Maryland	1.33	0.97	0.85	0.72
Change from 2013 (%)			-27.66%	-36.06%	-45.88%
Medicaid Casemix-Adjusted PPC rate	Maryland	1.01	0.77	0.67	0.58
Change from 2013 (%)			-23.69%	-34.06%	-42.54%

Source: HSCRC Inpatient Discharge Abstract Data, 2013-2016.

3.1.14 Goal 14: Reduce Readmissions – Nursing Home

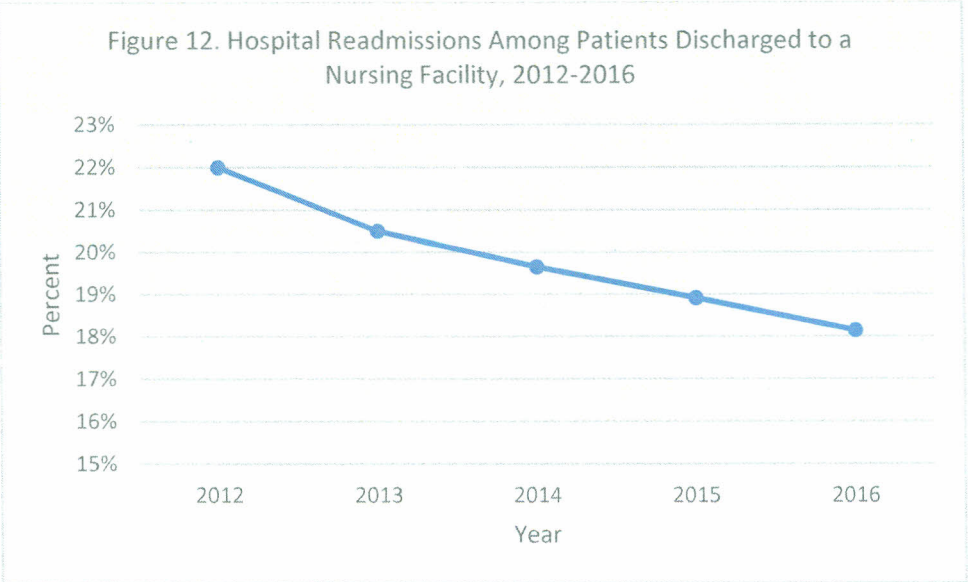
The goal of reducing readmissions among patients discharged to nursing homes is assessed by monitoring the current rates.

Measure 14: Readmission Rate Among Patients Discharged to Nursing Home	
Goal Summary	Readmissions among patients discharged to a nursing home may be high, due in part to the medical complexity of these patients; many nursing home patients are elderly and have multiple chronic conditions and physical limitations. In addition to their medical complexity, however, readmissions may increase due to patients being discharged from the hospital earlier than recommended by best practices, hospital complications that develop post-discharge, or deficiencies in quality of care. Coordination between the hospital and nursing home prior to and after discharge or transfer should reduce potentially avoidable readmissions.
Measurement Methodology	Percent Readmissions: **Numerator:** The number of All-Payer inpatient hospital stays where the patient was discharged to a nursing home, but was readmitted to any hospital within 30 days of the initial hospital discharge date. **Denominator:** The total number of hospital discharges that have a nursing home or skilled nursing facility as discharge disposition. **Note:** These data are not case-mix adjusted. **Data Source:** HSCRC inpatient discharge abstract data with CRISP unique patient enterprise identifiers (EIDs) for 2012-2016.
Monitoring Results ***Figures 22-23***	▪ There has been a steady decline in readmissions from nursing homes since 2012. When compared to the 2013 base year of the All-Payer Model, the 2016 readmission rate for inpatient discharges to nursing homes decreased by 11.46 percent. The observed reduction in readmissions could be partially attributable to an enhanced level of care coordination between Maryland hospitals and nursing facilities.

Figure 11. Readmission Rates from Nursing Homes, 2012-2016

Measures	Population	2011	2012	2013	2014	2015	2016
Readmission rates for inpatient discharges to nursing homes	Maryland		22.00%	20.50%	19.65%	18.92%	18.15%

Source: Analysis of HSCRC IP Data.



Source: HSCRC IP discharge abstract data, 2012-2015. This data was updated from what was provided in the June 2015 report.

3.1.15 Goal 15: Reduce Readmissions – Hospital

This report evaluates hospital readmissions in two statewide measures and five condition-specific measures, including (A) 30-day all-hospital, all-cause readmission rates; (B) readmissions per 1,000 Maryland residents; (C) heart failure readmission rates; (D) pneumonia readmission rates; (E) acute myocardial infarction readmission rate; (F) chronic obstructive pulmonary disease readmission rates; and (G) hip/total knee arthroplasty readmission rates.

Measure 15. 30-Day All Cause and Condition-Specific Hospital Readmissions	
Goal Summary	Hospital readmissions rates for Medicare beneficiaries are higher in Maryland than in the rest of the nation. The new All-Payer Model is required to reduce Medicare readmissions in Maryland to at or below the national rate by 2018. The costs of readmissions are also included in the HSCRC measure of potentially avoidable utilization, which is used to adjust global budgets. The HSCRC has a Readmission/Potentially Avoidable Utilization Shared Savings program and a Readmission Reduction Incentive program designed to incentivize hospitals to invest resources to reduce readmissions. In addition to the all-payer measures reported below, CMS provides the HSCRC with the Medicare-specific readmission rate for Maryland that includes readmissions that occur outside of the state.
Measurement Methodology	**Case-Mix Adjusted 30-Day All-Cause Readmission** = (Number of Observed Readmissions within 30 days of discharge ÷ Number of Expected Readmissions) x Statewide Unadjusted Readmission Rate in base period. Expected readmissions are estimated by applying the statewide rates by APR-DRG and severity of illness category to each hospital's discharges.

	Readmissions per 1,000 Maryland Residents = (Number of 30-Day Readmissions ÷ Total Maryland Resident Population) x 1,000. **Condition Specific Readmission Rates** = (Number of 30-Day Readmissions for Selected Condition ÷ Number of Condition Specific Discharges Eligible for a Readmission) x 100. Condition-specific readmission rates are unadjusted. Rates correspond to the following conditions: ○ Heart Failure (HF) ○ Acute Myocardial Infarction (AMI) ○ Pneumonia (PNA) ○ Chronic Obstructive Pulmonary Disease (COPD) ○ Hip/Total Knee Arthroplasty (THP/TKA) Note: The condition-specific readmission rates reflect full CY2012-2016 data, with the exception of the THA/TKA measure, which reflects full CY 2012-2014 data. Data from October-December 2015 and 2016 reflect the updated condition-specific logic under ICD-10 from the National Quality Forum. **Data:** Population estimates for 2012-2016, which were used in estimating readmissions per 1,000 population, were obtained from the Maryland Department of Planning.
Monitoring Results ***See Figure 13***	▪ The Maryland 30-day case-mix adjusted, all-cause readmission rate fell from 12.93 percent in 2013 to 11.54 percent in 2016, a reduction of 10.74 percent. ▪ Readmissions per 1,000 Maryland residents fell by 16.99 percent from 11.74 per thousand in 2013 to 9.75 per thousand in 2016. ▪ Between 2013 and 2016, readmission rates for all the specific conditions decreased: heart failure by 9.98 percent; pneumonia by 9.65 percent; AMI by 7.12 percent; and COPD by 8.84 percent.

Figure 13. Readmission Rates, including Condition-Specific Readmission Rates, 2012-2016

Measures	Population	2011	2012	2013	2014	2015	2016
30-day all-hospital, all-cause readmission	Maryland		12.49%	12.93%	12.43%	12.02%	11.54%
	Change from 2013				-3.85%	-7.02%	-10.74%
Readmissions per 1,000 Maryland residents	Maryland		12.65	11.74	10.84	10.25	9.75
	Change from 2013				-7.66%	-12.67%	-16.99%
Heart failure readmission rate	Maryland		24.68%	23.12%	22.68%	22.10%	20.81%
	Change from 2013				-1.91%	-4.40%	-9.98%
Acute myocardial infarction readmission rate	Maryland		13.42%	13.08%	12.10%	12.09%	12.15%
	Change from 2013				-7.50%	-7.57%	-7.12%
Pneumonia readmission rate	Maryland		15.30%	14.38%	14.33%	13.20%	12.99%
	Change from 2013				-0.33%	-8.19%	-9.65%
Chronic obstructive pulmonary disease readmission rate	Maryland		21.64%	20.74%	20.32%	19.66%	18.91%
	Change from 2013				-2.04%	-5.22%	-8.84%
Hip/total knee arthroplasty readmission rate	Maryland		4.25%	3.82%	3.39%		
	Change from 2013				-11.21%		

Source: Derived from HSCRC Inpatient Discharge Abstract Data, 2012-2016.

3.2 Population Health

Maryland believes that an all-payer model that is accountable for the total cost of care can establish incentives that improve population health outcomes and reduce health disparities. As broad population health measures, progress will take time, long-term investment, and commitment to achieve results.

3.2.1 Goal 16: Improve Life Expectancy

Goal 16. Improve Life Expectancy	
Goal Summary	The All-Payer Model seeks to improve life expectancy for Maryland residents over time. Maryland remains concerned about disparities in the life expectancy of white and black residents. 2016 data is not yet available; however this report amends the CY 2015 Annual Monitoring Report with updated 2015 Life Expectancy data.

Measurement Methodology	Life expectancy is calculated by the Maryland Vital Statistics Administration, a bureau of DHMH. Additional information on the Maryland Vital Statistics annual reporting on life expectancy can be found here: http://www.dhmh.maryland.gov/vsa/SitePages/reports.aspx.
Monitoring Results ***See Figure 14***	▪ The average life expectancy in Maryland declined slightly, from 79.8 in 2014 to 79.5 in 2015. This decline is unfortunately similar to a decline in life expectancy at the national level. ▪ The average life expectancy in United States declined slightly, from 78.9 in 2014 to 78.8 in 2015.

Figure 14. Life Expectancy at Birth, 2011-2015

Measure	Population	2011	2012	2013	2014	2015
Average life expectancy at birth	Maryland	79.5	79.7	79.7	79.8	79.5
	White (MD)	80.3	80.4	80.3	80.3	80.2
	Black (MD)	77.1	77.3	77.4	77.6	77.0
	National	78.7	78.8	78.8	78.9	78.8
	White	79	79.1	79.1	79	N/A
	Black	75.3	75.5	75.5	75.6	N/A

Source: Maryland data from the Maryland Vital Statistics Administration, National data from CDC.

3.2.2 Goal 17: Reduce the Rate of Hospitalization for Ambulatory Sensitive Conditions

This report evaluates the rate of hospitalizations for ambulatory sensitive conditions using three composites of Prevention Quality Indicator (PQI) rates, including (A) PQI acute composite rates, (B) PQI chronic composite rates, and (C) PQI overall composite rates. While the PQI composite rates are typically risk-adjusted, the Agency for Healthcare Research and Quality (AHRQ) has not yet released a risk-adjustment procedure that is compatible with the ICD-10 codes. Therefore the rates presented below are not risk-adjusted.

Measure 17. Chronic, Acute, and Overall Preventive Quality Indicators	
Goal Summary	PQIs are a set of measures developed by AHRQ that flag hospitalizations for ambulatory care sensitive conditions. These conditions and hospitalizations are preventable if patients have access to high-quality outpatient care. Examples of these conditions include hypertension, diabetes and its associated complications, and heart failure. The individual PQI measures can be collapsed into composite measures, which include acute, chronic, and overall composite rates. Typically, these measures are population-based and are adjusted for covariates such as sex and age (currently unavailable under ICD-10). The HSCRC uses the PQI measures to identify

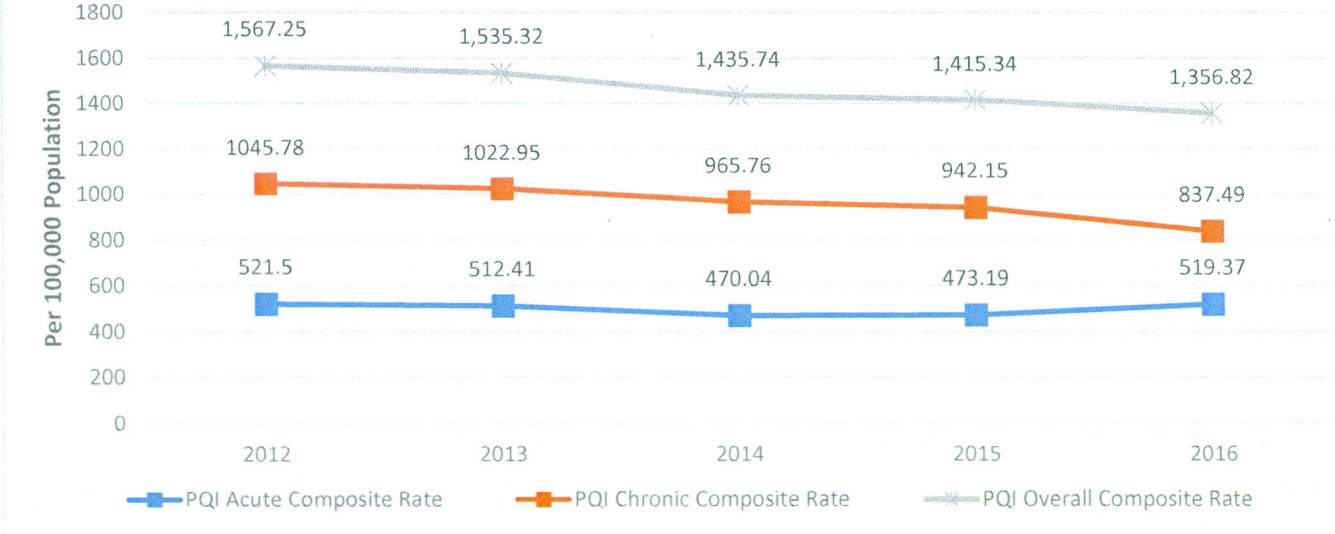
	revenue associated with potentially avoidable utilization (PAU). Tracking PAU costs aims to incentivize hospitals to work within their communities to improve care coordination outside the hospital and thus reduce potentially avoidable hospital utilization. A risk-adjusted version of the AHRQ software is not currently available for use with ICD-10 codes. In this report, we are therefore providing the number of PQIs per 100,000 population without the normal AHRQ risk-adjustment.
Measurement Methodology	The method for calculating the acute, chronic, and overall composite PQI rates per 100,000 of the adult Maryland population is as follows: The total acute, chronic, or overall composite counts divided by the adult Maryland population (composite score ÷ number of Maryland residents aged 18 and over) multiplied by 100,000. **Data Sources:** PQIs are identified using the HSCRC Inpatient Discharge Abstract data. The annual adult Maryland population (over 18 years of age) is calculated from Maryland Department of Planning population estimates. The CY 2016 population of Maryland adults (age 18 & over) is preliminary at this time, and will be updated in the December Annual Monitoring report.
Monitoring Results ***See Figures 15-16***	▪ The Maryland **acute** PQI composite score rate was 519.37 in 2016, a 1.36% increase over the base year 2013 rate. ▪ The Maryland **chronic** PQI composite score rate decreased by 18.13 percent between the 2013 base year of the model and 2016, declining from 1,022.95 to 837.49. ▪ Maryland **overall** PQI composite score rate decreased by 11.63 percent between the 2013 base year of the model and 2016, declining from 1,535.32 to 1,356.82. ▪ As mentioned below, PQI trends between CY 2016 and prior years should be interpreted with caution due to differences in the PQI logic following the implementation of ICD-10.

Figure 15. Prevention Quality Indicators in Maryland, 2012-2016

Measures	Population	2012	2013	2014	2015	2016
Preventive quality indicator (PQI) **acute** composite rate per 100,000 population, age 18 and over	Maryland	521.5	512.41	470.04	473.19	519.37
Preventive quality indicator **chronic** composite rate per 100,000 population, age 18 and over	Maryland	1045.78	1022.95	965.76	942.15	837.49
Preventive quality indicator **overall** composite rate per 100,000 population, age 18 and over	Maryland	1,567.25	1,535.32	1,435.74	1,415.34	1,356.82

Source: HSCRC inpatient abstract data run through AHRQ software version 4.5a/5 through 2015, using version 6 in 2016.
NOTE: PQI trends between CY 2016 and prior years should be interpreted with caution due to differences in the PQI logic following the implementation of ICD-10.

Figure 16. Overall, Chronic, and Acute PQI Rate per 100,000 Population Aged 18+, Maryland 2012-2016



Source: HSCRC inpatient abstract data run through AHRQ software version 4.5a/5 through 2015, version 6 for 2016 data.
NOTE: PQI trends between CY 2016 and prior years should be interpreted with caution due to differences in the PQI logic following the implementation of ICD-10.

3.2.5 Goal 20: Improve Prevention for Diabetes and Cardiovascular Disease

Goal 20 includes four measures: (A) diabetes-related ED visit rates; (B) hypertension-related ED visit rates; (C) percentage of children considered obese; and (D) percent of adults at a healthy weight. This June report will present data for measures 20A and 20B.

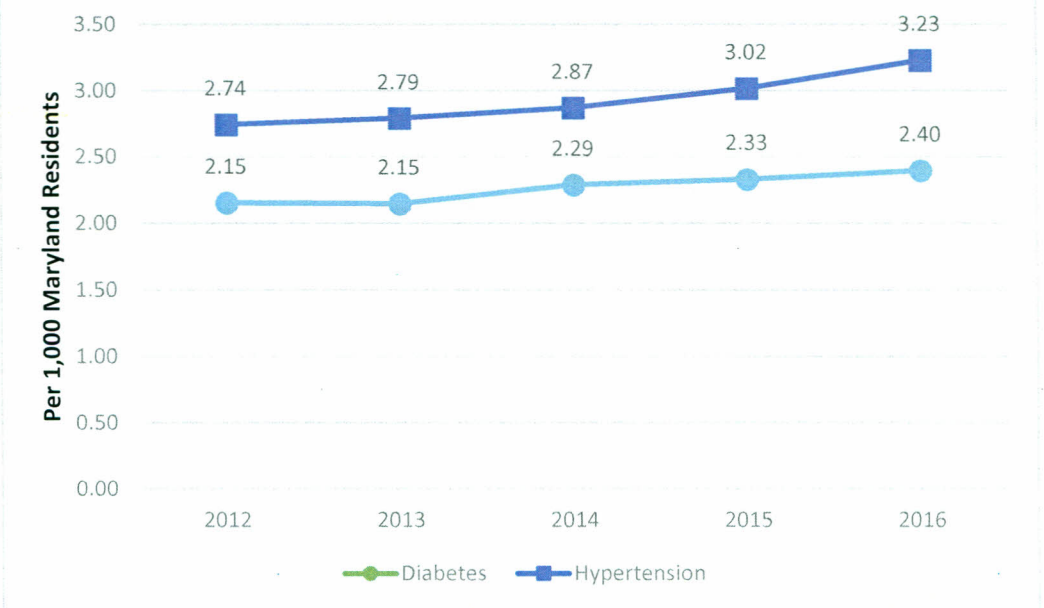
Goal 20. Improve Prevention for Diabetes and Cardiovascular Disease	
Goal Summary	Diabetes and Hypertension-Related ED Visit Rate The Maryland SHIP monitors diabetes and cardiovascular disease prevalence as indicators of population health, and encourages the development of local health improvement coalitions (LHICs) to address these chronic conditions outside of the emergency department. ED visits related to complications with diabetes or hypertension may indicate that these conditions are not well controlled and, as with PQIs, may represent lack of access to or poor quality outpatient care. This report works in tandem with the SHIP objective of reducing condition-specific emergency department visits, and builds off of related SHIP measures to create the HSCRC measure methodology outlined below; accordingly, rates will differ between this report and those displayed on the SHIP website.
Measurement Methodology	Diabetes- and Hypertension-Related ED Visit Rate The method for calculating the rate of diabetes- and hypertension-related ED visits per 1,000 Maryland residents is as follows: The total number of ED visits related to the condition divided by the total number of Maryland residents multiplied by 1,000. **Data Source:** **Numerator**: HSCRC outpatient data of relevant condition-specific ICD-9 codes and preliminary ICD-10 codes. **Denominator**: Updated Maryland Department of Planning population estimates for 2012-2016.
Monitoring Results ***See Figures 17-18***	Diabetes and Hypertension-Related ED Visit Rate ▪ The Maryland diabetes-related ED visit rate increased slightly each year. Between 2013 and 2016, the ED rate increased from 2.15 to 2.40 per 1,000 residents, an increase of 11.65 percent. ▪ Between 2013 and 2016, the hypertension ED rate increased from 2.79 to 3.23 per 1,000 Maryland residents. This represents an increase of 15.74 percent.

Figure 17. Prevention of Diabetes and Cardiovascular Disease, 2012-2016.

Measures	Population	2012	2013	2014	2015	2016
Diabetes-related ED visit rate per 1,000 population	Maryland	2.15	2.15	2.29	2.33	2.40
Hypertension-related ED visit rate per 1,000 population	Maryland	2.74	2.79	2.87	3.02	3.23

Source: HSCRC Outpatient Abstract data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.

Figure 18. Diabetes and Hypertension - Related Emergency Department Visit Rate, Maryland 2012-2016



Source: HSCRC Outpatient Abstract data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.

3.2.6 Goal 21: Improve Prevention for Asthma

Goal 21. Improve Prevention for Asthma	
Goal Summary	The Maryland SHIP monitors asthma prevalence as an indicator of population health, and encourages the development of LHICs to address these chronic conditions outside of the emergency department. ED visits related to

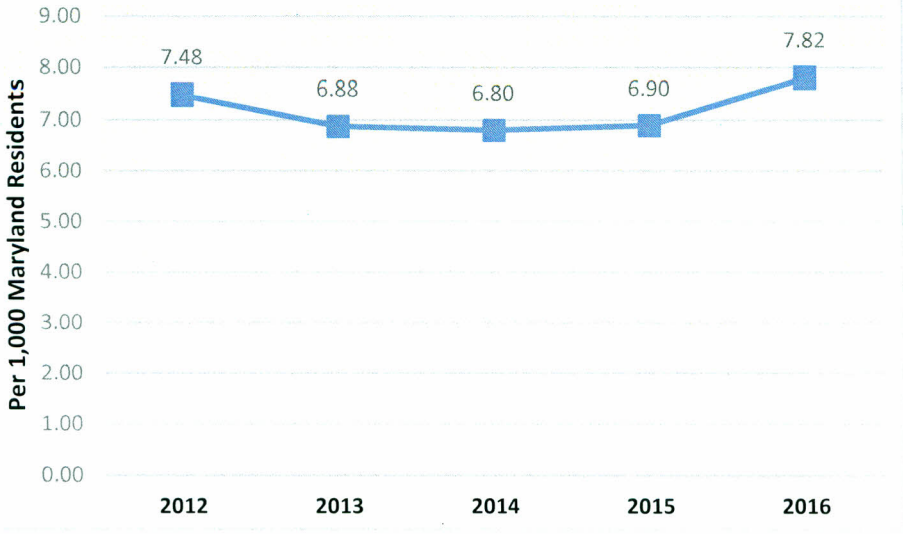
	complications with asthma may indicate that this condition is not well controlled and, as with PQIs, may represent lack of access to or poor quality outpatient care. This report works in tandem with the SHIP objective of reducing condition-specific emergency department visits, and builds off of related SHIP measures to create the HSCRC measure methodology outlined below; accordingly, rates will differ between this report and those displayed on the SHIP website.
Measurement Methodology	The method for calculating the rate of asthma-related ED visits per 1,000 Maryland residents is as follows: The total number of ED visits related to asthma divided by the total number of Maryland residents multiplied by 1,000. **Data Source:** **Numerator**: HSCRC outpatient data of relevant condition-specific ICD-9 codes and preliminary ICD-10 codes. **Denominator**: Updated Maryland Department of Planning population estimates for 2012-2016.
Monitoring Results ***See Figures 19-20***	▪ The Maryland asthma-related ED visit rate increased by 13.67 percent between the 2013 base year of the model and 2016, increasing from 6.88 to 7.82 per 1,000 Maryland residents.

Figure 19. Prevention of Asthma, 2012-2016

Measures	Population	2012	2013	2014	2015	2016
Asthma-related emergency department visit rate per 1,000 population	Maryland	7.48	6.88	6.80	6.90	7.82

Source: HSCRC Outpatient Abstract data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.

Figure 20. Asthma-Related Emergency Department Visit Rate, Maryland 2012-2016



Source: HSCRC Outpatient Abstract data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.

3.2.7 Goal 22: Promote Behavioral Health in Primary Care

This report evaluates the promotion of behavioral health in primary care by tracking ED visits for behavioral health conditions in two measures, including (A) mental health-related ED visit rates, and (B) substance abuse-related ED visit rates.

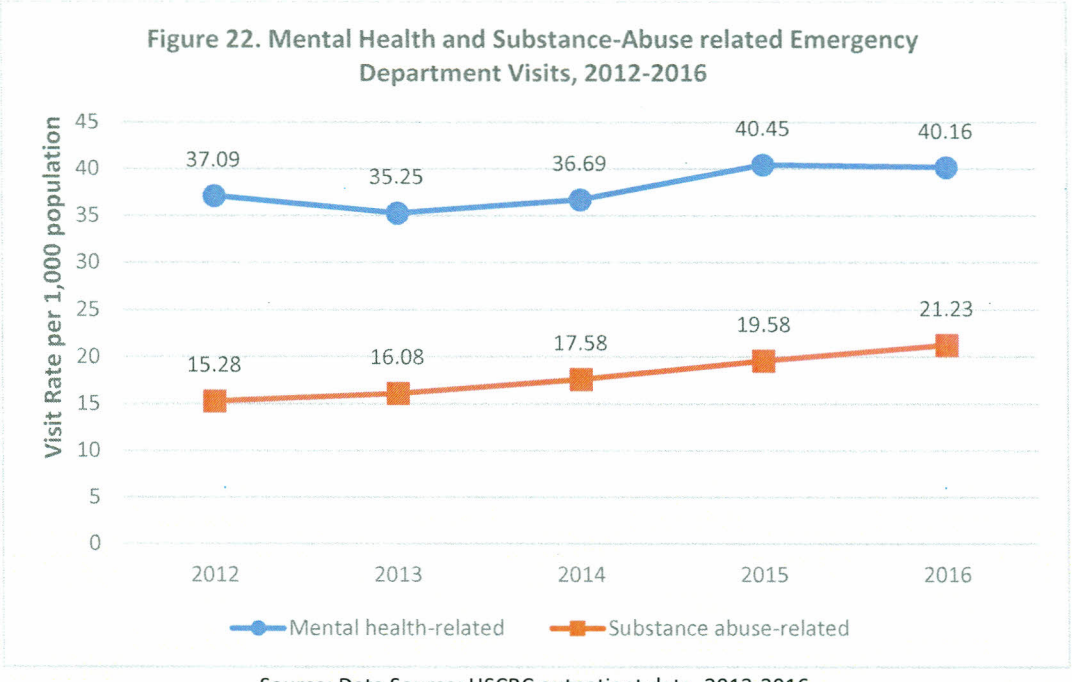
Measure 22. Mental Health and Substance Abuse ED Visit Rate	
Goal Summary	The Maryland SHIP monitors mental health and substance abuse-related ED visits and encourages the development of local Health Improvement Coalitions to address these issues outside of the emergency department. This report works in tandem with the SHIP objective of reducing condition-specific emergency department visits, and builds off of related SHIP measures to create the HSCRC measure methodology outlined below; accordingly, rates will differ between this report and those displayed on the SHIP website.
Measurement Methodology	The method for calculating the rate of mental health and substance abuse related ED visits per 1,000 Maryland residents is as follows: The total number of ED visits related to the condition divided by the total number of Maryland residents multiplied by 1,000. **Numerator**: HSCRC outpatient data of relevant condition-specific ICD-9 codes and preliminary ICD-10 codes.

	Denominator: Updated Maryland Department of Planning population estimates for 2012-2016.
Monitoring Results ***See Figures 21-22***	▪ The Maryland mental health-related ED visit rate increased by 16.46 percent between the 2013 base year of the model and 2015, from 25.15 to 29.29 per 1,000 Maryland residents. ▪ The Maryland substance abuse-related ED visit rate increased from 11.43 to 13.76 per 1,000 residents between 2013 and 2015, an increase of 20.38 percent.

Figure 21. Behavioral Health-related Emergency Department Visit Rate per 1,000, 2012-2016.

Measures	Population	2012	2013	2014	2015	2016
Mental health-related	Maryland	37.09	35.25	36.69	40.45	40.16
Substance abuse-related	Maryland	15.28	16.08	17.58	19.58	21.23

Source: Data Source: HSCRC outpatient data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.



Source: Data Source: HSCRC outpatient data, 2012-2016.
Note: Data for ED visit rates are preliminary pending finalized ICD-9 to ICD-10 crosswalks.

The HSCRC is concerned about the increasing ED utilization trends related to mental health and substance abuse, and is convening a sub-group of the Performance Measurement Workgroup with interested stakeholders to discuss how best to monitor and incentivize quality improvement in the behavioral health field.

3.3 Costs and Efficiency

Maryland believes that an all-payer model accountable for the total cost of care can control the growth in health care expenditures at a reasonable level. The goal is to achieve meaningful savings for all payers, including to Medicare, Medicaid, and the Children's Health Insurance Program (CHIP).

3.3.2 Goal 25: Control Expenditure Growth – Hospitals

This report evaluates hospital expenditure growth by tracking per-capita Maryland hospital charges in five payer categories: (A) all-payer Maryland hospital charges, (B) Medicare Maryland hospital charges, (C) Medicaid Maryland hospital charges, (D) dual eligible Maryland hospital charges, and (E) private payer Maryland hospital charges.

Measure 25. Hospital Per Capita Total Charges	
Goal Summary	Controlling hospital expenditure growth is one of the primary metrics on which the Maryland All-Payer Model is to be assessed. Data on hospital expenditure growth are available across all payers, as well as for Medicare FFS (including dual-eligibles), Medicaid (including dual-eligibles), dual-eligibles separately, and for those with private insurance only. The data for each category captures in-state spending on Maryland residents.
Measurement Methodology	All-Payer Maryland Hospital Per Capita Total Charges for Maryland Residents: (Total inpatient and outpatient charges for all Maryland residents) ÷ (Total population in the state of Maryland) Medicare Maryland Hospital Per Beneficiary Total Charges for Maryland Residents: (Inpatient expenditures for Medicare beneficiaries with Part A ÷ Maryland Part A Beneficiaries) + (Outpatient expenditures for Medicare beneficiaries with Part B ÷ Maryland Part B Beneficiaries) Medicaid Maryland Hospital Per Beneficiary Total Charges for Maryland Residents: (Total fee-for-service and managed care expenditures for Maryland Medicaid recipients) ÷ (Total average Medicaid annual enrollment) Private Payer Maryland Hospital Beneficiary Total Charges for Maryland Residents: (Total inpatient and outpatient costs for private payer Maryland beneficiaries) ÷ (Total estimated private payer beneficiaries) Medicare/Medicaid Dual Eligibles Maryland Hospital Beneficiary Total Charges for Maryland Residents: (Total inpatient and outpatient hospital expenditures for dual eligible beneficiaries) ÷ (Number of Maryland residents with dual eligibility status) **Data Sources:** **Hospital Expenditures**: HSCRC Inpatient and Outpatient Abstract. **Population Estimates**: All-Payer (Maryland Dept. of Planning), Medicare (CMS), Medicaid and Dual Eligible (Maryland Medicaid eHealth Statistics), Private Payer

	(State Health Access Data Assistance Center (SHADAC); CMS Office of the Actuary (CMS OACT)).
Monitoring Results ***See Figure 23***	▪ Between 2013 and 2016, all-payer total per capita hospital charges grew by 4.15 percent. ▪ Medicare total per capita hospital charges decreased slightly by 0.22 percent between 2013 and 2016, from $7,009 to $6,952. ▪ During the same time period, total per capita hospital charges increased for Medicaid by 4.16 percent. ▪ Between 2013 and 2016, total hospital charges for Medicare/Medicaid dual eligibles increased by 2.97 percent. ▪ Private payer beneficiaries are difficult to estimate, so this report includes two estimate sources, the SHADAC and the OACT. ▪ Using the SHADAC data, total hospital charges for private payers decreased 1.94 percent between 2013 and 2015. Total hospital charges for 2016 are not yet available, as an estimated number of private payer beneficiaries has not yet been released. Using the OACT data, total hospital charges decreased for private payers by 1.91 percent between 2013 and 2014. Total hospital charges for 2015 and 2016 are not yet available, as an estimated number of private payer beneficiaries for those years has not yet been released.

Figure 23. Total Maryland Hospital Charges (Inpatient & Outpatient) and Growth, by Payer, Maryland 2012-2016*

Measures		2012	2013	2014	2015	2016*
All-payer per capita Maryland Hospital total charges for MD residents	Charges ($)	2,343	2,383	2,414	2,469	2,482*
	Change from 2013 (%)			1.30%	3.61%	4.15%
Medicare Maryland hospital per beneficiary total charges for MD Medicare Beneficiaries	Charges ($)	6,918	6,967	6,913	7,009	6,952*
	Change from 2013 (%)			-0.78%	0.60%	-0.22%
Medicaid Maryland hospital per capita total charges for MD Medicaid Beneficiaries (includes Medicaid Expansion beneficiaries)	Charges e ($)	2,398	2,382	2,466	2,518	2,481
	Change from 2013 (%)			3.53%	5.71%	4.16%
Private payer Maryland hospital per capita total charges for MD Privately insured residents (SHADAC estimates)	Charges ($)	1,290	1,288	1,266	1,263	
	Change from 2013 (%)			-1.71%	-1.94%	
Private payer Maryland hospital per capita total charges for MD Privately insured residents (CMS OACT estimates)	Charges ($)	1,226	1,223	1,200		
	Change from 2013 (%)			-1.91%		
	Charges ($)	7,859	8,502	8,470	8,829	8,754

Medicare/Medicaid dual eligible Maryland hospital total charges for MD Dual Beneficiaries	Change from 2013 (%)			-0.37%	3.84%	2.97%

* Hospitals undercharged their global budget revenues in the second half of CY 2016. Please see Appendix A for further details on the impact to All-Payer and Medicare data.

3.3.2 Goal 25a: Control Expenditure Growth – Specialty Hospitals

This report also evaluates specialty hospital expenditure growth by tracking per-capita Maryland specialty hospital charges in three payer categories, including (A) all-payer Maryland specialty hospital charges, (B) Medicare Maryland specialty hospital charges, and (C) Medicaid Maryland specialty hospital charges.

Goal 25a. Specialty Hospitals Per Capita Total Charges	
Goal Summary	Maryland is required to monitor expenditure growth for hospitals where the HSCRC regulates the non-governmental payer rates, such as for specialty care hospitals. Data on specialty care hospital expenditure growth are available across all payers, as well as for Medicaid (including dual-eligibles). The data for each category capture in-state spending on Maryland residents.
Measurement Methodology	All-Payer Maryland Specialty Hospital Per Capita Total Charges for Maryland Residents: (Total inpatient and outpatient specialty hospital charges for all Maryland residents) ÷ (Total Maryland resident population). Medicare Maryland Specialty Hospital Per Beneficiary Total Charges for Maryland Residents: (Inpatient per capita specialty charges for Medicare beneficiaries with Part A) + (Outpatient per capita specialty charges for Medicare beneficiaries with Part B). Medicaid Maryland Specialty Hospital Per Beneficiary Total Charges for Maryland Residents: (Total FFS and managed care specialty charges for Maryland Medicaid recipients) ÷ (Total average Medicaid annual enrollment). **Data Sources:** Hospital Charges: HSCRC Inpatient and Outpatient Abstract; Population Estimates: All-Payer (Maryland Dept. of Planning), Medicare (CMS), and Medicaid (UMBC Hilltop Institute).
Monitoring Results ***See Figure 24***	▪ Maryland all-payer specialty per capita charges increased from $44.99 in 2013 to $51.86 in 2016, an increase of 15.27 percent. ▪ Medicare per beneficiary specialty hospital charges also increased by 4.23 percent between 2013 and 2016, from $102.63 to $106.97. ▪ Medicaid per beneficiary charges also increased from $85.38 to $89.38 from 2013 to 2016, an increase of 4.69 percent.

Figure 24. Specialty Hospital Per Capita Charges and Growth, by Payer, Maryland, 2013-2016

Measures		2013	2014	2015	2016
All-payer Maryland specialty hospital per capita total charges for MD residents	Charges	$44.99	$45.91	$49.23	$51.86
	% Change since 2013		2.06%	9.44%	15.27%
Medicare Maryland specialty hospital per capita total charges for MD residents	Charges	$102.63	$102.49	$110.39	$106.97
	% Change since 2013		-0.14%	7.56%	4.23%
Medicaid Maryland specialty hospital per capita total charges for MD residents	Charges	$85.38	$75.81	$63.76	$89.38
	% Change since 2013		-11.21%	-25.32%	4.69%

3.3.3 Goal 26: Control Expenditure Growth – All Health Services

This report evaluates the expenditure growth of all health services by tracking per-capita Maryland health services charges in five payer categories: (A) All-payer total expenditures, (B) Medicare total expenditures, (C) Medicaid total expenditures, (D) private payer Maryland total expenditures, and (E) Dual Eligibles Medicaid-only total expenditures.

Measure 26: Per Capita Total Expenditures for All Health Services	
Goal Summary	Total health expenditure growth is used to monitor potential shifting of costs between categories of health services under the new model agreement.
Measurement Methodology	*Per Capita Total Expenditures* = (Total health care charges for all Maryland residents) ÷ (Total Maryland resident population) This data is currently not available. Separate estimates are generated for the following populations: *Medicare Per Capita Total Expenditures:* The sum of inpatient per capita expenditures for Medicare beneficiaries with Part A and outpatient per capita expenditures for Medicare beneficiaries with Part B *Medicaid Per Capita Total Expenditures:* (Total fee-for-service and managed care expenditures for Maryland Medicaid recipients) ÷ (Medicaid enrollment months, annualized to reflect a 12 month period) *Private Payer per Capita Total Expenditures:* (Total Costs for private payer Maryland residents) ÷ (Total member insured months, annualized to reflect a 12 month period) *Dual Eligibles Medicaid Total Expenditures*: (Total Medicaid costs for dually eligible beneficiaries) ÷ (Total number of Dually eligible Maryland beneficiaries) **Data Sources:** **Total Expenditures**: Medicare (CMS Financial Reports), Medicaid and Dual-Eligible (Maryland Medicaid), Private Payer (MHCC All-Payer Claims Database);

	Population Estimates: Medicare (CMS); Medicaid and Dual-Eligible (Maryland Medicaid); Private Payer (MHCC All-Payer Claims Database).
Monitoring Results ***See Figure 25***	▪ Maryland Medicare per capita total health expenditures increased by 1.42 percent between 2013 and 2016, compared to an increase of 3.20 percent for the U.S. ▪ In this report, Maryland has included updated numbers for Private Payer total expenditures, reflecting the most recent data captured in the MHCC All-Payer Claims Database. ▪ Also in this report, Maryland is reporting Medicaid total expenditures (for FFS beneficiaries and MCO beneficiaries), as well as total Medicaid expenditures for the dually eligible, for the first time. These data may be subject to further revision in the December report.

Figure 25. Total Annual Health Expenditures by Payer, 2012-2016

Measures	Population	2012	2013	2014	2015	2016*
All-payer per capita total expenditure	Maryland ($)					
	National ($)					
Medicare per beneficiary total expenditure	Maryland ($)	11,122	10,987	10,916	11,169	11,143*
	MD change from 2013 (%)			-0.64%	1.66%	1.42%
	National ($)	9,565	9,413	9,496	9,649	9,714
	National change from 2013 (%)			0.88%	2.51%	3.20%
Medicaid MCO per beneficiary total expenditure	Maryland		3,432	3,876	4,008	
	MD change from 2013 (%)			12.94%	16.78%	
Medicaid FFS non-dual population per beneficiary total expenditure**			20,511	14,769	11,806	
				-28.00%	-42.44%	
Private payer per beneficiary total expenditure	Maryland ($)		2,692	3,240	3,456	
	MD change from 2013 (%)			20.36%	28.38%	
Medicare/Medicaid dual eligibles per beneficiary total Medicaid expenditure	Maryland		16,375	15,890	15,630	
	MD change from 2013 (%)			-2.96%	-4.55%	

*Hospitals undercharged their global budget revenues in the second half of CY 2016. Please see Appendix A for further details on the impact to Medicare data.

** Please interpret these numbers with caution. This category includes a number of special Medicaid coverage groups, including very high cost users in the Rare and Expensive Case Management Program, as well as limited benefit coverage groups, such as individuals who are only eligible for family planning services. It also includes MCO-eligible participants during their MCO selection time period.

4.0 Conclusions

The All-Payer Model continues to incentivize broad collaboration among hospitals and non-hospital providers to increase patient satisfaction, improve health outcomes and population health, and control costs. Although more incremental, progress on broader population health will accelerate alongside the progression of the All-Payer Model as it broadens stakeholder engagement in improving quality outcomes and controlling the total cost of care.

Appendix A: Summary Results for All Goals and Measures, Maryland 2011-2016 (including Numerators and Denominators Used to Estimate Measures, as appropriate)

Goal 7								
Measures	Population		2011	2012	2013	2014	2015	2016
Discharges with Principal Provider Notified, Any Provider	Maryland	Discharges with Notification			59,777	216,864	277,069	315,127
		Total Discharges			669,862	647,229	629,672	621,055
		Rate of Notification			8.92%	33.51%	44.00%	50.74%
Discharges with Principal Provider Notified, Ambulatory Care Provider	Maryland	Discharges with Notification			40,719	95,957	179,574	248,246
		Total Discharges			669,862	647,229	629,672	621,055
		Rate of Notification			6.08%	14.83%	28.52%	39.97%

Goal 9								
Measures	Population		2011	2012	2013	2014	2015	2016
Participation of Maryland clinicians in NCQA accredited patient-centered medical homes	By Clinician	Level 1		73	0	52	24	27
		Level 2		82	125	148	124	151
		Level 3		243	268	564	739	913
		Total		398	393	764	887	1091
	By Practice	Level 1		19	0	7	5	5
		Level 2		18	28	26	32	35
		Level 3		45	45	95	147	167
		Total		82	73	128	184	207
Participation of providers in accountable care organizations	Maryland ACOs					21	21	26
	Maryland Provider Organizations					482	506	672
	National ACOs					406	393	433
	National Providers					15,782	15,392	14,817

Participation of providers in alternative rate setting methodologies	Maryland		31	38	32	36	35	35
Goal 12								
Measures	**Population**		**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
Potentially Preventable Complications Rate per 1,000 discharges (all 65 PPCs)	Maryland All-Payer	Total Number of Observed PPCs			24,614	18,072	15,748	14,169
		Number at-risk Discharges			22,567,666	21,496,940	20,660,050	20,518,717
		PPCs per 1,000 at-risk Discharges			1.09	0.84	0.76	0.69
Potentially Preventable Complications Rate per 1,000 discharges (all 65 PPCs)	Maryland Medicare FFS	Total Number of Observed PPCs			11,867	8,382	7,496	6,429
		Number at-risk Discharges			8,554,616	8,242,465	8,027,708	7,918,419
		PPCs per 1,000 at-risk Discharges			1.39	1.02	0.93	0.81
Potentially Preventable Complications Rate per 1,000 discharges (all 65 PPCs)	Maryland Medicaid	Total Number of Observed PPCs			3,494	3,071	2,645	2,495
		Number at-risk Discharges			4,084,170	4,786,918	4,672,282	4,647,590
		PPCs per 1,000 at-risk Discharges			0.86	0.64	0.57	0.54
Potentially Preventable Complications Casemix-Adjusted Rate	Maryland All-Payer	Case-mix Adjusted Rate			1.16	0.87	0.76	0.65
	Maryland Medicare FFS	Case-mix Adjusted Rate			1.33	0.97	0.85	0.72
	Maryland Medicaid	Case-mix Adjusted Rate			1.01	0.77	0.67	0.58
Goal 14								
Measures	**Population**		**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
	Maryland	Readmissions		9,969	9,523	8,880	9,611	8,930
		Eligible Discharges		45,310	46,464	45,194	50,806	49,197

Readmission rates for inpatient discharges to nursing homes		Readmission Rate		22.00%	20.50%	19.65%	18.92%	18.15%
Goal 15								
30-day all-hospital, all-cause readmission	Maryland	Readmission Rate		12.49%	12.93%	12.43%	12.02%	11.54%
Readmissions per 1,000 MD residents	Maryland	Readmissions		74,518	69,640	64,701	61,474	58,643
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Readmission Rate per 1,000		12.65	11.74	10.84	10.25	9.75
Heart failure readmission rate	Maryland	Readmissions		4,336	3,956	3,930	3,975	3,318
		Eligible Discharges		17,571	17,111	17,328	17,986	15,941
		Readmission Rate		24.68%	23.12%	22.68%	22.10%	20.81%
Acute myocardial infarction readmission rate	Maryland	Readmissions		1,061	1,008	965	1,009	947
		Eligible Discharges		7,909	7,706	7,972	8,343	7,793
		Readmission Rate		13.42%	13.08%	12.10%	12.09%	12.15%
Pneumonia readmission rate	Maryland	Readmissions		2,328	2,099	2,009	1,776	1,653
		Eligible Discharges		15,215	14,597	14,018	13,451	12,721
		Readmission Rate		15.30%	14.38%	14.33%	13.20%	12.99%
Chronic obstructive pulmonary disease readmission rate	Maryland	Readmissions		3,494	3,265	2,959	2,692	2,169
		Eligible Discharges		16,144	15,739	14,563	13,693	11,473
		Readmission Rate		21.64%	20.74%	20.32%	19.66%	18.91%
Hip/total knee arthroplasty readmission rate	Maryland	Readmissions		663	611	579		
		Eligible Discharges		15,607	16,004	17,062		
		Readmission Rate		4.25%	3.82%	3.39%		

*NOTE: Hip/total knee arthroplasty readmission rate is calculated only using ICD-9 codes through CY 2014. The December report will include CY 2015 and CY 2016 data under ICD-10 codes

Goal 16								
Measure	**Population**		**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
	Maryland		79.5	79.7	79.7	79.8	79.5	

Average life expectancy at birth	White (MD)		80.3	80.4	80.3	80.3	80.2	
	Black (MD)		77.1	77.3	77.4	77.6	77.0	
	National		78.7	78.8	78.8	78.9	78.8	
	White		79	79.1	79.1	79		
	Black		75.3	75.5	75.5	75.6		

Goal 17

Measure	Population		2011	2012	2013	2014	2015	2016
PQI Acute Composite Rate	Maryland	Number of acute ACSC discharges		23,101	23,223	21,642	22,577	24,233
		Population age 18 and over		4,429,728	4,532,085	4,604,251	4,649,690	4,665,829
		Composite PQI Rate		521.5	512.41	470.04	473.19	519.37
PQI Chronic Composite Rate	Maryland	Number of chronic ACSC discharges		46,325	46,361	44,466	41,471	39,076
		Population age 18 and over		4,429,728	4,532,085	4,604,251	4,649,690	4,665,829
		Composite PQI Rate		1045.78	1022.95	965.76	942.15	837.49
PQI Overall Composite Rate	Maryland	Number of overall ACSC discharges		69,425	69,582	66,105	64,048	63,307
		Population age 18 and over		4,429,728	4,532,085	4,604,251	4,649,690	4,665,829
		Composite PQI Rate		1567.25	1535.32	1435.74	1415.34	1356.82

Goal 20

Measures	Population		2011	2012	2013	2014	2015	2016
Diabetes-related ED visit rate per 1,000 population	Maryland	Number of ED visits		12,683	12,723	13,651	13,973	14,410
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Visit Rate per 1,000		2.15	2.15	2.29	2.33	2.40
Hypertension-related ED visit rate per 1,000 population	Maryland	Number of ED visits		16,156	16,544	17,123	18,089	19,423
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Visit Rate per 1,000		2.74	2.79	2.87	3.02	3.23

Goal 21								
Measures	Population		2011	2012	2013	2014	2015	2016
Asthma-related ED visit rate per 1,000 population	Maryland	Number of ED visits		44,046	40,802	40,599	41,367	47,059
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Visit Rate per 1,000		7.48	6.88	6.80	6.90	7.82
Goal 22								
Mental Health-related ED visit rate per 1,000 population	Maryland	Number of ED visits		218,421	209,068	218,939	242,500	241,605
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Visit Rate per 1,000		37.09	35.25	36.69	40.45	40.16
Substance Use-related ED visit rate per 1,000 population	Maryland	Number of ED visits		89,974	95,385	104,896	117,361	127,744
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Visit Rate per 1,000		15.28	16.08	17.58	19.58	21.23
Goal 25								
Measures	Population		2011	2012	2013	2014	2015	2016*
All-payer Maryland Hospital per capita total charges for MD residents	Maryland	Total Hospital Charges ($)		13,802,757,694	14,126,722,640	14,425,743,837	14,832,091,464	14,931,711,496[1]
		Population		5,889,651	5,931,129	5,967,295	5,994,983	6,016,447
		Per capita charges ($)		2,344	2,382	2,417	2,474	2,482
Medicare Part A Maryland hospital per capita total charges per Beneficiary	Maryland	Total Inpatient Charges ($)		3,540,917,788	3,641,083,879	3,657,721,047	3,738,655,187	3,704,110,365[2]
		Part A Beneficiaries		763,357	793,092	818,502	843,531	857,554
		Per capita charges ($)		4,639	4,591	4,469	4,432	4,340
Medicare Part B Maryland hospital per capita total charges per Beneficiary	Maryland	Total Outpatient Charges ($)		1,551,059,646	1,679,405,573	1,783,754,452	1,938,206,962	1,979,663,202[3]
		Part B Beneficiaries		680,364	706,850	729,875	752,245	761,954
		Per capita charges ($)		2,280	2,376	2,444	2,577	2,611
Medicare Maryland hospital per capita total charges for MD Medicare Beneficiaries	Maryland			6,918	6,967	6,913	7,009	6,952

Medicaid Maryland hospital per capita total charges per Beneficiary	Maryland	Total Charges ($)		2,492,754,659	2,595,383,354	3,158,238,247	3,250,755,718	3,276,651,898
		Total Enrollees		1,041,607	1,089,640	1,280,831	1,290,779	1,320,793
		Per capita charges ($)		2,398	2,382	2,466	2,518	2,481
Medicare/Medicaid dual eligible Maryland hospital per capita total charges per Beneficiary	Maryland	Total Charges ($)		923,593,002	1,047,382,694	1,099,859,606	1,179,449,021	1,216,611,446
		Total Enrollees		117,523	123,192	129,850	133,589	138,971
		Per capita charges ($)		7,859	8,502	8,470	8,829	8,754
Private Payer (using SHADAC estimate)	Maryland	Total Charges ($)		4,845,961,093	4,844,846,429	4,778,552,465	4,850,521,494	4,833,942,280
		Total Enrollees		3,756,699	3,762,456	3,775,719	3,841,538	
		Per capita charges ($)		1,290	1,288	1,266	1,263	
Private Payer (using CMS OACT estimate)	Maryland	Total Charges ($)		4,845,961,093	4,844,846,429	4,778,552,465	4,850,521,494	4,833,942,280
		Total Enrollees		3,954,000	3,961,000	3,983,000		
		Per capita charges ($)		1,226	1,223	1,200		

*All-Payer and Medicare numbers are updated below to reflect the undercharge from the first half of CY 2016.

[1] This number does not reflect the adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. When adjusting for Maryland hospitals' undercharge of their Global Budget Revenue July-December targets by approximately $79 million, the impact is a total adjusted all-payer Maryland hospital total charges for Maryland residents of approximately $15.01 billion.

[2]This number does not reflect the adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. When applying an undercharge factor of 1.02 percent to Maryland hospital charges for Maryland Part A beneficiaries for each month from July 2016 to December 2016, the impact is approximately $18.6 million, or total adjusted Maryland Medicare inpatient charges of $3.72 billion

[3] This number does not reflect the adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. When applying an undercharge factor of 1.02 percent to Maryland hospital charges for Maryland Part B beneficiaries for each month from July 2016 to December 2016, the impact is approximately $10.1 million, or total adjusted Maryland Medicare outpatient charges of $1.99 billion.

Goal 25a

Measures	Population		2011	2012	2013	2014	2015	2016
All-payer Maryland specialty hospital total charges per capita for MD residents	Maryland	Total Charges ($)			266,816,278	273,983,175	295,140,611	311,993,719
		Population			5,931,129	5,967,295	5,994,983	6,016,447
		Per capita charges ($)			44.99	45.91	49.23	51.86
Medicare Maryland specialty hospital total	Maryland	Total Inpatient Charges ($)			80,304,955	80,934,506	87,112,629	85,383,229

charges per beneficiary for MD Medicare Beneficiaries		Part A Beneficiaries			793,092	818,502	843,531	857,554
		Per capita charges ($)			101	99	103	100
Medicare Maryland specialty hospital total charges per beneficiary for MD Medicare Beneficiaries		Total Outpatient Charges ($)			972,099	2,634,466	5,355,240	5,640,910
		Part B Beneficiaries			706,850	729,875	752,245	761,954
		Per capita charges ($)			1.38	3.61	7.12	7.40
Medicare Maryland hospital per capita total charges for MD Medicare Beneficiaries	Maryland	Total Inpatient and Outpatient Charges ($)			102.63	102.49	110.39	106.97
Medicaid Maryland specialty hospital total charges per beneficiary for MD Medicaid Beneficiaries	Maryland	Total Charges ($)			93,034,066	97,094,364	82,299,596	118,053,889
		Total Enrollees			1,089,640	1,280,831	1,290,779	1,320,793
		Per capita charges ($)			85.38	75.81	63.76	89.38

Goal 26

Measures	Population		2011	2012	2013	2014	2015	2016*
All-payer per capita total expenditure	Maryland	Expenditures ($)						
		Population						
		Per capita expenditures ($)						
Medicare per capita total expenditure	National	Total Part A Expenditures ($)			177,847,545,711	176,858,507,516	177,655,585,298	179,752,893,899
		Part A Beneficiaries			36,349,121	36,473,828	36,568,143	37,178,539
		Per capita expenditures ($)			4,893	4,849	4,858	4,835
	National	Total Part B Expenditures ($)			151,734,340,183	156,315,893,208	161,247,215,528	166,423,590,762
		Part B Beneficiaries			33,566,063	33,638,693	33,660,479	34,109,121
		Per capita expenditures ($)			4,520	4,647	4,790	4,879
	National	Per capita expenditures ($)		9,565	9,413	9,496	9,649	9,714

	Maryland	Total Part A Expenditures ($)		4,332,789,590	4,406,629,147	4,439,449,155	4,633,148,430	4,610,176,936[4]
		Part A Beneficiaries		763,357	793,092	818,502	843,531	857,554
		Per capita expenditures ($)		5,676	5,556	5,424	5,493	5,376
	Maryland	Total Part B Expenditures ($)		3,705,308,739	3,838,392,196	4,008,491,181	4,269,939,264	4,394,218,776[5]
		Part B Beneficiaries		680,364	706,850	729,875	752,245	761,954
		Per capita expenditures ($)		5,446	5,430	5,492	5,676	5,767
	Maryland	Per capita expenditures ($)		11,122	10,987	10,916	11,169	11,143
Medicaid MCO per capita total expenditure	Maryland	Statewide Average Annualized PMPM			3,432	3,876	4,008	
Medicaid FFS Non-Dual population per capita total expenditure[6]	Maryland	Expenditures ($)			1,155,902,851	1,131,680,385	1,221,509,572	
		Yearly Total Member Months			676,274	919,526	1,241,621	
		Per capita expenditures ($)			20,511	14,769	11,806	
Private Payer per capita total expenditure	Maryland	Expenditures ($)			7,745,718,582	7,753,726,521	7,966,173,949	
		Yearly Average Total Member Months			2,877,120	2,393,048	2,306,297	
		Per capita expenditures ($)			2,692	3,240	3,456	
Medicare/Medicaid dual eligibles per capita total expenditure (Medicaid only portion of expenditures)[7]	Maryland	Expenditures ($)			2,055,772,516	2,118,602,765	2,151,976,525	
		Yearly Total Member Months			1,506,523	1,599,964	1,652,206	
		Per capita expenditures ($)			16,375	15,890	15,630	

*Maryland Medicare numbers are updated below to reflect the undercharge from the first half of CY 2016.

[4]This number does not reflect the adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. When applying an undercharge factor of 1.02 percent to Maryland hospital expenditures for Maryland Part A beneficiaries for each month from July 2016 to December 2016, the impact is approximately $17.1 million, or total adjusted Maryland Medicare Part A expenditures of $4.63 billion.

[5] This number does not reflect the adjustment to account for undercharging that occurred in Maryland hospitals from July to December 2016. When applying an undercharge factor of 1.02 percent to Maryland hospital expenditures for Maryland Part B beneficiaries for each month from July 2016 to December 2016, the impact is approximately $7.7 million, or total adjusted Maryland Medicare Part B expenditures of $4.40 billion.

[6] Please interpret these numbers with caution. This category includes a number of special Medicaid coverage groups, including very high cost users in the Rare and Expensive Case Management Program, as well as limited benefit coverage groups, such as individuals who are only eligible for family planning services. It also includes MCO-eligible participants during their MCO selection time period.

[7]These numbers reflect the Medicaid-only portion of expenditures for services for the dually eligible. This includes individuals for which Medicaid pays the Part B premiums only. Medicaid expenditures reflect payments for services only and do not include premiums.

Appendix B: Measure Methodology – Supplemental Information

Adult Survey 2.0, Top Box Scores, Regional Top Box Scores, Patients' Rating of the Provider.

Goal 7. Enhance Care Transitions – Coordination with Primary Care

Percent of Discharges with Any ENS Alert Sent to Provider

Numerator: Number of discharges for which an associated ENS alert (admission or discharge) is sent to at least one provider

Denominator: Total number of discharges

Source: Data obtained from the CRISP ENS

Goal 9. Broaden Engagement in Innovative Models of Care

Participation of Clinicians in NCQA-Accredited PCMHs

Practices and physicians who were NCQA PCMH-recognized as of March 2016 and/or October 2016 were included (retrieved from http://www.ncqa.org/programs/recognition).

As of January 2017, NCQA no longer provides an easily accessible list of providers; however, checking of practices confirms that no new practices became NCQA PCMH recognized between October 2016 and January 2017.

Participation of Provider Organizations in ACOs

ACO Definition from: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/index.html?redirect=/aco/

Goal 14. Readmission Rate Among Patients Discharged to a Nursing Home.

Numerator: The number of All-Payer inpatient hospital stays where the patient was discharged to a nursing home, but was readmitted to the hospital within 30 days of the initial hospital discharge date.

Denominator: The total number of hospital discharges that have a nursing home or skilled nursing facility as discharge disposition.

Note: These data are not case-mix adjusted.

Data Source: HSCRC inpatient discharge abstract data with CRISP unique patient enterprise identifiers (EIDs) for 2012-2015.

Goal 15. Reduce Readmissions from Hospital

Condition-Specific Readmission Rates

NQF crosswalks for condition-specific readmission rates were current as of October 18, 2016 and, per the NQF website, may be subject to revision.

Goal 16. Improve Life Expectancy

Source: National data by race for 2014 is sourced from http://www.cdc.gov/nchs/data/nvsr/nvsr65/nvsr65_04.pdf, pg 33. National data for 2014 and 2015 is sourced from http://www.cdc.gov/nchs/data/databriefs/db267.pdf, pg 1. Included separate sources

because national rate retroactively improved for 2014.

Goals 20-22. Condition-Specific ED Visit Rates

Condition-specific ED Visit Rate

In October 2015, there was a national update to ICD codes (ICD-9 to ICD-10), which rendered data prior to October 2015 incomparable to ICD coded data moving forward. These changes impact all measures that are derived from ICD-coded data from the Health Service and Cost Review Commission (HSCRC) – for purposes of this report, these include visits to the emergency department due to: hypertension, diabetes, asthma, and mental health.

ICD-9 codes were mapped to ICD-10 codes by the Maryland Department of Health and Mental Hygiene (DHMH), Medicaid, Office of Health Services. Please be advised that new ICD-10 codes were added last year and may be added yearly. The ICD-10 codes are subject to change upon further review and stakeholder input. Data and information released from DHMH are provided on an "AS IS" basis, without warranty of any kind, including without limitation the warranties of merchantability, fitness for a particular purpose and non-infringement. Availability of this data and information does not constitute scientific publication. Data and/or information may contain errors or be incomplete.