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October 12, 2016

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 Van T. Mitchell
Secretary of DHMH
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 Mitchell:

I am pleased to submit to you with the fourth 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 April 1, 2016 through September 30, 2016, which encompasses through the third quarter of the third year of Maryland's new agreement with the Center for Medicare & Medicaid Innovation (CMMI).

Effective January 1, 2014, the State of Maryland and CMMI 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://www.hscrc.state.md.us/

Please contact me if you have any questions about this report, or you may contact Erin Schurmann at erin.schurmann@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 2016

Executive Summary

Introduction

Effective January 1, 2014, the State of Maryland and the Centers for Medicare & Medicaid Services (CMS) entered into a new 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,[1] contains a summary of implementation, monitoring, and other activities during the time period from January 1, 2014, through September 30, 2016. The purpose of this report is to inform the Maryland General Assembly on the status of the New Maryland All-Payer Model.

Highlights

The following bullets highlight the Maryland Health Services Cost Review Commission's (HSCRC's) progress in the nine reporting areas required by law.[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 and 2.31 percent between CYs 2014 and 2015. CY 2016 year-to-date (YTD) per capita revenue growth grew 1.47 percent over the same period in CY 2015 (as of June).
- **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. The HSCRC gained access to CMS data and is working with a contractor to perform analytics to validate the aggregate Medicare savings calculated by CMS. Maryland realized $116 million in savings in CY 2014 and $135 million in CY 2015. CY 2016 data are considered preliminary and have not yet been approved for public release 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 96 percent of hospital revenues under global budget structures.
- **Reducing the Readmission Rate among Medicare Beneficiaries** – While the readmission rate in Maryland has decreased over the last several years, Maryland's readmission rate for Medicare beneficiaries remains higher than the national average. Under the New 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 2018. Final CMS data for CY 2015 show that the Maryland readmission rate decreased from 16.61 percent in CY 2013 to 15.95 percent in CY 2015, a decrease sufficient to meet the test of the New All-Payer Model for CY 2015. Additional analysis of HSCRC data show that Maryland continues to reduce readmissions. The gap between

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

the Maryland per-beneficiary readmission rate and the national rate decreased by 0.69 percent between CY 2013 and CY 2015.

- **Reducing Hospital-Acquired Conditions (HACs)** – CMS requires Maryland to reduce the cumulative rate of HACs by 30 percent by 2018. HSCRC measures HACs using 64 Potentially Preventable Complications (PPCs).[3] To date, Maryland has exceeded this target, with a 47.34 percent reduction in all-payer case-mix adjusted PPCs between fiscal year (FY) 2013 and FY 2016. This reduction in PPCs was even higher for Medicare FFS at 52.40 percent. Staff have set a statewide reduction target of 6 percent for CY 2016, and will continue to incentivize reductions in HACs through our quality incentive program.

- **Workgroup Activities –** The HSCRC continues to implement a broad stakeholder engagement approach, convening an Advisory Council and several workgroups with various subcommittees. The Payment Models and Performance Measurement work groups continue to operate and have established ad hoc subcommittees as needed. The Consumer work groups also continue their work, and pursuant to one of their recommendations, the Commission is establishing a Standing Consumer Advisory Committee to provide advice regarding Commission activities. 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 Commissioners have also been participating in work groups and meetings aimed at establishing value-based models for patients dually eligible for Medicare and Medicaid, as well as primary care.

- **Actions to Promote Alternative Methods of Rate Determination and Payment** – The New All-Payer Model agreement allows Maryland to develop alternative methods of rate determination. During the first six months of the performance period, the HSCRC developed the Global Budget Revenue (GBR) reimbursement model and moved 95 percent of acute hospital revenue under global budgets. As hospitals have pursued more effective models for coordinating and managing the care of chronically ill patients, several hospital systems are offering Medicare Advantage plans. The Commission continues to review these alternative methods of rate determination each year to ensure that they do not result in a loss contract. The HSCRC has begun to work with stakeholders on augmenting the existing global budget concept with a new, population-based arrangement in the future.

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

- **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 that 1% above Medicare total cost of care growth nationally. However, in any two consecutive years, Maryland's Medicare total cost of care may not exceed the nation. In CY 2015, Maryland's total cost of care grew by .7% above the nation. The Commission is watching closely and prepared to take action to ensure that the two consecutive year requirement is not breached. The HSCRC will continue to develop monitoring tools, measure performance, and

[3] 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.

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, 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. Success of the New All-Payer Model will reduce cost to purchasers of care—businesses, patients, insurers, Medicare, and Medicaid—and improve the quality of the care that patients receive both inside and outside of the hospital. In the past 33 months, the State, in close partnership with providers, payers, and consumers, has made significant progress in this modernization effort.

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

State Reporting Requirements for Maryland's New 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 New Maryland All-Payer Model. This New Maryland All-Payer Model Biannual Report, prepared in accordance with Maryland law,[4] discusses the State's progress during the period from January 1, 2014, through September 30, 2016, based on the information available at the time. The Maryland Health Services Cost Review Commission (HSCRC, or Commission) will produce an updated report every six months. Figure 1 provides an overview of the reporting required by law under the New Maryland All-Payer Model.[5]

Figure 1. State Biannual Reporting of Maryland's New 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 calendar year (CY) 2013 and CY 2014. CY 2015 per capita revenue growth grew 2.31% over CY 2014. CY 2016 YTD per capita revenue growth grew 1.47% over the same period in CY 2015.	• Ongoing monthly measurement • Expecting continued favorable performance for CY 2016
I.2.	Achieve aggregate savings in Medicare spending equal to or greater than $330 million over 5 years	$116m in Performance Year (PY) 1 and $135m in PY2. CY 2016 data is considered preliminary	• HSCRC gained access to CMS data and is working with an analytics contractor to examine the calculation of the per beneficiary amounts and growth rates

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

Section	Achievement Requirement	Accomplishments	Ongoing Activities
		and not yet approved for public release by CMS.	for CY 2016
I.3.	Shift at least 80% of hospital revenue to a population-based payment structure (such as global budgets)	96% of hospital revenue shifted to global budgets	• All hospitals are engaged in global budgets under Global Budget Revenue (GBR) and Total Patient Revenue (TPR) agreements • HSCRC continues to refine global budget methodology.
I.4.	Reduce the hospital readmission rate for Medicare beneficiaries to below the national rate over the 5-year period of the agreement	The gap between the Maryland per beneficiary readmission rate and the national rate decreased by 0.69% between CY 2013 and CY 2015.	• HSCRC is monitoring progress within Maryland using data collected from hospitals by HSCRC and continues to see declines in all-payer, Medicare FFS, and Medicaid readmissions • The HSCRC Readmission Reduction Incentive Program (RRIP) for fiscal year (FY) 2018 was approved in June 2016 and continues to incentivize readmission reductions. Beginning in FY 2018, the RRIP will reward hospitals that achieve strong attainment in lower readmissions.
I.5.	Cumulative reduction in hospital acquired conditions (HACs) by 30% over 5 years	Reduction of 33% in all-payer case-mix adjusted potentially preventable complication (PPC) rate in CY 2015 compared to CY 2013. The reduction between FY 2013 and FY 2016 is 47.34 percent.	• HSCRC continues to set a statewide annual improvement goal for the Maryland Hospital Acquired Conditions (MHAC) program, despite having achieved the 30% required reduction. • For FY 2018, HSCRC staff set a statewide reduction target of 6%, comparing FY 2015 with CY2016. • HSCRC continues to review and audit these findings and monitor ICD-10 conversion
I.6	Monitor Total Cost of Care (TCOC) for Medicare and maintain growth within guardrails	For CY 2015, the growth in TCOC for Maryland's Medicare beneficiaries exceeded the national growth rate when compared to CY 2014. However, when compared to the base year (CY 2013), the cumulative growth rate in Maryland is lower than the national growth rate, and Maryland is exceeding its savings requirements, even after considering the growth in non-hospital costs.	• HSCRC is closely monitoring TCOC growth for CY 2016. Through June 2016, the growth rate in cost per beneficiary in Maryland was lower than the national growth rate. However, the growth of non-hospital spending exceeded the national growth rate. HSCRC is investigating the sources of this growth.
II	Workgroup Actions	The HSCRC is convening an additional workgroup: the	• The Advisory Council reconvened in February 2016 and meets monthly to

Section	Achievement Requirement	Accomplishments	Ongoing Activities
		Consumer Standing Advisory Committee	assist in developing the vision for Phase II of the All-Payer Model • Active workgroups have continued to meet on a regular basis
III	New alternative methods of rate determination	96% of hospital revenue is now under global budget arrangements, implemented in accordance with policies approved by the Commission	• Global budget agreements are published on the HSCRC's website • New policies are being developed to refine and advance the GBR methodology
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	• The HSCRC continues to provide reports to CMS on an ongoing basis

Federal Reporting Requirements for Maryland's New All-Payer Model

Maryland's New 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 mid-year Annual Monitoring Report to CMS in July 2016, and will submit its second Annual Monitoring Report to CMS in December 2016.[6] 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.

Section I

1. Inpatient and Outpatient Hospital Per Capita Cost Growth

The New 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 2002-2012 period (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. CY 2016 year-to-date (YTD) per capita revenue grew by 1.47 percent over the same period in CY 2015 (as of June). 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.

[6] The annual report is currently submitted in two parts due to timeliness of data availability. A partial report detailing CY 2015 is submitted in July, and a final report with full CY 2015 data is submitted in December as available.

2. Aggregate Medicare Savings

The New 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 and $135 million in CY 2015. CY 2016 data are considered preliminary and have not yet been approved for public release by CMS.

The HSCRC is currently working with a Medicare analytics contractor 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 successfully replicated CMS's analysis of Maryland's data for CYs 2013, 2014, and 2015.

HSCRC has been tracking Medicare fee-for-service (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 YTD, the Medicare FFS per capita revenue has declined by 1.20 percent over the same time period in CY 2015 (as of June).

3. Shifting from a Per-Case Rate System to Global Budgets

As discussed in the October 2015 and April 2016 New Maryland All-Payer Model Biannual Reports, 96 percent of Maryland hospital revenues are contained within global budget structures. This exceeds the New 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 that were not already under a Total Patient Revenue (TPR) agreement now operate under a Global Budget Revenue (GBR) agreement, through policies approved by the Commission. The remaining 4 percent that is not under global budgets constitutes excluded, out-of-state revenue for five hospitals. These hospitals are otherwise engaged in global budgeting. Global budget agreements are available on the Global Budget Web Page of the HSCRC website.

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

4. Reducing the Hospital Readmission Rate among Medicare Beneficiaries

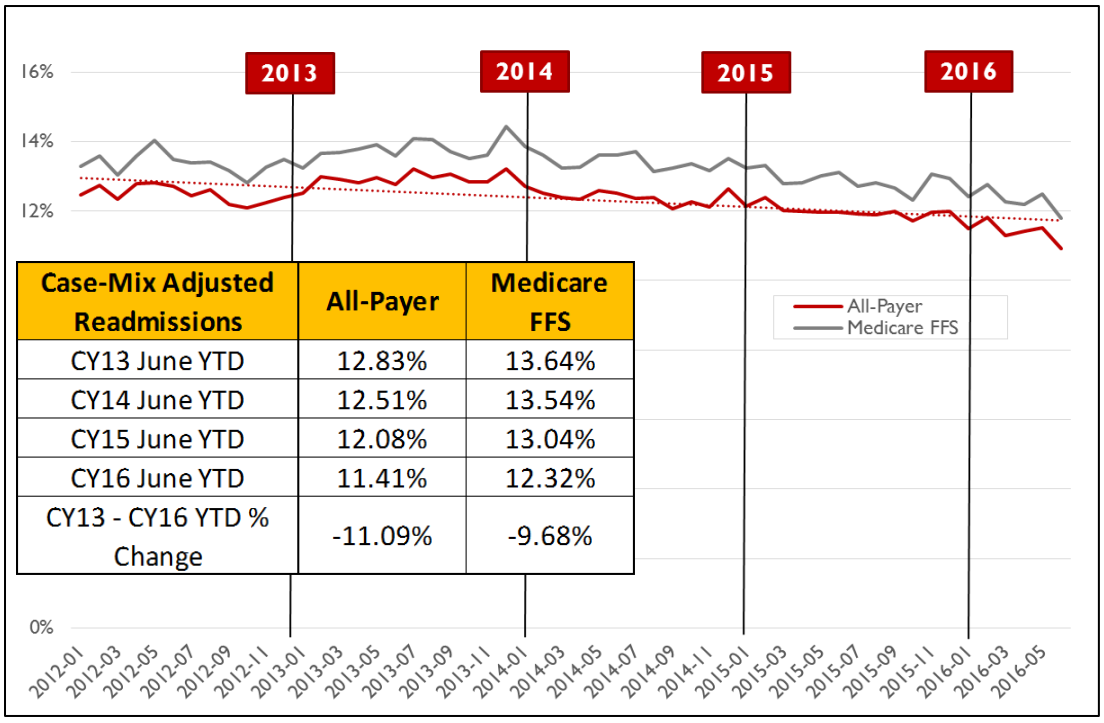
Reducing hospital inpatient readmission rates has been an aim of the HSCRC since 2011. While the readmission rate in Maryland has fallen over the last several years, Maryland's readmission rate for Medicare beneficiaries remains higher than the national average. The New Maryland All-Payer Model agreement requires Maryland's hospital readmission rate for Medicare FFS beneficiaries to be at or below the national readmission rate by the end of 2018. Each year beginning in 2014, the Maryland readmission rate must keep up with national improvements

and close the gap between Maryland and the nation by one-fifth. This All-Payer Model requirement uses national Medicare data.

Overall, HSCRC's hospital data show that the monthly case-mix adjusted readmission rate YTD through June 2016 is trending lower than the rate for the same time period in CY 2013 or CY 2014 (Figure 2). This analysis includes all Maryland inpatient stays, including Medicare FFS. Based on these HSCRC data, the all-payer case-mix adjusted readmission rate YTD through June 2016 was 11.41 percent, compared with 12.83 percent during the same time period in 2013, an 11.1 percent reduction. The corresponding readmission reduction for Medicare FFS beneficiaries was lower (9.68 percent). The reduction highlights the difficulty and time involved in reducing readmissions, as it requires significant effort, investment, and coordination across providers.

Staff believe that the addition of penalties to the RRIP provides strong incentives to reduce readmissions compared with the State FY 2016 program that only had rewards. In the FY 2018 policy, staff modified the policy to reward both improvement and attainment. Thus hospitals with low readmission rates (those with a rate 2 percent below the 25th percentile from previous year) had the opportunity to receive a reward regardless of improvement (this was also retrospectively applied to FY 2017 adjustments). To help readmission reduction efforts, HSCRC continues to improve its readmission reporting capability by leveraging resources available in the state Health Information Exchange and providing timely, monthly, patient-specific data to hospitals.

Figure 2. All-Payer and Medicare FFS Case-Mix Adjusted Readmission Rates, CY 2013-2016 YTD through June



Case-Mix Adjusted Readmissions	All-Payer	Medicare FFS
CY13 June YTD	12.83%	13.64%
CY14 June YTD	12.51%	13.54%
CY15 June YTD	12.08%	13.04%
CY16 June YTD	11.41%	12.32%
CY13 - CY16 YTD % Change	-11.09%	-9.68%

5. 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 New Maryland All-Payer Model agreement. Maryland measures HACs using 64 Potentially Preventable Complications (PPCs).[7] 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.

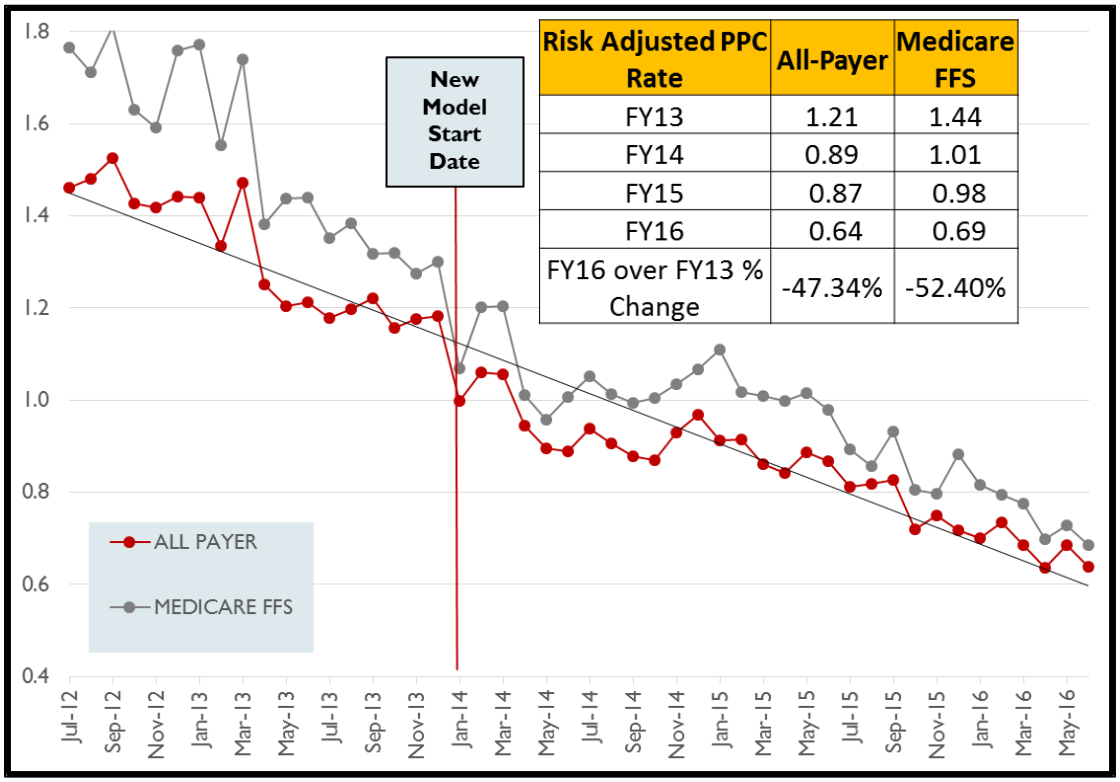
As discussed in the October 2014 New Maryland All-Payer Model Biannual report, the HSCRC approved major revisions to the Maryland Hospital Acquired Conditions (MHAC) program in April 2014 in order to support the goal of reducing PPCs. The MHAC program calculates hospital rewards and penalties for case-mix adjusted rates of PPCs. Specifically, these calculations now use observed-to-expected ratios as the basis of the measurement for all of the 64 PPCs and preset positions on a scale constructed using the base year scores for all PPCs to determine penalties and rewards.

Figure 3 shows the all-payer and Medicare FFS case-mix-adjusted PPC rates by month and year. In FY 2016, the all-payer case-mix adjusted PPC rate was 0.64 per 1,000, compared with 1.21 per 1,000 for FY 2013, which is a 47.34 percent reduction. The reduction in the case-mix adjusted complication rate for Medicare FFS was even higher at 52.40 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 set annual improvement targets for hospitals to further reduce PPCs and to ensure that Maryland hospitals will continue to have a waiver from the CMS HAC program. For the FY 2018 performance period, the HSCRC set a 6 percent statewide PPC reduction target comparing FY 2015 with CY 2016.

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 that had audit results that exceeded the HSCRC thresholds. The HSCRC has also worked closely with 3M, the Maryland Hospital Association (MHA), and the hospital industry around the International Classification of Diseases – 10th Edition (ICD-10) implementation, and to date have not seen significant changes in PPC rates due to ICD-10.

[7] 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.

Figure 3. All-Payer Risk-Adjusted PPC Rates FY2013-FY2016



Risk Adjusted PPC Rate	All-Payer	Medicare FFS
FY13	1.21	1.44
FY14	0.89	1.01
FY15	0.87	0.98
FY16	0.64	0.69
FY16 over FY13 % Change	-47.34%	-52.40%

6. Medicare Savings and Total Cost of Care Performance

Under the New All-Payer Model agreement, the total cost of care growth for Maryland Medicare beneficiaries should not exceed the national growth rate by more than 1 percent in any given year and should 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.

- 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. Based on preliminary data, Maryland exceeded the national Medicare total cost of care growth rate in CY 2015 by about 0.7 percent. While Maryland is still ahead of the promised savings levels to date, the total cost of care growth trend line is of concern.
- For calendar YTD through June 2016, HSCRC staff estimates the Medicare total cost of care growth in Maryland to be lower than the nation. With monthly fluctuations, Medicare total cost of care continues to be of concern.

Figure 4. Total Cost of Care per Capita
Actual Growth Trend (CY month vs. prior CY month)

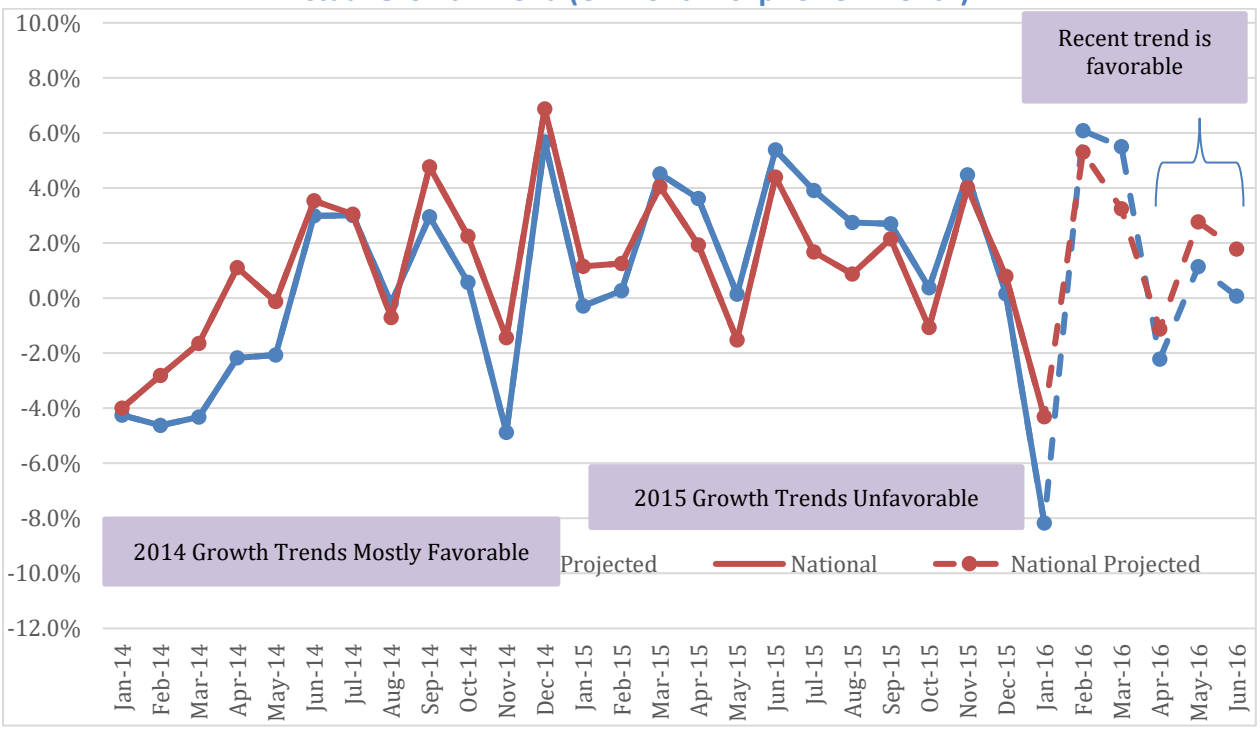


Figure 5. Medicare Hospital Spending per Capita
Actual Growth Trend (CY month vs. prior CY month)

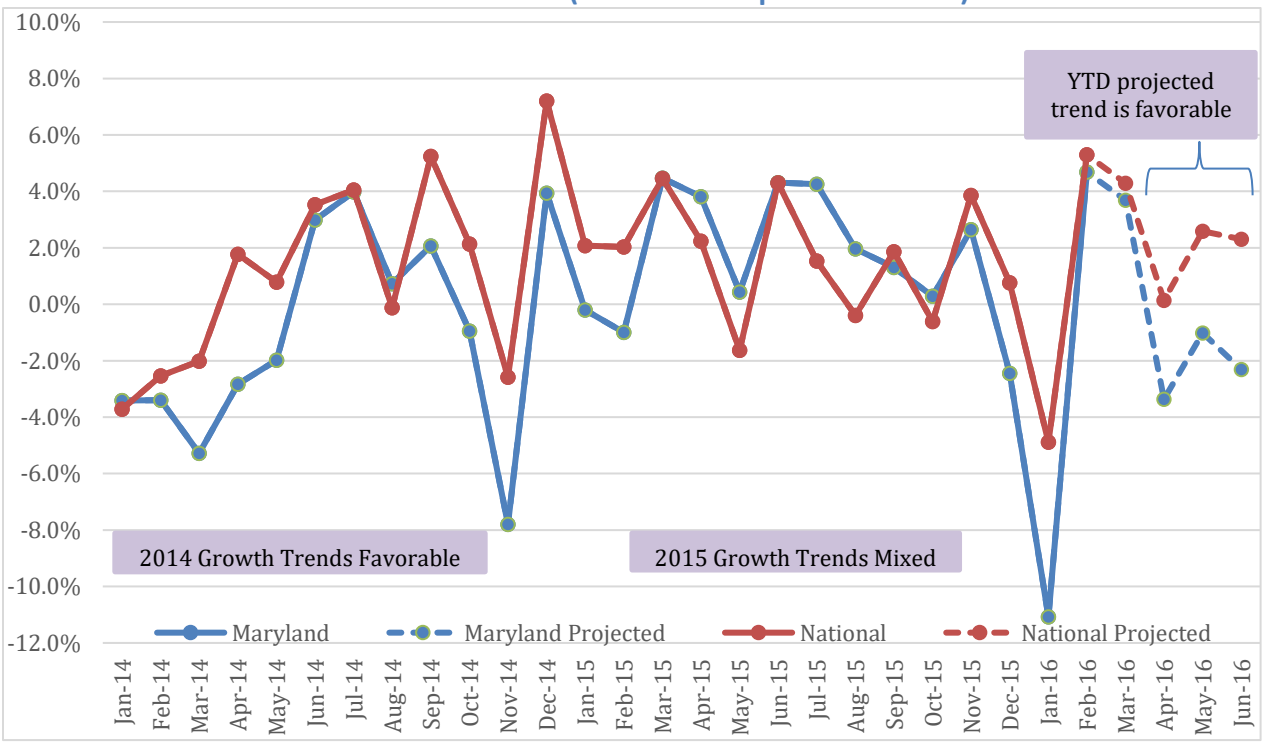
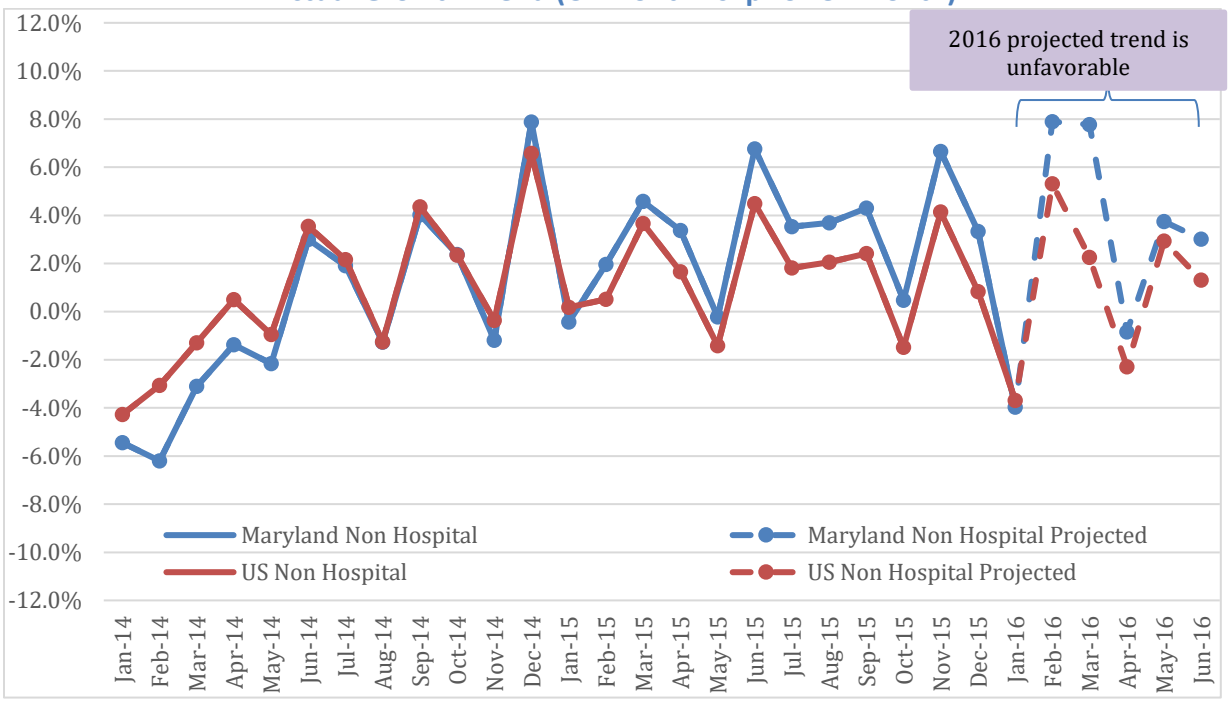


Figure 6. Non-Hospital Spending per Capita
Actual Growth Trend (CY month vs. prior CY month)



Section II

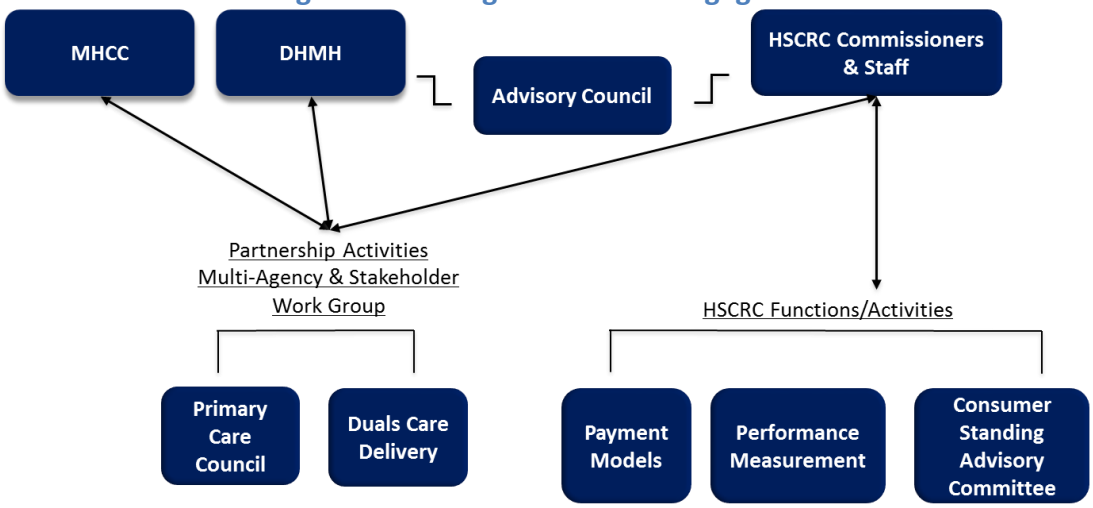
Workgroup Actions

The HSCRC continues to implement a broad stakeholder engagement approach to healthcare transformation through stakeholder workgroups. As the All-Payer Model progression broadens to include providers and delivery systems beyond hospitals, the HSCRC has focused on coordinating workgroup efforts across agencies. In partnership with the Maryland Health Care Commission (MHCC) and the Maryland Department of Health and Mental Hygiene (DHMH), the HSCRC has participated in a Primary Care Council and the Duals Care Delivery Workgroup. In February 2016, the Commission and DHMH reconvened an Advisory Council to assist in developing the vision for Phase II of the All-Payer Model, which moves to a broader total cost of care model. The Council includes a broad set of stakeholders representing hospitals, the insurance industry, long-term care, post-acute care, physicians, and other providers. The Payment Models and Performance Measurement Workgroups continued to meet regularly throughout CY 2016, and the HSCRC is working to build a Consumer Standing Advisory Committee in the fall of 2016.

Figure 7 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 Commission's website at http://www.hscrc.maryland.gov/index.cfm.

Figure 7. Existing Stakeholder Engagement Structure



1. Advisory Council on Modernization of the Maryland All-Payer Waiver

The purpose of the Advisory Council is to provide the HSCRC with senior-level stakeholder input on guiding principles for the overall implementation of population-based and patient-centered payment systems. The Advisory Council consists of a broad representation of hospitals, payers, physicians, consumers, providers, DHMH, and health care experts. The Advisory Council suggested guiding principles for the HSCRC to consider as it addresses key challenges and possible strategies over the next two years of Model implementation.

During the three meetings from April through June 2016, Advisory Council members drafted interim recommendations for the HSCRC and DHMH to consider in their planning efforts. These recommendations revolved around the following six major domains: 1) vision; 2) roadmap, focus and progression; 3) person-centered care; 4) data; 5) accountability; and 6) alignment.

The Council also discussed priorities for Maryland's progression, including the following:

- Potential outline of a progression plan
- Guiding principles for the HSCRC staff as they draft the progression plan
- Proposed care redesign amendment
- Long-term, health care delivery and payment model developments and associated timelines for design and implementation
- Possible implications of the Medicare Access and CHIP Re-authorization Act and the Comprehensive Primary Care Plus Model policies on strategic planning

2. The 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 CY 2016, the workgroup reviewed several policies described above, including the FY 2017 Update Factor, the FY 2017 Uncompensated Care (UCC) Policy, and the FY 2017 Potentially Avoidable Utilization (PAU) Savings policy. Additionally, the Payment Models Workgroup discussed market shift adjustments, which are included in rate orders. For rate year (RY) 2017, these will be incorporated on a semi-annual basis, increasing the frequency of adjustment. The workgroup also discussed the increases in total cost of care for Medicare.

3. 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.

Since April 2016, the Performance Measurement Workgroup has finalized the Readmissions Reduction Incentive Program for FY 2018, as well as the PAU Savings Policy and the Aggregate Revenue-at-Risk policy. Current objectives include updating quality incentive program policies for FY 2019 and resolving data issues.

Section III

1. 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 New Maryland All-Payer Model, the HSCRC developed the GBR reimbursement model and engaged all hospitals not already under a TPR agreement in GBR, as discussed in Section I of this report. While some revenue is outside of the global budget (such as revenue from some out-of-state referrals), approximately 96 percent of acute hospital revenue is currently under a global budget.

The GBR and TPR methodologies are central to achieving the triple aim 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 New Maryland All-Payer Model focuses on controlling increases in total hospital revenue per capita. GBR and TPR 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 and TPR 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, infrastructure requirements for GBR hospitals,[8] demographic driven volume increases, performance on quality-based or efficiency-based programs, changes

[8] TPR hospitals were previously provided allowances at the initiation of their agreements.

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.

While the HSCRC may consider augmenting the existing global budget concept with new population-based arrangements in the future, it is important to first evaluate the effectiveness of the existing global budget mechanism.

Looking to the future, the Commission is 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. The State received preliminary approval from CMMI for an amendment to the existing All-Payer Model contract to implement specific care redesign strategies. One such strategy is the development of the Chronic Care Improvement Program, which will permit hospitals to share data and resources with community-based patient designated providers in order to improve care coordination, reduce cost, and align the incentives of hospitals and physicians. A similar program for hospital based physicians is referred to as the Hospital Care Improvement Program. Both programs are voluntary and are expected to begin implementation in CY 2017, with potential gain sharing payment distributed in CY 2018 for those hospitals who opt for this portion of the given program.

The HSCRC will continue to further develop payment policy and will report any future innovations in this section of the Biannual Report. Specifically, DHMH and Medicaid are developing primary care and dual eligible models that will create even greater alignment across various providers to better meet the needs of chronically ill patients. The Commission also anticipates expanding the global budget model to geographic populations. We anticipate various pilot projects to begin in 2018.

2. Refining Global Budget Methodologies

While the majority of Maryland hospitals transitioned to global budgets during the first six months of the New 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 New Maryland All-Payer Model evolves.

Global Budget Charge Corridors

A unique feature of global budgets that has been refined in the past six months 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 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 New Maryland All-Payer Model.

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 must submit annual reports on these investments with program descriptions, expenditures, and results.

The first of these reports was due at the end of September 2015. The HSCRC received infrastructure reports from hospitals detailing over 850 infrastructure investments made during FYs 2014 and 2015. Hospitals reported a total infrastructure investment of $231 million dollars over that time period.

Key areas of investment included: 1) expanding case management and care transition services; 2) increasing access to non-hospital provider care; 3) removing barriers to social services necessary for improved population health; 4) promoting patient education; and 5) increasing post-discharge support and follow-up care.

The HSCRC hopes to see more healthcare delivery transformation in coming years. To that end, staff met with a sub-group of the Performance Measurement Workgroup to improve the reporting template for FY 2016 reports. These reports are due in early October 2016.

As part of its update factor process for FY 2017, the Commission authorized up to .25% 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 award $30 million to 9 awardees who are permitted to increase their global budgets, so that dollars can be generated to reduce potentially avoidable utilization by working with community partners. These programs are above and beyond the care transitions initiatives that were funded in FYs 2014 and 2015.

A second and final round will be proposed to the Commission in October 2016. Regular reporting will be required of all awardees and the Commission maintains the authority to curtail or claw-back funding if it is not used in accordance with the proposals as approved by the Commission.

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 as 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 State FY 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 an annual basis, beginning with the CY 2016 measurement period.

Staff continues 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).

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 Monitoring Report: This annual report was submitted to CMS in July 2016 is currently being updated for submission in December 2016. It contains data for performance years 2014 and 2015, as well as 2013 baseline measures.

Please find the most recent annual report submitted to CMS in Appendix 1.

Section V

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 New Maryland All-Payer Model.

A number of policies developed in the past two 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 AMCs.

Additionally, the HSCRC is continuing to develop tools to monitor changes in patterns of service, particularly shifts in utilization and expenditures across all healthcare providers. This includes a Total Cost of Care Reporting Template through which a group of public and private healthcare payers have agreed to submit both hospital and non-hospital claims data. Some of these data may become available through the All Payer Claims Data collected by MHCC. The HSCRC will work with MHCC and payers to obtain the needed data in the most efficient and timely manner possible. The HSCRC will use this reporting tool 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.

In CY 2015, the HSCRC also focused on engaging consumers through the Consumer Engagement and Outreach Workgroups. Although these workgroups have concluded, consumer advocates participate in each of the HSCRC stakeholder workgroup panels, and the HSCRC is working to build a Consumer Standing Advisory Committee in the fall of 2016. Consumer advocacy organizations have described the HSCRC stakeholder engagement process as a model for consumer engagement in a major policy endeavor. 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/index.cfm).

One area of caution, however, is the recent trending in 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% above Medicare total cost of care growth nationally. However, in any two consecutive years, Maryland's Medicare total cost of care may not exceed the nation. In CY 2015, Maryland's total cost of care grew by .7% above the nation. The Commission is watching this issue very closely and is prepared to 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 ensure compliance with the requirements of the All-Payer Model contract.

Contact and More Information

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

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

Appendix 1:

Maryland All-Payer Model Monitoring Report

Submitted July 2016

Maryland All-Payer Model Monitoring Report

June 30, 2016

Health Services Cost Review Commission

This report containing performance year 2015 measures is submitted by the Health Services Cost Review Commission (HSCRC) to the Center for Medicare & Medicaid Innovation (CMMI), in compliance with the Maryland All-Payer Model Agreement. The June report only contains a subset of the measures and a second report with the remaining measures will be bmitted by December 30th, 2016.

Table of Contents

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 Center for Medicare & Medicaid Innovation (CMMI) approved the implementation of a new All-Payer Model for Maryland. As the State's hospital rate-setting authority, the Health Services Cost Review Commission (HSCRC) is playing a vital role in the implementation of an innovative approach to health care reform. The goal is a health care 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 reimbursements to global budgets tied to populations of patients, ahead of the required schedule over 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 care delivery transformations and improvements that will be needed to make progress in the Model. These delivery improvements include care coordination, alignment, consumer engagement, and IT and analytic infrastructure.

In the third year of model, the State is continuing the implementation of care redesign and infrastructure as the State supports the focus on population health and outcomes improvement goals. The State is also developing a model for longer-term transformation of the healthcare delivery system.

Successes of the All-Payer Model – 2nd Year

In the second year of the Maryland All-Payer Model, the State of Maryland expanded upon the first year's successes to continue improvement in cost savings and quality of care.

Preliminary results for Calendar Year 2015 show that Maryland saved $135 million in Medicare Hospital Expenditures, combining with our first year efforts to achieve $213 million in aggregate savings.

Maryland also continued to improve in our quality of care. Potentially Preventable Conditions (PPCs) were lowered an additional 7.3% (35.4% in aggregate, meeting the Model goal of 30% reduction in five years). Maryland also reduced all-cause readmissions relative to the national rate, as the State strives to be at or below the

The success of the All-Payer Model is premised on the assumption that a payment system that holds hospitals accountable for the total cost of hospital care on a per capita basis is an effective model for advancing population health by raising the quality of health care delivery, improving population health, and reducing cost. 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 as well as improving population health and patient care in the State. The Maryland All-Payer Model Agreement establishes a five-year model period during which a series of key requirements must be met. Several key requirements include:

Patient Experience of Care, Population Health, and Health Care Cost Goals for the State of Maryland

Patient Experience of Care

Goal 1: *Increase patient satisfaction with hospital*
Goal 2: *Increase patient satisfaction with home health*
Goal 3: *Increase patient satisfaction with nursing homes*
Goal 4: *Increase patient satisfaction with ambulatory care*
Goal 5: *Enhance hospital care transitions*
Goal 6: *Enhance short-stay nursing home transitions*
Goal 7: *Enhance care transitions – primary care coordination*
Goal 8: *Sustain high physician participation in public programs*
Goal 9: *Broaden engagement in innovative models of care*
Goal 10: *Improve inpatient process of care*
Goal 11: *Improve outpatient process of care*
Goal 12: *Reduce high priority hospital complications*
Goal 13: *Reduce home health readmissions*
Goal 14: *Reduce nursing home readmissions*
Goal 15: *Reduce hospital readmission*

Population Health

16: *Improve life expectancy*
Goal 17: *Reduce rate of hospitalization for ambulatory care sensitive conditions*
Goal 18: *Improve cancer control*
Goal 19: *Improve primary prevention of infectious diseases*
Goal 20: *Improve prevention for diabetes and cardiovascular disease*
Goal 21: *Improve prevention for asthma*
Goal 22: *Promote behavioral health integration in primary care*
Goal 23: *Promote health through safe physical environments*

Health Care Costs

Goal 24: *Reduce overuse of diagnostic imaging*
Goal 25: *Control hospital expenditure growth*
Goal 26: *Control all services expenditure growth*

- 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;
- Reduce the rate of 65 hospital-acquired conditions (HACs) by 30 percent.

In addition to the above-listed goals, this annual report is being submitted to meet the Maryland Model Agreement requirement that the State provide to the Centers for Medicare & Medicaid Services (CMS) an annual monitoring report on June 30th. This report is intended to catalogue State performance with respect to selected quality and financial goals outlined in Appendix 7 and 8 of the Agreement and listed in the sidebar.

1.0 Domains and Measures Included in Monitoring Report

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

- **Patient experience of care** measures: Patient satisfaction, the 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;
- **Health Care Cost** Measures: Overuse of diagnostic imaging, inpatient and outpatient cost

trends, and total cost of care for all residents, and for specific payers, including Medicare, Medicaid, and private insurance.

Data for the measures have been 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 constructed using utilization and financial data derived from claims-based files obtained from CMS (e.g., Research Identifiable Files) or Maryland (e.g., HSCRC Hospital Abstract Data).

Since many of the metrics for the report are not available by June, Maryland performance on each of these goals is reported in two Monitoring Reports that are submitted to CMS in June and December of each year. As available, the report provides both historical data (from CY 2012) and national data to contextualize Maryland performance. The June 2016 Monitoring Report includes performance data on the metrics **bolded** in Figure 1 below. Other metrics will be included in the December report.

Figure 1: Goals and Measures

Goal	Description	Measures
Goal 7	Enhance care transitions, primary care coordination	7A - Rate of Physician Follow-Up After Discharge **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** 12B - Central-Line Acquired Bloodstream Infections
Goal 14	Reduce nursing health readmissions	**14 - Readmission Rates for Inpatient Discharges to Nursing Homes**
Goal 15	Reduce hospital readmissions	**15A - 30-Day, All Hospital, All-Cause Readmission Rate** **15B - Readmissions Per 1,000 MD 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 17	Reduce rate of hospitalization 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 ED Visit Rate** **20B - Hypertension-Related ED Visit Rate** 20C - Percent of Children Considered Obese 20D - Percent of Adults at a Healthy Weight
Goal 21	Improve prevention for asthma	**21A - Asthma-Related ED Visit Rate**
Goal 22	Promote behavioral health integration	**22A - Mental Health-Related ED Visit Rate**

Figure 1: Goals and Measures

Goal	Description	Measures
	in primary care	**22B - Substance Abuse-Related ED Visit Rate**
Goal 25	Control hospital expenditure growth	**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 hospital expenditure growth: Specialty Hospitals	**25aA - All-Payer Maryland Specialty Hospital Charges** **25aB - Medicare Maryland Specialty Hospital Charges** **25aC - Medicaid Maryland Specialty Hospital Charges**
Goal 26	Control all services expenditure growth	**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. Because of lags in the availability of data, however, only the measures for which 2015 data are available are included in this report. The remaining measures will be incorporated into the December 2016 report. In addition, due to ICD-10 implementation, some measures in this June report only contain January to September data (e.g., emergency department visits for diabetes) or present interim measures because an ICD-10 version is not yet available (e.g., prevention quality indicators); instances where data are modified due to ICD-10 are identified in the report.

In collaboration with CMMI, 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. The HSCRC aims to ensure that CMMI has the data it needs to show that this new All-Payer Model is effective at achieving the three-part aim, and the State will continue to work collaboratively with CMMI 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

The remainder of this report presents results for each of the measures identified in Section 2.0. Along with the results, this section includes a brief description of each measure and a summary of the methods used to estimate each measure. A table with results for all measures is included in Appendix A of this report, organized by goal and year. To assist in understanding the information contained in the report, Appendix B includes data used in constructing measures, such as the value of numerators and denominators, and Appendix C provides additional detail to support the description of methods contained in the main report.

3.1 Patient Experience of Care

Maryland believes that the All-Payer Model, **which 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.

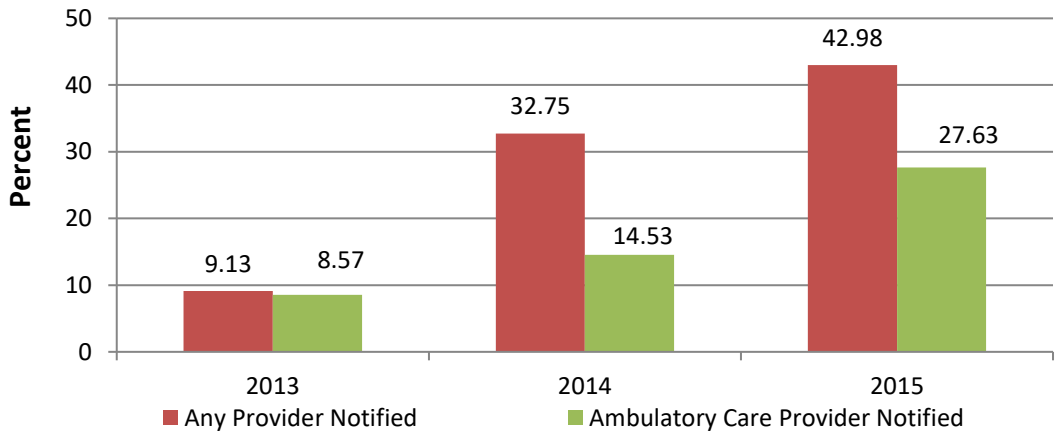
Goal 7: Enhance Care Transitions – Coordination with Primary Care

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. This report will only include data for the latter measure. Data on the rate of physician follow-up will be added to the December report.

Measure 7B: Notification of Principal Provider	
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. Care transitions are measured as the proportion of discharges for which a physician is notified of the admission and/or discharge.
Measurement Methodology	Chesapeake Regional Information System for Our Patients (CRISP), Maryland's Health Information Exchange, provides an Encounter Notification Service (ENS), which sends information on a real-time basis to providers when a provider's patient visits a hospital. Providers can choose to receive different types of notifications through CRISP, such as ER 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 has 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 percent of inpatient discharges for which there is any associated ENS alert sent to a provider. While measuring discharges with the provider notified via ENS is not exactly consistent with the original CMS requirement, 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 to providers the patient's most recent contact information and this has been noted by providers 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 Consolidate Clinical Document Architecture, the CRISP team is developing attribution methods for providers to auto-populate ENS panels.

	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 a provider. **Denominator**: Total number of discharges. **Source:** Data obtained from the Chesapeake Regional Information System, Electronic Notification System
Monitoring Results ***See Figure 2***	▪ Between 2013, the base year of the model, and 2015, there was a more than four-fold increase in the discharges for which a provider received an ENS notification, from 9.13 percent to nearly 42.98 percent. ▪ During the same time period, the proportion of discharges for which an ambulatory care provider received an ENS notification more than tripled, from 8.57 percent to 27.63 percent.

Figure 2: Percent of Maryland Hospital Discharges where Provider was Notified of Admission or Discharge, Maryland, 2013-2015



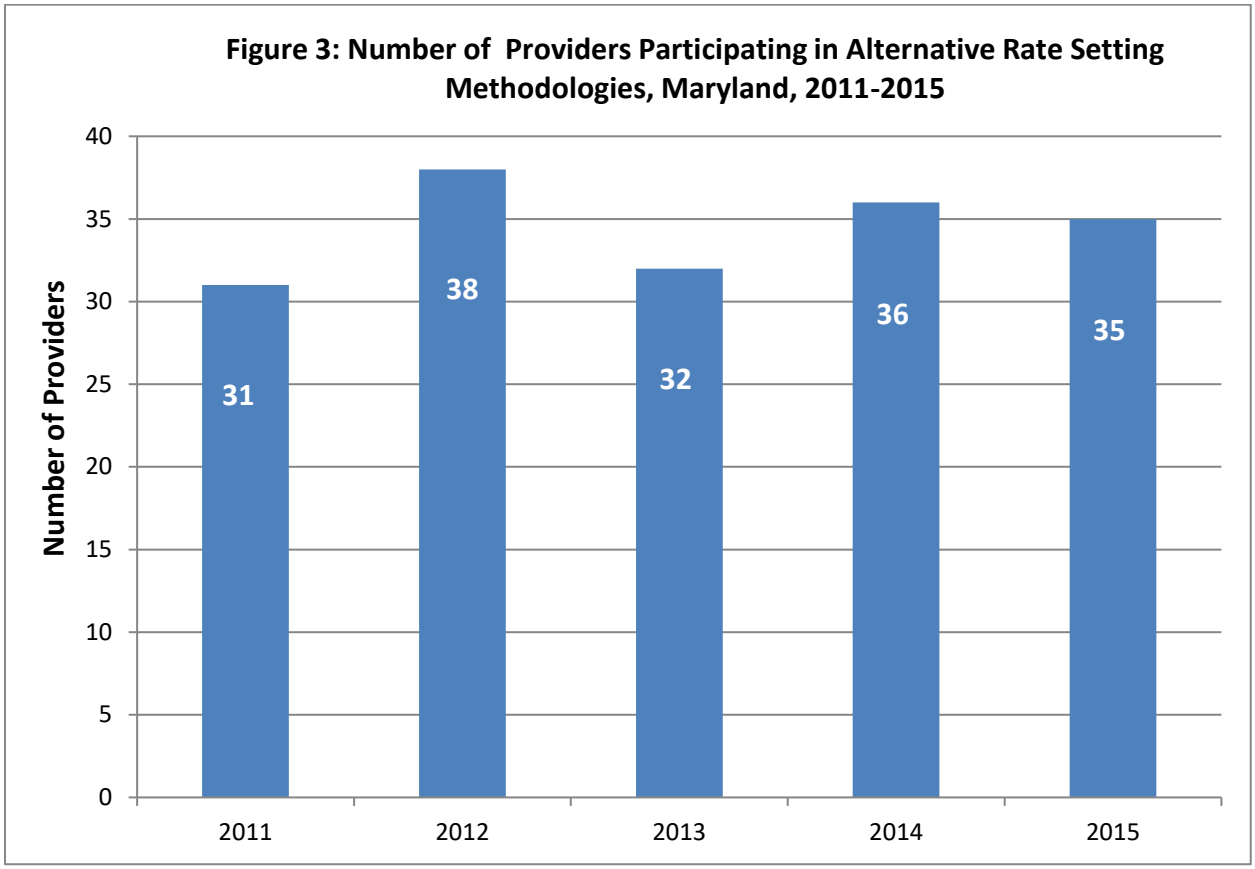
Source: CRISP ENS Notification Reports, 2016.[9]

[9] Notification provider types include: ambulatory, behavioral health, care coordinators, long term care, payers, and other.

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. The June report includes data on the Participation of Providers in Bundled Payment Initiatives. The remaining two measures categories will be included in the December report.

Measure 9C: Participation of Providers in Bundled Payment Initiatives	
Goal Summary	The All-Payer Demonstration model requires the continued participation of providers in healthcare reform initiatives such as Bundled Payments. 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	The HSCRC reports the number of providers that participated in an Alternative Rate-setting Methodology for each year. **Source:** Data obtained from the Maryland Health Services Cost Review Commission, 2016.
Monitoring Results ***See Figure 3***	▪ In 2015 a total of 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. ▪ No national ARM participation rates are available.



Source: Maryland Health Services Cost Review Commission, 2011-2015 ARM data.

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. This report will only focus on the PPC rates for the June release.

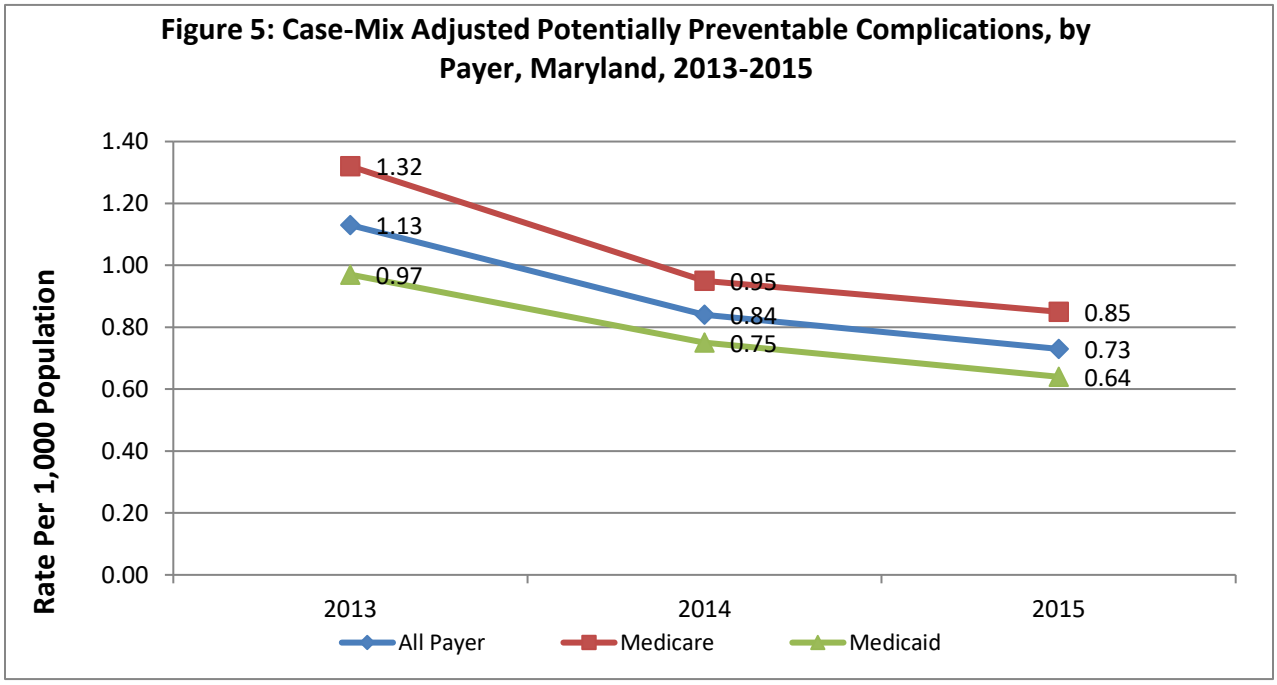
Measure 12A: Potentially Preventable Complications	
Goal Summary	Progress in reducing high-priority hospital complications is assessed using the rate of potentially preventable complications (PPCs). PPCs are defined as harmful events or negative outcomes that may result from the process of care and treatment rather than from a natural progression of an underlying disease. Under the new model contract, Maryland is expected to achieve an aggregate 30 percent reduction across 63 potentially preventable conditions that comprise the Maryland Hospital Acquired Condition Program.
Measurement Methodology	**Case Mix Adjusted Rate:** The case-mix adjusted 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 are calculated by be 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. Refer to Appendix C for a detailed description of the PPC rate specifications.
Monitoring Results ***See Figure 4 and 5***	▪ Between 2013 and 2015, the all-payer case-mix adjusted PPC rate for the state of Maryland declined from 1.13 per 1,000 at risk discharges to 0.73 per 1,000 at risk discharges. This represents a reduction of 35.40 percent. ▪ The Medicare case-mix adjusted PPC rate per 1,000 at risk discharges declined by 35.61 percent and the Medicaid PPC rate declined by 34.02 percent during the same period.

Figure 4: Case-Mix Adjusted Potentially Preventable Complications, by Payer, Maryland, 2013-2015

Measures	2013	2014	2015
All Payer Potentially preventable complications per 1,000 at-risk discharges	1.13	0.84	0.73
Change from 2013 (%)		-25.66	-35.40
Medicare Potentially preventable complications per 1,000 at-risk discharges	1.32	0.95	0.85
Change from 2013 (%)		-28.03	-35.61
Medicaid Potentially preventable complications per 1,000 at-risk discharges	0.97	0.75	0.64

Change from 2013 (%)		-22.68	-34.02

Source: HSCRC Inpatient Discharge Abstract Data, 2012-2015.

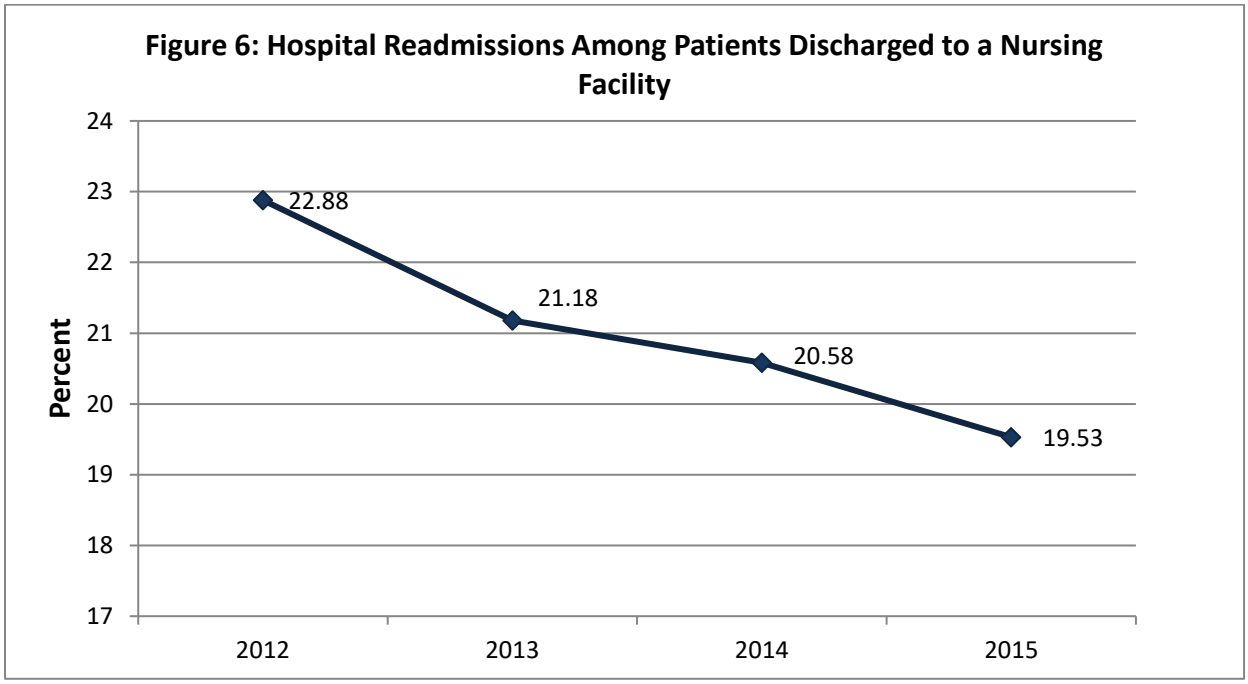


Source: HSCRC Inpatient Discharge Abstract Data, 2013-2015.

Goal 14: Reduce Readmissions – Nursing Home

The goal of reducing readmissions among patients discharged to nursing homes is assessed by monitoring the readmissions rate for patients discharged to nursing homes. This data is included in the June report.

Measure 14: Readmission Rate Among Patients Discharged to Nursing Home	
Goal Summary	Readmissions among patients discharged to a nursing home may, in part, be high due to the medical complexity of these patients; many nursing home patients are elderly and affected by 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 or due to deficiencies in post-discharge quality of care. Coordination between the hospital and nursing home prior to and after discharge or transfer is expected to reduce potentially avoidable readmissions.
Measurement Methodology	**Percent Readmissions:** **Numerator:** The number of All-Payer inpatient hospitals 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 are admitted to nursing homes within 1 day of initial hospital discharge. **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.
Monitoring Results ***Figure 6***	▪ 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 2015 readmission rate for inpatient discharges to nursing homes has decreased by 7.79 percent. The observed reduction in readmissions could be partially attributable to an enhanced level of care coordination conducted between MD hospitals and nursing facilities.



Source: HSCRC inpatient discharge abstract data, 2012-2015.

Goal 15: Reduce 30-Day Readmissions – Hospital

This report will evaluate hospital readmissions in two statewide measures and five condition-specific measures, including (A) 30-day, All Hospital, All-Cause Readmission Rate, (B) Readmissions per 1,000 Maryland Residents, (C) Heart Failure Readmission Rate, (D) Pneumonia Readmission Rate, (E) Acute Myocardial Infarction Readmission Rate, (F) Chronic Obstructive Pulmonary Disease Readmission Rate, and (G) Hip/Total Knee Arthroplasty Readmission Rate. This report will include all readmissions measures, however, condition-specific data is reflective of January-September data and will be updated with full calendar year data in the December report.

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 also are 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, CMMI 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 January-September YTD data for 2012-2015 due to the shift from ICD-9 to ICD-10.

	These rates will be updated with full calendar year data in the December report to CMMI. **Data:** Population estimates for 2012-2015 which were used in estimating readmissions per 1,000 population were obtained from the Maryland Department of Planning.
Monitoring Results ***See Figure 7***	▪ The Maryland 30-day case-mix adjusted, all-cause readmission rate fell from 13.86 percent in 2013 to 12.87 percent in 2015, a reduction of 7.14 percent. ▪ Readmissions per 1,000 Maryland residents fell by 13.21 percent from 13.12 in 2013 to 11.39 in 2015. ▪ Between 2013 and 2015, readmission rates for all the specific conditions decreased: Heart Failure by 4.17 percent; Pneumonia by 8.87 percent; AMI by 5.59 percent; COPD by 6.27 percent; and Hip/Total Knee Arthroplasty by 16.59 percent.

Figure 7: Hospital Readmission Rates, All-Cause and Condition- Specific, Maryland 2012-2015

Measures	2012	2013	2014	2015
30-day all-hospital, all-cause readmission (%)	13.42	13.86	13.37	12.87
Change from 2013 (%)			-3.54	-7.14
Readmissions per 1,000 Maryland residents	14.19	13.12	12.15	11.39
Change from 2013 (%)			-7.45	-13.21
Heart failure readmission rate (%)	25.67	23.97	23.44	22.97
Change from 2013 (%)			-2.21	-4.17
Pneumonia readmission rate (%)	14.15	14.21	13.66	12.95
Change from 2013 (%)			-3.87	-8.87
AMI readmission rate (%)	16.97	15.39	15.57	14.53
Change from 2013 (%)			1.17	-5.59
COPD readmission rate (%)	22.72	22.17	20.96	20.78
Change from 2013 (%)			-5.46	-6.27
Hip/total knee arthroplasty readmission rate (%)	4.70	4.10	3.57	3.42
Change from 2013 (%)			-12.93	-16.59

Source: Derived from HSCRC Inpatient Discharge Abstract Data, 2012-2015.

Note: Estimates for condition-specific measures were derived using nine-months of data (January and September of the respective year). Estimates will be updated in the December report.

3.2 Population Health

Maryland believes that the All-Payer Model, **which holds the State accountable for the total cost of care,** can establish incentives that improve population health outcomes and reduce health disparities.

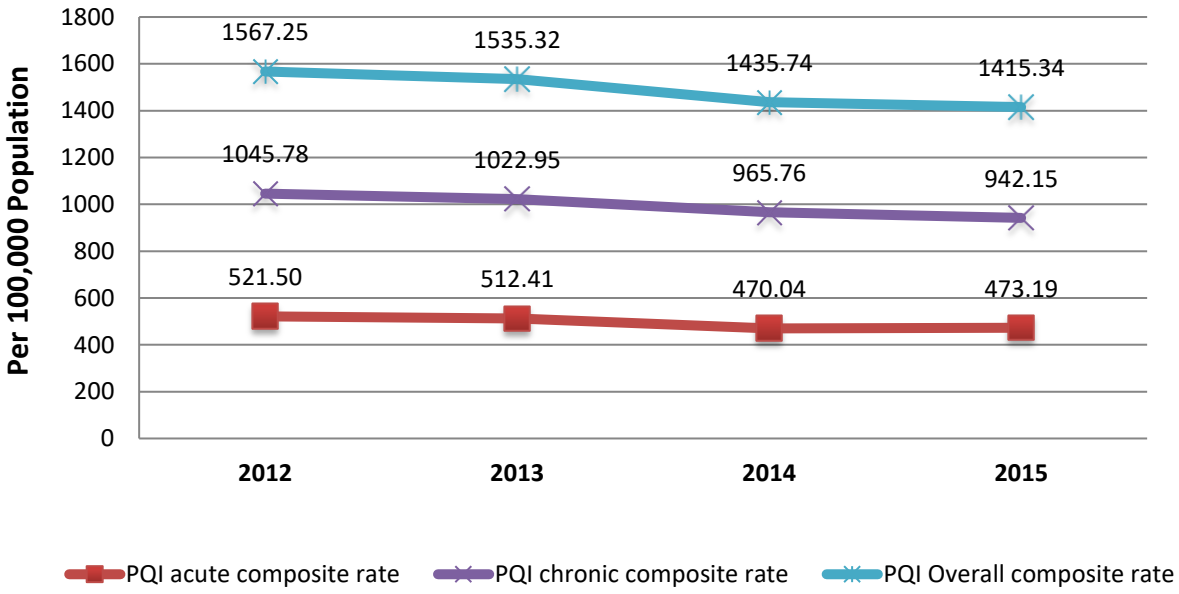
Goal 17: Reduce the Rate of Hospitalization for Ambulatory Sensitive Conditions

This report will evaluate the rate of hospitalization for ambulatory sensitive conditions using three composites of Prevention Quality Indicator (PQI) rates, including (A) PQI Acute Composite Rate, (B) PQI Chronic Composite Rate, and (C) PQI Overall Composite Rate. While the PQI composite rates are typically risk-adjusted, the AHRQ has not yet released a risk-adjustment procedure 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	Prevention Quality Indicators (PQIs) are a set of measures developed by the Agency for Healthcare Research and Quality (AHRQ) that flag hospitalizations that are for ambulatory care sensitive conditions. Patients should not require hospitalizations for these conditions or their associated complications if they have access to high-quality outpatient care; examples of these conditions include hypertension, diabetes and its associated complications, and heart failure. The 12 individual PQI measures can be collapsed into composite measures, which represent include acute, chronic, and overall composite rates. These measures are population-based and are adjusted for covariates such as sex and age (currently not done under ICD-10). The HSCRC uses the PQI measures to identify potentially avoidable utilization (PAU) costs. Tracking potentially avoidable utilization costs should incentivize hospitals to work within their communities to improve care coordination outside the hospital and thus reduce potentially avoidable hospital utilization. Currently a risk-adjusted version of the AHRQ software is not available for use with ICD-10 codes. In this report, we are therefore providing the number of PQIs per 1,000 population without the normal AHRQ risk-adjustment. Once software to calculate risk-adjusted rates is available, this report will be updated.
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 Claritas population estimates.
Monitoring Results ***See Figure 8***	▪ The Maryland **acute** PQI composite score rate decreased by 7.65 percent between the 2013 base year of the model and 2015, declining from 512.41 to 473.19.

	▪ The Maryland **chronic** PQI composite score rate decreased by 7.90 percent between the 2013 base year of the model and 2015, declining from 1,022.95 to 942.15. ▪ Maryland **overall** PQI composite score rate decreased by 7.81 percent between the 2013 base year of the model and 2015, declining from 1,535.32 to 1,415.34.

Figure 8: Overall, Chronic, & Acute PQI rate per 100,000 Population Aged 18+, Maryland 2012-2015

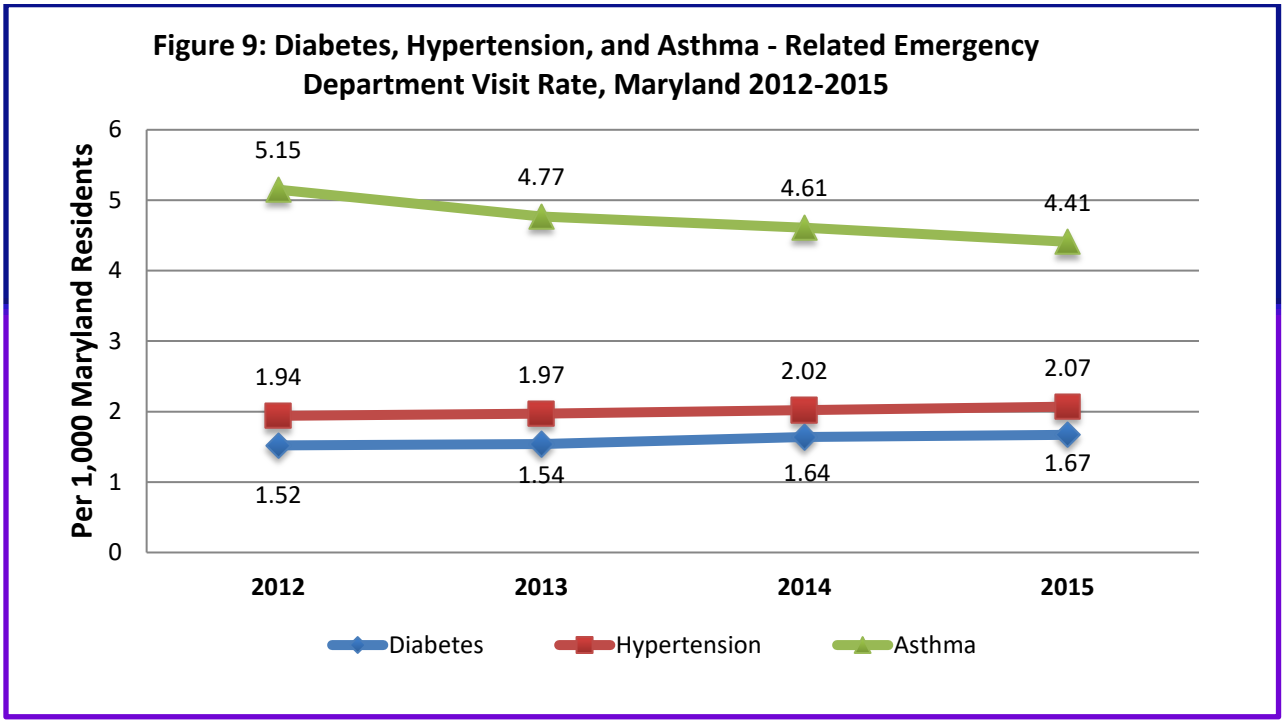


Source: HSCRC inpatient abstract data run through AHRQ software version 4.5a.

Goal 20 and 21: Improve Prevention for Diabetes, Cardiovascular Disease and Asthma

Goal 20 consists of four measures: (A) Diabetes-Related ED visit rate; (B) Hypertension-Related ED visit rate; (C) Percent of Children Considered Obese; and (D) Percent of adults at a Healthy Weight. This report will only focus on the measures regarding Diabetes and Hypertension Related ED visit rates; the other two measures will be included in the December report. Goal 21 has one measure which is the Asthma-Related ED visit rate; it is included in the June report. Due to changes in ICD codes, this report presents January-September YTD data for 2012-2015.

Measure 20A-B & 21: Diabetes, Cardiovascular Disease, and Asthma ED Visit Rate	
Goal Summary	The Maryland State Health Improvement Process (SHIP) monitors diabetes, cardiovascular, and asthma measures of population health and encourages the development of Local Health Improvement Coalitions to address these issues. ED visits related to diabetic, hypertension, and asthma complications may indicate that these conditions are not well controlled and, as with PQIs, may represent poor quality outpatient care.
Measurement Methodology	The method for calculating the rate of diabetes, hypertension, and asthma related ED visits per 1,000 MD 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. Note that the subsequent condition-specific ED rates reflect January-September YTD data for 2012-2015 due to ICD-10 changes, and will be updated with full calendar year data in the December report to CMMI. **Data Source:** HSCRC outpatient data. Maryland Department of Planning population estimates for 2012-2015.
Monitoring Results ***See Figure 9***	▪ The Maryland diabetes-related emergency department visit rate has increased slightly each year. Between 2013 and 2015 the ED rate increased from 1.52 to 1.67 per 1,000 residents, an increase of 9.87% percent. ▪ Between 2013 and 2015 the hypertension ED rate increased from 1.97 to 2.07 per 1,000 MD residents. This represents an increase of 5.08 percent. ▪ The Maryland asthma-related emergency department visit rate declined by 7.55 percent between the 2013 base year of the model and 2015, decreasing from 4.77 to 4.41 per 1,000 MD residents.

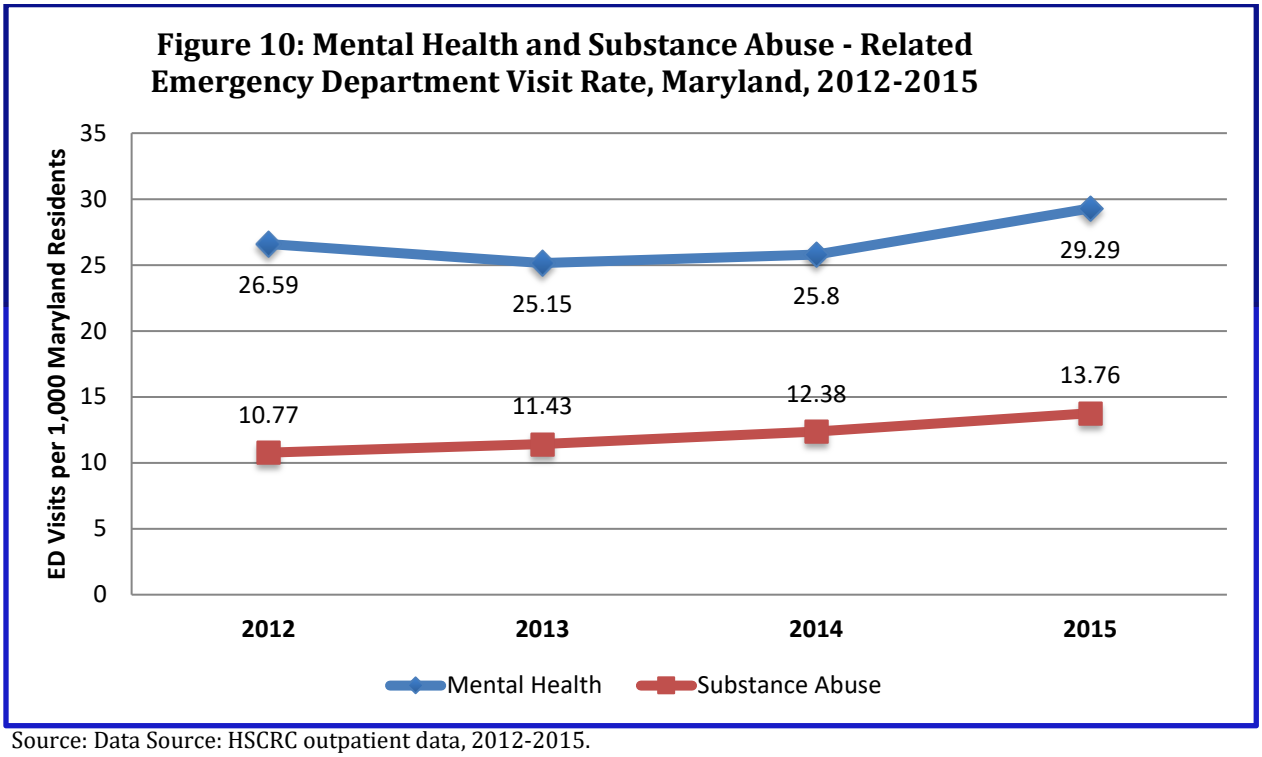


Source: HSCRC Outpatient Abstract data, 2012-2015.
Note: Data for each year represent the nine-month period between January and September.

Goal 22: Promote Behavioral Health in Primary Care

This report will evaluate 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 Rate, and (B) Substance Abuse-Related ED Visit Rate. Due to changes in ICD codes, this report presents January-September YTD data for 2012-2015.

Measure 22: Mental Health and Substance Abuse ED Visit Rate	
Goal Summary	The Maryland State Health Improvement Process (SHIP) monitors mental health and substance abuse-related ED visits and encourages the development of local Health Improvement Coalitions to address these issues.
Measurement Methodology	The method for calculating the rate of mental health and substance abuse related ED visits per 1,000 MD residents is as follows: The total number of ED visits related to the condition divided by the total number of Maryland residents (Number of ED Visits with condition ÷ Number of Maryland Residents) multiplied by 1,000. Note that the subsequent condition specific ED rates reflect January-September YTD data for 2012-2015 due to ICD-10 changes, and will be updated with full calendar year data in the December report to CMMI. **Data Sources:** HSCRC Outpatient Abstract Data, 2012-2015**.**
Monitoring Results ***See Figure 10***	▪ The Maryland mental health-related emergency department 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 MD residents. ▪ The Maryland substance abuse-related emergency department visit rate increased from 11.43 to 13.76 between 2013 and 2015, an increase of 20.38 percent.



Source: Data Source: HSCRC outpatient data, 2012-2015.
Note: Data for each year represent the nine-month period between January and September.

The HSCRC is concerned about the increasing ED utilization trends related to Mental Health and Substance Abuse, and plans to convene a workgroup to discuss how best to monitor and incentivize quality improvement in the behavioral health field.

3.3 Costs and Efficiency

Maryland believes that the All-Payer Model, which is accountable for the total cost of care, can control the growth in health care expenditures at a reasonable level and has the potential for shared savings beneath a hard expenditure ceiling. The goal is to achieve meaningful savings for all payers, including to Medicare, Medicaid, and CHIP.

Goal 25: Control Hospital Expenditure Growth – Hospitals

This report will evaluate hospital expenditure growth by tracking per-capita Maryland hospital charges in five payer categories, including (A) All-Payer Maryland Hospital Charges, (B) Medicare Maryland Hospital Charges, (C) Medicaid Maryland Hospital Charges, (D) Dual Eligibles 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 is available across all payers, as well as for Medicare FFS (including dual-eligibles), Medicaid (including dual-eligible), 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 MD Residents*: (Total inpatient and outpatient charges for all MD residents) ÷ (Total population in the state of MD). *Medicare Maryland Hospital Per Beneficiary Total Charges for MD Residents:* (Inpatient per capita expenditures for Medicare beneficiaries with Part A) + (Outpatient per capita expenditures for Medicare beneficiaries with Part B). *Medicaid Maryland Hospital Per Beneficiary Total Charges for MD Residents:* (Total fee-for-service and managed care expenditures for MD Medicaid recipients) ÷ (Total average Medicaid annual enrollment). *Private Payer Maryland Hospital Beneficiary Total Charges for MD Residents:* This measure is not included in the current report due to inconsistencies with the data on the number of people with private insurance. We will continue to work to find reliable data on the number of people with private insurance and plan to include this measure in the December report. *Medicare/Medicaid Dual Eligibles Maryland Hospital Beneficiary Total Charges for MD Residents:* (Total inpatient and outpatient hospital expenditures) ÷ (Number of MD residents with dual eligibility status). **Data Sources:** Hospital Expenditures: HSCRC Inpatient and Outpatient Abstract, except All-Payer Expenditure from 2013-2015 comes from the HSCRC Financial Database; Population Estimates: All-Payer (MD Dept. of Planning), Medicare (CMMI), Medicaid and Dual Eligible (UMBC Hilltop

	Institute).
Monitoring Results ***See Figure 11***	▪ Between 2013 and 2015, all-payer total per capita hospital charges grew by 3.64 percent. ▪ Medicare total per capita hospital charges increased slightly by .50 percent between 2013 and 2015, from $6,967 to $7,001. ▪ Total per capita hospital charges increased for Medicaid by 5.73 percent. ▪ Between 2013 and 2015, total hospital charges for Medicare/Medicaid dual eligibles increased by 2.00 percent.

Figure 11: Total Maryland Hospital Charges (Inpatient & Outpatient) and Growth, by Payer, Maryland 2012-2015

Measures		2012	2013	2014	2015
All-payer Maryland Hospital total charges for MD residents	Charges ($)	2,343	2,383	2,414	2,469
	Change from 2013 (%)			1.30	3.64
Medicare Maryland hospital total charges for MD Medicare Beneficiaries	Charges ($)	6,918	6,967	6,913	7,001
	Change from 2013 (%)			-.78	.50
Medicaid Maryland hospital per capita total charges for MD Medicaid Beneficiaries (includes Medicaid Expansion beneficiaries)	Charges e ($)	2,398	2,382	2,466	2,518
	Change from 2013 (%)			3.52	5.73
Private payer Maryland hospital per capita total charges for MD Privately insured residents	Charges ($)	N/A	N/A	N/A	N/A
	Change from 2013 (%)			N/A	N/A
Medicare/Medicaid dual eligible Maryland hospital total charges for MD Dual Beneficiaries	Charges ($)	7,859	7839	7,723	7,996
	Change from 2013 (%)			-1.48	2.00

Goal 25a: Control Hospital Expenditure Growth – Specialty Hospitals

This report will also evaluate 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 is available across all payers, as well as for Medicaid (including dual-eligible). The data for each category captures in-State spending on Maryland residents.
Measurement Methodology	*All-Payer Maryland Specialty Hospital Per Capita Total Charges for MD Residents*: (Total inpatient and outpatient specialty hospital charges for all MD residents) ÷ (Total MD resident population). *Medicare Maryland Specialty Hospital Per Beneficiary Total Charges for MD 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 MD Residents*: (Total fee-for-service and managed care specialty charges for MD Medicaid recipients) ÷ (Total average Medicaid annual enrollment). **Data Sources:** Hospital Charges: HSCRC Inpatient and Outpatient Abstract; Population Estimates: All-Payer (MD Dept. of Planning), Medicare (CMMI), and Medicaid (UMBC Hilltop Institute).
Monitoring Results ***See figure 12***	▪ Maryland all-payer specialty per capita charges increased from $44.93 in 2013 to $49.14 in 2015, an increase of 9.37 percent. ▪ Medicare per beneficiary specialty hospital charges also increased by 7.6 percent between 2013 and 2015, from $103.27 to $101.26. ▪ Medicaid per beneficiary charges also fell from $85.38 to $63.76 from 2013 to 2015, a reduction of 25.32 percent.

Figure 12: Specialty Hospital Per Capita Charges* and Growth, by Payer, Maryland, 2012-2015

Measures		2013	2014	2015
All-payer Maryland specialty hospital total charges per capita for MD residents	Charges ($)	44.93	45.84	49.14
	Change from 2013 (%)		2.03	9.37
Medicare Maryland specialty hospital total charges per beneficiary for MD Medicare Beneficiaries	Charges ($)	101.26	98.88	103.27
	Change from 2013 (%)		-.14	7.6
Medicaid Maryland specialty hospital total charges per beneficiary for MD Medicaid Beneficiaries	Charges ($)	85.38	75.81	63.76
	Change from 2013 (%)		-11.21	-25.32

*This data may be revised in the December report. Currently the data is incomplete due to outpatient data being missing for some payers.

Goal 26: Control Expenditure Growth – All Health Services

This report will evaluate the expenditure growth of all health services by tracking per-capita Maryland health services charges in five payer categories, including (A) All-Payer Maryland Total Expenditures, (B) Medicare Maryland Total Expenditures, (C) Medicaid Maryland Total Expenditures, (D) Dual Eligibles Maryland Total Expenditures, and (E) Private Payer Maryland 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 Charges = (Total health care charges for all MD residents) ÷ (Total MD resident population). Separate estimates are generated for the following populations: *Medicare Per Capita Total Charges:* 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 Charges:* Total fee-for-service and managed care expenditures for MD Medicaid recipients ÷Medicaid enrollment months, annualized to reflect a 12 month period. *Private Payer per Capita Total Charges:* This measure is not included in the current report due to inconsistencies with the data on the number of people with private insurance. We will continue to work to find reliable data on the number of people with private insurance and plan to include this measure in the December report. **Data Sources:** Total Expenditures: Medicare (CMMI Financial Reports); Population Estimates: Medicare (CMMI).
Monitoring Results ***See Figure 13***	▪ Maryland Medicare per capita total health expenditures increased by 1.65 percent between 2013 and 2015, compared to an increase of 2.50 percent for the U.S.

Figure 13: Expenditure by Payer, Maryland 2012-2015

Measures	Population	2012	2013	2014	2015
All-payer per capita total expenditure	Maryland ($)				
	National ($)				
Medicare per beneficiary total	Maryland ($)	11,122	10,987	10,202	11,169

expenditure	MD change from 2013 (%)			-1.03	1.65
	National ($)	9,565	9,413	8,857	9,649
	National change from 2013 (%)			.45	2.50
Medicaid per beneficiary total expenditure	Maryland				
	National				
Private payer per beneficiary total expenditure	Maryland ($)				
	MD change from 2013 (%)				
Medicare/Medicaid dual eligibles per beneficiary total expenditure	Maryland				
	National				

Appendix A: Summary Results for All Goals and Measures, Maryland 2012-2015

		2012	2013	2014	2015
Goal 7: Enhance Care transitions - Coordination with Primary Care					
Discharges with principal provider notified in Maryland (%)	Any Notification (%)		9.13	32.75	42.98
	Discharge Notification (%)		8.57	14.53	27.63
Goal 9: Broaden Engagement in Innovative Models of Care					
Participation of providers in ARMs	Number of providers	38	32	36	35
Goal 12: Reduce High Priority Hospital Complications					
Potentially preventable complications (all 65 PPCs)	Per 1,000 discharges		1.13	0.84	0.73
Goal 14: Reduce Readmissions - Nursing Home					
Readmission rates for inpatient discharges to nursing homes	Percent (%)	22.88	21.18	20.58	19.53
Goal 15: Reduce Readmissions – Hospitals					
30-day all hospital, all cause readmission (%)	Percent (%)	13.42	13.86	13.37	12.87
	Change From 2013 %			-3.54	-7.14
Readmissions	Per 1,000 residents	14.19	13.12	12.15	11.39
	Change From 2013 %			-7.44	-13.21
Heart failure readmission rate	Percent (%)	25.67	23.97	23.44	22.97
	Change From 2013 %			-2.21	-4.17
Pneumonia readmission rate	Percent (%)	14.15	14.21	13.66	12.95
	Change From 2013 %			-3.87	-8.87
Acute myocardial infarction readmission rate	Percent (%)	16.97	15.39	15.57	14.53
	Change From 2013 %			1.17	-5.59
Chronic obstructive pulmonary disease readmission rate	Percent (%)	22.72	22.17	20.96	20.78
	Change From 2013 %			-5.46	-6.27
Hip/total knee arthroplasty readmission rate	Percent (%)	4.70	4.10	3.57	3.42
	Change From 2013 %			-12.93	-16.59
Goal 17: Reduce the rate of hospitalization for ambulatory care sensitive conditions					

		2012	2013	2014	2015
Prevention Quality Indicator (PQI) **acute** composite rate	Per 100,000 population, age 18+	521.50	512.41	470.04	473.19
Prevention Quality Indicator (PQI) **chronic** composite rate	Per 100,000 population, age 18+	1045.78	1022.95	965.76	942.15
Prevention Quality Indicator (PQI) **overall** composite rate	Per 100,000 population, age 18+	1567.25	1535.32	1435.74	1415.34
Goal 20: Improve Prevention for Diabetes and Cardiovascular Disease					
Diabetes-related ED visit rate	Per 1,000 population	1.52	1.54	1.64	1.67
Hypertension-related ED visit rate per 1,000 population	Per 1,000 population	1.94	1.97	2.02	2.07
Goal 21: Improve Prevention for Asthma					
Asthma-related emergency department visit rate	Per 1,000 population	5.15	4.77	4.61	4.41
Goal 22: Promote Behavioral Health Integration in Primary Care					
Mental health-related emergency department visit rate	Per 1,000 population	26.59	25.15	25.8	29.29
Substance abuse-related emergency department visit rate	Per 1,000 population	10.77	11.43	12.38	13.76
Goal 25: Control Expenditure Growth – Hospitals					
All-payer Maryland Hospital per capita total charges for MD residents	Per capita charges ($)	2,343	2,383	2,414	2,469
	Change from 2013 (%)			1.30	3.64
Medicare Maryland hospital per capita total charges for MD Medicare Beneficiaries	Per capita charges ($)	6,918	6,967	6,913	7,001
	Change from 2013 (%)			-.78	.50
Medicaid Maryland hospital per capita total charges for MD Medicare Beneficiaries	Per capita charges ($)	2,398	2,382	2,466	2,518
	Change from 2013 (%)			3.52	5.73
Private payer Maryland hospital per capita total charges for MD Privately insured residents	Per capita charges ($)		1,387	1,219	
	Change from 2013 (%)			-12.12	
Medicare/Medicaid dual eligible Maryland hospital per capita total charges for MD Dual Beneficiaries	Per capita charges ($)	7,859	7,839	7,723	7,996
	Change from 2013 (%)			-1.48	2.00
Goal 25a: Control Expenditure Growth – Specialty Hospitals					

		2012	2013	2014	2015
All-payer Maryland Hospital per capita total charges for MD residents	Per capita charges ($)		44.93	45.84	49.14
	Change from 2013 (%)			2.03	9.37
Medicare Maryland hospital per capita total charges for MD residents	Per capita charges ($)		102.63	102.49	110.93
	Change from 2013 (%)			-.14	7.6
Medicaid Maryland hospital per capita total charges for MD residents	Per capita charges ($)		85.38	75.81	63.76
	Change from 2013 (%)			-11.21	-25.32
Goal 26: Control Expenditure Growth - All Services					
All-payer per capita total expenditure	Maryland				
	National				
Medicare per beneficiary total expenditure	Maryland ($)	11,122	10,987	10,202	11,169
	Change from 2013 (%)			-1.03	1.65
	National ($)	9,565	9,413	8,857	9,649
	Change from 2013 (%)			.45	2.50
Medicaid per beneficiary total expenditure	Maryland ($)				
	National ($)				
Medicare/Medicaid dual eligibles per beneficiary total expenditure	Maryland				
	National				

Appendix B: Numerators and Denominators Used to Estimate Measures

		2012	2013	2014	2015
Goal 7: Enhance Care transitions - Coordination with Primary Care					
Discharges with principal provider notified in Maryland	Discharges with Notification		61,076	211,772	270,549
	Total Number of Discharges		669,060	646,534	629,467
Discharges with ambulatory provider notified in Maryland	Discharges with Notification		36,945	90,069	171,089
	Total Number of Discharges		431,107	619,953	619,220
Goal 9: Broaden Engagement in Innovative Models of Care					
Participation of providers in ARMs	Number of Providers	38	32	36	35
Goal 12: Reduce High Priority Hospital Complications					
Potentially preventable complications rate per 1,000 discharges (all 65 PPCs)	Total number of Observed PPCs		24,831	18,170	15,803
	Number of at Risk Discharges		22,379,583	21,340,185	20,390,087
Goal 14: Reduce Readmissions - Nursing Home					
Readmission rates for inpatient discharges to nursing homes	Number of readmissions	10,804	10,209	6,730	2,740
	Number of inpatient discharges to nursing home	47,223	48,206	32,696	14,028
Goal 15: Reduce Readmissions – Hospitals					
30-day all hospital, all cause readmission	Number of readmissions	83,586	77,904	72,580	68,411
	Eligible Discharges				
Readmissions per 1000 MD residents	Number of readmissions	83,586	77,904	72,580	68,411
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Heart failure readmission rate	Number of readmissions	3,404	3,127	3,057	3,169
	Eligible Discharges	13,262	13,046	13,040	13,795
Pneumonia readmission rate	Number of readmissions	1,913	1,751	1,610	1,496
	Eligible Discharges	11,274	11,376	10,340	10,293
Acute myocardial infarction readmission rate	Number of readmissions	849	837	828	830
	Eligible Discharges	6,001	5,892	6,063	6,410
Chronic obstructive pulmonary disease readmission rate	Number of readmissions	2,758	2,762	2,299	2,279
	Eligible Discharges	12,141	12,460	10,970	10,969

		2012	2013	2014	2015
Hip/total knee arthroplasty readmission rate	Number of readmissions	556	484	448	452
	Eligible Discharges	11,833	11,804	12,546	13,223
Goal 17: Reduce the rate of hospitalization for ambulatory care sensitive conditions (ACSC)					
Prevention quality indicator (PQI) **acute** composite rate per 100,000 population, age 18 and over	Number of acute ACSC discharges	23,101	23,223	21,642	22,002
	Population age 18 and over	4,429,728	4,532,085	4,604,251	4,649,690
Prevention quality indicator (PQI) **chronic** composite rate per 100,000 population, age 18 and over	Number of chronic ACSC discharges	46,325	46,361	44,466	43,807
	Population age 18 and over	4,429,728	4,532,085	4,604,251	4,649,690
Prevention quality indicator (PQI) overall composite rate per 100,000 population, age 18 and over	Overall ACSC discharges	69,425	69,582	66,105	65,809
	Population age 18 and over	4,429,728	4,532,085	4,604,251	4,649,690
Goal 20: Improve Prevention for Diabetes and Cardiovascular Disease					
Diabetes-related ED visit rate per 1,000 population	Number of ED visits	8,959	9,132	9,794	10,039
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Hypertension-related ED visit rate per 1,000 population	Number of ED visits	11,430	11,670	12,083	12,432
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Goal 21: Improve Prevention of Asthma					
Asthma-related ED visit rate per 1,000 population	Number of ED visits	30,320	28,306	27,576	26,483
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Goal 22: Promote Behavioral Health Integration in Primary Care					
Mental Health-related ED visit rate per 1,000 population	Number of ED visits	156,607	149,282	154,174	175,920
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Addiction-related ED visit rate per 1,000 population	Number of ED visits	63,453	67,857	73,980	82,655
	Population	5,890,740	5,936,040	5,975,346	6,006,401
Goal 25: Control Expenditure Growth - Hospitals					
All-payer Maryland Hospital per capita total charges for MD residents	Total Hospital Charges ($)	13,802,757,694	14,126,722,640	14,425,743,837	14,832,091,464
	Population	5,890,740	5,928,814	5,976,737	6,006,401
Medicare Part A Maryland hospital per capita total charges per Beneficiary	Total Inpatient Charges ($)	3,540,917,788	3,641,083,879	3,657,721,047	3,762,884,766
	Part A Beneficiaries	763,357	793,092	818,502	843,531
Medicare Part B Maryland hospital per capita total charges per	Total Outpatient Charges ($)	1,551,059,646	1,679,405,573	1,783,754,452	1,911,169,812

		2012	2013	2014	2015
Beneficiary	Part B Beneficiaries	680,364	706,850	729,875	752,245
Medicaid Maryland hospital per capita total charges per Beneficiary	Total Charges ($)	2,492,754,659	2,595,383,354	3,158,238,247	3,250,755,718
	Total Enrollees	1,041,607	1,089,640	1,280,831	1,290,779
Medicare/Medicaid dual eligible Maryland hospital per capita total charges per Beneficiary	Total Charges ($)	923,593,002	965,716,900	1,002,794,990	1,068,165,772
	Total Enrollees	117,523	123,192	129,850	133,589
Goal 26: Control Expenditure Growth – All Health Services					
All-payer Maryland specialty hospital total charges per capita for MD residents	Total Charges ($)		266,816,278	273,983,175	295,140,611
	Total Population		5,938,737	5,976,737	6,006,401
Medicare Maryland specialty hospital total charges per beneficiary for MD Medicare Beneficiaries	Total Inpatient Charges ($)		80,304,955	80,934,506	87,112,629
	Total Part A Beneficiaries		793,092	818,502	843,531
	Total Outpatient Charges ($)		972,099	2,634,466	5,355,240
	Total Part B Beneficiaries		706,850	729,875	752,245
Medicaid Maryland specialty hospital total charges per beneficiary for MD Medicaid Beneficiaries	Total Charges ($)		93,034,066	97,094,364	82,299,596
	Total Enrollees		1,089,640	1,280,831	1,290,779
Goal 26: Control Expenditure Growth – All Health Services					
All-payer per capita total expenditure	Expenditures ($)				
	Population				
Medicare per capita total expenditure	Total Part A Expenditures ($)	4,332,789,590	4,406,629,147	4,439,449,155	4,633,148,430
	Part A Beneficiaries	763,357	793,092	818,502	843,531
	Total Part B Expenditures ($)	3,705,308,739	3,838,392,196	4,008,491,181	4,269,939,264
	Part B Beneficiaries	680,364	706,850	729,875	752,245
Medicaid per capita total expenditure	Expenditures ($)				
	Yearly Average Total Member Months				

		2012	2013	2014	2015
Medicare/Medicaid dual eligibles per capita total expenditure	Expenditures ($)				
	Yearly Average Total Member Months				

Appendix C: Measure Methodology

Goal	Measure	Notes on Measure Development
Goal 7: Enhance Care Transitions – Coordination with Primary Care	**Discharges with principal provider notified**	*Numerator:* Number of Maryland discharges for which an associated ENS alert (admission or discharge) is sent to a provider. *Denominator:* Total number of discharges. *Source:* Data obtained from the Chesapeake Regional Information System, Electronic Notification System, 2015 and 2016
Goal 9: Broaden Engagement in Innovative Models of Care	**Participation of providers in alternative rate-setting methodologies**	*Source:* Data obtained from the Maryland Health Services Cost Review Commission, 2016.
Goal 12: Reduce high priority hospital complications	**Potentially preventable complications rate per 1,000 discharges (all 65 PPCs)**	Maryland HSCRC used the 3M Health Information Systems Potentially Preventable Complication software to identify complications using the hospital discharge abstract data set submitted to the HSCRC along with the present on admission (POA) indicator. PPC Grouper Version 32 (ICD-9) and Version 33 (ICD-10) Normative values for expected rates and statewide base year rate are based on FY 2014 data. These data may differ from what was provided on a quarterly basis due to updates in the methodology because of ICD-10. Below are the specifications as identified in the Waiver Agreement: *Estimating Total PPC Count:* 1. Run the HSCRC patient level data for the base year and Performance Year with the same PPC grouper version, which provides the following classifications for each PPC: (a) PPC at risk and (b) PPC assigned. 2. Limit the analysis to acute care hospitals 3. Identify PPC cases for all 63 PPCs in the data sets (PPC 24 was dropped by 3M due to validity concerns and PPC 43 was combined with PPC 42 because of ICD-10) 4. Exclude hospice cases (defined as cases with ICD-9 code = V66.7) and cases with more than 6 PPCs 5. Total the count of all PPC cases for each year *Calculate PPC Rate:* 6. Identify patients at risk for each PPC 7. Total the count of at risk cases for all PPCs for each year 8. Rate is equal to total PPC cases divided by total at risk for each year *Estimate Case-mix Adjusted Rates:* 9. Calculate statewide base-year observed rates ("normative values") by dividing total PPC cases by total at risk cases for each admission APR-DRG severity of illness category using base year data. 10. Calculate statewide base-year observed PPC rate

		by dividing total count of PPC cases by total count of at risk cases using base year data. 11. Calculate expected PPC cases in the base and performance year by multiplying count of at risk cases by the statewide base-year observed rate for each admission APR-DRG Severity of Illness categories from step 9 and summing for each PPC. 12. Calculate the observed to expected (O/E) ratio by dividing total observed PPC counts by expected number of PPCs from step 11. 13. Calculate the case-mix adjusted rate of PPCs in the base and performance year by multiplying O/E ratio from step 11 by statewide base-year observed PPC rate from step 10.
Goal 14: Reduce Readmissions – Nursing Homes	**Readmission rate among Inpatients Discharged to Nursing Homes**	*Numerator*: The number of All-Payer inpatient hospitals 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 are admitted to nursing homes within 1 day of initial hospital discharge. The following discharges are removed from the numerator and/or denominator for the readmission rate calculations: ▪ Planned readmissions are excluded from the numerator based upon CMS Planned Readmission Algorithm V. 3. The HSCRC has added all vaginal and C-section deliveries as planned using the APR-DRGs (APR-DRGs 540, 541, 542, 560). Planned admissions are counted in the denominator because they could have an unplanned readmission. ▪ All newborn admissions are excluded due to issues with assigning unique patient identifiers. ▪ Hospitalization within 30 days of a hospital discharge where a patient dies is counted as a readmission; however, the readmission is removed from the denominator because there cannot be a subsequent readmission. ▪ Admissions that result in transfers, defined as cases where the discharge date of the admission is on the same day as the admission date of the subsequent admission, are removed from the denominator counts. Thus only one admission is counted in the denominator and that is the admission to the transfer hospital; it is this discharge date that is used to calculate the 30-day readmission window. ▪ Discharges from rehabilitation hospitals (provider ids 213028, 213029, 210333). ▪ In addition, the following data cleaning edits are applied: a. Cases with null or missing CRISP EIDs b. Duplicates c. Negative interval days *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 - Hospital	**30-Day All-Cause and Condition-Specific Readmission Rates**	*30-Day, All-Cause, All Hospital Case-Mix Adjusted Readmission Rate:* The case-mix adjusted readmission rate is calculated by taking the unadjusted readmission rate in the base period (30 day readmissions ÷ total hospital discharges) and multiplying it by the ratio: (observed Readmissions ÷ Expected Readmissions). Expected readmissions are estimated by applying the statewide rates by APR-DRG and severity of illness categories to each hospitals discharges. *30-Day, All-Cause, All Maryland Hospital Readmissions per 1,000 Maryland Residents*: The readmission rate per 1,000 MD residents is calculated by determining the readmission rate per resident (Number of readmissions ÷ Maryland Population) and multiplying by 1,000. *30-Day, All-Cause, All Maryland Hospital Condition Specific Readmission Rates*: The condition specific unadjusted readmission rates are calculated by determining the number of readmissions specific to the condition (using CMS definitions) and dividing by the total number of condition specific discharges (Number of Readmissions ÷ Number of Condition Specific Discharges Eligible for a Readmission). This is applied to the following conditions: i. Heart Failure (HF) ii. Acute Myocardial Infarction (AMI) iii. Pneumonia (PNA) iv. Chronic Obstructive Pulmonary Disease (COPD) v. Hip/Total Knee Arthroplasty (THP/TKA) Note that the subsequent condition specific readmission rates reflect January-September YTD data for 2012-2015 due to ICD-10 and will be updated with full calendar year data in the December report to CMMI. *Exclusions:* The following discharges are removed from the numerator and/or denominator for the readmission rate calculations: ▪ Planned readmissions are excluded from the numerator based upon CMS Planned Readmission Algorithm V. 3. The HSCRC has added all vaginal and C-section deliveries as planned using the APR-DRGs (APR-DRGs 540, 541, 542, 560). Planned admissions are counted in the denominator because they could have an unplanned readmission. ▪ All newborn admissions are excluded due to issues with assigning unique patient identifiers. ▪ Hospitalizations within 30 days of a hospital discharge where a patient dies is counted as a readmission, however the readmission is removed from the denominator because there cannot be a subsequent readmission. ▪ Admissions that result in transfers, defined as

		cases where the discharge date of the admission is on the same day as the admission date of the subsequent admission, are removed from the denominator counts. Thus only one admission is counted in the denominator and that is the admission to the transfer hospital, and it is this discharge date that is used to calculate the 30-day readmission window. ▪ Discharges from rehabilitation hospitals (provider IDs 213028, 213029, 210333). ▪ In addition the following data cleaning edits are applied: a. Cases with null or missing CRISP EIDs b. Duplicates c. Negative interval days *Notes:* All condition specific rates are based on January-September, 2012-2015 data to account for the October 2015 shift to ICD-10 coding. *Data:* Population estimates for 2012-2015 which were used in estimating readmissions per 1,000 population were obtained from the Maryland Department of Planning.
Goal 17: Reduce Hospitalizations for Ambulatory Care Sensitive Conditions	**Overall, Acute and Chronic Prevention Quality Indicators (PQI)**	Additional information on numerator, denominator, exclusions, and codes used to calculate the PQI rates can be found on the AHRQ website: http://www.qualityindicators.ahrq.gov/modules/pqi_resources.aspx. **Notes:** PQI composite scores were calculated after October 2015 with ICD-10 codes using AHRQ PQI Module software. These estimates may differ from previous reports that used ICD-9 coding. A risk-adjusted version of this software is not available for use with ICD-10 codes. The rates in this document will be updated as the software becomes available. *Data Sources:* Data to identify readmissions is the HSCRC Inpatient Discharge Abstract. Source of data on the annual Maryland population over 18 years of age is calculated from Claritas population estimates.
Goal 20 and 21: Improve Prevention for Diabetes, Cardiovascular Disease and Asthma	**Diabetes, Cardiovascular disease and asthma ED visit Rates**	*Diabetes-Related ED Visit Rate* = (Number of ED Visits with ICD 9 Primary Diagnosis of 250.xx ÷ Number of MD residents) X 100,000. *Hypertension-related ED Visit Rate* = (Number of ED Visits with ICD 9 Primary Diagnosis of 401.x ÷ Number of MD residents) X 100,000. *Asthma –related ED Visit Rate* = (Number of ED Visits with ICD 9 Primary Diagnosis of 493.xx ÷ Number of Maryland Residents) X 100,000. *Data Sources*: HSCRC Outpatient Abstract Data, 2012-2015. *Notes:* Data for each year represent the nine-month period between January and September.

Goal 22: Promote Behavioral Health Integration in Primary Care	**Mental health and Substance Abuse ED Visit Rates**	*ED Visit Rate* = (Number of ED Visits with primary diagnosis or condition ÷ Number of Maryland Residents) X 1,000. Notes**:** Due to the shift from ICD-9 to ICD-10, ED rates are based on January-September YTD data. Mental Health Codes: E954; E956; E959; E950; E9500; E951; E9510; E952; E9520; E953; E9530; E954; E955; E9550; E957; E9570; E958; E9580; E9501; E9511; E9521; E9531; E9551; E9571; E9581; E9502; E9552; E9572; E9582; E9503; E9553; E9583; E9504; E9554; E9584; E9505; E9555; E9585; E9506; E9556; E9586; E9507; E9557; E9587; E9508; E9518; E9528; E9538; E9588; E9509; E9529; E9539; E9559; E9579; E9589; V6284; V402; V403; V4031; V4039; V409; V673; 2938; 29381; 29382; 29383; 29384; 29389; 2939; 295; 2950; 29500; 29501; 29502; 29503; 29504; 29505; 2951; 29510; 29511; 29512; 29513; 29514; 29515; 2952; 29520; 29521; 29522; 29523; 29524; 29525; 2953; 29530; 29531; 29532; 29533; 29534; 29535; 2954; 29540; 29541; 29542; 29543; 29544; 29545; 2955; 29550; 29551; 29552; 29553; 29554; 29555; 2956; 29560; 29561; 29562; 29563; 29564; 29565; 2957; 29570; 29571; 29572; 29573; 29574; 29575; 2958; 29580; 29581; 29582; 29583; 29584; 29585; 2959; 29590; 29591; 29592; 29593; 29594; 29595; 296; 2960; 29600; 29601; 29602; 29603; 29604; 29605; 29606; 2961; 29610; 29611; 29612; 29613; 29614; 29615; 29616; 2962; 29620; 29621; 29622; 29623; 29624; 29625; 29626; 2963; 29630; 29631; 29632; 29633; 29634; 29635; 29636; 2964; 29640; 29641; 29642; 29643; 29644; 29645; 29646; 2965; 29650; 29651; 29652; 29653; 29654; 29655; 29656; 2966; 29660; 29661; 29662; 29663; 29664; 29665; 29666; 2967; 2968; 29680; 29681; 29682; 29689; 2969; 29690; 29699; 297; 2970; 2971; 2972; 2973; 2978; 2979; 298; 2980; 2981; 2982; 2983; 2984; 2988; 2989; 299; 2990; 29900; 29901; 2991; 29910; 29911; 2998; 29980; 29981; 2999; 29990; 29991; 3000; 30000; 30001; 30002; 30009; 3001; 30010; 30011; 30012; 30013; 30014; 30015; 30016; 30019; 3002; 30020; 30021; 30022; 30023; 30029; 3003; 3004; 3005; 3006; 3008; 30081; 30082; 30089; 3009; 301; 3010; 3011; 30110; 30111; 30112; 30113; 3012; 30120; 30121; 30122; 3013; 3014; 3015; 30150; 30151; 30159; 3016; 3017; 3018; 30181; 30182; 30183; 30184; 30189; 3019; 302; 3020; 3021; 3022; 3023; 3024; 3025; 30250; 30251; 30252; 30253; 3026; 3027; 30270; 30271; 30272; 30273; 30274; 30275; 30276; 30279; 3028; 30281; 30282; 30283; 30284; 30285; 30289; 3029; 306; 3060; 3061; 3062; 3063; 3064; 3065; 30650; 30651; 30652; 30653; 30659; 3066; 3067; 3068; 3069; 3071; 3072; 30720; 30721; 30722; 30723; 3073; 3074; 30740; 30741; 30742; 30743; 30744; 30745; 30746; 30747; 30748; 30749; 3075; 30750; 30751; 30752; 30753; 30754; 30759; 3076; 3077; 3078; 30780; 30781; 30789; 308; 3080; 3081; 3082; 3083; 3084; 3089; 309; 3090; 3091; 3092; 30921; 30922; 30923; 30924; 30928; 30929; 3093; 3094; 3098; 30981; 30982; 30983; 30989; 3099; 3101; 311; 312; 3120; 31200; 31201; 31202; 31203; 3121; 31210; 31211; 31212; 31213; 3122; 31220; 31221; 31222; 31223; 3123; 31230; 31231;

		31232; 31234; 31235; 31239; 3124; 3128; 31281; 31282; 31289; 313; 3130; 3131; 3132; 31321; 31322; 31323; 3133; 3138; 31381; 31382; 31383; 31389; 3139; 314; 3140; 31400; 31401; 3141; 3142; 3148; 3149; 316; 6484; 64840; 64841; 64842; 64843; 64844 E954; E956; E959; E950; E9500; E951; E9510; E952; E9520; E953; E9530; E954; E955; E9550; E957; E9570; E958; E9580; E9501; E9511; E9521; E9531; E9551; E9571; E9581; E9502; E9552; E9572; E9582; E9503; E9553; E9583; E9504; E9554; E9584; E9505; E9555; E9585; E9506; E9556; E9586; E9507; E9557; E9587; E9508; E9518; E9528; E9538; E9588; E9509; E9529; E9539; E9559; E9579; E9589 Substance Abuse Codes: V6542; 291; 2910; 2911; 2912; 2913; 2914; 2915; 2918; 29181; 29189; 29182; 2919; 292; 2920; 29211; 29212; 2922; 29281; 29282; 29283; 29284; 29285; 29289; 2929; 303; 3030; 30300; 30301; 30302; 30303; 3039; 30390; 30391; 30392; 30393; 304; 3040; 30400; 30401; 30402; 30403; 3041; 30410; 30411; 30412; 30413; 3042; 30420; 30421; 30422; 30423; 3043; 30430; 30431; 30432; 30433; 3044; 30440; 30441; 30442; 30443; 3045; 30450; 30451; 30452; 30453; 3046; 30460; 30461; 30462; 30463; 3047; 30470; 30471; 30472; 30473; 3048; 30480; 30481; 30482; 30483; 3049; 30490; 30491; 30492; 30493; 3050; 30500; 30501; 30502; 30503; 3052; 30520; 30521; 30522; 30523; 3053; 30530; 30531; 30532; 30533; 3054; 30540; 30541; 30542; 30543; 3055; 30550; 30551; 30552; 30553; 3056; 30560; 30561; 30562; 30563; 3057; 30570; 30571; 30572; 30573; 3058; 30580; 30581; 30582; 30583; 3059; 30590; 30591; 30592; 30593; 6483; 64830; 64831; 64832; 64833; 64834; 6555; 65550; 65551; 65553; 76071; 76072; 76072; 76073; 76075; 7795; 9650; 96500; 96501; 96502; 96509; 9800 *Data Sources*: HSCRC Outpatient Abstract Data, 2012-2015.
Goal 25: Control expenditure growth-Hospital -- per capita	**Per-Capita Hospital Charges, Payer-specific**	*Calculation of All-Payer per capita MD Hospital charges:* (Total Inpatient and outpatient MD hospital Charges ÷ Total MD population) *Data Sources*: HSCRC Inpatient Abstract Data, 2012-2015; MD Department of Planning Population estimates, 2012-2015. *Calculation of Medicare per beneficiary MD Hospital charges:* (Total Inpatient hospital Charges ÷ Number of Part A Beneficiaries) + (Total hospital outpatient charges ÷ Number of Part B Beneficiaries) *Data Sources*: HSCRC Inpatient and Outpatient Abstract Data, 2012-2015; CMMI Part A & Part B Enrollment estimates. *Calculation of Medicaid per capita charges:* (Total Medicaid Inpatient and Outpatient hospital charges ÷ Total Medicaid average annual eligibility) *Data Sources:* HSCRC Inpatient and Outpatient Abstract Data 2012-2015; Hilltop Institute Estimate of

		Medicaid Population. These data were also used to estimate per beneficiary hospital charges for the dual population. For additional information refer to http://www.chpdm-ehealth.org/eligibility/index.cfm
Goal 25a: Control expenditure growth-Specialty Hospital -- per capita	**Per-Capita Specialty Hospital Charges, Payer-specific**	*Calculation of All-Payer per capita charges:* (Total Inpatient and Outpatient Specialty Hospital Charges ÷ Total MD Population) *Data Sources*: HSCRC Inpatient Abstract Data, 2013-2015; MD Department of Planning 2013-2015. Charges data may be updated in December report due to it being incomplete. *Calculation of Medicare per capita charges:* (Total Inpatient Specialty Hospital Charges ÷ Number of Part A Beneficiaries) + (Total Specialty Hospital outpatient charges ÷ Number of Part B Beneficiaries) *Data Sources*: HSCRC Inpatient Abstract Data, 2013-2015; CMMI Part A & Part B Enrollment estimates. Charges data may be updated in December report due to it being incomplete. *Calculation of Medicaid per capita charges:* (Total Medicaid Specialty Hospital charges ÷ total Medicaid average annual eligibility) *Data Sources:* HSCRC Inpatient and Outpatient Abstract Data 2013-2015; Hilltop Institute Estimate of Medicaid Population. These data were also used to estimate per capita hospital charges for the dual population. For additional information refer to http://www.chpdm-ehealth.org/eligibility/index.cfm Charges data may be updated in December report due to it being incomplete.
Goal 26: Control Expenditure Growth All Services	**Total Cost of Care Expenditures and Growth, by Payer**	*Calculation of Medicare Total Cost per capita:* (Total Part Expenditures ÷ Number of Part A Beneficiaries) + (Total Part B Expenditures ÷ Number of Part B Beneficiaries) *Data source*: Medicare Total Cost of Care was obtained from CMMI reports using all Part A and Part B services expenditures; Medicare population estimates are from CMMI reports (average of Part A and B Beneficiaries over the calendar year).