LARRY HOGAN
GOVERNOR

STATE OF MARYLAND
OFFICE OF THE GOVERNOR

December 14, 2020

Via Email

Ms. Rivka Friedman
Director, Prevention and Population Health Group
Acting Director, State Innovations Group
Center for Medicare and Medicaid Innovation
2810 Lord Baltimore Drive
Windsor Mill, MD 21244

Dear Ms. Friedman:

In 2019, the State of Maryland collaborated with the Center for Medicare and Medicaid Services' Innovation Center (CMMI) to establish the domains of health care quality and delivery that the State would impact under the Total Cost of Care (TCOC) Model. As a result of the collaboration with CMMI, the State entered into a Memorandum of Understanding (MOU) that required Maryland to provide a proposal for the Statewide Integrated Health Improvement Strategy (SIHIS) to CMMI by December 31, 2020.

In compliance with Section 3 of the MOU, the State of Maryland is pleased to present its Statewide Integrated Health Improvement Strategy proposal. This proposal outlines the goals, measures, milestones, and targets proposed by the State to advance hospital quality, care transformation across the system, and total population health. Under the SIHIS framework, the State has identified priorities to mobilize and align healthcare stakeholders across both the public and private sectors to collaborate on and invest in improving health, addressing disparities, and reducing healthcare costs for Marylanders.

The State looks forward to further discussions with CMMI on this proposal and implementation of SIHIS. If you have any questions, please contact the Maryland Health Services Cost Review Commission Executive Director, Katie Wunderlich, via email at katie.wunderlich@maryland.gov.

Sincerely,

Larry Hogan
Governor

Dennis R. Schrader
Acting Secretary, Maryland Department of Health

Adam Kane
Chairman, Maryland Health Services Cost Review Commission

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Statewide Integrated Health Improvement Strategy Proposal

December 2020

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Executive Summary

In 2019, the State of Maryland collaborated with the Center for Medicare and Medicaid Innovation (CMMI) to establish the domains of health care quality and delivery that the State could impact under the Total Cost of Care (TCOC) Model. The collaboration also included an agreed upon process and timeline by which the State would submit proposed goals, measures, milestones, and targets to CMMI. As a result of the collaboration with CMMI, the State entered into a Memorandum of Understanding (MOU) that required Maryland to provide a proposal for the Statewide Integrated Health Improvement Strategy (SIHIS) to CMMI by December 31, 2020. The SIHIS aligns statewide efforts across three domains that are interrelated and, if addressed successfully, have the potential to make significant improvement in not just Maryland's healthcare system, but in the health outcomes of Marylanders.

- Domain 1: Hospital Quality
- Domain 2: Care Transformation Across the System
- Domain 3: Total Population Health

To establish the goals, measures, milestones, and targets for the SIHIS proposal, the State undertook a broad stakeholder engagement process, involving workgroups led by the Maryland Department of Health (MDH), Maryland Opioid Operational Command Center (OOCC), and the Health Services Cost Review Commission (HSCRC). These workgroups obtained stakeholder input as the State developed its SIHIS proposal. In particular, the groups identified goals, measures, milestones, and targets that could be achievable in the SIHIS performance period established by CMMI. The workgroups were specifically designed to solicit input from diverse health system stakeholders including hospitals, consumer advocates, health policy experts, payers, physicians, State agencies, and other community-based healthcare resources. Agency staff from MDH, OOCC, and HSCRC guided detailed discussions with workgroups between July-October 2020 to evaluate options for the SIHIS proposal. Additionally, MDH, OOCC, and HSCRC provided clinical, epidemiological, and statistical expertise to assist the groups in discussions to evaluate the feasibility of the proposed improvements across the domains throughout the SIHIS performance period.

Based on the expertise of agency staff and stakeholders, the following goals, as shown in Table 1 below, were selected for each domain.

Table 1. SIHIS Domain Goals

Domain Area	Goal(s)
Domain 1 – Hospital Quality	Reduce avoidable admissions and readmissions
Domain 2 – Care Transformation Across the System	Increase the amount of Medicare TCOC or number of Medicare beneficiaries under Care Transformation Initiatives (CTIs), Care Redesign Program, or successor payment model Improve care coordination for patients with chronic conditions
Domain 3 – Total Population Health "Diabetes"	Reduce the mean Body Mass Index (BMI) for adult Maryland residents
Domain 3 - Total Population Health "Opioid Use Disorder"	Improve overdose mortality
Domain 3 - Total Population Health "Maternal and Child Health"	Reduce severe maternal morbidity rate Decrease asthma-related emergency department visit rates for ages 2-17

Implications of COVID-19 on SIHIS

As is true across the United States of America, the State of Maryland has spent the past year battling the COVID-19 pandemic. We applaud the heroic efforts of our first responders, nurses, doctors, hospitals, and healthcare providers to address this dangerous virus aggressively and compassionately. Emergency measures have transformed our healthcare landscape, in some instances temporarily, and in others permanently. While we have acknowledged this time of great disruption and uncertainty as best as possible in the construction of the SIHIS proposal, further unforeseen complications related to COVID-19 could affect the State's ability to implement programs and direct staff to the activities necessary to achieve goals included in this proposal. The State is particularly concerned with resources and data availability in CY 2021 as the State sees a resurgence of COVID-19 that is causing disruptions across the healthcare system and will make any CY 2021 milestones difficult to achieve. The State has focused its proposed CY 2021 milestones on programs and policies that will be put in place to ensure there is a strong foundation for achievement of targets later in the SIHIS performance period. The 2021 milestones are important building blocks necessary to progress toward the 2023 and 2026 targets. Delays in the ability to implement new activity and expand existing efforts will hinder progress toward 2023 and 2026 goals. Additionally, given the expected continuation of the COVID-19 surge, the State would like to revisit its SIHIS goals, measures, and targets with CMMI in the first quarter of 2022 to determine if adjustments are needed to further account for the effects of the pandemic.

Background

The State of Maryland is leading a transformative effort to improve care and lower healthcare spending growth through the Maryland TCOC Model. The TCOC Model builds on the successes of the All-Payer Model, a five-year demonstration project with the CMMI that established global budgets for hospitals and ended December 31, 2018. In 2019, the State of Maryland launched the TCOC Model with the goal of "testing whether statewide healthcare delivery transformation, in conjunction with population-based hospital payments, improves population health and care outcomes for individuals, while controlling the growth of Medicare Total Cost of Care."[1] Thus, the TCOC Model continued the hospital global budgets of the All-Payer Model, while also introducing additional responsibility and flexibility for the State to limit growth of Medicare total cost of care. Given the TCOC Model's broader mandate, the State and CMMI recognized that success under the new agreement would require more focus beyond hospital walls.

The TCOC Model agreement did not include specific targets for hospital quality and population health, in recognition of the broader work and engagement needed to develop goals, measures and targets. In 2019, the State collaborated with CMMI to establish the broad domains for goals that the State would impact under the Total Cost of Care Model. The collaboration also included an agreed-upon process and timeline by which the State would submit proposed goals, measures, milestones, and targets to CMMI. As a result of the collaboration with CMMI, the State entered into an MOU that required Maryland to provide a proposal for the SIHIS to CMMI by December 31, 2020.

The MOU establishes the SIHIS proposal requirements and requires the State to provide at least one goal for each of the three domains. Within each domain, the SIHIS proposal must also provide a Model Year 3 milestone that will be measured on CY 2021 data, a Model Year 5 interim target that will be measured on CY 2023 data, and a Model Year 8 final target that will be measured on CY 2026 data. The MOU also sets forth guiding principles that Maryland should use to develop the SIHIS. These guiding principles include the following:

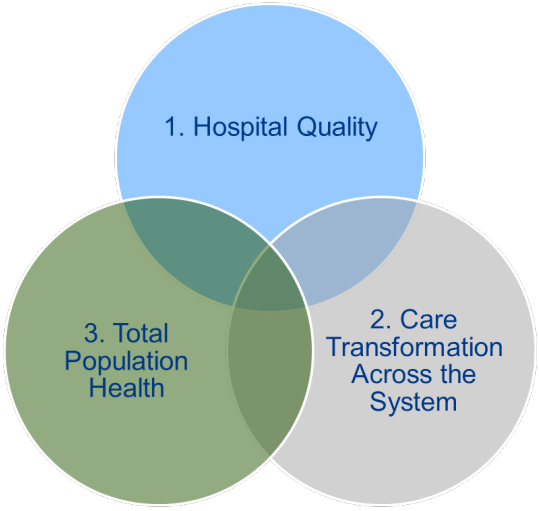
- Maryland's strategy should fully maximize the population health improvement opportunities made possible by the TCOC Model;
- Goals, measures, and targets should be specific to Maryland and established through a collaborative public process;
- Goals, measures, and targets should reflect an all-payer perspective;

[1] Maryland Total Cost of Care Model Agreement. https://hscrc.maryland.gov/Documents/Modernization/TCOC-State-Agreement-CMMI-FINAL-Signed-07092018.pdf

- Goals, measures, and targets should capture statewide improvements, including improved health equity;
- Goals for the three domains of the integrated strategy should be synergistic and mutually reinforcing;
- Measures should be focused on outcomes whenever possible; milestones, including process measures, may be used to signal progress toward the targets; and
- Maryland's strategy must promote public and private partnerships with shared resources and infrastructure.

Using the principles established in the SIHIS MOU, Maryland will expand efforts to transform health care delivery across the State, developing population-based hospital payments and launching initiatives designed to improve population health outcomes. Collectively, these initiatives will improve the overall health of Marylanders while controlling the growth of healthcare costs both in the short and long term.

As part of the SIHIS, Maryland's efforts will span three interrelated domains and, if successful, Maryland's efforts have the potential to make significant improvement in not just the State's healthcare system, but also the health outcomes of Marylanders.



- *Hospital Quality* – Enhanced hospital quality and value-based performance targets will build on historical performance targets to drive continued improvement in quality of care.
- *Care Transformation Across the System* – System-wide care transformation activities and value-based payment models will improve care quality and reduce costs.
- *Total Population Health* – Key health priorities and the statewide mobilization of public and private resources will improve health outcomes for Marylanders.

The goals, measures, milestones, and targets for each domain area, including the stakeholder engagement approach to develop these, are detailed below.

Domain 1: Hospital Quality

Under the All-Payer Model, Maryland hospitals made significant improvements (reductions) in both hospital-acquired complication and readmission rates, and achieved the specified Model targets for hospital quality.[2] Under the TCOC Model, Maryland hospitals must maintain these achievements and match any national quality improvement in these areas. While specific quality targets were not included in the contract, Maryland recognizes the need to make further progress in hospital quality, consistent with the broader care coordination and population health aims of the TCOC Model. Thus, HSCRC staff engaged the Performance Measurement Workgroup to develop goals, measures, and targets for the Hospital Quality domain of the SIHIS. Based on the stakeholder process, Maryland proposes that the Hospital Quality domain focus on the goal of reducing avoidable utilization through two measures - reducing avoidable admissions, and improving readmission rates by reducing within-hospital disparities. This goal aligns well with the care coordination and population health aims of the TCOC Model, as it requires Maryland hospitals to work in their communities to address ambulatory care sensitive conditions as well as social determinants of health.

Goal 1: Reduce Avoidable Admissions

Stakeholders in the Performance Measurement Workgroup supported the selection of the Agency for Healthcare Research and Quality (AHRQ) Prevention Quality Indicators (PQIs) as measures of avoidable admissions that could be used to demonstrate progress in hospital quality. The AHRQ PQIs are a set of measures that identify hospitalizations that may have been avoided with proper outpatient care, and thus, the measure set provides insights into quality of health services in a community. There are ten individual PQI measures that are included in the overall PQI composite measure (PQI-90). These ten measures are grouped into an overall PQI-90 composite, and broken into three other specific composites for acute, chronic, and diabetic-related admissions (the diabetes-related admission composite can also be included in the chronic composite). Examples of PQI admissions include urinary tract infection admission rate (acute), heart failure admission rate (chronic) and uncontrolled diabetes admission rate (chronic and diabetes composite).[3] At the start of the TCOC Model (CY 2019), the HSCRC updated the Potentially Avoidable Utilization (PAU) Savings program to hold hospitals accountable for per capita rates of avoidable admissions using the AHRQ PQIs, explicitly tying Model Savings to hospital communities, as opposed to

[2] The All-Payer Model Quality goals included: 1) Reduce Maryland Medicare FFS readmissions to at or below the National Rate by CY 2018, and 2) Achieve a cumulative reduction in Potentially Preventable Complications (PPCs) of greater than 30 percent by CY 2018. Maryland achieved both of these goals.

[3] Additional information on the ten AHRQ PQI measures can be found here: AHRQ - Quality Indicators.

simply holding hospitals accountable for the PQIs experienced in their hospital. Thus, Maryland hospitals are held financially accountable under the TCOC Model for all-payer PQI admissions, which will support Maryland's success under SIHIS.

In 2018, Maryland had a PQI-90 rate of 1,335 per 100,000 residents, or 62,506 PQI admissions.[4] Table 2 provides the 2021 Year 3 milestone, 2023 Year 5 interim target, and 2026 Year 8 final target for reductions in the risk-adjusted PQI rate. The targets were determined in collaboration with the Performance Measurement Workgroup using two types of modeling: historical trends, and performance-based goals. Specifically, the trend analyses used historical data of statewide, all-payer overall PQI-90 rate (CYs 2016-2019) and projected the improvements that would be achieved if these trends continued. Additionally, trends were modeled by the specific PQI composite types (acute, chronic, and diabetes), by region, and focusing on more recent time periods (CYs 2018-2019). Finally, the performance-based modeling examined the variation in performance by county within Maryland and calculated improvements needed for the State median to reach the top quartile rate. The trend modeling and performance-based targets provided a range of improvement goals that were evaluated by the Performance Measurement Workgroup, and led to consensus on the targets established in Table 2. Maryland believes that the targets included are attainable and will promote high quality care. Appendix 2 provides additional information on the modeling used to determine these targets.

Table 2. Hospital Quality Goal #1

Goal: Reduce avoidable admissions[5]	
Measure	AHRQ Risk-Adjusted PQIs
2018 Baseline	1335 admits per 100,000[6]
2021 Year 3 Milestone	8 percent improvement
2023 Year 5 Target	15 percent improvement
2026 Year 8 Final Target	25 percent improvement

[4] Maryland includes observation stays greater than 23 hours as inpatient admissions that may be eligible to be flagged as a PQI. The CY 2018 baseline rate listed above will be updated as new versions of the AHRQ software are released to ensure that the latest clinical knowledge on avoidable admissions is taken into consideration, and that staff is comparing future years' performance to the same measure.
[5] Maryland will pursue expanding the definition of avoidable inpatient stays to the emergency department (ED), and may set targets for reductions in avoidable ED visits in the future.
[6] This all-payer baseline rate for MD residents was run using HSCRC case-mix data under PQI v2020. The baseline rate will be updated with new PQI versions to ensure that the baseline rate incorporates new codes and changes in clinical logic over time. COVID positive patients (primary or secondary diagnosis) should be removed for comparison to 2018 rates.

Goal 2: Improve Readmission Rates by Reducing Within-Hospital Disparities

Racial and socioeconomic differences in readmission rates are well documented and have been a source of significant concern among healthcare providers and regulators for years. [7],[8] In Maryland, the 2018 readmission rate for Black Marylanders was 2.6 percentage points higher than for White Marylanders, and the rate for Medicaid enrollees was 3.4 points higher than for other patients. A 2019 Annals of Internal Medicine paper co-authored by HSCRC staff reported a 1.6 percent higher readmission rate for patients living in neighborhoods with increased area deprivation.[9] Many Maryland hospitals, as well as the Maryland Hospital Association, identify reduction in readmission disparities as a key priority over the near term. Thus, the HSCRC staff developed and vetted with stakeholders an approach for measuring and incentivizing reductions in disparities for readmissions. Specifically, the methodology examines readmission rates by hospital across different levels of patient adversity, as measured by the Patient Adversity Index (PAI). The PAI measure is a continuous variable of readmission risk based on three patient factors: Medicaid status, Black race, and neighborhood deprivation. The goal of the policy is to increase equity, such that the gap in readmission rates between low and high PAI patients is reduced.

This pilot policy was approved by the HSCRC for CY 2020 performance; however due to the COVID-19 Public Health Emergency (PHE), much of 2020 data will not be able to be used for assessing hospitals. Because this is a new policy, there is insufficient data to set targets at this time. Nevertheless, given the importance of reducing disparities in readmission rates, stakeholders agreed to include this measure in the SIHIS proposal with a CY 2021 milestone to "establish and monitor a measurement methodology and payment incentive for reducing within hospital readmission disparities and set a 2023 and 2026 target" as shown in Table 3.

Table 3. Hospital Quality Goal #2

Goal: Improve Readmission Rates by Reducing Within-Hospital Disparities[10]	
Measure	Readmission disparity gap
2018 Baseline	TBD
2021 Year 3 Milestone	Establish and monitor a measurement methodology and payment incentive for reducing within hospital readmission disparities and set a 2023 and 2026 target

[7] Tsai TC, Orav EJ, Joynt KE. Disparities in surgical 30-day readmission rates for Medicare beneficiaries by race and site of care. Ann Surg. 2014;259(6):1086–1090. doi:10.1097/SLA.0000000000000326;
[8] Calvillo–King, Linda, et al. "Impact of social factors on risk of readmission or mortality in pneumonia and heart failure: systematic review." Journal of general internal medicine 28.2 (2013): 269-282.
[9] Jencks, Stephen F., et al. "Safety-Net hospitals, neighborhood disadvantage, and readmissions under Maryland's all-payer program: an observational study." Annals of internal medicine 171.2 (2019): 91-98.
[10] Maryland will pursue expanding the definition of avoidable inpatient stays to the emergency department and may set targets for reductions in avoidable ED visits in the future.

2023 Year 5 Target	TBD
2026 Year 8 Final Target	TBD

Domain 2: Care Transformation across the System

Under the All-Payer Model, the delivery system in Maryland began moving away from the traditional fee-for-service payment systems and towards value-based care. The State moved more than 95 percent of all hospital payments to a population-based payment system. Under the TCOC Model, the State will continue and accelerate the transition towards value-based care and move all payments – regardless of setting of care – to a value-based payment arrangement. The State already has significant delivery system reform efforts beyond the hospitals, including Care Redesign Programs and the Maryland Primary Care Program. In addition to these 'formal' programs, there are numerous endogenous care transformation efforts that hospitals have deployed in response to the incentives of the All-Payer Model and the global budgets. While these initiatives have helped the State's to reduce the total cost of care and the unnecessary hospitalization rate, the accountability for managing Medicare beneficiaries remains fragmented across many different providers in different settings of care.

The State proposes to adopt the Health Care Payment Learning and Action Network (HCP-LAN) approach for assessing alternative payment models. The HCP-LAN uses an Alternative Payment Model (APM) Framework that splits APMs into four categories of models, ranging from Category 1 models that are traditional fee-for-service payment systems to Category 4 models, which are population-based payments. Maryland occupies a unique position in the Framework. Under the All-Payer Model, the State moved the entirety of hospital payments to a population-based payment model. But other settings of the delivery system remainder under a fee-for-service system. This creates the possibility that incentives are misaligned between different settings of care. For example, while hospitals are paid under a population-based payment system, the physicians who operate in the hospital are paid under a fee-for-service payment system. In order to increase alignment across the delivery system, the State proposes to create value-based payment models that meet the criteria for a Category 4 APM but include total cost of care accountability, and thus include all settings of care not just primary care or hospital care.

Financial accountability ensures that the delivery system in Maryland continues to reward the value of care rather than the volume of care. However, financial alignment is only important to the extent it leads to clinical alignment. The State proposes to examine the extent to which financial alignment has led to clinical alignment by measuring providers' follow-up with beneficiaries after an exacerbation of chronic conditions. The rate at which providers follow-up with beneficiaries does not capture the entirety of clinical

transformation. Given the breadth and ambition of Maryland transformation efforts, no single measure could capture the scope of transitions. However, better follow-up care must occur in any effective care management program and the extent to which follow-up care has improved can indicate whether those programs are effective. Therefore, the State proposes to significantly increase the rate of better follow-up care as part of its widespread transformation efforts.

Goal 1: Total Cost of Care or Beneficiaries under Care Transformation Initiatives, the Care Redesign Program, or Successor Payment Models

This proposal articulates the State's goals as it takes the next step in the evolution of the Maryland Model—moving from a hospital-focused model to one that aligns accountability for managing the total cost of care through value-based payment initiatives. The Secretary of the Maryland Department of Health (MDH) convened many of these discussions in the Secretary's Vision Group (SVG) and Maryland's Stakeholder Innovation Group (SIG) and the HSCRC convened discussions with hospitals and other stakeholders with its Total Cost of Care Workgroup. Maryland has led the nation in its adoption of value-based care and this proposal represents its commitment to continuing to lead in this area.

The HSCRC has launched multiple payment models designed to incentivize increased value in care delivered in Maryland. The Care Redesign Program is a voluntary program that focuses on care redesign and aligning financial incentives across hospitals and other partner providers. The Care Redesign Program provides opportunities for Maryland hospitals to partner with and provide incentives and resources to care partners in exchange for their performance of activities and processes that support statewide efforts to improve quality of care and reduce growth in total cost of care for Maryland Medicare beneficiaries.

Additionally, the HSCRC created a new value-based payment program, called Care Transformation Initiatives (CTI), that assigns Medicare beneficiaries to the hospitals that have enrolled those beneficiaries in a care management program. The CTI holds hospitals accountable for the total cost of care for those beneficiaries assigned to them and rewards hospitals for any savings created by their care management programs. The programs ensure that a single entity is accountable for managing patient care across the delivery system and second ensures that providers are paid on a population specific-basis, rather than on fee-for-service.

The CTI program has its limitations, namely that the hospital system anchors all the CTI though other settings of the delivery system may be more suitable to manage certain types of populations. To address this, the State is currently working with CMMI to create additional APMs that are anchored with non-hospitals providers. Additionally, the CTI program is a population-based payment system that overlies a fee-for-service chassis. Similar to CMMI's Accountable Care Organizations (ACOs), providers continue to be

paid under the regular claims system and are retrospectively adjusted to equal a population-based payment amount. Overtime, and with the collaboration of CMMI, future payment programs may evolve to include prospective payments or other innovations. Therefore, the State proposes to set a target for enrollment in APMs based on attribution to CTI or other future models (including the Maryland Primary Care Program) that are developed to include total cost accountability.

The State's proposal for the milestones, interim targets, and the final targets are shown in Table 4, below. The State proposes to measure participation in APMs based on either the Medicare total cost of care or the number of Medicare beneficiaries that are included in the CTI, Care Redesign Programs, or successor models. Measuring participation on the basis of the total cost of care or the number of beneficiaries is important because some beneficiaries have disproportionately high needs and thus are particularly important to include in care management programs. The State initially intended to include 25 percent of Medicare TCOC or 15 percent of Medicare beneficiaries in a CTI or similar initiative. However, given the extraordinary demands that the COVID pandemic has on hospital's clinical resources, the State is proposing to instead include 12.5% percent of Medicare TCOC or 7.5% of Medicare beneficiaries under a CTI. This does not reflect a diminishment of the State efforts in moving towards value-based payment in 2021 but rather a recognition that CTIs will likely be postponed until the latter half of 2021 to free clinical resources for the pandemic response. By 2023, the State proposes to attribute half of the Medicare total cost of care or 30 percent of the Medicare beneficiaries to a value-based payment model. Such a goal will ensure that the State continues to evolve the delivery system to one that rewards value over volume.

Table 4. Care Transformation across the System - Goal #1

Goal: Increase the amount of Medicare TCOC or number of Medicare beneficiaries under Care Transformation Initiatives (CTIs), Care Redesign Program, or successor payment model[11]		
Measure	Percent of TCOC under Care Transformation	Number of beneficiaries under CTI
2018 Baseline	$0	0
2021 Year 3 Milestone	12.5% of Medicare TCOC under a CTI or CRP or successor payment model	7.5% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model
2023 Year 5 Target	37% of Medicare under a CTI or CRP or successor payment model	22% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model
2026 Year 8 Final Target	50% of Medicare TCOC under a CTI or CRP or successor payment model	30% of Medicare Beneficiaries covered under a CTI or CRP or successor payment model

[11] Maryland will pursue adding additional payers as data becomes available about care transformation activities.

Goal 2: Timely Follow-Up after Acute Exacerbations of Chronic Conditions

Stakeholders in the Performance Measurement Workgroup supported the goal to improve care coordination for patients with chronic conditions, and the selection of the National Quality Forum (NQF) endorsed measure of Timely Follow-Up after Acute Exacerbations of Chronic Conditions (NQF# 3455). This measure was developed as a health plan measure by IMPAQ International on behalf of CMS, and Maryland has adapted the measure to calculate rates of follow-up after discharge for Medicare beneficiaries in the State and for hospitals in Maryland. The measure assesses the percentage of emergency department visits, observation stays, and inpatient admissions where non-emergent outpatient follow-up was received within the timeframe recommended by clinical practice guidelines for the following conditions:

- Hypertension: Within 7 days of the date of discharge
- Asthma: Within 14 days of the date of discharge
- Heart Failure: Within 14 days of the date of discharge
- Coronary Artery Disease: Within 14 days of the date of discharge
- Chronic Obstructive Pulmonary Disease: Within 30 days of the date of discharge
- Diabetes: Within 30 days of the date of discharge

NQF endorsed this measure for three main reasons: the overall importance of timely follow-up in favorable health outcomes; clinical evidence that timely follow-up is associated with reduced readmission rates for specific conditions; and in alignment with strong clinical practice guidelines to receive follow-up following discharge.

Due to the fact that positive performance on the follow-up measure will be one of the main goals in SIHIS, the HSCRC staff has proposed that this measure be used in the hospital pay-for-performance Quality-Based Reimbursement program, beginning with the CY 2021 performance period. At this time, this measure is assessed for Medicare FFS beneficiaries only, since both hospital and non-hospital data are needed to calculate the measure. While the measure is presently Medicare-only, improvements in clinical practice incentivized by the QBR program may benefit all payers. Additionally, the HSCRC is pursuing the inclusion of other payers to this measure, pending data availability and feasibility. Finally, based on stakeholder feedback, the HSCRC is also exploring whether it is possible to expand this measure to other conditions, in particular, follow-up after mental health hospitalization.

In 2018, Maryland had a follow-up rate across all six conditions of 71.36 percent. Table 5 provides the 2021 Year 3 milestone, 2023 Year 5 interim target, and 2026 Year 8 final target. The targets were determined in collaboration with the Performance Measurement Workgroup using two types of modeling:

historical trends, and performance-based goals. The trend analyses used historical data (2016-2019) and projected the improvements that would be achieved if these trends continued. The performance-based modeling estimated what the statewide rate of follow-up would be after eight years under two scenarios: 1. All hospitals in Maryland reach the national average follow-up rate, and 2. All hospitals in Maryland reach the national average; and hospitals with follow-up rates similar or above the national average further improve, but at a slower rate than recent trends. Based on the results of these analyses, Maryland proposes a statewide 75 percent follow-up rate by 2026 (or half percent better than the national rate), building upon the required 2021 Year 3 milestone and 2023 Year 5 interim target to reach this final target over eight years.[12] Appendix 3 provides additional information on the modeling used to determine these milestones and targets.

Table 5. Care Transformation across the System - Goal #2

Goal: Improve care coordination for patients with chronic conditions[13]	
Measure	Timely Follow-up After Acute Exacerbations of Chronic Conditions (NQF# 3455)
2018 Baseline	71.36%
2021 Year 3 Milestone	72.26% 1.25 percent improvement
2023 Year 5 Target	73.16% 2.52 percent improvement
2026 Year 8 Final Target	75.00% 5.10 percent improvement or 0.50 percent better than the national rate

Domain 3: Total Population Health

A successful TCOC Model will achieve not only improved quality of care within hospitals and transformation of care across the delivery system, but also will improve the broader population health of Marylanders. The State worked closely and collaboratively with subject matter experts and interested stakeholders to develop population health improvement goals across three main health priority areas – Diabetes, Opioid Use Disorder (OUD), and Maternal and Child Health. Maryland appreciates the commitment of the Health Department and its broad array of interested stakeholders to improve the population health of Marylanders, further optimizing the opportunity presented by CMMI in the TCOC Model.

[12] Based on stakeholder concerns regarding the COVID-PHE, the 2021 Year 3 and 2023 Year 5 targets are discounted by one year; thus improvement needed from Year 5 to Year 8 is greater in recognition that earlier improvements for this new measure may be slower.
[13] Medicare-only based on Claims and Claims-Line Feed (CCLF) data. Maryland will pursue adding and setting goals for additional payers (e.g., Medicaid) and expanding the conditions evaluated (e.g., follow-up after mental health hospitalization).

Alignment with the State's Outcomes-Based Credit Approach

The State's outcomes-based credit programs and SIHIS goals represent complementary approaches to achieving population health improvements. Where appropriate, the State has identified areas in which the outcomes-based credits and SIHIS goals are mutually reinforcing. Specifically, the State will receive an outcomes-based credit for improvement in diabetes incidence, while the SIHIS identifies improvement in mean BMI as a population health goal.

Importantly, the State has avoided selecting identical outcomes across the SIHIS and outcomes-based credit programs. In the case of diabetes, this allows the State to incentivize interventions limiting the rate at which Marylanders transition from pre-diabetes to diabetes, which provides a near-term public health benefit, while also emphasizing maintenance of healthy BMI, which is a primary prevention strategy for limiting diabetes incidence over the long term. Similarly, the State expects to propose an outcomes-based credit for opioid use dependence. Curbing incidence in this area is a key long-term strategy for limiting opioid-related morbidity and mortality. At the same time, the proposed SIHIS goal focuses on addressing overdose mortality, which will lead to development of tertiary prevention programs aimed at Marylanders already wrestling with substance use issues.

The selection of maternal and child health as a SIHIS focus area illustrates the differences between the SIHIS and outcomes-based credit programs. Because outcomes-based credits involve calculating the impact of prevention efforts on the Medicare trust fund, they are most appropriately applied to chronic diseases that affect Medicare beneficiaries, or occur late enough in life that their impact on the healthcare costs of those aging into Medicare can be reliably calculated. Maternal and child health improvements, because they affect younger Marylanders, are not as readily translated into Medicare savings. Although not expressly aligned with the outcomes-based credit program, the Maternal and Child Health goals optimize Maryland's opportunity under the TCOC Model to address and improve the health of all Marylanders.

Domain 3a: Total Population Health – Diabetes

There are more than 2.1 million Maryland residents – more than 34 percent of the total population – with diabetes or prediabetes. Of those, 1.6 million Marylanders have prediabetes, and 90 percent are not aware of it. Diabetes is the sixth leading cause of death in Maryland and is a risk factor for other serious and potentially fatal conditions. For instance, heart disease is the leading cause of death for both men and women in the United States and in Maryland. People with diabetes are twice as likely to have heart disease, and to develop heart disease at a younger age.

Diabetes also has a substantial economic impact on Maryland. The estimated annual cost to Maryland as a result of diabetes and prediabetes is $7 billion, with an additional loss of $2 billion in economic

productivity[14]. Medical expenses for people with diabetes are two to three times higher than for people without diabetes, and one in seven health care dollars are spent treating diabetes and its complications in Maryland.

To better understand the extent and impact of diabetes, the Maryland Department of Health (MDH) engaged a diverse 40-member group of stakeholders and subject matter experts and embarked on a comprehensive analysis and planning process to understand the current health status of Marylanders in detail and to create a framework to guide future interventions. The resulting inaugural 2019-2024 Diabetes Action Plan[15] was released in November of 2019.

The Diabetes Action Plan ("the Plan") provides detailed information on the disease burden of diabetes in Maryland. The data also illustrate the disproportionate impact of diabetes on specific populations based on income and education level, race and ethnicity, geographic location, physical disability, and access to health care. Other risk factors include poor nutrition, lack of physical activity, excess weight, and tobacco use.

The Diabetes Action Plan includes data that show significant disparities in the prevalence and impact of diabetes. Differences by race are particularly striking. The age-adjusted prevalence of diabetes for non-Hispanic Black residents is 13.3 percent, versus 8.0 percent for White residents. A similar degree of disparity is seen for the age-adjusted death rate for diabetes. In some jurisdictions the disparity is particularly striking. In Talbot County in 2015-17 the age-adjusted adult prevalence of diabetes for non-Hispanic Black residents was 24 percent, versus 6 percent for non-Hispanic White residents.[16]

Because of the devastating impact of diabetes on the health and well-being of Marylanders and the resulting economic impact, in 2019 then-Maryland Secretary of Health Robert Neall declared diabetes a major health priority in Maryland. For the Total Population Health domain of the SIHIS, diabetes was identified as the first priority area.

To determine the diabetes goal for this priority area, staff from MDH convened a group of 17 stakeholders and subject matter experts, which included two practicing clinicians, a pharmacist, and representatives from the hospital industry, Maryland Medicaid, the Maryland Primary Care Program (MDPCP), Chesapeake Region Information System for our Patients (CRISP, the State's Health Information Exchange), a local (county) health department, and a major payer. Several MDH staff members also participated, including two epidemiologists and a representative from the Maryland Office of Minority Health and Health Disparities.

[14] Maryland Department of Health. Diabetes Action Plan. Pg. 1. https://phpa.health.maryland.gov/ccdpc/Documents/Diabetes%20Action%20Plan%20documents/Diabetes%20Action%20Plan%20June%201%202020.pdf. Accessed November 24, 2020.
[15] Ibid.
[16] Ibid. pg. 9.

The Diabetes Action Plan describes four populations for potential intervention:

1. People of a Healthy Weight
2. People who are Overweight or Obese
3. People with Prediabetes or Gestational Diabetes
4. People with Diabetes or Diabetes with Complications

After an initial framing conversation, members of the workgroup were asked to identify the goal they would choose as their highest priority. The goals proposed by members of the group spanned all four populations. While there were compelling arguments for selecting a goal that focuses on the ends of the spectrum, more interest was expressed in a goal relevant to those across the spectrum.

There was a lot of interest in a goal to reduce diabetes incidence, that is, the number of Marylanders who newly develop diabetes. A goal in this category makes sense given resources currently or soon to be deployed across the State to increase capacity and participation in the Diabetes Prevention Program (DPP). The DPP targets people with prediabetes and provides an intensive program designed to delay or prevent altogether the conversion from prediabetes to diabetes. Diabetes prevention and management, with an emphasis on increasing capacity and enrollment in DPP, is one of the main components of the recently-awarded HSCRC Regional Partnership Catalyst grants, with $86.3 million committed to diabetes prevention and management over five years. Additionally, the Maryland Medicaid program has added the DPP as a covered benefit and efforts are underway to ensure access for Medicaid beneficiaries, and CRISP is developing a referral tool to increase patient referrals for DPP.

There are, however, some drawbacks and significant challenges to measuring diabetes incidence. Most challenging is the risk of surveillance bias resulting from increased awareness and screening, and the lack of sufficient information to adjust accurately. The work group devoted an entire meeting to exploring diabetes incidence measurement strategies but was unable to arrive at an approach that the group agreed would be feasible and sufficiently accurate to be meaningful.

In addition to diabetes incidence, there was strong interest in a goal with impact further upstream. One such approach would be to target a reduction in excess weight, as measured by Body Mass Index (BMI). There are several advantages to this approach. First, BMI is not vulnerable to surveillance bias. Calculated from height and weight, BMI is measured routinely at physician office visits, regardless of weight category or disease status. Increasing the resources devoted to diabetes interventions is not likely to change the distribution of BMI in the State.

Second, this goal targets a much larger proportion of the population. Nearly two thirds of Maryland residents fall into the Overweight or Obese category, while only one quarter of the population falls into the

Prediabetes category. There are health benefits to weight loss far beyond just for those with prediabetes. A goal of BMI reduction targets and will bring health benefits to more Marylanders, while a goal related to diabetes incidence would focus efforts on a much smaller population.

A goal of reducing BMI would bring benefits across the spectrum of the populations delineated in the Diabetes Action Plan, including those that would not be included in a diabetes incidence goal. Monitoring BMI helps Marylanders in the Healthy Weight category maintain that status. For people who already have diabetes, a reduction in BMI can bring significant health benefits, as in most cases a reduced BMI results in easier management of blood glucose levels and reduces the need for glucose-lowering medications. For those in the Prediabetes category, weight loss is the single most important way to avoid converting to diabetes, and it is one of the key components of the DPP. Weight loss achieved through the DPP will be captured by a BMI goal.

After extensive debate, the workgroup came to a consensus and recommended a goal to reduce BMI. A variety of alternatives were put forward as appropriate measures for this goal, but the workgroup ultimately selected reducing the mean BMI for adult Maryland residents. Children and adolescents are not included in this measure solely because the data for pediatric and adolescent BMI is not considered reliable. Children and adolescents will be included in Maryland's SIHIS intervention strategies.

Table 6. Total Population Health - Diabetes Goal

Goal: Reduce the mean BMI for adult Maryland residents[17]	
Measure	Mean BMI in the population of adult Maryland residents
2018 Baseline	State Mean BMI for 2018
2021 Year 3 Milestone	Identify the cohort of states that will serve as the control group to measure progress. Enter into Data Use Agreements (DUAs), if necessary. Launch the Diabetes Prevention and Management Program track of the HSCRC Regional Partnership Catalyst Grant Program. Incorporate a quality measure for all MDPCP practices requiring BMI measurement for all patients, and for patients with an elevated BMI, requiring documentation of a follow-up plan (applying inclusion/exclusion criteria from MIPS measure 128). Expansion of CRISP Referral Tool to Regional Partnerships to increase patient referrals for Diabetes Prevention Programs.
2023 Year 5 Target	Achieve a more favorable change from baseline mean BMI than a group of control states
2026 Year 8 Final Target	Achieve a more favorable change from baseline mean BMI than a group of control states

[17] Mean BMI will be determined using the results of the Behavioral Risk Factor Surveillance System (BRFSS).

Maryland will use a synthetic control approach, similar to the methodology approved by CMMI for the diabetes outcomes-based credit, to identify a cohort of states with similar BMI trajectories and demographic characteristics. State mean BMI in 2018 will serve as the baseline. The State will measure performance with difference-in-differences analysis, which evaluates whether Maryland's change in mean BMI, comparing the performance period to the base period, has been more favorable than that of the control group.

The workgroup identified four milestones to track progress related to achieving the goal of reducing the State's mean BMI.

Milestone 1: Identify a cohort of states that will serve as the synthetic control group to measure progress. Enter into data-use agreements as necessary.

Maryland will use the CMMI-approved, outcomes-based credit approach to identify a cohort of states with similar characteristics related to BMI. The state will compare its progress in improving mean BMI against this cohort. As part of this approach, the state will work to identify states with similar trends to minimize differences between Maryland and the control group.

Milestone 2: Launch the Diabetes Prevention and Management Programs track of the Health Services Cost Review Commission (HSCRC) Regional Catalyst Grants Program.

The HSCRC Regional Partnership Catalyst Grant Program will launch in January 2021. This five-year grant program is intended to foster collaboration between hospital and community partners and enable the creation of a statewide infrastructure to implement evidence-based interventions to improve population health. In November 2020, the HSCRC approved $165.4 million in five-year cumulative funding for this program to support population health investments. $86.3 million of this investment will be applied to diabetes prevention and management activities for six Regional Partnerships spread out across Maryland.

Milestone 3: Incorporate a quality measure for all MDPCP practices requiring BMI measurement for all patients, and patients with an elevated BMI, requiring documentation of a follow-up plan.

The MDPCP was created as a major element in the TCOC Model contract to support primary care practices in providing better care and expanded services. Incorporating this quality measure into practices and requiring follow-up documentation will enhance efforts to monitor patient risk and increase the number of referrals to weight loss programs, as needed.

Milestone 4: Expansion of CRISP Referral Tool to Regional Partnerships to increase patient referrals for Diabetes Prevention Programs.

CRISP will complete the design and development of its diabetes referral tool that will facilitate data sharing between hospitals and community partners. Six Regional Partnerships across Maryland will gain access to the CRISP Referral Tool in 2021 to increase patient referrals to Diabetes Prevention Programs.

Interim (2023) and final (2026) targets: Achieve a more favorable trend in baseline mean BMI as compared to the weighted average of control states.

Maryland will measure its success in achieving the goal of improving mean BMI by achieving a more favorable trend in mean BMI compared to the weighted average of control states. The synthetic control approach involves combining observed mean BMI for control states with a set of weights, creating an aggregate control unit that has a trend line as similar as possible to Maryland's in the baseline period. The degree to which Maryland's mean BMI changes from baseline, as compared to change observed in the synthetic control rate, is interpreted as the effect of the model on mean BMI.

Domain 3b: Total Population Health – Opioids Use

Opioid-related intoxication deaths are not a new phenomenon. Like other comparably sized states, Maryland has historically experienced several hundred opioid-related deaths each year. While opioid-related deaths began to rise slowly in Maryland in the early 2010s, they began to accelerate dramatically in 2016. In 2016, the State experienced 1,856 opioid-related fatalities, an increase of more than 70 percent over the 1,089 such fatalities the State experienced just one year earlier.

This increase in fatalities has been largely attributed to the emergence of fentanyl, a synthetic opioid that has quickly become prevalent due to its transportability, low cost, and potency. As the presence of fentanyl has become more widespread, so too have its negative effects. Since 2017, there have been more than 2,000 lives lost each year due to opioid intoxication in Maryland. The Centers for Disease Control and Prevention (CDC) reports that, in 2018, Maryland had an age-adjusted drug overdose death rate of 37.2/100,000, the third-highest rate in the nation.[18]

In 2015, Governor Larry Hogan acknowledged the urgency of this public crisis and created Maryland's Opioid Task Force under the leadership of Lt. Governor Boyd Rutherford. In 2017, as the state's opioid death rates continued to increase, Governor Hogan declared a State of Emergency related to the opioid crisis, making Maryland one of the first states in the nation to take this important step. During that time, Governor Hogan also created the Opioid Operational Command Center (OOCC) as an extension of the governor's office. The OOCC is tasked with coordinating Maryland's opioid crisis response among approximately 20 state agencies and each of Maryland's 24 jurisdictions, while ensuring that all efforts align

[18] Maryland Behavioral Health Administration. Unintentional Drug- and Alcohol-Related Intoxication Deaths in Maryland, 2018. https://bha.health.maryland.gov/Documents/Annual_2018_Drug_Intox_Report.pdf

with the Hogan-Rutherford administration's policy priorities of Prevention & Education, Enforcement & Public Safety, and Treatment & Recovery.

While building a statewide infrastructure to address the opioid epidemic, Maryland has also undertaken several other substantial investments to address the opioid crisis since 2015. The OOCC administers $10 million in funding through two grants programs: the Opioid Intervention Team (OIT) Block Grant, which is distributed using a needs-based applied formula to all 24 OITs in Maryland, and the Competitive Grants Program, which is open to governmental and private partners. An example of a project supported with OOCC funding is the Maryland Medicaid Comprehensive Crisis Stabilization Center pilot project. OOCC funding will support Maryland Medicaid as they provide assistance to a subset of outpatient mental health clinic (OMHCs) providers working to become Comprehensive Crisis Stabilization Centers (CCSCs) over the course of a multi-year initiative. OMHCs are uniquely-positioned to serve as CCSCs due to their statewide presence, and present offering of an array of behavioral health services. Additionally, a large proportion of Marylanders experiencing crises already view these providers as trusted sources of care within their communities. By assisting five OMHCs to transition to become CCSCs, with a combined total of 72 sub-acute beds and 85 observation chairs, Maryland will serve approximately 27,000 persons experiencing a crisis event annually. The addition of these CCSC sites has the potential to reduce ED utilization for crisis services by 3.4 percent and divert approximately 9,500 inpatient stays. In addition to the OOCC grants program, the State receives federal support through various funding streams, including the Substance Abuse and Mental Health Services Administration's (SAMHSA) State Opioid Response (SOR) grant programs, which have run in two phases from fiscal years 2019 through 2022.

Additionally, Maryland received $50 million in SOR I funding to support prevention, treatment, and recovery services for individuals with opioid use disorder (OUD). SOR I funding was used to establish and enhance numerous services, including expanding crisis stabilization centers, connecting individuals with medication-assisted treatment (MAT), and providing essential harm reduction services. In the fall of 2020, Maryland learned that it would be receiving an additional $50 million in funding through SOR II, which continues many of the services provided through SOR I and adds new services for individuals with stimulant use disorder. Maryland will also utilize SOR II funding to expand its behavioral health workforce, provide safety devices to individuals on MAT to promote medication adherence, and provide treatment services to adolescents.

Aside from the SAMHSA funding, Maryland has received additional federal funding, including a recently awarded $4 million Department of Labor grant to support workforce development for those impacted by the opioid crisis. These multiple funding streams have allowed the State to create a holistic response plan for addressing the opioid and substance use crisis that aligns with the administration's policy priorities. Given the urgency of the opioid use epidemic and the substantial investments made by the State to address this

public health crisis, the State selected opioid use reduction as the second population health focus under the SIHIS and outcomes-based credit programs.

The OOCC was identified as the lead agency for identifying goals, measures, milestones and targets for the SIHIS initiative. The OOCC convened a multidisciplinary data workgroup, which included representatives from the MDH (Public Health Services, Behavioral Health Administration, and Medicaid Administration); provider groups, such as the Maryland Hospital Association and the Community Behavioral Health Association; and subject-matter experts from the Johns Hopkins Bloomberg School of Public Health. The workgroup met four times between July and September to deliberate and select potential metrics.

Table 7 below outlines the goal, measure, baseline data, milestones, and interim and final targets for the opioid-related population health priority as part of the SIHIS proposal.

Table 7. Total Population Health - Opioids Use Goal

Goal: Improve overdose mortality[19]	
Measure	Annual change in overdose mortality as compared to a cohort of states with historically similar overdose mortality rates and demographics.
2018 Baseline	Age-adjusted death rate of 37.2/100,000
2021 Year 3 Milestone	Identify the cohort of states who will serve as the synthetic control group to measure progress. Enter into Data Use Agreements as necessary. Launch the Behavioral Health Crisis Programs grants track of the HSCRC Regional Catalyst Grants Program. Expand Screening Brief Intervention and Referral to Treatment (SBIRT) to 200 practices participating in the Maryland Primary Care Program (MDPCP)
2023 Year 5 Target	Achieve a more favorable trend in overdose mortality rate as compared to the weighted average of control states.
2026 Year 8 Final Target	Achieve a more favorable trend in overdose mortality rate as compared to the weighted average of control states

The workgroup cited Maryland's high national age-adjusted overdose death rate as the primary factor in identifying the SIHIS goal of improving overdose mortality. While most overdose fatalities involve opioid use, the workgroup chose to establish a goal to address all overdoses and focus state efforts on addressing all problematic substance use. The goal of improving mortality – rather than simply reducing mortality – was chosen given the deleterious impact that the coronavirus pandemic has had on behavioral health. During

[19] Maryland will utilize CDC data that measure age-adjusted overdose rates based on ICD-10 codes.

times of despair, substance use and its related consequences increase. Many states, including Maryland, are seeing an acceleration in overdose-related fatalities due to the coronavirus pandemic.

The workgroup identified three milestones to track progress related to achieving the goal of improving overdose mortality.

Milestone 1: Identify a cohort of states who will serve as the synthetic control group to measure progress. Enter into data-use agreements as necessary.

Maryland will use the CMMI-approved, outcomes-based credit approach to identify a cohort of states with similar overdose characteristics. The State will compare its progress in improving overdose mortality against this cohort. As part of this approach, the State will work to identify states with similar trends and absolute levels of overdose mortality rates to minimize differences between Maryland and the control group.

Milestone 2: Launch the Behavioral Health Crisis Programs track of the Health Services Cost Review Commission (HSCRC) Regional Catalyst Grants Program.

The HSCRC Regional Partnership Catalyst Grant Program will launch in January 2021. This five-year grant program is intended to foster collaboration between hospital and community partners and enable the creation of a statewide infrastructure to implement evidence-based interventions to improve population health. In November 2020, the HSCRC approved $165.4 million in five-year cumulative funding for this program to support population health investments. Approximately $79.1 million of this investment has been directed to three Regional Partnerships to develop and expand behavioral health crisis services infrastructure statewide, and will serve individuals with both mental health and substance use disorders. The funding is intended to promote treatment of individuals in need of behavioral health crisis services in more appropriate community settings and avoid unnecessary emergency room visits, which in some cases can adversely impact patients in crisis.

Milestone 3: Expand the screening brief intervention and referral to treatment (SBIRT) model to 200 practices participating in the Maryland Primary Care Program (MDPCP).

The MDPCP was created as a major element in the TCOC Model contract to support primary care practices in providing better care and expanded services, including behavioral health services. MDPCP contracted with Mosaic Group to assist primary care practices in integrating SBIRT into their workflows. The MDPCP program will continue to expand SBIRT into primary care practices, with a goal of implementing SBIRT in 200 practices by the end of 2021. As MDPCP practices continue to integrate SBIRT into their workflow, the State expects to increase the number of screenings and brief interventions performed by MDPCP practices. An increase in SBIRT activity will demonstrate growth in the number of individuals who are 1) being assessed for substance use issues within the primary care setting and 2) receiving further insight and awareness of their substance use to gauge motivation toward behavioral change.

Interim (2023) and final (2026) targets: Achieve a more favorable trend in overdose mortality rate as compared to the weighted average of control states.

Maryland will measure its success in achieving the goal of improving overdose mortality by achieving a more favorable trend in overdose mortality rate as compared to the weighted average of control states. The synthetic control approach involves combining observed mortality rates for control states with a set of weights, creating an aggregate control unit that has a trend line as similar as possible to Maryland's in the baseline period. The degree to which Maryland's mortality rate changes from baseline, as compared to change observed in the synthetic control rate, is interpreted as the effect of the Model on the mortality rate.

Domain 3c: Total Population Health – Maternal and Child Health

Maternal and Child Health (MCH), the health of mothers, infants, and children, is the foundation of adult health, and a critical point in the intergenerational cycle of poor health. The well-being of this population determines the health of the next generation. Although adult health needs represent an outsized share of medical costs and poor health outcomes in the health care system, opportunities exist to address and prevent conditions early on for the MCH population. Health events as early as in utero and infancy greatly affect an individual's health trajectories across the entire life course.[20]

The U.S. faces higher maternal and infant mortality rates compared to other industrialized countries, with large racial/ethnic disparities for each outcome; Maryland's maternal mortality rate from 2013 to 2017 (24.8 maternal deaths per 100,000 live births) ranks 22nd among states, with the rate for African Americans almost four times that of Whites (44.7 maternal deaths vs. 11.3 per 100,000 live births).[21],[22]

In addition, pediatric asthma contributes to increased healthcare utilization and spending, missed school days, and sub-optimal overall health and well-being in Maryland children. Pediatric asthma also has a significant impact on parental productivity. In Maryland, approximately 9.7 percent of children have asthma.[23]

As part of the Total Population Health domain of the SIHIS, Maryland had the option to identify a third health priority area. Consistent with the MOU guiding principle to select goals, measures, and targets that

[20] Hanson & Gluckman,v Life course View of Health Risk. Physiol Rev 2014; 94(4): 1027-1076
[21] America's Health Rankings analysis of CDC WONDER Online Database, Mortality files 2017, United Health Foundation, AmericasHealthRankings.org, Accessed February 9, 2020.
[22] Maryland Department of Health. Maryland Maternal Mortality Review 2019 Annual Report. https://phpa.health.maryland.gov/mch/Documents/Health-General%20Article,%20%C2%A713-1207,%20Annotated%20Code%20of%20Maryland%20-%202019%20Annual%20Report%20%E2%80%93%20Maryland%20Maternal%20Mortality%20Review.pdf Accessed May 19, 2020.
[23] Children's Environmental Health Advisory Council. 2017 Legislative Report of the Maryland Asthma Control Program. https://phpa.health.maryland.gov/Documents/Maryland-Asthma-Control-Program-2017-Legislative-Report.pdf. Accessed November 15, 2020

are all-payer in nature, MCH was deliberately considered as a priority area even though it is not Medicare focused. The selection of maternal and child health as a priority area reflects its importance in the State, and acknowledges both the longstanding history of disparities, as well as the large potential for improvement.

MDH's Maternal & Child Health Bureau (the Bureau) formed a workgroup by first tapping into the existing Maternal & Child Health Task Force that was created under the 2019 legislative mandate in House Bill 520/Senate Bill 406. The Task Force was then expanded to include additional clinical, academic, payer, hospital, and community stakeholders from around the State.

Members of the Bureau initially reviewed indicators across the life cycle that are used for Title V metrics, Healthy People 2020, and the Maryland State Health Improvement Program. This review included metrics for preconception/prenatal health (13 indicators), infants (18 indicators), children and adolescents (21 indicators). Examples of reviewed indicators included: the percentage of mothers who received the first trimester of prenatal care, the maternal mortality rate, the percentage of women age 18-44 who had a preventive medical visit in the past year, the neonatal mortality rate per 1,000 live births, the infant mortality rate, and the child mortality rate.

Members of the Bureau narrowed the metrics to seven metrics for the working group to decide the metric. The indicators included: maternal mortality rate; severe maternal morbidity rate; infant mortality rate; rate of low birth-weight births (< 2500 grams); asthma-related ED visits for children less than 18 years old; and appropriate developmental screening, specifically the percentage of children ages 10 to 71 months receiving a developmental screen using a parent-completed screening tool.

The working group decided that maternal health would be important to address. Not only does maternal health contribute to infant health, but severe maternal morbidity (SMM) is associated with high rates of preventability.[24] There are significant disparities in maternal health. In Maryland, Black mothers experience nearly twice the rate of severe maternal morbidity as compared to White mothers. In addition, the SMM rate for Asian Pacific Islander mothers or Hispanic mothers is nearly 1.4 times that of White mothers. While Maryland experiences disparities in both maternal mortality and severe maternal morbidity, the severe maternal morbidity (SMM) rate was selected given the variations with annual maternal mortality rates.

[24] Geller SE, Rosenberg D, Cox SM, Brown ML, Simonson L, Driscoll CA, et al. The continuum of maternal morbidity and mortality: factors associated with severity. Am J Obstet Gynecol 2004;191:939–44.

Goal 1: Severe Maternal Morbidity (SMM)

In 2018, there were 62,423 delivery hospitalizations and 1,508 SMM events for women ages 12-44 with a delivery diagnosis.[25] Many of these events are preventable, and thus the addition of SMM to SIHIS could result in significant focus and ultimately improvement in this area that has a longstanding history of racial/ethnic disparities.

To determine the goals for severe maternal morbidity, the trends were mapped. The group calculated minimum targets that achieve disparity reductions and developed an overall race and ethnicity goal that is the weighted average of the race and ethnic-specific goals. The group felt that it was necessary to eliminate disparities and determine minimum targets based on investments. In addition, the group assumed diminishing returns once low rates are reached.

Table 8 below outlines the goal, measure, baseline, milestones, and targets selected to address severe maternal morbidity. The goal is to reduce the SMM Rate by 19 percent by 2026 with a decrease in Black Non-Hispanic (NH) SMM rate by 20 percent and White NH SMM rate by 15 percent. The absolute change in Black to White SMM rate would decrease from 144.9 to 106.7 per 10,000 delivery hospitalizations. Please see Appendix 4.

Table 8. Total Population Health - Maternal Health Goal

Goal: Reduce severe maternal morbidity rate	
Measure	Severe Maternal Morbidity Rate per 10,000 delivery hospitalizations
2018 Baseline	242.5 SMM Rate per 10,000 delivery hospitalizations
2021 Year 3 Milestone	Re-launch the Perinatal Quality Collaborative. Pilot a Severe Maternal Morbidity Review Process with eight Birthing hospitals Complete Maryland Maternal Strategic Plan. Launch Regional Partnership Catalyst Grant for MCH, if funding is available.
2023 Year 5 Target	219.3 SMM Rate per 10,000 delivery hospitalizations
2026 Year 8 Final Target	197.1 SMM Rate per 10,000 delivery hospitalizations

To achieve the SMM rate, interventions including better preconception health, including equitable access to family planning, linkages to care including the public health system of care, timely and adequate prenatal

[25] Centers for Disease Control and Prevention. How Does CDC Identify Severe Maternal Morbidity? https://www.cdc.gov/reproductivehealth/maternalinfanthealth/smm/severe-morbidity-ICD.htm. Accessed October 1, 2020

care, multi-disciplinary quality review processes such as the development of severe maternal morbidity reviews, modifications of hospital care protocols if necessary, improved post-natal care and follow-up will need to build and expand.

The workgroup identified four milestones to track progress related to the goal of reducing severe maternal mortality.

Milestone 1: Re-Launch the Maryland Perinatal Quality Collaborative

Maryland's Perinatal-Neonatal Quality Care Collaborative (MDPQC) is a network of perinatal care providers and public health professionals working to improve health outcomes for women and newborns through continuous quality improvement. The Collaborative provides participating birthing hospitals with educational resources, technical assistance and a platform for communication and sharing best practices. In 2021, the Maryland Perinatal Quality Collaborative will relaunch to choose a focus area for maternal health and neonatal health.

Milestone 2: Pilot a Severe Maternal Morbidity Review Process in Maryland Birthing Hospitals

In September 2019, the Health Resource Service Administration (HRSA) awarded the Johns Hopkins University $10.3 million dollars over a five-year period as part of the State Maternal Health Initiative Program to address disparities in maternal health and improving maternal health outcomes, with a particular emphasis on preventing and reducing maternal mortality and severe maternal morbidity. JHU has partnered with the Maryland Department of Health, Baltimore Healthy Start, and hospital centers to address severe maternal morbidity (SMM). Several Maryland Birthing Hospitals will participate in a severe maternal morbidity review process with the goal of eight birthing hospitals participating by the end of 2021.

Milestone 3: Complete the Maternal Health Strategic Plan

As part of the Maternal Health Improvement Program, MDH is developing a Maternal Health Strategic Plan to improve maternal health outcomes in Maryland for the next five years. The Maternal Health Strategic Plan will be finalized in late 2021.

Milestone 4: Launch Regional Partnership Catalyst Grant for MCH, if funding is available.

The HSCRC Regional Partnership Catalyst Grant Program is a five-year grant program intended to foster collaboration between hospital and community partners and enable the creation of a statewide infrastructure to implement evidence-based interventions to improve population health. The HSCRC plans to release a Request for Proposals in the spring of 2021 to support investments in maternal and child health to align with the goals outlined in SIHIS. Funding would be issued in FY 2022, beginning July 1, 2021.

Goal 2: Asthma-related ED Visit Rates for Ages 2-17

Asthma is a priority for MDH and is one of the largest racial and ethnic health disparities in terms of ED visit rates. Asthma is responsible for more Emergency Department (ED) visits than some other major chronic disease such as hypertension and diabetes ED visits. Asthma was responsible for greater than $73 million dollars in hospital charges (2018) for Maryland children less than 18 years old. In addition, children with asthma miss an additional 2.3 days of school.

The group decided to focus on a childhood asthma-related emergency department (ED) goal. To achieve a reduction in this measure, successful management of asthma in the community must be improved by increasing access to primary care, adherence to asthma treatment plans, and mitigating asthma triggers in the homes of asthmatic children. In 2018, there were 10,974 asthma-related ED visits for ages 2-17 in Maryland with asthma being the primary diagnosis.[26]

The group decided on the ages 2-17 as the Agency for HealthCare Research and Quality (AHRQ) Pediatric Quality Indicator uses the age group two to seventeen years old as a pediatric quality indicator for asthma. Of note, urgent cares were not included as these numbers are not included in the HSCRC Case-Mix data. The group felt that decreasing ED visits was important to pursue as a population health goal

To calculate the goals for asthma, the previous rates were mapped (Appendix 4) and based on previous interventions, the goals were calculated less than previous trends. The group took into consideration diminishing returns on investments. The all-race/ethnicity goal is a weighted average of the race/ethnic-specific goals. The total goal weight is a weighted average of race/ethnic groups.

Table 9 below outlines the goal, measure, baseline, milestones, and targets selected to address asthma-related emergency department visit rates for ages 2-17.

Table 9. Total Population Health - Child Health Goal

Goal: Decrease asthma-related emergency department visit rates for ages 2-17	
Measure	Annual ED visit rate per 1,000 for ages 2-17
2018 Baseline	9.2 ED visit rate per 1,000 for ages 2-17
2021 Year 3 Milestone	Obtain Population Projections. Development of Asthma Dashboard. Launch Regional Partnership Catalyst Grant for MCH, if funding available. Asthma-related ED visit is a Title V State Performance Measure and shift some of the Title V funds for Asthma-related interventions.

[26] Analysis performed for the Maternal and Child Health Working group. Asthma defined using AHRQ CCS-R Category RSP-009); (ED Visit defined using HSCRC Case-mix Outpatient Data, Rate Centers 28 - Emergency, 34 - Free-Standing ED, or 90-Trauma Center with Charges >$0)

2023 Year 5 Target	Achieve a rate reduction from 2018 baseline to 7.2 in 2023 for ages 2-17
2026 Year 8 Final Target	Achieve a rate reduction from the 2018 baseline to 5.3 in 2026 for ages 2-17

The group set race/ethnic-specific targets that achieve disparity reductions. The group has proposed, as a minimum, a 50% decrease in ED visits for Black children from the baseline of 19.1 to 9.6 asthma-related ED visits from 2018 to 2026. In addition, the absolute rate difference for ED visits between Black and White children would decrease to a gap of 8.5 in 2026 from a gap of 15.0 in 2018. Please see Appendix 4.

To achieve the goals, community interventions need to occur. These interventions include: environmental trigger reduction, use of primary care, optimal treatment plans prescribed, and excellent adherence to treatment plans. The workgroup identified four milestones to track progress related to achieving the goal of reducing the State's mean BMI.

Milestone 1: Obtain Population Projections

Maryland is currently using Maryland Department of Planning population numbers for ages two to seventeen. The State will work to coalesce around improved population projections, if available, in the future.

Milestone 2: Development of Asthma Dashboard

Maryland's Environmental Public Health Tracking project in the Environmental Health Bureau provides a display of asthma data by relevant geographies across the State. A dashboard for the SIHIS initiative will be included in the Environmental Public Health Tracking public portal, which will include the asthma measures adopted through the SIHIS process, and will also include links to local health departments and other partners participating in the asthma interventions.

Milestone 3: Launch Regional Partnership Catalyst Grant for MCH, if funding is available.

The HSCRC Regional Partnership Catalyst Grant Program is a five-year grant program intended to foster collaboration between hospital and community partners and enable the creation of a statewide infrastructure to implement evidence-based interventions to improve population health. The HSCRC plans to release a Request for Proposals in the spring of 2021 to support investments in maternal and child health to align with the goals outlined in SIHIS. Funding would be issued beginning in FY 2022, beginning July 1, 2021.

Milestone 4: Asthma-related ED visit is a Title V State Performance Measure and shift some of the Title V funds for Asthma interventions.

Title V is a federal block grant that supports promoting and improving the health and well-being of the nation's mothers, children, including children with special needs, and their families. The Title V Program seeks to strengthen the Maternal and Child Health (MCH) infrastructure and to ensure the availability, accessibility and quality of primary and specialty care services for women, infants, children and adolescents. Through the Title V Maternal and Child Health Services Block Grant, Maryland is able to provide core public health funding to all 24 jurisdictions (23 counties and Baltimore City) in the state to advance vital maternal and child health services and initiatives that are specific to the needs of each community. Funding is used for direct and enabling services for maternal health and children/youth with special health care needs. Additionally, funds are used for population-based services through community education of emerging public health issues and through the continued development and advancement of public health infrastructure to ensure the health and well-being of Title V eligible populations.

Asthma-related ED visits for ages 2-17 years old would be submitted for the application submitted in 2021 as a state performance measure. In addition, there would be an evaluation within Maryland Title V to see if some of the funds could be shifted for Asthma interventions.

Conclusion

The TCOC Model presents Maryland with a unique opportunity to improve hospital quality, foster care transformation, and ultimately improve the health and lives of Marylanders. The proposed Statewide Integrated Health Improvement Strategy described herein will create a unified agenda that will mobilize and align healthcare stakeholders across both the public and private sectors to collaborate on and invest in improving health, addressing disparities, and reducing costs for Marylanders. This proposal is the culmination of a robust stakeholder process involving hospitals, physicians, consumers, public health experts, payers, and other healthcare stakeholders.

Across the SIHIS domains of hospital quality, care transformation, and total population health, Maryland has been careful to consider goals, measures, and targets that are realistic and achievable during the SIHIS performance period. While the State is optimistic about achieving all the goals in this proposal, it is important to recognize the unprecedented and unpredictable nature of the COVID-19 pandemic that continues to stretch healthcare resources and could ultimately affect the State's ability to achieve some or all of the goals included in this proposal. Nonetheless, Maryland is undeterred and is excited about the potential to make tremendous positive impact on both the healthcare system and the health of Marylanders. The State of Maryland looks forward to further discussions with CMMI on this proposal and the implementation of SIHIS.

Appendix 1: Specifications for Measures and Targets

Domain 1: Hospital Quality

Measure	Avoidable Admissions: Risk-Adjusted PQI-90 Rates
Population	All-Payer Maryland Residents admitted to Maryland hospitals
Data Source	HSCRC Case-Mix Data run through AHRQ PQI Software
Numerator	Discharges, for patients ages 18 years and older, that meet the inclusion and exclusion rules for each of the specific PQI admissions (observed PQIs)
Denominator	Expected PQI admissions based on the Maryland population ages 18 years and older. The Observed to expected ratio is multiplied by the national PQI rate to get the risk-adjusted PQI rate.
Baseline (2018)	1,335 admits per 100,000 Run using v2020 of AHRQ PQI software; baseline rate will be rerun with updated AHRQ

Measure	Readmission Disparity Gap
Population	All-Payer
Data Source	HSCRC Case-Mix Data
Numerator	To Be Determined
Denominator	To Be Determined
Baseline (Year)	To Be Determined

Domain 2: Care Transformation across the System

Measure	Increase the amount of Medicare TCOC or number of Medicare beneficiaries under Care Transformation Initiatives (CTIs), Care Redesign Program, or successor payment model
Population	Medicare Fee-For-Service
Data Source	CCLF Data
Numerator	Medicare TCOC/Benes under CTI/CRP/successor payment model
Denominator	All Maryland Medicare FFS claims / All Maryland Medicare Beneficiaries
Baseline (2018)	$0/0 beneficiaries

Measure	Timely Follow-up After Acute Exacerbations of Chronic Conditions (NQF# 3455)
Population	Medicare Fee-For-Service
Data Source	CCLF Data
Numerator	Number of patients from denominator who receive timely follow-up
Denominator	Number of patients with one of the six chronic conditions who have an ED visit, observation stay, or inpatient stay and meet the inclusion and exclusion rules of the measure
Baseline (2018)	71.36 percent

Domain 3: Total Population Health

Domain 3a: Total Population Health – Diabetes

Measure	Mean BMI
Population	Residents over 18 years old in Maryland and control states
Data Source	Behavioral Risk Factor Surveillance Survey
Numerator	Sum of survey-weighted BMI values
Denominator	Survey-weighted total count of adults in state
Baseline (2018)	State Mean BMI for 2018

Domain 3b: Total Population Health – Opioids

Measure	Drug overdose mortality
Population	Residents of Maryland and control states
Data Source	National Vital Statistics System
Numerator	Number of drug overdose deaths as reported by CDC
Denominator	State population as reflected in Census data
Baseline (2018)	Age-adjusted death rate of 37.2/100,000

Domain 3c: Maternal and Child Health

Measure	Severe Maternal Morbidity Rate per 10,000 delivery hospitalizations
Population	Women ages 15-49 years old with a delivery hospitalization
Data Source	HSCRC Case-Mix Data
Numerator	Number of women ages 15-49 with a delivery hospitalization with any of the 21 Severe Maternal Morbidity Indicators as indicated by the Centers for Disease Control and Prevention
Denominator	Women ages 15-49 years old with a delivery hospitalization
Baseline (2018)	242.5 SMM per 10,000 delivery hospitalizations

Measure	Childhood Asthma-Related Emergency Department Visit per 1,000
Population	Children ages 2-17 years old
Data Source	HSCRC Case-Mix Data (Numerator); Maryland Department of Planning (Denominator)
Numerator	Number of children with a primary diagnosis of Asthma in an ED visit (Asthma defined using AHRQ CCS-R Category RSP-009); (ED Visit defined using HSCRC Case-mix Outpatient Data, Rate Centers 28 - Emergency, 34 - Free-Standing ED, or 90-Trauma Center with Charges >$0))
Denominator	Number of children ages 2-17 years old
Baseline (2018)	9.2 ED visit rate per 1,000 for ages 2-17

Appendix 2: Modeling of Avoidable Admissions Targets

The figures below summarize the modeling that was presented to the Performance Measurement Workgroup for the purpose of setting avoidable admissions targets.

Figure 1 provides the 2018 AHRQ PQI rates per 100,000 Maryland residents, with the overall PQI-90 rate as well as the rates for the acute, chronic, and diabetes composites. These rates include observation stays greater than 23 hours due to the higher use of observation stays in Maryland.

Figure 1. CY 2018 PQI Rates per 100,000

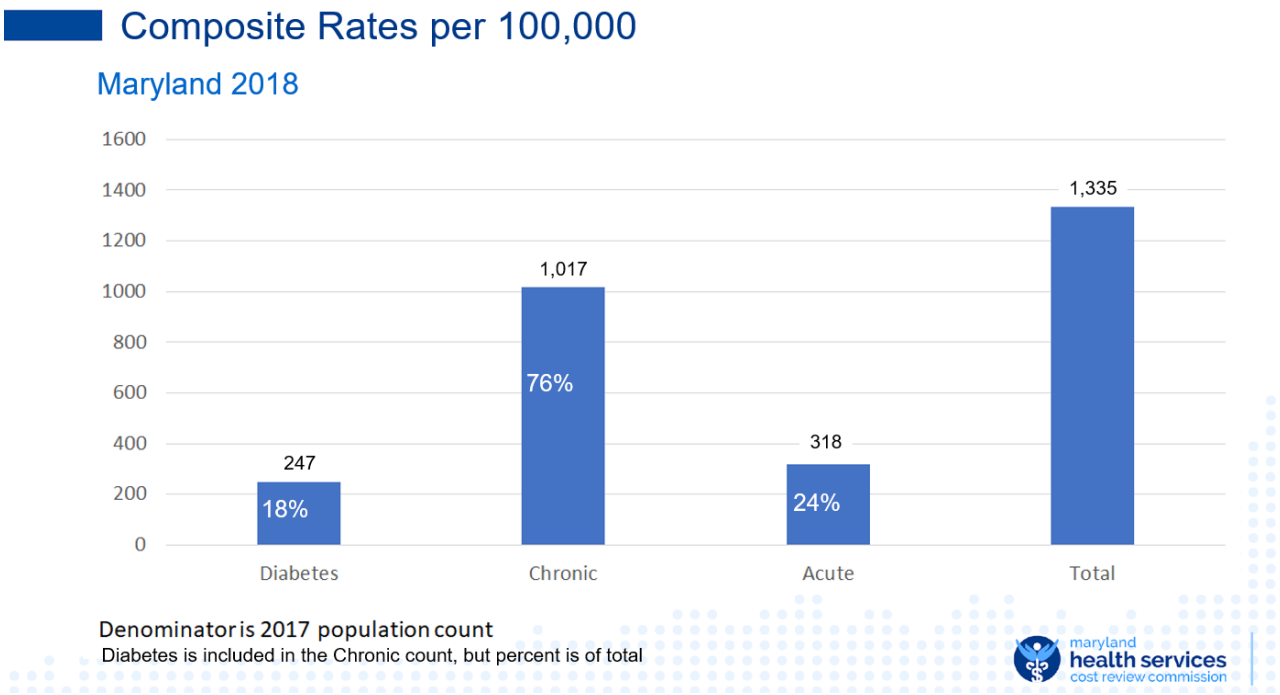
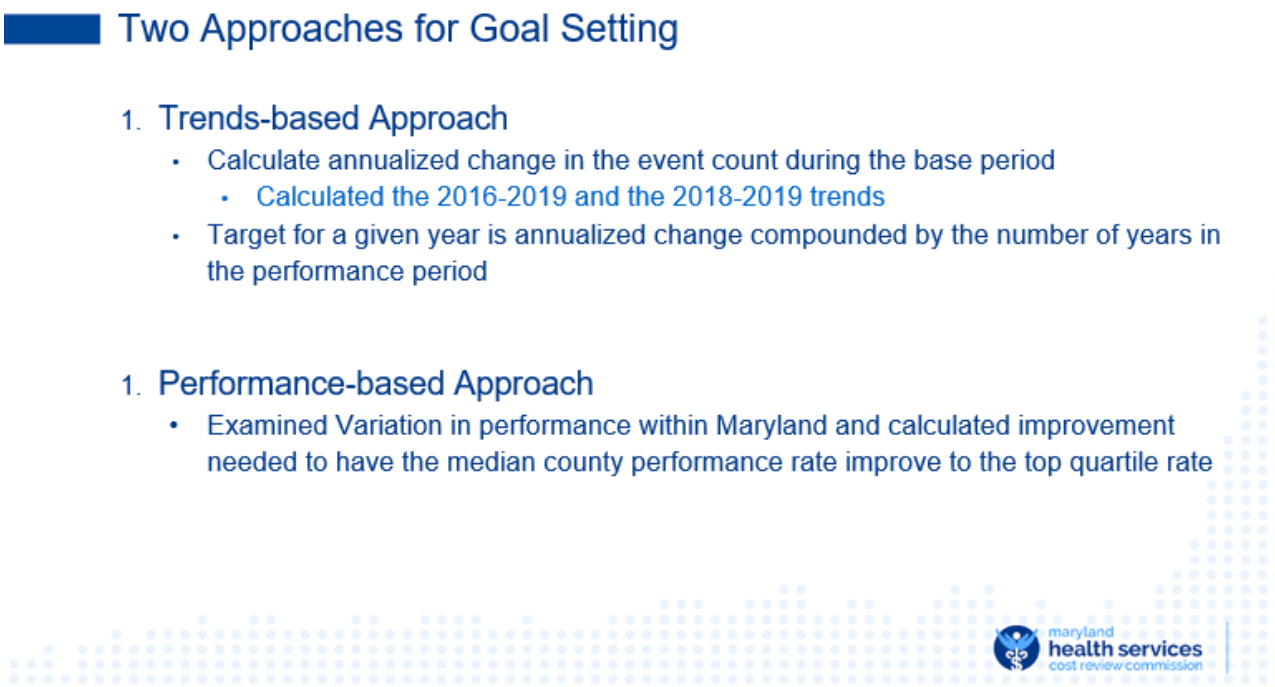


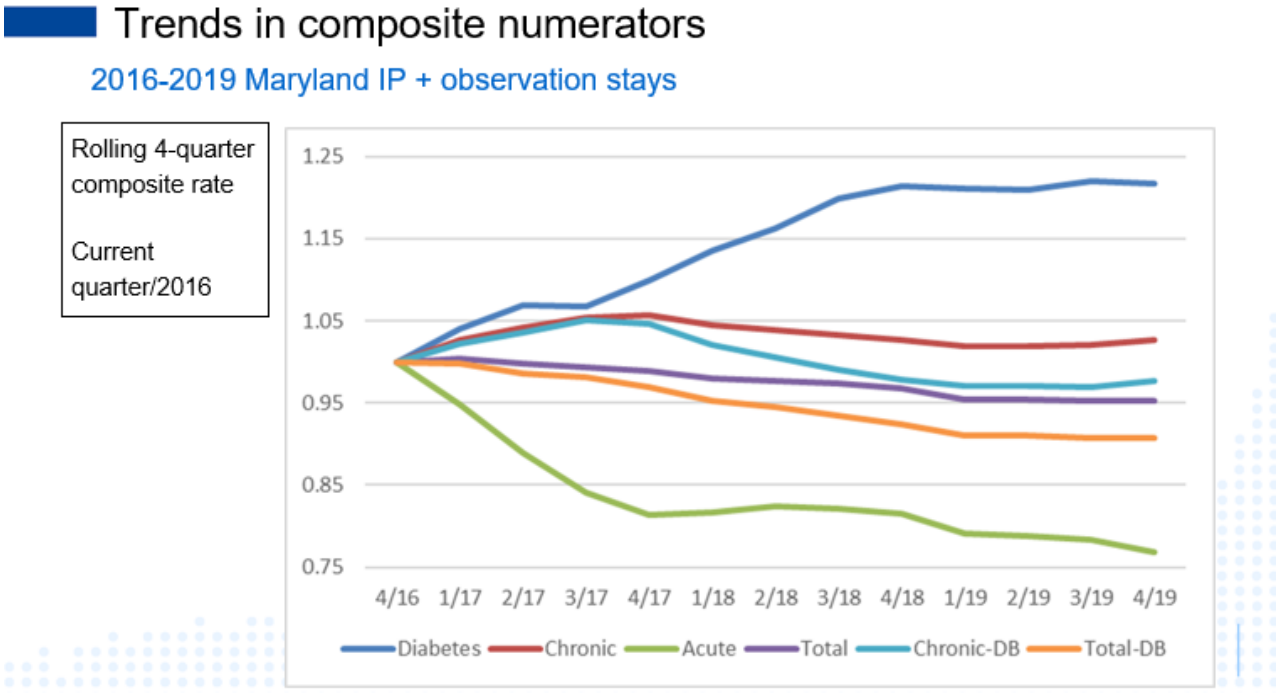
Figure 2 below highlights the two modeling approaches that were used to set targets.

Figure 2. Two Modeling Approaches to Determine Avoidable Admissions Target



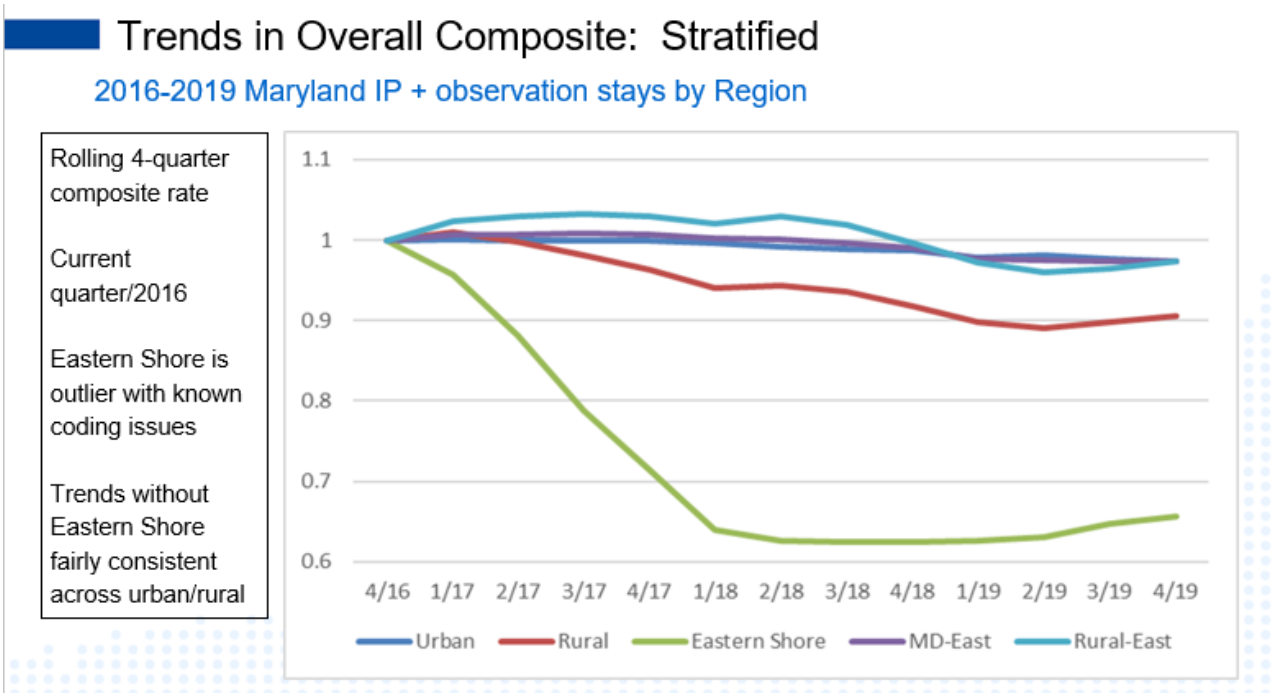
Under the trends-based approach, staff analyzed quarterly 12-month rolling trends in the count of PQI admissions (numerator) relative to Quarter 1 of 2016. These PQI admissions are broken out by composite. Figure 3 (below) shows the following: 1. Acute PQIs have declined since 2016, but the trend has slowed; 2. Diabetes-related PQIs have increased since 2016, but the trend has slowed (further investigation suggests that diabetes admission increases since 2016 are in large part due to coding changes); and 3. Chronic, non-diabetes PQIs have decreased since 2016. Based on this analysis, stakeholders supported the use of more recent trends (i.e., 2018-2019) and the removal of the diabetes PQIs in modeling the improvement trend.

Figure 3. Rolling 12-months Trends of PQIs per 100,000



Next, the rolling 12-month trends were stratified by region to examine variation in performance across the state. Figure 4 presents significant decreases in PQI Rates per 100,000 concentrated on the Eastern Shore of Maryland. Further investigation, including audits conducted by the HSCRC, suggested that the Eastern Shore trends are unreliable and based on erroneous coding, and staff are working with hospitals in this region to correct these errors moving forward. Based on this analysis, stakeholders supported the removal of the Eastern Shore region when calculating the improvement trend for modeling. With the Eastern Shore removed, the urban and rural trends were similar such that a statewide improvement goal was deemed feasible.

Figure 4. PQI Rates per 100,000 Stratified by Region

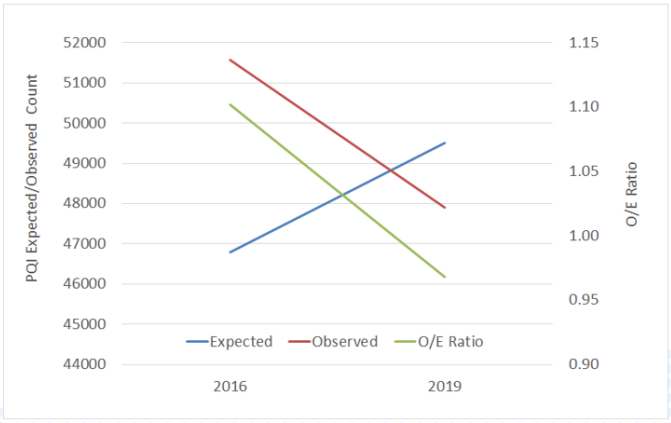


A final consideration in constructing an Avoidable Admissions Improvement Target relates to the Maryland population data (denominator) needed to calculate the risk-adjusted PQI rate. The risk-adjusted PQI rates calculate an expected number of PQI events for the population adjusting for age and sex. For the development of the SIHIS targets, staff modeled PQI events two ways: 1. a numerator-only approach where the population data was held static across years, and 2. a population-adjusted approach that uses actual or projected population estimates for a given year. The population-adjusted approach impacted the analysis of Maryland rates, as the Maryland population is aging and thus the number of expected PQI events increases over time. Figure 5 (below) shows that due to the increase in expected PQIs (+1.9 percent), the decreases in the risk-adjusted PQI rate is much larger (-4.2 percent) than the decreases in observed PQIs (-2.4 percent). For monitoring of performance in Years 3, 5, and 8 the actual population for 2021, 2023, and 2026 (or the most recent projections) should be used to assess performance.

Figure 5. Population-Adjusted Observed and Expected PQI Rate Decreases Over Time

Expected and Observed PQI Changes Overtime

As expected PQI's increase and there is simultaneously decreases in observed PQI's, overall improvement in the O/E ratio (and risk-adjusted PQI rate) is greater than the reduction suggested by just looking at changes in the numerator



Diabetes PQIs and Eastern Shore Removed

	Percent Change 2016-2019
Expected	1.9%
Observed	-2.4%
O/E Ratio	-4.2%

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Based on the trend and performance goal analysis outlined in this appendix, staff calculated the Avoidable Admissions Reduction Targets in Figure 6 (below), and the Performance Measurement Workgroup approved these targets. The final targets selected utilized CY 2018-2019 risk-adjusted PQI trends, adjusted for anticipated population changes, excluding diabetic PQIs and the Eastern Shore region. These targets were then discounted by one year (i.e., we used the 2-year projected improvement as the Year 3 target) to account for the COVID-PHE and rounded to the nearest whole number. For monitoring of performance over the course of the TCOC model, the most recent AHRQ PQI version should be used, and numbers recalculated back to 2018 (i.e., the base period PQI rate may change slightly over time). Adopting the most recent AHRQ PQI versions will ensure that the State is using the most accurate clinical guidelines for what constitutes an avoidable admission. The State does not anticipate needing to revise the improvement targets unless there are significant changes in PQI definitions. Furthermore, COVID positive patients (primary or secondary diagnosis) should be removed for comparison to 2018 rates.

Figure 6. Final Target Modeling for Avoidable Admission Reduction Targets

Target Options

Approved by PMWG

Targets with Diabetes and Eastern Shore Removed	3 Years CY 2021	5 Years CY 2023	8 Years CY 2026
Trend goal based on CY 2016-CY2019 improvement (Numerator Only)	-7.1%	-11.6%	-17.9%
Trend goal based on CY 2016-CY2019 improvement (Population Adjusted)	-12.2%	-19.5%	-29.3%
Trend goal based on CY 2018-CY2019 improvement (Numerator Only)	-6.5%	-10.6%	-16.5%
Trend goal based on CY 2018-CY2019 improvement (Population Adjusted)	-11.3%	-18.2%	-27.5%
Performance-based goal of moving median to top quartile	-8.1%	-13.2%	-20.2%
HSCRC Staff Proposal:			
Trend goal based on CY 18-CY19 improvement (Population Adjusted)—Minus 1 Yr improvement due to COVID	**-8%**	**-15%**	**-25%**

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Appendix 3: Care Transformation - Modeling of Timely Follow-Up

The figures below summarize the modeling that was presented to the Performance Measurement Workgroup for the purpose of setting follow-up targets.

Figure 1 provides the 2019 Maryland and National follow-up rates by condition and in total across all six conditions. While Maryland performs similar to the national rates, given the resources available under the TCOC model Maryland should perform better than the nation. The national data was used to model potential performance targets for SIHIS, as discussed below.

Figure 1. CY 2019 Maryland and National Follow-Up Rates

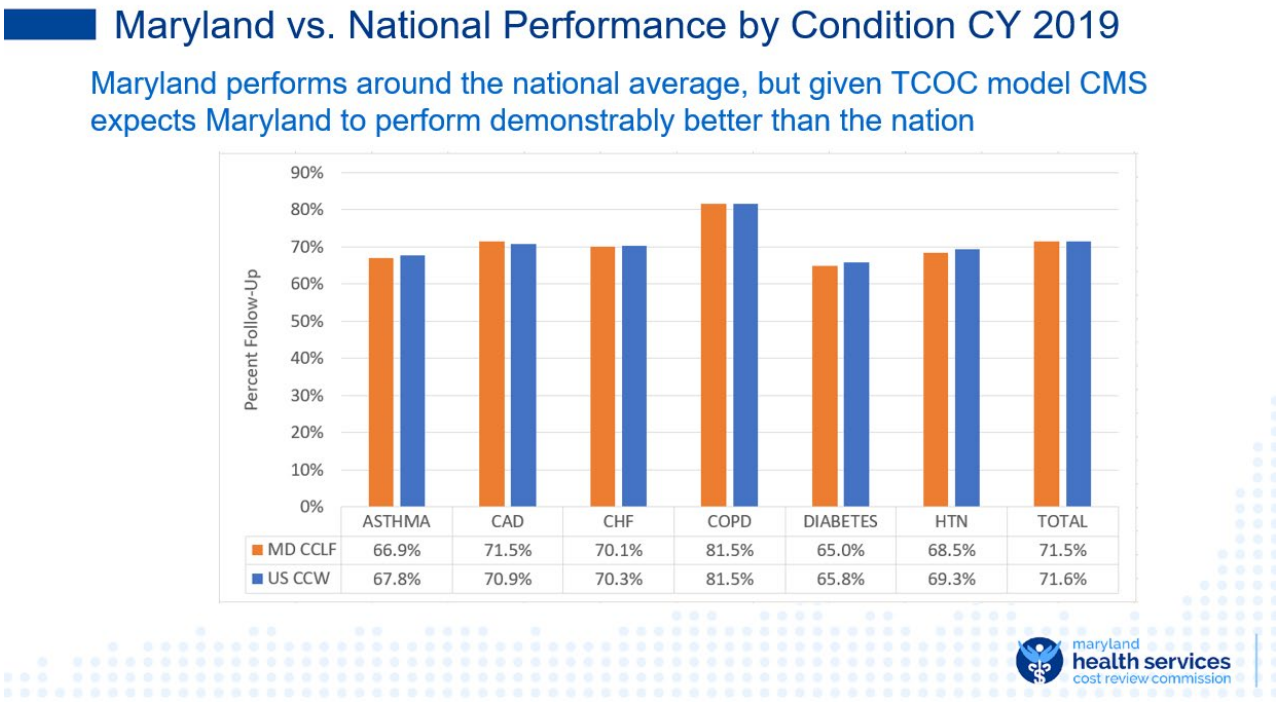
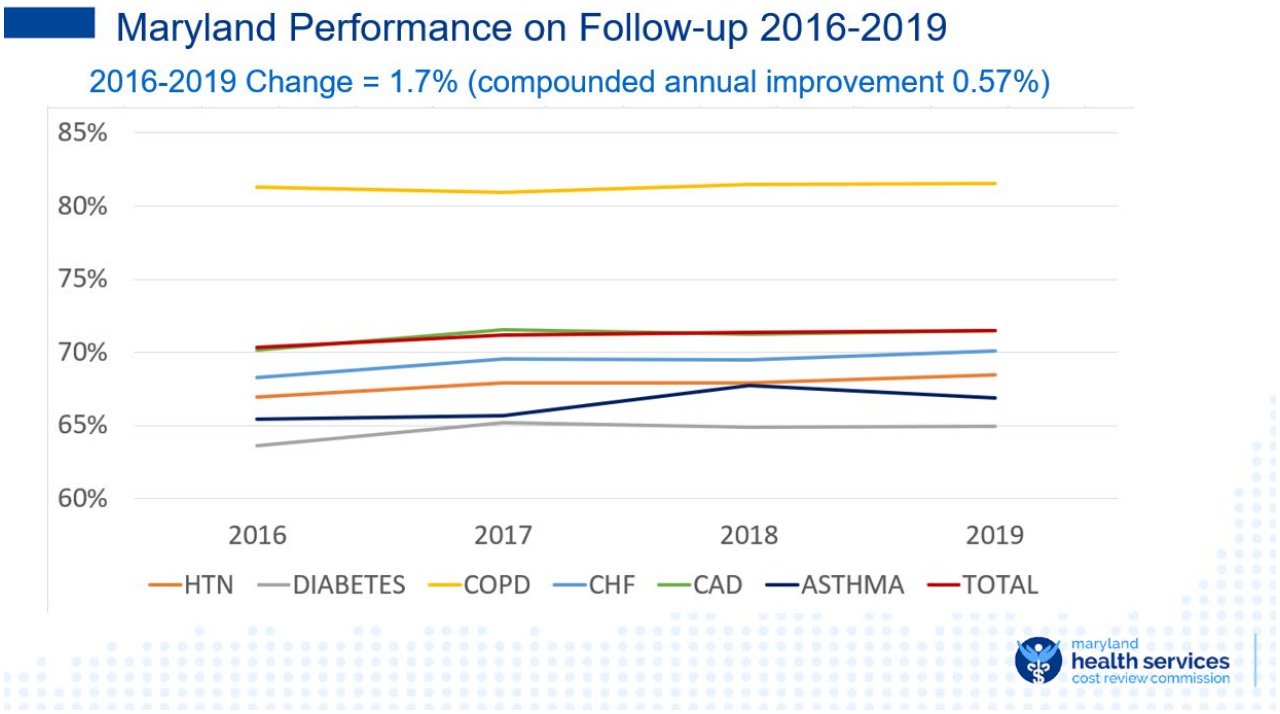


Figure 2 provides the 2016-2019 Maryland rates by condition and in total across all six conditions. Overall Maryland has seen slight improvements across all conditions, and this improvement was used to model trend targets for SIHIS, as discussed below.

Figure 2. CY 2016 to 2019 Maryland Follow-Up Rates



Two modeling approaches were used to set targets in Figure 3. The first approach trended historical data (2016-2019) and projected the improvements that would be achieved if these trends continued. The second approach used performance-based modeling estimated what the statewide rate of follow-up would be after eight years under two scenarios: 1. All hospitals in Maryland reach the national average follow-up rate, and 2. All hospitals in Maryland reach the national average; and hospitals with follow-up rates similar or above the national average further improve, but at a slower rate than recent trends. Based on the results of these analyses, Maryland proposes a 75 percent follow-up rate by 2026 (OR , and calculated the 2021 Year 3 milestone and 2023 Year 5 interim target using the annual compounded improvement needed to reach this final target over eight years.

Figure 3. SIHIS Follow-Up Target Modeling

SIHIS Follow-Up Targets

All Roads Lead to 75 Percent Attainment Target

- Staff propose the 8 year target should be to achieve the better of a 75 percent follow-up rate or the 2025/2026 national average
  - Year 3 and 5 goals are annualized change needed to achieve ~ 75 percent in 8 years discounted one year due to COVID-19 PHE

Proposed SIHIS Targets	2018	Year 3 (2021)		Year 5 (2023)		Year 8 (2026)	
	Rate	Percent Improvement	Rate	Percent Improvement	Rate	Percent Improvement	Rate
Trend Target	71.36%	1.71%	72.58%	2.87%	73.41%	4.63%	74.66%
Performance Target 1: All Improve to National Average	71.36%	1.38%	72.35%	2.32%	73.01%	3.73%	74.02%
Performance Target 2: All Improvement to National Average + Half Annualized Improvement	71.36%	1.91%	72.73%	3.21%	73.65%	5.19%	75.06%
Proposed Target	**71.36%**	**1.25%**	**72.26%**	**2.52%**	**73.16%**	**5.10%**	**75.00%**

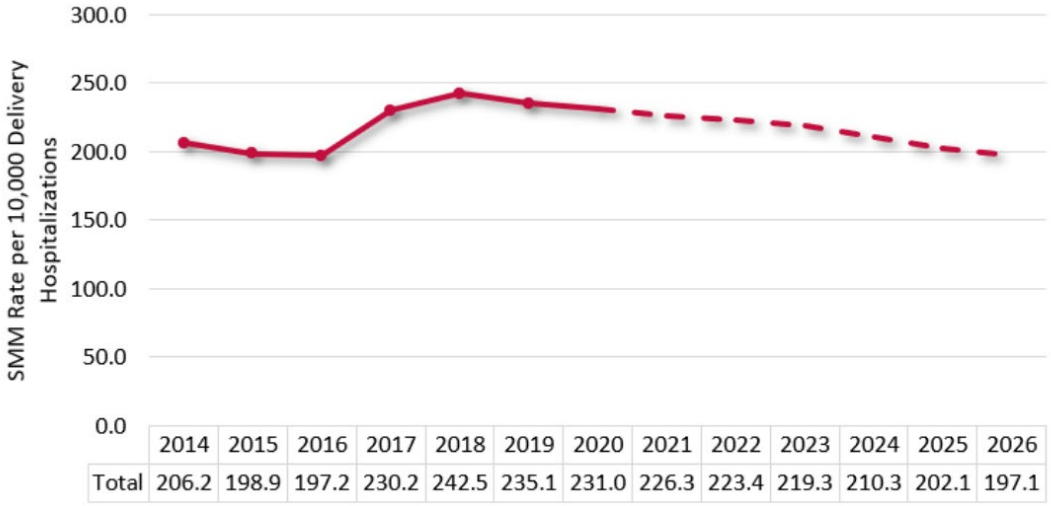
Appendix 4: Maternal and Child Health Goals

Severe Maternal Morbidity Rates

Table 1. SMM rates per 10,000 delivery hospitalizations, disaggregated by race and ethnicity

Population	Baseline (2018)	2023	2026	Absolute change	Relative Percentage Change
Total	**242.5**	**219.3**	**197.1**	**45.4**	**19%**
White NH	183.6	169.8	156.1	27.5	15%
Black NH	328.5	295.7	262.8	65.7	20%
Asian NH	241.9	217.7	193.5	48.4	20%
Hispanic	236.9	213.2	189.5	47.4	20%
Other	227.3	204.6	181.8	45.5	20%

Figure 1. Rate of SMM, Maryland, 2014-2016



Source: Health Services Cost Review Commission, Case-mix data. Data reflect Maryland residents in Maryland hospitals only. Changes in SMM coding from ICD-9 to ICD-10 in October 2015 may have influenced the number of SMM diagnoses in year 2016 forward.

Asthma ED Visit Projections and Rates for ages 2-17 years old

Figure 2. Asthma ED Visit Projections for ages 2-17 years old

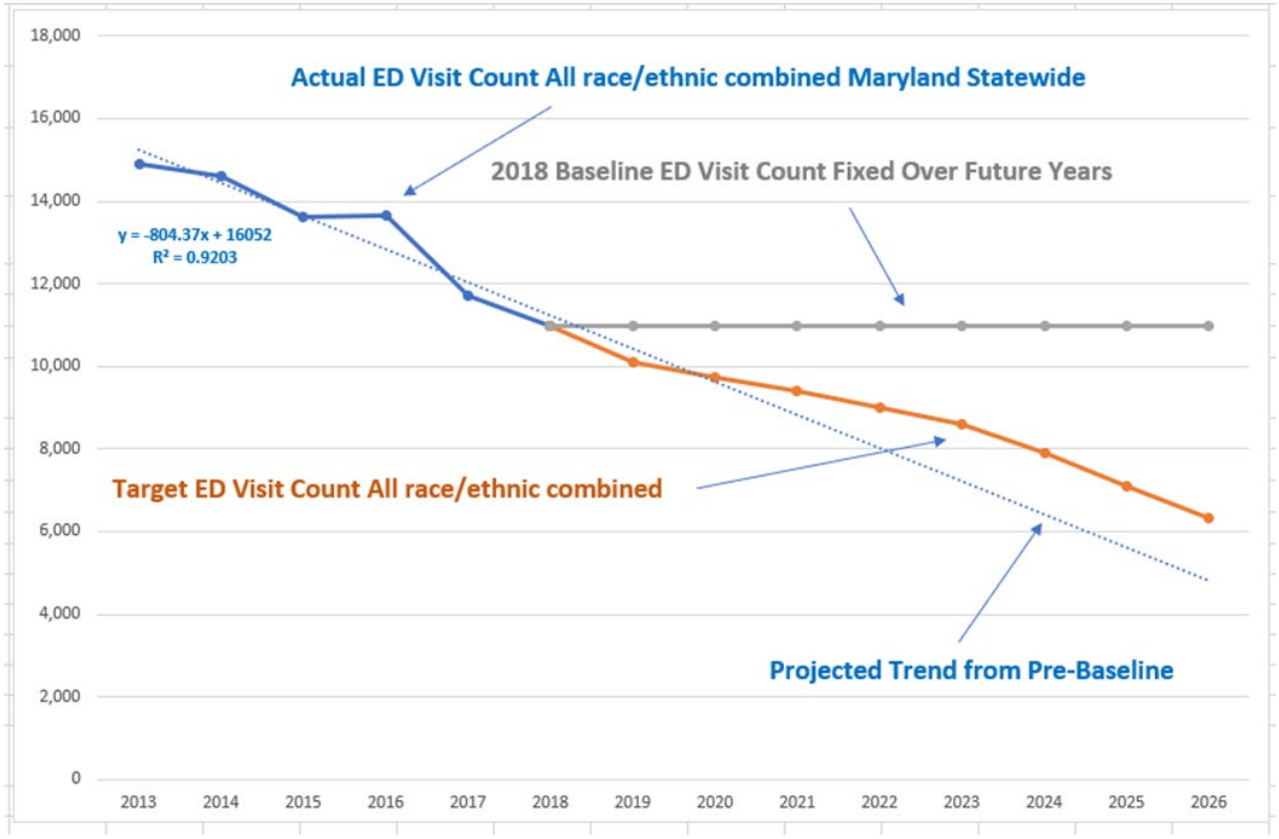


Table 2. Asthma-related ED Visit Rate for ages 2-17 years old

Population	Baseline (2018)	2023	2026	Absolute change	Relative Percentage Change
Total	**9.2**	**7.2**	**5.3**	**3.9**	**42%**
White	4.1	3.5	3.0	1.1	26%
Black	19.1	14.36	9.6	9.6	50%
Asian	2.7	2.6	2.5	0.2	9%
Hispanic	5.4	4.7	4.0	1.4	25%
Other	10.6	7.30	5.5	5.1	48%