



**591st Meeting of the Health Services Cost Review Commission
January 12, 2022**

(The Commission will begin in public session at 11:30 am for the purpose of, upon motion and approval, adjourning into closed session. The open session will resume at 1:00pm)

EXECUTIVE SESSION

11:30 am

1. Discussion on Planning for Model Progression – Authority General Provisions Article, §3-103 and §3-104
2. Update on Administration of Model - Authority General Provisions Article, §3-103 and §3-104
3. Update on Commission Response to COVID-19 Pandemic - Authority General Provisions Article, §3-103 and §3-104

PUBLIC MEETING

1:00 pm

1. Review of Minutes from the Public and Closed Meetings on December 8, 2021
2. Docket Status – Cases Closed
2573A – University of Maryland Medical Center 2574A – Johns Hopkins Health System
2575A – Johns Hopkins Health System 2576A – Johns Hopkins Health System
2577A – Johns Hopkins Health System
3. Docket Status – Cases Open
2569N – Greater Baltimore Medical Center 2578A – University of Maryland Medical Center
2579A – Johns Hopkins Health System 2580R – Brook Lane Hospital
4. HSCRC Response to Surge
5. Hospital Request for Mid-Year Rate Update
6. Final Recommendation on Maryland Hospital Acquired Conditions (MHAC) for RY 2024
7. Policy Update and Discussion
 - a. Model Monitoring
 - b. CRISP Learning Collaborative
 - c. Workgroup Update

8. Hearing and Meeting Schedule

**Closed Session Minutes
of the
Health Services Cost Review Commission**

December 8, 2021

Upon motion made in public session, Chairman Kane called for adjournment into closed session to discuss the following items:

1. Discussion on Planning for Model Progression– Authority General Provisions Article, §3-103 and §3-104
2. Update on Administration of Model - Authority General Provisions Article, §3-103 and §3-104
3. Update on Commission Response to the COVID-19 Pandemic – Authority General Provisions Article, §3-103 and §3-104

The Closed Session was called to order at 11:34 a.m. and held under authority of §3-103 and §3-104 of the General Provisions Article.

In attendance via conference call in addition to Chairman Kane were Commissioners Antos, Bayless, Cohen, Elliott, Joshi, and Malhotra.

In attendance via conference call representing Staff were Katie Wunderlich, Allan Pack, William Henderson, Jerry Schmith, Geoff Daugherty, Will Daniel, Alyson Schuster, Claudine Williams, Megan Renfrew, Xavier Colo, Amanda Vaughn, Bob Gallion, and Dennis Phelps.

Also attending via conference call were Eric Lindemann, Commission Consultant, and Stan Lustman, Commission Counsel.

Item One

Eric Lindemann, Commission Consultant, updated the Commission on Maryland Medicare Fee-For-Service TCOC versus the nation.

Item Two

William Henderson, Director-Medical Economics & Data Analytics, updated the Commission and the Commission discussed hospitals' financial condition.

Item Three

Megan Renfrew, Associate Director-External Affairs, summarized and the Commission and Staff discussed the Commission's Budget User Fee Cap.

Item Four

Katie Wunderlich, Executive Director, reported that the Population Health Workforce Support of Disadvantaged Areas grant Program will not be continued.

The Closed Session was adjourned at 1:15 p.m.

MINUTES OF THE
590th MEETING OF THE
HEALTH SERVICES COST REVIEW COMMISSION
December 8, 2021

Chairman Adam Kane called the public meeting to order at 11:34 a.m. Commissioners Joseph Antos, PhD, Victoria Bayless, Stacia Cohen, James Elliott, M.D., Maulik Joshi, DrPH, and Sam Malhotra were also in attendance. Upon motion made by Commissioner Antos and seconded by Commissioner Elliott, the meeting was moved to Closed Session. Chairman Kane reconvened the public meeting at 1:23 p.m.

REPORT OF DECEMBER 8, 2021 CLOSED SESSION

Mr. Dennis Phelps, Deputy Director, Audit & Compliance, summarized the minutes of the December 8, 2021 Closed Session.

ITEM I
REVIEW OF THE MINUTES FROM THE NOVEMBER 10, 2021
CLOSED SESSION AND PUBLIC MEETING

The Commissioners voted unanimously to approve the minutes of the November 10, 2021 Public meeting and Closed Session.

ITEM II
CASES CLOSED

2572A- University of Maryland Medical Center

ITEM III
OPEN CASES

2569N- Greater Baltimore Medical Center
2573A- University of Maryland Medical Center
2574A- Johns Hopkins Health System
2575A- Johns Hopkins Health System
2576A- Johns Hopkins Health System
2577A- Johns Hopkins Health System
2578A- University of Maryland Medical Center

Adam Kane, Esq
Chairman

Joseph Antos, PhD
Vice-Chairman

Victoria W. Bayless

Stacia Cohen, RN, MBA

James N. Elliott, MD

Maulik Joshi, DrPH

Sam Malhotra

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Katie Wunderlich
Executive Director

Allan Pack
Director
Population-Based Methodologies

Tequila Terry
Director
Payment Reform & Provider Alignment

Gerard J. Schmith
Director
Revenue & Regulation Compliance

William Henderson
Director
Medical Economics & Data Analytics

2579A- Johns Hopkins Health System
2580R- Brook Lane Hospital

ITEM IV
PRESENTATION ON COVID-19 COMMUNITY VACCINATION PROGRAM

Ms. Erin Schurmann, Chief, Provider Alignment and Special Projects, presented an update on the COVID-10 Community Vaccination Program (see COVID-19 Community Vaccination Program- Midyear Program Update) available on the HSCRC website.

In March 2020, the Commission approved the COVID-19 Community Vaccination Program from May 2021 through the end of FY 2022 to support the State's effort to increase vaccination rates, particularly for underserved and vulnerable populations. The program provides short-term funding to hospitals. It allows for the optimization/expansion of their community-based vaccine dissemination strategies in areas with vaccine rates lower than the State average. Hospitals volunteered to oversee vaccination efforts in over 200 zip codes identified by the Vaccination Equity Task Force or collaborate with Local Health Departments in disadvantaged, underserved, vulnerable, and hard-to reach areas.

The HSCRC awarded \$12 million to 12 hospital systems in Maryland to expand hospitals' existing mobile and community-based vaccination programs and improve existing programs

Johns Hopkins Health System

Mr. Ben Bigelow, Director COVID-19 Mobile Vaccine Clinics, John Hopkins Health System (JHHS), provided an update on JHHS's COVID-19 Community Vaccination Program (see "HSCRC COVID-19 Community Vaccination Program") available on the HSCRC website.

JHHS received \$1.653 million in funding through from the HSCRC to operate a community vaccination program for its four Maryland Hospital

- Johns Hopkins Hospital
- Bayview Medical Center
- Howard County General Hospital
- Suburban Hospital

JHHS initial dose projection was 19,800 doses of the vaccine administered by the end of June 2022. As of November 30, 2021, JHHS has administered 20,273 doses.

JHHS has worked with over 40 community partners to host clinics at their locations. In addition, JHHS relies on a network of 100+ partners to share information about our events. JHHS partners include:

- Sacred Heart Church, Baltimore
- Henderson Hopkins School, Baltimore
- Megamart Supermarket, Takoma Park & Baltimore
- St. Johns Baptist Church, Columbia
- Salud Y Bienestar, Montgomery County

These community partners assist by providing outreach to the community, acting as ambassadors for vaccine uptake, and hosting events and informational sessions.

JHHS has targeted a number of populations including:

- Latinx—JHHS has vaccinated over 5,000 Latinx individuals who reported having limited English proficiency.
- East Baltimore Residents—through a partnership with BCHD, over 800 doses have been administered in non-traditional locations such as markets, strip malls, and community events.
- Longshoremen and Seafarers—Over 1,000 doses provided in the Port of Baltimore.

Mr. Bigelow noted that in the next six months JHHS will continue to focus on getting more individuals vaccinated with their 1st and 2nd doses as well as providing booster doses.

Mr. Bigelow stated that JHHS plans to increase its educational sessions with community members who are vaccinated about COVID-19 and the efficacy of the vaccines. The goal is to enable vaccinated members to answer questions from family and friends that are vaccine hesitant.

Mr. Bigelow stated that at their booster clinic, staff encourage individuals to bring family and friends that are unvaccinated so that staff has the opportunity to talk to parents about the importance of their children being vaccinated.

Chairman Kane asked if JHHS feels that there are any other community outreach opportunities, particularly in terms of population health initiatives.

Mr. Bigelow stated that there are many other opportunities for community outreach. In addition, JHHS has established relationships within the community that it hopes will be key to address any knowledge gaps identified through this program.

Chairman Kane asked if JHHS has partnered with Priority Partners or other Managed Care Organizations (MCOs).

Mr. Bigelow stated that they have tried, but that Priority Partners have been unresponsive to JHHS' requests.

Meritus Health

Mr. Allen Twig, Executive Director, Meritus Health, and David White, Manager of Reimbursement and Strategy, Meritus Health provided an update on Meritus Health COVID-19 Community Vaccination Program (see “Meritus Health HSCRC Mobile Vaccination Clinic”) available on the HSCRC website.

Meritus received \$453,333 in funding through from the HSCRC to operate a community vaccination program. Meritus dose projection was 7,500 doses of the vaccine administered by the end of June 2022. As of November 30, 2021, JHHS has administered 4,564 doses as of 11/30/21.

Meritus has worked with over 20 community partners to host clinics at their locations. These community partners include convenience stores, churches, public and private business, YMCA, Goodwill, Children in Need, shelters, medical practices, and schools.

Meritus plans for the next 6 months are as follows:

- Anticipate increase in pediatric and booster needs
- New pediatric clinics beginning Dec. 1
- Increase outreach to Hispanic community, churches, markets, employers
- Coordinating with Maryland Physicians Care to reach unvaccinated members
- Shelters and unhoused population during cold weather
- Friends and family plan
- Continue with convenience store locations

Chairman Kane asked Mr. Twigg if he thought that Meritus was beginning to experience diminishing returns in their vaccine education and outreach efforts. Mr. Twigg responded that

Meritus reached the most accessible. However, Meritus believes that additional individuals, particularly in harder-to-reach areas, will continue to choose to get vaccinated in the coming months.

Chairman Kane asked if Meritus feels that there could be any other applications of this community outreach, particularly in terms of population health initiatives.

Mr. Twigg replied that going back to these communities to distribute vaccines has allowed Meritus to create relationships with rural communities that are harder to reach. Eventually, Meritus hopes to use these sites to deliver preventive healthcare services in the community.

ITEM V **REPORT ON COMMUNITY BENEFIT ACTIVITIES FOR FY 2020**

Mr. Willem Daniel, Deputy Director, Payment Reform and Stakeholder Alignment, and Laura Spicer, Director, Health Reform Studies, The Hilltop Institute, presented Staff's FY 2019 Community Benefit Report. (See "Maryland Hospital Community Benefit Report FY 2020") available on the HSCRC website.

The term community benefit refers to initiatives, activities, and investments undertaken by tax exempt hospitals to improve the health of the communities they serve. Maryland law defines community benefit as a planned, organized, and measured activity that is intended to meet identified community health needs within a service area. Examples of community benefit activities may include the following:

- Community health services
- Health professional education
- Research
- Financial contributions
- Community-building activity, including partnerships with community-based organizations
- Charity care
- Mission-driven health services

Hospital community benefit information, including a financial and narrative report, is collected each year. FY 2020 marks the 17th annual community benefit report. HB 1169/SB0774 of the 2020 Legislative Session updated §19-303 of the Health General Article by changing community benefit reporting requirements. These updates include:

- Updating the definition of community benefit

- More closely tying initiatives back to the Community Health Needs Assessment (CHNA)
- Requiring a list of tax exemptions that the hospital claimed during the preceding year.

To implement these new requirements, the HSCRC convened the Consumer Standing Advisory Committee and a technical subgroup in the summer and fall of 2020 and submitted a legislative report with recommendations in December 2020. Some changes will be optional for FY 2021 reporting; The HSCRC will require all changes for FY 2022.

Key changes to the Financial Report are as follows:

- The financial reporting will be split into three sections:
 - a) Hospital Community Benefit summary spreadsheet
 - b) Itemized Hospital Community Benefit expenditures that address CHNA priority areas
 - c) Itemized physician subsidy expenditures
- Clearer reporting of rate support as off-setting revenue
- Allowing for separate indirect cost ratios for hospital community-based services
- Forthcoming: Additional guidance on mission-driven services/physician subsidies.

Key changes to the Narrative Report are as follows:

- Self-assessment of community engagement in the CHNA process
- Engagement in CHNA recommended practices, as identified by the Maryland Hospital Association
- Clearer guidance on reporting justifications for physician subsidies
 - a) For each line-item physician subsidy listed in the financial report, explain why physicians needed each subsidy.
- Indicating initiatives that address Statewide Integrated Health Improvement Strategy (SIHIS) goals
- Listing of tax exemptions
 - a) State/Local
 - b) Federal

Chairman Kane questioned why HSCRC considers the Medicaid Deficit Assessment to be a community benefit.

Ms. Spicer responded that while this cost is predominantly passed through rates to payers, hospitals still end up bearing a portion of the cost.

Mr. Jerry Schmith, Director, Revenue and Regulation Compliance stated that Staff estimated that the amount borne by hospitals was approximately \$56M in CY 2020.

Mr. Daniel explained that while hospitals don't choose to participate in the Medicaid Deficit Assessment, Staff believes that they should receive credit for any spending that benefits the community's health needs.

Commissioner Joshi asked if there was a threshold amount that hospitals should be spending on community benefits.

Ms. Spicer replied that neither the IRS nor the State has a threshold for community benefit spending.

Mr. Daniel noted that taxes assessed on for-profit industries could serve as a loose proxy for estimating appropriate levels of community benefit spending.

ITEM VI
FINAL RECOMMENDATION ON MEDICARE PERFORMANCE ADJUSTMENT FOR
CY 2022

Mr. Willem Daniel presented Staff's final recommendation for the Medicare Performance Adjustment for CY 2022 (see "Medicare Performance Adjustment Final Recommendation" available on the HSCRC website).

The Medicare Performance Adjustment (MPA) is a required element for the Total Cost of Care Model and is designed to increase the hospital's individual accountability for total cost of care (TCOC) in Maryland. Under the Model, hospitals bear substantial TCOC risk in the aggregate. However, for the most part, the TCOC is managed on a statewide basis by the HSCRC through its GBR policies. The MPA was intended to increase a hospital's individual accountability for the TCOC of Marylanders in their service area. In recognition of large risk borne by the hospitals collectively through the GBR, the MPA has a relatively low amount of revenue at risk (i.e. 1 percent of Medicare fee-for-service revenue).

The MPA includes two "components": a Traditional Component, which holds hospitals accountable for the Medicare total cost of care (TCOC) of an attributed patient population, and an Efficiency Component, which rewards hospitals for the care redesign interventions. These two components are added together and applied to the amount that Medicare pays the hospitals. The MPA is applied as a discount to the amount that Medicare pays on each claim submitted by the hospital.

In November 2019, the Commission directed staff to explore potential changes to the MPA based on feedback from the industry and other stakeholders via its Total Cost of Care Workgroup and other meetings. Based on this review, Staff concluded that the multi-step attribution method has both strengths and weaknesses. Attribution based on primary care visits aligns with clinical relationships that, presumably, have significant influence over the TCOC of the attributed beneficiaries. However, the multi-step attribution method is complex. Hospitals and staff spend a significant amount of time and energy analyzing the MPA attribution and its complexity has led to questions about whether a hospital's performance is due to the hospital's efforts or due to the eccentricities of the attribution algorithm.

Per CMMI responses to the MPA Proposal, Staff updates to the draft MPA recommendation presented in September include the changes and continuations of the following components:

Revised Attribution Methodology:

Staff recommends adjusting the attribution algorithm for CY 2022 in two respects:

- All Medicare beneficiaries that reside within the hospital's PSAP service area will be attributed to the hospital.
 - a) Beneficiary duplication will be allowed for zip codes shared between hospitals and will be attributed to both hospitals
 - b) Any zip code that is not in any one hospital's PSAP will be assigned to a hospital by the HSCRC
- Academic Medical Centers will have an alternative attribution.
 - a) The PSAP attribution results in "too few" dollars attributed to the AMCs.
 - b) As an alternative, HSCRC intends to work with the AMCs to create an alternative attribution for the two AMCs
 - c) The AMC attribution will be based on a hospital "touch" attribution for beneficiaries with CMI above 1.5

CTI Buyout Recommendation:

Care Transformation Initiatives (CTI) buyout will end effective December 31, 2021. While Staff believes that the traditional MPA is not the most effective tool for holding hospitals accountable, CMS did not approve the CTI buyout. CMMI thinks that the conventional MPA remains vital because it holds hospitals directly responsible for the TCOC of all Maryland beneficiaries.

Quality Adjustment:

Staff will work with HSCRC stakeholders to increase quality adjustment weights under both CTI and MPA mechanisms in future years. Staff believes that quality programs should be all-payer. Therefore, Staff intends to work on additional quality programs that would hold hospitals

accountable for improving the Statewide Integrated Improvement Strategy (SIHIS) measures and develop the program as an all-payer program.

Revenue at Risk:

CMS requested that the State increase the revenue at risk under the MPA.

- Currently, the revenue at risk is limited to 1% of hospitals' Medicare FFS revenue.
- Staff believes that hospitals have sufficient risk under the MPA given the historical volatility in the MPA outcomes and attribution.
- Staff will work with CMMI and the industry to assess the level of revenue at risk under existing hospital quality programs and the most appropriate level of revenue at risk under the MPA.

Staff's final recommendation for the revisions to the MPA policy for CY2022 are as follows:

1. Replace the existing multi-step MPA attribution with geographic attribution, with an additional attribution layer for Academic Medical Centers for calendar year 2022.
2. Maintain the other aspects of the MPA with the following exceptions:
 - a) Modify the Supplemental MPA attribution to be based on HSCRC's MDPCP-like attribution;
 - b) Add additional attribution for beneficiaries participating in the Episode Quality Improvement Program (EQIP).

Mr. Brett McCone, Senior Vice President of Healthcare Payment, Maryland Hospital Association (MHA), stated that MHA originally agreed with the geographic attribution, contingent upon CMMI's approval of the CTI buyout. However, CMMI's rejection of the buyout component changes MHA's position. MHA generally agrees with Staff on the other points of MPA Policy recommendation. Mr. McCone expressed concern about the overall revenue at risk. He would like to see a quantification of payment at risk across all HSCRC programs to eventually understand the aggregate impact.

Commissioner Kane questioned why CMMI objected to the CTI buyout recommendation.

Mr. Daniel replied that a core tenant of the MPA is the attribution of at least 95% of beneficiaries to a hospital. While allowing hospitals to buy out of the MPA with CTI performance may result in identical dollar amounts, CTIs would not necessarily attribute 95% of beneficiaries. In addition, geographic attribution allows each beneficiary to be attributed to a hospital, while the CTI does not consider this.

Commissioner Kane asked Mr. McCone whether he believed that the primary care attribution method was better than geographic attribution.

Mr. McCone stated that the prior approach better mirrored the relationships between beneficiaries and care providers.

Commissioner Kane then asked if this is primarily an issue for Baltimore City.

Mr. McCone noted that it is an issue for Baltimore City and DC suburbs.

Mr. McCone stated that relationships with providers might be a challenge based on geographic attribution. The old methodology was not perfect and offered at least equal concerns.

Commissioner Kane asked whether Staff recommends continuing CTIs, given CMMI's rejections of the buyout for CY 2022.

Mr. Daniel noted that CMMI rejected the recommendation because of the 95% attribution requirement, not because of the validity or effectiveness of CTIs.

Mr. Daniel noted that there are also CTI objectives embedded in SIHIS.

Commissioner Elliott asked Mr. Daniel if he believes that CMS would be open to CTI buyouts up to a certain threshold.

Mr. Daniel stated that if Staff could guarantee attribution of 95% of beneficiaries to hospitals, he believes that CMS would likely approve.

Commissioners voted unanimously in favor of Staff's recommendation.

ITEM VII
DRAFT RECOMMENDATION ON MARYLAND HOSPITAL ACQUIRED
CONDITIONS FOR RY2024

Dr Alyson Schuster, Deputy Director, Quality Methodologies, presented the draft recommendation for the Maryland Hospital Acquired Conditions Program for Rate Year 2024 (see "Draft Recommendation for the Maryland Hospital Acquired Conditions Program For Rate Year 2024") available on the HSCRC website

The quality programs operated by the HSCRC, including the Maryland Hospital Acquired Conditions (MHAC) program, are intended to ensure that any incentives to constrain hospital

expenditures under the Total Cost of Care Model do not result in declining quality of care. Thus, HSCRC's quality programs reward quality improvements and achievements that reinforce the incentives of the Total Cost of Care Model, while guarding against unintended consequences and penalizing poor performance.

The MHAC program is one of several pay-for-performance quality initiatives that provide incentives for hospitals to improve and maintain high-quality patient care and value over time.

The MHAC policy currently holds 2 percent of inpatient hospital revenue at-risk for complications that may occur during a hospital stay as a result of treatment rather than the underlying progression of disease. Examples of the types of hospital acquired conditions included in the current payment program are respiratory failure, pulmonary embolisms, and surgical-site infections.

This policy affects a hospital's overall GBR and so affects the rates paid by payers at that particular hospital. The HSCRC quality programs are all-payer in nature and so improve quality for all patients that receive care at the hospital.

Historically the MHAC policy included the better of improvement and attainment, which incentivized hospitals to improve poor clinical outcomes that are often emblematic of disparities. The protection of improvement has since been phased out to ensure that poor clinical outcomes and the associated health disparities are not made permanent, which is especially important for a measure that is limited to in-hospital complications. In the future, the MHAC policy may provide direct hospital incentives for reducing disparities, similar to the approved readmission disparity gap improvement policy.

Staff's draft recommendations for the RY 2024 Maryland Hospital Acquired Conditions (MHAC) program are as follows:

1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
 - a) Monitor all PPCs and provide reports for hospitals and other stakeholders.
 - b) Update PPC measures for inclusion in the payment program based on clinical recommendations, statistical characteristics, and recent trends.
2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
3. Continue to assess hospital performance on attainment only.
4. Continue to weigh the PPCs in the payment program by 3M cost weights as a proxy for patient harm.

5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
6. Adjust retrospectively the RY 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.

Commissioner Cohen asked if monitoring attainment has made a difference since PPC rates have continued to worsen since the inception of the MHAC Program.

Dr. Schuster explained that some of the PPC increases are due to low denominators. When evaluating exclusions to the MHAC Program, Staff also considers variations across hospitals, patient safety index, and significance for potential improvement, clinical input, and ambiguous coding. For example, Dr. Schuster explained that the QBR program includes pressure ulcers and, as a result, is not included in MHAC.

Commissioner Cohen questioned how Staff identifies PPCs for inclusion in the MHAC Program.

Dr. Schuster replied that the original All-Payer model contract required the inclusion of all 45 PPCs. Over time, Staff then pared down to the 14 that they felt made the most sense to include.

Commissioner Elliott asked if there had been any consideration of the potential harm to each patient by each PPC.

Dr. Schuster explained that they decided to use 3M weights as part of the redesign. 3M weights estimate the average incremental cost for when the PPC occurs compared to when it does not happen.

Commissioner Elliott expressed concern that using these weights does not consider the potential harm to the patient.

Dr. Schuster added that they use cost as a proxy for harm because there are no harm weights.

As this is a draft recommendation, no Commissioner action is necessary.

ITEM VIII
POLICY UPDATE AND DISCUSSION

Model Monitoring

Ms. Caitlin Cooksey, Deputy Director of Hospital Rate Regulation, reported on the Medicare Fee for Service data for the 8 months ending August 2021. Maryland's Medicare Hospital spending per capita growth was trending close to the nation, with the past several months being favorable. Ms. Cooksey noted that Medicare Nonhospital spending per-capita was trending unfavorably for both Part A and Part B when compared to the nation. Ms. Cooksey noted that Medicare TCOC spending per-capita was unfavorable with the past several months trending close when compared to the nation. Ms. Cooksey noted that the Medicare TCOC guardrail position is 1.19% above the nation thru August. Ms. Cooksey noted that Maryland Medicare hospital and non-hospital growth thru August shows a run rate erosion of \$86,783,000.

Undercharge Update

As part of the RY22 Update Factor recommendation, Staff recommended that the Commission guarantee RY2021 Global Budget Revenues for hospitals. The net statewide undercharge for RY21 is (\$212) million. This includes an overcharge of \$47 million and undercharge of (\$259) million.

Maryland's current CY 2021 guardrail performance with data through July is unfavorable by 1.47 percentage points. The Model tests do not allow the State to be above the nation's Total Cost of Care growth by 1 percentage in any year or above the nation in two consecutive years.

Based on the current guardrail position, Staff intends to provide the following in the January rate update

- Hospitals that were overcharged in RY21 will pay back the entire overcharge and any associated penalties.
- Hospitals that were undercharged in RY2021 will get 1/3 of their net undercharged back in January.
- All unit rate penalties will be assessed, unless the hospital and Staff have an agreement on waiver of penalties.

Future payment of the remaining 2/3 of the RY21 undercharge will be released pending further review of waiver results and RY23 update factor.

ITEM VIII
HEARING AND MEETING SCHEDULE

January 12, 2022 Times to be determined - Go to Webinar

February 9, 2022 Times to be determined – Go to Webinar

There being no further business, the meeting was adjourned at 3:14 pm.

Cases Closed

The closed cases from last month are listed in the agenda

H.S.C.R.C's CURRENT LEGAL DOCKET STATUS (OPEN)

AS OF January 3, 2022

A: PENDING LEGAL ACTION : NONE
 B: AWAITING FURTHER COMMISSION ACTION: NONE
 C: CURRENT CASES:

Docket Number	Hospital Name	Date Docketed	Decision Required by:	Rate Order Must be Issued by:	Purpose	Analyst's Initials
2569N	Greater Baltimore Medical Center	9/8/2021	1/12/2022	3/8/2022	CAPITAL	JS/AP
2578A	University of Maryland Medical System	12/1/2021	N/A	N/A	ARM	DNP
2579A	Johns Hopkins Health System	10/29/2021	N/A	N/A	ARM	DNP
2580R	Brook Lane Hospital	12/7/2021	1/6/2022	5/6/2022	FULL	JS/AP

PROCEEDINGS REQUIRING COMMISSION ACTION - NOT ON OPEN DOCKET

None

File
Status

OPEN

OPEN

OPEN

OPEN



maryland
health services
cost review commission

Greater Baltimore Medical Center Capital Request

1/12/21

Background & Request

Greater Baltimore Medical Center (GBMC) received an approved Certificate of Need (CON) on August 20, 2020

- CON was approved to construct a three-story, 106,083 square foot expansion in front of the main lobby.
- This project will include two thirty bed nursing units and renovate an additional 11,600 square feet.

GBMC requested gross capital funding in the amount of \$2,231,584 as part of the Commission's Capital Funding Policy under a Partial Rate Application

- The hospital did not pursue revenue under full rate review standards and methodology

Capital Review Methodology

The request is capped at the 50/50 blend of the hospital's capital cost share and the peer group average. That value is then scaled for:

- cost per case efficiency,
- total cost of care efficiency,
- current levels of potentially avoidable utilization
- excess capacity.

The methodology then removes costs associated with excess capacity, defined by bed day reductions from 2010-2018. These figures are then marked up for uncompensated care and the governmental payer differential.

- Bed day reductions occurred between 2010-2014 when the hospital was under an 85 percent variable cost factor. As such, staff made no adjustment for excess capacity.
- The Hospitals FY22 mark up was applied to the methodology.

Since the Commission has not been able to update its efficiency methodologies beyond annual filing statistics from RY 2019 due to the confounding effects of the COVID-19 public health emergency, staff has a methodology that is one year in arrears from the typical implementation of its capital policy.

- Staff is recommending applying an additional year of inflation (2.96%) to the eligible capital funding to bring it closer in alignment with current year dollars.

Recommendation

Staff recommend a permanent adjustment of **\$2,097,895** be provided to GBMC when the project is completed and the new site is available for use

- Anticipated opening date is 7/1/23

IN RE: THE PARTIAL RATE * BEFORE THE HEALTH SERVICES
APPLICATION OF * COST REVIEW COMMISSION
GREATER BALTIMORE * DOCKET: 2021
MEDICAL CENTER * FOLIO: 2379
TOWSON, MARYLAND. * PROCEEDING: 2569N

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STAFF RECOMMENDATION

January 12, 2021

Introduction

On August 20, 2020 Greater Baltimore Medical Center (GBMC or the Hospital) received an approved Certificate of Need (CON) to construct a three-story, 106,083 square foot expansion in front of the main lobby. The addition will include two thirty-bed nursing units. The project will also renovate about 11,600 square feet.”¹ This project is part of GBMC’s Master Facility Plan which aims to update the Hospital’s acute care facilities in line with standards while also remaining consistent with modern Facility Guidelines Institute standards. In concert with the approval of the CON and to ensure GBMC can update and modernize their facilities with today’s standards, the Hospital is requesting gross capital funding in the amount of \$2,231,584 as part of the Commission’s capital funding policy.

Hospital Capital Request

GBMC did not pursue a revenue adjustment under full rate review standards, but the HSCRC staff did review the hospital’s capital request under partial rate application standards. In October 2003, the Commission adopted the staff’s recommendation permitting rate increases for major projects approved through a CON under an alternative partial rate application process. The partial rate application process builds on the Inter-Hospital Cost Comparison (ICC) standard methodology, but with adjustments. HSCRC staff recently updated its approach to capital requests to include evaluations of total cost of care efficiency, current levels of potentially avoidable utilization, and excess capacity, in addition to the historical analyses of capital cost efficiency and cost per case efficiency. This updated methodology was approved at the December 11, 2019 Commission meeting.

The focus of the partial rate application is to allow a hospital that has a large capital cost increase associated with a major project to obtain some level of rate support for the capital cost increase to the extent that the Hospital’s rates are determined to be reasonable under a Commission-defined methodology.

The Hospital’s partial rate application requests that the HSCRC grant a revenue increase equal to the total projected incremental capital costs associated with the regulated portion of the project. The CON includes projected average annual interest cost of \$1,987,716 and first year depreciation cost of \$4,435,576 for a total of \$6,423,892 in annual capital cost. The rate increase of \$6,381,370 requested by GBMC for capital is comprised of 100 percent of the portion of the

¹https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/2020_decisions/con_gbmc_2439_decision_20200820.pdf

project that relates to regulated services and is deemed eligible for financing per the Maryland Health Care Commission (MHCC) approved CON.²

The Hospital is requesting that approximately one third of the \$6,381,370 (plus mark up for uncompensated care and payer differential) in additional capital costs be added to rates at the time of the opening of the new facility. The reduced request reflects GBMC's acknowledgement of the scaling in the capital financing methodology.

The Hospital has assumed an interest rate of approximately 4 percent for the project in its partial rate application for capital. The Hospital proposed to finance the project using Maryland Health and Higher Educational Facilities Authority (MHHEFA) bonds under GBMC Healthcare, Inc.. According to the audited financial statements for GBMC Healthcare, Inc. for the year ended June 30, 2021, GBMC Healthcare, Inc. issued \$73.7 million of bonds in Fiscal Year 2017 at an interest rate of 3.14 percent . The interest rate on such bonds was modified to 2.56 percent on September 16, 2021. Additionally, GBMC Healthcare, Inc. obtained a \$25.7 million taxable term note in Fiscal Year 2017 at an interest rate of 3.83 percent. The interest rate on this note was modified to 3.26 percent on September 16, 2021. For purposes of the partial rate application model, staff used an interest rate of 3.17 percent.

Under the HSCRC's historical capital methodology, GBMC's request would have been capped at the 50/50 blend of a hospital's capital cost share (inclusive of the new request's first year estimated depreciation and interest costs) and the peer group average capital cost share, and that value would be scaled for cost per case efficiency. Using the recently updated HSCRC capital methodology, the capital request from GBMC will continue to be capped at the 50/50 blend of the hospital's capital cost share (inclusive of the new request's annualized estimate for depreciation and interest) and the peer group average, and that value will be scaled for cost per case efficiency, total cost of care efficiency, current levels of potentially avoidable utilization, and excess capacity.

Specifically, the allowed, regulated portion of GBMC's capital project of \$99,776,721 has an annualized depreciation figure for a 24.4-year useful facility of \$4,089,210 and an annualized interest figure of \$1,832,499 on a 30-year loan with a 3.17 percent interest rate. Combined, the depreciation and interest bring GBMC's current capital cost share of 8.38 percent to 9.82

² The MHCC noted in its CON review that "Any future changes relating to this project that result in adjustments in rates set by the HSCRC shall exclude \$8,451,328, which is the estimated new construction cost that exceeds the MVS guideline and portions of the contingency allowance and inflation allowance that are based on the excess construction cost."

https://mhcc.maryland.gov/mhcc/pages/hcfs/hcfs_con/documents/2020_decisions/con_gbmc_2439_decision_20200820.pdf

percent, an increase of 1.43 percentage points (or \$31,258,200 to \$37,179,909). Averaging the requested capital share of 9.82 percent to the peer group average of 8.48 percent yields an allowed capital cost share of 9.15 percent, which equates to a 0.76 percentage point increase in capital costs, or \$3,083,602

After this figure is derived, the new capital methodology then scales the result by the integrated efficiency of hospital cost per case and total cost of care, which is a relative ranking of hospitals that provides approximately 2 percent for each additional increase in ranking. In the case of GBMC, which is the best hospital in the third quintile of performance, the hospital is entitled to 60 percent of the allowed capital cost share, or \$1,850,161 (60 percent of \$3,083,602).

Staff has also provided a credit to hospitals that have lower levels of PAU, as defined by 30-day readmissions and avoidable admissions for PQIs. GBMC's performance is in the middle of the second quintile of performance and higher than the state average performance (17.7 percent compared to the statewide average of 17.17 percent), thus it earns no credit.

The final two steps of the methodology are to remove costs associated with excess capacity, as defined by reductions in bed days from 2010 to 2018, and to markup these cost-based figures for uncompensated care and the governmental payer differential. GBMC experienced a reduction of 2,772 bed days since 2010; however, the reduction occurred exclusively during the 2010 to 2014 time period when the Commission had a 85 percent volume variable system, i.e. 85 percent of the revenue associated with volume reductions was removed from the hospitals permanent revenue base, so there is no adjustment for excess capacity. The Hospital's markup in Fiscal Year 2022 was 1.1013; therefore, the capital allotment GBMC is eligible for is \$2,037,583.

Lastly, since the Commission has not been able to update its efficiency methodologies beyond annual filing statistics from RY 2019 due to the confounding effects of the COVID-19 public health emergency, staff has a methodology that is one year in arrears from the typical implementation of its capital policy. As such, staff is recommending applying an additional year of inflation to the eligible capital funding to bring it closer in alignment with current year dollars. The \$2,037,583 will be inflated by 2.96% that was provided in the RY2020 Update Factor, which yields a final permanent revenue adjustment of \$2,097,895.

[Staff Recommendation](#)

Based on the analysis described in the prior section of this document, staff recommends a permanent adjustment of \$2,097,895 be provided to GBMC when the project is completed and the new site is available for use. This opening date of this project is anticipated to become effective on July 1, 2023.

**IN RE: THE APPLICATION FOR
ALTERNATIVE METHOD OF RATE
DETERMINATION**

**UNIVERSITY OF MARYLAND
MEDICAL CENTER
BALTIMORE, MARYLAND**

*** BEFORE THE MARYLAND HEALTH
* SERVICES COST REVIEW**

*** COMMISSION**

*** DOCKET: 2021**

*** FOLIO: 2388**

*** PROCEEDING: 2578A**

Staff Recommendation

January 12, 2022

I. INTRODUCTION

The University of Maryland Medical Center (“the Hospital”) filed a renewal application with the HSCRC on December 1, 2021 for an alternative method of rate determination, pursuant to COMAR 10.37.10.06. The Hospital requests approval from the HSCRC to continue to participate in a global rate arrangement for solid organ and blood and bone marrow transplant services with Humana for a period of eleven months, from January 1, 2022 to November 30, 2022.

II. OVERVIEW OF APPLICATION

The contract will continue be held and administered by University Physicians, Inc. (UPI), which is a subsidiary of the University of Maryland Medical System. UPI will manage all financial transactions related to the global price contract including payments to the Hospital and bear all risk relating to regulated services associated with the contract.

III. FEE DEVELOPMENT

The hospital component of the global rates was developed by calculating mean historical charges for patients receiving the procedures for which global rates are to be paid. The remainder of the global rate is comprised of physician service costs. Additional per diem payments were calculated for cases that exceed a specific length of stay outlier threshold.

IV. IDENTIFICATION AND ASSESSMENT OF RISK

The Hospital will continue to submit bills to UPI for all contracted and covered services. UPI is responsible for billing the payer, collecting payments, disbursing payments to the Hospital at its full HSCRC approved rates, and reimbursing the physicians. The Hospital contends that the arrangement between UPI and the Hospital holds the Hospital harmless from any shortfalls in payment from the global price contract. UPI maintains that it has been active in similar types of fixed fee contracts for several years, and that UPI is adequately capitalized to the bear risk of potential losses.

V. STAFF EVALUATION

The staff reviewed the experience under this arrangement for the last year and found that it was favorable. The staff believes that the Hospitals can continue to achieve a favorable experience under this arrangement.

VI. STAFF RECOMMENDATION

Staff recommends that the Commission approve the Hospital's application for an alternative method of rate determination for solid organ and blood and bone marrow transplant services for eleven months, from January 1, 2022 to November 30, 2022.

Consistent with its policy paper regarding applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the execution of the standard Memorandum of Understanding ("MOU") with the Hospital for the approved contract. This document would formalize the understanding between the Commission and the Hospital, and would include provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the contract, quarterly and annual reporting, confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU will also stipulate that operating losses under the contract cannot be used to justify future requests for rate increases.

**IN RE: THE APPLICATION FOR
ALTERNATIVE METHOD OF RATE
DETERMINATION
JOHNS HOPKINS HEALTH
SYSTEM
BALTIMORE, MARYLAND**

*** BEFORE THE MARYLAND HEALTH
* SERVICES COST REVIEW
* COMMISSION
* DOCKET: 2021
* FOLIO: 2389
* PROCEEDING: 2579A**

**Staff Recommendation
January 12, 2022**

INTRODUCTION

Johns Hopkins Health System (the “System”) filed an application with the HSCRC on October 29, 2021, on behalf of Johns Hopkins Hospital and Johns Hopkins Bayview Medical Center (the “Hospitals”) and on behalf of Johns Hopkins HealthCare, LLC (JHHC) for an alternative method of rate determination, pursuant to COMAR 10.37.10.06. The System requests approval from the HSCRC to add outpatient joint replacement services to the global rate arrangement approved for bariatric surgery, bladder surgery, anal rectal surgery, cardiovascular services, joint replacement surgery, pancreas surgery, spine surgery, thyroid surgery, parathyroid surgery, solid organ and bone marrow transplants, and Executive Health services, eating disorder, gender affirming surgery, and gall bladder surgery with Assured Partners. The Hospitals request that the approval be for the period for one year beginning January 1, 2022.

II. OVERVIEW OF APPLICATION

The contract will be continue to be held and administered by JHHC, which is a subsidiary of the System. JHHC will manage all financial transactions related to the global price contract including payments to the Hospitals and bear all risk relating to regulated services associated with the contract.

III. FEE DEVELOPMENT

The hospital portion of the updated global rates was developed by calculating mean historical charges for patients receiving similar procedures at the Hospitals. The remainder of the global rate is comprised of physician service costs. Additional per diem payments were calculated for cases that exceed a specific length of stay outlier threshold.

IV. IDENTIFICATION AND ASSESSMENT OF RISK

The Hospitals will continue to submit bills to JHHC for all contracted and covered services. JHHC is responsible for billing the payer, collecting payments, disbursing payments to the Hospitals at their full HSCRC approved rates, and reimbursing the physicians. The System contends that the arrangement among JHHC, the Hospitals, and the physicians continues to hold the Hospitals harmless from any shortfalls in payment from the global price contract. JHHC maintains it has been active in similar types of fixed fee contracts for several years, and that

JHHC is adequately capitalized to bear the risk of potential losses.

V. STAFF EVALUATION

The experience under the current arrangement for the last year has been favorable.

VI. STAFF RECOMMENDATION

The staff recommends that the Commission approve the Hospitals' application for an alternative method of rate determination to add outpatient joint replacement services to bariatric surgery, bladder surgery, anal rectal surgery, cardiovascular services, joint replacement surgery, pancreas surgery, spine surgery, thyroid surgery, parathyroid surgery, solid organ and bone marrow transplants, and Executive Health services, eating disorder, gender affirming surgery, and gall bladder surgery approved effective January 12, 2022. The Hospitals will need to file a renewal application for review to be considered for continued participation. Consistent with its policy paper regarding applications for alternative methods of rate determination, the staff recommends that this approval be contingent upon the execution of the standard Memorandum of Understanding ("MOU") with the Hospitals for the approved contract. This document would formalize the understanding between the Commission and the Hospitals and would include provisions for such things as payments of HSCRC-approved rates, treatment of losses that may be attributed to the contract, quarterly and annual reporting, confidentiality of data submitted, penalties for noncompliance, project termination and/or alteration, on-going monitoring, and other issues specific to the proposed contract. The MOU will also stipulate that operating losses under the contract cannot be used to justify future requests for rate increases.



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HSCRC Response to Surge

Public Session

January 2022

HSCRC Response to Surge

- Revised COVID Surge Policy for FY 22
- Accelerate release of FY 21 Undercharge
 - \$124 million funding released for January 2022 rate orders; \$100 million remains
- Delay development and approval of policies
 - Readmissions Reduction program new policy changes delayed
 - Revenue for Reform policy approval and implementation delayed
 - Workgroup meetings suspended
- Ease regulatory reporting burdens
 - Population Health Reporting deadline extend to 3/1
 - Community Benefit Reporting deadline extended to 3/1

FY 22 COVID Surge Policy

- Given the ongoing challenges presented by COVID cases that have not abated, staff recommends refining the policy to supplement traditional GBR with COVID surge reimbursement
- The policy requires revision from previous iterations as that policy was implemented for a period when non-COVID volumes were significantly reduced across the State.
- Staff recommend working with stakeholders to bring specific policy guidance to the Commission for review and approval in late Spring
- Reconciliation at the end of the fiscal year and surge funding included in January 2023 rate orders

FY 22 COVID Surge Policy Continued

The general intent is to reimburse hospitals for high COVID volumes that result in total volumes beyond those covered under their GBR and that are not otherwise reimbursed. Specific consideration will include:

- Focus funding for hospitals with higher than typical COVID volumes
- Focus funding for hospitals with higher than typical total volumes where COVID is a significant contributor to the higher volumes
- Focus funding on COVID cases where a patient is being treated for COVID as primary diagnosis, as opposed to all those with COVID exposure (the original policy used the more generous definition)
- Reduce funding for offsetting alternative sources of funding such as PRF funds.



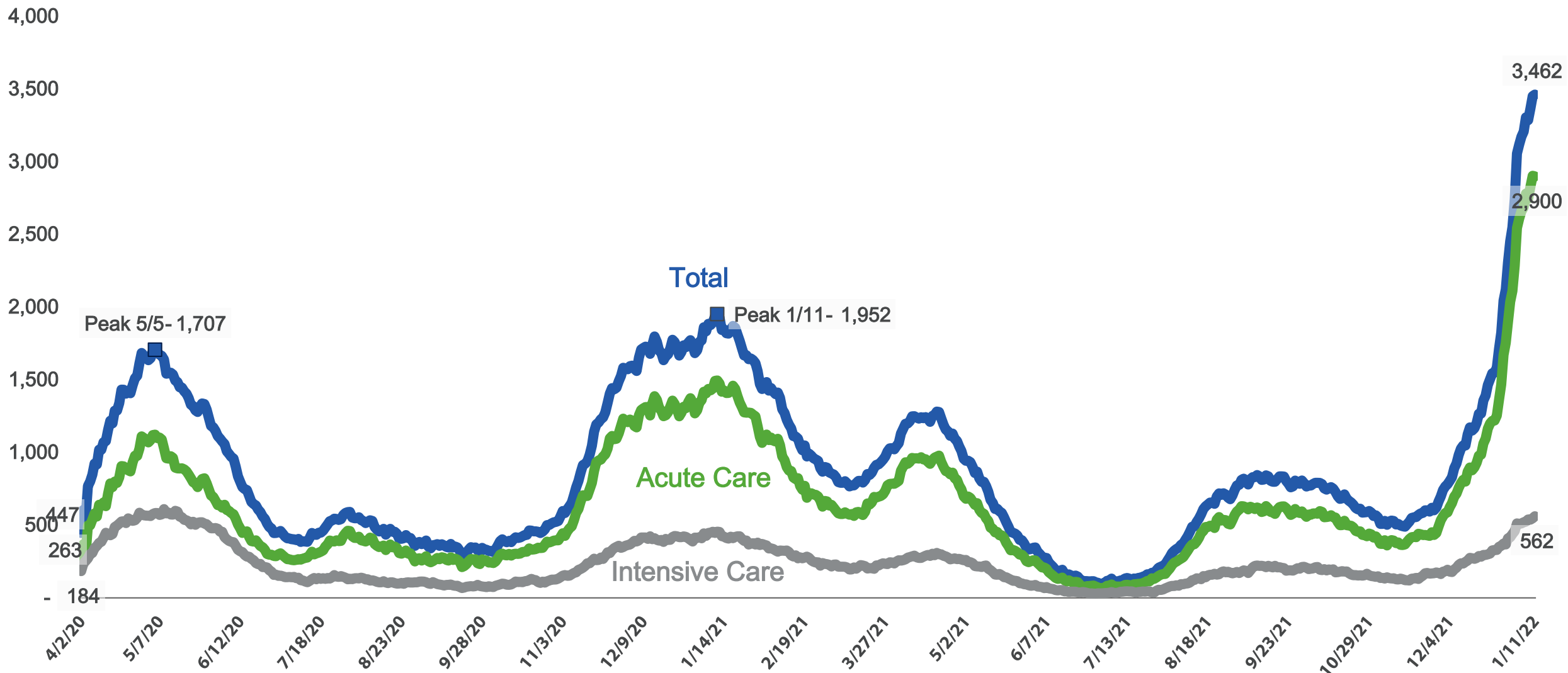
MHA COVID 9 DASHBOARD



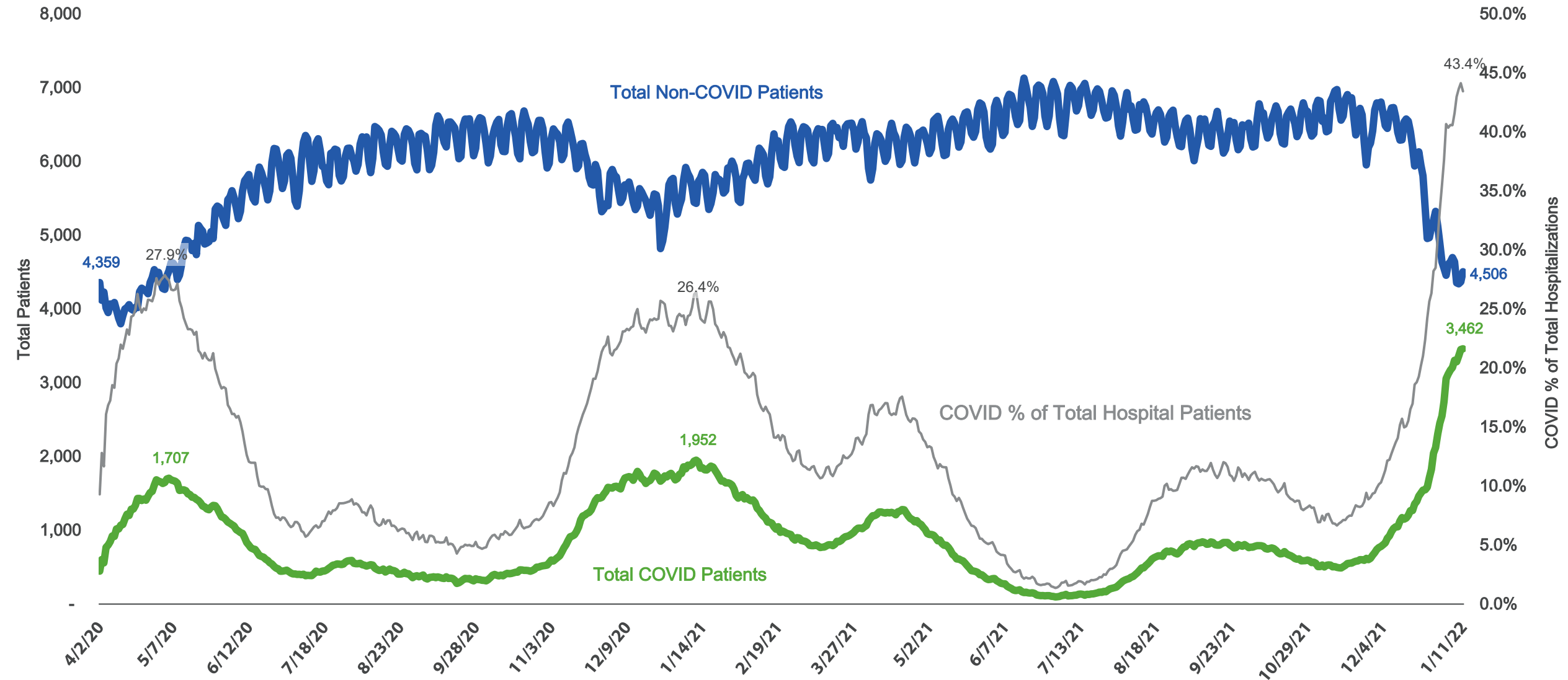
January 12, 2022



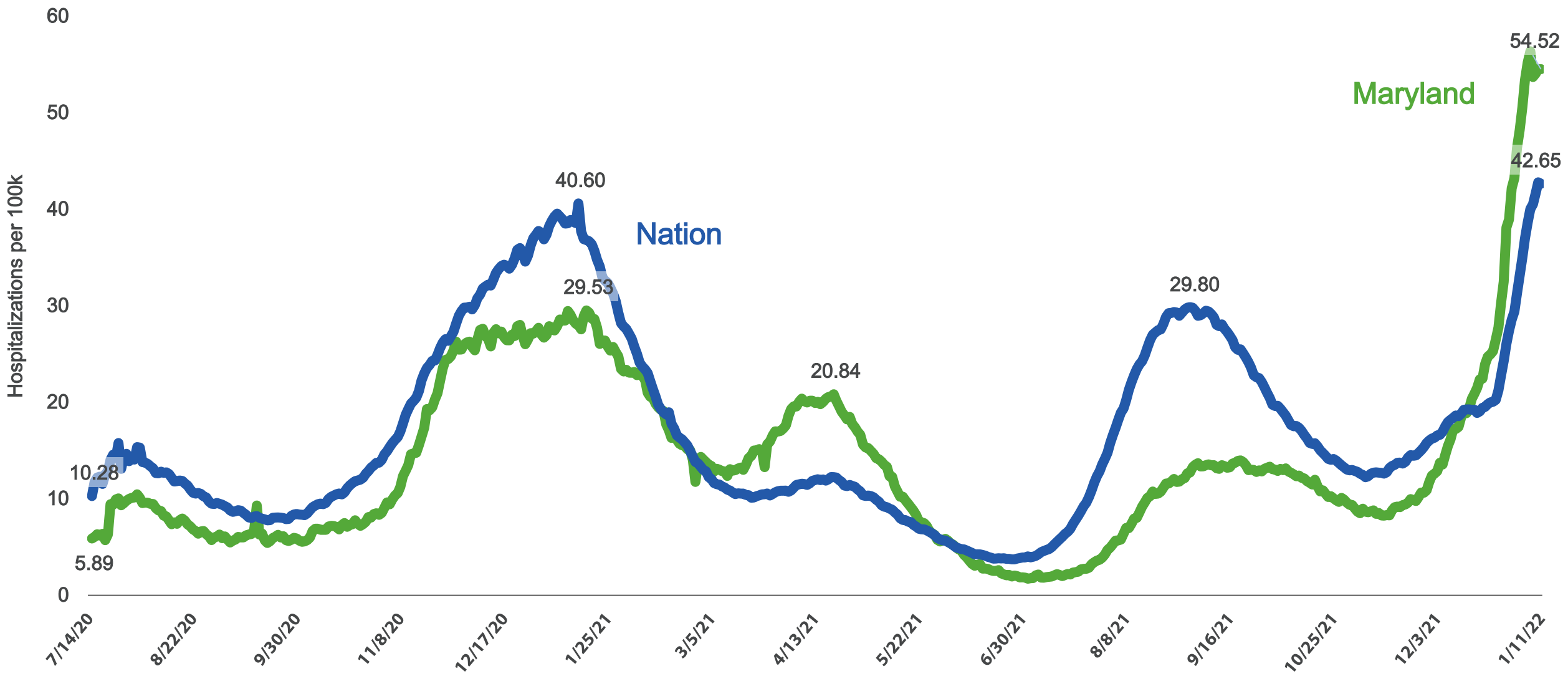
STATEWIDE COVID-19 HOSPITAL INPATIENTS



HOSPITAL CAPACITY COVID VS. NON-COVID PATIENTS



COVID-19 HOSPITAL INPATIENTS PER 100K



Source: Hospitalizations – Healthdata.gov; COVID-19 Reported Patient Impact and Hospital Capacity by State Timeseries





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R.Y. 2024 Final Recommendation for the Maryland Hospital Acquired Conditions (MHAC) Program

January 12, 2022

Stakeholder Feedback and Staff Responses

Stakeholder Input/Concerns: Monitoring PPCs

Maryland Hospital Association (MHA)

Concerned about the recommendation to update the PPC measures included in the payment program:

- Acknowledge concern but believe more time is needed to assess factors driving increases (i.e., reduced focus on coding/documentation vs. poor clinical care)

CareFirst (CF)

Concerned regarding monitoring trends and want timely changes to reverse deterioration in performance that may negatively impact patient care and raise concerns with CMMI.

Three priority PPCs:

- Decubitus Ulcers, mechanical complications of device, implant, or graft, diabetic ketoacidosis and coma.

Staff Response

Staff are concerned with increases in monitoring PPCs and the impact on patient care. For RY 2024, staff propose to do additional analytics on which hospitals/systems are driving statewide increases and to engage these hospitals to understand trends and discuss quality concerns vs. coding and documentation changes. Furthermore, the HSCRC recognizes the burden hospitals are under during the current COVID surge and do not want to further burden hospitals with additional measures at this time.

Final Updated Staff Recommendations

R.Y. 2024 Final Recommendations

- MODIFIED**
1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
 - a. **Maintain a focused list of PPCs in the payment program that are clinically recommended and that generally have higher statewide rates and variation across hospitals.**
 - b. **Assess monitoring PPCs based on clinical recommendations, statistical characteristics, and recent trends to prioritize those for future consideration for updating the measures in the payment program.**
 - c. **Engage hospitals on specific PPC increases to understand trends and discuss potential quality concerns.**
 2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
 3. Continue to assess hospital performance on attainment only.
 4. Continue to weigh the PPCs in the payment program by 3M cost weights as a proxy for patient harm.
 5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
 6. Adjust retrospectively the R.Y. 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.



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Final Recommendation for the Maryland Hospital Acquired Conditions Program for Rate Year 2024

January 12, 2022

This document contains the final staff recommendations for the Maryland Hospital Acquired Conditions Program for RY 2024.

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List of Abbreviations

AHRQ Agency for Health Care Research and Quality

APR-DRG	All Patients Refined Diagnosis Related Groups
CMS	Centers for Medicare & Medicaid Services
CY	Calendar Year
DRG	Diagnosis-Related Group
FFY	Federal Fiscal Year
FY	State Fiscal Year
HAC	Hospital-Acquired Condition
HAI	Hospital Associated Infection
HSCRC	Health Services Cost Review Commission
ICD	International Statistical Classification of Diseases and Related Health Problems
MHAC	Maryland Hospital-Acquired Condition
NHSN	National Healthcare Safety Network
NQF	National Quality Forum
PMWG	Performance Measurement Work Group
POA	Present on Admission
PPC	Potentially Preventable Complication
PSI	Patient Safety Indicator
QBR	Quality-Based Reimbursement
RY	Rate Year
SIR	Standardized Infection Ratio
SOI	Severity of Illness
TCOC	Total Cost of Care
VBP	Value-Based Purchasing
YTD	Year to Date

Key Methodology Concepts and Definitions

Potentially preventable complications (PPCs): 3M originally developed 65 PPC measures, which are defined as harmful events that develop after the patient is admitted to the hospital and may result from processes of care and treatment rather than from the natural progression of the underlying illness. PPCs, like national claims-based hospital-acquired condition measures, rely on **present-on-admission codes** to identify these post-admission complications.

At-risk discharge: Discharge that is eligible for a PPC based on the measure specifications

Diagnosis-Related Group (DRG): A system to classify hospital cases into categories that are similar clinically and in expected resource use. DRGs are based on a patient's primary diagnosis and the presence of other conditions.

All Patients Refined Diagnosis Related Groups (APR-DRG): Specific type of DRG assigned using 3M software that groups all diagnosis and procedure codes into one of 328 All-Patient Refined-Diagnosis Related Groups.

Severity of Illness (SOI): 4-level classification of minor, moderate, major, and extreme that can be used with APR-DRGs to assess the acuity of a discharge.

APR-DRG SOI: Combination of Diagnosis Related Groups with Severity of Illness levels, such that each admission can be classified into an APR-DRG SOI "cell" along with other admissions that have the same Diagnosis Related Group and Severity of Illness level.

Case-Mix Adjustment: Statewide rate for each PPC (i.e., normative value or "norm") is calculated for each diagnosis and severity level. These **statewide norms** are applied to each hospital's case-mix to determine the expected number of PPCs, a process known as **indirect standardization**.

Observed/Expected Ratio: PPC rates are calculated by dividing the observed number of PPCs by the expected number of PPCs. Expected PPCs are determined through case-mix adjustment.

Diagnostic Group-PPC Pairings: Complications are measured at the diagnosis and Severity of Illness level, of which there are approximately 1,200 combinations before one accounts for clinical logic and PPC variation.

Zero norms: Instances where no PPCs are expected because none were observed in the base period at the Diagnosis Related Group and Severity of Illness level.

Policy Overview

Policy Objective	Policy Solution	Effect on Hospitals	Effect on Payers/Consumers	Effects on Health Equity
<p>The quality programs operated by the Health Services Cost Review Commission, including the Maryland Hospital Acquired Conditions (MHAC) program, are intended to ensure that any incentives to constrain hospital expenditures under the Total Cost of Care Model do not result in declining quality of care. Thus, HSCRC's quality programs reward quality improvements and achievements that reinforce the incentives of the Total Cost of Care Model, while guarding against unintended consequences and penalizing poor performance.</p>	<p>The MHAC program is one of several pay-for-performance quality initiatives that provide incentives for hospitals to improve and maintain high-quality patient care and value over time.</p>	<p>The MHAC policy currently holds 2 percent of inpatient hospital revenue at-risk for complications that may occur during a hospital stay as a result of treatment rather than the underlying progression of disease. Examples of the types of hospital acquired conditions included in the current payment program are respiratory failure, pulmonary embolisms, and surgical-site infections.</p>	<p>This policy affects a hospital's overall GBR and so affects the rates paid by payers at that particular hospital. The HSCRC quality programs are all-payer in nature and so improve quality for all patients that receive care at the hospital.</p>	<p>Historically the MHAC policy included the better of improvement and attainment, which incentivized hospitals to improve poor clinical outcomes that are often emblematic of disparities. The protection of improvement has since been phased out to ensure that poor clinical outcomes and the associated health disparities are not made permanent, which is especially important for a measure that is limited to in-hospital complications. In the future, the MHAC policy may provide direct hospital incentives for reducing disparities, similar to the approved readmission disparity gap improvement policy.</p>

Recommendations

The MHAC policy was redesigned in Rate Year (RY) 2021 to modernize the program for the new Total Cost of Care Model. This RY 2024 final recommendation, in general, maintains the measures and methodology that were developed and approved for RYs 2022 and 2023.¹

These are the final recommendations for the RY 2024 Maryland Hospital Acquired Conditions (MHAC) program:

1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
 - a. Maintain a focused list of PPCs in the payment program that are clinically recommended and that generally have higher statewide rates and variation across hospitals.
 - b. Assess monitoring PPCs based on clinical recommendations, statistical characteristics, and recent trends to prioritize those for future consideration for updating the measures in the payment program.
 - c. Engage hospitals on specific PPC increases to understand trends and discuss potential quality concerns
2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
3. Continue to assess hospital performance on attainment only.
4. Continue to weigh the PPCs in the payment program by 3M cost weights as a proxy for patient harm.
5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
6. Adjust retrospectively the RY 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.

¹ See the [RY 2022 policy](#) for detailed discussion of the MHAC redesign, rationale for decisions, and approved recommendations.

Introduction

Maryland hospitals have been funded under a population-based revenue system with a fixed annual revenue cap under the All-Payer Model agreement with the Centers for Medicare & Medicaid Services (CMS) beginning in 2014, and continuing under the current Total Cost of Care (TCOC) Model agreement, which took effect in 2019. Under the global budget system, hospitals are incentivized to transition services to the most appropriate setting of care, and may keep savings that they achieve via improved health care delivery and hospital quality (e.g., reduced avoidable utilization, readmissions, hospital-acquired infections). It is important that the Commission ensure that any incentives to constrain hospital expenditures do not result in declining quality of care. Thus, the Maryland Health Services Cost Review Commission's (HSCRC's or Commission's) quality programs reward quality improvements and achievements that reinforce the incentives of the global budget system, while guarding against unintended consequences and penalizing poor performance.

The Maryland Hospital Acquired Conditions (MHAC) program is one of several quality pay-for-performance initiatives that provide incentives for hospitals to improve and maintain high-quality patient care and value over time. The program currently holds 2 percent of hospital revenue at-risk for hospital acquired complications that may occur during a hospital stay as a result of treatment rather than the underlying progression of disease. Examples of the types of hospital acquired conditions included in the current payment program are respiratory failure, pulmonary embolisms, and surgical-site infections.

For MHAC, as well as the other State hospital quality programs, annual updates are vetted with stakeholders and approved by the Commission to ensure the programs remain aggressive and progressive with results that meet or surpass those of the national CMS analogous programs (from which Maryland must receive annual exemptions). For purposes of the RY 2024 MHAC Policy, staff had two meetings in October and November with the Performance Measurement Workgroup (PMWG), which is a standing advisory group that meets monthly to discuss Quality policies.

Additionally, with the onset of the Total Cost of Care Model Agreement with CMS on January 1, 2019, each program was overhauled to ensure they support the goals of the Model. For the MHAC policy, the overhaul was completed during 2018, which entailed an extensive stakeholder engagement effort that included six meetings with the Clinical Adverse Events Measurement (CAEM) subgroup and two meetings with the PMWG during 2018. The major accomplishments of the MHAC program redesign were focusing the payment incentives on a narrower list of clinically significant complications, moving to an attainment only system given Maryland's sustained improvement on complications, adjusting the scoring methodology to better differentiate hospital performance, and weighing complications by their associated cost weights as a proxy for patient harm. The redesign also assessed how hospital performance is converted to revenue

adjustments, and ultimately recommended maintaining the use of a linear revenue adjustment scale with a hold harmless zone.

In light of the recent MHAC program redesign, and the ongoing COVID-19 Public Health Emergency (PHE), this RY 2024 MHAC policy proposes minimal changes to the program. The assessment section does, however, include an evaluation of PPCs in “Monitoring” status because the approved recommendations for RY 2021 and future rate years included identifying PPCs that due to worsening performance should be included back into the MHAC program. Furthermore, the assessment section outlines necessary timeline changes and the current plan to assess the impact of COVID-19 for both the RYs 2023 and 2024 policy; as with the RY 2023 this policy includes a recommendation to retrospectively adjust the program as needed to provide the fairest assessment of hospital quality.

Background

Exemption from Federal Hospital-Acquired Condition Programs

The Federal Government operates two hospital complications payment programs, the Deficit Reduction Act Hospital Acquired Condition program (DRA-HAC), which reduces reimbursement for hospitalizations with inpatient complications, and the HAC Reduction Program (HACRP), which penalizes hospitals with high rates of complications. Detailed information, including HACRP complication measures, may be found in Appendix I.

Because of the State’s unique all-payer hospital model and its global budget system, Maryland does not directly participate in the federal pay-for-performance programs. Instead, the State administers the Maryland Hospital Acquired Conditions (MHAC) program, which relies on quality indicators validated for use with an all-payer inpatient population. However, the State must submit an annual report to CMS demonstrating that Maryland’s MHAC program targets and results continue to be aggressive and progressive, i.e. that Maryland’s performance meets or surpasses that of the nation. Specifically, the State must ensure that the improvements in complication rates observed under the All-Payer Model through 2018 are maintained throughout the TCOC model. Based on the 2020 PPC results, CMS granted Maryland exemption from the federal pay-for-performance programs (including the HAC Reduction Program) for Federal Fiscal Year 2022 on October 29, 2020.

Overview of the MHAC Policy

The MHAC program, which was first implemented for RY 2011, is based on a system developed by 3M Health Information Systems (3M) to identify potentially preventable complications (PPCs) using present-on-admission for eligible secondary diagnosis codes available in claims data. 3M originally developed

specifications for 65 PPCs², which are defined as harmful events that develop after the patient is admitted to the hospital and may result from processes of care and treatment rather than from the natural progression of the underlying illness. For example, the program holds hospitals accountable for venous thrombosis and sepsis that occur during inpatient stays. These complications can lead to 1) poor patient outcomes, including longer hospital stays, permanent harm, and death; and 2) increased costs. Thus, the MHAC program is designed to provide incentives to improve patient care by adjusting hospital budgets based on PPC performance.

MHAC Methodology

Figure 1 provides an overview of the three steps in the RY 2023 MHAC methodology³ that converts hospital performance to standardized scores, and then payment adjustments, as outlined below:

Step 1. For the PPCs identified for payment, clinically-determined global and PPC-specific exclusions, as well as volume based hospital-level exclusions are identified to ensure fairness in assignment of complications.

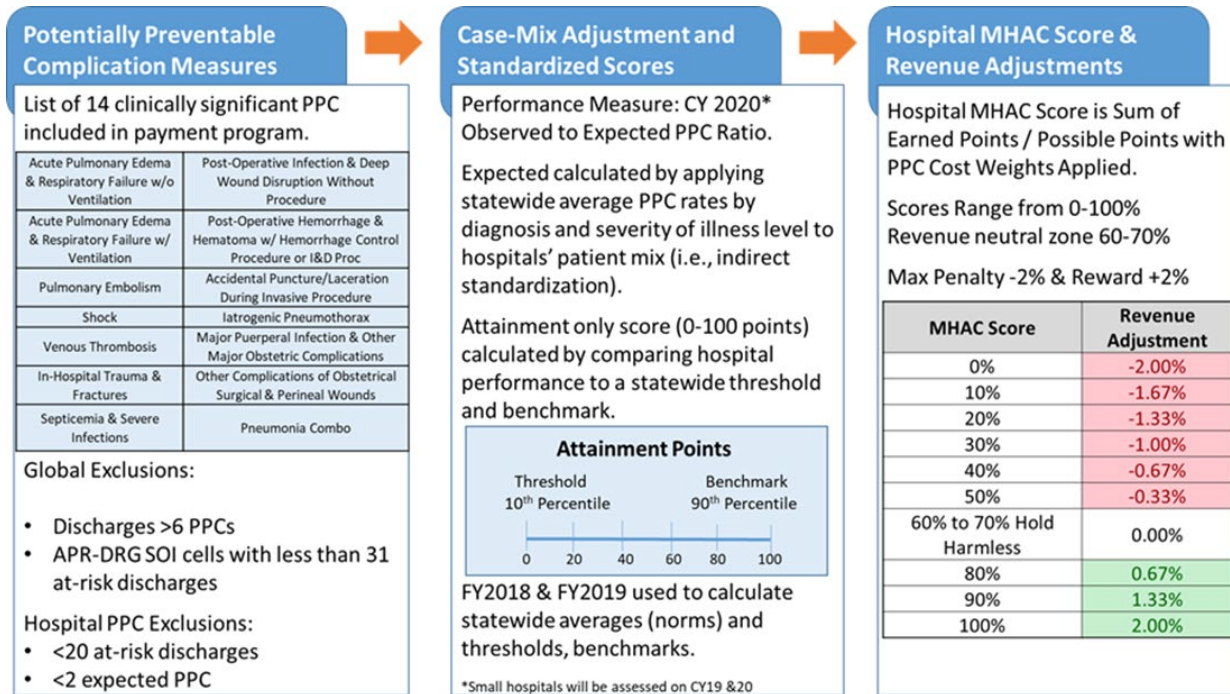
Step 2. Case-mix adjustment is used to calculate observed to expected ratios that are then converted to a standardized point based score (0-100 points) based on each hospital's attainment levels using the same scoring methodology that is used for CMS Value-Based Purchasing and Maryland QBR program.

Step 3. Overall hospital scores are then calculated by taking the points for each PPC and multiplying by the 3M PPC cost weights, then summing numerator (points scored) and denominator (possible points) across the PPCs to calculate a percent score. A linear point scale set prospectively is then used to calculate the revenue adjustment percent. This prospective scaling approach differs from national programs that relatively rank hospitals after the performance period.

Because of the ongoing COVID PHE, staff working with PMWG and other stakeholders is currently considering retrospective adjustments to the approved RY 2023 methodology outlined above and illustrated in Figure 1 below. Among the changes being considered are inclusion versus exclusion of COVID patients, updates to the base and performance periods, and updates to the performance standards. Additional information on the current MHAC policy for RY 2023 can be found in Appendix II.

² In RY 2020, there were 45 PPCs or PPC combinations included in the program, from an initial 65 PPCs in the software, as 3M had discontinued some PPCs and others were deemed not suitable for a pay-for-performance program.

³ Due to COVID-19 PHE, this methodology will need to be retrospectively adjusted, pending future CMS guidance, assessment of performance standards, and to address any future surge in COVID cases.



Assessment

In order to develop the RY 2024 MHAC policy, staff solicited input from the PMWG and other stakeholders. In general, stakeholders support the staff's recommendation to not make major changes to the RY 2024 MHAC program. Staff is still soliciting input on selecting monitoring PPCs with increasing rate trends to include back in the program. This section of the report provides an overview of the data and issues discussed by the PMWG, including analysis of statewide PPC trends—for those used for payment, under monitoring, and overall—and discussion of COVID-19 related changes and analyses that need to be done to fairly assess hospital performance.

Statewide PPC Performance Trends

Complications Included in Payment Program

Under the All-Payer Model, Maryland hospitals saw a dramatic decline in complications and, as a State, well exceeded the requirement of a 30 percent reduction by the end of CY 2018. These reductions were achieved through clinical quality improvement, as well as improvements in documentation and coding.

As mentioned previously, the MHAC redesign assessed which PPCs should be included in the pay-for-performance program based on criteria developed by the Clinical Adverse Events Measures (CAEM) subgroup that are outlined in the “Monitored Complications” section below.

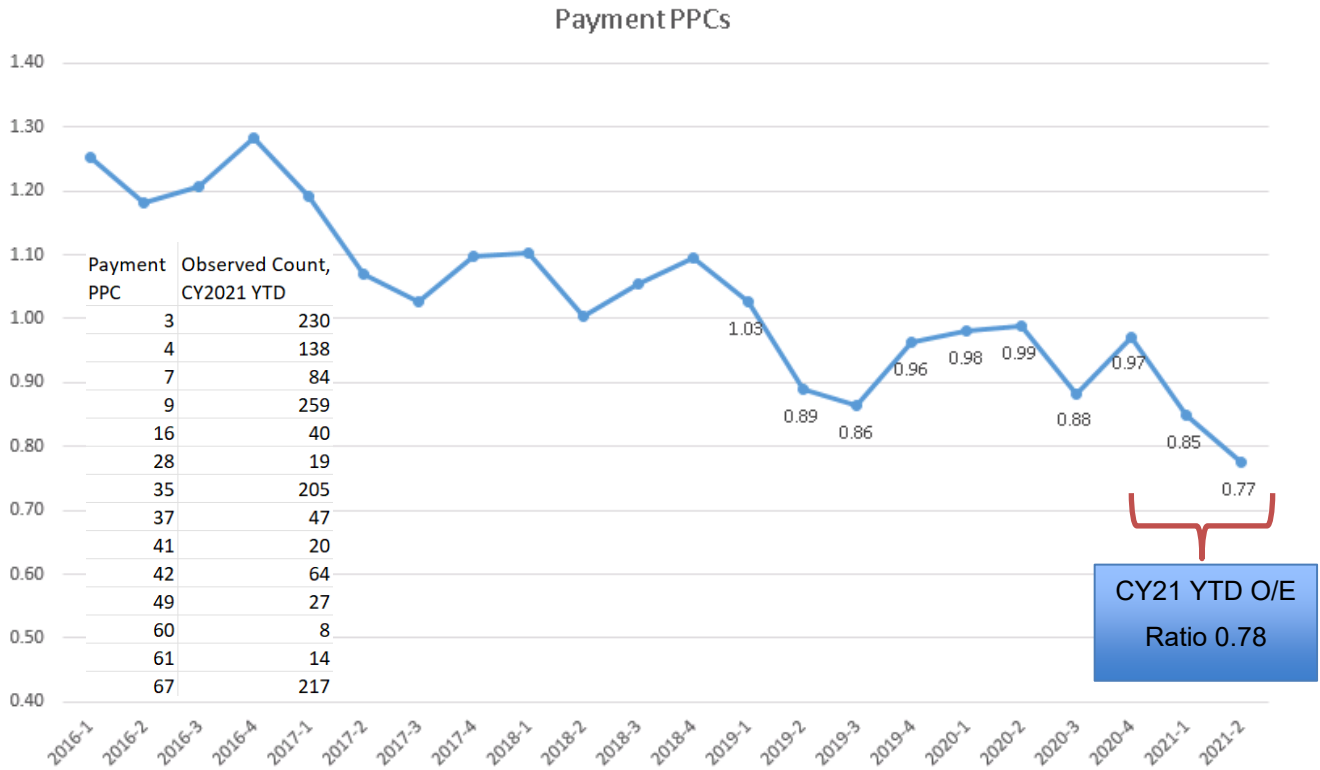
Under the TCOC Model, Maryland must maintain these improvements by not exceeding the CY 2018 PPC rates. Figure 2 below shows the statewide observed to expected (O/E) ratio from 2016 through June CY 2021.⁴ The O/E ratio presents the count of observed PPCs divided by the calculated number of expected PPCs (which is generated using normative values applied to the case-mix of discharges a hospital experiences). An O/E Ratio of greater than 1 indicates that a hospital experienced more PPCs than expected, and conversely, an O/E Ratio less than one indicates that a hospital experienced fewer PPCs than expected. The Figure 2 below also indicates how Maryland is performing relative to CY 2018, which is the time period that will be used to assess any backsliding on performance.⁵ Specifically, there has been a 26% decrease in the ratio based on the most recent data available (CY 2018 O/E ratio = 1.06 and CY 2021 YTD O/E ratio = 0.78). PPCs in the MHAC program include:

- 3 Acute Pulmonary Edema and Resp Failure w/o Ventilation
- 4 Acute Pulmonary Edema, Resp Failure w/ventilation
- 7 Pulmonary Embolism
- 9 Shock
- 16 Venous Thrombosis
- 28 In-Hospital Trauma and Fractures
- 35 Septicemia & Severe Infections
- 37 Post-Operative Infection & Deep Wound Disruption Without Procedure
- 41 Post-Operative Hemorrhage & Hematoma w/ Hemorrhage Control Procedure or I&D
- 42 Accidental Puncture/ Laceration During Invasive Procedure
- 49 Iatrogenic Pneumothorax
- 60 Major Puerperal Infection and Other Major Obstetric Complications
- 61 Other Complications of Obstetrical Surgical & Perineal Wounds
- 67 Pneumonia Combo (with and without aspiration)

⁴ Staff notes that, consistent with federal policies during the COVID Public Health Emergency, PPC data from January-June 2020 will not be used for assessing quality of care.

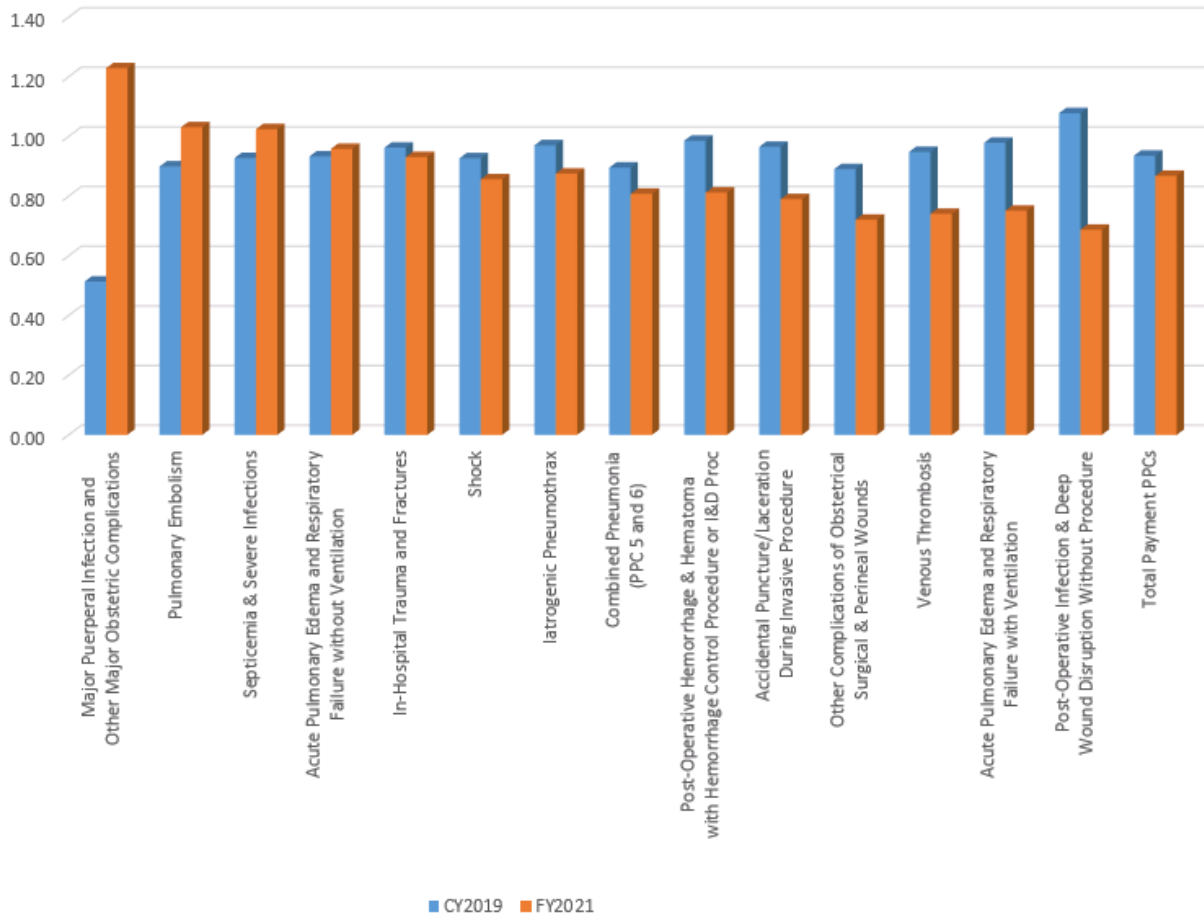
⁵ The O/E ratios presented here are calculated with COVID-19 discharges removed; a final decision on whether to include or exclude COVID-19 discharges has not yet been made for RYs 2023 and 2024.

Figure 2. Payment Program PPCs Quarterly Observed to Expected Ratios CY 2016 to CY 2021 June



In terms of specific improvements among the 14 payment PPCs, Figure 3 shows the O/E ratios for CY 2019 and CY 2021 YTD, sorted from greatest percent increase (on the left) to greatest decrease (on the right). The four PPCs that worsened during this time period include PPC 3- Acute Pulmonary Edema and Respiratory Failure without Ventilation, PPC 60- Major Puerperal Infection and Other Major Obstetric Complication, PPC 7- Pulmonary Embolism, and PPC 35- Septicemia and Severe Infections. The three PPCs with the greatest decreases include PPC 42- Accidental Puncture/Laceration During Invasive Procedure, PPC 37- Post- Operative Infection and Deep Wound Disruption Without Procedure, and PPC 16- Venous Thrombosis.

Figure 3. Payment Program PPC Observed to Expected Ratios CY 2019 and FY 2021

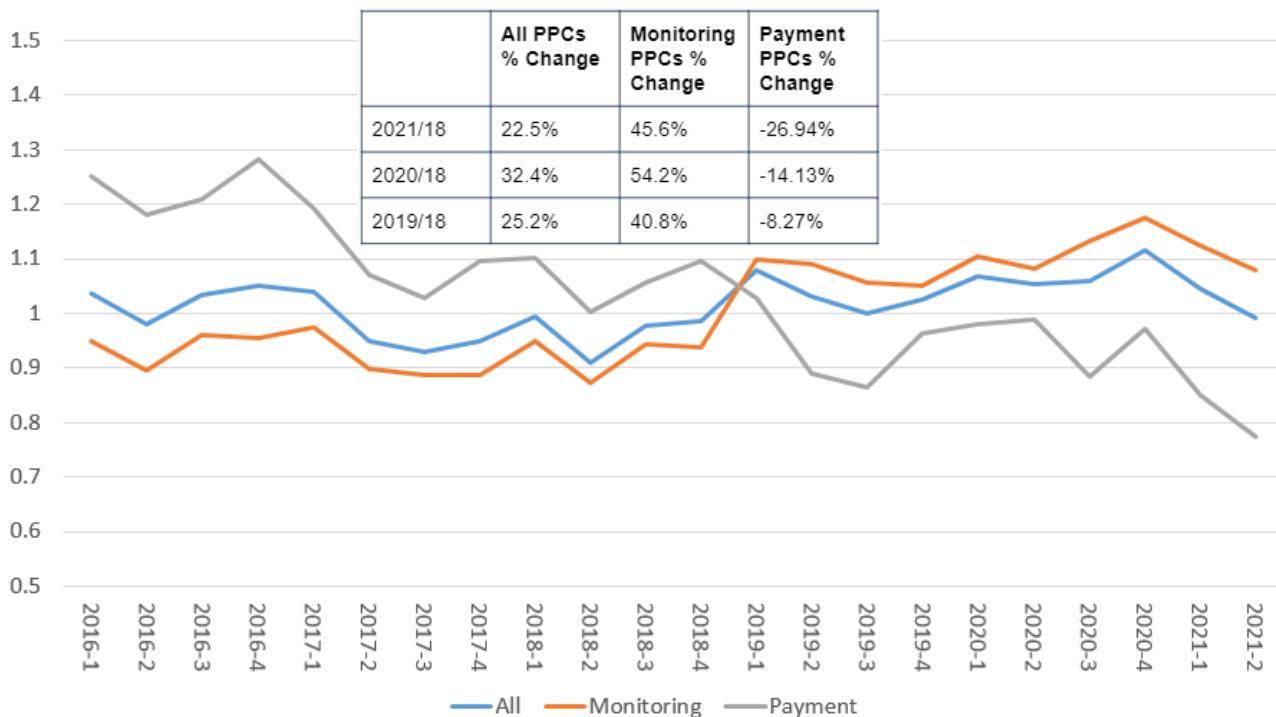


Monitored Complications

In addition to focusing on a narrowed list of PPCs for payment, as stated previously, the RY 2021 MHAC policy included a recommendation to monitor the remaining PPCs. Staff fulfills this recommendation by monitoring all PPCs that are still considered clinically valid by 3M, and distinguishing between “Monitoring” and “Payment” PPCs. The overall PPC trend across all 54 PPCs shows that there has been a slight increase in the overall statewide O/E ratio from 0.98 in CY 2018 to 1.01 in CY 2021 YTD; the slight worsening in performance is driven primarily by increases in PPCs under monitoring status, and not increases in the payment program PPCs, as illustrated in Figure 4. As discussed in the RY 2023 policy, staff had reached out to hospitals with increases in monitoring PPCs and had been given several reasons for the increase unrelated to declining quality. Furthermore, last year staff had planned to analyze data for CY 2019 through June 2020 to determine whether any monitored PPCs needed to be placed back into the

payment program. Due to the lack of valid and reliable data during the COVID-19 PHE for January-June 2020, staff did not recommend any PPCs be moved back into the payment program for RY 2023, but maintained the recommendation to monitor and possibly move PPCs back into the payment program in the future. Appendix III provides the statewide changes in observed, expected, and the O/E ratios for the monitoring PPCs sorted by the observed PPCs that accounted for the largest proportion of the increase from 2018 to 2021 YTD through June.

Figure 4. PPC O/E Ratio Trends CY 2016 Through CY 2021 Qtr 2



*Note: This analysis excludes COVID-19 patients. The percent change table is only a reflection of the first and second quarters of the specified years.

As mentioned previously, the MHAC redesign process assessed which PPCs should be included in the pay-for-performance program based on criteria developed by the Clinical Adverse Events Measures (CAEM) subgroup. To support determining the monitored PPCs that are the best candidates for re-adopting into the payment program, staff and stakeholders are using the previously established criteria that include:

- PPC Data Analysis/Statistics
 - Greater than 50% increase in O/E ratio comparing 2021 to 2018
 - Rate per 1,000 generally 0.5 or above
 - Volume of observed events 100 or above (over two years)

- Significant variation across hospitals O/E ratios less than .85 or greater than 1.15
- At least half of the hospitals are eligible for the PPC
- Additional Considerations
 - PSI overlap
 - Clinical significance
 - Opportunity for improvement
 - All-payer

Based on staff assessment to date of monitored PPC trends and the criteria above, staff vetted the PPCs listed below with PMWG stakeholders. In addition to adjusting the expected rates at each hospital by their APR-DRG Severity of Illness (SOI) patient mix, staff has noted that the MHAC program also relies on the work of 3M to review the PPC clinical logic and perform PPC Grouper updates annually. Staff has encouraged stakeholders, particularly clinicians, to review 3M updated global exclusion logic and PPC-specific assignment and exclusion logic and to weigh in on the monitored PPCs they believe are best to include in the payment program. Staff has established two tiers of PPCs currently monitored to consider for use in the payment program.

- Strongly Consider
 - 31: Decubitus Ulcer
 - 51: Gastrointestinal Ostomy Complications
 - 47: Encephalopathy
 - 26: Diabetic Ketoacidosis & Coma
 - 50: Mechanical Complication of Device, Implant & Graft
 - 45: Post Procedure Foreign Body
- Consider
 - 15: Peripheral Vascular Complication except Venous Thrombosis
 - 23: Genitourinary Complications except UTI
 - 34: Moderate Infections
 - 18: Major GI Complications w/ Transfusion or Significant Bleeding
 - 13: Other Cardiac Complications
 - 17: Major GI Complications w/o Transfusion or Significant Bleeding (Possibly combine with PPC #18)

Again, as stated above, staff is committed to ensuring that the additional monitored complication measures that are areas of concern and are deemed appropriate for a pay-for-performance program, if any, are proposed for re-inclusion. In the PMWG meetings staff convened in October and November as well as in the draft recommendation document, staff invited stakeholder input on the monitored PPC's listed for

potential inclusion, particularly those indicated as “Strongly Consider.” As outlined in the “Stakeholder Feedback and Responses” section below in this final RY 2024 MHAC recommendation, staff outlines stakeholder feedback received to date on this subject. Staff also provides rationale for not recommending additional PPCs for re-inclusion in the payment program at this time. In addition, staff outlines a process for investigations with specific hospitals/systems regarding the potential drivers of increasing observed/expected ratios in the monitored PPCs of concern, and for ongoing public stakeholder dialogue to determine PPC future updates based on the outlined criteria and any additional clinical feedback.

COVID-19 Program Adjustments

RY 2024 Changes to Timelines

Staff notes that, on September 2, 2020, CMS published an [Interim Final Rule \(IFR\)](#) in response to the COVID-19 PHE. In this IFR, they announced that CMS will not use CY Q1 or CY Q2 of 2020 quality data even if submitted by hospitals. Thus, the two-year base period for establishing performance standards (normative values, and the benchmarks/thresholds) needs to be modified for RY 2024 to exclude this 6 month period. The proposed base period for RY 2024 will be July 2020 through CY 2021 (see below for discussion of concurrent performance standards). This change shortens the base period by 6 months and will delay the availability of normative values and the benchmarks/thresholds until final data for all of CY 2021 is received. While this change does violate the guiding principles of our programs to be prospective and to allow hospital track performance during the performance period, these adjustments as well as potentially retrospective adjustments discussed below are necessitated by the unprecedented COVID PHE.

Assessing Performance During COVID

For both RY 2023 and RY 2024, retrospective changes may be needed to more fairly assess hospital performance. In the RY 2023 policy staff proposed to include COVID-19 related discharges to ensure quality of care was being monitored for all patients. However, staff recognize that the normative values for calculating expected complications during the performance period and the benchmarks/thresholds for scoring hospital performance are using a pre-COVID base period. Thus, for RY 2023 the staff is currently working with Mathematica Policy Research (MPR) to evaluate the impact of COVID on hospital performance. Specifically, as shown in Figure 5, MPR is going to assess the impact of concurrent norms (i.e., using the performance period to develop performance standards as opposed to a historical time period) with and without COVID-19 discharges on hospitals scores, model fit, reliability and validity, hospital rankings relative to COVID volumes, impact on specific DRGS (e.g., Major Respiratory infections and inflammations, sepsis), and equity considerations. The PMWG has reviewed this analysis plan and staff will be bringing results to PMWG over the next few months. The staff anticipates proposing any updates for RY

2023 by March 2022. These decisions may then be carried over or reassessed for RY 2024. As discussed in PMWG, the changes needed due to COVID will continue to impact the Maryland quality programs for the foreseeable future. As always the staff appreciate the input of stakeholders and the patience of the hospital industry as we work to ensure the fairest approach for quality assessment.

Figure 5. MHAC Program COVID Analytics Models

Models Under Consideration	Model 1 <i>original baseline period</i>	Model 2a <i>concurrent norms with COVID-19 cases</i>	Model 2b <i>concurrent norms without COVID-19 cases</i>
Description	original base period norms	concurrent norms including COVID-19 cases	concurrent norms excluding COVID-19 cases from normative values and performance period calculations

Palliative Care Update

Last year for RY 2023, the MHAC program adjusted its methodology to not exclude palliative care cases because there was data on whether palliative care cases were present-on-admission. The 3M PPC grouper then could assign PPCs to discharges where palliative care was not present-on-admission. This addressed a long-standing concern among HSCRC staff that complications were being missed that caused a patient to go into palliative care during the hospitalization. Unfortunately, starting in October 2021 the palliative care diagnosis is again exempt from POA coding. While 3M plans to assess and update the PPC grouper in future years to clinically determine which complications should be assigned to all patients with a palliative care diagnosis, in the meantime the HSCRC staff will remove discharges with palliative care from October-December 2021 and for all of CY 2022. The RY 2025 policy will re-evaluate palliative care Coding Clinic updates, PPC trend results with/without palliative care, and clinical updates to the PPC grouper v.40 to determine if the palliative care exclusion can be removed.

Hospital Scores and Revenue Adjustments

This final policy does not present modeling of the RY 2024 results since there are no changes to the methodology or revenue adjustment scale. Furthermore, there are likely to be retrospective changes (e.g., use of concurrent norms) to the methodology due to COVID, making the modeling potentially meaningless.

The revenue adjustment scale recommended in this policy ranges from 0 to 100 percent, with a hold harmless zone between 60 and 70 percent. The revenue adjustment scale is normally determined by looking at the distribution of scores from modeling but has not changed since the RY 2021 redesign. Despite historical concerns regarding the lack of a continuous scale from some stakeholders, staff still believe that the hold harmless zone is reasonable given the lack of national benchmarks for establishing a cut-point. Based on this scale, the RY 2021 MHAC program had net revenue adjustments of about \$39M (\$3M penalties, \$42M rewards). These revenue adjustments reflect the continued improvement on complications during the TCOC model.

Additional Future Considerations

Staff continue to believe that it is important to seek national comparison data to evaluate relative Maryland PPC performance. The AHRQ HCUP data, containing all-payer claims data from ~40 states, may provide such an opportunity; however, staff notes that the data lag is two years and the COVID-19 PHE emergency has made this type of benchmarking much more difficult. In the meantime, staff will be assessing hospital performance on the all-payer Patient Safety Indicators, which includes some complications that are similar to the payment and monitoring PPCs but may be able to provide a national comparison.

As Maryland hospitals continue to improve on payment PPCs, staff are wanting to pursue statistical methods that will better address small cell size issues and statistical reliability and validity. Thus, over the coming years, staff will work with our contractor MPR to explore whether changes are needed to the program. The methods that will be considered are similar to methods used by CMS for the same concerns.

As mentioned throughout this document, the impact of COVID-19 is still a factor for our quality programs. As COVID-19 prevalence declines and/or becomes endemic, the Maryland quality programs will need to include these patients in assessments of quality. Staff believes that the analytic plan using concurrent norms may allow us to include COVID-19 discharges. However, in future years when we have a base period that is after the most acute phases of the pandemic, staff will want to use that data to set performance standards so that we can not be making retrospective changes to the program.

Finally, staff notes that patient race and ethnicity, social determinants of health, socioeconomic status, and neighborhood factors need to be considered, as hospitals and the State of Maryland work to address disparities in health outcomes. Staff plans to analyze the complication measures data to understand disparities on these measures and other quality outcomes. During the upcoming year staff plans to convene a subgroup that assesses areas of focus for the Commission's equity work.

Stakeholder Feedback and Responses

As noted above in the Assessment section, staff raised concerns about the increasing rates of monitored PPCs in the PMWG meetings in October and November of this year. To facilitate stakeholder input on monitored PPCs for potential re-inclusion, staff presented analysis of the PPCs using the criteria and factors for selecting the more narrowed, focused list of PPCs for pay-for-performance when the program was re-designed in CY 2018 for the RY 2021 MHAC policy. Staff also reminded stakeholders of the information to access the 3M PPC documentation including the assignment and exclusion logic. Staff requested that stakeholders provide input on the “Strongly Consider” and “Consider” groups of PPCs listed in the Assessment section. In the PMWG meetings, while hospital stakeholders were concerned about the increasing trends in monitored PPCs, they were also generally concerned about the addition of PPCs, particularly in light of the ongoing COVID-19 PHE and the associated large demands and toll on hospitals. Additionally, staff received one comment letter to the draft MHAC recommendations from the Maryland Hospital Association that raised similar concerns, noting that more time was needed to determine the drivers of the monitored PPC trends, whether they be a reduced focus on coding and documentation versus deficiencies in clinical care.

RESPONSE:

While staff remains concerned about the increasing trends in particular monitored PPCs that may be clinically preventable, staff agrees that the current and ongoing challenges for hospitals because of the ongoing COVID-19 PHE takes precedence over asking hospitals to focus on additional PPCs in the payment program. Staff has therefore withdrawn its recommendation to add monitored PPCs to the MHAC program this year. However, as always the staff will provide data for the monitoring PPCs to hospitals for their use in quality monitoring.

To better understand root causes of the increases in some of the monitored PPCs, staff plan in the coming months to contact individual hospitals whose rates may be driving the statewide increases. Staff plans to discuss relevant documentation and coding as well as clinical/care delivery issues that may be contributing to the increases. Staff will continue to encourage hospitals/stakeholders to review and comment on the 3M PPC documentation, including the exclusion and assignment logic, and provide input through the structured monthly PMWG meetings on PPC updates for RY 2025 and beyond.

Recommendations

The MHAC policy was redesigned in Rate Year (RY) 2021 to modernize the program for the new Total Cost of Care Model. This RY 2024 final recommendation, in general, maintains the measures and methodology that were developed and approved for RY 2023.⁶

These are the final recommendations for the RY 2024 Maryland Hospital Acquired Conditions (MHAC) program:

1. Continue to use 3M Potentially Preventable Complications (PPCs) to assess hospital acquired complications.
 - a. Maintain a focused list of PPCs in the payment program that are clinically recommended and that generally have higher statewide rates and variation across hospitals.
 - b. Assess monitoring PPCs based on clinical recommendations, statistical characteristics, and recent trends to prioritize those for future consideration for updating the measures in the payment program.
 - c. Engage hospitals on specific PPC increases to understand trends and discuss potential quality concerns
2. Use more than one year of performance data for small hospitals (i.e., less than 20,000 at-risk discharges and/or 20 expected PPCs). The performance period for small hospitals will be CY 2021 and 2022.
3. Continue to assess hospital performance on attainment only.
4. Continue to weigh the PPCs in the payment program by 3M cost weights as a proxy for patient harm.
5. Maintain a prospective revenue adjustment scale with a maximum penalty at 2 percent and maximum reward at 2 percent and continuous linear scaling with a hold harmless zone between 60 and 70 percent.
6. Adjust retrospectively the RY 2024 MHAC pay-for-performance program methodology as needed due to COVID-19 Public Health Emergency and report any changes to Commissioners.

⁶ See the [RY 2023 policy](#) for detailed discussion of the MHAC redesign, rationale for decisions, and approved recommendations

Appendix I. Background on Federal Complication Programs

The Federal Government operates two hospital complications payment programs, the Deficit Reduction Act Hospital Acquired Condition program (DRA-HAC) and the HAC Reduction Program (HACRP), both of which are designed to penalize hospitals for post-admission complications.

Federal Deficit Reduction Act, the Hospital-Acquired Condition Present on Admission Program

Beginning in Federal Fiscal Year 2009 (FFY 2009), per the provisions of the Federal Deficit Reduction Act, the Hospital-Acquired Condition Present on Admission Program was implemented. Under the program, patients were no longer assigned to higher-paying Diagnosis Related Groups if certain conditions were acquired in the hospital and could have reasonably been prevented through the application of evidence-based guidelines.

Hospital-Acquired Condition Reduction Program

CMS expanded the use of hospital-acquired conditions in payment adjustments in FFY 2015 with a new program, entitled the Hospital-Acquired Condition Reduction Program, under the authority of the Affordable Care Act. That program focuses on a narrower list of complications and penalizes hospitals in the bottom quartile of performance. Of note, as detailed in Figure 1 below, all the measures in the Hospital-Acquired Condition Reduction Program are used in the CMS Value Based Purchasing program, and the National Healthcare Safety Network (NHSN) Healthcare-Associated Infection (HAI) measures are also used in the Maryland Quality Based Reimbursement (QBR) program.

Figure 1. CMS Hospital-Acquired Condition Reduction Program (HACRP) FFY 2020 Measures

<p>Recalibrated Patient Safety Indicator (PSI) measure:[^]</p> <ul style="list-style-type: none"> ● PSI 03 – Pressure Ulcer Rate ● PSI 06 – Iatrogenic Pneumothorax Rate ● PSI 08 – In-Hospital Fall with Hip Fracture Rate ● PSI 09 – Perioperative Hemorrhage or Hematoma Rate ● PSI 10 – Postoperative Acute Kidney Injury Requiring Dialysis Rate ● PSI 11 – Postoperative Respiratory Failure Rate ● PSI 12 – Perioperative Pulmonary Embolism or Deep Vein Thrombosis Rate ● PSI 13 – Postoperative Sepsis Rate ● PSI 14 – Postoperative Wound Dehiscence Rate ● PSI 15 – Unrecognized Abdominopelvic Accidental Puncture/Laceration Rate
Central Line-Associated Bloodstream Infection (CLABSI) ^{^*}
Catheter-Associated Urinary Tract Infection (CAUTI) ^{^*}
Surgical Site Infection (SSI) – colon and hysterectomy ^{^*}
Methicillin-resistant Staphylococcus aureus (MRSA) Bacteremia ^{^*}
Clostridium Difficile Infection (CDI) ^{^*}

[^]Recalibrated PSI Composite Measures included in the CMS VBP Program beginning FFY 2023. ^{*} National Healthcare Safety Network (NHSN) Healthcare-Associated Infection (HAI) measures included in both the CMS VBP and Maryland QBR Programs.

For more information on the DRA HAC program POA Indicator, please refer to:

<https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/index>

For more information on the DRA HAC program, please refer to: <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/HospitalAcqCond/Downloads/FAQ-DRA-HAC-PSI.pdf>

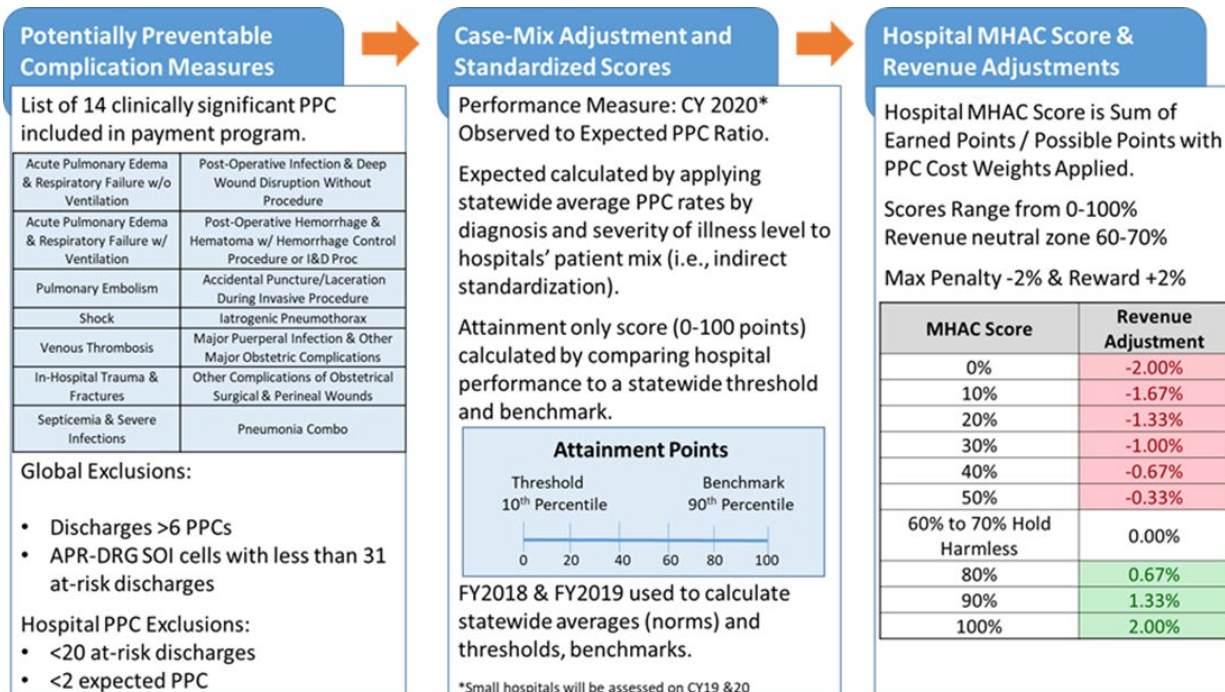
For more information on the HAC Reduction program, please refer to:

<https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/HAC-Reduction-Program>

Appendix II: RY 2023 MHAC Program Methodology

Figure 1 below provides a summary overview of the approved RY 2023 MHAC methodology.

Figure 1. Overview of RY 2023 Approved MHAC Methodology



Performance Metric

The methodology for the MHAC program measures hospital performance using the Observed (O) /Expected (E) ratio for each PPC. Expected number of PPCs are calculated using historical data on statewide PPC rates by All Patient Refined Diagnosis Related Group and Severity of Illness Level (APR-DRG SOI). See below for details on how expected number of PPCs are calculated for each hospital.

Observed and Expected PPC Values

The MHAC scores are calculated using the ratio of *Observed* : *Expected* PPC values.

Given a hospital's unique mix of patients, as defined by APR-DRG category and Severity of Illness (SOI) level, the HSCRC calculates the hospital's expected PPC value, which is the number of PPCs the hospital would have experienced if its PPC rate were identical to that experienced by a normative set of hospitals.

The expected number of PPCs is calculated using a technique called indirect standardization. For illustrative purposes, assume that every hospital discharge is considered "at-risk" for a PPC, meaning that all discharges would meet the criteria for inclusion in the MHAC program. All discharges will either have no

PPCs, or will have one or more PPCs. In this example, each discharge either has at least one PPC, or does not have a PPC. The unadjusted PPC rate is the percent of discharges that have at least one PPC.

The rates of PPCs in the normative database are calculated for each diagnosis (APR-DRG) category and severity level by dividing the observed number of PPCs by the total number of admissions. The PPC norm for a single diagnosis and severity level is calculated as follows:

Let:

N = norm

P = Number of discharges with one or more PPCs

D = Number of “at-risk” discharges

i = A diagnosis category and severity level

$$N_i = \frac{P_i}{D_i}$$

In the example, each normative value is presented as PPCs per discharge to facilitate the calculations in the example. Most reports will display this number as a rate per one thousand discharges.

Once the normative expected values have been calculated, they can be applied to each hospital. In this example, the normative expected values are computed for one diagnosis category and its four severity levels.

Consider the following example in Figure 2 for an individual diagnosis category.

Figure 2. Expected Value Computation Example for one Diagnosis Category

A Severity of illness Level	B At-risk Discharges	C Observed Discharges with PPCs	D PPCs per discharge (unadjusted PPC Rate)	E Normative PPCs per discharge	F Expected # of PPCs	G Observed: Expected Ratio
			= (C / B)	(Calculated from Normative Population)	= (B x E)	= (C / E) rounded to 4 decimal places
1	200	10	.05	.07	14.0	0.7143
2	150	15	.10	.10	15.0	1.0000
3	100	10	.10	.15	15.0	0.6667
4	50	10	.20	.25	12.5	0.8000
Total	500	45	.09		56.5	0.7965

For the diagnosis category, the number of discharges with PPCs is 45, which is the sum of discharges with PPCs (column C). The overall rate of PPCs per discharge in column D, 0.09, is calculated by dividing the total number of discharges with PPCs (sum of column C) by the total number of discharges at risk for PPCs (sum of column B), i.e., $0.09 = 45/500$. From the normative population, the proportion of discharges with PPCs for each SOI level for that diagnosis category is displayed in column E. The expected number of PPCs for each severity level shown in column F is calculated by multiplying the number of at-risk discharges (column B) by the normative PPCs per discharge rate (column E). The total number of PPCs expected for this diagnosis category is the expected number of PPCs for the severity levels.

In this example, the expected number of PPCs for the APR DRG category is 56.5, which is then compared to the observed number of discharges with PPCs (45). Thus, the hospital had 11.5 fewer observed discharges with PPCs than were expected for 500 at-risk discharges in this APR DRG category. This difference can be expressed as a percentage difference as well.

All APR-DRG categories and their SOI levels are included in the computation of the observed and expected rates, except when the APR-DRG SOI level has less than 30 at-risk discharges statewide.

PPC Exclusions

Consistent with prior MHAC policies, the number of at-risk discharges is determined prior to the calculation of the normative values (hospitals with <10 at-risk discharges are excluded for a particular PPC) and the normative values are then re-calculated after removing PPCs with <2 complication expected. The following exclusions will also be applied:

For each hospital, discharges will be removed if:

- Discharge is in an APR-DRG SOI cell has less than 31 statewide discharges.
- Discharge has a diagnosis of palliative care (this exclusion may be removed in the future once POA status is available for palliative care for the data used to determine performance standards); and
- Discharge has more than 6 PPCs (i.e., a catastrophic case, for which complications are probably not preventable).

For each hospital, PPCs will be removed if during FY 2018 and FY 2019:

- The number of cases at-risk is less than 20; and
- The expected number of PPCs is less than 2.

The PPCs for which a hospital will be assessed are determined using the FY 2018 and FY 2019 data and not reassessed during the performance period. This is done so that scores can be reliably calculated during the performance period from a pre-determined set of PPCs. The MHAC summary workbooks provide the excluded PPCs for each hospital.

Combination PPCs

Based on clinical input and 3M recommendation, starting in RY 2021 two pneumonia (PPC 5 Pneumonia & Other Lung Infections & PPC 6 Aspiration Pneumonia) PPCs were combined into single pneumonia PPC and the 3M cost weight is a simple average of the two PPC cost weights.

Hospital Exclusions

Acute care hospitals that do not have sufficient volume to have at least 20 at-risk and 2 expected for any payment program PPC are excluded from the MHAC policy.

Benchmarks and Thresholds

For each PPC, a threshold and benchmark value are calculated using the determined base period data. In previous rate years when improvement was also assessed, the threshold was set at the statewide median of 1 and the benchmark was the O/E ratio for the top performing hospitals that accounted for 25% of discharges. For RY 2021 under an attainment only methodology, staff adapted the MHAC points system to allow for greater performance differentiation by moving the threshold to the value of the observed to expected ratio at the 10th percentile of hospital performance, moving the benchmark to the value of the observed to expected ratio at the 90th percentile of hospital performance, and assigning 0 to 100 points for each PPC between these two percentile values.

Attainment Points (possible points 0-100)

If the PPC ratio for the performance period is greater than the threshold, the hospital scores zero points for that PPC for attainment.

If the PPC ratio for the performance period is less than or equal to the benchmark, the hospital scores a full 100 points for that PPC for attainment.

If the PPC ratio is between the threshold and benchmark, the hospital scores partial points for attainment.

The formula to calculate the Attainment points is as follows:

- $\text{Attainment Points} = [99 * ((\text{Hospital's performance period score} - \text{Threshold}) / (\text{Benchmark} - \text{Threshold}))] + 0.5$

Calculation of Hospital Overall MHAC Score

To calculate the final score for each hospital, the attainment points earned by the hospital and the potential points (i.e., 100) for each PPC are multiplied by the 3M cost weights. Hospital scores across PPCs are calculated by summing the total weighted points earned by a hospital, divided by the total possible weighted points (100 per PPC * 3M cost weight). Figure 5 provides a hypothetical example of the points based scoring approach with the 3M cost weights.

RY 2023 Update: Small Hospital Methodology

Hospital-specific PPC inclusion requirements were maintained in the RY 2023 policy, i.e., all hospitals are required to have at least 20 at-risk discharges and 2 expected PPCs in order for a particular PPC to be included in the payment program. Because of the volatility in performance scores for smaller hospitals, the Commission also approved the following policy updates in RY 2022:

“Establish small hospital criteria for assessing performance under the MHAC policy based on the number of at-risk discharges and expected PPCs (i.e., small hospitals are those with less than 20,000 at-risk discharges and/or 20 expected PPCs across all payment program PPCs) as opposed to the number of PPC measure types, and for hospitals that meet small hospital criteria, increase reliability of score by using two years of performance data to assess hospital performance (i.e., for RY 2022 use CY 2019 and 2020). “

Because of the COVID PHE, the above proposal was not implemented for RY 2022 but instead, the MHAC scores and revenue adjustments for RY 2021 were repeated in RY 2022.

For RY 2023, staff proposed to maintain the small hospital criteria and expected to utilize CY 2020 and CY2021 for the assessment of small hospitals. However, staff will need to reconsider this approach due to the COVID related suspension of data use for January to June of 2020. Thus, in the RY 2023 recommendations, staff proposed that for small hospitals more than one year of data be used, and that the performance period will be CY 2021 plus yet to be determined performance period. For example, if the Commission decides to use July to December 2020 data, then small hospitals could be assessed on data from July 2020 through December 2020 and January to December 2021

Appendix III: Monitoring PPCs

The table below shows the monitored PPCs O/E ratios for CY 21 YTD (through June) and the changes in the ratio from CY 2018. The PPCs highlighted in green represent those PPCs that staff believes should be “strongly considered,” and those highlighted in yellow are those that should be “considered.” In addition, the following statistical information is provided:

- The CY 2021 and 2019 rates per thousand
- The observed counts for CYs 2019 and 2020 combined
- The 3M cost weights: these are based upon cost variation correlated with individual PPCs. The cost measurement provides an estimate of the incremental cost of the average PPC over the cost of the typical case at admission. Cost estimates are converted into relative weights on a similar scale to those of other admissions to provide context.
- Reliability and validity statistics for CY 18-19
- Variations among hospitals’ O/E ratios with percent of hospitals below 0.85 or above 1.15 O/E
- Number of hospitals in the state eligible for the PPC (20 or more cases at risk for the PPCs and 2 or more expected PPCs) for those staff is recommending be strongly considered or considered.

			21/18 %	21 rate per	19 rate per				Spearman's	Pearson's	Hospital	Quality-
	PPC Description	O/E Ratio 2021	change	1000	1000	obs counts	3M cost	Reliability CY	Validity CY18-	Validity CY18-	Variation	ing
				(obs/atrisk	(obs/atrisk	19&20	weights	18-19	19	19	CY 18-19	Hospitals
				*1000)	*1000)						O/E	CY18-19
31	Decubitis Ulcer	2.072532252	177.75%	1.1979359	0.65542465	159	2.732754	Strong	Very Weak	Very Weak	82.61	46
51	Gastrointestinal Ostomy Complications	1.718597992	143.68%	0.7390512	0.430243656	363	1.536037	Moderate	Weak	Moderate	80	40
47	Encephalopathy	1.564997708	95.30%	1.0876954	0.711396182	428	0.73486	Strong	Moderate	Moderate	86.62	39
26	Diabetic Ketoacidosis & Coma	1.241225227	90.48%	0.1579474	0.144046556	71	0.529726	Low	N/A	N/A	94.74	19
50	Mechanical Complication of Device, Implant & Graft	1.469228381	83.29%	1.0828006	0.859003256	669	1.16229	Strong	Weak	Moderate	72.5	40
45	Post Procedure Foreign Body	1.590764476	68.36%	0.0290641	0.019134827	22	0.599007	Very Low	Very Weak	Very Weak	95.65	46
15	Peripheral Vascular Complications except Venous Thrombosis	1.536704471	104.91%	0.5493201	0.377287304	261	1.509014	Moderate	Very Weak	Weak	68.97	29
23	GU Complications Except UTI	1.413699187	85.21%	0.4168621	0.329810917	241	0.59266	Low	Weak	Very Weak	81.82	33
34	Moderate Infectious	1.592439017	77.22%	1.3389441	0.813836638	233	1.319832	Strong	Strong	Very Strong	78.79	33
18	Major Gastrointestinal Complications with Transfusion or Significant Bleeding	1.359434475	70.32%	0.6059707	0.450138595	340	1.532197	Moderate	Weak	Moderate	78.95	38
13	Other Cardiac Complications	1.175128606	51.50%	0.3970074	0.36516392	252	0.370811	Strong	Moderate	Moderate	88.57	35
17	Major Gastrointestinal Complications without Transfusion or Significant Bleeding	1.255369369	48.50%	0.6737902	0.547433419	397	1.243755	Strong	Weak	Weak	89.74	39
29	Poisonings except from Anesthesia	1.144385284	48.25%	0.1542033	0.156751835	88	0.135078	Moderate	Very Strong	Very Strong		
52	Inflammation & Other Complications of Devices, Implants or Grafts	1.084425214	36.36%	1.2117467	1.177818333	836	1.114926	Strong	Moderate	Moderate		
20	Other Gastrointestinal Complications without Transfusion or Significant Bleeding	1.294820046	34.31%	1.1186044	0.801833667	641	1.084788	Moderate	Very Weak	Very Weak		
40	Post-Operative Hemorrhage & Hematoma without Hemorrhage	1.120816644	27.35%	4.8969488	4.477363636	1150	0.726008	Strong	Very Weak	Very Weak		
66	Catheter-Related Urinary Tract Infection	1.593794825	25.92%	0.1702901	0.046158462	9	0.800112	Strong	N/A	N/A		
1	Stroke & Intracranial Hemorrhage	1.118901984	24.41%	1.4162018	1.1961753	919	0.903899	Moderate	Weak	Weak		
19	Major Liver Complications	1.136822422	23.16%	0.6633808	0.515488787	413	0.726922	Strong	Very Weak	Weak		
27	Post-Hemorrhagic & Other Acute Anemia with Transfusion	1.05087275	11.70%	1.0401768	0.896475793	518	0.976265	Strong	Moderate	Moderate		
10	Congestive Heart Failure	0.96501292	11.70%	0.1710669	0.185425552	94	0.421532	Strong	N/A	N/A		
8	Other Pulmonary Complications	0.837757869	7.52%	0.6607423	0.904226378	373	0.844686	Strong	Moderate	Moderate		
25	Renal Failure with Dialysis	1.025418548	7.31%	0.2468878	0.215890282	107	2.904097	Moderate	N/A	N/A		
39	Reopening Surgical Site	1.055902787	6.91%	2.8355142	2.207216287	446	1.678212	Moderate	Weak	Weak		
11	Acute Myocardial Infarction	0.932359935	5.26%	1.1045771	1.180943012	840	0.407992	Strong	Moderate	Moderate		
33	Cellulitis	0.890671509	-4.43%	0.6884197	0.749318391	465	0.912768	Strong	Moderate	Moderate		
21	Clostridium Difficile Colitis	0.856196362	-14.80%	4.7207173	5.333759647	667	1.3374	Strong	Moderate	Weak		
65	Urinary Tract Infection without Catheter	0.919584705	-15.57%	4.0051524	3.515917693	2406	0.677804	Strong	Moderate	Moderate		
6	Aspiration Pneumonia	0.832606481	-20.70%	0.9345935	0.942210085	617	0.926432	Strong	Moderate	Moderate		
2	Extreme CNS Complications	0.513988392	-44.27%	0.3701015	0.660879402	411	0.463291	Strong	Moderate	Strong		
5	Pneumonia & Other Lung Infections	0.624438177	-45.88%	1.3265499	1.683720491	534	1.296954	Strong	Very Weak	Very Weak		
63	Postoperative Respiratory Failure with Tracheostomy	0	-100.00%	0	31.25	4	7.572636	#N/A	#N/A	#N/A		
38	Post-Operative Wound Infection & Deep Wound Disruption with Drainage	1.236654438	140.38%	0.4604052	0.529836413	11	2.464263	Very Low	#N/A	#N/A	100	3
59	Medical & Anesthesia Obstetric Complications	1.550394274	122.98%	3.7068818	3.022534498	400	0.125938	Strong	Very Weak	Very Weak	87.1	31
44	Other Surgical Complication - Mod	1.882049283	102.00%	0.8025682	0.38502916	104	1.08229	Low	N/A	N/A	90	20
54	Infections due to Central Venous Catheters	1.708700704	84.83%	0.2510166	0.142946606	44	2.964553	Moderate	N/A	N/A	90	10
53	Infection, Inflammation & Clotting Complications of Peripheral Vascular	1.582724561	84.35%	0.2333961	0.155606161	105	0.52856	Strong	N/A	N/A	80.77	26
64	Other In-Hospital Adverse Events	1.284914723	80.18%	0.4154651	0.390416411	296	0	Strong	Very Weak	Very Weak	86.84	38
48	Other Complications of Medical Care	1.190529596	59.08%	0.4286806	0.408025869	285	1.074701	Moderate	Very Weak	Very Weak	86.11	36
14	Ventricular Fibrillation/Cardiac Arrest	1.240931756	32.75%	4.2005757	3.057108823	2020	0.510352	Strong	Weak	Moderate	67.39	46



Maryland
Hospital Association

December 15, 2021

Dr. Alyson Schuster
Deputy Director, Quality Methodologies
Health Services Cost Review Commission
4160 Patterson Avenue
Baltimore, Maryland 21215

Dear Dr. Schuster:

On behalf of the Maryland Hospital Association's 60 member hospitals and health systems, we appreciate the opportunity to comment on the Health Services Cost Review Commission's (HSCRC) *Draft Recommendations for the Maryland Hospital Acquired Conditions (MHAC) Program for Rate Year 2024*.

We support most of the current recommendations, which are mostly unchanged from the existing policy. We are concerned about the recommendation to update the Potentially Preventable Complications (PPC) measures for inclusion in the payment program.

The redesign of the MHAC program in 2019 narrowed the number of payment PPCs from 45 to 14 based on guidelines from clinical experts. Maryland hospitals supported this reduction to allow greater focus on clinically relevant complications with evidence-based prevention strategies. Yet, not all PPCs considered by staff for inclusion meet each of the criterion. Additionally, hospitals demonstrated including complications in payment policy drive attention and resources to improve clinical intervention and documentation and coding.

MHA acknowledges concerns about rising complications. However, more time is needed to assess the factors driving these increases—reduced focus on coding and documentation versus deficiencies in clinical care. Hospitals continue to focus on managing the COVID-19 pandemic, care delivery transformation, and exceptional patient care and safety. Activities that are perceived as an administrative burden receive less focus.

Through the end of 2018, Maryland hospitals dramatically decreased complications, exceeding the requirement of a 30% reduction by the end of the year. At this mature stage of the MHAC program, we recommend delaying the addition of PPCs in payment policy. This would allow time to work with staff to identify PPCs that should be removed or added. This is in keeping with established criteria for PPC inclusion in payment policy and maintaining the ability for hospitals to narrowly focus on complications improvement.

We look forward to continuing to work with the commission on this and future policies.

Dr. Alyson Schuster
Dec. 15, 2021
Page 2

Sincerely,

A handwritten signature in cursive script that reads "Traci La Valle".

Traci La Valle
Senior Vice President, Quality & Health Improvement



maryland
health services
cost review commission

Update on Medicare FFS Data & Analysis

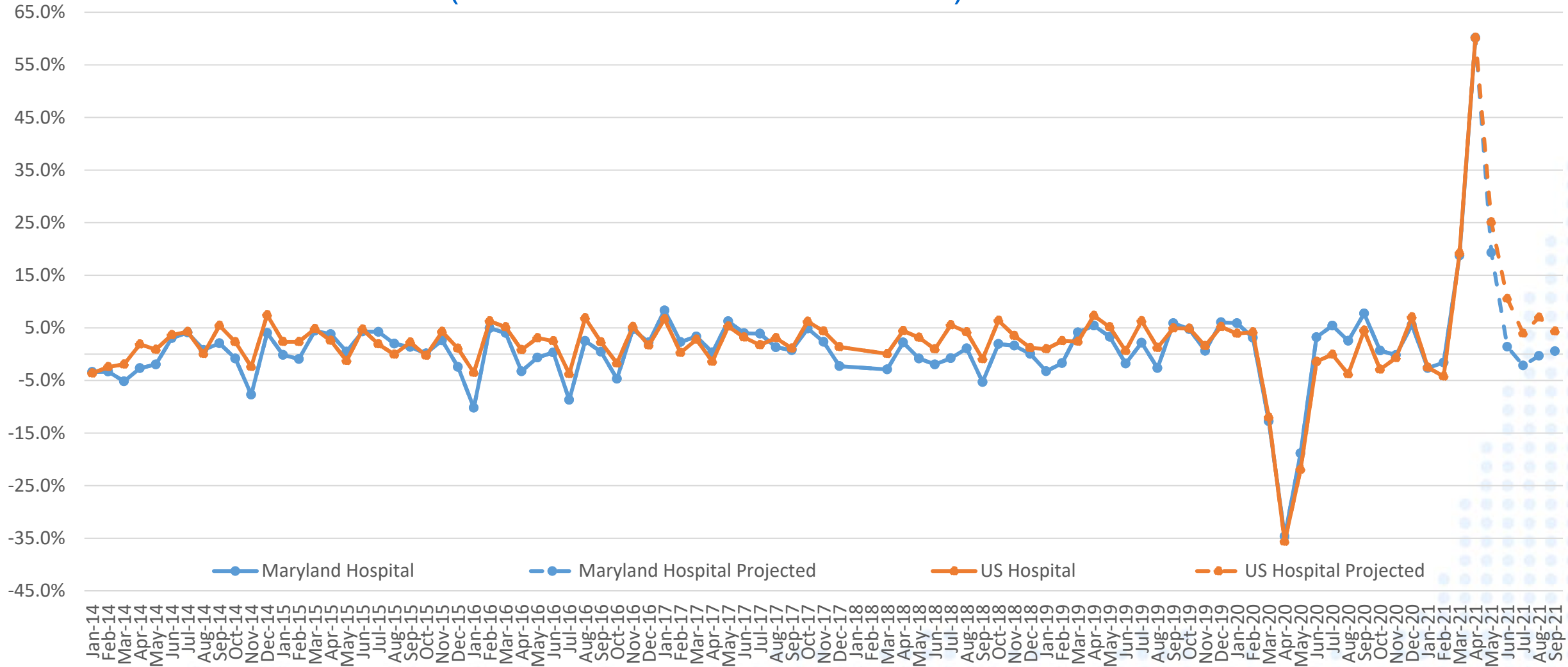
January 2022 Update

Data through September 2021, Claims paid through November 2021

Data contained in this presentation represent analyses prepared by HSCRC staff based on data summaries provided by the Federal Government. The intent is to provide early indications of the spending trends in Maryland for Medicare FFS patients, relative to national trends. HSCRC staff has added some projections to the summaries. This data has not yet been audited or verified. Claims lag times may change, making the comparisons inaccurate. ICD-10 implementation and EMR conversion could have an impact on claims lags. These analyses should be used with caution and do not represent official guidance on performance or spending trends. These analyses may not be quoted until public release.

Medicare Hospital Spending per Capita

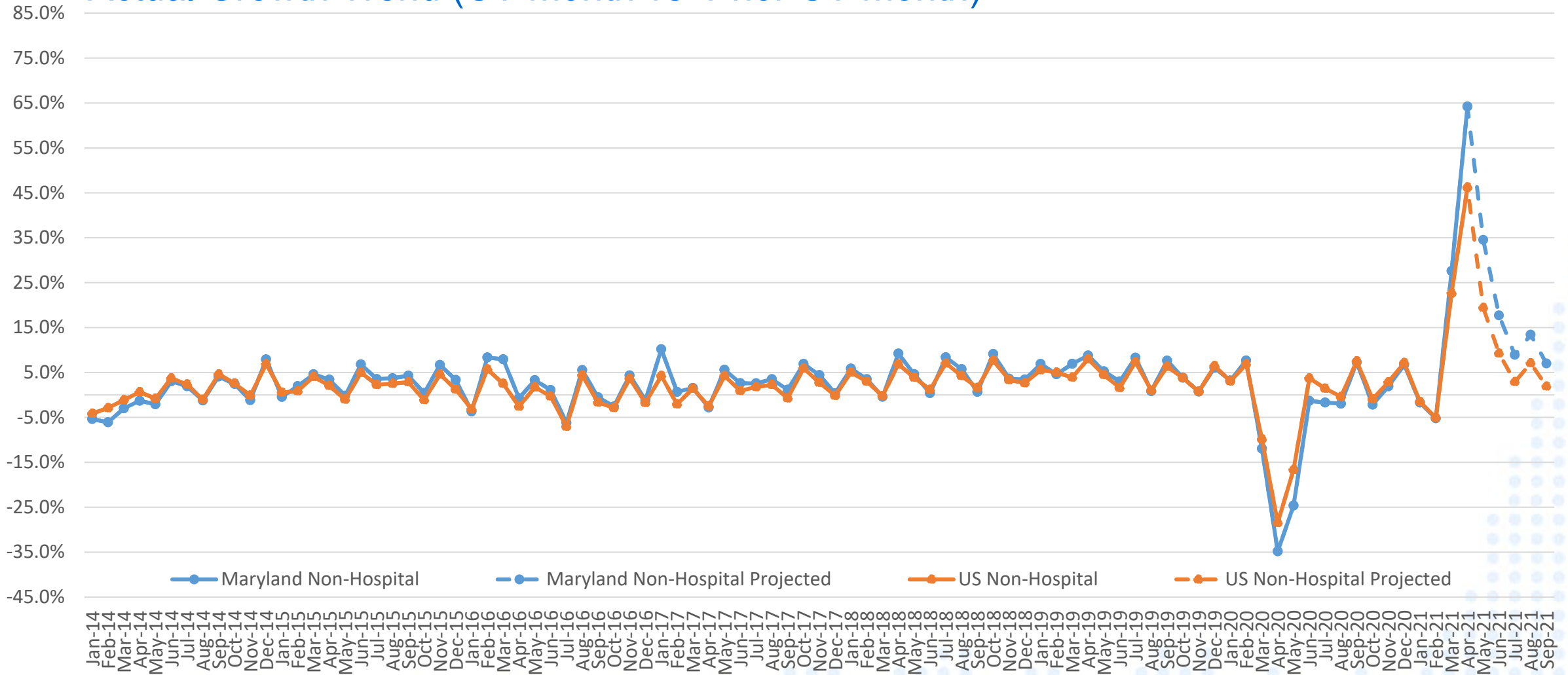
Actual Growth Trend (CY month vs. Prior CY month)



CY16 has been adjusted for the undercharge.

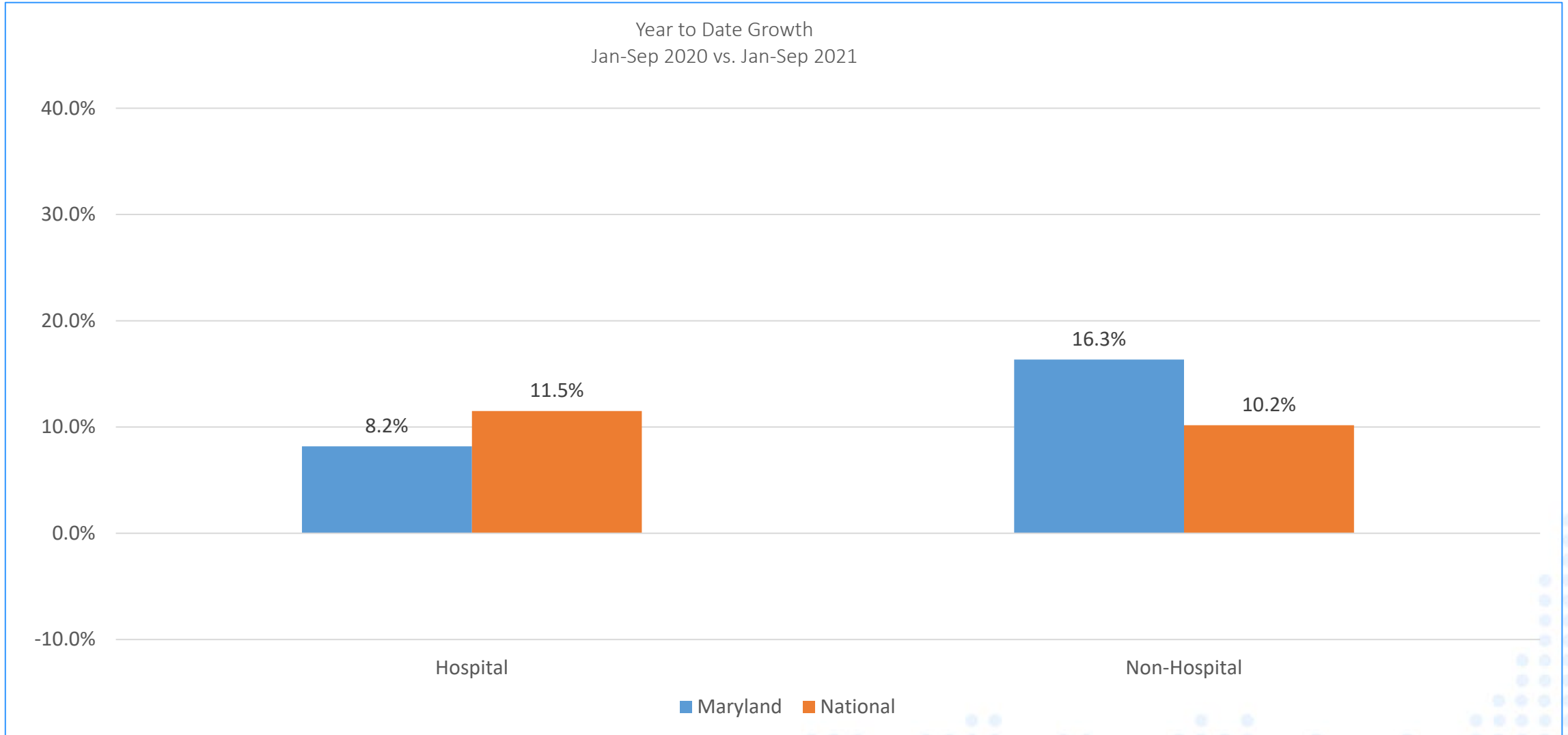
Medicare Non-Hospital Spending per Capita

Actual Growth Trend (CY month vs. Prior CY month)



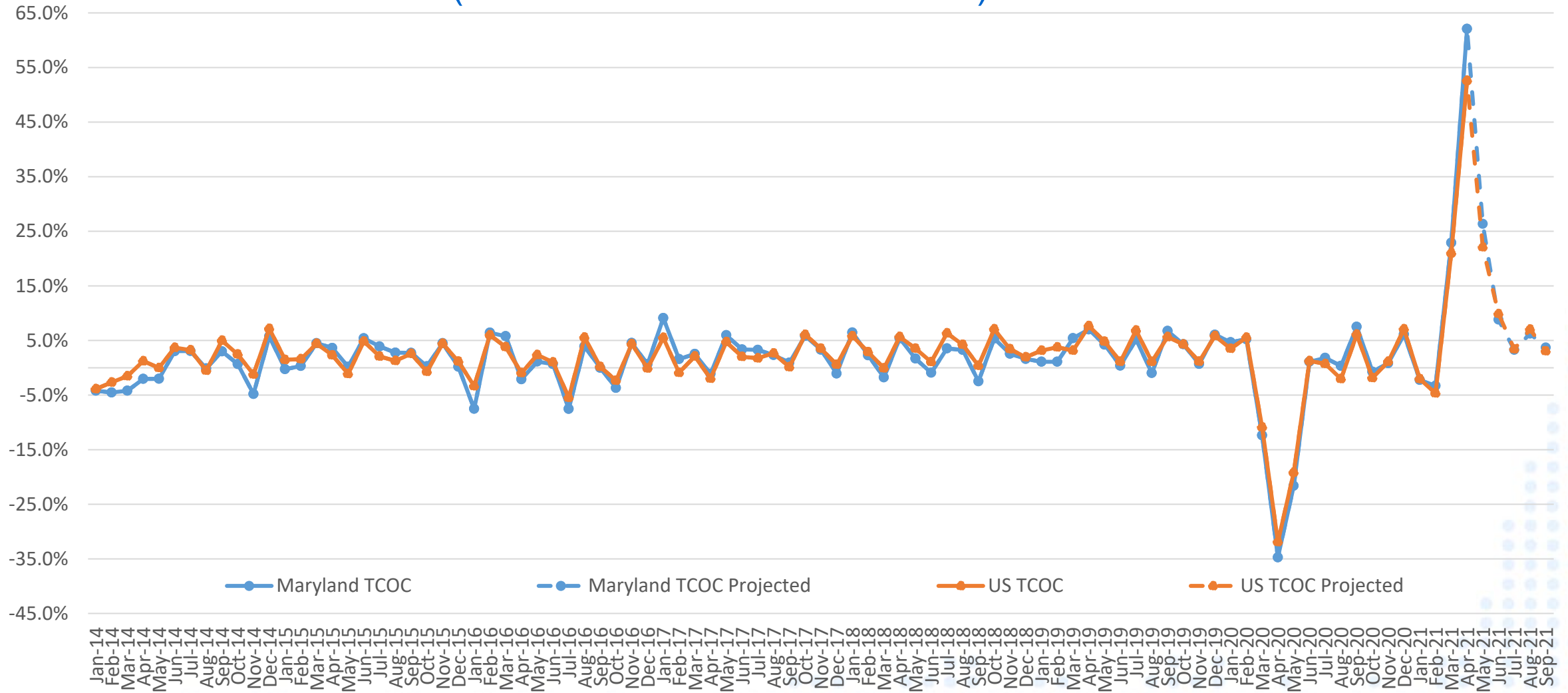
Medicare Hospital and Non-Hospital Payments per Capita

Year to Date Growth
Jan-Sep 2020 vs. Jan-Sep 2021



Medicare Total Cost of Care Spending per Capita

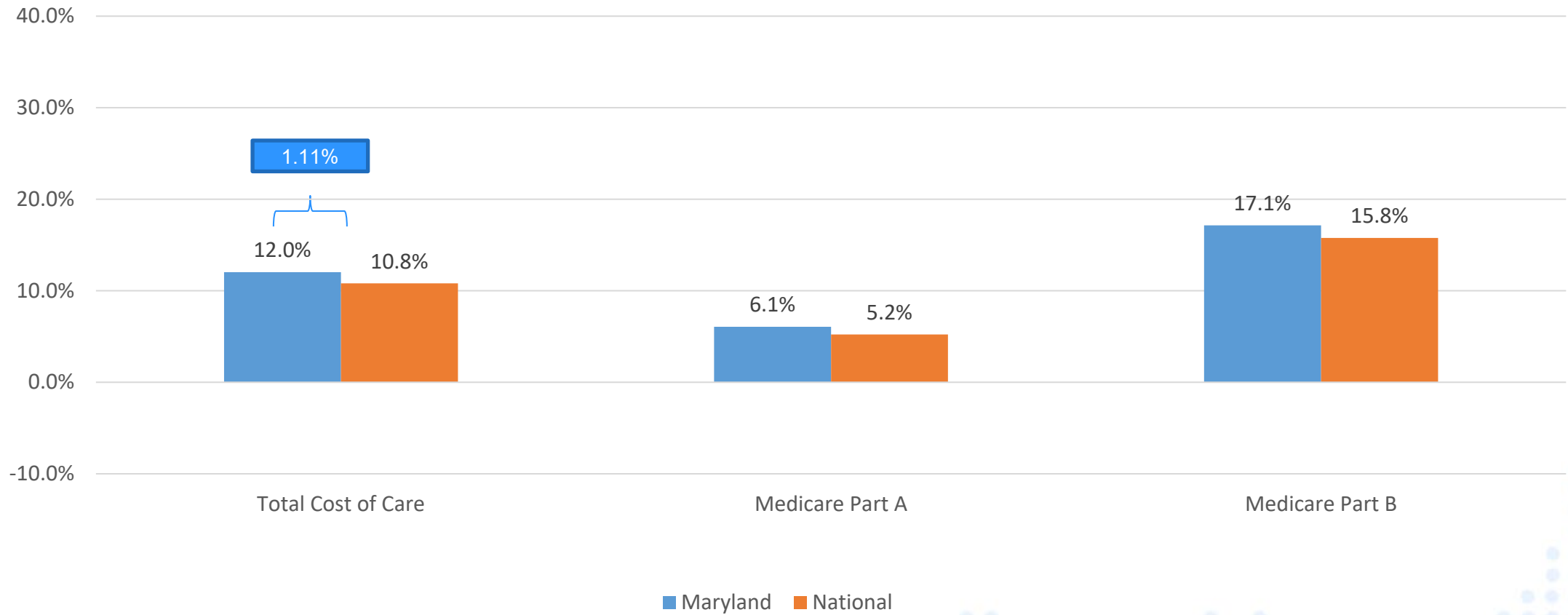
Actual Growth Trend (CY month vs. Prior CY month)



CY16 has been adjusted for the undercharge

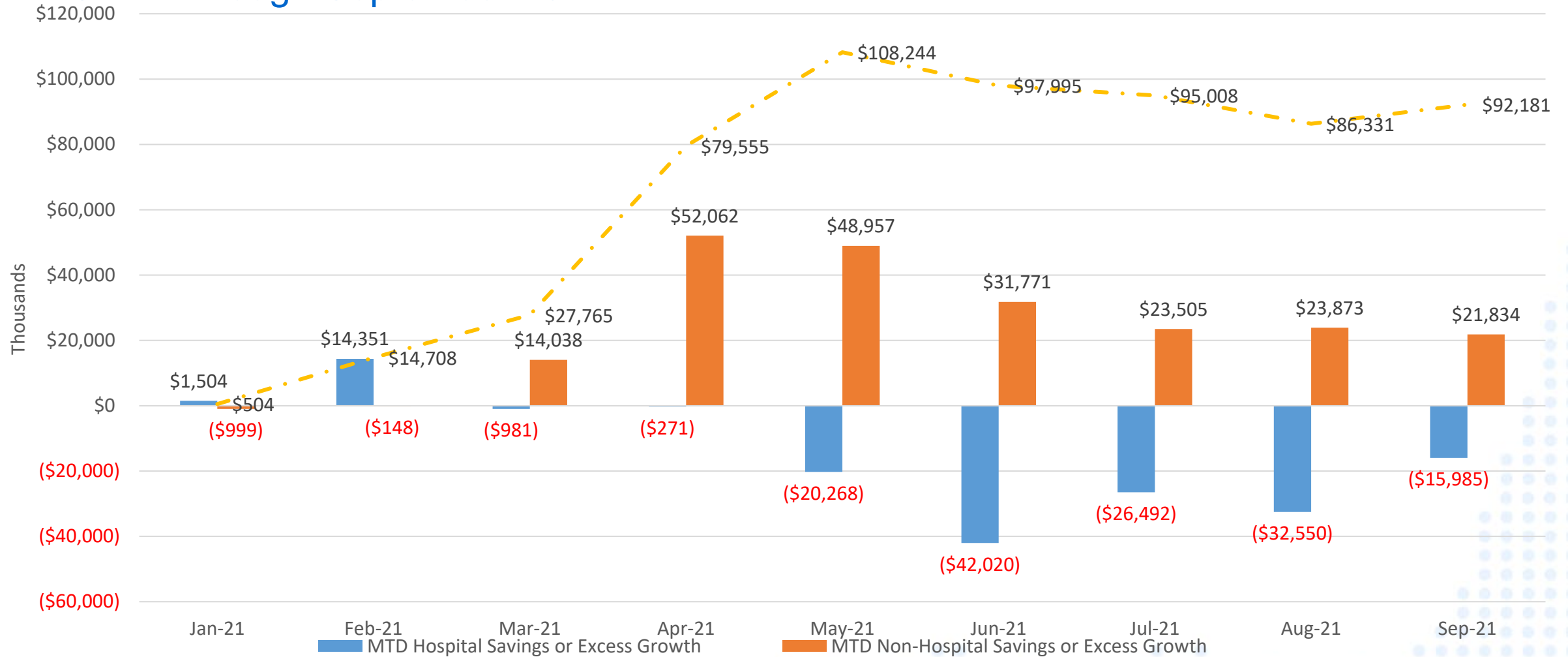
Medicare Total Cost of Care Payments per Capita

Year to Date Growth
Jan-Sep 2020 vs. Jan-Sep 2021



Maryland Medicare Hospital & Non-Hospital Growth

CYTD through September 2021



Maryland Model Analytics

Evaluation of the Care Transformation Initiatives Program: Pre-Implementation Report

Melissa Hafner, MPP

Parakh Patel, MPH

IMPAQ International

November 2021



AIR® Headquarters

1400 Crystal Drive, 10th Floor

Arlington, VA 22202-3289

+1.202.403.5000 | AIR.ORG



An Affiliate of the American Institutes for Research®

IMPAQ International, LLC

10420 Little Patuxent Parkway, Suite 300

Columbia, MD 21044

+1.443.256.5500 | IMPAQINT.COM

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Executive Summary

Care Transformation Initiatives (CTIs) are a key component of Maryland's Total Cost of Care (TCOC) Model. These voluntary initiatives allow hospitals and health systems to test innovations that address specific clinical and population needs and promote efficient use of health care resources. Hospitals whose initiatives produce savings will be rewarded with a positive payment adjustment. By testing and evaluating the results of hospitals' care transformation efforts, the state hopes to identify and disseminate best practices for improving care and reducing costs.

IMPAQ is conducting a two-part evaluation of the CTI program. This report includes findings from the pre-implementation phase of the program. After the first performance period ends in 2022, we will conduct a second evaluation. In this first phase, we conducted a mixed-methods evaluation of the CTI program to (1) describe how hospitals designed their CTIs, (2) identify areas of spending that are (or are not) addressed by CTIs, (3) assess how CTIs align with published research on care transformation, and (4) describe the extent to which CTIs address socioeconomic status and race and ethnicity. We found that:

- **Three-quarters of CTIs focus on transitions of care or primary care.** Hospitals are targeting areas of spending for patients with acute care stays, or patients at risk of hospital admission or readmission. A smaller portion of CTIs focus on palliative or emergency care. The episode design and target prices of CTIs vary widely.
- **Nearly all Maryland hospitals are participating in the CTI program, and most are motivated by the potential to earn savings.** Many hospitals were already engaged in quality improvement and care transformation activities, and the CTI program offers an opportunity to evaluate these efforts.
- **CTI thematic areas generally align with recent research on care transformation; however, behavioral healthcare and quality measurement are two notable gaps.** Behavioral health is a known cost driver, and care for patients with behavioral health diagnoses is often fragmented. The CTI program presents an opportunity to integrate behavioral health care across different settings of care. In addition, nearly all recent research on care transformation includes quality measurement to detect changes in

care processes and observe changes in patient outcomes that may precede changes in cost.

- **CTIs are targeting chronic conditions, but few are in the primary care setting.** Costs for Medicare patients with chronic conditions are nearly double that of patients without these conditions. CTIs that target patients with chronic conditions are concentrated in hospital care rather than primary care, which is inconsistent with recent care transformation research.
- **CTIs use many of the same interventions documented in care transformation research.** Care coordination, care planning, and patient outreach are among the most common interventions in both CTIs and published studies. We note, however, that CTIs' interventions are not well documented, which could present challenges for identifying best practices in the future.
- **Half of all CTIs address social determinants of health (SDOH), but opportunities exist to align more closely with local population needs.** Although CTIs are targeting social needs, few hospitals that serve socially vulnerable and low-income populations are targeting SDOH through their CTIs. None of the CTIs explicitly state that they are focusing on the needs of racial or ethnic minorities. However, about a quarter of CTIs have baseline populations in which at least 40 percent of patients identify as a racial or ethnic minority.
- **Care coordination and data utilization are key challenges during the early implementation stages of the CTI program.** Coordination with outside health care providers, community organizations, and other partners has been challenging as many CTIs require the participation of multiple stakeholders. Some hospitals will require ongoing technical assistance to understand how to use data to transform care.

To identify success factors and share best practices for CTI design in the future, we identified considerations for the future of the CTI program. First, more comprehensive descriptions of CTIs will help the state, hospitals, and other stakeholders to understand how to scale up practices that lead to successful care transformation. Second, incorporating behavioral health care into CTIs could reduce costs and improve outcomes for patients with behavioral health diagnoses. Third, quality measurement could provide a more complete picture of CTIs' progress, and hospitals may be able leverage existing quality measures in

ways that do not create additional reporting burden. Finally, CTIs could be better aligned with the socioeconomic conditions of hospital service areas. Although hospitals should not be limited to conducting CTIs that address socioeconomic factors, these factors should be a consideration in the design of CTIs going forward.

Overview of Care Transformation Initiatives

Since 1971, Maryland has used an all-payer rate-setting system to pay hospitals for inpatient and outpatient services, and in recent years, it has developed innovative strategies using its authority to set hospital payments. On January 1, 2014, Maryland implemented the All-Payer Model for hospitals, which shifted the state to an all-payer, annual, global hospital budget.¹

Building on the successes of the All-Payer Model, Maryland launched an eight-year demonstration TCOC Model in 2019, authorized by the Centers for Medicare & Medicaid Innovation (CMMI) within the Centers for Medicare & Medicaid Services (CMS).² Now in its third year, the TCOC Model holds hospitals and primary care providers accountable for the total cost of care for all Medicare fee-for-service (FFS) beneficiaries under a global budget. Maryland's innovative payment approach to paying hospitals under a global budget allows the state an opportunity to manage health care spending while holding hospitals and providers accountable for the quality of their patient care.

Recognizing that hospitals are not the only driver of health care costs, CMS requires the state to engage in care transformation efforts that can lead to savings across the entire delivery system as part of the TCOC Model. In 2019, the Maryland Health Services Cost Review Commission (HSCRC) established the CTI program to meet CMS requirements while allowing hospitals the flexibility to define their own episodes of care and test interventions to determine whether they reduce costs.³ The CTI framework uses a three-part process to quantify how care transformation affects costs:

Step 1: Identify a patient population.

Step 2: Construct a clinical episode.

Step 3: Establish a Target Price using historical data.

¹ Centers for Medicare and Medicaid Innovation, CMS. Innovation Models: Maryland All-Payer Model. Available at: <https://innovation.cms.gov/innovation-models/maryland-all-payer-model>

² Centers for Medicare and Medicaid Innovation, CMS. Innovation Models: Maryland Total Cost of Care. Available at: <https://innovation.cms.gov/innovation-models/md-tccm>

³ A detailed description of the CTI methodology can be found in the Care Transformation Initiative User Guide. Available at: https://hscrc.maryland.gov/Documents/Care%20Redesign/Steering%20Committee/DRAFT%20CTI%20User%20Guide_vF.docx

Step 4: Compare the total cost of care during the performance period to the target price to determine whether the CTI achieved savings.

Hospitals that conduct CTIs can earn additional payments by achieving savings for their defined episodes during a performance year. To fund these additional payments in a cost-neutral way, the state will reduce payments to all hospitals, including those that choose not to participate in the CTI program.

Between late 2019 and the spring of 2021, hospitals submitted 253 CTIs, which underwent a review and refinement process. HSCRC ultimately approved 114 CTIs for implementation in 2021.⁴ At the time of this evaluation, 105 CTIs had been approved and had complete baseline data available for analysis. However, our follow-up evaluation will include all 114 CTIs.

To minimize administrative burden, hospitals are not required to report on their progress on, or savings achieved by, their CTIs during the performance year. Instead, the Chesapeake Regional Information System for Our Patients (CRISP), which operates the health information exchange (HIE) for Maryland and acts as a program administrator for many HSCRC Care Transformation programs, developed the Care Transformation Profiler (CTP), an online data tool, so that hospitals can track costs on a monthly basis during the performance period. The CTP uses dashboards and reports that aggregate Medicare claims data and show the hospital's performance on their CTIs month-to-month.

In its role as a program administrator, CRISP sponsors a learning collaborative that provides CTI participants with best practices, technical assistance, and feedback on their performance under the program. As part of this role, CRISP selected IMPAQ International to evaluate the CTI program during its first year of implementation. After the first year of the CTI program ends in June 2022, IMPAQ will conduct a follow-up evaluation that summarizes Year 1 results, including which CTIs achieved savings, feedback from participants, and recommendations on how the CTI program could be improved or expanded.

⁴ Although the program was intended to start in 2020, it was delayed until July 2021 due to the COVID-19 pandemic.

Data, Methods, and Analysis

IMPAQ used a mixed-methods approach to evaluate the CTI program in the pre-implementation period. This section describes the qualitative and quantitative data sources and the methods we used to conduct our analyses.

Literature Review. IMPAQ conducted a brief literature review to (1) provide an overview of care transformation efforts in the U.S. and identify studies that have demonstrated success in reducing costs or encouraging appropriate utilization of health care resources; and (2) to examine how the clinical areas and interventions that are targeted in first-year CTIs compare to the published literature on care transformation.

We conducted the search using PubMed and Google Scholar, using a five-step process:

1. We searched scientific and gray literature using an initial set of keywords to refine the search strategy based on the results (Exhibit 1). The search was limited to studies published within the past ten years and conducted within the U.S.

Exhibit 1. Literature Review Search Terms

Topics (joined by "AND")	Search Terms (joined by "OR")
Care transformation	Primary care transformation, health care transformation, value-based care transformation, acute care transformation, post-acute care transformation, care transformation intervention, care transformation savings, care transformation episode, care transformation bundle
Care redesign	Primary care redesign, health care redesign, value-based care redesign, acute care redesign, post-acute care redesign, care redesign savings, care redesign episode, care redesign bundle

2. After identifying the terms most likely to produce results on care transformation, we systematically identified, screened, and analyzed relevant materials. We screened results using a multi-stage process: we determined how recently an article was published, the type of publication, and its relevance to our study. We retained articles that were peer-reviewed clinical research studies or non-clinical research such as meta-analyses, qualitative studies, or analyses of claims data.
3. We then conducted a search of the grey literature using the same search terms, and retained editorials, blogs, and white papers that met our study criteria. To do this, we

ran a general web search and searched the websites of organizations that advocate for care transformation, as well as federal agencies that have published research on care transformation.

4. We then abstracted relevant details from each publication into an Excel spreadsheet: title, authors, the summary or abstract, the article type (clinical study, white paper, etc.), any interventions tested, specific populations, payers, or disease states targeted, and whether changes in utilization, cost, or quality were observed. We also created a variable to identify the CTI thematic area with which it aligned (if applicable). For clinical studies, we also created a variable to identify the model or unit being studied, such as a defined clinical episode, a patient panel, or a geographic area.
5. Finally, we imported the abstracted information into NVivo to code and analyze key information from the articles. Specifically, we used NVivo to categorize the interventions and outcomes observed in clinical studies and to code information on clinical, cost, or other outcomes. We used matrix analyses to identify instances where certain interventions co-occur with changes in cost or quality.

Survey. Due to the ongoing pandemic, we determined that a survey of CTI participants would be less burdensome than interviews with hospital and health system staff, we conducted a brief online survey of CTI participants to capture their perspectives during the pre-implementation phase. We used a short survey of 8 questions asking participants about their reasons for conducting a CTI, the type of care transformation they were undertaking, any early challenges to implementing the CTI, and other open-ended questions that would help us to understand the context in which the CTI is being conducted.

We fielded the survey to 76 contacts provided by CRISP. We received 21 responses; not all respondents answered every question. We reviewed and qualitatively coded the responses to identify key themes.

Key Informant Interviews. We conducted one-hour interviews with CRISP and HSCRC staff to gather information on how the CTI program evolved, the policy goals of the program, and any challenges experienced in the lead-up to the launch of the program. Because we were unable to interview hospital staff, we instead conducted an interview with staff from the Maryland Hospital Association to gather insights about the CTI program that they may have heard from their members.

The interviews were semi-structured discussions conducted by a researcher and recorded by a notetaker. We also audio recorded each interview to ensure that our notes were accurate. We conducted a qualitative analysis of the interviews using NVivo to identify common themes.

CTI Data. We analyzed descriptive data on CTIs that were active as of July 2021. The data included baseline information on each CTI, such as thematic area, the preliminary target price for each episode, the number of baseline episodes, a brief summary of the interventions, specific diagnosis-related groups or conditions targeted (if applicable), and the episode length.

We analyzed CTI data to summarize and describe:

1. The breakdown of CTIs by thematic area
2. Baseline episode cost within thematic areas
3. The volume and types of CTI episodes
4. The racial/ethnic composition of CTI patient populations
5. The extent to which CTIs focus on chronic conditions
6. Common types of interventions used in CTIs
7. How CTIs consider or incorporate socioeconomic factors or race/ethnicity.

Social vulnerability and chronic condition indicators. To understand the socioeconomic factors affecting CTIs and their patient populations, we linked hospital data with publicly available measures of social vulnerability and the prevalence of disease in hospital service areas. First, we linked zip codes in each hospital's service area to the Social Vulnerability Index (SVI) created by the Centers for Disease Control and Prevention.⁵ The SVI ranks census tracts on 15 social factors, including poverty, lack of vehicle access, and crowded housing, and groups them into four related themes. The SVI is expressed as a percentage that indicates the vulnerability of a census tract relative to others in the state. For each hospital, we calculated an average SVI rank across all zip codes within a service area. We flagged hospitals whose SVI rankings were 75 percent or higher.

We also used CMS data from the Mapping Medicare Disparities Tool to identify hospitals whose service areas have high rates of hospitalizations for asthma (>10 per 1,000), diabetes (>5 per 1,000), hypertension (>14 per 1,000), and chronic kidney disease (>9 per 1,000).⁶

Finally, we used data on hospitals' payer mix (provided by CRISP) to identify those that receive 50 percent or more of their inpatient or emergency department (ED) revenue from Medicaid. A

⁵ Information on the SVI may be found at: https://www.atsdr.cdc.gov/placeandhealth/svi/faq_svi.html

⁶ Information on the Mapping Medicare Disparities Tool can be found at: <https://www.cms.gov/About-CMS/Agency-Information/OMH/OMH-Mapping-Medicare-Disparities>

higher mix of Medicaid revenue indicates that the hospital is serving a relatively high-cost, low-income patient population that may have unmet social needs.

Findings

This section summarizes the key findings of our evaluation. We begin with an overview of the areas that CTIs are targeting in the first year of the program and show how CTI episodes and costs vary within these areas. We then use survey data to describe why hospitals chose to participate in the CTI program and why they chose to focus on the areas that they did. Next, we discuss how CTIs compare to published research in terms of the chosen thematic areas and care settings, episodes and interventions, and the extent to which CTIs address SDOH. Finally, we summarize the types of challenges they faced in designing and implementing their CTIs at the start of the program.

Overview of CTIs: Thematic Areas, Episodes, and Baseline Costs

CTIs are grouped into thematic areas based on similarities between the clinical interventions used, the settings where the triggering event occurs (such as a hospital or a primary care practice), and how the patient populations are defined (such as diagnosis or the treating provider).⁷ When developing the CTI program, HSCRC did not initially define the areas that hospitals should focus on in the CTI program, but instead asked hospitals to propose CTIs that aligned with areas that they considered high priorities. As hospitals submitted CTIs for approval, HSCRC and its CTI Steering Committee finalized five thematic areas:

- **Care Transitions**, which focus on transitional care management such as discharge coordination, home assessments, and telehealth transition services
- **Community-Based Care**, which target the broader community, including community health workers, providers assigned to senior living buildings, or care coordination for patients transitioning to or from skilled nursing facilities (SNFs)
- **Emergency Care**, which focus on reducing ED visits for patients who are at high risk for ED use (such as high utilizers and individuals who have unmet social needs)
- **Palliative Care**, which focus on managing direct care of chronic pain patients, improving advanced care planning, and coordination with home health, hospice, and SNF, and
- **Primary Care**, which is for hospitals that have programs to improve their primary care services, such as wrap-around services or completion of social, behavioral, and home safety assessments, or referrals to community resources.

⁷ HSCRC. Care Transformation Initiative Frequently Asked Questions. Available at: https://hscrc.maryland.gov/Documents/Care%20Redesign/Steering%20Committee/Care%20Transformation%20Initiative%20FAQs_final.pdf

This evaluation includes the 105⁸ CTIs that were approved and that had complete data available at the time of our analysis. These CTIs cover 233,228 Medicare fee-for-service beneficiaries in Maryland, which is nearly a quarter of the 1 million beneficiaries who have Medicare Parts A and B coverage in any given month. Nearly 75 percent of first-year CTIs are in Care Transitions or Primary Care (Exhibit 2).

Exhibit 2. Number of CTIs by Thematic Area

Thematic Area	Number of CTIs	Total Number of Patients at Baseline
Care Transitions	55	35,612
Community-Based Care	10	29,985
Emergency Care	13	17,314
Palliative Care	6	986
Primary Care	21	149,331
Total	105	233,228

To construct a CTI, hospitals identify a patient population (for example, patients with chronic conditions being discharged from an acute care stay) and episode length, or the duration of time during which the patients will receive a set of interventions (Exhibit 3). Hospitals are responsible for all costs during the episode. Episodes lasting 90 days are most common, while 365-day episodes account for nearly a quarter of CTIs and are concentrated in the Primary Care thematic area. We note that HSCRC requires certain episodes (such as those that follow a panel of patients) to be 365 days, and hospitals do not have the option to change the length.

Exhibit 3. CTI Episode Length by Thematic Area

Thematic Area	30 days	60 days	90 days	180 days	365 days
Care Transitions	6	10	29	8	2
Community-Based Care	1	2	5	0	2
Emergency Care	2	1	9	1	0
Palliative Care	0	0	3	1	2
Primary Care	0	0	1	1	19
Total	9	13	47	11	25

⁸ CRISP assigns a numeric identifier for each unique CTI, where the identifier corresponds to a defined set of interventions, an episode length, and criteria for selecting the patient population. There are 92 unique CTIs. However, the same CTI may be conducted by more than one hospital. In these cases, CTI definition is the same, but each hospital has different baseline costs and will be evaluated individually for cost savings. Of the 92 unique CTIs, eight are being conducted at more than one hospital, and we treat each of these as a unique CTI.

Hospitals select a one-year period that serves as a baseline. Claims data from this baseline period is used to calculate a target price for the episode. After the performance year ends, costs will be compared to the target price to determine whether the CTI achieved savings. Because some hospitals had been engaged in care transformation efforts prior to the start of the CTI program, they could select a baseline period that predated those efforts so that the baseline did not include the period when interventions were being implemented.⁹ CTIs vary widely in the number of episodes available in baseline data (Exhibit 4). This variation reflects differences in patient populations and the length of episodes.

Exhibit 4. Number of Baseline Episodes per CTI by Thematic Area

Thematic Area	Mean	Minimum	Maximum
Care Transitions	713	15	2,907
Community-Based Care	3,050	29	22,556
Emergency Care	1,624	13	5,531
Palliative Care	168	1*	342
Primary Care	7,262	82	32,525

Baseline episode data are masked when there are fewer than 12 episodes.

The target price per episode depends on the number of available baseline episodes, the variation in costs for those episodes, patient complexity and care needs, and the types of costs that hospitals chose to include in the episode. For example, CTIs may be triggered by an inpatient hospital stay, while others may not. For episodes that are triggered by an inpatient hospital stay, hospitals can choose to include or exclude the cost of that stay in the CTI episode. Eighty-eight CTIs include the index hospitalization in the cost of the episode, and most were Care Transitions or Primary care CTIs. Palliative Care CTIs have the highest costs per episode, likely due to the severity of illness in the patient population (Exhibit 5).

Exhibit 5. Preliminary Target Price by Thematic Area

Thematic Area	Minimum	Mean	Median	Maximum
Care Transitions	\$9,048	\$34,438	\$34,805	\$87,369
Community-Based Care	\$12,027	\$27,378	\$29,092	\$43,831
Emergency Care	\$8,203	\$14,552	\$11,165	\$29,871
Palliative Care	\$34,417	\$48,808	\$42,287	\$88,197
Primary Care	\$3,952	\$14,562	\$13,502	\$35,182

⁹ The earliest baseline data available was 2016. Almost half (48) of CTIs are using a baseline data that is recent (2018 or later), while the remainder rely on 2016-2017 data.

Nearly all Maryland hospitals are participating in the CTI program, and most are motivated by the potential to earn savings

Forty-three hospitals (or 90 percent of all Maryland hospitals) are leading CTIs during the 2021-2022 performance period. We surveyed CTI participants to understand why they are participating in the CTI program and why they chose the clinical areas they did. Reasons for participation vary among the twenty-one survey respondents: the majority (12) are participating in CTIs to earn potential savings or because they were already engaged in similar initiatives and are eager to be formally evaluated. Six other respondents said that they are conducting CTIs because they want to avoid financial penalties or because there is no downside financial risk if they do not achieve savings.

We also asked participants whether they designed CTIs to address clinical areas or patient populations that represent elevated areas of spending. The survey results were divided: eleven respondents said that their CTI was intended to address an area of high spending, while another ten said this was not the purpose of their CTI. As noted by several interviewees, hospitals may be more focused on designing CTIs that improve quality and patient outcomes rather than address costs. Other respondents indicated that the CTI program offers an opportunity to align quality with financial incentives, improve patient outcomes, or establish better relationships with communities and other providers.

These responses align with findings from our interview with HSCRC. During the planning phase of the CTI program, HSCRC conducted outreach to hospitals to understand the types of transformation projects they were already engaged in. Hospitals indicated a need to understand whether these projects were working to reduce costs but often lacked the internal data support to evaluate them. The CTI program helps to fill that gap.

CTI thematic areas generally align with recent research on care transformation; however, behavioral health and quality measurement are two notable gaps

We reviewed recent research on care transformation to assess the extent to which CTIs are, or are not, addressing common areas of spending. Specifically, we reviewed recent research to identify (1) the clinical areas addressed, (2) the settings and episodes of care, and (3) the interventions being tested.

Among the 64 articles in our final list, 57 (89 percent) align with a CTI thematic area, with most focusing on transitions of care or primary care.¹⁰ Thirty-five articles in our literature review

¹⁰ Seven articles that did not align with a thematic area were policy-focused and addressed system-level issues, such as the need to incorporate social needs into care, problems with fragmented payment, and the need to develop and leverage data systems to drive care improvements.

were clinical studies that were designed similarly to CTIs and tested care transformation interventions to reduce costs or improve patient outcomes. The settings of clinical studies were also similar to those in the CTI program: 18 were conducted in hospitals or across multi-site health systems, and 14 were conducted in primary care clinics, small practices, or within an accountable care organization (ACO). Of the remaining three studies, two were community-based, and one was based in an orthopedic practice.

The clinical studies mainly focused on reducing hospital admissions or readmissions after acute care stays and avoiding emergency department visits. Most of the clinical studies (23) did not measure changes in cost but instead measured changes in quality, patient or provider satisfaction, or overall utilization. Because most studies focused on transitions of care or primary care, they also defined their patient populations according to a clinical episode of care (such as a recent acute care stay) or patient panel, although five focused on a geographic area. Based on these similarities, we found that clinical studies aligned CTI thematic areas.

Twelve of the 35 studies assessed cost savings. Of these, 11 showed a reduction in costs for care transitions, community-based care, and primary care. Four of the 11 studies focused on the Medicare population (one of these also included Medicaid patients), and one focused on high-risk Medicare and Medicaid patients in a geographic area (East Baltimore). We note that one of these 11 studies (which focused on the impact of a mandatory CMS payment model for joint replacement) projected a reduction in costs for the Medicare program but an *increase* in costs for hospitals. This results of this study may provide lessons for the CTI program because it notes that hospitals may encounter two obstacles to reducing costs, even while faced with reduced Medicare reimbursement: first, that the volumes for certain episodes of care may be too low make the investments in care transformation worthwhile; and second, that certain models limit the ability nonhospital providers (such as physician groups, post-acute care providers, and management companies) to manage patients' care when it is not in the economic interest or the capability of an individual hospital to do so.¹¹ These potential obstacles to cost savings may be worthy of future examination under the CTI program.

The alignment between CTIs and the published literature shows that hospitals and health systems have been focusing on similar opportunities for care transformation in the past ten years. Alternative payment models and grant programs initiated by CMS, states, and commercial payers (all of which are represented in our literature review) have encouraged research on avoiding or reducing hospitalizations and emphasizing primary care. CTIs are largely in step with this pattern, although the CTI program has a few notable differences.

¹¹ Maniya, O. Z., Mather III, R. C., Attarian, D. E., Mistry, B., Chopra, A., Strickland, M., & Schulman, K. A. (2017). Modeling the potential economic impact of the Medicare comprehensive care for joint replacement episode-based payment model. *The Journal of arthroplasty*, 32(11), 3268-3273.

Gaps Between CTIs and Care Transformation Research. One notable gap between the clinical areas covered by CTIs and those in the literature is the extent to which CTIs integrate behavioral health care. While a subset of CTIs include interventions such as behavioral health assessments or referrals to behavioral health providers, none include ongoing behavioral health services, even though behavioral health is a known cost driver for the Medicare population.¹² Our review of the literature identified three clinical studies of behavioral health integration in either the primary care or community settings, two of which resulted in cost savings.^{13,14} Three additional sources (non-clinical studies) highlighted the importance of behavioral health integration but noted challenges in identifying which entities or stakeholders should finance this type of care transformation, which payers will benefit from it, and which model(s) are most effective. The Maryland Hospital Association acknowledged in their interview that behavioral health and addiction issues are known drivers of cost, but many hospitals are not focusing on behavioral health because the interventions are costly. HSCRC and CRISP could consider ways to help hospitals and health systems develop CTIs that target patients with behavioral health needs, or that incorporate behavioral health services into episodes in the future.

A second difference between the CTI program and published research is the CTI program's primary focus on cost reduction without measuring changes in quality or patient outcomes. HSCRC indicated that it consciously did not require quality measurement in the CTI program because hospitals are already required to report quality data through other programs, and because HSCRC could not identify quality measures without knowing what topics or thematic areas hospitals would propose. As hospitals implement their CTIs, they may show quality improvements before they demonstrate any cost reductions. Therefore, process and outcome measures, which are widely used in value-based models, could be used to demonstrate near-term changes in clinical practice and possibly predict cost savings in future years.

CTIs are targeting chronic conditions that drive costs, but few are doing so in the primary care setting

Nearly 70% percent of Medicare beneficiaries have two or more chronic conditions, which increase care costs and mortality.¹⁵ Chronic conditions such as heart disease, diabetes, and respiratory disease are also leading causes of death among older adults nationally.¹⁶ On

¹² Figueroa JF, Phelan J, Orav EJ, Patel V, Jha AK. Association of Mental Health Disorders With Health Care Spending in the Medicare Population. *JAMA Netw Open*. 2020;3(3):e201210. doi:10.1001/jamanetworkopen.2020.1210.

¹³ Beil H, Feinberg RK, Patel SV, Romaire MA. Behavioral Health Integration With Primary Care: Implementation Experience and Impacts From the State Innovation Model Round 1 States. *Milbank Q*. 2019 Jun;97(2):543-582.

¹⁴ Ross, K. M., Gilchrist, E. C., Melek, S. P., Gordon, P. D., Ruland, S. L., & Miller, B. F. (2019). Cost savings associated with an alternative payment model for integrating behavioral health in primary care. *Translational behavioral medicine*, 9(2), 274-281.

¹⁵ CMS. (2012). *Chronic conditions chartbook: 2012 edition*. CMS. Retrieved from <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Chronic-Conditions/2012ChartBook>.

¹⁶ Centers for Disease Control and Prevention. (2021, August 3). *FASTSTATS - older persons health*. Centers for Disease Control and Prevention. Retrieved from <https://www.cdc.gov/nchs/fastats/older-american-health.htm>.

average, a Medicare beneficiary with a heart condition has almost twice the total cost of care (\$18,270) compared to a beneficiary without a heart condition (\$9,203).¹⁷ In Maryland, nearly two-thirds of Medicare beneficiaries have at least one chronic condition, and the per capita cost of care for Maryland beneficiaries with two chronic conditions is nearly 65 percent higher than those with no chronic conditions. Because chronic conditions are so widespread in the Medicare population and are a major cost driver, care transformation has increasingly focused on managing these conditions and preventing hospitalization.

Our literature review shows that care transformation efforts often target patients with chronic conditions and do so in primary care or community settings as a way to avoid unnecessary hospitalizations or readmissions.¹⁸ For example, a meta-analysis showed that, for patients with chronic obstructive pulmonary disease (COPD), patient education, telemonitoring, and home visits reduced hospital admissions.¹⁹ One CMS-funded primary care transformation initiative in Michigan that targets chronic conditions has reduced costs for this population by expanding the capacity of patient-centered medical homes.²⁰ In contrast, few of the 21 Primary Care CTIs include chronic conditions in their defined target population (Exhibit 6).²¹ The 51 CTIs that specify chronic conditions in their target patient population are heavily concentrated in the Care Transitions thematic area.

Exhibit 6. Number of CTIs that Target Chronic Conditions, by Thematic Area

Thematic Area	Number of CTIs	Number CTIs Targeting at Least 1 Chronic Condition
Care Transitions	55	37
Community-Based Care	10	4
Emergency Care	13	1
Palliative Care	6	4
Primary Care	21	5
Total	105	51

¹⁷ Ewald, E., Koenig, K., Schluterman, N., & Ward, C. (2017, December). *Prevalence and health care expenditures among Medicare Beneficiaries Aged 65 Years and Over with Heart Conditions*. Centers Medicare and Medicaid Services. Retrieved from https://www.cms.gov/Research-Statistics-Data-and-Systems/Research/MCBS/Downloads/HeartConditions_DataBrief_2017.pdf.

¹⁸ Fifteen sources in our literature review focused on, or included, patients with chronic conditions. Ten of these were in the primary care setting.

¹⁹ Yang F, Xiong ZF, Yang C, Li L, Qiao G, Wang Y, Zheng T, He H, Hu H. Continuity of Care to Prevent Readmissions for Patients with Chronic Obstructive Pulmonary Disease: A Systematic Review and Meta-Analysis. *COPD*. 2017 Apr;14(2):251-261. doi: 10.1080/15412555.2016.1256384. Epub 2017 Feb 7. PMID: 28326901.

²⁰ Zhai S, Malouin RA, Malouin JA, Stiffler K, Tanner CL. Multipayer Primary Care Transformation: Impact for Medicaid Managed Care Beneficiaries. *Am J Manag Care*. 2019;25(11):e349-e357.

²¹ One primary care CTI includes chronic care management in its description but does not use chronic care flags or DRGs to define the target population.

Thirty-nine CTIs (37 percent) are being conducted by hospitals that are located in counties with high hospitalization rates for chronic conditions. High hospitalization rates for chronic conditions likely indicate a high overall burden of disease in the county and unmet primary care needs. More than half of the CTIs in these counties are targeting chronic conditions in their patient population, and nearly all focus on transitions of care. Thirteen primary care CTIs are being conducted in these counties, but only three target chronic conditions.

Hospitals can use different indicators to include patients with chronic conditions in their CTI population. Thirty-nine CTIs use chronic condition flags that are available in the episode creation template designed by HSCRC, while 14 CTIs specify their patient population using diagnosis-related groups²² (DRGs) (three CTIs use both chronic condition flags and DRGs). Four CTIs use ICD-10 codes²³ (Exhibit 7). This variation in how episodes flag certain conditions may be an area that HSCRC wishes to study in the future to determine how they affect the alignment of patients to a CTI.

Exhibit 7. Number of CTIs that Include Chronic Conditions in the Patient Population

Chronic Conditions	Number of CTIs that use chronic condition flags	Number of CTIs that use DRGs	Number of CTIs that use ICD-10 codes
COPD/Asthma	34	14	2
Chronic Kidney Disease	22	8	0
Diabetes	31	11	3
Heart Disease	21	16	2
Hypertension	20	7	0
All Major DRGs	N/A	6	N/A
Number of Unique CTIs	39	14	4

CTIs use many of the same interventions documented in care transformation research

Hospitals and health systems are implementing a range of interventions to lower costs and improve quality through their CTIs. HSCRC and CRISP required only minimal CTI descriptions in order to give hospitals maximum flexibility and to minimize administrative burden at the start

²² DRGs are a patient classification system that standardizes prospective payment to hospitals and encourages cost containment initiatives. In general, a DRG payment covers all charges associated with an inpatient stay from the time of admission to discharge.

²³ ICD-10 codes are the International Statistical Classification of Diseases and Related Health Problems (ICD), a medical classification list by the World Health Organization (WHO).

of the program. However, to identify best practices among the CTIs, it will be important to identify interventions that had a measurable impact on costs and quality so they can be scaled across hospitals. We reviewed CTI descriptions and categorized the interventions to identify common strategies and assess how the interventions align with those described in the literature. Early in this process, we discovered that CTI applications included very brief descriptions of the interventions being used. Four CTIs did not describe any interventions, and 22 only describe one general intervention such as team-based care, making referrals, using data analysis, or conducting clinical assessments. Despite these limitations, we identified six interventions that were common between CTIs and clinical studies from our literature review.²⁴

Clinical study interventions that align with CTIs. By far, the most common intervention type is care coordination and care planning (Exhibit 8). This includes assisting patients with referrals and scheduling, warm hand-offs, and developing and coordinating care plans with patients and multiple providers. In the clinical studies we reviewed, care coordination was frequently used to improve care transitions after hospitalization and manage high-risk patients, such as those with chronic conditions.

Exhibit 8. Interventions: Common Areas of Alignment Between CTIs and Clinical Studies

Intervention Type	Number of CTIs (Percentage of CTIs)	Number of studies (Percentage of studies)
Care coordination and care planning	63 (60%)	18 (51%)
Screening or referrals for social needs	36 (34%)	9 (26%)
Patient outreach, education, and follow-up	34 (32%)	13 (37%)
Data analysis, Enhanced EHR or Registry use	16 (15%)	8 (23%)
Medication Reconciliation or Medication Management	16 (15%)	5 (14%)
Home-based Care	11 (10%)	4 (11%)

Interventions related to SDOH are present in about one-third of CTIs, and include screening for and documenting social needs, referrals to community service providers, and providing transportation to and from appointments. These were slightly less common in the clinical studies we reviewed; however, social needs have gained more attention in recent years, and

²⁴ When comparing interventions, we focused on clinical studies from our literature review because they contained more detailed descriptions. We did not include non-clinical studies such as meta-analyses, retrospective claims analyses, or other non-clinical sources because they did not contain sufficient information about interventions to compare to CTIs.

therefore more studies on care transformation initiatives that address them may be forthcoming.

Increased patient engagement is also common in both CTIs and the care transformation literature. More than a third of CTIs and clinical studies describe interventions such as increased patient outreach, education about their clinical conditions, and enhanced communication such as reminders about appointments and telephonic follow-up to check on patients' status. Interestingly, less than a quarter of CTIs and clinical studies describe the use of data resources as an intervention. It is possible that hospitals intend to leverage data to support their CTIs but have not fully articulated how data will be used. In the final section of this report, we describe the challenges of accessing and using data that surfaced during our survey of CTI participants, through interviews, and in our review of the literature.

Also relevant is the small overlap in medication reconciliation and home-based care. These interventions were less common but are used in combination with other interventions to prevent hospital readmissions and manage complex patients.

We note that most common interventions being used in CTIs were also used in the 11 clinical studies that produced cost savings. However, it is not clear whether these interventions will produce savings in the CTI program, given the difficulty in isolating the impact of any single intervention and the variation in the methods and intensity of the interventions.

Differences between CTI and Clinical Study Interventions. Almost a third of CTIs (30) are using clinical assessments and early intervention to identify high-risk patients and provide tailored treatment plans. CTIs are also testing interventions such as discharge planning and remote patient monitoring. These were far less common among the clinical studies we reviewed. In addition, a third of clinical studies included interventions related to provider education, training, or financial incentives as part of care transformation, along with expanded patient access. These differences between the published literature and CTIs are likely due to the number of studies we reviewed, differences in patient populations in the published literature, and the limited descriptions that hospitals provided for CTI interventions.

Half of all CTIs address SDOH, but opportunities exist to align more closely with local population needs

Hospitals' ability to achieve savings through their CTIs will depend on several factors, including the design of interventions and episodes, as well as the patient populations they target. The SDOH for CTI patient populations—including socioeconomic status, racial/ethnic composition, and prevalence of disease—are also important factors that affect patient complexity, risk, and health care costs.

We reviewed CTI descriptions and survey responses to determine the extent to which CTIs acknowledge or address SDOH or target minority racial/ethnic populations.²⁵ We then considered the socioeconomic context of CTIs by identifying those that are being conducted in areas with high social vulnerability ratings, which signal high rates of unmet social needs within an area and can drive costs and make care transformation challenging. We also reviewed hospitals’ payer mix to identify hospitals with higher Medicaid revenue.²⁶ Hospitals that serve a large Medicaid population can have higher patient costs overall because Medicaid patients tend to be more medically complex and often need social supports due to their low-income status. Although the CTI program focuses on Medicare patients, hospitals that receive a larger share of their revenue from Medicaid may also have more dually-eligible individuals included in CTIs.²⁷

SDOH is a common theme in CTIs, although race and ethnicity are not explicitly mentioned in CTI descriptions. Half (46) of all CTIs acknowledge SDOH, but in different ways: some CTI descriptions state that they include patients with unmet social needs in their patient populations, while others include SDOH-related interventions (as discussed in the previous section) or include social service professionals or community organizations as part of the care team (Exhibit 9).

Exhibit 9. SDOH and Race/Ethnicity Indicators in CTIs

Thematic Area	Number of CTIs that Address SDOH	Number of CTIs with ≥40% Minority Baseline Population
Care Transitions	25	17
Community-Based Care	1	1
Emergency Care	8	4
Palliative Care	2	2
Primary Care	10	4
Total	46	28

One third of all Maryland Medicare fee-for-service beneficiaries identify as Black, Indigenous, or Person of Color (BIPOC). However, none of the CTI descriptions explicitly state that they are

²⁵ Social determinants of health are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life-risks and outcomes. They include safe housing transportation, racism, violence, education, economic opportunity, and other factors. See <https://health.gov/healthypeople/objectives-and-data/social-determinants-health>

²⁶ For detailed information on these indicators, please refer to the Data, Methods, and Analysis section.

²⁷ According to recent statistics, dually eligible individuals represent about 34 percent of spending under Medicare despite making up 20 percent of enrollees. Under Medicaid, dually eligible individuals represent about 32 percent of spending and 15 percent of enrollees. See Medicaid and CHIP Payment and Access Commission. *Data Book: Beneficiaries dually eligible beneficiaries for Medicare and Medicaid.* <https://www.macpac.gov/wp-content/uploads/2020/07/Data-Book-Beneficiaries-Dually-Eligible-for-Medicare-and-Medicaid-January-2018.pdf>

focusing on racial or ethnic minorities, and only 37 CTIs have baseline populations in which at least 33 percent of patients identify as BIPOC.²⁸ Because race and ethnicity are social factors that contribute to health outcomes, there is opportunity to further articulate how CTIs can acknowledge or address racial and ethnic disparities.

Survey responses provide some additional context the ways hospitals plan to address SDOH or the needs of racial/ethnic minorities: Twelve respondents said their CTIs would reduce health disparities for racial or ethnic minorities or low-income populations by directly addressing health-related social needs, using stratified data to inform care, or by utilizing risk assessment tools. Others indicated that focusing on chronic conditions will allow them to target populations with social needs. In general, however, CTI descriptions are limited in the level of detail provided on SDOH or how the interventions are expected to impact racial or ethnic minorities.

Few hospitals that serve socially vulnerable and low-income populations are targeting SDOH through their CTIs. There are 12 Maryland hospitals whose service areas have high SVI rankings, and 10 are participating in CTIs (we note that not all of these hospitals are leading a CTI, some are participating sites).²⁹ However, only about half of the 29 CTIs being conducted in hospitals with socially vulnerable service areas are targeting SDOH. Twenty-one CTIs are being conducted in hospitals with high Medicaid revenue, seven of which explicitly include SDOH as part of the interventions (Exhibit 10). These seven CTIs are concentrated among three hospitals and health systems—Johns Hopkins, University of Maryland, and Mercy Medical Center.

Exhibit 10. CTIs in Hospitals with High Medicaid Revenue or in Socially Vulnerable Areas

Thematic Area	Number of CTIs in Hospitals with Higher Medicaid Revenue	Number of CTIs in Service Areas with High SVI*
Care Transitions	12	15
Community-Based Care	3	1
Emergency Care	3	2
Palliative Care	2	1
Primary Care	1	10
Total	21	29

*CTIs may be conducted in multiple locations. We counted a CTI in this column if one or more of the participating hospitals has a service area with a high SVI ranking. However, other hospitals with lower SVI rankings may also be participating in the same CTI.

²⁸ Race/ethnicity categories available in the CTI data are: American Indian/Alaska Native, Asian/Pacific Islander, Black (or African-American), Hispanic, non-Hispanic White, Other, and Unknown.

²⁹ Hospitals with high SVI rankings are: Adventist Healthcare Fort Washington Medical Center, Adventist White Oak Hospital, Johns Hopkins Hospital, Levindale, Medstar Good Samaritan, Medstar Harbor Hospital Center, MedStar Union Memorial Hospital, Mercy Medical Center, Northwest Hospital Center, UMMC Midtown Campus, UM-Prince George’s Hospital Center, and University of Maryland Medical Center. Levindale and Adventist Fort Washington are not participating in CTIs.

All interviewees agreed that SDOH is a high priority for hospitals HSCRC, and CRISP. However, addressing social factors remains a challenge. Not all hospitals have consistent screening practices or access to data on SDOH. HSCRC indicated that linking socioeconomic data with claims data is a complex undertaking and may be a goal for the future. And while CTIs allow hospitals to test interventions that address SDOH, this program alone may not be able to address social factors, and other statewide programs would be needed. The Maryland Hospital Association noted that CRISP is conducting a pilot program that screens patients for social needs and analyzes the data. Hospitals that the Association represents have indicated an interest in expanding this statewide.

Care coordination and data utilization have been key challenges during the early implementation of the CTI program

To understand the challenges of standing up and sustaining CTIs, our survey included questions about issues that CTI participants faced at the start of the performance period. At the time, some participants had experience with care transformation projects, while others did not. Because of the variation in their experience and heterogeneity in the design of CTIs, we expected to see differences in the degree to which participants were experiencing challenges with implementation. We found that two challenges were most common: (1) coordination among providers and other stakeholders; and (2) collecting, understanding, and using data.

Challenges with care coordination and working with other stakeholders. A majority (16) of the 21 survey respondents described difficulties engaging with stakeholders or accomplishing the requirements of the program. While some respondents said that their partners and stakeholders were supportive of the CTI, several said their partners wanted to simplify the design of CTI, or they found it challenging to convince partners to implement a financially focused CTI. Other respondents said they had received feedback from partners and stakeholder encouraging them to focus on quality, identifying gaps in care, aligning goals and incentives, and providing education to hospital stakeholders. Several respondents noted that they are consulting with their senior leadership or are in the process of strengthening their partnerships and referral processes.

Our interviews with both CRISP and HSCRC staff indicated that coordination among stakeholders was a challenge during the CTI design phase. Successfully designing and implementing CTIs requires input from clinical, financial, and information technology staff, and hospitals often struggle to bring these stakeholders together due to various constraints and competing demands. These coordination challenges are also noted in the care transformation

literature.^{30,31} Specifically, researchers note that the fragmentation of the health care system and competing demands on providers' and administrators' time make it difficult to share information needed to provide coordinated care.^{32,33}

Challenges with collecting and leveraging data. Sharing, understanding, and applying data were other challenges noted by CTI survey respondents. Specifically, respondents said that they had trouble utilizing CTI resources such as CRISP's care transformation dashboard or CTI reports. The Maryland Hospital Association noted that hospital staff vary in their experience with utilizing data to support care transformation. Some hospitals have staff who are technologically savvy, while others are just beginning to leverage data. Several survey respondents said they are making investments to update their hospital's information technology infrastructure by developing performance dashboards or by updating electronic health records to capture more information needed for the CTI.

Research on care transformation supports CTI participants' experience. One study found that the time needed to incorporate and use new data in their project was a major challenge.³⁴ Other studies note that data collection is challenging and costly, yet it can still be insufficient to identify which interventions affected certain outcomes.^{35,36} CRISP and HSCRC staff echoed these challenges during interviews and acknowledged that a subset of CTI participants needed additional technical assistance to define clinical episodes during the CTI application process. CRISP and HSCRC have also committed to providing ongoing technical assistance on data use throughout the program.

Other implementation challenges. In the final month before implementation of CTIs began, 14 respondents said that they were still making adjustments to their CTI episodes. These changes included broadening the target population, changing the structure of the care team, or

³⁰ Shmerling, A. C., Gold, S. B., Gilchrist, E. C., & Miller, B. F. (2020). Integrating behavioral health and primary care: a qualitative analysis of financial barriers and solutions. *Translational Behavioral Medicine*, 10(3), 648-656.

³¹ Berkowitz SA, Brown P, et al; J-CHiP Program. Case Study: Johns Hopkins Community Health Partnership: A model for transformation. *Healthc (Amst)*. 2016 Dec;4(4):264-270. doi: 10.1016/j.hjdsi.2016.09.001. Epub 2016 Sep 29. PMID: 27693204.

³² Beil H, Feinberg RK, Patel SV, Romaine MA. Behavioral Health Integration With Primary Care: Implementation Experience and Impacts From the State Innovation Model Round 1 States. *Milbank Q*. 2019 Jun;97(2):543-582. doi: 10.1111/1468-0009.12379. Epub 2019 Apr 7. PMID: 30957311; PMCID: PMC6554552.

³³ Bustamante AV, Martinez A, Rich J, Chen X, Rodriguez HP. Comparing costs of a senior wellness care redesign in group and independent physician practices of an accountable care organization. *Int J Health Plann Manage*. 2019 Jan;34(1):241-250. doi: 10.1002/hpm.2622. Epub 2018 Aug 15. PMID: 30109902.

³⁴ Fairbrother G, Trudnak T, Christopher R, Mansour M, Mandel K. Cincinnati Beacon Community Program highlights challenges and opportunities on the path to care transformation. *Health Aff (Millwood)*. 2014 May;33(5):871-7. doi: 10.1377/hlthaff.2012.1298. PMID: 24799586.

³⁵ Johnson, D. C., Kwok, E., Ahn, C., Pashchinskiy, A., Laviana, A. A., Golla, V., Saigal, C. S. (2019). Financial margins for prostate cancer surgery: quantifying the impact of modifiable cost inputs in an episode based reimbursement model. *The Journal of urology*, 202(3), 539-545.

³⁶ Jayakody, A., Bryant, J., Carey, M., Hobden, B., Dodd, N., & Sanson-Fisher, R. (2016). Effectiveness of interventions utilising telephone follow up in reducing hospital readmission within 30 days for individuals with chronic disease: a systematic review. *BMC health services research*, 16(1), 403. <https://doi.org/10.1186/s12913-016-1650-9>.

developing committees or partnerships with providers, health systems, and local communities. These late-stage changes relate to the other challenges noted above regarding data use and coordination among partners. Notably, only one survey respondent mentioned challenges due to the COVID-19 pandemic, although this certainly presented challenges for all hospitals.

Given the low rate of response to our survey, and our inability to interview staff participating in the CTIs, we have limited information on the broader implementation challenges encountered by CTI participants and how they are addressing them. However, we expect to conduct in-depth interviews with a set of CTI participants and field a follow-up survey in the post-implementation period to gather more information.

Conclusion

Maryland hospitals and health systems have operated under an all-payer, global-budget model since 2014 and are attuned to the dual objectives of controlling costs while increasing quality of care for Medicare patients. The CTI program is intended to further encourage hospitals and primary care providers to control costs by testing innovative approaches to care. As this evaluation shows, the CTIs being implemented in the program's first year are similar to recent care transformation research, with a few noted exceptions. However, the results of recent research are mixed in terms of demonstrated cost savings. The extent to which CTIs can achieve savings will depend on the variation in populations being studied, the quality of the study designs, and the combinations of interventions and how they may interact. In order to identify success factors and share best practices for CTI design in the future, we offer the following considerations:

More comprehensive descriptions of CTIs will help to articulate interventions and support the spread of best practices.

CTI's descriptions of interventions were limited, which presents challenges in understanding the scope of CTIs and comparing them to published research. These limitations could also present challenges for future evaluation of the success of the program. For CTIs that achieve cost savings, it will be essential to understand which interventions influenced the outcomes. Similarly, for those that do not achieve savings, it will be important to assess the set of interventions for possible deficiencies.

Incorporating behavioral health into CTIs could address a major cost driver.

Behavioral health is a known driver of health care costs and is an area that intersects with both social determinants and chronic conditions. While patients with behavioral health diagnoses are may be included in CTIs, they are not the primary focus of any CTIs, and behavioral health services do not appear to be included in CTI episodes. The CTI program presents an opportunity for hospitals and health systems to improve costs and outcomes for patients with behavioral health diagnoses through many of the same interventions that are being tested in current CTIs—including care coordination, partnerships with behavioral health, and social service providers, and medication management.

Quality measurement could provide a more complete picture of CTIs' progress.

Quality measurement and improvement is a long-standing component of Maryland's all-payer model. Under the TCOC model, Maryland hospitals are required to meet selected population health targets. While it may not be feasible to require a distinct set of measures for each CTI,

HSCRC, and CRISP could consider ways to leverage existing quality measures in ways that do not create additional reporting burden for hospitals and health systems. In future years of the CTI program, these measures will be needed to assess interactions between quality, outcomes, and costs.

CTIs could be better aligned with the socioeconomic conditions and prevalent health conditions of hospital service areas. We found that hospitals in socially vulnerable communities did not necessarily design CTIs that address SDOH. In addition, only half of the CTIs taking place in counties with high hospitalization rates for chronic conditions are targeting them in their patient populations, and few are in the primary care setting. It is possible that hospitals in these areas have other programs that address SDOH or chronic conditions, and the CTI program would have duplicated those efforts. Hospitals should not be limited to conducting CTIs that only reflect the health of the local population; however, these factors should be considered in the design of CTIs going forward.

This evaluation provides a starting point for assessing the first year of the CTI program by highlighting the areas of care transformation that hospitals are choosing to prioritize, assessing the extent to which CTIs align with other care transformation efforts, and identifying possible gaps. The follow-up evaluation will examine why CTIs were or were not successful in achieving cost savings, describe lessons learned by CTI participants, and identify possible updates to the CTI savings methodology.

Appendix A. List of Citations

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Appendix B. Interview/Discussion Guides

B.1 Questions for CRISP and HSCRC Staff

1. Please describe your role(s) in implementing the CTI program.
2. Can you discuss the evolution of the CTI program, including its short- and long-term goals?
3. Had the state identified any key areas for care transformation prior to the application process? If so, what were they, and why?
4. Please describe the process for vetting the CTI applications.
 - a. Were there concerns about cherry-picking among the hospitals in how they select the populations (such as the populations that the hospitals knew would have cost savings)?
5. How does CRISP work with HSCRC to implement the program?
6. How does CRISP interact with the implementing sites? Which hospital staff do you interact with?
7. The CTI program currently measures only changes in costs. Can you discuss the decision to measure cost and not measure quality or patient experience of care?
8. What feedback have you received from CTI participants about the cost savings methodology?
9. Hospitals and providers have raised concerns about risk adjustment in value-based care models. Have you received similar feedback from Maryland hospitals?
10. How do you plan to scale up or dissemination lessons from successful CTIs? What would this process look like?
11. Socioeconomic status, race, and ethnicity are indicated as HSCRC and CRISP priorities. However, relatively few of the applications explicitly address these issues. How will you encourage subsequent hospital initiatives to address socioeconomic status, race, and/or ethnicity?
12. What changes, if any, do you think would improve the CTI program? Are there opportunities for the hospitals to provide their perspectives on the way the CTI program is being implemented?

B.2 Discussion Guide for the Maryland Hospital Association

1. What are some of the major areas of care transformation among hospitals in the state?
2. Did the Association work with HSCRC to develop the themes for the CTIs?
 - a. Which areas of care transformation were focused on the most? Why?
3. What were hospitals' reactions to the incentives introduced by the CTI program?
4. Did hospitals raise concerns about the costs of implementing CTIs?
 - a. The CTI program does not include quality metrics, and is based solely on cost savings. How have hospitals reacted to this?
5. Have your member hospitals shared their experiences with implementing CTIs so far?
 - a. What are some of the challenges they are facing, and to what extent is social risk a factor?
6. In terms of the data, are hospitals starting to collect information on social needs or outcomes?
 - a. Are there challenges around the privacy of this data, or any plans to make the identification of patients with social needs more robust?
7. Is there a desire among hospitals to further risk adjust patients based on social risks?
8. Are you aware of any examples of successful care transformation—in Maryland or elsewhere—that could be scaled up in the state, or that you think could serve as models for hospitals in the state?
9. What kinds of changes or supports would help Maryland hospitals implement care transformation efforts to drive down costs and increase quality?

Appendix C. Survey Questions

1. Briefly explain why your hospital decided to implement a CTI (*FREE TEXT*)
2. Has the focus of your CTI been a major cost driver at your hospital system/hospital? (*YES/NO*)
3. Have you made any adjustments to the CTI design (such as the triggering event, population of interest, or interventions) since you began implementing it? (*YES/NO*)
 - a. If yes, what are those specific changes? (*FREE TEXT*)
4. Has your hospital made structural changes in order to implement your CTI? For example, hiring additional staff, investing in new IT systems, or forming partnerships with other organizations? (*YES/NO*)
 - a. If yes, please explain these changes. (*FREE TEXT*)
5. Does your hospital's CTI focus on racial/ethnic minorities and/or low-income populations? (*YES/NO*)
 - a. If yes, please explain. (*FREE TEXT*)
6. What, if any, early challenges have you experienced when implementing the CTI? (*FREE TEXT*)
 - a. How have you addressed these challenges? (*FREE TEXT*)
7. Aside from cost savings, what other benefits do you anticipate as a result of this CTI? Please include benefits for staff, patients, and community in your answer, as applicable. (*FREE TEXT*)
8. What feedback, if any, have you received from your staff, patients, partners, and other stakeholders about the CTI thus far? (*FREE TEXT*)

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AIR® Headquarters
1400 Crystal Drive, 10th Floor
Arlington, VA 22202-3289
+1.202.403.5000 | [AIR.ORG](https://www.air.org)



An Affiliate of the American Institutes for Research®
IMPAQ International, LLC
10420 Little Patuxent Parkway, Suite 300
Columbia, MD 21044
+1.443.256.5500 | [IMPAQINT.COM](https://www.impaqint.com)



TO: HSCRC Commissioners
FROM: HSCRC Staff
DATE: January 12, 2022
RE: Hearing and Meeting Schedule

Adam Kane, Esq
Chairman

Joseph Antos, PhD
Vice-Chairman

Victoria W. Bayless

Stacia Cohen, RN, MBA

James N. Elliott, MD

Maulik Joshi, DrPH

Sam Malhotra

.....
Katie Wunderlich
Executive Director

Allan Pack
Director
Population-Based Methodologies

Tequila Terry
Director
Payment Reform & Stakeholder Alignment

Gerard J. Schmith
Director
Revenue & Regulation Compliance

William Henderson
Director
Medical Economics & Data Analytics

February 9, 2022 To be determined - GoTo Webinar

March 9, 2022 To be determined - GoTo Webinar

The Agenda for the Executive and Public Sessions will be available for your review on the Wednesday before the Commission meeting on the Commission's website at <http://hscrc.maryland.gov/Pages/commission-meetings.aspx>.

Post-meeting documents will be available on the Commission's website following the Commission meeting.