FOURTH EVALUATION REPORT

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Evaluation of the Vermont All-Payer Accountable Care Organization Model: 2018–2022

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Table of Contents

List of Exhibits

Contributors

This report reflects the contributions of the entire VTAPM Evaluation Team, including the following individuals:

Executive Summary

The Vermont All-Payer Accountable Care Organization (ACO) Model (VTAPM) builds on nearly two decades of health care payment and delivery system reform initiatives in Vermont, including Vermont's Global Commitment to Health Section 1115 Demonstration, the Blueprint for Health (Blueprint) initiative, and a multi-payer ACO Shared Savings Program pilot under Vermont's State Innovation Model (SIM) Testing Grant. Under the VTAPM, the Centers for Medicare & Medicaid Services (CMS) provided Vermont flexibility in designing a state-specific, all-payer ACO program including Medicaid, Medicaid, and commercial initiatives. In exchange, per the Model State Agreement, the state is accountable for meeting financial targets, statewide health outcomes, and quality of care targets.[1] The VTAPM currently includes one statewide nonprofit ACO: OneCare Vermont (OneCare). OneCare negotiates contracts and aligns model features across Medicare, Medicaid, and commercial payers; supports model implementation in the delivery system; and sets financial and quality targets for participating providers.

State Oversight. The model employs a multi-layered accountability structure across CMS, state agencies, payers, and the health care delivery system (including hospitals, clinicians, and other providers). Overseeing model implementation are CMS, the Vermont Agency of Human Services (AHS), and the Green Mountain Care Board (GMCB, Vermont's independent entity that regulates ACOs).

Model Targets. The ACO, state leaders, and providers participate in activities to meet the model's financial and population health targets. Financial targets are focused on limiting year-over-year growth in all-payer and Medicare total cost of care (TCOC) per beneficiary.[2] The model's quality and population health goals include increasing access to primary care, reducing deaths from suicide and drug overdose, and reducing chronic disease prevalence and morbidity. These three population health targets were selected to align with the priorities identified in Vermont's 2013 State Health Improvement Plan.[3]

Participation. Hospitals are the primary risk-bearing entities in the VTAPM and can choose to participate in any or all three ACO initiatives: Medicare, Medicaid, and/or commercial. In addition to Medicare and Medicaid, two commercial payers participated in the model in performance year (PY) 5 (2022)—Blue Cross Blue Shield of Vermont (BCBSVT) and MVP Health Care. Fourteen of fifteen eligible hospitals participated in at least one ACO initiative in PY 5 (2022). In PY 5 (2022), eight hospitals participated in all three payer initiatives, and six hospitals participated in both the Medicaid and commercial initiatives. Clinicians and providers are eligible to participate only if the hospital in their health service area is participating. Eligible primary and specialty care clinicians can choose to participate in one or more ACO initiatives. In each PY, patients are attributed to the model by virtue of receiving a plurality of their primary care from "participant clinicians." To extend the reach of the provider network, the model's ACO initiatives also contract with "preferred clinicians" who are not used for patient attribution. In PY 5 (2022), the model's network was composed of 85% participant clinicians (almost half of whom were primary care clinicians) and 15% preferred clinicians. Other providers that participated in the model included primary and specialty care practices, federally qualified health centers (FQHCs), skilled nursing facilities (SNFs), home health agencies, and designated agencies for mental health and substance abuse.

Attributed Vermonters. The number of Vermonters attributed to the model grew steadily over time, from 109,914 Vermonters in PY 1 (2018), representing 22% of those eligible, to 259,958 (50% of those eligible) in PY 5 (2022). Of Vermonters attributed to the model, almost half (48.6%) were enrolled in Medicaid, while 24% were Medicare beneficiaries, and 27% had insurance through a participating commercial payer (BCBSVT or MVP Health Care). Most Medicare beneficiaries attributed to the VTAPM were not dually eligible for Medicaid,

resided in rural areas, and had between three and six chronic conditions. Additionally, about two thirds of attributed Medicare beneficiaries were attributed to clinicians who elected all-inclusive population-based payments (AIPBP), and about half were attributed to clinicians who participated in the VTAPM for all five PYs. For the attributed Medicaid population (identified using the Vermont Health Care Uniform Reporting and Evaluation System), the average age of attributed Medicaid enrollees was 27 years across all analytic years (2017–2021). On average, just under half of enrollees (48%) were under the age of 18 years, and this percentage declined over the observed period, ranging from 51% in 2017 to 43% in 2021. During the same period, an average of 66% of attributed Medicaid enrollees lived in rural areas.

Payment Mechanisms and Financial Structure. VTAPM facilitates sharing of financial risk between the risk-bearing ACO (OneCare) and the participating hospitals for the attributed patient populations. The three payment mechanisms include Medicare's optional AIPBP, which are prospective monthly payments that are reconciled to actual Medicare fee-for-service (FFS) payments at the end of the year; Medicaid's fixed prospective payment, which is not reconciled with FFS payments; and traditional FFS. Payments from each payer flow through the ACO, which distributes the prospective payments to participating hospital providers based on their attributed patients. The two commercial payers participating in the model both elected to use FFS payments and did not negotiate alternative payment arrangements with OneCare.

Medicare and Medicaid Spending

We conducted two quantitative analyses for Vermonters attributed to the model: (1) a difference-in-differences (DID) analysis of spending, utilization, and quality of care outcomes for Medicare beneficiaries attributed to the VTAPM Medicare ACO and a comparison group of beneficiaries attributed to Medicare Shared Savings Program ACOs[a] and (2) a serial cross-sectional analysis of spending and utilization trends for enrollees attributed to the VTAPM Medicaid ACO. Due to data limitations, we were unable to assess impact on spending, utilization, or quality of care for Medicaid enrollees. Both sets of results should be interpreted considering Vermont's long history of health care reform efforts in the years before model implementation; results likely reflect longer-term effects of those efforts, model implementation activities, as well as disruptions in care patterns related to the COVID-19 public health emergency (PHE).

> 👥 **Using the Comparison Group to Establish the Counterfactual**
>
> **The comparison group allows us to establish the *expected* outcome for VTAPM beneficiaries, also known as the counterfactual**. The counterfactual answers the question, "What would have happened to outcomes in PY 5 (2022) for those VTAPM Medicare ACO-attributed beneficiaries if the VTAPM had not been implemented?"
>
> In this way, **we use the comparison group to assess the impact of the VTAPM**, while accounting for trends in similar Shared Savings Program ACOs across the same timeframe, as well as baseline trends in the VTAPM.

Impact on Medicare Spending

Over the first five PYs (2018–2022), the VTAPM Medicare ACO initiative reduced gross spending by $789.12 per beneficiary per year (PBPY) for VTAPM-attributed beneficiaries, relative to beneficiaries attributed to providers participating in Medicare Shared Savings Program ACOs (**Exhibit ES.1**). After accounting for ACO shared savings and other investment payments provided to the Medicare ACO and comparison providers in the baseline and

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[a] We also performed this analysis for the Medicare population statewide, which is presented in **Appendix F**.

performance periods, the cumulative net impact of the VTAPM across the five PYs was a statistically significant reduction in net Medicare spending of $757.67 PBPY. In PY 5 (2022), we observed non-significant reductions in both gross and net Medicare spending for VTAPM Medicare beneficiaries—reflecting an overall decline in spending for VTAPM Medicare ACO beneficiaries since baseline years (2014–2016) and an overall increase in spending since baseline for comparison Shared Savings Program ACO beneficiaries. The direction and magnitude of the impact estimates in PY 5 were consistent with those seen in prior PYs.

Exhibit ES.1   Gross and Net Medicare Spending Declined for VTAPM Medicare ACO Beneficiaries Relative to Shared Savings Program ACO Beneficiaries, Both Cumulatively (2018–2022) and in PY 5 (2022)

Outcome	Impact Estimate ($PBPY)	Aggregate Impact ($millions)	% Impact
Gross Spending			
Cumulative (2018–2022)	-$789.11**	-$193.5M	-6.6%
PY 5 (2022)	-$1,021.99	-$50.3M	-8.3%
Net Spending			
Cumulative (2018–2022)	-$757.67**	-$185.8M	6.3%
PY 5 (2022)	-$1,075.83	-$52.9M	8.7%

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is presented in 2022 USD ($) per beneficiary per year (PBPY). Asterisks denote significance at **$p<0.05$. Estimated aggregate impact was the impact estimate multiplied by the number of attributed beneficiaries in the PY or PYs. Estimated percentage impact is the DID estimate relative to the expected outcome for the VTAPM Medicare ACO-attributed beneficiaries in the PY(s) had the model not been implemented.

Trends in Medicaid Spending

Medicaid spending for the ACO population stayed relatively stable at about $4,500 per enrollee per year between 2017 and 2019, but declined in 2020 and 2021, dropping to $3,332 per enrollee per year in 2021 (**Exhibit ES.2**). While we cannot attribute the decline in Medicaid spending directly to the VTAPM, the trend is consistent with the decline observed in the Medicare ACO population. This spending reduction likely also reflects disruptions in usual care patterns due to the COVID-19 pandemic.

Exhibit ES.2   Medicaid Spending Declined for Medicaid ACO-Attributed Enrollees from 2019–2021
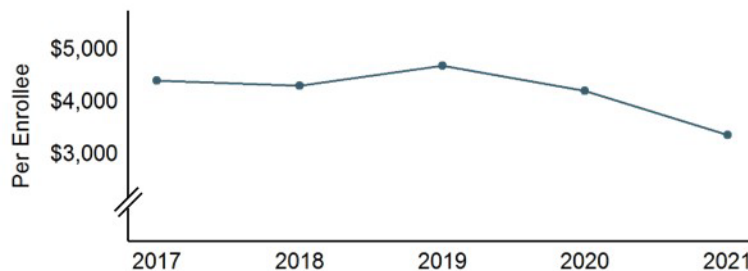
SOURCE: NORC analysis of VHCURES claims.

NOTES: Estimates are presented in 2021 USD ($) per enrollee per year and represent unadjusted trends. We only include spending data through 2021 due to concerns about the timeliness and accuracy of reporting across all spending and utilization measures for 2022 due to the extended timeframe needed for claims adjudication and processing.

Utilization, Quality, and Population Health

Managing Care to Reduce Acute Care Utilization

OneCare, hospitals, primary care clinicians, and other providers initiated, expanded, and strengthened initiatives to address avoidable hospital utilization—an important means of reducing health care spending. While not all these initiatives were directly attributable to the model, they were aligned with the model's shift toward value-based care in Vermont.

Reductions in acute care utilization for VTAPM-attributed Medicare beneficiaries may indicate an increased focus on collaborative care management, particularly for patients at high risk of avoidable emergency department (ED) visits and hospitalizations. In PY 5 (2022), we observed significant reductions in acute care stays for beneficiaries attributed to the Medicare ACO relative to comparison beneficiaries, which may reflect the collective impact of the VTAPM's many care coordination initiatives. However, the VTAPM did not have any significant impacts on other measures of hospital and ED utilization for Medicare ACO-attributed beneficiaries (**Exhibit ES.3**). Workforce shortages and patient acuity following the COVID-19 PHE may have moderated the extent to which care coordination and management, as well as new alternative care settings, could affect ED utilization and observation stays.

Exhibit ES.3 Acute Care Utilization for Medicare ACO-Attributed Beneficiaries Decreased in PY 5 (2022)

Outcome	Impact Estimate (per 1,000 BPY)	VTAPM Baseline (per 1,000 BPY)	90% CI	P Value
Utilization Measures				
Acute Care Stays	-35.6*	210.3	-68.7, -2.5	0.077
Acute Care Days	-66.5	1513.2	-392.3, 259.3	0.737
ED Visits & Observation Stays	40.7	494.0	-27.1, 108.4	0.323
Quality of Care Measures				
Unplanned 30-Day Readmissions[+]	-59.6	90.4	134.1, 14.9	0.188

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is per 1,000 beneficiaries per year (BPY). The impact estimate compares the change in utilization from baseline to PY 5 (2022) in the VTAPM Medicare ACO group to the change in the comparison group. VTAPM baseline is the regression-adjusted mean spending of the VTAPM Medicare ACO-attributed beneficiaries averaged over the three baseline years (2014–2016). Asterisks denote significance at *p<0.10. [+]Findings for unplanned 30-day readmissions should be interpreted with caution due to small sample size; only 14.5% of the VTAPM Medicare ACO-attributed beneficiaries had a hospitalization in PY 5 (2022) and were considered "eligible" to have a readmission, and, among those, only 11.7% had an unplanned 30-day readmission. Although the impact estimate for this measure is large, there is a large amount of variability, leading to a non-significant estimate, and should be interpreted with caution.

For attribution-eligible Vermont Medicaid enrollees, we observed a decline in acute care stays starting in 2021, which may be related to the model's increased focus on population health efforts to address chronic conditions and health-related social needs. We observed a drop in overall volume of ED visits and observation stays in 2020, which returned to pre-pandemic levels in 2022; this is consistent with wider national trends in ED use driven by the COVID-19 pandemic.[4]

Addressing Population Health Goals

A key model aim is to improve the health of Vermonters, as reflected in three primary population health outcome goals: (1) increase access to primary care, (2) reduce deaths from suicide and drug overdose, and (3) reduce prevalence and morbidity of chronic disease.[5] Both the state and the ACO achieved the targets set in the Model State Agreement for most population health measures as of PY 4 (2021), the most recent year for which GMCB reported progress on these measures.

Increasing Access to Primary Care. Primary care visits increased for Medicare ACO-attributed beneficiaries between 2014 and 2022, despite reported primary care workforce shortages. This may reflect additional primary care access points, initiatives to connect frequent ED users with a primary care practitioner (PCP), and/or increased telehealth use. Trends over time showed that Medicare ACO-attributed beneficiaries consistently had higher rates of primary care evaluation and management (E&M) visits than did the comparison group, particularly in PY 4 (2021) and PY 5 (2022), when primary care E&M visits increased for Medicare ACO-attributed beneficiaries while visits for the comparison group remained stable (**Exhibit ES.4**). In contrast, specialty care visits for the Medicare ACO decreased during the COVID-19 PHE and had not recovered as of PY 5 (2022), perhaps reflecting a shortage of specialty care providers and increasing demand. Access to specialty care was especially limited in Vermont's rural areas, where there may have been insufficient patient volume to sustain a full-time specialty practice and less competitive wages to recruit and retain specialists.[6]

Exhibit ES.4 Primary Care E&M Visits for the Medicare ACO Increased Over the Baseline Period, while Specialty Care E&M Visits Decreased
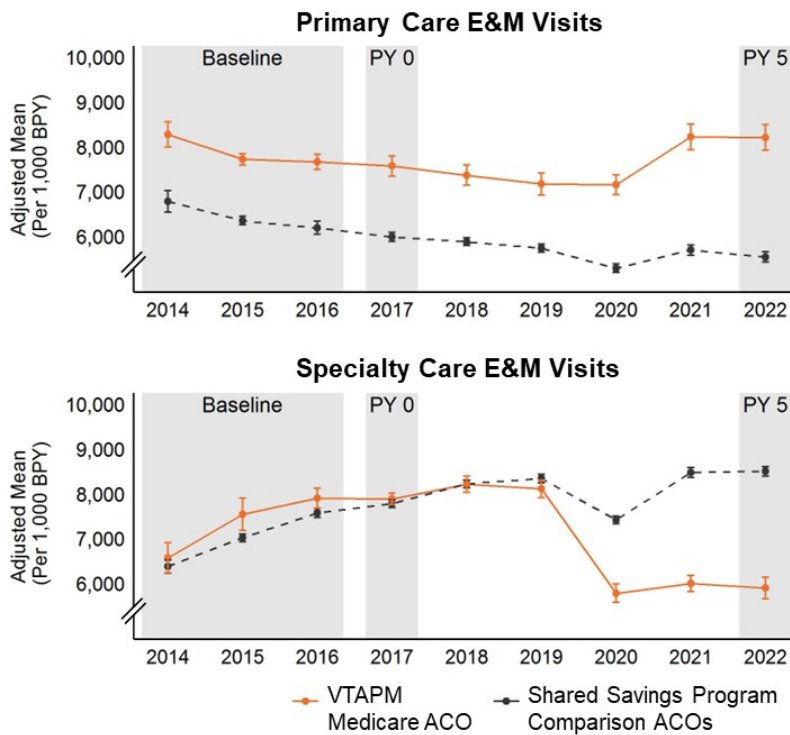
SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented per 1,000 beneficiaries per year (BPY) and represent regression-adjusted means for E&M visits in each year from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) Medicare ACO and comparison clinicians.

Reducing Deaths from Suicide and Drug Overdose. Vermont has higher prevalence of mental illness, alcohol use, and illicit drug use disorders compared to national and Northeast averages. To address these challenges, hospitals and HSAs in the state expanded mental health and suicide screening efforts, embedded mental health clinicians within EDs and primary care offices, and developed alternatives to the ED, such as walk-in clinics for individuals experiencing mental health crises. While not solely due to the VTAPM, hospitals and HSAs built on existing investments to address substance use disorder (SUD), including community collaboratives, naloxone distribution, and education and anti-stigma campaigns. Vermont has maintained progress toward mental health and SUD treatment performance targets set forth in the Model State Agreement, including high rates of initiation and engagement of alcohol and other drug dependence treatment and of 30-day follow-up after ED discharge for mental health.[7] However, interviews with hospital, primary care, and mental health providers suggest there continues to be unmet needs for mental health and SUD treatment.

For attribution-eligible Medicaid enrollees, we observed increases in SUD diagnoses and treatment from 2016 through 2022. However, we also observed a slight decrease over time in the percentage of attribution-eligible Medicaid enrollees diagnosed with an SUD who were receiving treatment, indicating that the need for SUD treatment services may be outpacing the ability of the health care system to provide those services.

Lowering Prevalence of Chronic Disease. Vermont is meeting its performance targets related to chronic disease, including diabetes, hypertension, chronic obstructive pulmonary disease, asthma, and tobacco cessation.[7] Statewide and community-level efforts to reduce chronic disease prevalence and mortality have been in line with the model's goals, but many of those programs and initiatives operate independently from the model and are largely payer-agnostic.

Implementation Experience

Model Design Features. The VTAPM aims to shift providers from FFS to value-based payments by aligning financial incentives across payers through risk-based models that flow through the ACO to participating hospitals. However, the model has faced challenges in transitioning model participants to value-based care, including limited model participation from hospitals choosing to participate in all three payer ACO initiatives and variation in the payment mechanisms across payers. The Medicare ACO's financial model hindered critical access hospital (CAH) participation, as they viewed the two-sided risk arrangement as too great financially and the capitated payments reconciled with FFS as too unpredictable. Additionally, because of the model's hospital-focused financial incentive structure, non-hospital providers—who are integral to achieving the goals of the model—have limited financial mechanisms by which to support their reform efforts.

GMCB Regulatory Processes. The GMCB has been well-positioned to encourage investments in population health, given its oversight of hospital and ACO budgets. While hospital budget review mechanisms focus on slowing health care spending growth, hospital leaders suggest that the current approach has hindered hospital investments in population health initiatives and progress toward a value-based payment system. The GMCB seeks to implement changes for the fiscal year (FY) 2024 budget review process to better understand hospitals' expense drivers. The GMCB has also expanded its oversight of OneCare, now requiring the ACO to implement a benchmarking system that compares OneCare's performance on key metrics to national benchmarks. OneCare has found the benchmarking data useful for targeting population health investments and plans to connect with peer ACOs to discuss best practices.

Progress Toward Care Delivery Transformation and Population Health. The VTAPM builds on a history of delivery system reform initiatives and collaboration in the state, and the model provides a focal point for this

work to continue. State leaders and model participants suggested that the VTAPM has improved understanding of value-based care, encouraged cultural and educational shifts among providers toward value-based care, and inspired collaborative population health initiatives. Despite the challenges arising from the COVID-19 PHE, workforce shortages, and slim financial margins, model participants made progress by investing in population health initiatives. OneCare has served as a vehicle for aligning population health priorities and connecting different providers in the health care system, although there have been challenges scaling and sustaining some OneCare initiatives. Additionally, non-hospital providers continue to struggle with limited financial support and their lack of a platform to communicate with other providers across the continuum of care.

Discussion

VTAPM participants have made positive strides toward spending, utilization, and population health goals. Building on Vermont's previous health reform initiatives, the VTAPM has provided funding, incentives, and opportunities for collaboration to expand the focus and reach of population health efforts. When interpreting the impact of the VTAPM, it is important to recognize how Vermont's unique history of health care payment reform has supported the model's success. It is also important to consider the design and implementation challenges that may have limited the scale of the model and its influence on the shift to value-based payment.

Overview of the Report

This report provides an analysis of Medicare impacts and Medicaid trends for spending, utilization, and quality of care outcomes; approaches to addressing the model's spending, quality, and population health goals, as well as progress toward those goals; and model implementation experience. The report leverages the assessments presented in NORC's First, Second, and Third Evaluation Reports to address the research questions in **Appendix B**. This report also includes two new analyses: an examination of Medicare ACO subgroups and an analysis of Medicaid spending, utilization, and quality of care trends.

Chapter 1
Introduction
- Overview of the VTAPM
- Model Participants in PY 5
- Overview of the Evaluation

Chapter 2
Medicare and Medicaid Spending
- Gross and Net Medicare Spending
- Gross Medicaid Spending

Chapter 3
Utilization, Quality, and Population Health Goals
- Managing Care to Reduce Acute Care Utilization
- Addressing Population Health Goals

Chapter 4
Implementation Experience
- Model Design Features
- GMCB Regulatory Processes
- Progress Toward Care Delivery Transformation and Population Health Goals

Chapter 5
Discussion
- Insights to Date
- Model and Evaluation Challenges
- Lessons Learned

Chapter 1: Introduction

The Centers for Medicare & Medicaid Services (CMS), through the Center for Medicare and Medicaid Innovation (Innovation Center), launched the Vermont All-Payer Accountable Care Organization (ACO) Model (VTAPM) in 2017. With this model, CMS intended to test whether scaling an ACO structure across all major payers in the state would support broad care delivery transformation and ultimately reduce statewide spending and improve population health outcomes.[8] The VTAPM is one of several Innovation Center ACO models that aim to bring together groups of providers to coordinate care for patients. The VTAPM builds on the state's long history of innovation in the health care sector and expands on previous CMS ACO programs and models by aligning a wider array of payers and beneficiaries with the goal of transforming relationships among care delivery and public health systems in Vermont. It is also part of the Innovation Center's portfolio of state-based models, which includes the State Innovation Models, the Maryland All-Payer and Total Cost of Care Models, and the Pennsylvania Rural Health Model. Additionally, the VTAPM advances the Innovation Center's Strategic Objective to drive accountable care, as described in its 2021 Strategy Refresh.[9] The VTAPM was originally scheduled to end after the 2022 performance year (PY); however, CMS and the state agreed to a two-year extension to account for the disruption of the COVID-19 public health emergency (PHE).[10,11]

The Innovation Center contracted with NORC at the University of Chicago to conduct an independent evaluation of the model.[b] This report is the fourth in a series for the Innovation Center to be released as part of NORC's evaluation. In the report, we present the findings from our analysis of spending, implementation strategies, utilization and quality outcomes, and trends in population health and substance use measures. In the pages that follow, we provide an overview of the model, a summary of model participants in 2022, our evaluation approach, and a road map for the remainder of the report.

1.1   Overview of the VTAPM

The VTAPM builds on nearly two decades of payment and delivery system reform initiatives in Vermont, including Vermont's Global Commitment to Health Section 1115 Demonstration, the Blueprint for Health (Blueprint) initiative, and a multi-payer ACO Shared Savings Program pilot under Vermont's State Innovation Model (SIM) Testing Grant. Under the VTAPM, CMS provided Vermont flexibility in designing a state-specific, all-payer ACO program. In exchange, per the Model State Agreement, the state is accountable for meeting financial targets, statewide health outcomes, and quality of care targets.[1] The VTAPM currently includes one statewide nonprofit[c] ACO: OneCare Vermont (OneCare).[d] OneCare negotiates contracts and aligns model features across Medicare, Medicaid, and commercial payers; supports model implementation in the delivery system; and sets provider-specific financial and quality targets. The Innovation Center's VTAPM webpage includes more model details as well as the previous three evaluation reports.

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[b] NORC's evaluation is of the VTAPM as a whole; it is not an evaluation of any individual participating or nonparticipating organizations (including payers, regulatory authority, care providers, or other stakeholders).

[c] In April 2021, OneCare was recognized as a 501(c)(3) nonprofit organization.

[d] In 2010, three ACOs operated in the state. At the end of 2017, two ACOs suspended operations, leaving OneCare as the sole ACO operating in the state. Community Health Accountable Care (CHAC), LLC, a primary care association, and Vermont Collaborative Physicians (VCP), LLC, an independent practice association, did not join the model. The Model State Agreement does not limit how many ACOs can participate.

State Oversight

The model employs a multi-layered accountability structure across CMS, state agencies, payers, and the health care delivery system (including hospitals, clinicians, and other providers). Overseeing model implementation are CMS, the Vermont Governor's office, the Vermont Agency of Human Services (AHS), and the Green Mountain Care Board (GMCB; **Exhibit 1.1.1**).

Exhibit 1.1.1. The VTAPM Accountability Structure
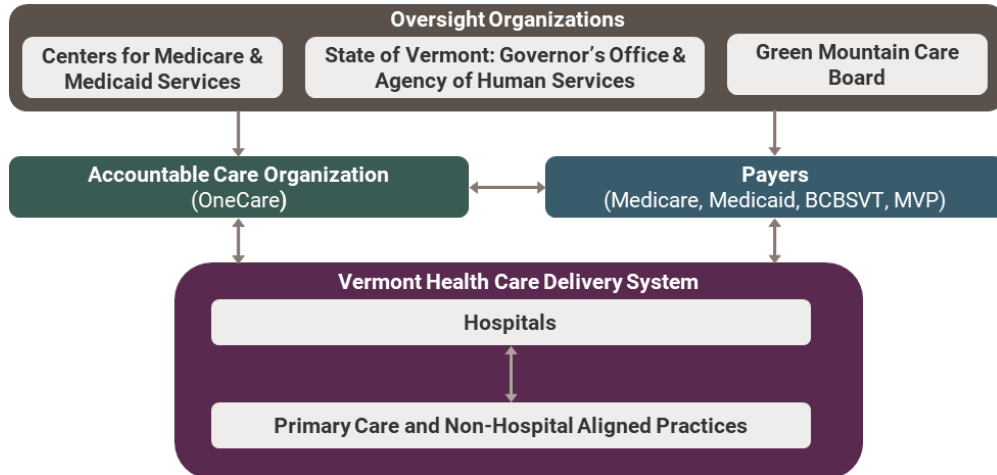
NOTE: BCBSVT=BlueCross BlueShield of Vermont; MVP=MVP Health Care.

As an independent, nonpartisan regulatory body with a broad mandate across the health care system, the GMCB is charged with moderating health care spending growth through hospital and insurance rate regulation, innovation, and evaluation; bolstering statewide health information technology initiatives; and improving the health of Vermonters. The GMCB has regulatory oversight of ACO budgets and regulates health care reforms, health insurance rates, individual hospital budgets, and major health care capital spending. The GMCB's role also includes authority to regulate ACOs, granted by Act 113 in 2016.[12] Under the Model State Agreement, the GMCB is charged with:

- Developing financial benchmarks for Vermont Medicare ACO initiatives and producing data and reporting for CMS on progress toward targets.
- Coordinating with OneCare to achieve model ACO scale targets,[e] statewide financial targets, and statewide health outcomes and quality of care targets.
- Overseeing alignment across payers on beneficiary attribution methodology, ACO quality measures, payment mechanisms, and risk arrangements.

As part of an intergovernmental agreement with the AHS, the Department of Vermont Health Access (DVHA) administers Vermont's Medicaid program. To facilitate model participation, the DVHA sets Medicaid ACO program rates prospectively for each calendar year to provide predictability for OneCare and participating

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[e] The original agreement required the VTAPM's participating payers to attribute 70% of all insured Vermont residents and 90% of Medicare beneficiaries to participating ACO providers by 2022. However, in October 2021, CMS waived enforcement of the scale targets, noting that ACO scale targets in the Model State Agreement were unattainable for Vermont, based on information that was not available when the agreement was drafted. For additional information, see the Temporary Waiver of Enforcement of the Vermont All-Payer Accountable Care Organization Model State Agreement ACO Scale Targets.

clinicians. The AHS has supported the alignment of Medicaid ACO requirements with Medicare ACO standards, including modifying ACO-level quality and performance measures to standardize measures across payers to reduce administrative burden for providers.[13]

Model Targets

Through the Model State Agreement, CMS holds Vermont accountable for meeting financial, population health, and quality of care targets and benchmarks.[14] Financial targets include limiting all-payer total cost of care (TCOC) per beneficiary growth to 3.5% annually and limiting Medicare TCOC per beneficiary growth to 0.2 percentage points below the annual projected national Medicare TCOC per beneficiary growth rate.[2] The model's population health goals include increasing access to primary care, reducing deaths from suicide and drug overdose, and reducing chronic disease prevalence and morbidity (see **Appendix Exhibit F.44** for a complete list of measures). The state is also financially accountable for achieving quality of care targets for the Medicare ACO population; if targets are not met, a downward adjustment is made to the shared savings payout from CMS.[f]

Participation

Hospitals are the primary risk-bearing entities in the VTAPM and can choose to participate in any or all three payer ACO initiatives (Medicare, Medicaid, and/or commercial). Health care clinicians and providers are eligible to participate only if the home hospital in each of the 15 Health Service Areas (HSAs) opted for model participation.[g]

Primary and specialty care clinicians[h] participating in the model (participant clinicians) are used to attribute patients to the model. In each PY, patients receiving a plurality of their primary care—as measured by qualified evaluation and management (E&M) services[i]—from participant clinicians are attributed to the model.[j] To extend the reach of the provider network, the model's ACO initiatives also contract with preferred clinicians, including skilled nursing facilities (SNFs), home health, and hospice providers. However, preferred clinicians are not used for attribution. Providers that participated in the model include hospitals, primary care practices, specialty practices, federally qualified health centers (FQHCs), SNFs, home health agencies, and designated agencies for mental health and substance abuse.

> **Key Terms**
>
> **Participant clinician:** Individual physician participating in the model; used in patient attribution
>
> **Preferred clinician:** Individual physician participating in the model; *not* used in patient attribution
>
> **Provider:** Hospital or other health care organization (non-hospital provider)

[f] In 2018, 2020, and 2021, the Medicare quality withhold was tied to reporting only (no performance incentives); thus, no downward adjustment was made to the shared savings amount. In 2019, OneCare reported a 91.88% quality score resulting in a downward adjustment of $196,758; in 2022, OneCare reported a 65.63% quality score resulting in a downward adjustment of $786,302.
[g] OneCare's definition of HSA refers to one or more counties that are relatively self-contained with respect to the provision of routine hospital care as defined by the Dartmouth Atlas methodology. For additional information, see the OneCare September 17, 2019, meeting materials.
[h] Participant clinicians in certain specialty areas can attribute patients to the model. See **Appendix D** for additional details.
[i] Qualified E&M services are a subset of E&M services as identified by the Healthcare Common Procedure Coding System (HCPCS) codes and include claims for primary care services provided by a primary care specialist or one of the selected non-primary care specialists.
[j] The model uses prospective attribution, by which patients are attributed to the model based on their qualified E&M service utilization in the two years ending six months before the performance year (for example, for PY 5 [2022], patients are attributed based on their service use between July 2019 and June 2021).

Payment Mechanisms and Financial Structure

The VTAPM enables flexible model implementation, with payment mechanisms and funding streams that vary by payer. While one of the VTAPM's primary goals is to align financial incentives across payers, the model uses three different payment mechanisms—all-inclusive population-based payment (AIPBP), fixed prospective payments, and traditional fee-for-service (FFS) payments—across the Medicare, Medicaid, and commercial ACO initiatives (**Exhibit 1.1.2**).

Exhibit 1.1.2 Payment Mechanisms by Payer

Medicare

All-Inclusive Population-Based Payment (AIPBP). Medicare's optional AIPBP mechanisms for eligible providers pays expected FFS claims in prospective monthly payments for each attributed beneficiary, with reconciliation to Medicare FFS at the end of the year.

Fee-for-Service (FFS). Non-eligible and non-attributed providers receive Medicare FFS payments.

Medicaid

Fixed Prospective Payments. The DVHA pays OneCare a fixed per member per month (PMPM) payment for services provided by hospitals and certain practices in OneCare's network in advance of the services being performed. The fixed prospective payment is not reconciled with FFS.

FFS. Medicaid FFS payments continue for community providers in OneCare's network, independent practices in OneCare's network that do not participate in the Comprehensive Payment Reform program, providers outside OneCare's network, and for all services not included in the fixed prospective payment.

Commercial

FFS: The two commercial health plans participating in the model—BlueCross BlueShield Vermont (BCBSVT) and MVP Health (MVP)—reimburse providers through FFS payments.

SOURCES: OneCare Vermont 2019 Budget Presentation; OneCare Medicare Benchmarking Report–October 2022; Vermont Medicaid Next Generation ACO Program 2020 Performance; ACO Oversight FY 2022 Budget and Certification OneCare Vermont.

In the VTAPM, the financial risk of caring for attributed patient populations is shared with the hospitals through participation in the risk-bearing ACO (OneCare). The prospective population-based payments from each payer flow through the ACO, which distributes the prospective payments to participating hospital providers based on their attributed patients. As depicted in **Exhibit 1.1.3**, Medicare and Medicaid provide the ACO with a fixed per beneficiary per month (PBPM) prospective payment.[15] OneCare uses the payments—along with hospital participation dues, advanced Medicare shared savings, and start-up funding[k]—to fund population health management and care delivery activities.

[k] In the Model State Agreement, CMS provided start-up funding of $9.5 million to support population health investments and hospital participation dues.

Exhibit 1.1.3. Financial Structure of the VTAPM
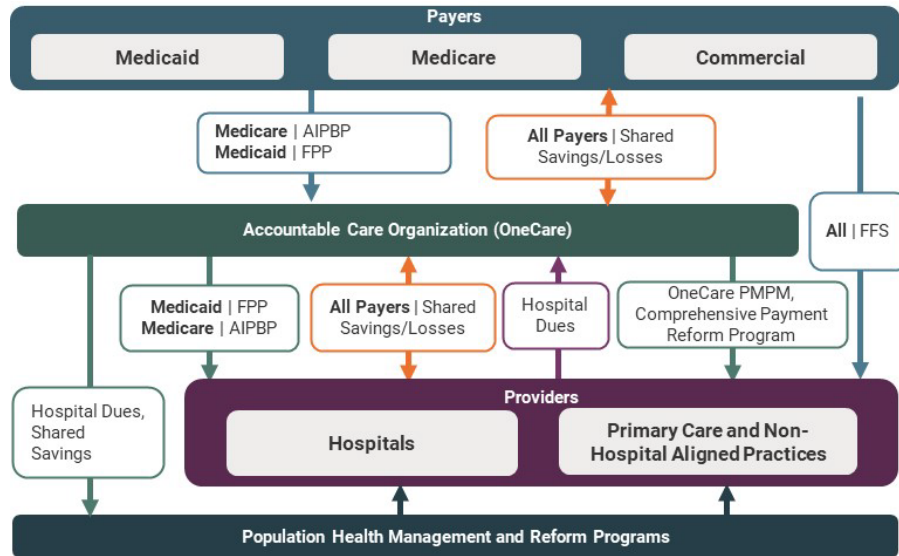
NOTE: AIPBP=All-inclusive population-based payment; FPP=fixed prospective payment; PMPM=per member per month; FFS=fee-for-service. Independent primary care practices participating in the Comprehensive Payment Reform program can receive per-member per month (PMPM) payments instead of FFS payments for all attributed beneficiaries.

1.2   Model Participants in PY 5 (2022)

This section presents an overview of payer, hospital, and clinician participation in the model, as well as characteristics of eligible Vermonters in the VTAPM in PY 5 (2022). **Exhibit 1.2.1** illustrates other key characteristics among hospitals, non-hospital providers, clinicians, and Vermonters. For additional detail on model participants, see **Appendix E**.

- **Payers**. The two major public payers, CMS (Medicare) and DVHA (Medicaid), have participated in the model since its inception. Two of Vermont's three major commercial payers—BlueCross BlueShield of Vermont (BCBSVT),[l] and MVP Health (MVP)—also participated in PY 5 (2022), representing 65.5% of Vermont's commercial insurance market, as measured by premium payments.[16] The remainder of the Vermont commercial insurance market is highly fragmented. Limited participation from the commercial self-insured market—where the model reached 22% scale in PY 5 (2022)—poses a challenge for increasing the scale of the model's commercial insurance market overall.[17]

- **Hospital and Non-Hospital Providers**. Since PY 3 (2020), 14 of the 15 eligible hospitals have participated in the VTAPM (**Appendix Exhibit E.1**). In PY 5 (2022), eight hospitals participated in all three ACO initiatives (Medicare, Medicaid, and commercial), and the remaining six participated in the Medicaid and commercial ACO initiatives only.[m] The non-hospital provider network was similar to prior years.

- **Participant Clinicians.** Between PY 4 (2021) and PY 5 (2022), 959 participating and preferred clinicians joined the model, and 680 exited the model, bringing the total number of clinicians to roughly 5,400 in PY 5.

- **Vermonters.** The number of Vermonters attributed to the model grew steadily over time, from 109,914 Vermonters in PY 1 (2018), representing 22% of eligible Vermonters, to 259,958 (50% of eligible Vermonters) in PY 5 (2022).

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[l] BCBSVT announced that it will not participate in VTAPM beginning in PY 6 (2023).
[m] In PY 6 (2023), one additional hospital joined the VTAPM Medicare ACO.

Exhibit 1.2.1 VTAPM Participants in PY 5 (2022)

14 Participating Hospitals

- A greater percentage of Prospective Payment System (PPS) hospitals participated in all three ACO initiatives compared to Critical Access Hospitals (CAHs).

Bar chart:
- CAH: Medicare, Medicaid, and Commercial = 2; Medicaid and Commercial = 5
- PPS Hospital: Medicare, Medicaid, and Commercial = 6; Medicaid and Commercial = 1

Legend: Medicaid and Commercial; Medicare, Medicaid, and Commercial
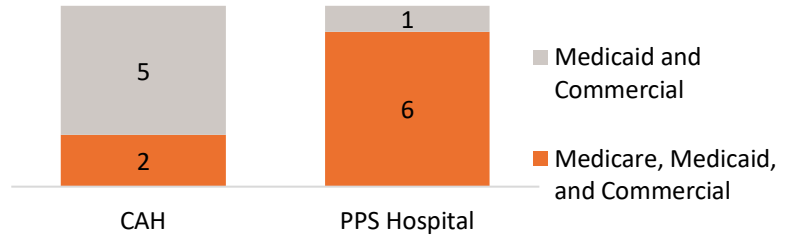
SOURCE: 2023 OneCare Budget Submission (September 2022).

Non-Hospital Providers

- Hospitals also partnered with post-acute providers and agencies focused on mental health and substance use, consistent with the model goals to reduce suicides and substance use disorders.

121	Primary Care Practices
262	Specialty Practices
9	Federally Qualified Health Centers (FQHCs)
22	Skilled Nursing Facilities (SNFs)
10	Home Health Agencies
10	Designated Agencies for Mental Health & Substance Abuse

SOURCE: 2022 OneCare Budget Presentation (November 2021).
NOTE: OneCare has collaboration agreements with Area Agencies on Aging across Vermont as well as the Support and Services at Home (SASH) program.

5,452 Clinicians

- Participant clinicians composed 85% of the model's network (15% are preferred clinicians), with almost half being primary care clinicians.
- Over half of clinicians engaged in all three ACO initiatives (Medicare, Medicaid, and commercial).

Participant Clinicians by Specialty

PY 5: Primary Care 47% | Specialty Care 9% | Other 44%

Legend: ■ Primary Care ■ Specialty Care ■ Other

Clinicians by ACO Initiative

PY 5: 1 ACO Initiative 7% | 2 ACO Initiatives 38% | 3 ACO Initiatives 54%

Legend: ■ 1 ACO Initiative ■ 2 ACO Initiatives ■ 3 ACO Initiatives
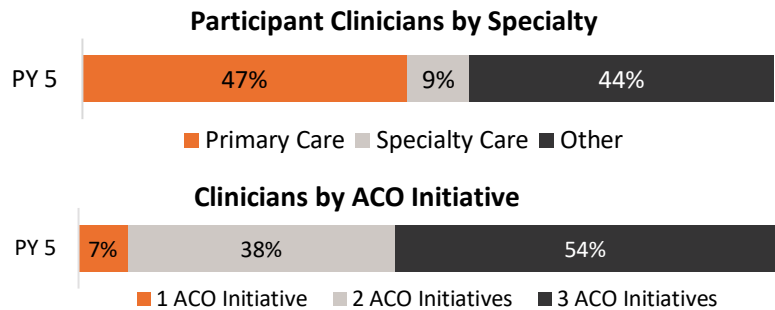
SOURCES: OneCare 2022 Provider Network (October 2021); 2022 Medicare Provider List; NPPES (October 2022).

259,958 Vermonters

- Approximately half of eligible Vermonters were attributed to one of the three ACO initiatives.

Percentage of Eligible Vermonters Attributed to the Model

Medicare	62%	62,607
Medicaid	84%	126,291
Commercial	29%	71,060
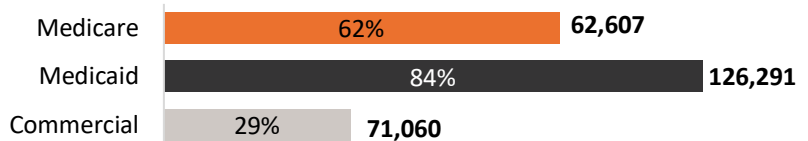
SOURCE: Vermont All-Payer ACO Model Scale Targets and Alignment Report for PY 5 (2022).

1.3 Overview of the Evaluation

The evaluation addresses research questions on the following topics:

- Program design features
- Model participants and implementation partners
- Implementation approaches and experiences
- Population health outcomes
- Spending and utilization outcomes

Conceptual Framework

The conceptual framework presented in **Exhibit 1.3.1** was adapted from Damberg et al. (2014)[18] and has guided our evaluation of the VTAPM's implementation and impact. The framework includes contextual factors, such as Vermont's history of health care reform efforts and the GMCB's regulatory role, as well as other design features, implementation approaches, and characteristics of local health care markets, organizations, provider networks, and Vermonters.

Exhibit 1.3.1 Evaluation Conceptual Framework
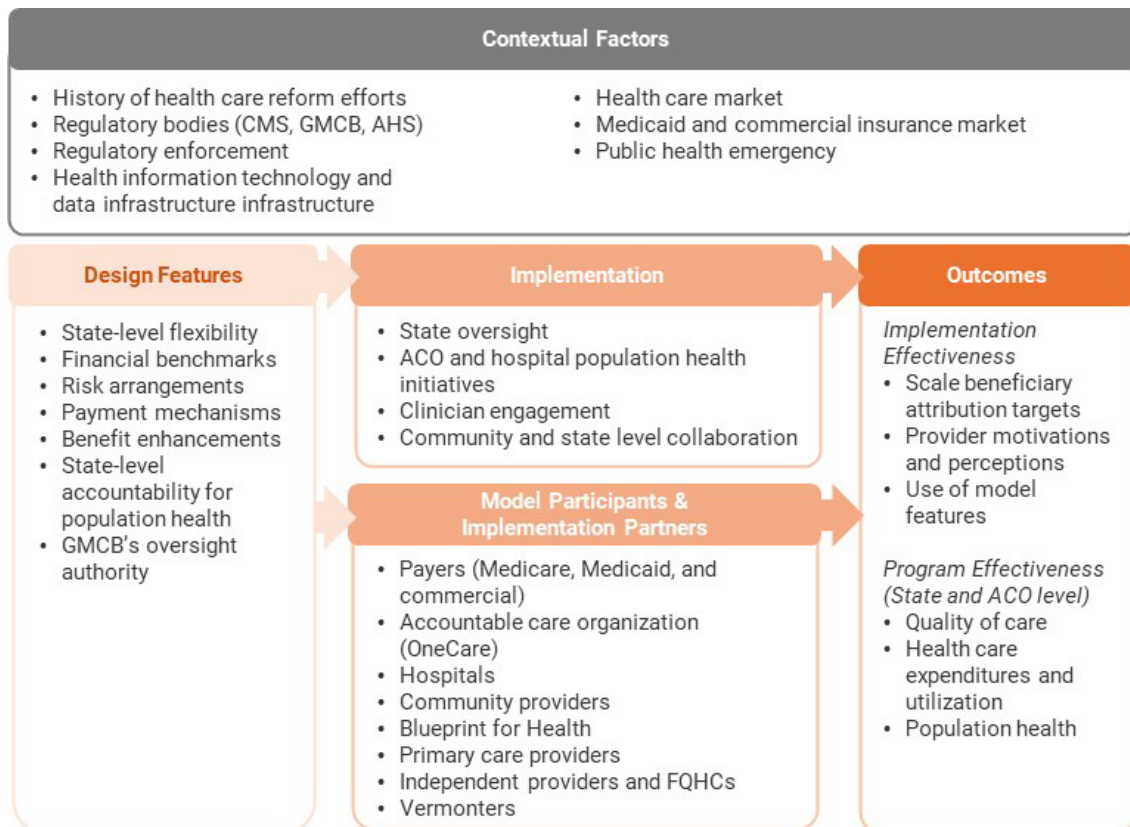
NOTES: CMS=Centers for Medicare & Medicaid Services; GMCB=Green Mountain Care Board; AHS=Vermont Agency of Human Services; ACO=accountable care organization; FQHC=federally qualified health center.

Evaluation Methods

NORC's evaluation employs an embedded, mixed methods design that facilitates an iterative approach to data collection and analysis, enabling qualitative and quantitative data to inform one another across the PYs. NORC's evaluation examines the VTAPM's impact on Medicare and Medicaid[n] spending, utilization, and quality of care, as well as other measures of population health outcomes. **Exhibit 1.3.2** depicts the mixed methods design, including a Medicare impact analysis and a Medicaid descriptive analysis, both informed by semi-structured interviews and document review.

Exhibit 1.3.2 Mixed Methods Evaluation Approach

Secondary data sources
- Medicare FFS claims
- VHCURES and T-MSIS Medicaid claims
- Provider enrollment and specialty data
- Model documentation

Primary data sources
50 interviews with 72 state officials, OneCare leaders, hospital leaders, clinicians, community providers, and Blueprint program managers (May-Sept. 2023)

Evaluate Medicare impact
- Spending, utilization, and quality of care
- ACO-level impacts
- Descriptives of subgroups of Medicare ACO-attributed beneficiaries

Assess Medicaid trends
- Spending and utilization

Assess programmatic information
Standardized review of model documentation, including OneCare, hospital, GMCB, and federal reports

GMCB-reported data on health outcomes and quality of care

Understand implementation experience
- Thematic analysis of interview data

Embedded understanding of impact: DID impact analysis, Serial cross-sectional analysis, Semi-structured interviews, Document review

➕ *Medicare Impact Analysis*

We employed a difference-in-differences (DID) design to assess the impact of the VTAPM on Medicare spending, utilization, and quality of care in each PY. We assessed the model's impact on all eligible Medicare FFS beneficiaries at both the ACO and state levels. We focus on ACO-level findings in the main report and present state-level findings in **Appendix F**. Moreover, results from ACO-level and state-level analyses have been similar in previous years and continued to be similar in PY 5 (2022).

Vermont's unique market characteristics and context presented several challenges to constructing an appropriate comparison group for analysis; few other areas had similar sociodemographic and health insurance market characteristics, and the state has a unique history of health care reform. To address these challenges, we

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[n] Assessing the model's impact on the commercial payer population is outside the evaluation scope.

employed a flexible DID framework that allowed groups to have differing baseline trends for outcomes[o] while including area-level characteristics likely to influence outcomes in the weighting stage.[p]

We note several limitations to our impact analysis. First, Vermont has a unique history of health reform and is sociodemographically unique in comparison to other rural states. Second, Vermont's strong response to the COVID-19 PHE led to differential health outcomes in Vermont compared with other states. Third, as with findings presented in our previous evaluation reports, we continued to see wide standard errors in our impact estimates.

For additional detail on the DID design methodology, quantitative methodological challenges, and resulting mitigation strategies, see **Chapter 2** and **Appendix D**.

Medicaid Serial Cross-Sectional Analysis

We used two datasets to carry out the Medicaid serial cross-sectional analysis. We constructed the gross Medicaid spending variable for analysis using data from the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES) from 2017–2021.[q] The VHCURES is Vermont's all-payer claims database containing medical and pharmacy claims and eligibility data from private and public payers. We constructed Medicaid utilization metrics using the Transformed Medicaid Statistical Information System (T-MSIS) from 2016–2022. We used a serial cross-sectional analysis to assess trends in Medicaid spending, acute care stays, emergency department (ED) visits, and substance use disorder (SUD) diagnosis and treatment.

Due to data limitations in both datasets, we were only able to assess unadjusted trends over time and could not attribute observed changes specifically to model implementation. For more detail on the Medicaid analysis methods, see **Chapter 2**, **Chapter 3**, and **Appendix D**.

Semi-Structured Interviews

Between May and September 2023, we conducted 50 interviews with 72 state-level officials, OneCare leaders, state association leaders, hospital leaders, physicians, designated mental health agency staff members,[r] and Blueprint program managers (staff hired within each HSA to support implementation of the Blueprint initiatives). The evaluation research questions (see **Appendix B**), conceptual framework, and document review informed the interview guides for each category of participant. After transcribing each interview, we coded the transcripts and our notes using NVivo software (QSR International Pty Ltd., Melbourne, Australia). We systematically

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[o] The flexible DID framework enabled us to relax the common trends assumption needed to produce unbiased DID impact estimates. Instead, our approach assumed that the differential trends in the baseline period would take a linear form and that they would continue in the absence of the VTAPM.

[p] The weighting methodology and multivariate models included individual-level factors (demographic and health) and area-level factors (health care market, COVID-19 outcomes, and community sociodemographic). Reflecting Vermont's unique health care market, we were unable to achieve balance between Vermont and the comparison group on Shared Savings Program participation and Medicare Advantage (MA) penetration in the baseline period; as a result, these factors were excluded from our weighting models.

[q] The timeframe for the Medicaid spending analysis was limited to 2017–2021, reflecting: (1) data quality challenges that raised concerns about the timeliness and accuracy of reporting across all spending and utilization measures for PY 5 (2022) and (2) difficulty identifying ACO-attributed Medicaid enrollees in the baseline period in a manner comparable to the Medicare analyses.

[r] Vermont's Designated Agencies, or community mental health centers, are private nonprofit agencies that work with the Department of Mental Health to provide mental health care. The Designated Agencies are organized under Vermont Care Partners, a collaboration between the Vermont Council and the Vermont Care Network of 16 nonprofit community-based member agencies that provide mental health, substance use, and developmental disability services and supports to Vermonters.

reviewed and sorted the qualitative data, using a deductive and inductive approach to identify themes and important concepts. Interview findings are reported in **Chapter 3** and **Chapter 4**.

Document Review

To understand the model's design and implementation to date, we reviewed over 300 existing documents, including the Model State Agreement and other contracts; hospital and ACO-level budget documents; materials on the GMCB, AHS, and DVHA websites; federal communications; and news articles. These documents described care management, population health initiatives, and implementation experience, and informed key informant outreach and interview guide development. Document review findings are reported in **Chapter 3** and **Chapter 4**.

Chapter 2: Medicare and Medicaid Spending

Key Takeaways

Impact on Medicare Spending

- The **VTAPM Medicare ACO significantly reduced total gross ($789.12 PBPY, or 6.6%) and net ($757.67, or 6.3%) Medicare spending** for ACO-attributed beneficiaries over the five PYs (2018–2022).

- In **PY 5 (2022), we observed non-significant reductions in both gross and net Medicare spending for VTAPM Medicare ACO beneficiaries**. However, the direction and magnitude of the impact estimates in PY 5 (2022) were consistent with those seen in prior PYs (2018–2021).

- **Vermont has met the model's Medicare Total Cost of Care per beneficiary annual growth targets** in all five PYs of the model (2018–2022). In PY 5 (2022), Vermont's performance ranged from 6.6 to 8.4 percentage points below targets.

- When interpreting the model's impact, it is important to consider Vermont's unique history of health reform and potential effects of preexisting care and delivery system initiatives. Additionally, the COVID-19 PHE introduced broader changes in care patterns across Vermont and nationwide. **Results should be interpreted in light of these challenges**.

Trends in Medicaid Spending

- Medicaid spending for the ACO population stayed relatively stable from 2017 to 2019 at around $4,500 per enrollee per year. **Medicaid spending declined in 2020 and 2021**, dropping to $3,332 per enrollee per year in 2021, **likely due in part to disruption in care patterns related to the COVID-19 PHE**.

This chapter answers key evaluation questions by assessing spending outcomes at the model level, including:

- What impact did the model have on spending for the VTAPM Medicare ACO populations?
- What were trends over time in Medicaid spending for the VTAPM Medicaid ACO population?

The analyses presented in this chapter include:

- **Medicare impacts**: Analyses of Medicare FFS claims data to estimate spending impacts for beneficiaries attributed to the VTAPM Medicare ACO compared with beneficiaries attributed to similar Medicare Shared Savings Program ACOs in other comparable states.
- **Medicaid trends**: Serial cross-sectional analyses of Medicaid claims data to understand descriptive trends in spending among Medicaid enrollees[s] attributed to the ACO from 2017 to 2021.

➕ 2.1   Gross and Net Medicare Spending

Methodology

To estimate the VTAPM's impact on Medicare spending, we used a DID design to compare the change in spending for beneficiaries attributed to the VTAPM Medicare ACO before and after model launch to the corresponding change in spending for beneficiaries attributed to Shared Savings Program comparison ACOs over the same period. **Exhibit 2.1.1** summarizes the beneficiaries included in the treatment and comparison groups.

Exhibit 2.1.1 Medicare Impact Analysis: PY 5 (2022) Treatment and Comparison Group Definitions

Group	Definition
VTAPM Medicare ACO Beneficiaries ("Treatment Group")	Medicare FFS beneficiaries (N=49,174) who resided in Vermont and who received the plurality of their primary care services from PY 5 (2022) model clinicians[t] during the baseline years and PY 5
Medicare Shared Savings Program ACO Beneficiaries ("Comparison Group")	A representative sample[u] of Medicare FFS beneficiaries who resided in the 26 comparison states and who received the plurality of their primary care services from clinicians[v] participating in **2022 Medicare Shared Saving Program Basic Track Levels A/B/C/D/E ACOs during the baseline years and PY 5 (2022)**[w]; these beneficiaries are then weighted to be similar to the treatment group on key individual- and area-level characteristics

Exhibit 2.1.2 summarizes our approach to constructing the comparison group. First, we identified 26 states with health care reform experiences similar to Vermont's—specifically, states that implemented patient-centered medical homes (PCMHs) or multi-payer CMS reform initiatives in the baseline years (**Step 1**). To minimize computational burden in comparison group construction and estimation, we used a stratified random sample of

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[s] While the Vermont AHS refers to individuals enrolled in Medicaid as "members," we use the term "enrollees," which is more frequently used across state Medicaid programs.

[t] The list of model participants has changed each PY as clinicians have entered or exited the model; for this reason, the VTAPM Medicare ACO participant list for each PY has been distinct. As a result, the sample of beneficiaries attributed to each PY's model participants during each baseline year (BY; 2014–2016) and PY—and used for the impact analyses—has been distinct for each PY.

[u] See **Appendix D** for more information on the sampling strategy.

[v] As with the treatment group, the list of Shared Savings Program participants has changed each PY as clinicians have entered or exited the model. As a result, the sample of beneficiaries attributed to each PY's Shared Savings Program participants during each BY (2014–2016) and PY has been distinct, and the study sample for the ACO-level comparison group has been different for each PY's impact analysis.

[w] OneCare participated in the Medicare Shared Savings Program between 2013 and 2017, prior to the establishment of the VTAPM. Had it remained in the Shared Savings Program rather than entered the VTAPM, then OneCare would have been required to participate in Basic Level Track E in PY 5 (2022). See the comparison of Medicare Shared Savings Program tracks for more information.

Medicare beneficiaries residing in the 26 comparison states rather than include all beneficiaries in those states (**Step 2**).[x]

Next, we applied the VTAPM's beneficiary attribution rules concurrently to Medicare Shared Savings Program ACO providers participating in Basic Track Levels A, B, C, D, or E, in order to identify beneficiaries who received a similar level of care from clinicians in those ACOs as beneficiaries who were attributed to the VTAPM did from their clinicians (**Step 3**). We included Shared Savings Program ACOs with both one-sided risk (Levels A and B) as well as two-sided risk (Levels C, D, and E) to reflect the variation in provider experience with risk models in the VTAPM, as well as to ensure that our comparison group had sufficient sample size to power our analyses appropriately. We did not consider ACO- or provider-level characteristics in our comparison group selection; all clinicians participating in ACOs in the Basic Track Levels A through E were eligible to attribute beneficiaries to the comparison group.

After attributing potential comparison beneficiaries to Shared Savings Program clinicians, we weighted those beneficiaries to be similar to the treatment group on key beneficiary- and community-level covariates (**Step 4**). To address differential COVID-19 PHE effects on outcomes for the treatment and comparison groups, we included county-level total deaths per 100,000 population in the analytic weighting procedure to account for geographic variation in COVID-19 PHE burden in PY 5 (2022); this approach was consistent with comparison group construction for evaluation of the model in PY 3 (2020) and PY 4 (2021).

Exhibit 2.1.2 The Comparison Group of Beneficiaries Attributed to Shared Savings Program ACOs was Designed to be as Similar as Possible to the Treatment Group of VTAPM Medicare ACO-Attributed Beneficiaries

Step 1
Select comparison states based on similar health reform in baseline years (PCMH, multi-payer CMS initiatives)

Step 2
Conduct a **stratified random sample of Medicare beneficiaries in comparison states**, oversampling rural areas, to ensure computational feasibility

Step 3
Apply the VTAPM's attribution rules concurrently, and select beneficiaries receiving a plurality of their primary care from clinicians in Shared Savings Program ACOs in BASIC Track Levels A-E.

Step 4
Weight comparison group to be similar to treatment group on 80+ beneficiary- and market-level characteristics

For more information on the analytic methodology, the treatment and comparison group construction, and the entropy balancing approach used to ensure comparability between the Vermont and comparison groups, see **Appendix D.2**. For descriptive characteristics of treatment and weighted comparison group beneficiaries, which were similar across baseline years and performance years, see **Appendix Exhibits F.1 and F.2**.

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[x] The PCMH model and the multi-payer ACO model were key building blocks for the VTAPM; for this reason, we focused on comparison states with similar reform histories. Because the VTAPM aims to improve outcomes statewide through an all-payer design, a within-state comparison group was not feasible. Refer to **Appendix D** for more information on comparison state selection and the list of comparison states used to construct the comparison group.

Although this report focuses on impacts for VTAPM Medicare ACO-attributed beneficiaries, we also completed an analysis of the VTAPM's impact on all Medicare beneficiaries within Vermont. The VTAPM has multiple levels of accountability and differing incentives focused on the ACO-attributed population and Vermont's statewide Medicare population. Our additional analysis evaluated whether Vermont achieved spending reductions for the Medicare FFS beneficiary population statewide in the presence of the VTAPM, compared with a sample of all Medicare FFS beneficiaries residing in the 26 comparison states. More details on the methodology specific to the state-level analyses are in **Appendix D**. State-level spending results are in **Appendix Exhibits F.3 and F.4** and are similar to the ACO-level findings presented in this chapter and in prior years.

Methodological Limitations and Mitigation Strategies. There were several methodological limitations and challenges to our analysis, similar to those described in the previous three evaluation reports. Because of Vermont's extensive history of health coverage, quality, and cost control initiatives, few other states have comparable health care market characteristics and health care reform experience. Thus, unaccounted-for differences in area-level characteristics between the treatment and comparison groups may bias stated impacts. In addition, we continued to see a lower impact of COVID-19 on the treatment versus comparison groups due to Vermont's robust response to the COVID-19 PHE, which necessitated an additional variable in our entropy balancing models. Finally, imprecision persisted in our impact estimates; where standard errors were too large to produce reliable impact estimates, we focused on explaining trends over time in outcomes for the treatment and comparison groups. **Exhibit 2.1.3** summarizes our analytical challenges and corresponding mitigation strategies to address the issues to the best of our ability. Although we employed multiple approaches and sensitivity analyses, our results must continue to be interpreted considering these methodological limitations. For a more detailed discussion of these challenges and strategies, including sensitivity analyses results, see **Appendix D**.

👥 Using the Comparison Group to Establish the Counterfactual

We use the term comparison group here and throughout the report, which is a group of beneficiaries residing in comparison states and attributed to clinicians in Shared Savings Program ACOs. OneCare participated in the Shared Savings Program prior to the VTAPM; in the absence of the VTAPM, we assume OneCare would have continued in the Shared Savings Program. Each beneficiary in the comparison group is assigned an analytic weight to resemble the VTAPM Medicare ACO-attributed beneficiary population on average as closely as possible.

A key assumption of our impact model is that the change in comparison group over the analytic time period approximates the change we would *expect to* see in the VTAPM beneficiaries over the same time period, given that, prior to the VTAPM, some of its provider and beneficiaries were in Shared Savings Program ACOs. The comparison group allows us to establish the *expected* outcome for VTAPM beneficiaries, also known as the counterfactual. The counterfactual answers the question, **"What would have happened to outcomes in PY 5 (2022) for those VTAPM Medicare ACO-attributed beneficiaries if the VTAPM had not been implemented?"**

In this way, we use the comparison group to assess the impact of the VTAPM, while accounting for trends in similar Shared Savings Program ACOs across the same timeframe as well as baseline trends in the VTAPM.

Exhibit 2.1.3 Methodological Challenges and Mitigation Strategies

Challenge	Mitigation Strategy
Ongoing differential effects of the COVID-19 PHE on the treatment and comparison groups in PY 5 (2022)	Included COVID-19 variable in entropy balancing models, examined descriptive characteristics of COVID-19 variables between treatment and comparison groups, conducted additional sensitivity analyses
Imprecision in impact estimates due to outlier weights, outcome variability, and relatively small sample sizes, resulting in large standard errors	Tested multiple iterations of the entropy balancing algorithm, considered both contextual factors and the significance level of impact estimates when interpreting impact estimates
Imbalance between treatment and comparison groups on two key covariates due to Vermont's unique health care market context	Limited the comparison group to Medicare beneficiaries attributed to ACO clinicians likely to have similar experience in upside-risk contracts; conducted additional sensitivity analyses
Greater scale and intensity of Vermont's health reform efforts in the baseline period relative to the comparison group	Selected comparison states with similar histories of health reform; conducted additional sensitivity analyses

Trends in Medicare Spending

Medicare beneficiaries represent approximately 24% of the model's attributed population; for this reason, the trends and impacts presented may not reflect the model's effects for Vermonters covered by other payers (for example, the commercial ACO-attributed population). We estimated changes over time in gross Medicare spending for beneficiaries attributed to the VTAPM Medicare ACO and comparison Shared Savings Program ACOs. **Exhibit 2.1.4** shows regression-adjusted means in spending across the baseline and PYs (2014–2022).[y] Through the first year of the COVID-19 PHE in 2020, we observed relatively flat spending for comparison group beneficiaries. However, spending for beneficiaries attributed to the VTAPM Medicare ACO declined in PY 3 (2020) before increasing again in PY 4 (2021). In PY 5 (2022), spending for both VTAPM Medicare ACO and Shared Savings Program ACO beneficiaries decreased from the prior year, although the decrease was greater for comparison group beneficiaries. Spending for comparison beneficiaries attributed to Shared Savings Program ACOs in PY 5 (2022) remained above spending levels in the baseline period, while spending for VTAPM Medicare ACO beneficiaries remained lower than spending during baseline.[z]

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[y] For details on unadjusted spending in the baseline and PYs, see **Appendix Exhibits F.12** and **F.20.**

[z] Gross Medicare spending associated with Vermont Medicare beneficiaries statewide and their comparison group showed similar trends, shown in **Appendix Exhibit F.3.**

Exhibit 2.1.4 Gross Medicare Spending for VTAPM Medicare ACO-Attributed Beneficiaries and Comparison Shared Savings Program ACO Beneficiaries Diverged after 2018
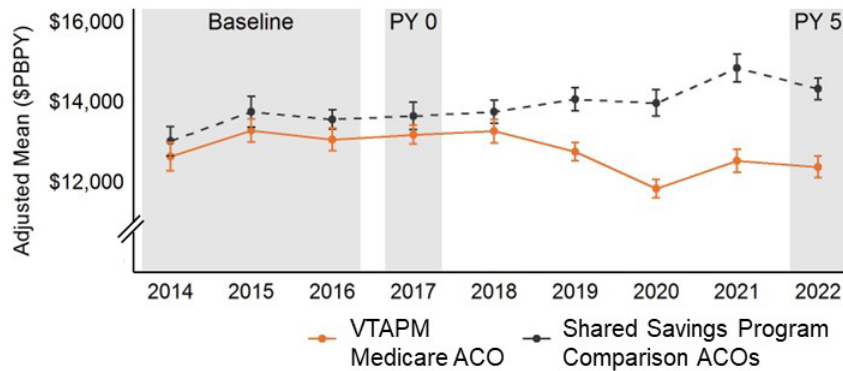
SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented in 2022 USD ($) per beneficiary per year (PBPY) and represent regression-adjusted means for gross Medicare spending in each year from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) VTAPM Medicare ACO and comparison Shared Savings Program ACOs clinicians.

Impact on Medicare Spending

To derive spending impact estimates for PY 5 (2022), we used a DID design that compared the change in spending from a three-year baseline period (2014–2016) to PY 5 for the VTAPM Medicare ACO relative to comparison Shared Savings Program ACOs. The DID design had a slightly different specification than that used to estimate spending trends year by year; spending was averaged over the three-year baseline period, and the pooled estimate was compared with PY 5. For this reason, the impact estimates cannot be calculated directly from the trend graph in **Exhibit 2.1.4**.

We estimated the impact of the VTAPM on gross and net Medicare spending in PY 5 (2022). The estimated impacts in each PY from PY 1 (2018) through PY 4 (2021) were all inflation-adjusted to 2022 dollars and are presented with a cumulative impact estimate for gross and net Medicare spending across the five PYs (2018–2022). We do not present impacts for 2017, which is considered a ramp-up year for the VTAPM Medicare ACO implementation.

Gross Impact. Cumulatively over the first five PYs of the model, there was a statistically significant reduction in total gross Medicare spending for beneficiaries attributed to the VTAPM Medicare ACO. Spending reduced by $789.12 PBPY, or $193.5 million overall, before considering CMS shared savings and other investment payments (**Exhibit 2.1.5**). This amount represented a 6.6% reduction from spending for the VTAPM ACO-attributed beneficiaries relative to spending changes for the comparison Shared Savings Program ACOs over the same time period. For PY 5 (2022) alone, we observed a reduction of $1,021.99 PBPY (8.3% compared to the counterfactual) that was not statistically significant, reflecting an overall decline in spending for VTAPM Medicare ACO beneficiaries since baseline years (2014–2016), and an overall increase in spending since baseline for comparison Shared Savings Program ACO beneficiaries. The impact for PY 5 was consistent in direction and magnitude with those estimated for prior individual PYs. Over the five PYs of the model, there have been reductions in gross Medicare spending for both the VTAPM Medicare ACO and Vermont statewide beneficiaries, although only some of the reductions reached statistical significance. Findings for the state-level analysis were similar: cumulatively, there was a statistically significant reduction in total gross Medicare spending for Vermont Medicare beneficiaries statewide, by $1,226.92 (9.6%) PBPY, or $501.5 million overall. For PY 5 (2022), the reduction of $1,114.08 PBPY (8.4%) was not statistically significant.[aa]

[aa] See **Appendix Exhibit F.4** for full results.

Exhibit 2.1.5 The VTAPM was Associated with a Significant Cumulative Reduction in Gross Medicare Spending, and Both Significant and Non-Significant Declines from PY 1 (2018)–PY 5 (2022)

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is presented in 2022 USD ($) per beneficiary per year (PBPY) or in aggregate for all beneficiaries in the PY(s). VTAPM baseline is the regression-adjusted mean spending of the VTAPM Medicare ACO-attributed beneficiaries averaged over the three baseline years (2014–2016). Aggregate impact is the impact estimate multiplied by the number of attributed beneficiaries in PY(s). Estimated percentage impact is the DID estimate relative to the expected outcome for the VTAPM Medicare ACO-attributed beneficiaries in the PY(s) had the model not been implemented. The PY 3 (2020) estimate represented the first three calendar quarters of 2020, to mitigate any effect of the cyberattack on the University of Vermont Health Network. For more information on the cyberattack and its effects, see the Second and Third Annual Reports. Asterisks denote significance at *p<0.10, **p<0.05.

The estimated impacts both cumulatively and for individual PYs are consistent with the results described in the VTAPM Medicare Total Cost of Care (TCOC) Annual Report in PY 5 (2022), which found that Vermont consistently met Medicare TCOC per beneficiary growth targets.[19] The targets were set against the projected national growth of Medicare FFS spending and were calculated separately for different subsets of Medicare beneficiaries.[bb] For all five PYs of the VTAPM, the Vermont Medicare TCOC per beneficiary annual growth rate was below the respective target for all beneficiary subgroups. In PY 5 (2022), Vermont's performance ranged from 6.6 to 8.4 percentage points below targets.

Historically, Vermont's Medicare spending per beneficiary has been lower than national levels, but the state has experienced relatively higher spending growth, which was cited as one of the motivations to initiate the VTAPM. In the five years before the VTAPM (2012 to 2017), Vermont's average annual growth was 3.4 percentage points greater than that observed nationally. During the first two years of the VTAPM, from 2018 to 2019, Vermont's growth slowed to 0.6 percentage points below national growth. As the COVID-19 PHE began, however, average annual growth from 2020 to 2022 increased both within Vermont and nationally, likely from delayed care during the COVID-19 PHE and other health care cost increases. Overall, Vermont continues to have one of the lowest per capita TCOCs in the nation, lower than national expenditures and other states with similar health reform efforts.[12]

Net Impact. We estimated net spending impacts by adjusting total gross spending by costs associated with ACO incentives (such as shared savings payments and penalties) incurred by the Medicare Trust Fund for both the

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[bb] The growth targets were calculated separately for beneficiaries eligible for Medicare due to end-stage renal disease (ESRD) and those eligible due to age and/or disability (non-ESRD).

VTAPM Medicare ACO and comparison group ACOs.[cc] In PY 5 (2022), the VTAPM Medicare ACO received a final shared savings amount of $490,346. After accounting for the incentive payments in the baseline and PYs, the cumulative net impact of the VTAPM on Medicare ACO beneficiaries across the five PYs was a statistically significant reduction in Medicare spending of $757.67 PBPY (6.3%), or $185.8 million overall (**Exhibit 2.1.6**). In PY 5 (2022), there was a non-significant reduction in net Medicare spending of $1,075.83 PBPY (8.7%). Similar to gross impact results, findings for net spending showed reductions in each PY, although many did not reach statistical significance. Findings for the state-level analysis were similar: cumulatively, the statistically significant reduction in total net Medicare spending for Vermont Medicare beneficiaries statewide was $1,196.28 (9.4%) PBPY, or $489.0 million overall. For PY 5 (2022), the reduction of $1,106.42 PBPY (8.4%) was not statistically significant.[dd]

Exhibit 2.1.6 The VTAPM was Associated with a Significant Cumulative Reduction in Net Medicare Spending and Significant and Non-Significant Declines from PY 1 (2018)–PY 5 (2022)

	Impact Estimate ($PBPY)	VTAPM Baseline ($PBPY)	Aggregate Impact ($M)	% Impact
Cumulative	-$757.67**	$11,748	-$185.8M	-6.3%
PY 5 (2022)	-$1,075.83	$11,859	-$52.9M	-8.7%
PY 4 (2021)	-$1,331.72	$12,842	-$70.7M	-9.7%
PY 3 (2020)	-$115.69	$9,111	-$5.7M	-1.4%
PY 2 (2019)	-$857.15*	$12,763	-$45.7M	-6.5%
PY 1 (2018)	-$266.72	$12,053	-$10.7M	-2.2%

Impact Estimate ($PBPY) and 90% CI

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is presented in 2022 USD ($) per beneficiary per year (PBPY) or in aggregate for all beneficiaries in the PY(s). VTAPM baseline is the regression-adjusted mean spending of the VTAPM Medicare ACO-attributed beneficiaries averaged over the three baseline years (2014–2016). Aggregate impact is the impact estimate multiplied by the number of attributed beneficiaries in PY(s). Estimated percentage impact is the DID estimate relative to the expected outcome for the VTAPM Medicare ACO-attributed beneficiaries in the PY(s) had the model not been implemented. The PY 3 (2020) estimate represented the first three calendar quarters of 2020, to mitigate any effect of the cyberattack on the University of Vermont Health Network. For more information on the cyberattack and its effects, see the Second and Third Annual Reports. Asterisks denote significance at *p<0.10, **p<0.05.

Subgroup Analyses. We conducted analyses to understand the VTAPM's influence on gross spending for different subgroups defined by beneficiaries' characteristics and characteristics of clinicians to whom they were attributed in the model. However, our initial power calculations showed that effect sizes would need to be relatively large for us to detect them with the available Medicare beneficiary sample size. Thus, the subgroup analyses were postponed to PY 5 (2022), as potential impacts might be most detectable with the larger sample size of additional beneficiaries participating in the last two years of the model. However, as expected with the prior power calculations, we were unable to detect any significant spending impacts in any of the subgroups. We

[cc] The net impact assessment included the Multi-Payer Advanced Primary Care Practice pass-through payments in the baseline and PYs, the VTAPM shared savings payments in the PYs, and shared savings payments to comparison group providers from Pioneer, Medicare Shared Savings Program, and Next Generation ACO models in the baseline and PYs. The net impact assessment did not include the Medicare start-up funds ($9.5 million) provided to Vermont by CMS in PY 0 (2017) as part of a cooperative agreement between the two entities to build state infrastructure supporting model implementation. For more details on net impact estimation, see **Appendix D.5**.

[dd] See **Appendix Exhibit F.4** for full results.

therefore only present descriptive characteristics of the subgroups and our hypotheses for the analyses in this chapter. Full subgroup results for VTAPM Medicare ACO-attributed beneficiaries and Vermont Medicare beneficiaries statewide are in the Appendix (**Appendix Exhibits F.8-F.11**), but we caution against overinterpreting the point estimates of the effect sizes.

For Medicare beneficiary characteristics, we assessed whether spending impacts differed based on Medicaid dual-eligibility status, rurality,[ee] number of chronic conditions, and the number of years beneficiaries were attributed to the VTAPM Medicare ACO (**Exhibit 2.1.7**). Most VTAPM Medicare ACO beneficiaries were not dually eligible for Medicaid, resided in rural areas, and had 3–6 chronic conditions, with slightly lower proportions of beneficiaries experiencing 0–2 and more than 7 chronic conditions. About half of beneficiaries were attributed to the model for all five PYs.

The VTAPM has emphasized increasing access to primary care and coordinating care for high-risk beneficiaries. We hypothesized that the largest spending impacts would be for those who were dually eligible for Medicare and Medicaid, lived in rural locations, and experienced more chronic conditions. Beneficiaries who were dually eligible also had, on average, higher numbers of chronic conditions despite being younger than those not dually eligible (**Appendix Exhibit F.5**), indicating greater potential for reduced spending. Furthermore, as beneficiaries continued to participate in the model and were better able to manage their conditions, we would expect to see larger spending reductions associated with more years of ACO participation. Beneficiaries attributed to the model for all five PYs were on average older, more likely to be dually eligible for Medicaid, and have more chronic conditions than beneficiaries attributed to the model for less than five years (**Appendix Exhibit F.7**), suggesting spending could be reduced with successful care coordination and disease management.

Exhibit 2.1.7 Most VTAPM Medicare ACO Beneficiaries Were Not Dually Eligible for Medicaid, Lived in Rural Areas, and had 3-6 Chronic Conditions

Dual Eligibility
Dual Eligible 25%
Not Dual Eligible 75%

Rurality
Non-Rural 37%
Rural 63%

Chronic Conditions
7+ 22%
0-2 35%
3-6 43%

Years Attributed to the Model
Attributed < 5 Years 48%
Attributed all 5 Years 52%
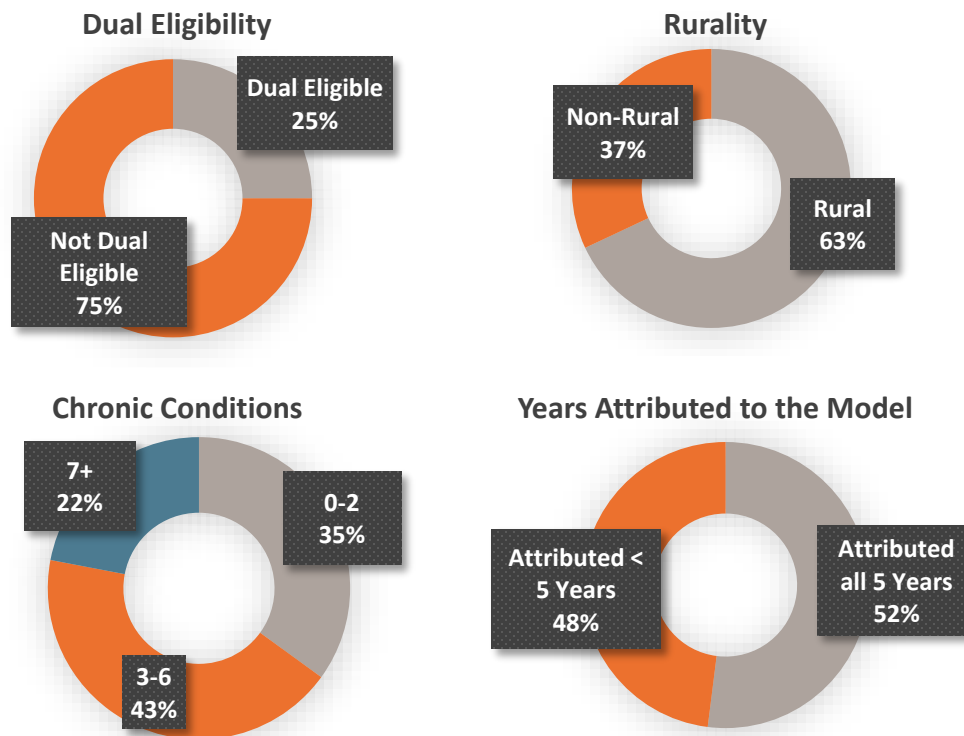
SOURCE: NORC analysis of Medicare FFS claims data.

[ee] Urban areas were defined as metropolitan counties with 2013 Rural-Urban Continuum Codes (RUCC) of 1-3; rural areas were defined as nonmetropolitan counties with RUCC 4-9.

For clinician characteristics, we examined whether spending impacts differed by whether clinicians participating in the VTAPM Medicare ACO elected all-inclusive population-based payment (AIPBP), as well as clinicians' length of model participation.[ff] The percentages of VTAPM Medicare ACO beneficiaries attributed to clinicians in each subgroup are shown in **Exhibit 2.1.8**. We would expect the model to produce larger spending reductions for clinicians electing AIPBP and those participating in the model for the entire duration.

We found that beneficiaries attributed to (respectively) clinicians who elected AIPBP and clinicians who participated in the model for all five PYs were slightly less likely to be dually eligible for Medicaid and had lower numbers of chronic conditions, compared with those attributed to clinicians not electing AIPBP and clinicians participating in the model for less than five years (**Appendix Exhibit F.7**). Beneficiaries attributed to clinicians participating in the model for all five PYs were also more likely to live in urban areas (**Appendix Exhibit F.7**). Vermont's urban area is centered on Burlington, where the University of Vermont (UVM) Medical Center is located; clinicians may have participated in the model continuously because they were affiliated with a large academic medical center with greater administrative capacity to implement and support payment reform.

Exhibit 2.1.8 Most Beneficiaries Were Attributed to Clinicians who Elected AIPBP and Participated in the VTAPM for All Five PYs
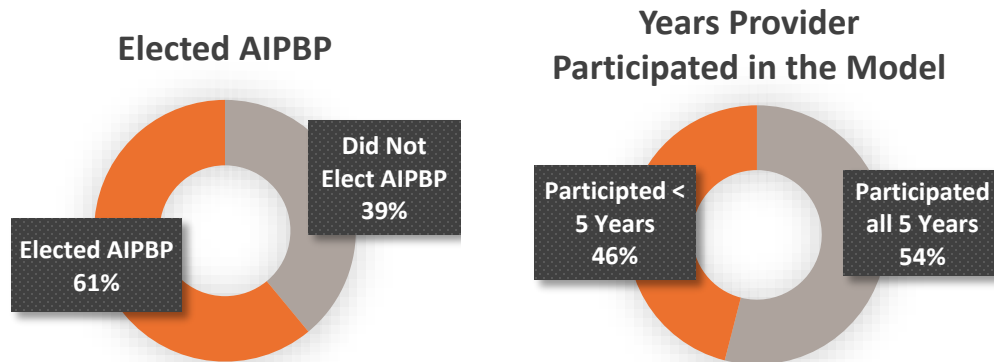
SOURCES: NORC analysis of Medicare FFS claims data; OneCare 2022 Provider Network (Appendix 2, FY2022 budget; October 2022); PY 2021 Medicare Provider List (October 2022).

NOTE: Percentages represent the proportion of VTAPM Medicare ACO beneficiaries attributed to clinicians in each subgroup.

2.2   Gross Medicaid Spending

In this section, we examine unadjusted trends over time in spending associated with Medicaid ACO-attributed enrollees. Due to data limitations in this analysis—including challenges constructing valid treatment and comparison groups with available data and incomplete or unusable data elements—we are unable to conduct an impact analysis and in turn to attribute observed spending changes specifically to model implementation.

[ff] We also explored spending for clinicians who participated in all three ACO initiatives compared with those who participated in fewer than three initiatives. However, in PY 5 (2022) only two organizations participating in the VTAPM Medicare ACO initiative were in fewer than three initiatives; the sample was too small to produce meaningful results, and we dropped this subgroup analysis.

Methodology

Data Sources. In our Third Evaluation Report, we used Vermont Transformed Medicaid Statistical Information System (T-MSIS) data to assess trends in SUD diagnosis and treatment among Medicaid enrollees. However, given the low quality of provider data available, we were unable to use T-MSIS data to determine whether a Vermont Medicaid enrollee was attributed to the VTAPM Medicaid ACO. Instead, we constructed an attribution-eligible population by applying the VTAPM Medicaid ACO's expanded attribution methodology to Vermont Medicaid enrollees. Additionally, capitated payments—a cornerstone of the VTAPM Medicaid ACO—were not captured in the T-MSIS data fields related to spending. In light of the challenges with the T-MSIS data, we assessed the feasibility of using Vermont Health Care Uniform Reporting and Evaluation System (VHCURES)[20] data to identify Vermont Medicaid enrollees attributed to the VTAPM for this report.[gg]

However, we also identified data quality challenges within VHCURES, including concerns about the timeliness and accuracy of reporting across all spending and utilization measures for 2022 (likely due to issues related to the timeframe for claims adjudication and processing). Additionally, we encountered challenges identifying ACO-eligible enrollees in the baseline period. Our VHCURES analysis was further constrained by incomplete, inconsistent, or unusable data elements. We found significant missingness or unusable values in elements required to construct several utilization measures for the Medicaid population in a manner similar to the Medicare specifications. In addition, there were high levels of missingness (over 95%) for the race and ethnicity variables and inconsistent values for the gender variable in the VHCURES data. For these reasons, our VHCURES analysis for the fourth evaluation report was limited to assessing Medicaid spending trends from 2017–2021, and we were unable to report on key demographic variables.

To mitigate the limitations in both datasets and leverage their strengths, for this evaluation report we used both VHCURES data and T-MSIS data. We used VHCURES data to evaluate Medicaid ACO spending only. We used T-MSIS data to assess Medicaid utilization measures, including acute care stays, ED visits and observation stays, and SUD diagnosis and treatment (**Exhibit 2.2.1**). We used demographic data from the relevant data source (i.e., VHCURES or T-MSIS) to descriptively characterize Medicaid enrollees in each of the analyses.

Exhibit 2.2.1. Medicaid Data Sources, Methods, Analytic Populations, and Outcome Measures

	T-MSIS	**VHCURES**
Years	2016–2022	2017–2021
Analytic Methods	Serial cross-sectional analyses	Serial cross-sectional analyses
Analytic Population	Members eligible for attribution to the Medicaid ACO, defined using the expanded attribution eligibility criteria	Members attributed to the Medicaid ACO, identified using program participation flags
Outcome Measures	• Acute Care Stays • ED Visits & Observation Stays • ED Visits Involving SUD Treatment • Members with SUD Diagnosis • Members with SUD Diagnosis Receiving Treatment	• Gross Medicaid Spending

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[gg] The VHCURES is Vermont's all-payer claims database—a comprehensive, longitudinal, multi-payer database that includes medical and pharmacy claims and eligibility data from private and public payers.

Identifying the Analytic Populations. In analyses using VHCURES data, we identified Medicaid enrollees attributed to the ACO using program participation flags. Unlike the VHCURES data, an ACO participation flag was not available in T-MSIS. Instead, for analyses using T-MSIS data, we applied the model's Medicaid ACO's expanded attribution criteria from baseline (2016)[hh] and performance years (2017–2022) to identify attribution-eligible members. Whereas the T-MSIS data do not include capitated payments, the VHCURES data include these payments, allowing us to assess trends in spending for the Medicaid population. These analyses are descriptive, and trends should not be interpreted as a direct reflection of VTAPM Medicaid ACO implementation or activities.

In 2020, the VTAPM Medicaid ACO applied an expanded attribution methodology, under which Vermont Medicaid enrollees are attributed prospectively to the ACO based on Medicaid enrollment regardless of historical primary care utilization. We used the expanded attribution methodology to identify Medicaid enrollees who met the expanded attribution criteria[ii] from 2016–2022 in T-MSIS data. Due to data quality issues, we were not able to determine whether an enrollee had a designated primary care practitioner (PCP) who was not in the ACO; thus, we were unable to operationalize that criterion for our T-MSIS analysis. While this approach lets us observe changes in outcomes over time for Vermont Medicaid enrollees who met the expanded attribution criteria, we cannot causally link these trends to the Medicaid ACO. Further, because the VTAPM Medicaid ACO used traditional attribution criteria from 2017–2019 (which attributed enrollees to the model based on receiving services from clinicians participating in the model), T-MSIS findings from those years should be considered for contextual purposes only, rather than as reflecting model activities.

Although the VTAPM Medicaid ACO attributes Medicaid enrollees to the model prospectively (that is, based on historical Medicaid enrollment), to remain consistent with the Medicare analyses, our T-MSIS analyses used a concurrent approach and identified Medicaid enrollees eligible to be attributed to the model based on their enrollment within a PY.

Characteristics of Attributed Medicaid Enrollees. The number of attributed Medicaid enrollees increased over time, from 40,783 enrollees in 2017 to 126,939 enrollees in 2021. The implemented shift to expanded attribution resulted in increased Medicaid ACO alignment in 2020 (see previous section for more detail on expanded attribution methodology). Increased attribution after 2020 may also have been driven by continuous enrollment requirements instituted due to the COVID-19 PHE, which led to increased enrollment in Medicaid in Vermont and nationwide.[21] On average across all analytic years (2017–2021), approximately 45% of enrollees were under the age of 17 years; this percentage declined over the observed period, from 48% in 2017 to 41% in 2021. During the same period, on average 54% of enrollees were between the ages of 18 and 64, and approximately 1% of enrollees were over 65 years of age.[jj] During the same period, an average of 66% of attributed Medicaid enrollees lived in rural areas.[kk] See **Appendix Exhibit F.45** for more detail on the characteristics of attributed Medicaid enrollees, as well as **Chapter 3** for information on the attribution-eligible population as identified by T-MSIS data.

[hh] 2016 is the first full year for which T-MSIS data were available for Vermont.

[ii] Expanded criteria include: member must live in Vermont; member must be over 1 year old; member is not dually eligible for Medicare; member must have at least 1 month of Medicaid coverage; member does not have evidence of additional sources of insurance coverage; member did not receive a limited Medicaid benefits package.

[jj] High levels of data missingness and other data quality issues meant that we were unable to report on the gender, race, or ethnicity of Medicaid enrollees using VHCURES data.

[kk] Defined as areas with 2013 Rural-Urban Continuum Codes of 4-9.

Statistical Analysis. To explore trends in spending and utilization among Medicaid enrollees attributed to the ACO over time, we used a serial cross-sectional design. The serial cross-sectional analyses are descriptive, and trends should not be interpreted as a reflection of VTAPM Medicaid ACO implementation or activities.

For all measures, we used a serial cross-sectional analysis to explore annual trends in the outcomes between 2017 and 2021 (VHCURES spending outcomes) or 2016 and 2022 (T-MSIS utilization outcomes). More detail on the results of our data quality assessment can be found in **Appendix D.7**.

Trends in Medicaid Spending

Vermont's overall per enrollee Medicaid spending ranks among the highest in the nation but is comparable to other New England states.[22,23] **Exhibit 2.2.2** depicts the trend in unadjusted gross Medicaid spending for the ACO-attributed population. Spending for this population[II] was relatively stable from 2017–2019, at around $4,500 per enrollee per year. Beginning in 2020, spending for the attributed population declined, reaching $3,332 per enrollee per year in 2021. These trends are descriptive and cannot be interpreted as a causal impact of the VTAPM. However, while we cannot attribute the decline in Medicaid spending directly to the VTAPM, the downward trend may reflect the implementation of the expanded attribution criteria in 2020; because enrollees were no longer required to have a documented relationship with a PCP under the expanded attribution methodology, the newly attributed population may have had lower rates of service utilization overall. This spending reduction may also reflect delayed medical care across the health care system during the COVID-19 PHE.

Exhibit 2.2.2 Gross Medicaid Spending for Medicaid ACO-Attributed Enrollees Declined from 2019–2021
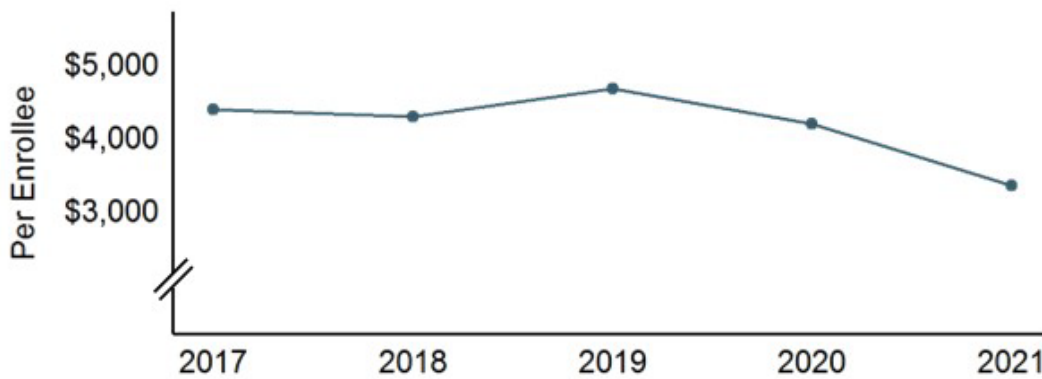
SOURCE: NORC analysis of VHCURES claims.

NOTES: Estimates are presented in 2021 USD ($) per enrollee per year. These are unadjusted trends and cannot be interpreted as a causal impact of the VTAPM Medicaid ACO.

[II] The attributed population excludes enrollees with partial benefits and enrollees with other sources of insurance coverage, such as those dually enrolled in Medicare and Medicaid.

2.3 Conclusion

Our analysis found that across the course of the model, the VTAPM resulted in statistically significant cumulative reductions in both gross and net Medicare spending for the VTAPM Medicare ACO population, relative to comparison Shared Savings Program ACOs. In PY 5 (2022), the VTAPM was also associated with reductions in both gross and net Medicare spending, but neither reduction was statistically significant. Trends in gross Medicaid spending showed a decline in spending for the Medicaid ACO-attributed population from 2019 to 2021. In the next chapter, we present findings on health care utilization that may explain decreases in spending and describe population health activities and strategies VTAPM participants implemented to influence outcomes.

Chapter 3: Utilization, Quality, and Population Health

Key Takeaways

Managing Care to Reduce Acute Care Utilization

- OneCare and model participants **initiated, expanded, and strengthened initiatives to enhance population health management and reduce avoidable utilization,** such as the complex care coordination program and Comprehensive Payment Reform program.
- The model **sustained funding for initiatives that started before the VTAPM**, including the Blueprint for Health, which OneCare funds through future Medicare shared savings.
- **Acute care hospital inpatient stays for VTAPM Medicare ACO beneficiaries significantly decreased in PY 5 (2022).** Such inpatient stays dropped steeply in 2020 for both VTAPM Medicare ACO and comparison (Shared Savings Program ACO) beneficiaries; rates for VTAPM Medicare ACO beneficiaries remained low through 2022, while rates for comparison Shared Savings Program ACOs beneficiaries increased.
- **Reported workforce shortages and increased patient acuity following the COVID-19 PHE** may have moderated the effects of care coordination, care management, and new alternative care settings on ED utilization and observation stays.

Addressing Population Health Goals

- Both the state and ACO **achieved targets for most population health measures** as of PY 4 (2021), the most recent year for which the GMCB reported progress on such measures.
- **Visits to PCPs increased** for VTAPM Medicare ACO-attributed beneficiaries despite reported primary care workforce shortages. The higher rates may reflect additional primary care access points, initiatives to connect frequent ED users with a PCP, and/or increased telehealth use.
- **Specialty care visits decreased** during the COVID-19 PHE and had not recovered by 2022 for VTAPM Medicare ACO beneficiaries, possibly due to a specialty care provider shortage (particularly in rural areas).
- Hospitals and HSAs implemented **prevention, screening, and treatment-based approaches for mental health and substance use**. Many of these efforts have not been funded or otherwise determined by the model or OneCare, but rather reflect a growing focus on addressing mental health in Vermont.
- State- and community-level initiatives, many of which were not directly attributable to the VTAPM, facilitated **improved diabetes control, blood pressure control, and tobacco use assessment and cessation interventions**.

In this chapter, we answer evaluation questions regarding implementation approaches and outcomes related to health services utilization and population health. Our analyses explored how the state of Vermont, OneCare, hospitals, and non-hospital providers (including provider types listed in **Exhibit 1.2.1**) collaborated to coordinate care for patients and to work toward meeting model population health targets. In addition, we considered the effects of these efforts on utilization. Specific questions addressed were:

- What impact did the model have on utilization for the VTAPM Medicare ACO population?
- What are trends over time in Medicaid utilization for the VTAPM Medicaid ACO population?
- How did the model impact specific population health measures?
- How did hospitals, community providers, the ACO, and the state collaborate to reach population-level health goals of increasing access to primary care, reducing deaths from suicide and drug overdose, and reducing chronic disease prevalence and morbidity?
- What impact did the model have on the model-specific health care delivery system and monitoring measures?

The findings presented in this chapter are based on the following sources:

OneCare and hospital budget documents, state and federal reports, news articles, and websites: Analyses of relevant documents across model years to provide details on care management, population health initiatives, and implementation experience.

GMCB-reported data on health outcomes and quality of care: Data on population health outcomes, process milestones, and health care delivery system quality targets are drawn from the Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report, PY 4 (2021), submitted by GMCB as required by the Model State Agreement.

Key informant interviews: Analyses of interviews conducted in PY 6 (2023) to describe population health initiatives and implementation experience.

Medicare claims data: Difference-in-differences analyses of Medicare FFS claims data to assess impacts of the VTAPM on acute care utilization from baseline to PY 5 (2022).

Medicaid claims data: Serial cross-sectional analyses of Medicaid claims data to understand descriptive trends in acute care utilization among Medicaid enrollees attributed to the ACO from 2017 to 2021 (PY 0-4).

3.1 Managing Care to Reduce Acute Care Utilization

A primary goal of the model is to reduce health care spending. To this end, OneCare supports a broad portfolio of population health initiatives, as described in **Exhibit 3.1.1**. In addition, hospitals, PCPs, and other providers initiated, expanded, and strengthened initiatives to decrease avoidable hospital utilization—an important means for reducing spending.[24,25] Many initiatives were not directly attributable to the model but were inspired by the model or reflected the model's influence on shifting to value-based care in Vermont. The initiatives expanded or built on the collaborative relationships that have grown over the course of the model, as noted in prior evaluation reports and discussed further in **Section 4.3**.

Each year, OneCare contributes to funding for key population health activities, including the Blueprint for Health initiative and the Support and Services at Home (SASH) program, through an advance on future Medicare shared savings.[mm] In this way, the model allowed for continued funding of Blueprint for Health initiatives supporting primary care practices and multidisciplinary care teams. Since 2006, the Blueprint initiative has helped hospital-owned, FQHC-owned, and independent primary care practices across the state achieve and maintain patient-

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[mm] OneCare was paid $9.1 million of advanced shared savings throughout 2022, which supplied cash flow for the PCMH, CHT, and SASH population health management payments (OneCare Vermont ACO Results). Advanced shared savings are built into the Medicare benchmark. For additional information, see the GMCB's 2023 Medicare Benchmark Recommendation.

centered medical home (PCMH) certification. The Blueprint multidisciplinary community health teams (CHTs) in each HSA support care coordination for all patients.[26] Medicaid continues to fund the Blueprint directly. The SASH program provides support services and care coordination for Medicare FFS beneficiaries with high health care costs living in affordable housing properties.[27,nn] Almost all model participants noted the key role of the Blueprint in supporting primary care and the need for continued investment.

OneCare also continued to support care coordination through its complex care coordination program, which provided fixed per member per month (PMPM) payments to clinicians, primary care practices, and community providers (for example, home health agencies, designated mental health agencies, and area agencies on aging). This program focused specifically on patients attributed to the ACO who were identified as high- and very-high-risk. OneCare tied payments to completion of care coordination activities; for example, the development of shared care plans.[oo]

In addition, independent primary care practices participating in OneCare's Comprehensive Payment Reform program receive a fixed PMPM payment from OneCare rather than FFS payments from multiple payers.[pp] The Comprehensive Payment Reform program grew from three practices in PY 1 (2018) to 17 practices in PY 5 (2022).[28] Administrators and clinicians from participating practices noted that the fixed payments through the Comprehensive Payment Reform program established financial stability, enabling practices to sustain and expand the delivery of primary care services. For example, one independent practice leader noted that some practices are leveraging support from the Comprehensive Payment Reform program to hire mental health clinicians. Both programs—the complex care coordination program and the Comprehensive Payment Reform program—are OneCare investments that aim to incentivize and reward model participants for achieving population health goals, which are closely aligned with the VTAPM.[29]

Exhibit 3.1.1. Population Health Initiatives Funded Through OneCare—PY 6 (2023)

Program	Description
Blueprint for Health Programs*	
Blueprint Community Health Teams (CHTs)	• Funding to support Blueprint multidisciplinary care coordination teams to support PCMHs and manage patients' complex illnesses across providers
Blueprint Patient-Centered Medical Homes (PCMHs)	• Funding provided to support Blueprint PCMHs in all HSAs, independent of model participation
Support and Services at Home (SASH)	• Connects local health and long-term care systems for Medicare beneficiaries to support aging at home through community partnerships, independent of HSA participation in the model
Primary Care	
Comprehensive Payment Reform Program	• Blended capitation model for independent primary care practices with a minimum of 500 attributed beneficiaries. In 2023, the Comprehensive Payment Reform program began a mental health integration model
Specialty Care/Innovation	
Innovation Fund	• Grant funds that support innovative evidence-based (or -informed) program pilots that align with OneCare's priorities and expand opportunity to improve care and drive success under program goals

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nn An independent evaluation of the first years of the SASH program (2010–2016) found that the program had a favorable impact on Medicare expenditures, with variation by program/panel characteristics.

oo OneCare launched the complex care coordination program in 2017. The program has targeted high- and very-high-risk Medicaid enrollees attributed to the model through team-based care. Payments through OneCare's complex care coordination program are based on the attribution of high- and very-high-risk lives to primary care, the number of HSAs they serve in, and the number of high- and very-high-risk lives in those HSAs (Questions for OCV Budget Resubmission, OneCare Budget Order Deliverables).

pp The Comprehensive Payment Reform program is a blended capitation model for independent primary care practices with a minimum of 500 attributed beneficiaries. It aims to support the transition of primary care practices to value-based care.

Program	Description
Specialist Fund	• Funding for specialty care providers that enables care coordination and innovative care delivery concepts for high-cost populations
Care Coordination	
Longitudinal Care Program	• Supports in-home services for Vermonters who do not otherwise qualify for home health services and present with chronic disease, a recent hospitalization, and barriers to self-management
Developmental Understanding and Legal Collaboration for Everyone Program (DULCE)	• Funding for pediatric care office settings to support the health-related social needs of infants from birth to 6 months • OneCare funding for DULCE was designed to decrease over time. In FY23, OneCare decreased the DULCE budget by approximately $59,000
Quality	
Population Health Management (PHM) Base Payments	• PMPM funding to support population health initiatives and high-quality care delivery
PHM Bonus Potential	• PMPM payment offered to participating clinicians who meet quality targets
Programs Introduced during the VTAPM and Ended in PY 6 (2023)	
Quality	
Value-Based Incentive Fund (VBIF)§	• Funding offered to participating clinicians to encourage high performance on quality measures
Care Coordination	
Complex Care Coordination Program§	• PMPM payment offered to participating clinicians to encourage high performance on quality measures
Primary Care	
Population Health Management Program§	• Funding offered to participating clinicians to encourage high performance on quality measures
Primary Prevention	• Funding that supports collaborative community-level initiatives aimed at improving well-being and healthy lifestyles where Vermonters live, work, learn, and play; there is no funding allocated for Primary Prevention in FY 2023

SOURCES: OneCare's 2023 Budget Presentation to the GMCB (November 9, 2022); OneCare FY23 Budget Narrative (September 30, 2022); OneCare Vermont Accountable Care Organization Board of Managers Meeting December 15, 2020 Minutes (December 15, 2020); OneCare Vermont ACO: Innovation Fund (February 2021); GMCB Budget Order Condition 7d Final Description of OneCare's Population Health Initiatives; OneCare FY23 Amended Budget Order (September 9, 2023); OneCare Vermont FY23 CPR Program Monitoring Report to GMCB (July 2023).

*In FY 2023, funding for all Blueprint for Health programs was equivalent to the FY 2022 budgeted amount plus an inflationary factor of 5.2%. SOURCE: OneCare FY23 Budget Conditions (December 21, 2022).

§The FY 2023 budget integrated previously separate care coordination, VBIF, and population health management programs into a single blended program and payment stream (PHM Base Payments). SOURCE: OneCare's FY 2023 Budget Submission (September 30, 2022).

In PY 5 (2022), in addition to supporting OneCare's population health initiatives through participation fees, hospitals invested in staff and technology to assess and manage the needs of their patient populations. Some hospitals created population health departments and new positions to lead these departments. These departments aligned data analytics with population health initiatives to address model goals. Several hospitals invested in new electronic health records (EHRs) or population health management systems to better understand community needs. Hospitals also hired care managers to support new initiatives focusing on patients with chronic conditions, SUDs, and health-related social needs with recent hospitalizations or ED visits. Hospitals leveraged increased population health capacity and the Blueprint CHTs, working with non-hospital providers to manage care for patients at high risk of avoidable hospitalizations and ED visits.

Hospitals in several HSAs also pursued alternative care options to improve access to care and reduce avoidable ED utilization and hospitalizations. For example, two rural hospitals in different HSAs collaborated with a FQHC to open two express care/urgent care centers in 2020.[30,31] In interviews, CAH leaders attributed reductions in avoidable ED visits to access to these new lower-cost care centers that encourage patients to seek care when needed and avoid higher-cost EDs.[32] Express care centers also offer extended and weekend hours and are appointment-free,

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Addressing Health-Related Social Needs (HRSNs) through Population Health Interventions and Community-Level Partnerships

Model participants noted that significant unmet health-related social needs for Vermonters include housing instability, food insecurity, and transportation problems. Several participants shared that HRSNs were magnified during the COVID-19 PHE and that the end of certain COVID-19 PHE-era benefits has exacerbated needs and subsequent population health outcomes. HSAs have organized population health initiatives and community partnerships to address HRSNs at the local level. The Accountable Communities for Health (ACH)/Community Collaboratives, originally funded under a State Innovation Model (SIM) grant, are a vehicle for HSA-level collaboration among health and social providers. Hospital providers noted that community partnerships connected patients with transportation to appointments, hotel vouchers, and local food banks. Some PCPs and hospital providers are implementing social determinants of health (SDOH) screening to identify patient-specific social needs. CHTs also conduct SDOH screening in addition to supporting primary care in managing patients with chronic conditions and mental health needs.

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providing a convenient care-seeking option for individuals who do not have a PCP or when PCPs are not available.[33] Another example of a delivery system reform aimed at reducing ED visits or hospital stays is standing up the Psychiatric Urgent Care for Kids (PUCK) program. Initially funded by OneCare's Innovation Fund, PUCK, a joint effort between the designated mental health agency and the hospital in one HSA, aims to help elementary-aged children re-enter and stay in school by providing a non-ED mental health crisis intervention site.[34]

Examples of Actions Hospitals Took to Increase Population Health Management Capacity—PY 5 (2022)

- Creating a population health department and hiring a population health manager to lead data analytics focused on value-based care
- Establishing a population health services organization (PHSO) to align the network's population health strategies and resources; the PHSO also centralized care management, population health analytics, and community outreach
- Creating a director of population health programs and strategy position to oversee two additional staff to work with community partners and PCPs
- Planning for implementation of new EHRs to support population health management
- Contracting with a data management company to build a care management dashboard

Sources: UVMHN FY23 Budget Narrative; NMC FY23 Budget Narrative; Gifford Launches New Electronic Health Record, Patient Portal in October; Interviews with hospital leaders.

➕ Acute Care Utilization Impacts and Trends for the VTAPM Medicare ACO

To explore whether the initiatives to reduce acute care use had the intended effects, we used Medicare FFS claims data to evaluate the VTAPM's impact on hospital and ED utilization for beneficiaries attributed to the Medicare ACO. For the impact analysis, we present:

- **Impact estimates** from DID models assessing the effect of the VTAPM on utilization and comparing the change from baseline (2014–2016) to PY 5 (2022) in the VTAPM Medicare ACO group to the corresponding change in comparison Shared Savings Program ACOs. The analysis estimates change in utilization in PY 5 (2022) for VTAPM Medicare ACO beneficiaries that is attributable to the VTAPM and Vermont-specific factors, relative to Shared Savings Program ACO beneficiaries.

- **Trends over time** illustrating changes in regression-adjusted mean utilization for both the VTAPM Medicare ACO and comparison Shared Savings Program ACOs. The direction of impact estimates may vary from trend graphs because, even if trend graphs show decreases in utilization for both groups over time, the VTAPM could still have increased utilization if the decrease for the VTAPM Medicare ACO group is smaller than that for the comparison group.

Reductions in acute care utilization for beneficiaries attributed to the VTAPM Medicare ACO may indicate increased focus on care coordination in Vermont, among other contextual factors. In PY 5 (2022), we observed significant reductions (35.6 stays per 1,000 beneficiaries per year) in acute care stays for beneficiaries attributed to the VTAPM Medicare ACO relative to comparison beneficiaries attributed to Shared Savings Program ACOs (**Exhibit 3.1.2**). However, the VTAPM did not have any statistically significant impacts on other hospital and ED utilization measures for beneficiaries attributed to the VTAPM Medicare ACO, including the total number of days spent in acute care, the number of ED visits and observation stays, or unplanned 30-day readmissions. Results were similar for Vermont Medicare beneficiaries statewide (**Appendix Exhibit F.43**).

Exhibit 3.1.2 Acute Care Utilization for VTAPM Medicare ACO-Attributed Beneficiaries Decreased in PY 5 (2022)

Outcome	Impact Estimate (per 1,000 BPY)	VTAPM Baseline (per 1,000 BPY)	90% CI	P Value
Utilization Measures				
Acute Care Stays	-35.6*	210.3	-68.7, -2.5	0.077
Acute Care Days	-66.5	1,513.2	-392.3, 259.3	0.737
ED Visits & Observation Stays	40.7	494.0	-27.1, 108.4	0.323
Quality of Care Measures				
Unplanned 30-Day Readmissions[+]	-59.6	90.4	134.1, 14.9	0.188

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is per 1,000 beneficiaries per year (BPY). The impact estimate compares the change in utilization from baseline to PY 5 (2022) in the VTAPM Medicare ACO group to the change in the comparison group. VTAPM baseline is the regression-adjusted mean spending of the VTAPM Medicare ACO-attributed beneficiaries averaged over the three baseline years (2014–2016). Asterisks denote significance at *p<0.10. [+]Findings for unplanned 30-day readmissions should be interpreted with caution due to small sample size; only 14.5% of the VTAPM Medicare ACO-attributed beneficiaries had a hospitalization in PY 5 (2022) and were considered "eligible" to have a readmission, and, among those, only 11.7% had an unplanned 30-day readmission. Although the impact estimate for this measure is large, there is a large amount of variability, leading to a non-significant estimate, and should be interpreted with caution.

The significant decrease in acute care stays reflected a larger decrease for VTAPM Medicare ACO-attributed beneficiaries than comparison Shared Savings Program ACO beneficiaries. Acute care stays were stable for both groups in the years before the COVID-19 PHE (**Exhibit 3.1.3**), then declined in PY 3 (2020). After PY 3 (2020), acute care stays for VTAPM Medicare ACO-attributed beneficiaries remained at these lower levels, while acute care stays for beneficiaries attributed to comparison Shared Savings Program ACOs returned to pre-pandemic levels. The reduced acute care utilization of VTAPM Medicare ACO beneficiaries was a promising indicator that efforts under the VTAPM to improve collaborative care management for patients at high risk of hospitalizations

may collectively be having the intended effects, although our analysis could not causally link any individual VTAPM initiative to a specific outcome.

Examples of Hospitals' Collaborative Care Management Initiatives to Prevent Avoidable Acute Care Utilization

Following an ED visit
- Embedding a shared care provider in EDs and non-hospital provider practices
- Ensuring patients receive follow-up telephone calls to schedule a primary care visit following ED discharge
- Identifying individuals who use the ED frequently and managing their care through efforts such as scheduling weekly PCP visits and developing individualized care plans

Following a hospitalization
- Focusing CHT efforts to engage model participants in the development of short- and long-term care management plans and to improve understanding of patients' medical histories

Managing care at home
- Providing services through a multidisciplinary care team for patients at home after discharge, including organizing medications, creating routines, and helping patients understand and manage symptoms; the services predated the VTAPM
- Providing house call visits at no charge to at-risk patients through a partnership with the hospital and emergency medical services (EMS) teams, starting in PY 1 (2018); EMS crews have been asked to observe whether the home environment has adequate food, is safe, and whether the patient seems to understand and be properly taking prescriptions; in addition, crews have worked with primary care and/or the CHT to avoid future ED visits

Sources: UVMHN FY23 Budget Narrative; Copley Hospital FY23 Budget Narrative; Blueprint Annual Report–2022; OneCare Vermont Annual Report. 2019; SVMC Transitional Care Program; Gifford FY23 Budget Narrative; Gifford Helps Expand Home Visits; Interviews with hospital leaders

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Since PY 3 (2020), while acute care hospitalizations have remained stable in the VTAPM Medicare ACO group, between PY 3 and PY 5 (2022) there was an increase in the number of total days that VTAPM Medicare ACO beneficiaries spent in acute care. The increase in acute care days during the COVID-19 PHE could have reflected the lack of available staffed SNF beds, leading to longer hospitalizations.[35] In interviews, hospital leaders noted "huge challenges" in discharging patients to less intensive care settings, resulting in "inpatient boarders." Additionally, hospital leaders noted that increased patient acuity due to delayed care during the COVID-19 PHE, challenges in accessing care, and an older patient demographic may have contributed to the increase.

Exhibit 3.1.3 For VTAPM Medicare ACO-Attributed Beneficiaries, Acute Care Stays Decreased from 2019–2020, Then Remained Stable, While Acute Care Days Increased from 2020–2022
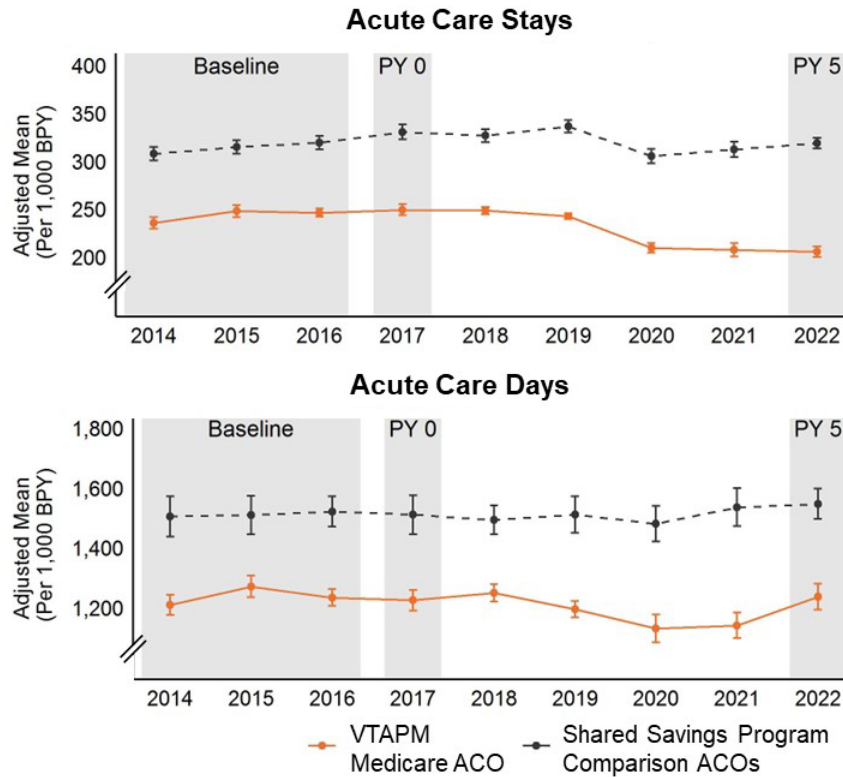
Acute Care Stays

Acute Care Days

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented per 1,000 beneficiaries per year (BPY) and represent regression-adjusted means for acute care stays and days in each year from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) VTAPM Medicare ACO and comparison clinicians.

Workforce shortages, patient acuity, and unmet social needs tempered the extent to which care coordination and management and new alternative care settings could affect rates of ED utilization and observation stays. Trends over time in the annual number of ED visits and observation stays were similar for VTAPM Medicare ACO and comparison Shared Savings Program ACO beneficiaries, dropping sharply in PY 3 (2020) and then increasing from PY 3 to PY 5 (2022). ED utilization did not rebound to pre-pandemic levels in PY 5 (2022) for either the VTAPM Medicare ACO or comparison groups, although utilization rose slightly faster in the VTAPM Medicare ACO group (**Exhibit 3.1.4**). Since the COVID-19 PHE, providers reported that patients have had more complex needs, including mental health issues, that may contribute to increased ED utilization. Limited access to specialty and mental health care, exacerbated by clinician retirement and practice closures during the COVID-19 PHE and the reluctance of people in rural communities to travel to academic medical centers for specialty care, has placed additional demand on EDs, urgent care centers, and PCPs.[36] Hospital leaders also reported limited bed availability in tertiary care centers, increasing the use of observation stays. There was also increasing intentional use of observation stays where admissions may have been unnecessary; for example, in 2022, the UVM Medical Center began piloting an ED observation unit to treat patients who may not need to be admitted to the hospital, including those with mental health needs.[37]

> ".... A large percentage of medical failures are a product of social determinants of need. The provider knew what they were doing and they had a good plan, but somebody went home, and looked at their prescription cost, and then they looked at their heating bill and they made the only choice they could make and so the plan failed and they rolled back into the ER."
>
> - CAH Leader

Exhibit 3.1.4 Trends Over Time in All ED Visits and Observation Stays Were Similar for VTAPM Medicare ACO and Comparison Shared Savings Program ACO Beneficiaries (2014–2022)
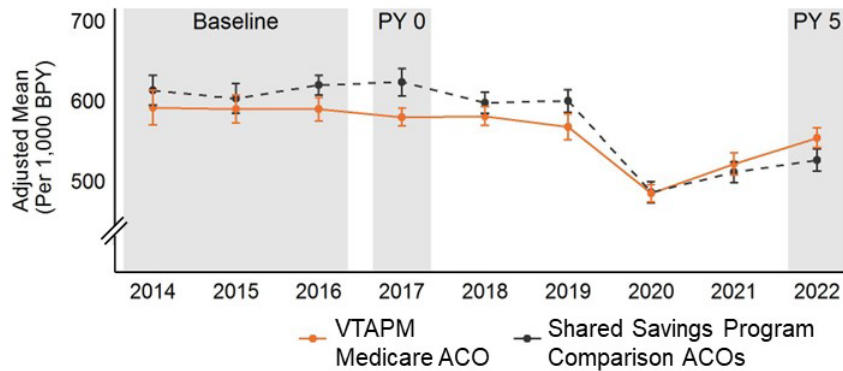
SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented per 1,000 beneficiaries per year (BPY) and represent regression-adjusted means in each year for ED visits and observation stays combined, from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) VTAPM Medicare ACO and comparison Shared Savings Program ACO clinicians.

Medicaid Acute Care Utilization Trends

We used T-MSIS data and a serial cross-sectional design to assess trends in health care utilization for attribution-eligible Medicaid enrollees (see previous chapter for further detail on the methodology used for Medicaid analyses). Results are presented as unadjusted rates of Vermont Medicaid enrollees with each outcome, from 2016 through 2022. Attribution-eligible enrollees were largely white, female, and living in rural areas, consistent with overall demographic trends in Vermont. The average age of attribution-eligible enrollees was 27, and on average roughly 40% were under the age of 18. See **Appendix Exhibit F.46** for more detail on characteristics of attribution-eligible enrollees.

Acute care stays for Medicaid enrollees eligible for attribution to the VTAPM began to decrease in 2021 (**Exhibit 3.1.5**). These results represent unadjusted trends and should not be interpreted causally. However, the overall trend is consistent with trends in the Medicare population and may similarly reflect an increased focus under the model on addressing chronic conditions and reducing avoidable acute care. In particular, the downward trend in acute care utilization may be related to the model's increased focus on population health efforts to address chronic conditions and health-related social needs, which are prevalent in the Medicaid population. Care coordination and management initiatives discussed earlier in this section supported all patients with identified needs, regardless of payer. In addition, the Vermont Chronic Care Initiative, which predated the model, continued to provide services for Medicaid enrollees with high utilization.

Exhibit 3.1.5 Acute Care Stays for Attribution-Eligible Medicaid Enrollees Declined Starting in 2021
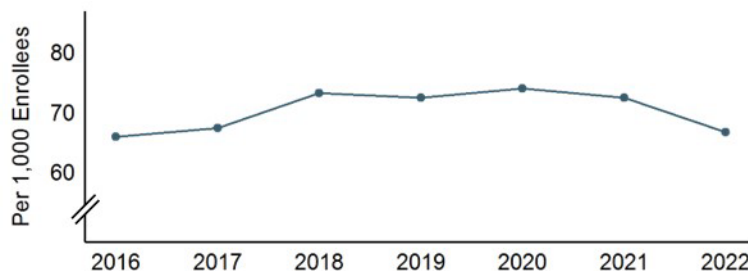
Source: NORC analysis of 2016–2022T-MSIS claims.

NOTES: Estimates represent unadjusted trends.

Overall, unadjusted trends for ED visits and observation stays for the Medicaid ACO-eligible population showed relatively stable utilization between 2016 and 2022 (PY 5; **Exhibit 3.1.6**). Overall, ED utilization for Vermont's Medicaid population is lower than national trends; during this period, the National Hospital Ambulatory Medical Care Survey (NHAMCS) estimates that rates of ED use by Medicaid enrollees nationwide ranged between 800 and 1,000 visits per 1,000 enrollees,[38] while Vermont's average during the same period was 520 visits per 1,000 enrollees. We also observed a drop in overall volume of ED and observation visits in 2020; this is consistent with wider national trends in ED use driven by the COVID-19 pandemic. Rates of ED use returned to pre-pandemic levels in 2021, which is also consistent with national trends.[4]

Exhibit 3.1.6 All ED Visits and Observation Stays for Attribution-Eligible Medicaid Enrollees Were Stable from 2016–2022

SOURCE: NORC analysis of T-MSIS claims.

NOTE: Estimates represent unadjusted trends.

Vermont Chronic Care Initiative

The Vermont Chronic Care Initiative (VCCI) has provided holistic, intensive, and short-term case management services to identified Medicaid and dually eligible enrollees with chronic health conditions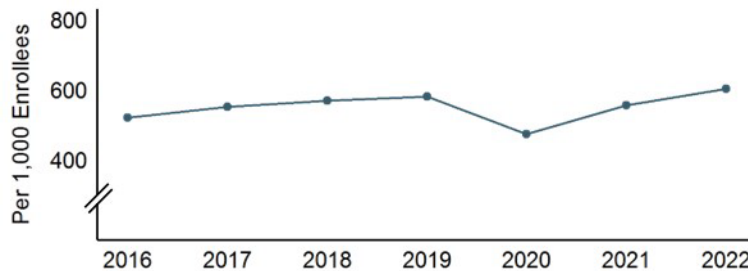 and/or who are high utilizers of care services. The Medicaid agency's care coordinators have been part of CHTs and embedded in hospital and primary care sites to support care transitions by connecting enrollees with medical homes and community-based self-management programs. While VCCI predated the model, AHS made efforts to align VCCI with OneCare. Additionally, OneCare's management of high- and very-high-risk Medicaid enrollees allowed VCCI to focus on outreach and engagement to newly enrolled Medicaid enrollees and Medicaid enrollees without claims, illustrating the strong collaborations that support the statewide accountability framework. According to DVHA, VCCI members experienced a 35% and 22% decrease in inpatient hospitalizations and ED visits, respectively, while non-enrolled counterparts experienced a 94% and 45% increase in inpatient hospitalizations and ED visits, respectively.

SOURCES: Vermont Chronic Care Initiative; Vermont Chronic Care Initiative Eligibility Changes; Medicaid's Vermont Chronic Care Initiative (VCCI); Implementation Improvement Plan: Vermont All-Payer Accountable Care Organization Model Agreement; Vermont Collaboration with Public Health Report.

3.2   Addressing Population Health Goals

A key model aim is to improve the health of Vermonters, as reflected in three primary population health outcome goals: (1) increase access to primary care, (2) reduce deaths from suicide and drug overdose, and (3) reduce prevalence and morbidity of chronic disease.[5] The Model State Agreement with CMS requires the GMCB to report on performance relative to statewide health outcome and quality targets for a set of 22 measures intended to support improved population health goals (see **Appendix Exhibit F.44** for a complete list of measures).[qq] Some of the Model State Agreement measures are statewide prevalence measures; the State encouraged the ACO and public health agencies to work together on "prevention and upstream solutions to preventing chronic disease."[7] OneCare reports on different subsets of the measures as part of its contracts with

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[qq] Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report Performance Year 4 (2021). These quality measures include population-level health outcomes, health care delivery system quality targets, and process milestones.

each payer.[rr,ss,7,39,40] Additionally, as required by the Model State Agreement, through its Value-Based Incentive Fund (VBIF), OneCare rewards primary care practices that meet quality targets for a subset of four measures, including diabetes (poor control of A1C [>9.0%]), hypertension (controlling high blood pressure), developmental screening in the first three years of life, and screening for clinical depression with follow-up plan.[41] OneCare also distributes additional VBIF funds to network specialists and collaborating community providers based on HSA-level performance against the same VBIF quality measures.[42] In the sections that follow, we provide an overview of state- and community-level initiatives to address the model's population health goals and present GMCB data showing OneCare's performance in PY 4 (2021) on Model State Agreement measures compared with performance targets (**Exhibits 3.2.1, 3.2.5, and 3.2.7**).

Goal #1: Increasing Access to Primary Care

In this section, we present progress and outcomes related to increasing access to and utilization of primary care in the context of health system initiatives and health care market pressures since the COVID-19 PHE. We also discuss trends and impacts in specialty care utilization among VTAPM Medicare ACO beneficiaries.

Measures of primary care access improved statewide and for VTAPM Medicare ACO-attributed beneficiaries, despite reported primary care workforce shortages. Vermont's percentage of adults without a PCP is lower than the national average and is one of the lowest in the country.[43] In 2017, the GMCB reported that 87% of Vermont adults had a personal doctor or care provider; by PY 4 (2021), the percentage grew to 90% of adults (**Exhibit 3.2.1**).[7] There was also an increase in the percentages of children and adolescents with well-child visits between PY 3 (2020) and PY 4 (2021).

[rr] Among quality measures reported on for the VTAPM Medicare ACO initiative in PY 5 (2022), OneCare received a quality score of 65.63%, resulting in a quality withhold from the final Medicare shared savings. See the Vermont Medicare ACO Initiative PY 2022 Annual Quality Scorecard.

[ss] OneCare reported on 11 of the 22 Model State Agreement measures, with 7 measures reported across all participating payers and 4 measures reported for one or more payers. In PY 5 (2022), OneCare reported on an additional 6 measures across payer contracts not included in the Model State Agreement. For a complete breakdown of OneCare quality measures by payer and type, see **Appendix F.44**.

Exhibit 3.2.1 Vermont Made Progress on Most Population Health and Quality Performance Measures Related to Increasing Access to Primary Care in PY 4 (2021), Compared to Baseline

	Reporting Level§	Baseline	PY 4 (2021)	Performance Target (2022)	Status
Population-Level Health Outcome Targets					
Percentage of Adults with Personal Doctor or Care Provider	State	87% (2017)	90%	89%	●
Health Care Delivery System Targets					
ACO CAHPS Composite: Getting Timely Care, Appointments, and Information	Medicare ACO	84.6% (2018)	83.0%	70th-80th Medicare percentile	◑
Process Milestones					
Percentage of Medicaid Children & Adolescents with Well-Child Visits	Statewide Medicaid	51.2% (2020)	56.5%	Monitoring	●
Percentage of Medicaid Enrollees Aligned with ACO tt	Statewide Medicaid	31.0% (2018)	79%	≤15% below Medicare alignment rate	●

SOURCE: Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report, Performance Year 4 (2021).

NOTES: CAHPS=Consumer Assessment of Healthcare Providers & Systems. ○ Trending opposite from outcome target; ◑ measure is improving toward the target; ● measure has achieved the stated target. Data for PY 5 (2022) were not available from GMCB at the time of this report. § Level denotes the population for which the measure is assessed per the Model State Agreement and is distinct from the Medicare populations used for analyses earlier in this chapter. Measures estimated at the "state" level included all Vermonters, "ACO" included all individuals attributed to OneCare (all major payers), and "Medicare ACO" included all individuals attributed to the VTAPM Medicare ACO through that payer. There were efforts at multiple levels to connect people with PCPs, considering workforce challenges. Hospitals and FQHCs opened walk-in health clinics, which provided primary care services. Hospitals attempted to connect patients who visited the ED to a PCP. OneCare's Comprehensive Payment Reform program increased the financial stability of primary care practices and enabled them to hire additional staff.

Trends over time (2014–2022) showed that Medicare ACO-attributed beneficiaries consistently had higher rates of primary care E&M visits than the comparison group (**Exhibit 3.2.2**). Particularly between 2020 and 2021, Medicare ACO-attributed beneficiaries increased their primary care E&M visits, while the comparison group stayed relatively stable—possibly reflecting the additional primary care access points described earlier, initiatives to connect frequent ED users with a PCP, and increased telehealth use. In PY 5 (2022), Medicare ACO beneficiaries had higher rates of telehealth use for E&M visits than did the comparison group, and telehealth was more common for primary care E&M visits than for specialist visits (**Appendix Exhibit F.17**).

> "We've had a hard time bringing practitioners to [a practice in town]. We hire and we lose and the cost of recruiters is a fortune…if it wasn't for CPR [Comprehensive Payment Reform], I would suspect we would have closed that practice long ago…hoping that it keeps turning around that we can get somebody who wants to stay in the area."
>
> - Independent Primary Care Clinician

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tt In 2020, for the Medicaid population, the DVHA moved to an alternative attribution methodology known as expanded attribution. Under expanded attribution, patients were attributed to the ACO based on three considerations: eligibility for full Medicaid benefits, lacking other insurance, and having no demonstrated relationship with a PCP outside the OneCare network. This change in methodology resulted in increased Medicaid ACO alignment.

Exhibit 3.2.2 Primary Care E&M Visits for the VTAPM Medicare ACO Were Consistently Higher than for Comparison Shared Savings Program ACOs and Increased from 2020 to 2021
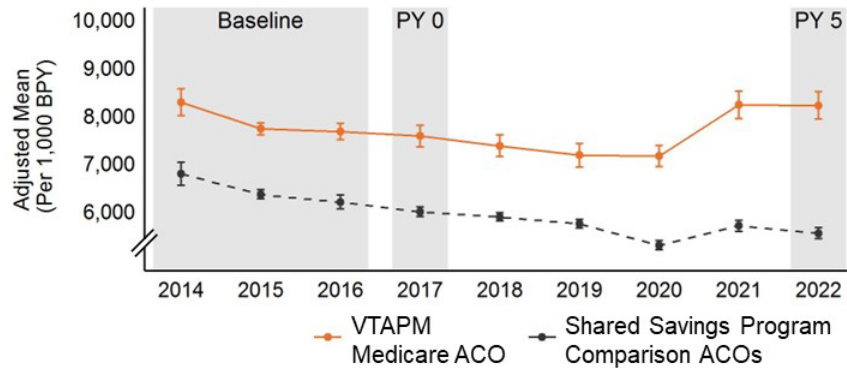
SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented per 1,000 beneficiaries per year (BPY) and represent regression-adjusted means for primary care E&M visits in each year from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) VTAPM Medicare ACO and comparison clinicians.

Exhibit 3.2.3 shows estimates of the effect of the VTAPM on utilization and quality of care measures related to primary care access. We observed no statistically significant impact on primary care E&M visits despite large increases for VTAPM Medicare ACO beneficiaries. There was no significant impact relative to comparison Shared Savings Program ACO beneficiaries. This is due in part to the high baseline rates for VTAPM Medicare ACO beneficiaries; the PY 5 (2022) rate is only slightly higher than the baseline years, and the decrease in comparison Shared Savings Program ACO beneficiaries from baseline is driving the observed impact estimate. There was a significant reduction in specialist E&M utilization for VTAPM Medicare ACO beneficiaries relative to the Shared Savings Program ACO comparison beneficiaries (more information on specialist E&M visits is in the following section). [uu] Total E&M visits showed a non-significant decrease, driven by the larger decrease in specialist E&M visits that was partially offset by the increase in primary care E&M visits.

Exhibit 3.2.3. In PY 5 (2022), the VTAPM Significantly Decreased Specialty Care E&M Visits for VTAPM Medicare ACO-Attributed Beneficiaries

Outcome	Impact Estimate (per 1,000 BPY)	VTAPM Baseline (per 1,000 BPY)	90% CI	P Value
Utilization Measures				
Total E&M Visits	-1,245.0	16,155.6	-3,023.1, 533.03	0.249
Primary Care E&M Visits	1,255.8	8,112.1	-502.5, 3,014.0	0.240
Specialty Care E&M Visits	-3,370.1***	7,614.7	-4,917.0, -1,823.2	0.000
Quality of Care Measures				
Annual Wellness Visits	-102.2	209.1	-204.7, 0.2	0.101
ACS Hospitalizations	0.1	27.1	-5.7, 6.0	0.971

SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Impact is per 1,000 beneficiaries per year (BPY). The impact estimate compares the change in utilization from baseline to PY 5 (2022) in the VTAPM Medicare ACO group to the change in the comparison group. VTAPM baseline is the regression-adjusted mean spending of the VTAPM Medicare ACO-attributed beneficiaries averaged over the three baseline years (2014–2016). E&M visits include both in-person and telehealth visits. Asterisks denote significance at ***p<0.01.

Unlike primary care, specialty care visits decreased during the COVID-19 PHE in Vermont and had not recovered, with reported specialty care provider supply lagging demand. There was a sharp decline in specialty

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[uu] Our state-level analysis identified a statistically significant increase in primary care E&M visits and a statistically significant decrease in total E&M visits under the VTAPM for Vermont Medicare beneficiaries. Results for other outcomes were similar to that for VTAPM Medicare ACO beneficiaries (see **Appendix Exhibit F.43**).

care E&M visits for beneficiaries attributed to the VTAPM Medicare ACO from 2019 to 2020 (the first year of the COVID-19 PHE), although specialty E&M visits had been increasing at a similar rate as the comparison group in prior years (**Exhibit 3.2.4**). Since 2020, specialty E&M visits for the VTAPM Medicare ACO group remained at low levels. Conversely, specialty E&M visits for comparison beneficiaries also decreased from 2019 to 2020 but not as drastically, and, in 2021, they began to exceed pre-COVID-19 PHE levels. Although findings indicate an unmet need for specialty care, the patterns found are only for Medicare FFS beneficiaries attributed to the ACO, who comprise about 25% of patients attributed to the VTAPM and 62% of eligible Medicare beneficiaries statewide.

Exhibit 3.2.4. Specialty Care E&M Visits for the VTAPM Medicare ACO Decreased in PY 5 (2022) Compared to the Baseline Period
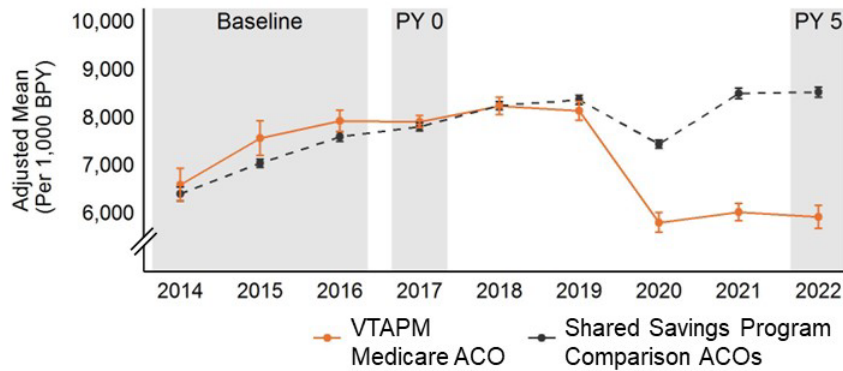
SOURCE: NORC analysis of Medicare FFS claims data.

NOTE: Estimates are presented per 1,000 beneficiaries per year (BPY) and represent regression-adjusted means for specialty care E&M visits in each year from eligible Medicare FFS beneficiaries attributed to PY 5 (2022) VTAPM Medicare ACO and comparison clinicians.

Vermont has experienced both increased demand for and a shortage of specialty care providers, in addition to a PCP shortage. A 2021 Blueprint report found that Vermonters face long wait times for specialty care across the state.[44] For example, the UVM Medical Center reported that half of patients referred to specialty care wait at least a month for an appointment.[45] Vermont's aging population is contributing to increasing demand for specialty care.[46] Access to specialty care was especially limited in Vermont's rural areas, where hospital leaders noted there may be insufficient patient volume to sustain a full-time specialty practice and less competitive wages to recruit and retain specialists.[6] One PPS hospital leader added that a lack of specialists in rural areas leads specialty care demand to funnel into urban areas, adding burden to urban hospitals. Patients with transportation and other health-related social needs have had trouble accessing specialists across the state. The COVID-19 PHE also exacerbated access issues.[47] The lack of specialists has placed an additional burden on PCPs to manage complex patient health needs. To support PCPs in addressing patient needs, in 2021, UVM Health Network launched eConsults, through which a PCP can request an electronic specialist consultation for a patient who does not need to see a specialist in person.[48] The specialist would provide feedback within one week, at which point the PCP can provide the patient with care plan options. The eConsult platform has been integrated into the network's EHR, enabling connected hospitals and clinics to participate. Between September 2022 and September 2023, UVM Health Network clinicians began more than 1,400 eConsults across 20 specialties.

"It's tough in a rural state. Do you ask people to travel to get that care? What kind of burden is that when transportation is not public transportation and maybe transportation is a barrier to getting care? Or do you try to set up these sort of rotating satellite clinics... I think that's where we're headed."

- PPS Hospital Leader

In terms of quality of care measures related to access to primary care, the VTAPM did not have significant impacts on annual wellness visits or hospitalizations for ambulatory care-sensitive conditions (ACSC; **Exhibit 3.2.3**). Annual wellness visits increased for both the VTAPM Medicare ACO and Shared Savings Program ACO

comparison beneficiaries from the baseline period to PY 5 (2022), while ACSC hospitalizations decreased steadily for both groups over time (**Appendix Exhibit F.33**). Results were similar for Vermont Medicare beneficiaries statewide (**Appendix Exhibit F.43**).

Goal #2: Reducing Deaths from Suicide and Drug Overdose

Vermont has a higher prevalence of mental illness, alcohol use, and illicit drug use disorders than the national and Northeast averages.[49] In the 2021 National Survey on Drug Use and Health (NSDUH), among people aged 18 and older, Vermont ranked fourteenth nationally in prevalence of any mental illness, sixteenth in serious mental illness, ninth in major depressive episodes, and seventeenth in percentage of individuals having serious thoughts of suicide.[49] In the same survey, Vermont ranked first nationally with individuals reporting illicit drug use, fourth in SUD prevalence, fifth in illicit drug use disorders, and eleventh in alcohol use disorder (AUD) prevalence.

Like other areas of the country, Vermont has experienced increased rates of substance use and related deaths following the COVID-19 PHE.[50] GMCB data (**Exhibit 3.2.5**) highlight growing needs across the state, with opioid-related deaths among Vermonters increasing from 17.6 per 100,000 in 2017 to 33.7 per 100,000 in 2021. Deaths related to suicide increased to their highest rate since the baseline period, reaching 20.3 per 100,000 in 2021.

Vermont trends echoed national trends showing increased suicide-related deaths from 2020 to 2021, likely following high levels of mental health symptoms during COVID-19, rising financial difficulties, and challenges accessing mental health care.[51,52]

"The state of Vermont is…short of capacity for really sick mental health people…The inpatient facilities that we have don't have good staffing. We're keeping our two floors pretty much full all the time, and there's pretty much never less than seven mental health [patients] in our ED and it gets as high as 25 or 30 sometimes."

- PPS Hospital Leader

Despite these rates, Vermont has facilitated access to mental health services. According to the 2021 NSDUH, Vermont ranked third nationally for adults reporting they received mental health services in the past year (22.5%).[49] However, there have been barriers to SUD care, especially in rural areas, which constitute 11 of the state's 14 counties.[53] In the 2021 NSDUH, Vermont ranked second highest in the U.S. for the percentage of residents needing but not receiving treatment at a specialty facility for substance use (an inpatient or outpatient drug and alcohol rehabilitation facility, inpatient hospital, or mental health center) and sixth for percentage of residents needing but not receiving treatment at a specialty facility for alcohol use.[49] At the same time, mental health and substance use-related ED visits continued to increase year-over-year (from 5.3% in 2016–2018 to 9.0% in 2020–2021). In 2023, interviews with hospital, primary care, and mental health providers highlighted the growing acuity of mental health and substance use concerns, as well as increased demand for mental health and substance use care among their patient populations. Hospital leaders and PCPs noted that access to inpatient treatment facilities was limited for patients with mental health and substance use treatment needs, leading to high numbers of mental health patients boarding in hospital EDs and inpatient beds.

To address such trends and barriers to care, hospitals and HSAs implemented initiatives to address mental health and substance use through prevention, screening, and treatment-based approaches, such as embedding suicide risk screening in EHRs and placing recovery coaches in EDs. As noted in **Exhibit 3.2.5**, the ACO achieved five out of the ten targets related to initiation of treatment, engagement of treatment, and 30-day follow-up after discharge from ED for mental health.

Exhibit 3.2.5. Progress on Population Health and Quality Performance Measures for Mental Health and Substance Use Treatment in PY 4 (2021)

	Reporting Level§	Baseline	PY 4 (2021)	Performance Target (2022)	Status
Population-Level Health Outcome Targets					
Opioid-related deaths (per 100,000 population)	State	17.6 (2017)	33.7	10% reduction from baseline	○
Deaths Related to Suicide (per 100,000 population)§	State	17.2 (2016)	20.3	16.0 per 100,000 or 20th highest rate in U.S.	○
Health Care Delivery System Quality Targets					
Initiation of Alcohol and Other Drug Dependence Treatment	ACO	38.9% (2018)	42.2%	40.8%	●
Engagement of Alcohol and Other Drug Dependence Treatment	ACO	13.3% (2018)	16.5%	14.6%	●
30-Day Follow-Up after Discharge from ED for Mental Health	ACO	84.4% (2018)	81.0%	60.0%	●
30-Day Follow-Up after Discharge for Alcohol or Other Drug Dependence	ACO	28.2% (2018)	33.2%	40.0%	◗
Growth Rate of Mental Health and Substance Abuse-Related ED Visits	State	5.3% (2016–2017)	9.0%	5.0%	○
Process Milestones					
Number of opioid analgesic morphine milligram equivalents (MMEs) dispensed per 100 residents	State	61,300 (2017)	37,083	Decrease in Rate	●
Adults Receiving Medication-Assisted Treatment (per 10,000 population)	State	215 (2018)	238	150 (or up to rate of demand)	●
Screening for Clinical Depression and Follow-Up Plan (OneCare VBIF Measure for FY22)	ACO	50.23% (2018)	56.64%	70-80th Medicare percentile	◗

SOURCE: Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report, Performance Year 4 (2021).

NOTES: VBIF=Value-Based Incentive Fund. ○ Trending opposite from outcome target; ◗ measure is improving toward the target; ● measure has achieved the stated target. § Level denotes the population for which the measure is assessed per the Model State Agreement and is distinct from the Medicare populations used for analyses earlier in this chapter. Measures estimated at the "state" level include all Vermonters; "ACO" includes all individuals attributed to OneCare (all major payers). §§ Rate is volatile due to small sample size; interpret with caution.

Approaches to Mental Health and Suicide Prevention

Before the VTAPM, Vermont had prioritized investments in mental health through payment and delivery system reform initiatives. These include Vermont's Global Commitment to Health Section 1115 Demonstration, the Blueprint, and a multi-payer ACO shared savings pilot under Vermont's SIM Testing Grant. In PY 5 (2022), hospitals and HSAs implemented a range of novel initiatives focused on addressing mental health needs, including expanding mental health and suicide screening efforts, increasing mental health and suicide prevention support initiatives and trainings, embedding mental health clinicians within EDs and primary care offices, and developing innovative ways to provide mental health care to patients. Many efforts have not been funded or otherwise determined by the model or OneCare but rather reflect a growing focus on addressing mental health in Vermont. Some efforts were implemented in parallel with the model and in alignment with model goals, and other model activities may have influenced the design and focus of these state- and agency-led initiatives.

> **Vermont Efforts to Address Mental Health and Prevent Suicide Across Initiatives, Agencies, and Payers**
> The VTAPM is one of many aspects of Vermont's broader strategy to improve mental health and prevent deaths attributable to suicide across the state. Other ongoing efforts across the state have included the following:
>
> **Mental Health**
> - Vermont Medicaid's Global Commitment to Health gave additional funding to cover costs associated with providing **community-based mobile crisis services** to Vermonters of all ages experiencing mental health or substance use crises. The services have included rapid community crisis response, screening, and assessment; stabilization and de-escalation services; and coordination with and referrals to health, social, and other services and supports.
> - Vermont Medicaid's Global Commitment to Health also has invested in **mental health consumer support programs,** including the Pathways Vermont Support Line providing nonemergency mental health and counseling services, and peer-run residential and crisis bed services.
> - The Blueprint **Pregnancy Intention Initiative**, previously known as the Women's Health Initiative, has offered enhanced health and psychosocial screenings, accompanied by in-office intervention and referrals to services for mental health, substance use, and health-related social needs.
> - Across primary care practices, providers have focused on increasing **integration of mental health services.**
>
> **Suicide Prevention**
> - The Vermont Department of Health and the Department of Mental Health began **Facing Suicide VT** in 2020, a statewide prevention initiative supported by the CDC Comprehensive Suicide Prevention Program.
> - Vermont Medicaid's Global Commitment to Health has **invested in suicide prevention activities**, including a 24/7 in-state response to the National Suicide Prevention Lifeline and additional statewide outreach, education, and engagement activities to improve awareness of and access to suicide prevention services.
> - The **Vermont Suicide Prevention Coalition** has combined representation—from provider groups (inpatient and outpatient), suicide survivors, family members, Agency of Human Services, Agency of Education, schools and higher educational institutions, Veterans Affairs, legislators, and the Centers for Health and Learning—to guide and inform statewide prevention efforts.
> - The Vermont Department of Mental Health has begun implementing the **National Alliance for Suicide Prevention's Zero Suicide approach** focused on improving screening and assessment and providing suicide-focused care and follow-up.
>
> SOURCES: Medicaid Investment: Community-Based Mobile Crisis Coverage for the Uninsured and Underinsured; Medicaid Investment: Mental Health Consumer Support Programs; Pregnancy Intention Initiative; Medicaid Investment: Suicide Prevention; Suicide Prevention Partnerships; Implementing Zero Suicide; Facing Suicide VT.

HSAs, hospitals, and independent clinicians increased efforts to integrate mental health within their practices, expanding access to mental health treatment through partnerships with regional designated mental health agencies. OneCare providers in Vermont have continued to perform above the PY 5 (2022) target for 30-day follow-up from the 84.4% follow-up rate in 2018, according to GMCB data (**Exhibit 3.2.5**).[7] Concerted efforts by the health care system across the state have maintained high levels of follow-up and care integration despite consistently high and increasing need for mental health services across Vermont.

Providers across the state described efforts to create additional access points to address mental health needs, including hiring additional mental health providers within their practices, expanding the function of PCPs, and partnering with designated mental health agencies. Hospital respondents described being unable to keep up with community demand for mental health services. Hospitals throughout the state, from small rural CAHs to large academic medical centers, used telepsychiatry services to expand providers' ability to address mental health needs. Yet, even with the expanded access provided by telepsychiatry services, hospitals remained unable to offer enough appointments to meet the significant demand for mental health services. One primary care practice director at a CAH described how, despite the addition of telepsychiatry services two mornings a week, services were still *"nowhere near enough,"* with appointments booked six months in advance.

"In the last three years, we've had maybe eight new hires in our psychiatry and counseling department, and it's become apparent that we are not going to out hire this problem and are bringing in telepsych resources."

- CAH Leader

Model participants focused on increasing screening for suicide while collaborating with partners across the state to prevent suicide. For many Vermont hospitals and primary care practices, specific initiatives related to suicide prevention involve expanding screening using the Columbia-Suicide Severity Rating Scale (C-SSRS) and treatment through the Collaborative Assessment and Management of Suicidality (CAMS) framework. Several hospitals and HSAs have built on the structure provided by the statewide Zero Suicide initiative to expand screening for suicidality across health care contexts and to develop workplans for future suicide prevention and screening efforts.[54] In the 2022 Blueprint Annual Report, 8 out of 13 HSAs described ongoing efforts to expand and optimize suicide screenings.[55] These efforts to expand screening have resulted in higher rates of screening for clinical depression and follow-up care, with GMCB data showing a statewide increase in the screening to 56.64% in PY 4 (2021), up from 50.23% in 2018 (**Exhibit 3.2.5**).[7]

OneCare also supported efforts to expand mental health screening. In 2023, OneCare implemented a new mental health screening and follow-up initiative that provided additional incentive funds for PCPs to screen for depression and suicide, record results in patient EHRs, and provide follow-up care based on screening results.

Some HSAs have focused on initiatives related to mental health and suicide prevention in their Accountable Communities for Health workgroups. In Burlington, the HSA's Accountable Communities for Health, supported by additional funding from area hospitals, focused on suicide prevention, creating subgroups to develop strategies to address social connectedness, reducing stigma, and refer for screening and treatment.[55] One initiative focused on providing suicide prevention and awareness training to people working in the construction industry.[56]

Approaches to Substance Use Disorder Treatment and Overdose Prevention

Examples of Hospital Suicide Risk Screening and Prevention Initiatives:

- Universal adoption of CSSR screening in primary care, inpatient, and ED settings, coupled with regular chart reviews to identify patients needing intervention and follow-up visits.

- Workplans to increase suicide risk screening in primary care, integrating the CSSR into the medication-assisted treatment (MAT) team screening process, and collaborating with mental health providers to provide collaborative assessment and management of suicidality treatment.

- Initiatives to use the CSSR in the ED and collaboration with local designated mental health agency to implement an EHR workflow that integrates the CSSR, PHQ-9, and Counseling Against Lethal Means in the EHR template for emergency service providers. The hospital has been expanding the screening workflow into primary care offices.

SOURCE: Blueprint Annual Report–2022.

Hospitals and HSAs have collaborated to address SUD and prevent deaths attributable to overdose, building on related investments in the Blueprint and Hub and Spoke program for opioid use disorder (OUD) treatment. Funding for Hub and Spoke comes from the state of Vermont via Medicaid.[57] Hub programs bill a monthly bundled rate, and the Blueprint distributes funds to support Spoke staffing through extending funding for the existing Community Health Team payment infrastructure.[55] In PY 5 (2022), hospitals and HSAs implemented new and ongoing initiatives focused on addressing SUDs, including community collaboratives,[vv] naloxone distribution, and education and anti-stigma campaigns. The initiatives reflect a statewide commitment to addressing SUDs as well as model goals, even if specific initiatives are not directly funded or otherwise supported by the model or OneCare.

[vv] Initially funded through the SIM grant, the community collaboratives have been community-level groups designed to bolster population health planning and to identify local priorities across health and social providers, community-based organizations, and community members.

🩹 **Initiatives to Address SUD**

- **The Blueprint Hub and Spoke program** has provided key support and access to medications for opioid use disorder (MOUD) for Vermonters recovering from OUD.

- The recent extension of **the Vermont Medicaid's Global Commitment to Health** added SUD community intervention and treatment benefits.

- Vermont Department of Health's Division of Substance Use Programs has provided **contracts and grants to support substance use services** to over 100 local partners, as well as **scholarships to regional programs** on best practices in addiction treatment.

- **Recovery coaches** have been embedded at all 14 Vermont EDs to help patients experiencing SUD-related emergencies.

- The CDC-funded **Overdose Data to Action** grant has provided support to use data on overdose surveillance and prescription monitoring to inform strategies on overdose prevention, community action grants, and naloxone distribution, among others.

- **VT Helplink**, launched in 2020, has offered free resources and referrals for SUD treatment and recovery services.

- There have been **public messaging campaigns** on topics including ending addiction stigma, identifying signs of overdoses, starting conversations with adolescents about substance use, and understanding the health risks of cannabis.

- The **Opioid Overdose Prevention and Naloxone Rescue Program** have provided naloxone and training for community organizations that distribute naloxone; referrals to treatment services; and training for community members on overdose response and opioid misuse prevention.

- **UVM's Center on Rural Addiction** has held clinician office hours for rural clinicians providing SUD treatment, delivered training for PCPs, and hosted webinars on evidence-based best practices for SUD treatment.

- **School-based education** has been offered on substance use prevention and early intervention.

SOURCES: Vermont Global Commitment to Health 1115 Demonstration Approval; Vermont Global Commitment to Health 1115 Demonstration Renewal Application–Submitted to CMS; Hub and Spoke; About Vermont's All-Payer Model; VT Helplink; Division of Substance Use Programs Annual Overview–2022; Overdose Data to Action (OD2A) Data Product Planning; Opioid Overdose Prevention.

The GMCB reported progress in health care delivery system targets focused on mental health and substance use treatment. Since 2018, initiation of alcohol and other drug dependence treatment has increased from 38.9% to 42.2%, exceeding the 2022 target goal of 40.8% **(Exhibit 3.2.5)**. Similarly, engagement of alcohol and other substance use treatment has increased and exceeded the PY 5 (2022) target, reaching a rate of 16.5%, up from 13.3% in 2018. Follow-up rates for alcohol or other substance use treatment have also increased, reaching 33.2% in 2021, up from 28.2% in 2018. The opioid-related death rate increased from 2017 to 2021 (**Exhibit 3.2.5**), consistent with a national increase in opioid overdose deaths since the COVID-19 PHE; outcomes of initiatives initiated in 2022 may be reflected in later years.[58]

> "The huge one is hub…That's a level of care that [the HSA] definitely needs because…spoke level of care is not managing the disorder. The availability of rehab and inpatient beds is limited…and so then we definitely could use a level of care there…Now, if they do need methadone, they actually have to travel an hour in any particular direction to get medication."
>
> - Blueprint Program Manager

Model participants partnered locally on SUD prevention and screening activities. Several initiatives at the HSA level, developed by Community Collaboratives and Accountable Communities for Health, encourage education of providers and community members to improve SUD prevention and outcomes. In one HSA, the MOUD program manager collaborated with local providers to develop a resource guide for clinicians regarding the treatment of chronic pain, with the goal of reducing long-term opioid prescriptions and identifying substance misuse. In addition, across HSAs, CHTs provide SUD screening, and PCPs embed mental health clinicians in practices.[55]

Program Highlight: The Refocus on Alcohol Dependence (ROAD) Pilot

The ROAD pilot was created to develop the Hub and Spoke model for AUD. The pilot connected patients identified with AUD in the ED with recovery coaches and scheduled intake appointments for outpatient substance use treatment and peer recovery services and supports. The initial program evaluation showed promising engagement, even after discharge from the hospital. Out of 86 patients enrolling in the ROAD program, 83 (97%) met with a recovery coach before ED discharge, and 59 (71%) of those patients received additional peer recovery services or supports. Fewer patients accepted medication-assisted treatment (MAT) for AUD, with 68 patients (79%) accepting a referral to the treatment center, 41 (60%) completing the intake process, and 26 (63%) engaging in ongoing treatment services. Ultimately, clinical outcomes among engaged patients showed a high level of success, and the program offered encouraging results, reflecting the value of connecting peer recovery coaches with individuals within the ED.

SOURCE: Refocus on Alcohol Dependence (ROAD) Pilot Project Report–2022.

Model participants leveraged Vermont's Hub and Spoke system to create and expand partnerships and to enhance care coordination for SUD treatment. Through Vermont's Hub and Spoke system, nine regional hubs throughout the state have offered intensive MOUD treatment options, offering assessment; medication dispensing, including daily methadone and maintenance buprenorphine and naltrexone; therapeutic support; and group counseling. Seventy-five office-based spokes in communities across the state have offered maintenance MOUD, including buprenorphine and naltrexone.[57,ww] However, with only nine hubs providing daily methadone doses, long commute times remain. The GMCB reported that the rate of adults receiving MOUD increased from 215 per 10,000 population in 2018 to 238 per 10,000 population in PY 4 (2021; **Exhibit 3.2.5**). Describing access to MOUD treatment, spoke providers noted challenges with accessing MOUD for patients with more severe OUD, describing how the limited availability of rehab and inpatient beds, coupled with a lack of a hub in their community, meant that individuals requiring higher levels of care were forced to commute or wait to access care.

At the same time, providers in communities with hubs expressed satisfaction with their OUD treatment options, noting that they felt the existing system vastly improved treatment and helped them feel more comfortable taking on more patients. At one spoke practice, the provider emphasized the importance of predictable Blueprint funding for building the SUD treatment workforce to expand the patient population. In the same area, an independent clinician noted relatively stable access to referrals for substance use concerns and intensive outpatient treatment but described access to treatment for mood disorders, anxiety, and schizophrenia as *"really difficult."*

Some initiatives to expand SUD treatment extended beyond OUD to include other substances, such as alcohol. In one HSA, the local hospital piloted a team-based care model combining community health workers with recovery coaches from the local substance use recovery center to support individuals needing addiction recovery services. Multiple HSAs have been working on developing medication management programs for AUD.[55,59,60] In one HSA, the Refocus on Alcohol Dependence (ROAD) pilot developed clinical protocols and referral pathways to expand access to MAT and services for patients with AUD.[55] Another hospital has been involved in a quality initiative to increase rapid treatment access for patients with AUD and developed a

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ww In 2023, the United States Congress passed the Mainstreaming Addiction Treatment (MAT) Act, eliminating the X-waiver requirement for individuals prescribing buprenorphine. The MAT Act eliminated the requirement for clinicians prescribing buprenorphine for the treatment of OUD to undergo an extensive training and registration process (a commonly cited barrier to expanding access to MAT) and enabled all clinicians with a standard DEA-controlled medication license to prescribe buprenorphine for OUD without separate registration. The Vermont Department of Health has changed their MAT rules to remove references to the X-waiver.

standardized clinical patient pathway in collaboration with community partners. The program has aimed to improve and increase patient referrals and tracking, with a focus on ensuring that treatment and follow-up occur within three days of an ED visit.[60]

For attribution-eligible Medicaid enrollees, we observed increases in SUD diagnoses and treatment from baseline (2016) through PY 5 (2022). Exhibit 3.2.6 shows trends from attribution-eligible enrollees. Rates of SUD diagnoses among this population (represented by the orange shading) increased from 100.06 per 1,000 enrollees to 122.70 per 1,000 enrollees. At the same time, the number of attribution-eligible enrollees with SUD receiving treatment (represented by the gray shading) also increased, but at a slower rate, from 74.98 enrollees per 1,000 in 2016 to 83.82 enrollees per 1,000 in 2022. This may indicate that access to treatment has lagged behind the increase in diagnoses; we observe a slight decrease in the percentage of attribution-eligible Medicaid enrollees diagnosed with an SUD receiving treatment (represented by the blue line) from 74.94% in 2016 to 68.31% in 2022. Qualitative data supported this finding, as clinicians across the state described how, despite their best efforts, they were unable to meet the rapidly increasing demand for SUD treatment due to lack of workforce, hospital beds, and funding for services, both within hospitals and community providers. In interviews, designated mental health agencies emphasized workforce and capacity concerns as they described how the state's Medicaid capitated funding system limited their ability to hire additional staff and provide additional services.

"Unlike physical and medical health, mental health and DA [designated agency] system is a cap system…If the need for services in the community increase beyond that, there's nothing we do about it. They're on a waitlist. We can't recruit new staff, if you don't get new funding…We only have so many Medicaid dollars we can bill, and once we get that ceiling, we can continue to see people, but we can't hire more staff."

- Designated Mental Health Agency Staff

Exhibit 3.2.6. The Percentage of Attribution-Eligible Medicaid Enrollees Diagnosed with an SUD Receiving Treatment Decreased Slightly from 2016–2022
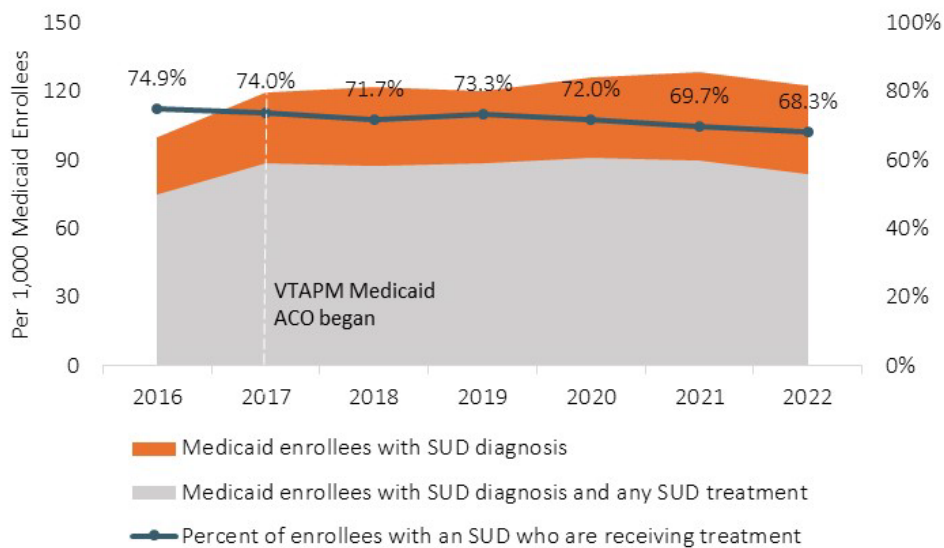
SOURCE: T-MSIS data.

However, we also observed a decreasing trend over time in the percentage of enrollees with SUD receiving treatment at the ED, including observation visits (**Exhibit 3.2.7**). These results are a promising indicator that, despite workforce and capacity challenges and increased demand, Vermont's initiatives to address SUD may collectively be shifting treatment of SUD from the ED to more appropriate care settings.

Exhibit 3.2.7. The Percentage of Attribution-Eligible Medicaid Enrollees with SUD Receiving Treatment at the ED Decreased from 2016–2022
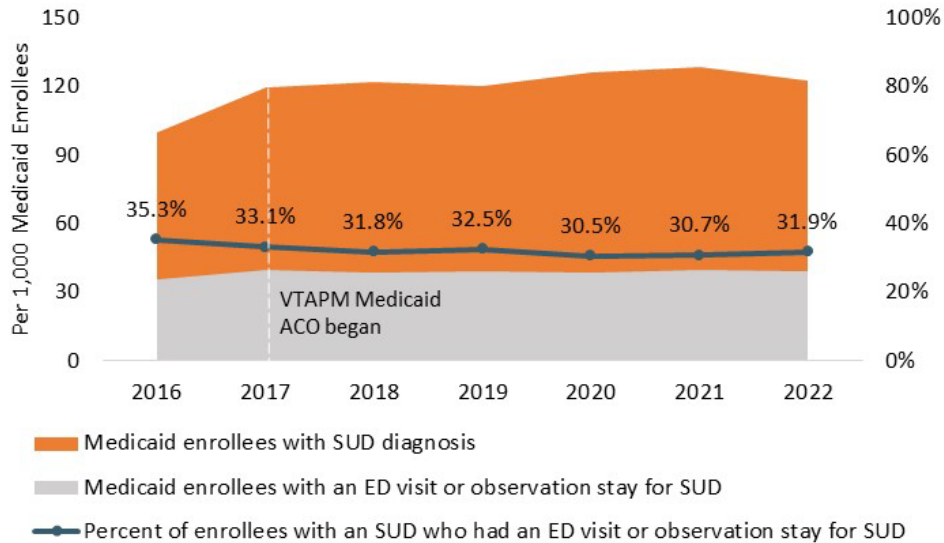
SOURCE: T-MSIS data.

Goal #3: Lowering Prevalence of Chronic Disease

In this section, we present progress and outcomes related to lowering the prevalence of chronic disease, first discussing state-level initiatives, followed by community-level initiatives.

Vermont has been meeting performance targets related to chronic disease prevalence and management. Chronic diseases are the most common cause of death in Vermont (accounting for 76% of deaths), and one third of Vermonters live with multiple chronic conditions. The prevalence of hypertension and diabetes is significantly higher than the statewide average in the northernmost HSAs, which are some of the most rural areas of the state.[61,62] Additionally, chronic diseases are more likely among adults living at a low SES.[61] Since the start of the VTAPM, there has been statewide progress in meeting quality and process targets for ACO participants, which may be a product of state- and community-level efforts (**Exhibit 3.2.8**).

Exhibit 3.2.8. Vermont Achieved Performance Targets on Population Health and Quality Performance Measures Related to Reducing Chronic Disease in PY 4 (2021), Compared with Baseline

	Reporting Level§	Baseline	PY 4 (2021)	Performance Target (2022)	Status
Population-Level Health Outcome Targets					
Chronic Obstructive Pulmonary Disease Prevalence	State	6% (2017)	7%	Increase ≤1%	●
Diabetes Prevalence	State	8% (2017)	9%	Increase ≤1%	●
Hypertension Prevalence	State	26% (2017)	25%	Increase ≤1%	●
Health Care Delivery System Quality Targets					
Diabetes A1C Poor Control (OneCare VBIF	Medicare	58.02%	9.98%	70-80th Medicare	●

	Reporting Level§	Baseline	PY 4 (2021)	Performance Target (2022)	Status
Measure for FY22)	ACO	(2018)		percentile	
Controlling High Blood Pressure (OneCare VBIF Measure for FY22)	Medicare ACO	68.12% (2018)	71.48%	70-80th Medicare percentile	●
All-Cause Unplanned Admissions for Patients with Multiple Chronic Conditions	Medicare ACO	63.84% (2018)	31.61%	70-80th Medicare percentile	●
Process Milestones					
Tobacco Use Assessment and Cessation Intervention	ACO	70.56% (2018)	88.27%	70-80th Medicare percentile	●
Asthma Medication Ratio: Percentage of Vermont Residents with an Asthma Medication Ratio of 0.50 or Greater	ACO	49.3% (2020)	67.1%	Monitoring	●

SOURCE: Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report, Performance Year 4 (2021).

NOTE: VBIF=Value-Based Incentive Fund. ○ Trending opposite from outcome target; ◐ measure is improving toward the target; ● measure has achieved the stated target.

§ Level denotes the population for which the measure is assessed per the Model State Agreement and is distinct from the Medicare populations used for analyses earlier in this chapter. Measures estimated at the "state" level include all Vermonters, "ACO" includes all individuals attributed to OneCare (all major payers), and "Medicare ACO" includes all individuals attributed to the VTAPM Medicare ACO through that payer.

Across the state, efforts to reduce chronic disease prevalence and mortality have coincided with model goals while operating independently from the ACO. In the 2019–2023 State Health Improvement Plan, the Vermont Department of Health (VDH) identified chronic disease as one of six priority health and social conditions.[63] The U.S. Centers for Disease Control and Prevention (CDC) statewide 1815 grant provides funds to address prevalence of diabetes and hypertension, with many health systems and providers in Vermont receiving this funding.[64] The Vermont Global Commitment to Health has emphasized programmatic support for care coordination for patients with chronic diseases; the Blueprint and the Vermont Chronic Care Initiative (VCCI) were among the primary statewide interventions addressing chronic disease prevention and management.[65] The Blueprint and the VDH administer self-management programs statewide, which are led by community-oriented partners such as SASH. In 2022, OneCare and Blueprint engaged with chronic disease experts from the VDH to advance coordination of chronic disease management strategies.[42]

Hospitals and other model participants have also implemented specific initiatives focused on chronic disease prevention and management activities that met criteria across concurrent funding streams and value-based initiatives in addition to the model, such as the CDC statewide 1815 grant. Specifically, OneCare's VBIF program included incentive payments to providers meeting quality targets for A1C control for patients with diabetes and hypertension control (**Exhibit 3.2.8**).[42] Many local initiatives have been fostered through state- and community-level collaborative efforts under the following three patient-centered strategies:[7]

- **Chronic disease prevention**. Prevention activities across the state have included the development of care protocols for prediabetes and prehypertension and a focus on increasing uptake of prediabetes and diabetes screening. Hospitals are also using shared savings and model funds to address upstream SDOH inequities by engaging in community partnerships that improve access to healthy food.
- **Chronic disease management**. Hospitals and clinics have devoted significant effort to programs for blood pressure cuff lending, self-management, and continuous glucose monitoring. Multidisciplinary team-based care and referrals to diabetes coaches and nutritionists are provided at the clinic level. Many efforts are supported by hiring additional staff, such as chronic care coordinators and dieticians, funded in part through the VTAPM. Non-hospital providers, such as SASH, are communicating with PCPs about diabetes prevention and management for their participants. The VDH also prioritizes relationships with pharmacists to support medication therapy management services.

- **Chronic disease education.** Interventions to educate patients on diabetes, hypertension, and/or smoking were primarily delivered through two methods: (1) in-person or virtual workshops and (2) clinician referrals to wellness coaches and nutritionists. Workshops were typically provided through HSAs and the My Healthy VT program.

💗 3.3 Conclusion

> **Collaborative Efforts to Reduce Chronic Disease Prevalence and Mortality**
>
> - **VCCI case managers** assist Medicaid patients with self-management of chronic conditions. Case managers provide diabetes education, support the development of diabetes and hypertension action plans, and facilitate workshops.
> - **SASH partners** with the **Blueprint for Health** offer a hybrid in-person and virtual diabetes management program and blood pressure management program. About 48% of the participants in SASH's diabetes self-management program experienced lower blood sugar levels, and thousands of SASH participants saw a reduction in blood pressure.
> - The **Vermont Department of Health**, in partnership with the **Blueprint**, is using **CDC statewide 1815 grant funds** to increase diabetes screening in the clinical care setting, implement glucose monitoring and a blood pressure cuff lending program, and encourage patient participation in **My Healthy VT workshops**. My Healthy VT workshops are created from a national evidence-based program shown to be effective in reducing likelihood of developing type 2 diabetes.
> - **My Healthy VT** and the **Vermont Tobacco Control Program** are offering tobacco cessation workshops and counseling programs, with a particular focus on people who are pregnant, low income, LGBTQ+ populations, and individuals with mental health disorders.
> - **HSAs and community partners** provide tobacco cessation, diabetes, and hypertension self-management courses.
> - One hospital collaborates with the **Local Farmacy program** to provide food shares for patients to address obesity and diabetes and promote healthier eating. Another partnership with **VeggieVanGo** distributes food bags to the community.
>
> SOURCES: Blueprint Annual Report–2022; Blueprint for Health Self-Management Programs; GMCB Individual Hospital Documents; SASH Program Results; VDH Tobacco Populations of Focus; VDH Diabetes Program.

OneCare, hospitals, PCPs, and other providers across Vermont initiated, expanded, and strengthened initiatives to reduce avoidable hospital utilization, an important means for reducing health care spending in the wake of the COVID-19 PHE.[25,66] Our analyses showed that overall hospital utilization for Medicare beneficiaries attributed to the ACO decreased in PY 5 (2022) relative to the comparison group, which may reflect the collective impact of the VTAPM's many ongoing care coordination initiatives. However, the VTAPM did not have impacts on other hospital and ED utilization measures in the Medicare population—there were no significant effects on ED visits and observation stays or unplanned 30-day readmissions. Workforce shortages and patient acuity in the wake of the COVID-19 PHE may have tempered the extent to which care coordination and management and new alternative care settings could affect rates of ED utilization and observation stays. Furthermore, Medicaid enrollees showed relatively stable hospital and ED utilization throughout the performance period. More time may be needed to see effects of interventions begun in 2022.

Vermont has achieved or made significant improvements toward meeting population health goals related to access to primary care, chronic disease, and prevention of suicide and drug overdose, which may be related to efforts inspired or enabled by the VTAPM. The percentage of adults with a doctor or care provider grew to 90% in the model's fourth year, and there were increases in the percentages of children and adolescents with well-child visits and of Medicaid enrollees aligned with the ACO. Despite encouraging indicators on access to primary care, hospital leaders and community providers noted that Vermont is experiencing primary and specialty care workforce shortages due to high turnover and retirement of PCPs, nurses, and other ancillary staff across the state.[36] Vermont also achieved its targets for reducing chronic disease and addressing diabetes, hypertension, chronic obstructive pulmonary disease, asthma, and tobacco cessation, in line with ongoing investments and

collaboration across the state. Additionally, Vermont maintained progress toward mental health and substance use treatment goals, continuing high rates of initiation and engagement of alcohol and other drug dependence treatment and of 30-day follow-up after ED discharge for mental health, as well as decreasing amounts of opioid analgesic morphine dispensed to residents. However, interviews with hospital, primary care, and mental health providers suggested there are persistent unmet needs for mental health and substance use treatment.

Progress toward achieving population health goals has reflected an ongoing focus on model goals. The complex interplay of overlapping local and state-based programs coupled with diverse needs across Vermont HSAs led to many distinct population health initiatives. Together, these efforts may reflect a shift toward value-based care even though some initiatives are not directly attributable to the model. In the next chapter, we discuss experience with model implementation, including model facilitators and challenges that limited progress.

Chapter 4: Implementation Experience

Key Takeaways

Model Design Features

- Hospital and state leaders suggested that **progress toward care transformation was hindered because of limited participation across all ACO initiatives**, coupled with model features like the hospital-centric design, having to reconcile Medicare all-inclusive population-based payments (AIPBPs), and the lack of prospective payments in the commercial ACO initiative.
- The **two-sided financial risk associated with the Medicare ACO initiative was perceived as too high for most critical access hospitals** (CAHs), given the lack of more substantial financial reserves.
- The **VTAPM's ACO initiatives rely on participation from non-hospital providers**; however, the model's hospital-focused financial structure hindered non-hospital provider participation.

GMCB Regulatory Processes

- The GMCB has continued to adapt its approach to **incentivize and support value-based care, care transformation, and alternative payment mechanisms**.
- The GMCB and hospital leaders cited **challenges and limitations of the GMCB hospital budget review mechanisms**, which focus on slowing health care spending growth, **for supporting the transition toward a value-based payment system**.
- The GMCB moved toward a **more data-driven approach to assessing the impact of OneCare's populations health investments.**

Progress Toward Care Delivery Transformation and Population Health

- State leaders and model participants suggested that the **VTAPM improved understanding and acceptance of value-based care and inspired collaborative population health initiatives**.
- Competing priorities and hospitals' slim financial margins associated with the **COVID-19 PHE shifted focus** and **limited their capacity to invest in population health initiatives** at the same level as at the outset of the VTAPM.
- **Ongoing challenges with the timeliness and completeness of OneCare data** have affected participating hospitals' program planning and future population health investments.
- **OneCare has served an important role in model implementation**, both as a vehicle for aligning population health priorities through data and quality meetings at the community level and as a convener of different health care providers across the state in OneCare's network.
- **OneCare funded new programs and initiatives across the state** supported by model funding mechanisms and in alignment with the VTAPM's goals; however, some efforts have struggled to sustain and scale.
- **Non-hospital providers have played a key role in implementing OneCare programs**. However, they have faced limited financial support for their efforts.

This chapter answers key evaluation questions on implementation approaches and the effectiveness of VTAPM. We focus on how the model's design features and the GMCB's regulatory authority have affected participants' implementation experience as well as the successes, challenges, and lessons learned from implementation.

Specific questions addressed include:

- How did the model's key design features influence participating providers' care delivery transformations?
- How did the GMCB use its regulatory authority to influence model implementation?
- How did program design features impact implementation at the community level?
- What challenges did participating providers encounter?

The main data sources for the findings presented in this chapter include interviews with state leaders, OneCare, hospital leaders and staff, and non-hospital providers; OneCare and hospital budgets and related materials; GMCB presentations and reports; and federal communication.

4.1   Model Design Features

The VTAPM has encouraged providers to move from FFS to value-based payment by aligning financial incentives across payers through risk-based models that flow through OneCare to participating hospitals. The model has faced challenges in fully transitioning model participants—and the state—to value-based care. These included limited model participation across all-payer ACO initiatives and variation in the payment mechanisms across payers. Additionally, because the model is hospital-centric (meaning it was designed with hospitals as the primary risk-bearing entities), clinicians are eligible to participate only if the home hospital in each HSA opted for model participation. Further, because of the model's hospital-centric design, non-hospital providers have had limited financial mechanisms to sustain services that support their reform efforts.

Hospital and state leaders suggested that progress toward care transformation was restricted because of the limited scope of the VTAPM. In 2022, over half (8 of 15) of eligible hospitals in Vermont participated in all three payer initiatives, with another six hospitals participating only in the Medicaid and commercial ACO initiatives.[42] As discussed in previous evaluation reports, the model has not achieved intended participation levels, despite the goal of establishing an all-payer model with robust participation across Medicare, Medicaid, and commercial payers. Vermont did not achieve the Medicare and all-payer scale targets established in the Model State Agreement due to several challenges—the model's voluntary nature, hospital hesitancy toward downside financial risk, a

> "If you don't have a collectivist model, it doesn't work. You can't opt in and opt out. We're all in this together or it doesn't work… There's too much risk and you have to spread that out, and you have to get everybody doing the same thing…you need to change thinking, and you're not going to do that unless everybody is moving together on the same thing. I don't think this can work unless everyone's doing it."
>
> - CAH Leader

fragmented commercially insured population, increasing Medicare Advantage (MA) penetration in the state, and individuals attributed to out-of-state providers.[xx] Limited model participation, coupled with a lack of alignment of payment mechanisms—notably the Medicare AIPBP, which is reconciled to FFS, and the lack of prospective payments in the commercial ACO initiative—hindered efforts to move away from FFS. Hospital and state leaders described how the model's efforts to expand value-based care require investment in primary care, preventive care, and other upstream efforts with the goal of reducing downstream costs, like ED visits and hospitalizations.

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xx The Model State Agreement signed in 2016 required that, by the end of PY 5 (2022), 70% of all insured Vermonters be aligned to a Scale Target ACO Initiative (Medicare, Medicaid, or commercial) and 90% of Vermont Medicare beneficiaries be aligned to the VTAPM Medicare ACO Initiative. In October 2021, CMS waived enforcement of the ACO Scale Targets.

At the same time, hospitals remained reliant on FFS revenue from acute care to *"keep the lights on,"* creating challenges for hospitals to prioritize investments in upstream efforts.

CAHs with narrow operating margins viewed the financial risk for the Medicare payment model as too high, given their lack of financial reserves. State leaders suggested that the financial risk associated with the model was not designed specifically for CAHs and for this reason hindered their participation in the VTAPM Medicare ACO initiative. Only two of the eight CAHs in the state participated in the VTAPM Medicare ACO initiative, supported by their affiliations with larger academic health systems (UVM Health Network and Dartmouth) that can cover CAHs' downside risk.[42] Those CAHs opting not to participate cited concerns that the VTAPM Medicare ACO payment model would result in lower revenue than existing Medicare cost-based reimbursement and that potential losses from downside risk could consume their "*entire operating margins*" and threaten their financial viability.[yy] Hospital leaders also described the Medicare reconciled payment as *"unpredictable,"* explaining the potential differences between capitated payments and that the reconciled FFS payments were too large for CAHs' narrow margins and too complicated to track accurately.

The VTAPM has relied on participation from non-hospital providers to achieve model goals but has a hospital-focused financial accountability structure that posed challenges for hospital providers and limited non-hospital providers' participation. Hospitals have been the primary risk-bearing entities in the model, with payments from each payer flowing through OneCare. Ultimately, hospital participants have been financially responsible for TCOC and any associated upside or downside risk in their HSA. At the same time, attribution has been based on patients receiving a meaningful amount of care from primary and specialty care clinicians, who can be independent or affiliated with the risk-bearing hospital. Although this arrangement increased the reach of the model, the clinicians with a direct care relationship to an attributed patient were largely not financially responsible for their health outcomes.[zz] Meanwhile, hospitals were accountable for some patients without a direct care relationship to their providers. Additionally, community providers had the option of participating in the model through participation agreements with OneCare and were needed to address the goals of the model and reduce the TCOC but were not financially responsible for their health outcomes. The multi-layered accountability structure across the health care delivery system to achieve model goals has required communication and collaboration across the continuum of care. However, the structure has posed challenges for non-hospital providers who believe that they provide care responsible for achieving shared savings (through provision of services that address upstream health and social needs, for example) but who have not received any shared savings under the model.

> "If I can do something to prove that I can keep those clients out of your ER, how much of the ER funding transfers to me next year? The answer was none. Okay, then why am I doing the work? I think that there has to be a little bit of give and take. You can't ask community partners to do work to change metrics, and then when we change the metrics, leave the dollars where they were."
>
> - Designated Mental Health Agency Staff

4.2 GMCB Regulatory Processes

Initially created in 2011, the GMCB was established with the goal of driving system-wide improvements in access, affordability, and quality of health care in the state of Vermont. The GMCB's core duties include advancing innovation in health care payment and delivery, serving as a transparent source of information and analysis on health system performance, and regulating major areas of Vermont's health care system. Over time,

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[yy] One CAH joined the VTAPM Medicare ACO Initiative in 2023, increasing participation to three CAHs (Northeastern Vermont Regional Hospital FY 2023 Budget Presentation to Green Mountain Care Board).

[zz] In 2021, OneCare created a primary care accountability pool, which for the first time passed 15% of total risk to hospital-based and non-hospital-based primary care practices (FY 2022 OneCare Vermont Budget and Certification–Staff Analysis and Preliminary Recommendations).

the GMCB's duties have expanded to include oversight over hospital and ACO budgets and support of the implementation and management of the VTAPM. Over the course of the model, the GMCB has continued to evolve its approach to supporting the model, including expanding its analytic capacity to support model reporting and regulatory work, as well as recommending the trend factor for the Medicare financial benchmark in relation to each PY's Annual Projected National Medicare Total Cost of Care per Beneficiary Growth Rate.[67,68] The GMCB's regulatory processes were established prior to the implementation of the VTAPM; therefore, the GMCB has continued to adapt its approach to incentivize and support value-based care, care transformation, and alternative payment mechanisms.[69]

The GMCB and hospital leaders cited challenges and limitations of the GMCB hospital budget review mechanisms for supporting the transition toward a value-based payment system. The hospital budget review process is intended to help slow health care spending growth.[70] To do so, the GMCB has established revenue growth rates for hospitals—specifically, the Board regulates hospitals' net patient revenue (NPR) and fixed prospective payment (FPP) growth, tied to the model's TCOC benchmark and external indicators.[aaa] GMCB staff reported that, to date, the budget process has not had a mechanism to track specific outcomes from investments in population health. Hospital leaders also discussed challenges with the hospital budget review process, describing how the GMCB's focus on capping NPR growth is challenging when hospitals currently operate within both FFS and value-based systems and have to manage competing financial systems. They noted that the GMCB caps on NPR growth did not allow hospitals additional financial flexibility to handle inflation and sicker patient populations and limited their ability to invest in population health initiatives and additional services.[bbb] Recognizing potential unintended consequences of revenue caps, the GMCB sought feedback on the process. As a result, the GMCB plans to implement changes beginning with the FY24 budget review to better understand hospitals' expense drivers, better position Vermont to integrate new and alternative payment models, and use evidence-based approaches for regulating expense growth.[71,72]

> "There are some hospitals that really do want to see this [model] succeed and really want to put some real dollars behind it to move the dial. We have to be able to start with a larger bucket of money in order to do that."
>
> - CAH Leader

The GMCB has been moving toward a more data-driven approach to evaluating OneCare performance. As part of its statutory responsibilities, the GMCB regulates ACOs operating in Vermont. As part of its role under the Model State Agreement, the GMCB is required to coordinate with OneCare to achieve the model's statewide financial targets and statewide health outcomes and quality of care targets. In line with these objectives, the GMCB's regulatory processes have included a review of:

> "programs and investments to facilitate the shift to value-based care; investments in health improvement activities; tools and analytics to support providers and improve health care quality and reduce unnecessary costs; ACO administrative costs; and the alignment of ACO strategies with Vermont's All-Payer Model goals."[73]

[aaa] NPR is the net revenue a hospital receives for patient services rendered. To calculate NPR, hospitals subtract deductions (for example, contractual allowances, reserves, and uncompensated care) from gross revenues. The GMCB also regulates FPP growth, or the growth of FPPs in hospital budgets.

[bbb] At the beginning of the model, the GMCB allowed hospitals to include line items within their hospital budgets to account for additional revenue growth to cover expenses related to health care reform investments. To qualify, hospitals were required to identify specific investments and link them to activities that reduced health care costs, improved quality, supported the transition to value-based care, and/or improved progress on model population health goals such as increasing access to primary care, reducing deaths from suicide and/or drug overdose, and reducing the prevalence and/or morbidity of chronic disease. By 2019, the GMCB moved away from that approach and no longer allowed hospitals to include health care reform investment expenses in their budgets by FY 2020; the change implied that the model's FPP provided sufficient incentives for hospitals to meet model goals. (FY2020 Hospital Budget Guidance Reporting Requirements; FY2019 Hospital Budget Guidance Reporting Requirements).

In the earlier years of the model, the GMCB had limited sources of data on which to assess OneCare's population health investments, in part due to limitations in the outcome data that OneCare had available on individual investments. As such, the GMCB oversight focused on requiring ACO reporting; overseeing the ACO certification and budget review process; and assessing Vermont and OneCare's progress toward scale targets and alignment, TCOC, and quality metrics required in the Model State Agreement. To better understand OneCare's impact on quality, cost, and utilization in the state, in FY 2022 the GMCB required OneCare to implement a benchmarking system that compares key metrics based on OneCare claims data to national benchmarks.[ccc] OneCare described using the benchmarking data on ED utilization and wellness visits to target 2023 population health investments.[74] OneCare also noted that they planned to conduct outreach to providers and other peer ACOs to discuss best practices and strategies to address ED utilization and wellness visits that they can share with their provider network.

4.3   Progress Toward Care Delivery Transformation and Population Health

The VTAPM has leveraged a history of delivery system reform initiatives and collaboration in the state. Model participation by hospital and non-hospital providers served as a focal point for collaboration at the community level and inspired new population health initiatives. Model participants made progress investing in initiatives to reduce avoidable utilization and to address health-related social needs despite external and internal challenges that limited progress. External to the VTAPM, model participants continued to face financial strains and workforce shortages that followed the COVID-19 PHE. Internal challenges included the limited usability of data to inform population health investments and a lack of funding and support for non-hospital providers.

Competing priorities associated with the COVID-19 PHE shifted focus away from population health initiatives, as workforce shortages increased. Health care providers noted high numbers of open positions and high staff turnover, exacerbating preexisting issues of a declining health care workforce in Vermont.[75] Recruitment and retention were particularly difficult in rural areas, where wages are not as competitive as in urban areas. Hospitals noted that primary care and specialty care physician shortages increased with the COVID-19 pandemic, reflecting clinician burnout and retirements. Hospitals reported worsening physician shortages, as well as challenges recruiting and retaining nurses, pharmacists, mental health providers, and allied health professionals.[76] Without adequate staffing support, the existing workforce has been unable to optimize their use of time and infrastructure. Moreover, hospital leaders reported increased demand and complexity of patient care due to delayed medical care during the COVID-19 pandemic. Providers and state leaders noted a renewed focus on population health as COVID-19 cases waned. However, some participants reported that financial and workforce challenges exacerbated by the pandemic, along with managing increased patient acuity and demand after the COVID-19 PHE, have hindered progress toward population health goals.

[ccc] According to the budget order, the benchmarking system must include national benchmarks and identify best-practices in five key areas, including: (1) utilization, (2) cost per capita, (3) patient satisfaction/engagement, (4) quality, and (5) evidence-based clinical appropriateness. As a result, OneCare conducted a vendor selection process and implemented a benchmarking solution, publishing their first benchmarking report in October 2022 (GMCB Benchmarking Report). As part of the memorandum to OneCare, the GMCB noted that the benchmarking report should include identification of best performers and best practices, clarification of the methodology used to compare to best performers, a return-on-investment calculation for areas of improvement, and a larger and more transparent comparison cohort.

Despite contextual challenges, state leaders and model participants suggested that cultural and educational shifts among providers toward value-based care have contributed to efforts to improve Vermonters' health.
As discussed in **Chapter 1**, the VTAPM aims to encourage provider participation in value-based payment
initiatives. Participating hospitals have had the potential for
shared savings and losses, and all participating providers received
non-risk-based, population-based payments for attributed
populations. Model participants and state policy leaders alike
described how the model's goal—to shift from FFS to a more
value-based payment system—cultivated knowledge about value-
based care and motivated a cultural shift among providers. Now,
providers across the Vermont health care system are empowered
to engage in value-based care, with an increasing focus on
collaborating with community partners to address patient needs
and the upstream determinants of health.

> "One of the biggest positives that comes out of [the model] is that we all recognize that being in a fee-for-service world is not sustainable. We're at least trying to take the steps to move in the direction to come at this from a value-based perspective."
>
> - CAH Leader

**OneCare has served as a "*connector,*" bringing together
providers from across the health care system and across the state**. As part of OneCare's strategic plan[ddd] to
ensure a high-quality, equitable system, OneCare redefined and streamlined the provider engagement
committee structure in PY 5 (2022) to reduce duplicative efforts. It also re-formed a number of defined, unique
clinical committees, subcommittees, and workgroups to incorporate clinicians and hospital leaders in the ACO's
strategy and decision-making process.[eee,77] Many hospital leaders, clinicians, and designated mental health
agency leaders have participated in OneCare's committee structure, providing feedback on the evolution of the
model, accountability/quality measures, and OneCare's data and analytic products.[41] OneCare leaders described
how they relied on such engagement opportunities to communicate openly with clinicians and hospital leaders
and to gain valuable insights about program design and finances. Model participants reported that these
discussions enabled collaboration and progress toward population health goals. However, designated mental
health agency leaders added that, while these committees and workgroups were an important way to have a
voice in discussions on value-based care, there were few OneCare-allotted spots for designated mental health
agencies and other community providers. There also continued to be a lack of trust in OneCare among some
providers.[fff]

To support transformation efforts at the HSA level, OneCare funded and established opportunities for model
participants across HSAs to meet and discuss local needs and priorities.[78] In PY 4 (2021), OneCare created
quarterly HSA consultations for sharing TCOC and quality data with HSA leaders and providers, presenting each
HSA's strengths and opportunities to improve quality measures.[41] Through the consultations, OneCare has
worked with leaders and providers to identify future quality improvement efforts and agree on potential focus
areas. Hospital leaders and staff shared differing opinions on the consultations' usefulness. Some hospitals
emphasized how HSA consultations provided useful comparisons between HSAs on quality metrics. However,

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[ddd] In 2021, OneCare developed a strategic plan to improve the ACO's core capabilities in network performance management, data analytics, and payment reform.

[eee] Committees included the Executive Committee, the Patient & Family Advisory Committee, the Compliance Committee, the Audit Committee, the Finance Committee, and the Population Health Strategy Committee. Subcommittees included the Payment Reform Subcommittee, the Subcommittee for Quality and Care Models, and the Subcommittee for Data and Analytics. Workgroups have been formed as needed for specific projects and strategy sessions, including topics such as equity and access, population health management measure selection, care coordination, the Comprehensive Payment Reform clinical advisory group, and the Comprehensive Payment Reform finance work group.

[fff] As discussed in the First Evaluation Report and the Second Evaluation Report, only one ACO is participating in the model, which is an obstacle for engaging providers that want a choice in ACOs. FQHCs and independent clinicians previously participated in two ACOs that ceased operations at the outset of the VTAPM and have reported skepticism of OneCare, given its relationship with UVM.

OneCare and hospital leaders acknowledged that there was limited participation among hospital clinicians and non-hospital providers. OneCare's 2023 Budget Narrative noted a goal of expanding participation among a broader selection of organizations in HSA consultation meetings.[41] In the final round of 2022 HSA consultations, OneCare extended invitations to additional organizations and asked attendees to propose leaders from other community organizations in the HSA.[79]

The VTAPM served as a focal point for collaborative work, providing a framework to continue and expand care delivery transformation and population health initiatives at the state and community levels. In some communities, the VTAPM was a motivating factor for increased hospital engagement with community organizations by providing structure and a set of common goals for collaboration. Through community meetings (for example, care management meetings, HSA consultations), different types of providers came together to share their perspectives on how to meet patients' needs. Among primary care and community providers, OneCare's focus on care coordination has increased development of team-based care approaches. Some CHWs noted that the "*ACO forced everybody into team-based care,*" and they recognized that the VTAPM's structure was more sustainable than grant-based work occurring under the Blueprint alone. Several non-hospital providers explained that working together to engage in OneCare's care coordination program fostered relationships between primary care and community providers, which improved PCP understanding of designated mental health agencies and the best ways to collaborate to meet patient needs.

Model participants prioritized investments that addressed unmet community needs, noting that the model's population health goals to reduce the prevalence of chronic diseases and address mental health and SUD needs were often local priorities. To identify and address such needs, some communities formed new workgroups and reviewed population health data, including data from OneCare. Where possible, they focused efforts on quality and population health measures aligned across programs, including the VTAPM, the Blueprint PCMHs, and OneCare's VBIF. At the community-level, CHT leaders reported prioritizing requests to address community needs, such as those communicated by local primary care practices or as disclosed in patient reports. OneCare has continued to standardize its programs[ggg] and better align with the Blueprint and other state programs.[hhh]

Hospital leadership highlighted ongoing challenges with OneCare data that have affected program planning and future population health investments. On the path toward value-based payment, providers need access to timely, actionable data to inform delivery transformation initiatives. As discussed in prior evaluation reports, OneCare shares data with network providers on quality metrics, utilization, cost, and care coordination for the attributed population. However, data analysts at hospitals noted the need for more useful and user-friendly data analytic tools,

> "I don't know how many opportunities you see throughout the country where…You've got this wide spectrum of care delivery [providers] sitting regularly in meetings, talking about the programs…. We're not working against each other, and that has been tremendous for us… It is OneCare who put that forum together…. We can understand each other's perspective."
>
> - Independent Practice Leader

> "We're not really included in the payment, not enough to incentivize us to do anything differently… Then the tools, are you helping pay for EMRs, or are we linking that up? The vision is unclear… and it really feels geared towards hospitals and primary care, which is fine, if that's the point, but you're roping in these other community-based providers, but saying like, "We need you, but this isn't really for you."
>
> - Area Agency on Aging Staff Member

[ggg] In 2023, OneCare combined the previous care coordination, VBIF, and population health management programs into a single program and PMPM payment. Providers can also receive incentive payments for performance on quality measures.

[hhh] OneCare is collaborating with the Vermont Agency of Human Services to standardize SDOH screening and align these efforts with Blueprint's screening initiatives so that HSAs have a standardized screening tool with which to measure community needs. Source: Vermont All-Payer ACO Model Annual Health Outcomes and Quality of Care Report Performance Year 4 (2021).

as it took a significant amount of time to manipulate and review OneCare data within Workbench One, OneCare's analytic application for participating providers. Hospitals emphasized that, due to ongoing data quality issues and the limited scope of the data, they could not rely solely on OneCare data to monitor population health investments and support care delivery transformation and quality initiatives. Because most CAHs did not participate in all major payer initiatives, their data were limited to the Medicaid and commercial populations; they had to rely on internal data to review metrics for their entire population. To address the need for improved data analytics, as discussed in **Chapter 3**, several hospitals have invested in developing and refining EHR systems to pull care coordination and population health data, increasing staff specifically for data analytics, and building a population health services organization.

While OneCare has funded new programs and initiatives across the state, some efforts have struggled to sustain and scale. OneCare funds its population health programs, including its care coordination program, Blueprint initiatives, and VBIF, through hospital participation dues. OneCare decreased hospital participation dues in response to the COVID-19 pandemic, resulting in decreased funding for OneCare's population health initiatives over the course of the model.[41] While these funds were intended to support HSA-level population health and quality improvement work, hospital and non-hospital providers reported that they often rely on grants or hospital revenues to support initiatives. One designated mental health agency described how they relied on grant funding to support a quality improvement initiative focused on conducting outreach to primary care practices and supporting training on suicidality assessments and appropriate interventions. Another was able to provide co-location of mental health services within primary care practices based on grant funding from foundations and federal funds but ended programs after the completion of grant periods due to a lack of funding. Despite OneCare's efforts to promote new population health pilot programs through their Innovation Fund,[iii] non-hospital providers explained that it is burdensome to identify additional funding to sustain and expand pilots. For example, the Longitudinal Care Program has expanded from a pilot in one HSA to several HSAs, but staff in one HSA noted that uncertain and decreasing funding streams provided by OneCare hindered program expansion and impact. While OneCare's pilot funding has launched new population health programs, limited funding and uncertainty about how to sustain funding for these programs have resulted in large patient waiting lists and have stifled recruitment efforts.

Slim financial margins limited hospital capacity to invest in community-level population health initiatives. Hospitals in Vermont have been struggling financially in the aftermath of the COVID-19 PHE, reflecting national trends among hospitals that serve predominantly rural communities.[76,80] The GMCB reported only 3 of Vermont's 14 community hospitals had positive total margins in FY 2022.[76] As noted in previous evaluation reports, following the financial impacts of the COVID-19 PHE, hospital leaders have been unable to invest in population health initiatives at the same level as at the outset of the VTAPM. Furthermore, despite opportunities through the model to earn funds intended to support their population health initiatives (for example, OneCare population health management payments and shared savings), hospitals reported using model funding to keep their doors open. Model participants suggested that upfront funding and more predictable and consistent payments would be required to implement greater population health transformation.

Primary care clinicians have faced external challenges and competing demands that limited their ability to engage in the model. Following the COVID-19 PHE, primary care clinicians reported increased burden on staff due to practice closures in their area and the increasing complexity of patients' health care needs, in turn reflecting delayed care during the COVID-19 PHE and limited access to specialty care. Our previous evaluation reports have noted that such challenges have compounded the burden facing primary care practices, which must track quality measures and submit documentation to OneCare and Blueprint. To reduce burden, some practices have focused intentionally on quality measures to meet the requirements for PCMH certification and

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[iii] OneCare's Innovation Fund provides grant funds that support innovative evidence-based (or evidence-informed) program pilots that align with OneCare's priorities and expand opportunity to improve care and contribute to success under program goals (Final Description of OneCare's Population Health Initiatives).

for OneCare. Some hospitals created their own EHR care plan templates to reduce duplication of documentation for system-owned primary care practices.

OneCare also intended to support the work of participating primary care clinicians by distributing most of OneCare's population health management investments to primary care practices. However, because funds are distributed at the practice or Taxpayer Identification Number level, they have not had the intended effect of motivating individual clinicians in OneCare's care coordination and quality activities. Some hospitals have undertaken efforts to modify physician compensation structures to incorporate quality-based components but described how the lack of real-time data from OneCare and of sufficiently sophisticated EHRs limits their ability to tie physician payment to model measures. Some hospital leaders and OneCare have discussed wanting increased clinician engagement in model activities; however, the competing demands and limited financial support for these activities continue to hinder clinician engagement. While OneCare's Comprehensive Payment Reform program continued to provide stable funding to participating primary care practices and to support investments in staff to address community needs, the program remained limited to independent primary care practices, which constrained its impact. OneCare leaders noted that sustaining and expanding the reach of this program would be a priority for 2023 and 2024, to increase support for primary care.

Non-hospital providers engaged in OneCare's population health initiatives despite limited financial rewards and the lack of a communication platform hindering collaboration across the continuum of care and increasing burden. To help achieve the goals of the model, OneCare developed an approach to care coordination that relied upon coordination across the continuum of care. As noted in **Chapter 1**, OneCare funded its population health initiatives, including its care coordination program, using the model funding, hospital participation dues, and start-up funding. They supported their non-hospital providers engaged in OneCare's care coordination program by developing and sharing care plans, tracking patients for care coordination, and helping address OneCare's quality measures. Non-hospital providers are required to document care coordination activities to receive care coordination payments. However, the current funding they receive for such efforts (that is, complex care coordination and VBIF payments) has been insufficient to support the additional burden of the care coordination and documentation activities. Furthermore, non-hospital providers explained that OneCare funding has decreased in recent years and suggested that OneCare's focus has been on supporting hospitals and PCPs in the wake of the COVID-19 PHE. Meanwhile, non-hospital providers have continued to struggle to communicate and share patient information with providers from other organizations. OneCare developed Care Navigator[jjj] to address this challenge, but the platform had limited usability. Some non-hospital providers reported that, with the shift away from Care Navigator, they went back to sharing information by email and through in-person meetings. Individual organizations began exploring alternatives to improve data sharing for care coordination in their own communities.

4.4   Conclusion

The VTAPM increased understanding and adoption of value-based care, aligning initiatives at the state and local levels to improve Vermonters' health, despite model design challenges that limited progress. Participation in the model's various payer initiatives remained mixed, as most payments continued to be linked to FFS, including the Medicare payment model.[kkk] The GMCB, as the state's regulatory entity, continued to evolve its approach to evaluation of OneCare while facing challenges regulating hospital budgets that must support participation in FFS

[jjj] As reported in the Third Evaluation Report, OneCare developed Care Navigator—OneCare's care management software to support collaboration between health and social service providers—and tied a component of care coordination payments to use in Care Navigator. However, due to providers' negative feedback on the tool, OneCare made Care Navigator optional in PY 5 (2022) by decoupling care coordination payments from the tool.

[kkk] Although 61% of VTAPM Medicare ACO providers across the first five years of the model elected to receive AIPBP, which pays providers via a prospective monthly payment for each attributed beneficiary, those payments are reconciled back to FFS at the end of each year.

and value-based care systems. Accordingly, shifts to a predominantly value-based system may be slower than planned.

The impacts of the COVID-19 PHE continued to be felt throughout the health care system, with workforce shortages and increasing operating costs limiting the capacity to meet increased patient needs and care delivery transformation. Despite these challenges, model participants, with the support of OneCare, made strides toward meeting the model's population health goals. OneCare not only serves as a connector across the health care system, but also aligns population health priorities for model participants. Informed by the model's priorities and unmet community needs, model participants built upon a long history of investment in care delivery transformation through the Blueprint initiative and other programs. These initiatives include enhanced team-based care and care coordination, increased screening and prevention, and expanded services. While the model supported and inspired new programs and initiatives across the state, some of these efforts are struggling to sustain and scale due to limited funding and competing workforce and financial strains on hospitals and clinicians. Additionally, opportunities remain to improve data analytic support and data sharing among hospital and non-hospital providers.

The model served as a focal point for collaboration and care delivery transformation. Through the VTAPM, health care leaders across the state were brought together to move toward common goals for the health system and the health of Vermonters. Though the COVID-19 PHE affected model implementation, model participants have been able to refocus attention on the model's goals.

Chapter 5: Discussion

As of PY 5 (2022) of the VTAPM, participants have made positive strides toward spending, utilization, and population health goals. Strategies implemented under the model have leveraged Vermont's previous health reform initiatives. In addition, the VTAPM has provided funding, incentives, and opportunities for collaboration to expand the focus and reach of population health efforts. However, several design and implementation challenges have continued to limit participation and growth in value-based payment under the model. Vermont's history of health reform and other parallel reform efforts provided the foundation for the VTAPM and influenced outcomes. Therefore, attributing the impacts to a specific payment or delivery system initiative is not feasible. In this final chapter, we summarize findings from the key areas of investment under the VTAPM associated with outcomes and summarize facilitators and challenges associated with implementation. We also present lessons learned to consider in the design and implementation of future innovative payment and delivery system models.

5.1   Insights to Date

VTAPM participants focused on preventing avoidable acute care, which likely contributed to reduced hospital admissions. OneCare, hospitals, PCPs, and other providers continued previous initiatives or launched new initiatives to improve population health management. These initiatives included building data analytic capacity and hiring care managers to identify patients at risk of hospitalization and coordinate care in the most appropriate setting. State leaders and hospital and non-hospital providers continue to credit the VTAPM with establishing a cultural shift to value-based care, providing a focal point for collaboration and facilitating collaboration, and shifting the providers' mindset from FFS to value-based payment systems. They also emphasized the critical role of the Blueprint's Community Health Teams and regional support for primary care practices to improve care coordination for patients through the PCMH model.

We cannot definitively attribute any observed outcomes to these specific interventions, nor can we isolate the effect of the VTAPM from other health reform efforts; however, the significant decrease in hospitalizations for VTAPM Medicare ACO beneficiaries and (unadjusted) downward trends in acute care stays for Medicaid enrollees is an encouraging sign that providers have been making progress that is at least partly supported by the VTAPM. In 2022, Vermont ranked sixth lowest in the U.S. for hospital admissions per 1,000 people.[81]

The reduction in hospitalizations for VTAPM Medicare ACO beneficiaries likely contributed to cumulative gross and net spending reductions and consistent achievement of statewide TCOC growth targets. Additionally, (unadjusted) Medicaid spending reduced from 2019 to 2021. The reduction in hospitalizations may reflect the success of VTAPM and other HSA initiatives to get some patients connected to care within the community.

Statewide and HSA-level population health efforts may have contributed to the state meeting the VTAPM's quality performance targets for chronic disease. Initiatives included payment incentives for diabetes and hypertension control and increased support for education, screening, and self-management. From baseline to PY 5 (2022), the GMCB reported improved performance on measures for control of high blood pressure; uptake of tobacco use assessment and cessation interventions; medication for asthma; well-child visits; A1C control; unplanned admissions for patients with multiple chronic conditions; and stable prevalence rates for chronic obstructive pulmonary disease, diabetes, and hypertension. Hospital and community leaders acknowledged the VTAPM's role in helping them identify investment priorities for population health. Reported findings on chronic disease should be interpreted with caution, however, due to the limitations of only pre-post data from the GMCB.

Vermont's focus on increasing access to mental health and SUD treatment may have contributed to greater treatment initiation and follow-up care. Hospitals and HSAs implemented a range of initiatives, including expanding mental health and suicide risk screening and prevention support, increasing training, and embedding mental health clinicians in EDs and primary care practices. The efforts may have been associated with an increase in the rate of screening and follow-up for clinical depression and 30-day follow-up after discharge from the ED for a mental health concern among OneCare's attributed population. Initiation and engagement of alcohol and other SUD treatment have increased and exceeded statewide targets for Vermonters attributed to OneCare, and opioid dispensing has declined statewide since 2017. However, Medicaid trends have signaled a decreasing percentage of Vermonters with SUD receiving treatment. Additionally, opioid-related deaths and deaths related to suicide—among the model's main population health targets—have been increasing, suggesting the need for stronger efforts in prevention. Like findings on chronic disease prevalence, we were limited to pre-post data on mental health, substance use, and treatment trends.

5.2   Model and Evaluation Challenges

Hospitals and non-hospital providers increased capacity for care transformation and generated buy-in among stakeholders, but the model scale fell short of expectations for several reasons. First, the voluntary nature of the model allowed hospitals to decline participation. One Vermont hospital opted out entirely, while many others opted out of the VTAPM Medicare ACO. Smaller PPS hospitals and CAHs were reluctant to take on two-sided financial risk in the VTAPM Medicare ACO. The lack of uniformity in payment mechanisms across payers increased administrative burden, and the reconciliation of Medicare AIPBPs created financial uncertainty for hospitals. The largest commercial payer in the state, BCBSVT, also had limited participation (and has since dropped out of the model in 2023). Finally, the substantial growth in MA participation in Vermont since the model's outset (from 10% of all Medicare beneficiaries in 2018 to 27% in 2022) has further constrained the pool of patients eligible for alignment to the VTAPM Medicare ACO. With a limited footprint, the VTAPM could only begin to shift FFS to value-based payment, and most providers' revenue remained based on FFS payment because hospitals did not participate in all ACO initiatives. Commercial payers never established a structure for fixed prospective payments with OneCare, so payments remained in FFS.

While Vermont has increased access to care at some points along the care continuum, workforce shortages and other challenges have continued to impede overall access to care. The GMCB reported that the percentage of adults in Vermont with a personal doctor or care provider increased over the course of model, yet there was no statistically significant model impact on primary care visits or annual wellness visits and a sharp decrease in specialty care visits among VTAPM Medicare ACO beneficiaries relative to Shared Savings Program comparison beneficiaries. The shifts in care-seeking patterns and workforce shortages in the wake of the COVID-19 PHE persist and have been disrupting access to care in Vermont, particularly with respect to specialty care. Hospital leaders and community providers confirmed that these challenges are compounded by workforce shortages due to high turnover and retirement rates across the state, coupled with an aging population and increased demand for primary and specialty care. Patients had greater health needs, including mental health and substance use, and delayed care during the height of the COVID-19 PHE. VTAPM participants described being unable to meet the rapidly increasing demand for SUD treatment due to workforce shortages and lack of funding, which may have impeded progress on preventing opioid-related deaths. This dynamic may have limited VTAPM providers' ability to achieve model goals related to access to care with a limited supply of community providers and longer wait times for care. Vermont has still not met its target for the ACO CAHPS composite measure related to getting timely care, appointments, and information, which may be another indicator of wait times and access challenges.

An additional challenge that hospital leadership highlighted is a shortage of long-term care and nursing home beds due to pandemic-related workforce shortages in nursing homes and community caregivers. Therefore, hospitals reported holding patients who are not able to get a placement in a SNF, residential facility, or nursing home, which may be extending acute care stays beyond what is clinically necessary. This may be reflected in the

increase we observed in acute care days in 2022 for VTAPM Medicare ACO beneficiaries. Efforts have been made across the state to address these challenges. A 2022 study found that Medicaid home- and community-based reimbursement rates have not been able to keep pace with inflation and other costs, and long-term care facilities have taken beds offline and are increasingly closing or are accepting fewer Medicaid enrollees.[82] In 2022, Vermont used COVID-19 PHE relief funds and other short-term grants to support nursing homes; AHS provided workforce retention and recruitment payments to health care workers and increased Medicaid reimbursement rates for SNFs and community-based care.[35,83]

Financial constraints, administrative burden, and access to timely data have constrained population health efforts. Low financial margins limited hospitals' bandwidth for investments in population health initiatives compared to the earlier years of the model. Many initiatives were put on hold during the height of the COVID-19 PHE. ACO and hospital leaders cited the administrative burden associated with GMCB regulatory processes, while non-hospital providers cited that ACO funding they receive has been insufficient to support the additional burden of documentation activities. Delays in and limits of the usability of OneCare data on attributed patients has hindered clinician engagement and hospital and community decision-making around where to focus population health efforts. These challenges underscore the need to balance financial and clinical goals, minimize documentation burden, and promote data utility in APMs.

Several contextual and data-related challenges limited the scope of the evaluation. As discussed in previous reports, Vermont's historically strong health care payment reform efforts make it difficult to identify similar states for the comparison group and to distinguish the specific effects of the VTAPM from previous and concurrent initiatives. We mitigated this challenge to the extent possible by selecting states for the comparison group that had similar histories of health reform and identifying comparison beneficiaries attributed to Shared Savings Program ACO providers. However, despite these mitigation strategies, we lacked a large enough comparison pool with similar characteristics to the VTAPM Medicare ACO beneficiaries, which led to reduced precision for some impact estimates. We also asked interview respondents to clarify which interventions were directly in response to the VTAPM or inspired by the VTAPM and which were expansions of previous initiatives under the VTAPM. Their feedback suggests that most initiatives were inspired by the VTAPM but not directly attributable to the model. Many of the efforts hospitals and non-hospital providers are engaged in under the VTAPM may take time to achieve effects in health and utilization outcomes. If process measures for population health continue to improve, there may also be improved outcomes over time.

This evaluation is not comprehensive in its scope; lack of comparison groups for Medicaid and GMCB-reported outcomes prevented us from estimating the impact of the VTAPM on population health measures, as well as on utilization and cost for Medicaid enrollees, the largest group of patients attributed to the VTAPM. Challenges with timeliness, completeness, and reliability of Medicaid data further limited our ability to draw conclusions from observed trends. Our scope also did not include analysis of the population attributed to the model under commercial ACO initiatives, which comprised one third of all attributed Vermonters.

5.3 Lessons Learned

As CMS plans future state-based and ACO models, and as Vermont contemplates its next steps in transitioning to a new model, the VTAPM experience offers several important lessons.

- To encourage widespread participation, payment incentives should account for the different levels of risk that participants may be ready to assume, particularly smaller PPS hospitals, CAHs, and primary care practices. Glidepaths for ramping up to full risk may allow a wider range of provider types to join value-based payment models.

- Payment mechanisms across payers should be aligned to minimize administrative complexity for participants. Payment mechanisms with upfront funding for providers to implement care transformation activities may be especially beneficial to encourage participation.

- It is crucial to address the ongoing workforce shortages both in Vermont and nationally, which limit the capacity of health systems to address the needs of patients and to implement care transformation activities that could achieve the goals of APMs.

- The hospital-centered accountability structure of the VTAPM may not be as appropriate for new models, given the role of non-hospital providers and clinicians in reducing hospital utilization.

- Care transformation may take time to achieve its full potential, and longer time horizons for APMs may be necessary. For instance, the Next Generation ACO (NGACO) model saw its greatest gross savings and achieved net savings for the first time in its sixth PY.

- Finally, technical assistance to support states and their providers and clinicians participating in the model is essential for promoting successful state-based models. CAHs and small PPS hospitals will require additional technical assistance and other economies of scale to support staffing and infrastructure needs to transform care.

For decades, Vermont has been at the cutting edge of national health care reform efforts. The VTAPM expanded transformation efforts and built on an existing culture of reform with a strong primary care foundation. The GMCB also predated the VTAPM, and similar independent bodies take consensus-building and political capital to stand up. Other states may need longer runways, a pre-implementation period with start-up funds to establish buy-in from key partners (including state partners, participants, and payers), and additional technical assistance to make progress at a similar scale. These approaches to designing and testing state-based innovations will advance value-based care models that can be scaled and will ultimately support CMS's goal of having all Medicare beneficiaries and most Medicaid enrollees in accountable care relationships by 2030.[84]

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