GREEN MOUNTAIN CARE BOARD

Vermont Health Care Innovation Project State-Led Evaluation

Final Report

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Executive Summary

In 2013, the State of Vermont received a State Innovation Model (SIM) award from the Center for Medicare and Medicaid Innovation (CMMI) to advance payment and delivery system reform with the goal of better care, lower cost, and improved health for Vermonters. Vermont's SIM work is known as the Vermont Health Care Innovation Project (VHCIP). John Snow, Inc. (JSI) entered into a contract to work with the Green Mountain Care Board (GMCB) in February 2016 to conduct the State-led evaluation of VHCIP within three focus areas: care integration, payment reform and financial incentive structures, and use of clinical and economic data to promote value-based care. This closely mirrored VHCIP's three overall strategy areas, with the exception that the State-led evaluation's care integration focus does not cover the full breadth of practice transformation activities under VHCIP.

JSI's major activities for the State-led evaluation consisted of the following:

- Completed an environmental scan to understand the state and federal landscape related to VHCIP activities;

- Conducted site visits and key informant interviews with community groups, provider organizations, state and local health care leaders, and other stakeholders throughout the state;

- Conducted five focus groups of health care consumers receiving care coordination services;

- Conducted a statewide primary care provider survey and a statewide care coordinator survey;

- Aggregated and assessed multiple secondary data sources; and

- Disseminated learnings in multiple formats and venues.

JSI used an implementation science frame for the evaluation, meaning that the emphasis was on understanding what worked and what did not work, based on synthesizing the perspectives of a myriad of stakeholders and understanding contextual factors influencing perceived successes and challenges. JSI incorporated a sequential mixed methods approach to the evaluation, whereby learnings at every phase of the evaluation informed subsequent phases. For each focus area of the evaluation, the following sections highlight key VHCIP activities (in text boxes), implementation successes, and implementation challenges. It concludes with a discussion on cross-cutting strategies across the three areas of focus.

Care Integration

Implementation Successes

- Building on and strengthening Regional Care Collaboratives (RCCs): The RCCs developed as a partnership between Vermont's Blueprint for Health and the state's three Accountable Care Organizations (ACOs) and enabled a community forum for coordination across major health and human service providers in each of Vermont's health service areas (HSAs). Membership in the RCCs continued to expand under VHCIP, with more community-based providers joining in, and continued support through VHCIP enhanced their status as important convening structures within the HSAs, especially with regard to their care coordination role.

> **75% of care coordinator survey respondents were aware of RCCs, and 80% of those aware stated that RCCs had a positive impact on quality of care.**

- Continuing the development of workforce capacity related to care coordination: The Integrated Communities Care Management Learning Collaborative (ICCMLC) and Core Competency Trainings implemented under VHCIP promoted a common language around care coordination, shared best practices, such as identifying a "lead care coordinator," and spread other strategies for cross-agency collaboration.

> **81% of care coordinator survey respondents were aware of the ICCMLC, and 88% stated that the ICCMLC had a positive impact on quality of care. 77% of care coordinators surveyed were aware of the Core Competency Trainings, and 79% of those aware stated that the trainings had a positive impact on quality of care.**

- Focusing on data to drive care integration: The RCCs are becoming increasingly sophisticated in the use of data to identify patients in need of services and to monitor these patients over time, in part due to the ICCMLC.

> **76% of care coordinator survey respondents agreed with the statement "data drives the transformation of the practice and the practice's behavior."**

VHCIP Care Integration Activities:

- *Supported Regional Care Collaboratives and statewide collaborative structures;*

- *Implemented Integrated Communities Care Management Learning Collaborative and Core Competency Trainings to build capacity of front-line care coordinators;*

- *Established Accountable Communities for Health Peer Learning Lab;*

- *Provided sub-grants to foster care integration innovation;*

- *Supported expansion of models of care implemented by Vermont's Blueprint for Health, such as Community Health Teams, Support and Services at Home, and Hub and Spoke model (serving individuals with opioid dependence; and*

- *Facilitated Medicaid Pathway discussions, to integrate long-term services and supports and other specialized services into future alternative payment models.*

- Engaging a wide and representative range of service providers and service delivery agencies in reform efforts: Vermont's State-led efforts at health reform have historically emphasized local buy-in and transparency, and these core implementation strategies carried over to VHCIP, especially with regard to care integration. Another way buy-in and transparency occurred through VHCIP was through supporting the infrastructure development of the three ACOs, which enabled them to engage their member organizations in meaningful ways.

- Innovating through sub-grants: Four sub-grants that focused on care coordination created or expanded innovative approaches to care integration. Despite uncertainty of funding, three of these sub-grants, or at least components of them, will continue to be supported by their host organizations.

Implementation Challenges

- Insufficient information technology (IT) to facilitate care integration work: Among key informants, there was frustration noted over barriers to data sharing. Coordination still primarily occurs by fax and phone rather than electronically. While some systems, such as Patient Ping, were being used by some, IT generally was not seen as facilitating care integration work, although one of the ACOs developed and was piloting a shared care plan platform that shows promise. The results of this work were unknown at the time of writing this report.

- Uncertainty regarding support for RCCs and care management services post grant funding: Some to all of the care management activities and structures (e.g., training, RCCs) may be picked up by other entities or supported at some level through the state and eventually through alternative payment models. There is uncertainty in the shorter term about how these services and structures will be supported. The train-the-trainers strategy used for the ICCMLC and development of self-directed core competency training will help sustain capacity to some extent.

- Involvement of primary care providers (PCPs) in RCCs: While the RCCs have had good success in engaging multi-disciplinary and cross-agency groups, PCPs tend to be less involved. PCPs have a powerful voice and can be strong advocates for care management with higher engagement leading to stronger advocacy.

   73% of PCP survey respondents knowledgeable or involved with the RCCs noted that RCCs had a positive impact on improving quality of care coordination, but only 32% were knowledgeable of or involved with the RCCs.

- Alignment of financial incentives to support care management: While financial incentives exist to provide care coordination, incentives that enhance cooperation have not been leveraged in significant ways. The Medicaid Pathway discussions as well as the Accountable Communities for Health Peer Learning Lab were important forums to explore better financial alignment.

Payment Reform and Financial Incentive Structures

Implementation Successes

- Engaging all three ACOs and a full spectrum of PCPs (hospital-affiliated, federally qualified health centers, and independent practices) in payment reform: ACOs, especially, were strong partners to VHCIP leadership in the development and roll-out of payment initiatives, in part due to VHCIP investments in ACO capacity building and infrastructure development. The three ACOs served as the mechanism through which providers became aware of and participated in VHCIP payment reform activities.

- Aligning quality measures: Substantial work was conducted by stakeholders through VHCIP to better align quality measures across payers to facilitate collection and reporting. The quality measures used in VHCIP informed the list of quality measures agreed upon for the All Payer ACO Model.

> **VHCIP Payment Reform and Financial Incentives Activities:**
>
> - *Implemented Vermont-specific Medicaid and commercial Shared Savings Programs;*
> - *Provided ACO capacity-building and Infrastructure Development funding;*
> - *Enhanced Blueprint for Health's Pay-for-Performance Program;*
> - *Researched and explored Episodes of Care payment model (ultimately deciding not to pursue); and*
> - *Facilitated Medicaid Pathway discussions.*

- Implementing Shared Savings Programs (SSPs): All three ACOs participated in the SSPs, and two of the three were eligible for distribution of savings (based on cost savings and sufficient quality scores), although not from all payers.

- Enhancing system and provider capacity to participate in alternative payment models: Beyond the success in implementing SSPs, the greater value was to enhance system and providers' capacities to engage with alternative payment models. Through participation in SSPs, providers developed a better understanding of financial risk and costs of care, what it takes to shift organizational culture toward value-based payments from volume-based payments, how to track and use quality metrics, and best practices to optimize quality.

- Initiating Medicaid Pathway research and planning: The SSPs were focused primarily on medical providers and services as opposed to long-term services and supports and other non-medical services. The Medicaid Pathway initiative helped to define how such services could be integrated into future alternative payment models and informed the All-Payer ACO Model Agreement.

- Developing and moving to agreement on All-Payer ACO Model (APM): The APM created an advanced alternative payment model designed to encourage delivery of well-coordinated, high quality person-level care within a defined all-inclusive population-based payment.

Implementation Challenges

- Lack of awareness of participation in performance-based payment models, such as the SSPs, at provider level.

  28% of PCP survey respondents indicated they did not know if some portion of their practice's payments were based on performance of care.

- Uncertainty of impact of performance-based payment models on practice operations at the provider level: More work is needed to engage providers in connecting payment reform to practice operations to achieve desired reductions in costs of care and quality improvement.

  Of PCP survey respondents in practices with some performance based payments, 28% believed that participation with performance-based payments had no change on decision making, 31% believed that participation had made decision-making somewhat better, and 19% believed that participation had made decision somewhat worse.

- Provider confidence in their perceived readiness for alternative payment models: Standard quality measures, better tools for monitoring and tracking, and better cost analytics for performance monitoring were identified as challenges to readiness to participate in alternative payment models.

  About 40% of PCP survey respondents indicated that they and their practice were only somewhat ready to participate in alternative payment models, with nearly 30% responding that they are not at all ready.

- Lack of community-based provider involvement in alternative payment models: Engaging such organizations was challenging for many reasons, including sharing patient data, lack of existing contracts with insurers, and variation in benefits across payers. While these organizations were not included in the SSPs, the Medicaid Pathway initiative was established to explore strategies for incorporating these types of services and organizations into future payment reform efforts.

Use of Clinical and Economic Data to Promote Value-Based Care

Implementation Successes

- Leveraging existing data aggregation and dissemination activities and systems: Rather than developing parallel data initiatives, VHCIP's data infrastructure efforts built on existing foundational efforts, including Blueprint, Vermont Information Technology Leaders (VITL), and the statewide health information exchange (HIE) plan.

- Expanding use of electronic health records and access to data systems beyond medical providers: As examples, Specialized Service Agencies were supported to acquire electronic health records (EHRs) and Home Health Agencies were linked to VITLAccess. Bringing along these types of providers is essential to realizing the goals of health reform.

- Engaging relevant stakeholders in decision-making: Representatives from the provider community, all ACOs, Blueprint, VITL, and other key stakeholders all were involved in strategic planning and decision making with regard to data initiatives, which generated organizational leadership and systems-level buy-in to activities.

- Building capacity of workforce: Data and systems use were part of the ICCMLC. The RCCs worked at enhancing their group's sophistication with regard to use of data. The ACOs also played a very large role in building the capacity of their constituent organizations to collect and use data for quality improvement and decision making.

Implementation Challenges

- Varying levels of capacity and sophistication around data use: Perceived capability in use of non-EHR systems, including internal and external registries, VITL, Patient Ping (event notification system), ACO data, or Blueprint data was low compared to EHRs.

> **While 43% of PCP survey respondents noted that they felt very capable using their EHRs in support of patient care or quality improvement, 46% felt only somewhat capable, a little capable, or not at all capable (the remaining answered do not know).**
>
> **Fewer care coordinator survey respondents used any of these data systems, including EHRs; among those who did use these systems, they had a similar perception of their capability as PCP respondents.**

- Underutilization of external systems (e.g., Patient Ping, VITL): While some HSAs had heavier use of these systems than others, survey results indicated an underutilization of these systems. Some key informants noted the inconvenience and frustration of having to log into multiple portals to access the systems. Underutilization could also be due to a lag in the adoption and proficient use of the systems.

- Uncertainty between building data capacity locally or centrally: Key informants raised the issue of whether future data infrastructure resources are best used to develop local capacity or central capacity. Discussions about this issue recognized the potential value of these external systems while noting that they were currently not as useful as they could potentially be.

> **PCP and care coordinator survey respondents showed that respondents were more likely to use their own systems (e.g., EHRs and internal registries) versus external systems/sources (e.g., VITL, Patient Ping, ACO data, Blueprint data, and external registries).**

> *VHCIP Data Activities:*
>
> - *Expanded electronic health record penetration;*
>
> - *Addressed gaps in connectivity and clinical data reporting through Vermont's Health Information Exchange;*
>
> - *Provided funding to ACOs to support health data infrastructure building and development of analytic tools;*
>
> - *Developed strategy for data warehousing to support better data analytics.*
>
> - *Supported collaboration for implementation of Event Notification System*

- Lack of data to support cost analytics: Key informants noted that the lack of data to understand costs and conduct return on investment or cost/benefit analysis significantly hampered their ability to make investments and to feel comfortable becoming involved in performance-based contracts.

> **"Better cost analytics" was the third highest response to the survey question about what was needed to improve providers' readiness to participate in alternative payment models.**

Cross-Cutting Strategies

It is clear that each of the focus areas of the evaluation complements the other. For example, without a robust health data infrastructure, care integration and payment reform are compromised. Care integration and care management must be front and center in any discussion of payment reform and data infrastructure.

An examination of the implementation successes and challenges revealed cross-cutting VHCIP strategies common to all and worth replicating in future undertakings, including the following:

- Emphasizing stakeholder engagement at all levels and in all VHCIP efforts and supporting transparency;

- Building on previous efforts and previous established infrastructure;

- Establishing vision at state level but enabling/encouraging local adaptation and implementation;

- Emphasizing relationships, including between VHCIP leadership and stakeholders and across stakeholders; and

- Building understanding that health reform is complex, takes time, and is an iterative process.

The goals of VHCIP were to achieve better care, better health, and lower health care costs. While examining whether these goals were met was beyond the scope of the State-led evaluation, it is clear that within the three areas that were evaluated, significant strides forward were made that ultimately contribute to better care, better health, and lower health care costs. VHCIP continued Vermont's rich history of health care innovation and built upon successful strategies and structures (as opposed to starting anew). VHCIP is certainly not an end in and of itself; it built upon previous health reform successes and learnings and provides further successes and learnings that will inform Vermont's continued efforts toward better care, better health, and lower health care costs.

Overview

In 2013, the State of Vermont received a State Innovation Model (SIM) award from the Center for Medicare and Medicaid Innovation (CMMI) to advance payment and delivery system reform with the goal of better care, lower cost, and improved health for Vermonters. Vermont's SIM work is known as the Vermont Health Care Innovation Project (VHCIP). John Snow, Inc. (JSI) entered into a contract to work with the Green Mountain Care Board (GMCB) in February 2016 to conduct the State-led evaluation of VHCIP. This document serves as the final report for the State-led evaluation.

Background

Vermont's State Innovation Model

Vermont was one of six states funded in Round 1 of CMMI's State Innovation Model Initiative. VHCIP sought to reform Vermont's health care system to support better care, better health, and lower costs through developing and implementing strategies in three areas: payment model design and implementation, practice transformation, and health data infrastructure. VHCIP's practice transformation and payment model design and implementation components built on Vermont's Blueprint for Health, a nationally known advanced primary care program that combines Patient-Centered Medical Homes (PCMHs) and Community Health Teams (CHTs), to delve further into alternative payment models. Through VHCIP, the State piloted Shared Savings Programs (SSPs) for Medicaid and commercial payers, to augment existing Accountable Care Organization (ACO) participation in the Medicare Shared Savings Program, and explored other alternative payment models to inform future payment reform efforts.

VHCIP's practice transformation work sought to further the capacity of providers to participate in alternative payment models and to accept higher levels of risk and accountability. The practice transformation component had a focus on care management and care integration as essential features of readiness to engage in alternative payment models that incentivize quality of care and positive health outcomes. Additionally, VHCIP supported a sub-grant program to promote provider-led innovation. Fourteen organizations received sub-grants and worked on a range of projects, including developing strategies to support adults with developmental disabilities, running surgical services and lab optimization collaboratives, and implementing a variety of care coordination and integration models. Each of the state's three ACOs – Community Health Accountable Care, Vermont Collaborative Physicians, and OneCare Vermont (OCV) – also received sub-grant funding to further build their infrastructure and ready their participating practices and providers for alternative payment models.

A defining feature of VHCIP was its integration and coordination with other health reform efforts. Rather than creating new or parallel systems, the majority of VHCIP activities built on existing programs. VHCIP

often served as the impetus for bringing stakeholders together to work collaboratively on payment and health reform efforts.

JSI's Role

A requirement of SIM funding was to conduct a self-evaluation, referred to in VHCIP as the State-led evaluation. Vermont's State-led evaluation was intended to complement the federal SIM evaluation[1], by providing feedback and actionable recommendations to VHCIP stakeholders to continuously improve and make mid-course corrections as needed. JSI's areas of emphasis for the State-led evaluation, as directed by the GMCB, were: care integration, payment reform and financial incentives, and use of clinical and economic data to promote value-based care. This closely mirrored VHCIP's three overall strategy areas, with the exception that the State-led evaluation's care integration focus does not cover the full breadth of practice transformation activities under VHCIP.

JSI began its work on February 1, 2016, in year three of VHCIP implementation, and completed its work on June 30, 2017. This document serves as the final report for the State-led evaluation. There were several other products developed through this contract that provide further depth and insight into particular areas and are complementary to this report. These are referenced throughout the document and can be obtained through the Green Mountain Care Board.

The systems transformation undertaken through VHCIP was an extraordinarily complex, dynamic, and multi-faceted process that evolved over time. It built on a rich history of health reform in Vermont. Extracting VHCIP-specific activities from this larger context of health reform was not always possible. While the report is focused on VHCIP, the findings often reflect health reform efforts more broadly.

This report describes methods employed for the State-led evaluation and then presents detailed findings in each of the three areas of focus. The discussion section is a summary of the findings, highlighting VHCIP implementation successes and challenges in each area. While the federal evaluation will determine whether VHCIP reached its goals, it is clear that VHCIP augmented the rich history of health reform in Vermont with valuable and significant steps toward the continued evolution of Vermont's health care system to provide better care, better health, and lower costs for all Vermonters.

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[1] RTI International is conducting the federal evaluation through CMS Contract No. HHSM-500-2010-00021.

Methods

The major activities of the State-led evaluation were outlined in the state's initial request for proposal as follows:

- Conduct environmental scan to understand the state and federal landscape related to VHCIP activities;

- Conduct site visits and key informant interviews to collect stakeholder input on the evaluation questions;

- Conduct focus groups to assess consumer experience related to their health care;

- Conduct primary care provider (PCP) survey and care coordinator survey to understand perspectives on VHCIP of these two key stakeholder groups;

- Combine qualitative, survey, and other secondary data for comprehensive findings (analysis); and

- Disseminate learnings.

JSI used an implementation science frame for the evaluation, meaning that the emphasis was on understanding what worked and what did not work, based on synthesizing the perspectives of a myriad of stakeholders and understanding contextual factors influencing perceived successes and challenges. JSI incorporated a "sequential" mixed methods approach to the evaluation, whereby learnings at every phase of the evaluation informed the subsequent phases. The mixed methods approach combines quantitative (e.g., survey results and secondary data analysis) with qualitative data (e.g., site visits and key informant interviews). Multiple sources of similar information served to assess the strength of the findings; i.e., if stakeholders' perspectives are further borne out through quantitative data, the confidence in a finding is greater than if there is a discrepancy between data sources.

An Evaluation Steering Committee (with representatives from GMCB, Blueprint for Health, Medicaid, Agency of Human Services, other state government agencies, and various provider agencies, and a consumer who was involved in multiple VHCIP work streams) and three to four members of the VHCIP leadership group overseeing the evaluation (referred to as VHCIP evaluation management team) provided input on the methods and feedback on deliverables and interim findings throughout the evaluation. Their feedback served to ensure that evaluation activities were conducted as efficiently as possible, and more importantly, this group acted as a sounding board to assess whether interim findings resonated given their various levels of expertise and deep involvement with VHCIP. Bias of any one representative was mitigated through the varied and multidisciplinary perspectives of the combined members of the Evaluation Steering Committee and evaluation management team.

A methods description is provided for each of the major evaluation activities.

Environmental Scan

The environmental scan was the first phase of the evaluation, and it had the following objectives:

- Develop a picture of the health reform landscape and VHCIP activities to inform evaluation methods and provide context to evaluation results;

- Recommend site visit locations that would best inform the three evaluation themes (i.e., care integration, payment reform and financial incentive structures, and use of clinical and economic data to promote value-based care);

- Inform site visit and focus group guides and content of interviews;

- Inform the sampling approach for the provider and care coordinator surveys; and

- Inform survey content.

To conduct the environmental scan, JSI spoke with approximately 30 key stakeholders involved in some aspect of VHCIP implementation, reviewed data and documents specific to VHCIP and complementary initiatives, and examined peer-reviewed and grey literature (e.g., government documents, policy statements, reports) in each of the three theme areas. The VHCIP evaluation management team shared almost 200 documents that were directly relevant to VHCIP activities or health reform in Vermont. These documents were reviewed and prioritized based on relevance to the preliminary evaluation questions, goals of the State-led evaluation, and input from the VHCIP evaluation management team. The need for national context guided information abstraction during the literature review to understand the key characteristics and implications for activities in each technical area.

The environmental scan process led to some refinement of the preliminary evaluation questions (see Appendix) put forth in the request for proposal, a site selection approach for the site visits (see site visit section below), sources for the survey samples of PCPs and care coordinators, and suggestions for learning dissemination venues. Additionally, information gathered through the environmental scan in each of the three theme areas informed the subsequent development of the site visit protocol, key informant interview guides, and focus group guides.

JSI developed a draft Environmental Scan Report, which was reviewed by both the Evaluation Steering Committee and VHCIP evaluation management team. Input from both the Steering Committee and evaluation management team was used to finalize the report[2].

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[2] Vermont Health Care Innovation Project State-Led Evaluation: Environmental Scan. Prepared by John Snow, Inc. May 2016.

Site Visits and Interviews

Based upon the findings of the environmental scan and discussions with the VHCIP evaluation management team, Vermont's health service areas (HSAs), and specifically the Regional Care Collaboratives (RCCs, also referred to as Community Collaboratives, Regional Collaboratives, and Regional Community Care Collaboratives) operating within the HSAs, were prioritized for the initial site visits. This method afforded the value of geographic spread throughout the state, a means of grouping organizations that already work together in communities, and the matching of existing HSA quantitative data (e.g., Blueprint's Community Profiles) to add context to qualitative data obtained during the site visits. Additionally, supporting and expanding the work of the RCCs were important VHCIP efforts. The VHCIP evaluation management team provided contact information for RCC coordinators, and JSI worked with the coordinators to arrange a convenient time for a community site visit, often during a routinely scheduled RCC meeting.

The remaining site visits and key informant interviews were selected based on a host of criteria (put forth in a site selection matrix as part of the Environmental Scan) including: relevance to and knowledge of at least one of the State-led evaluation themes, innovation (e.g., sub-grants) and potential for spread, engagement with VHCIP activities (including state policy makers); geographic and organizational diversity (e.g., hospital, mental health, substance use treatment, primary care, accountable care organization, long-term services and supports). Selecting a diverse group of site visits and interviewees was critical to yield a richer understanding of implementation and the context in which various health care reform efforts operate.

JSI developed an interview guide[3] to facilitate a productive discussion and assure consistent interview approaches across various JSI teams, consisting of probing and follow-up questions focused on understanding the evaluation questions in each of the three theme areas and ideas for learning dissemination. JSI tailored the guide to address the specific nuances and contexts for each interview/site visit.

For the HSA visits, JSI drafted an email for VHCIP staff to introduce JSI and clarify the purpose of the site visit. This was followed up by an additional email from JSI staff within two days. Weekly phone or email communication was conducted thereafter until a pre-site visit meeting was scheduled. A 30-minute pre-site visit meeting was held via phone during which JSI staff shared a draft agenda, clarified the participants who would attend the site visit, identified potential dates and, ensured that senior HSA leadership and management had been given ample opportunities to ask questions.

For all other interviews, JSI contacted staff at the relevant agency to explain the evaluation and ask for their participation in an interview. A minimum of three members of the JSI team attended each of the HSA site visits. For most other interviews, at least two JSI staff were present. There were some

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[3] Vermont Health Care Innovation Project State-Led Evaluation: Site Visit and Interview Guide. Prepared by John Snow, Inc. July 2016.

interviews, late in the interview process, where only one JSI staff member attended. These later interviews were usually conducted to fill in specific gaps in knowledge that were still outstanding after completing the initial, intensive round of site visits and interviews.

A JSI team member was designated as the site visit or interview lead and was responsible for coordinating and developing the schedule, ensuring materials were provided in advance as appropriate, reviewing and providing input on the tailored interview guide, and developing and distributing the pre-site visit/interview field notes. Another team member had primary responsibility for note taking.

Soon after each site visit or interview, JSI team members convened to debrief and discuss the themes and key points related to the evaluation questions. The team lead was responsible for finalizing the field notes from the site visit/interview. The JSI team held nearly weekly meetings, both internally and with the VHCIP evaluation management team, throughout the course of the evaluation. During the site visit/interview phase of the evaluation, these meetings were used to discuss and document findings and themes, which continued to evolve and become more refined over time.

Focus Groups

JSI conducted focus groups to gain consumer insight on their experience with the care coordination aspect of their health care services. To frame this part of the evaluation, JSI drew on the definition of care coordination, as put forth by the Agency for Healthcare Quality and Research: "Care coordination involves deliberately organizing patient care activities and sharing information among all of the participants concerned with a patient's care to achieve safer and more effective care." Focus group questions were structured to explore care coordination as it relates to the following domains:

- Effectiveness in improving access to and coordination with multiple health care and social service providers;

- Patient centeredness, as evidenced by provider communication and consumer engagement;

- Timeliness (obtaining the appropriate care when it is needed); and

- Equity (receiving health care of equal quality to those who may differ in personal characteristics other than their clinical condition or preferences for care).

The priority populations identified for the focus groups were consumers enrolled in care coordination services, with group composition as follows:

- *Individuals dually eligible for Medicaid and Medicare,* including individuals with disabilities and individuals 65 and over;

- *Adults and older adults enrolled in care coordination*; and

- *Families receiving care coordination through Vermont's Integrating Family Services (IFS) program*, which funds child and family services through a unique payment model.

Using a list provided by the VHCIP evaluation management team, JSI staff approached organizations providing care coordination, case management and/or advocacy services to the priority populations to assess their interest in assisting in this phase of the evaluation. Only one organization declined the opportunity, citing the extreme vulnerability of the population they serve. The remaining five organizations worked closely with JSI to review and tailor the focus group facilitator's guide[4] to the specific population ensuring that the questions reflected the scope of services consumers in their area received. Organization staff also assisted in tailoring the recruitment letter. Recruitment letters included a description of the focus group, its purpose, stipend amount ($50 cash), and staff contact information should interested individuals have questions or concerns. Involved organizations disseminated the letter directly to eligible consumers and assisted in reminding consumers of the date and time of the focus group.

Between fall 2016 and spring 2017, five focus groups were conducted with individuals who received care coordination services in geographically distinct areas of the state as presented in Table 1. Focus groups lasted approximately 90 minutes with breakfast or lunch provided and distribution of the $50 cash stipend per participant. Two JSI staff attended each group: the focus group facilitator and the note taker. A care coordinator/case manager or advocate from the coordinating organization was present at all but one of the focus groups. The presence of this individual helped to reassure participants that it was a safe environment. These staff also assisted in answering questions raised by clients during the focus group discussion about services and provided examples to consumers when there was confusion about a question being posed to them.

Following the focus group, the facilitator and note taker conducted a debrief of the group. The moderator finalized the notes and documented themes and unique feedback from each of the groups. JSI developed a focus group report[5], which was a synthesis of the findings across the groups.

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[4] Vermont Health Care Innovation Project State-Led Evaluation: Focus Group Report; Focus Group Facilitator's Guide (pages 10-12). Prepared by John Snow, Inc. July 2016.

[5] Vermont SIM State-Led Evaluation: Focus Group Report. Vermont Health Care Innovation Project. Prepared by John Snow, Inc. June 2017.

Table 1: **Focus Group Composition**

Region	Population	No. of Participants	Service Delivery Model
Addison	Families who receive care coordination via IFS	12	Case Management
Caledonia	People with chronic conditions	10	Care Coordination
Chittenden	Dually eligible for Medicaid and Medicare	10	Residential Care Coordination
Rutland	Individuals with disabilities	9	Advocacy
Windsor	Individuals 60 years of age and older	10	Case Management

Surveys

Two separate survey studies were conducted – one with care coordinators (care coordinator survey) and one with PCPs, which included medical doctors (MDs), doctors of osteopathic medicine (DOs), physician assistants (PAs), and nurse practitioners (NPs) (provider survey). Common questions were used where possible to enable comparison across the two groups.

Survey Content

JSI organized the surveys around the three theme areas of the State-led evaluation. Survey development was also informed by other health reform surveys and findings from focus groups and site visits conducted by JSI. The VHCIP evaluation management team and the Evaluation Steering Committee provided feedback on the draft surveys. A pretest was conducted on each survey in which a group of care coordinators and PCPs filled out the survey and gave feedback to the survey development team. The care coordinator survey[6] was programmed in Survey Gizmo and was conducted entirely as an online

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[6] Vermont Health Care Innovation Project: 2017 Care Coordinator Survey. Green Mountain Care Board. Prepared by John Snow, Inc.

survey. The provider survey[7] was formatted in both Teleform (a scanning software program) and in Survey Gizmo to allow respondents to choose print or electronic formats to complete the survey.

Sampling

The PCP sample was obtained through an electronic file of all physicians, PAs and NPs provided by the Vermont Department of Health's Division of Health Surveillance. PCPs were selected from those who indicated that their main specialty was one of several categories associated with primary care (internal medicine, general practice, pediatrics, and obstetrician/gynecologists). Upon applying these selection criteria, the database yielded 629 physicians and 378 PAs and NPs. Of the 629 physicians invited to participate, 30 were ineligible or had incorrect addresses listed, leaving an eligible sample of 599 physicians. Of the 378 PAs and NPs, 31 were ineligible or had incorrect addresses, leaving an eligible sample of 347.

The care coordinator sample was obtained from a list provided by the VHCIP evaluation management team of participants in the Integrated Communities Care Management Learning Collaborative. The list included 509 care coordinators, and all were included as potential respondents. Contact information on this list was limited to email addresses, limiting dissemination to an online survey.

Data Collection Procedures and Response Rates

PCPs were sent a hard copy of the survey with a pre-paid mailing envelope. The mailing included a cover letter explaining the purposes of the survey. The letter also included a universal resource locator (URL) link to the online survey to give PCPs the option of filling it out by hand and mailing it in or filling it out electronically. Three reminder letters were mailed at two-week intervals to those who had not responded.

The physician response rate was 39% with 236 of 599 eligible responding. The NP and PA response rate was 31%, with 108 of 347 eligible responding. The aggregate response rate of both groups of PCPs was 36% (344 responses of 946 total). Of total respondents, 33% filled the survey out online, and 67% filled the survey out on paper.

Care coordinators were sent an email inviting their participation and explaining the purpose of the survey. The email contained an embedded link to the URL for the online version of the survey. Up to three e-mail reminders were sent at one-week intervals to non-responders. Of the 509 care coordinators invited to participate, 160 completed the survey for a response rate of 31%.

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[7] Vermont Health Care Innovation Project: 2017 Provider Survey. Green Mountain Care Board. Prepared by John Snow, Inc.

A detailed description of the methodology and findings from the survey are included in the survey report[8] submitted to the GMCB.

Review and Use of Secondary Data

JSI reviewed and used several secondary data sources throughout the evaluation. These secondary sources informed the site visit and key informant selection process, provided context to the evaluation team as part of the preparation for site visits and key informant interviews, and enabled tracking of key VHCIP activities. Community profile data through the Blueprint for Health was especially helpful in identifying RCCs to visit and providing contextual information to prepare the site visit team. Publicly available Shared Savings Plan Program data - including quality measures such as prevention, chronic disease, evidence-based treatment measures, all cause readmissions, and ambulatory sensitive admissions - informed the evaluation findings. The wealth of VHCIP information available through the website, RTI evaluation reports, and the work conducted by GMCB's sustainability contractor were among other sources that were reviewed and informed the State-led evaluation.

JSI also read and analyzed the quarterly and final reports of the 14 sub-grants awarded through VHCIP. These sub-grants spanned a range of activities including: development of strategies to support adults with developmental disabilities, surgical services and lab optimization collaboratives, care coordination and integration models, and ACO infrastructure development. For most of these sub-grants, the organizations leading them were included as site visit or key informant interview participants. Additionally, JSI conducted an analysis of the sub-grants after submission of the final reports assessing reach of their activities, evidence of effectiveness, and potential for scalability/sustainability that was shared with the VHCIP evaluation management team and also informed the overall evaluation findings.

Engagement with Other Stakeholders

The JSI evaluation team also engaged with multiple VHCIP stakeholders as follows:

- Attended monthly RTI (federal evaluator) conference calls;
- Attended monthly CMS conference calls and one CMS site visit to the state;
- Collaborated with the contractor hired to conduct the Sustainability Plan, including sharing our results to-date with them and reviewing their final report;
- Arranged weekly meetings with the VHCIP evaluation management team; and
- Attended and presented at routine (approximately monthly) meetings of the Evaluation Steering Committee.

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[8] Vermont SIM State-Led Evaluation: Survey Report. Vermont Health Care Innovation Project. Prepared by John Snow, Inc. June 2017.

Findings

This section describes the findings in each of the three theme areas of the evaluation (care integration, payment reform and financial incentive structures, and use of clinical and economic data to promote value-based care). Each theme area includes a description of VHCIP objectives and activities undertaken, an analysis of factors (both positive and negative) that impacted the implementation of these activities, and a discussion regarding sustainability or moving forward in each of these areas.

Care Integration

VHCIP Objectives and Primary Activities

JSI's focus in this section of the report is on the implications for core VHCIP care integration activities such as the Learning Collaborative, other trainings, RCCs and sub-grants. Building on existing infrastructure, VHCIP served as a catalyst for care integration activities across the state. A defining feature of VHCIP was its integration and coordination with other state health reform efforts. Rather than creating new or parallel systems, the majority of VHCIP activities built on and enabled existing programs.

VHCIP funds supported care integration at multiple levels of the human/social services and health care system, ranging from testing and supporting specific care management models to enabling regional and statewide infrastructure development and to facilitating dialogue across disparate geographies and stakeholders. The multi-pronged approach created the opportunity to see both shorter-term health outcome effects and longer-term systems-level transformation.

There are numerous programs in Vermont offering care management services and care coordination, and this can pose a challenge for the system as a whole. The VHCIP Care Models and Care Management Work Group, which later became the Practice Transformation Work Group, identified the following recommendations to address gaps and duplications of services[9]:

- Increased process standardization, including increased use of common care management tools;

- Creation of an organizational mechanism to coordinate the "family of care coordinators;"

- Increased development and use of information technology resources to coordinate care management activities;

- Increased use of a shared data set to coordinate care and measure effectiveness; and

- Increased opportunities for care managers to build their skills through initiatives to share best practices and learn new skills.

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[9] Bailit Health Purchasing, LLC. Care Management in Vermont: Gaps and Duplication, Prepared for the Vermont Care Models and Care Management Work Group. 2015.

Taking into account these recommendations, key VHCIP care integration activities included supporting regional and statewide collaborative structures, such as the Regional Care Collaboratives, Integrated Communities Care Management Learning Collaborative, and the Accountable Communities for Health Peer Learning Lab. VHCIP also provided sub-grants focused on care integration and coordination and supported expansion of models of care implemented by Vermont's Blueprint for Health, including Community Health Teams (CHTs), Support and Services at Home (SASH), and the Hub and Spoke model which supports medication-assisted treatment for individuals with opioid dependence. Additionally, under the payment models work stream, VHCIP facilitated discussions of potential alternative payment models to support practice transformation and care integration efforts for services through an effort known as the Medicaid Pathway.

Convening and collaborative structures

VHCIP invested in both *Regional Care Collaboratives (RCCs)* and statewide initiatives such as the *Integrated Communities Care Management Learning Collaborative (ICCMLC)* and the complementary *Core Competency Trainings* for front-line care managers.

*Regional Care Collaboratives*

Regional collaborations were developed in partnership between Vermont's Blueprint for Health Program (the Blueprint) and the three Accountable Care Organizations (ACOs). The RCCs enable coordination between major local health and human service provider groups, including hospitals, federally qualified health centers (FQHCs), Designated Agencies (DAs), Home Health or Visiting Nurse Associations (VNAs), Area Agencies on Aging, Designated Regional Housing Organizations and other social service organizations, and each ACO active in the HSA. The RCCs also support data collection, analysis, and reporting and support administrative capacity for collaboration. Care management stakeholders identified these RCCs as key players in addressing potential gaps and duplication in care management services. VHCIP enabled these structures through sub-grant and contract funding to the ACOs, which supported ACO staff time and other administrative costs. These collaborations served as the foundation for *Accountable Communities for Health (ACH) Peer Learning Lab* and deepened community-level integration of care.

Integrated Communities Care Management Learning Collaborative and Core Competency Trainings

The *Integrated Communities Care Management Learning Collaborative (ICCMLC)* was a statewide initiative to test interventions to address gaps and duplications in care management, facilitated by the use of common tools and methods across 11 participating HSAs. The ICCMLC developed a common framework for care management (see Figure 1 below) that was adopted in participating communities. The *Core Competency Trainings* initiative was developed through the ICCMLC and acted as an extension of the ICCMLC, providing training on specific skills for care managers on implementing the processes and tools developed through the ICCMLC (e.g., how to conduct a root cause analysis) as well as core competencies for disability awareness.

Figure 1: Key Interventions in Vermont's Integrated Communities Care Management Learning Collaborative
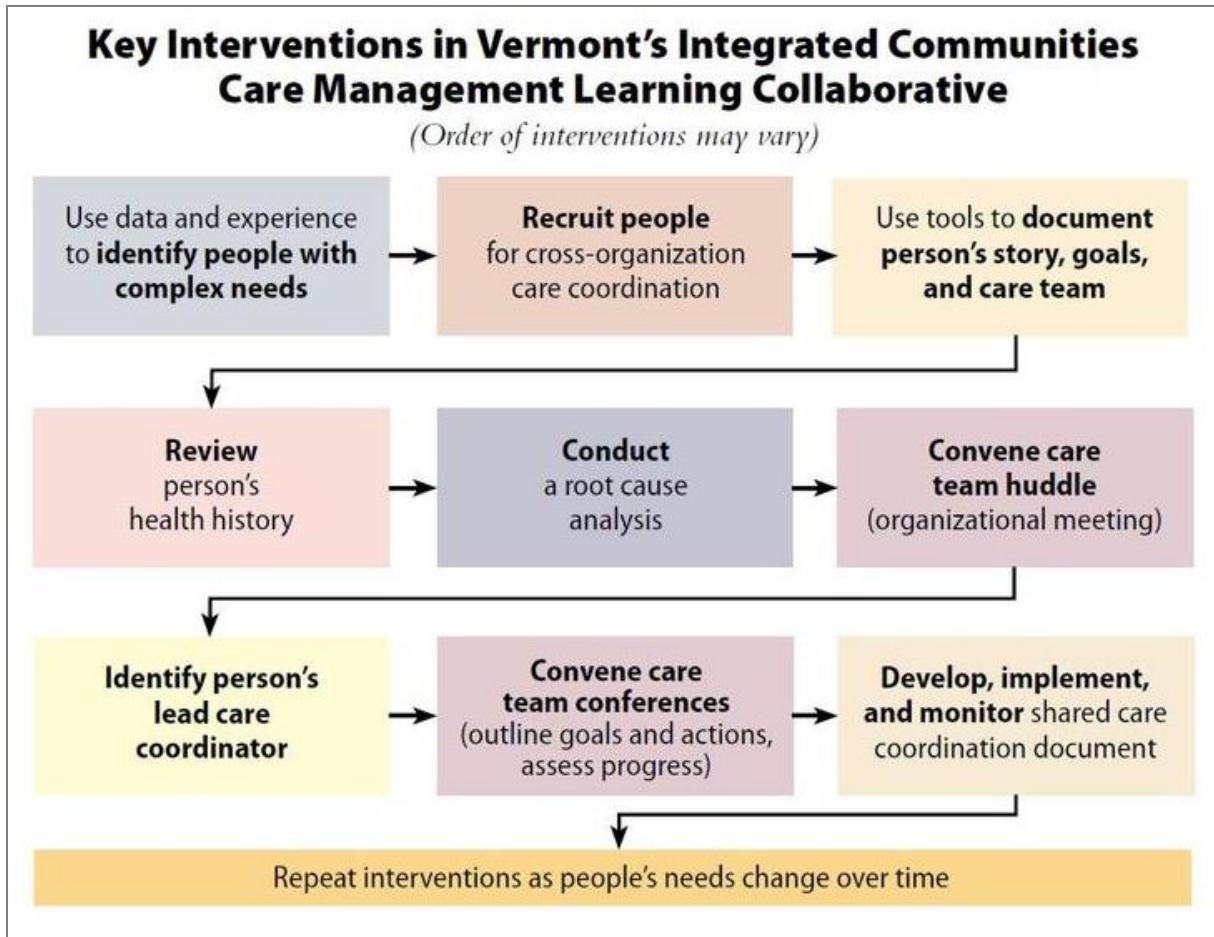
Accountable Communities for Health Peer Learning Lab

The *Accountable Communities for Health Peer Learning Lab* brought together teams from 10 RCCs across Vermont to develop innovative approaches to achieving population health. Primary activities included three in-person gatherings, coaching and support for local ACH facilitators in each community, and six webinars. The goals of these activities were to: 1) increase participating ACH communities' understanding of the nine core elements of an ACH (mission, multi-sector partnership, integrator organization, governance, data and indicators, strategy and implementation, community member engagement, communications, and sustainable financing); 2) increase participating ACH communities' readiness to implement the nine core elements; 3) increase participating ACH communities' understanding of community-based prevention and population health improvement strategies and support communities in implementing these strategies; 4) increase participating ACH communities'

capacity to navigate complex challenges and co-create solutions with their peers into the future; and 5) identify recommendations on how to support ACHs across Vermont[10].

Specific models of care coordination and integration

Vermont has a rich ecosystem of both medical and non-medical providers who are increasingly working together to provide better quality care. A key player in this arena has been the Blueprint, which implements practice models that support improved primary care through patient-centered medical homes (PCMHs), incorporating multi-disciplinary care providers to coordinate access to both medical and social services into CHTs, access to substance use treatment (Hub and Spoke), and home-based support and services for seniors and individuals with special needs who choose to live independently at home (SASH). In addition to supporting expansion of the foundation developed through Blueprint models, VHCIP funded targeted sub-grants to test and expand innovative models and to support care management and worked in collaboration with IFS to develop payment models that enable integration of social services and medical care.

Blueprint for Health practice transformation and care management models

Building on primary care transformation through PCMH incentives, the Blueprint leveraged funds from Medicare, Medicaid, and commercial payers to support implementation of CHTs, SASH, and Hub and Spoke across the state through a network of providers including Practice Facilitators (trained in quality improvement and change management), CHT leaders, and Project Managers (who work with PCMHs, CHTs, and local health and human service leaders). Blueprint's emphasis is on implementing programs that are both evidence-based and locally responsive. While these models pre-date VHCIP and have not been a central VHCIP investment, they have been an important foundation and enabler.

Care coordination and integration sub-grants

Four of the VHCIP sub-grants focused on care coordination and integration and each are described below.

Transitional Care Management at Southwestern Vermont Health Care and Medical Center (SVMC): SVMC expanded an existing program to improve outpatient care through a transitional care management (TCM) model. In the previous model, inpatient clinical nurses partnered with PCPs and provided patients with care navigation, education, mediation management, and symptom identification. This program was successful in reducing hospital admissions and emergency department (ED) visits. Three enhancements were made through the VHCIP grant:

1. A fourth transitional care nurse (TCN) was hired. The TCNs identified a gap in care causing patients with mental health and substance use treatment issues to make frequent visits to the ED.

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[10] Public Health Institute. Vermont Accountable Communities for Health Peer Learning Lab Final Report. March 2017.

2. A Community Care Team was also established and a Health Promotion Advocate (HPA) was stationed in the ED to provide support 40 hours a week. The team included representatives from the EDs, counseling services, Medicaid case managers, workforce development, soup kitchens, social workers, and others.

3. The team identified a high rate of readmissions from skilled nursing facilities (SNFs), and a program was created to educate SNFs in identifying changing patient needs and providing appropriate early intervention - Interventions to Reduce Acute Care Transfers (INTERACT). An education coordinator was hired and stationed at the SNF with the highest readmission rates.

White River Family Practice (WRFP) Chronic Disease Management: WRFP has long been moving in the direction of population health. The practice provides patient-centered care and leveraged this strong foundation to implement an innovative VHCIP-funded program. WRFP's grant targeted "at-risk" patients identified through enhanced self-confidence screening and population health analytic software and surveillance. At-risk patients were eligible for care coordination and mental health counseling, and all providers and staff were trained in motivational interviewing. The goals of this program were: 1) to reduce non-emergent ED visits and hospital readmissions; 2) to improve patient experience and health confidence; 3) to develop team-based care for chronic disease management; and 4) to employ software to improve population health management.

Dual Eligible Project in Caledonia and Essex County: This sub-grant was focused on the Medicare/Medicaid dually eligible population. The Caledonia/Essex HSA leadership team oversees both this project and the RCC. The primary sub-grant activities included:

1. Employing a Health Coach to work with clients to improve their chronic disease self-management skills, conduct health assessments, reinforce provider-initiated treatment plans, provide hands-on assistance in support of chronic disease self-management plans, provide cooking lessons, and teach stress management and coping techniques.

2. Employing a CHT Coordinator to serve as overall project coordinator and work with the Health Coach to identify and assess clients.

3. Developing a data-sharing agreement with the state in order to compare past and current expenditures of dually eligible persons in the served area. Data will be used to identify at-risk individuals and request referrals from PCPs and CHT members.

Supportive Care Pilot through the Rutland VNA: The congestive heart failure (CHF) and chronic obstructive pulmonary disease (COPD) collaborative of Rutland worked in partnership on this pilot program to bridge the gap between inpatient palliative care and hospice and reduce hospitalizations for patients with either condition. Funding enabled the pilot program to assist patients and their caregivers (in their homes) to clearly identify their goals and incorporate these goals into suitable treatment plans by collaborating with their PCPs earlier in the disease trajectory.

Health data infrastructure to support care integration activities

Data sharing across partners is a common challenge to effective care coordination. Two tools were developed and disseminated under VHCIP to support better communication: the Blueprint Clinical Registry and the Patient Ping event notification system. The Blueprint Clinical Registry was developed prior to VHCIP in 2009, and VHCIP resources were used to enhance and continue its use. Key components of the Blueprint Clinical Registry include a data entry portal for the Blueprint CHTs, self-management support programs, and tobacco cessation programs. It also has standard data collection that interfaces with the state health information exchange. Patient Ping is an electronic notification system to alert providers when their patients have been admitted to or discharged from the hospital, visited the emergency department, or transferred between care settings.

Payment reform support of care integration activities

The development and implementation of Medicaid and Commercial ACO Shared Savings Programs (SSPs) was VHCIP's central payment reform effort. ACOs participating in the SSPs could achieve shared savings by meeting specific cost and quality targets; this was intended to give providers an incentive to provide high quality, efficient care. These savings could then be reinvested. The SSPs were not prescriptive in how these savings should be distributed across the ACO network, but any savings would likely be used to cover the cost of programs and any losses before sharing with clinical providers. Clinical providers would then have the option of distributing savings more widely in the community. This type of financial impact on the larger community appeared to be limited, in part due to the fact that savings themselves were limited.

The Medicaid Pathway discussions explored strategies for integrating Medicaid Specialized Services and Providers (mental health, substance use, developmental disabilities, and long-term services and supports) into an integrated payment methodology, given that these providers and services are not subject to the proposed financial capitations of the All-Payer ACO Model where the primary focus is hospital and physician services. These Medicaid payments were not altered during the VHCIP grant period to support care coordination activities; however, Medicaid Pathway discussions and associated health reform activities will have implications for care coordination in the future. This activity is discussed in more detail in the Payment Reform and Financial Incentive Structures section of this report.

IFS helped create the framework and impetus for the Medicaid Pathway discussions. While IFS was not funded by VHCIP, the process and lessons learned have implications for

> *The Vermont All-Payer ACO Model is an agreement between the State and the federal government on a sustainable rate of growth for health care spending in the state. It includes strict quality and performance measurement and is intentionally aligned with Vermont's Global Commitment for Health 1115 waiver renewal. It builds on the reforms and infrastructure developed and piloted under VHCIP and will be the next big step forward in Vermont's health system transformation. Through the legal authority of the GMCB and facilitated by an All-Payer ACO Model Agreement with CMMI, the State can enable the alignment of commercial payers, Medicaid, and Medicare in an Advanced Alternative Payment Model.*
>
> *http://healthcareinnovation.vermont.gov/sites/vhcip/files/documents/Final%20Vermont%20SIM%20Sustainability%20Plan%206.30.17.pdf#page=21*

funding care integration in the future. IFS focuses on children's mental health services paid for by Medicaid and supports local efforts to collaborate across stakeholders to best meet the needs of their communities. Central to IFS has been the creation of a new integrated care model and payment structure that provides a per member per month (PMPM) or "*case rate*" payment for traditionally fee-for-service payments for children's mental health services and can be used much more flexibly. The case rate system converts the majority of traditional Medicaid payments into a single monthly payment for participating providers[11]. This case rate model is a marked shift toward transformative blended funding that has significant potential to address fragmentation of services and has informed the Medicaid Pathways component of VHCIP (aimed at informing the next generation of Medicaid payment within the context of a multi-payer model).

Factors Influencing Implementation

There was considerable variation in the demonstrated success of care coordination and care integration activities. Evidence of effectiveness ranged from a reported reduction in inpatient and ED visit utilization (in the case of several sub-grants), to improved trust and relationships (RCCs), and to capacity building across providers (Learning Collaborative and Core Competency Trainings). Programs, such as the Accountable Communities for Health Peer Learning Lab, were too nascent to fully evaluate, and facilitating factors - including health data and payment reform - showed mixed results. Where programs were challenged, it was often due to lack of a strong foundation, or need for additional time and investment to achieve goals.

This section examines the performance of each major VHCIP investment into care coordination and care integration, based on data collection through the environmental scan, literature review, site visits, focus groups, provider and care coordinator surveys, and final sub-grant reports compiled by recipients.

Convening and collaborative structures

Regional Care Collaboratives

Central to the development and success of the RCCs vis-à-vis care coordination has been the history of partners coming together to share information and understand the resources within their region. This relationship-building is reported as a key building block in RCC and care coordination maturation. Learning Collaborative and Core Competency Trainings leveraged these existing relationships and brought structure to the way organizations and individuals related around care coordination. In addition to having a past history and formal relationships, some of the strongest RCCs had two important ingredients: 1) a strong formal or informal leader, and 2) a shared group culture. Contributing to the success of the RCCs was the forum to discuss how to begin to address the social determinants of health. One organization noted that their success was starting with the data but then diving into the qualitative

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[11] Clary, Amy and Trish Riley. Braiding & Blending Funding Streams to Meet the Health-Related Social Needs of Low-Income Persons: Considerations for State Health Policymakers. The National Academy for State Health Policy. (2016).

information that explained a patient's context. This process of case analysis allowed them to think about high value, holistic care.

Several RCC participants involved in site visits suggested expanding care coordination services to a lower acuity population. If a lower acuity population was the focus, there could be more of an emphasis on prevention and early intervention. Understanding when it is appropriate to share information about a patient/client across the care team and what information can be shared were challenges raised in some communities. Concerns regarding the Health Insurance Portability and Accountability Act (HIPAA) and the privacy of individuals remain a central concern to be navigated at the community level.

Participation in the RCCs by PCPs was assessed through the provider survey, and 32% of the PCP respondents reported being involved with personally or having representation in the RCCs. Among those who had participated, 73% said it had a positive impact in improving quality of care coordination services. From interviews, participants said that when they were able to integrate diverse community perspectives and really understand complex patients from a community perspective, they were able to better meet patient needs.

Integrated Communities Care Management Learning Collaborative and Core Competency Trainings

The ICCMLC was seen as complementary to the RCCs for further building relationships at the community level and developing a shared culture for addressing community health needs. The ICCMLC promoted an Integrated Care Management (ICM) model[12] to support person-directed care and joint care planning with the goal of delivering non-episodic care. The ICM model also emphasizes a plan to address the social determinants of health (e.g.: safe housing, transportation, economic stability) for clients with complex social needs. The Learning Collaborative sessions helped bring a common structure and discussion of effective communication channels, such as identifying a "lead care coordinator." Individuals participating noted that these discussions provided clarifications for effective cross-agency coordination. One person noted that this was happening informally, but the common language to discuss it made sure that it was consistently put in place.

The ICCMLC also made specific tools available to participating providers. One example is the "Camden Cards," adapted from the Camden Coalition of Health Care Providers in Camden, N.J., which helped lead care coordinators work with patients to discuss areas of client need, prioritize coordination of care, and engage patients in care management. From the state evaluation of the Learning Collaborative, participating providers found that through using the Camden Cards, patients were able to easily sort out their treatment goals and identify next steps. Additionally, patients reported that "Eco Maps," (another tool promoted through the Learning Collaborative) gave them a venue to communicate supports that they had which may otherwise not have been discussed without the tool. Overall, participating providers noted that engaging a person in his/her own care is important and reduces barriers to receiving care[12].

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[12] [Integrated Communities Care Management Learning Collaborative Evaluation Final Report](). December 23, 2016.

The discussion of the shared care plan provided opportunity to discuss what information was included, how it was shared between parties, and the process for getting permission from the patient to share data. This was especially important for organizations not used to sharing patient information with others, such as Medicaid Specialized Services and Providers. These conversations helped build consensus on what information is appropriate to share. The Core Competency Trainings were considered a valued resource to support the care management workforce development given limited resources for organizations and staff turnover.

The comments by participants in the Learning Collaborative and Core Competency Trainings reinforced the value of tools to support patients in prioritizing their needs and supporting them to address the

social determinants affecting their health. Care coordinators, case managers and advocates do their best to mitigate social determinants that negatively affect health by increasing provider awareness of social determinants via provider education, arranging for provider home visits, and working with consumers to increase self-advocacy skills. Care coordinators are also aware of the community supports and services to address social determinants that negatively affect

> *Focus group participants emphasized the value of care coordinators in effectively assessing and identifying needs that the participants themselves were not aware of and providing support customized to their needs.*

health and work to facilitate access to these resources. The value of this approach was further endorsed in focus groups (see box), held with patients involved with care management.

Within the care coordinator survey, respondents provided their perception of the impact of the care coordination activities including the Learning Collaborative and Core Competency Trainings (Table 2). Survey respondents identified the CHTs and Learning Collaborative as having the greatest impact on improving the quality of care coordination activities, with 90% of respondents saying the CHT had a positive impact, and 70% of respondents saying the Learning Collaborative had a positive impact.

Accountable Communities for Health Peer Learning Lab

ACH activities were nascent during the VHCIP grant period and focused primarily on relationship building and education. Most care coordinators were either not familiar with the program or had limited knowledge as shown in Table 2. However, at least one RCC visited reported that ACH activities were instrumental in engaging hospital leadership and garnering their support for care integration activities. An ACH survey demonstrated that a third of the ACHs were still identifying leadership, and half reported that they were still learning about the ACH, with only a quarter reporting that they were "making progress toward achieving [their] goals"[13]. The same survey also showed that the educational and collaborative process was making progress, and the large majority (82% or more) of participants felt that they were part of a peer learning community and were better able to collaborate with both members of their own ACH and with other ACH members. In fact, more than half of respondents felt that they improved their understanding of each of the core ACH elements, with the exception of sustainable

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[13] Public Health Institute. Vermont Accountable Communities for Health Peer Learning Lab Final Report. March 2017.

financing. Collaborative members showed a high level of trust and coordination, and the political knowledge and savvy needed to advocate to clinicians and design activities to make them attractive to clinical partners[13].

Table 2: Care coordinators' perception of the impact of activities supporting care coordination on improving the quality of care coordination.

	I am unaware or not involved in activity	Significant negative impact	Some negative impact	No impact	Some positive impact	Significant positive impact
(N=159)						
Regional Care Collaboratives	25%	0%	1%	14%	45%	15%
ICCMLC	19%	1%	1%	9%	44%	26%
Core Competency Trainings	23%	1%	1%	14%	43%	18%
Community Health Teams	2%	1%	1%	6%	37%	53%
Accountable Communities for Health Peer Learning Lab	64%	1%	0%	11%	18%	6%

Participation in Infrastructure Development Activities

Across each of these VHCIP infrastructure activities- the Learning Collaborative, Core Competency Trainings, and the Accountable Communities for Health Peer Learning Lab- VHCIP was successful in engaging providers in a wide range of settings. Results from the provider survey indicated relatively equal participation in each of these activities when respondents were grouped by organizational type (hospital affiliated, FQHC, independent, and other). While not statistically significant, the care coordinator survey also indicated that respondents who were highly engaged in VHCIP activities were less likely to report that their organization was performing "not very well" or "poorly" on internal care coordination (Table 3). PCPs highly engaged in VHCIP activities were also less likely to report difficulty in coordination of transitions of care (Table 4).

Table 3: How well is the practice/organization where you spend the majority of your time doing regarding care coordination? (*Survey respondents: care coordinators.*)

Level of Engagement in VHCIP activities	Percent by Column			
	Low	**Medium**	**High**	**Total respondents**
Very well	29%	32%	46%	67
Well in some ways, but not well in others	65%	64%	53%	90
Not very well	6%	4%	0%	2
Poorly	0%	0%	0%	0
Don't know	0%	0%	1%	1

Table 4: How would you rate the difficulty you have in assistance with transitions of care between one setting and another? (*Survey respondents: primary care providers.*)

Level of Engagement in VHCIP activities	Percent by Column			
	Low	**Medium**	**High**	**Total respondents**
Very difficult	6%	3%	0%	15
Somewhat difficult	15%	19%	25%	59
Average	31%	31%	23%	101
Somewhat easy	22%	18%	29%	75
Very easy	10%	14%	19%	41
Don't know or Not applicable	16%	15%	4%	48

Blueprint for Health Practice Transformation and Care Management Models

Primary care providers (PCPs) perceived the Blueprint and Hub and Spoke models to have a positive impact on quality of services. Half (50%) of PCP survey respondents indicated that they didn't know whether the ACO Shared Saving Programs had a positive impact; of those who did know, most reported that the SSPs had "no change" relative to impact on quality of services (Figure 2).

While the majority of care coordinator survey respondents noted that it was "somewhat" or "very easy" to coordinate care within their agency (70%), with SASH (62%), and with Blueprint coordinators (53%); only 36% indicated that it was "somewhat" or "very easy" to obtain assistance with transitions of care between one organization and another, and 37% answering similarly for coordinating with providers

outside of their practice setting (Figure 3). This highlights the need for continued implementation and scaling of effective care coordination and care integration models.

Figure 2: Primary care provider perception of program impact on quality of services.
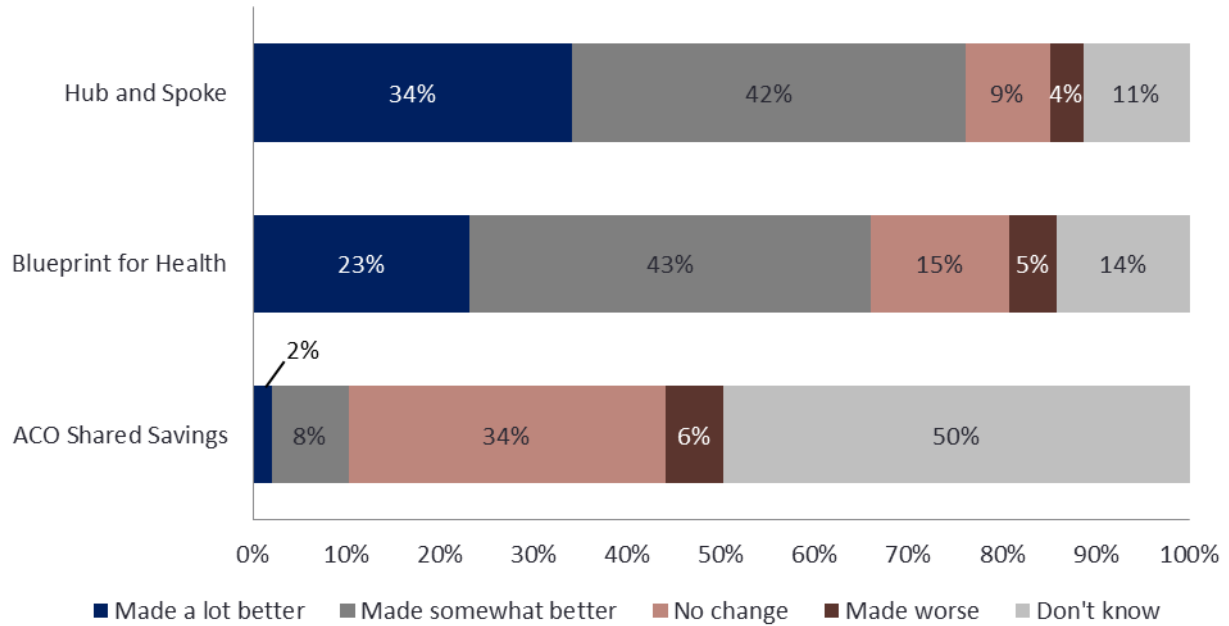
Figure 3: Care coordinators' perception of ease or difficulty of care coordination with various entities.
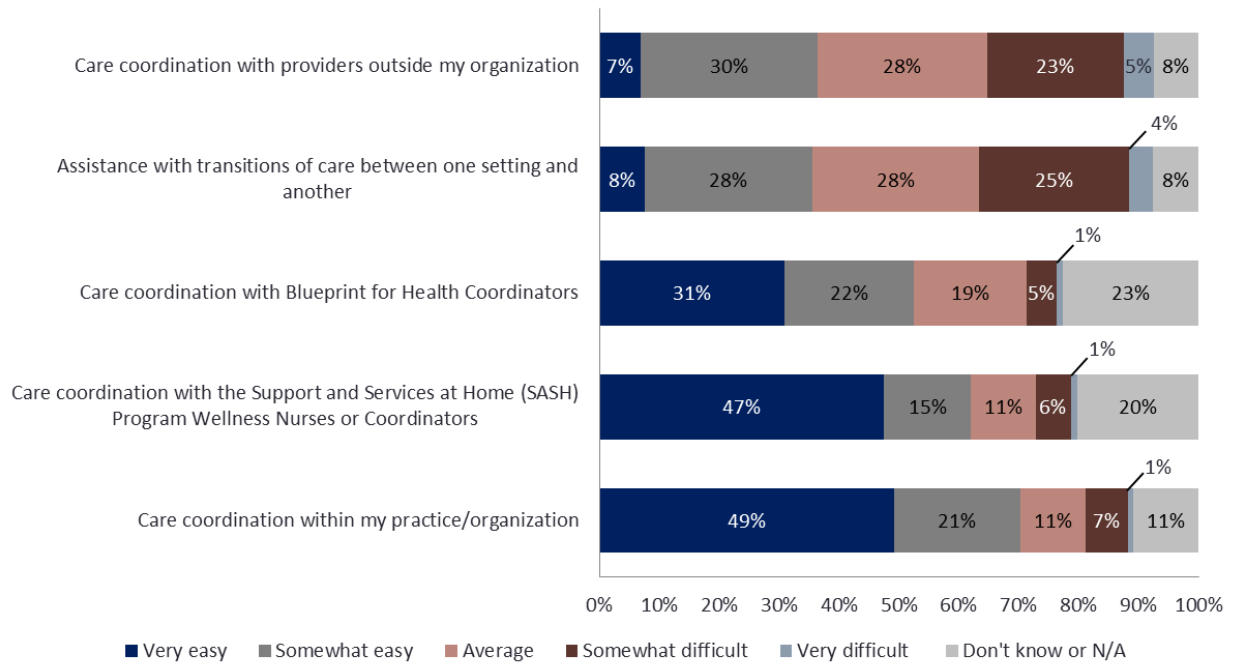
Care Coordination and Integration Sub-grants

Where data were available from sub-grantee reports, some sub-grantees noted success in reducing inpatient admissions and ED visits. The evaluations were limited and largely based on pre- and post-intervention comparisons; however, anecdotal evidence supports this finding. While this likely translated to short-term savings for some, the increased Medicaid cost in the dual eligible program, for example, illustrated the challenge of providing immediate investments into social determinants of health that impacts long-term outcomes beyond the payment period[14].

Sub-grants were most successful where they had strong leadership and were embedded in structures that had the key principles of care integration and team based care including:

- **IT, access to information,** and ability to measure processes and outcomes;
- **Commitment and incentives to delivering integrated care** including formal agreements and procedures;
- **Clinical care model** including clearly defined roles and awareness of expertise across providers;
- **Organizational culture and effective communication** and leadership including common goals, trust, and shared responsibility;
- Access to **educational opportunities;**
- Aligned **financial incentives** that enhance cooperation;
- **Quality improvement and performance measurement** including commitment to quality and a structured approach to analytics; and
- **Patient focus** including patient engagement, patient-centered care and population-based needs.

This was achieved through integration into high performing physician practices, through RCCs with a high level of trust and communication, and through strategic hiring decisions for leadership.

Transitional Care Management at Southwestern Vermont Health Care and Medical Center: The TCM sub-grant was used to expand an existing, successful program through which relationships, systems, and political buy-in had already been developed. Clinical nurses, traveling between hospitals, skilled nursing facilities, physician office practices, and patient homes, were able to identify and fill gaps in resources, communication, education, and support services. The Health Promotion Advocate based in the ED successfully connected patients entering with mental health and substance use disorder issues to both clinical and social services.

The grantee reported success with the Transitional Care Nurse decreasing hospitalizations (~64%) and ED visits (~25%) as well as enabling PCPs to serve larger patient panels. Additionally, SVMC estimated that 40% of the individuals in the program showed significant improvement, including accomplishments such as overcoming their addictions, obtaining a job or stable housing, and reducing ED visits. Finally,

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[14] Dual Eligible Project in Caledonia and Essex County.

the INTERACT model was successful in strengthening relationships with the skilled nursing facilities, which led to a near immediate reduction in hospital readmissions.

White River Family Practice (WRFP) Chronic Disease Management: The sub-grantee reported that the program was successful in reducing hospital encounters (admissions and ED visits) for targeted "at-risk" patients receiving outpatient care management and coordination to less than half the prior frequency. Additionally, WRFP found a statistically significant improvement in the self-reported health confidence of patients in the at-risk cohort. However, the program was not successful in reducing 30-day readmissions. The grantee indicated that this is due to the need for more intensive care coordination around transitions of care.

WRFP has a strong foundation as a Level III PCMH, an award winning electronic health record (EHR) system, and a good working relationship with Dartmouth Hitchcock Medical Center which positioned them well to implement this care management and coordination initiative. These resources enabled them to find a creative solution when they determined that retrospective risk stratification with incomplete claims data would not be effective. They were able to replace this method of identifying at-risk patients with the health confidence assessment that was already being implemented as part of the program.

Challenges facing the program included the fact that the relationship with Vermont providers does not appear as strong, in part due to the physical distance from the RCC and other Vermont providers. As a result, the practice is not able to access all of the care management infrastructure services and supports provided under the Blueprint and VHCIP. Another challenge to note in potentially scaling a program like this one was the fact that the temporary cessation of grant payments created a significant burden on the practice that it could not financially absorb. This led to staff turnover, a gap in service, and distrust from practice leadership that was detrimental to the program. Any effort to scale the care coordination activities should take into account the need for a predictable funding mechanism to support small practices.

Dual Eligible project in Caledonia and Essex County: The Caledonia and South Essex Accountable Health Communities (CAHC) reported achieving the goals of: 1) more efficient use of Medicaid Specialized Services (some evidence from pre and post analysis by the Department of Vermont Health Access (DVHA)) and 2) improved well-being of clients (as demonstrated through case studies). While Medicaid costs were determined to be higher while participating in the program, the reduction in overall health care costs was difficult to quantify without access to Medicare claims data and without a longer study period. However, several investments were made that allowed people to stay in their homes. For example, Northeastern Vermont Regional Hospital (NVRH) installed an emergency monitoring system, modified a bathroom, pumped a septic system, purchased a lift chair, and subsidized rent. While it was not demonstrated to achieve short-term savings, it increased the well-being of patients.

The leadership of this sub-grant was the same as the leadership of the Caledonia and South Essex Accountable Health Community, which was still in its early stages of forming when the grant proposal was submitted. This leadership included executive directors and Chief Executive Officers from the

hospital, FQHC, Home Health and Hospice, Designated Agencies, Designated Regional Housing Organization, and the Council on Aging. CAHC was also part of the first cohort of the Learning Collaborative, and according to the final report: "The two VHCIP projects (sub-grant and Learning Collaborative) were so closely aligned and intertwined, it is impossible to separate the two[15]." In this sub-grant's final report, leadership was identified as key to success, most notably leadership skills and ability to form relationships.

A large challenge identified was limited partner organization resources dramatically limiting the speed of implementation and causing NVRH to seek out new partners (for example working with Habitat for Humanity instead of the Vermont Center for Independent Living to do home renovations). Other challenges included housing waitlists, eligibility for services, and data sharing between partners (both in terms of a waiver to share information and a shared care plan).

Supportive Care Pilot through the Rutland VNA: The collaborative reported overwhelmingly positive feedback from the community and attributed it to strong collaboration between all stakeholders centered on the patient and family goals. However, while there was a strong evaluation plan, the implementation of the evaluation was limited, and it is difficult to assess the effectiveness of the program. Fewer than 24 surveys were collected in total to assess provider satisfaction and patient/family satisfaction. Additionally, the quality of life tool intended for evaluation purposes was not implemented consistently enough to draw conclusions. Challenges were also reflected in the limited number of patients referred and enrolled into the program, potentially due to delays in program implementation, leadership turnover, lack of provider knowledge, and patients' unwillingness to participate.

The Collaborative convened for this project included many facilities and community-based services in Rutland County, including Rutland Area Visiting Nurse Association and Hospice (RAVNAH) and Rutland Regional Medical Center (RRMC). However, the program faced significant challenges including limited effectiveness of the initial program director, poor implementation of the evaluation, lack of internal education regarding the program, and overly restrictive eligibility criteria at the start of the program. It is clear that the initial lack of a champion who was able to effectively market the program and support adoption was the primary factor limiting success.

Health data infrastructure to support care integration activities

There are several ways in which stakeholders discussed using data to enhance care coordination and care management, including: 1) to support effective identification of individuals to prioritize in care management activities, and 2) to exchange information across providers caring for an individual. With regard to identifying individuals to prioritize for care coordination, the existing data sources were noted as adequate to target high need, high risk populations; however, some practices were more sophisticated in data use and desired additional analytic capabilities to leverage data within their EHRs.

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[15] L. Ruggles. VHCIP Sub-Grant Final Report; Caledonia and South Essex Dual Eligibles Project. June 2016.

The area where individuals expressed continued struggle is in information exchange across providers. Providers do not have an electronic system to communicate care coordination efforts, and coordination still occurs primarily by fax and phone. OneCare ACO's shared care plan was not fully implemented during VHCIP, but several persons interviewed identified it as a tool that should help improve the electronic communication for care coordination. Comments by PCPs in the provider survey indicated that strong IT systems with interoperability are still important but not yet a reality (Figures 4 and 5).

Figure 4: Primary care provider use of data systems in support of patient care or quality improvement
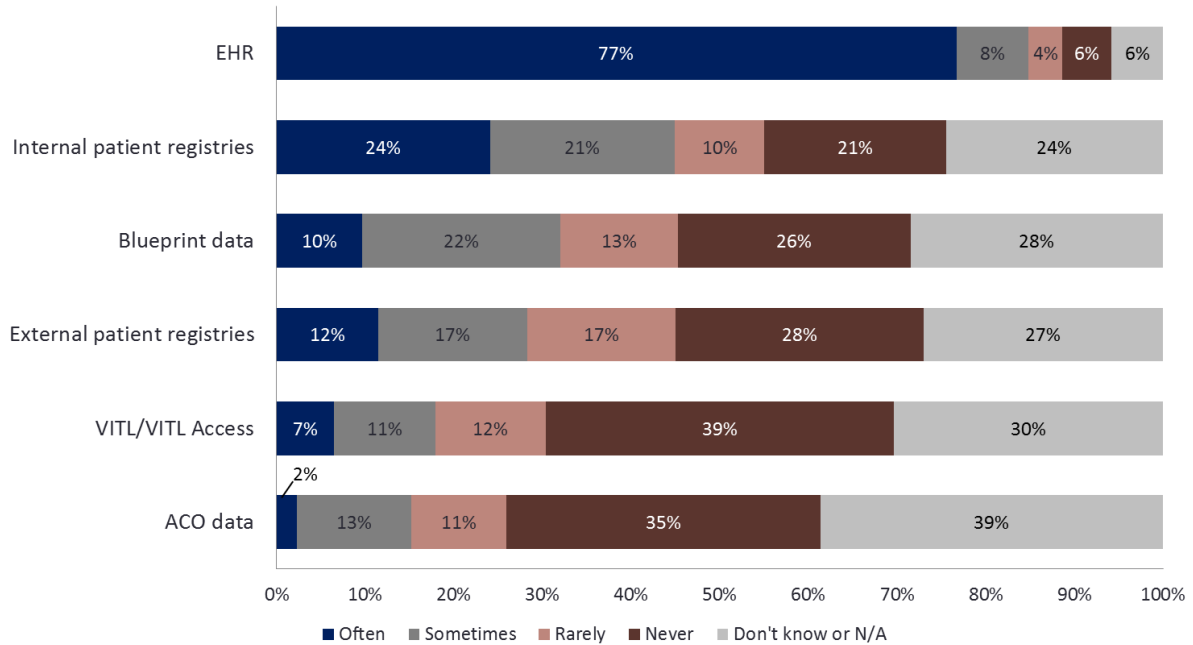
Figure 5: Care coordinator use of data systems in support of patient care or quality improvement

	Often	Sometimes	Rarely	Never	Don't know or N/A
EHR	41%	9%	3%	28%	20%
Internal patient registries	25%	20%	4%	25%	27%
Blueprint data	17%	24%	13%	24%	23%
External patient registries	9%	17%	11%	34%	29%
VITL/VITL Access	2%	8%	13%	47%	30%
ACO data	5%	23%	13%	34%	25%
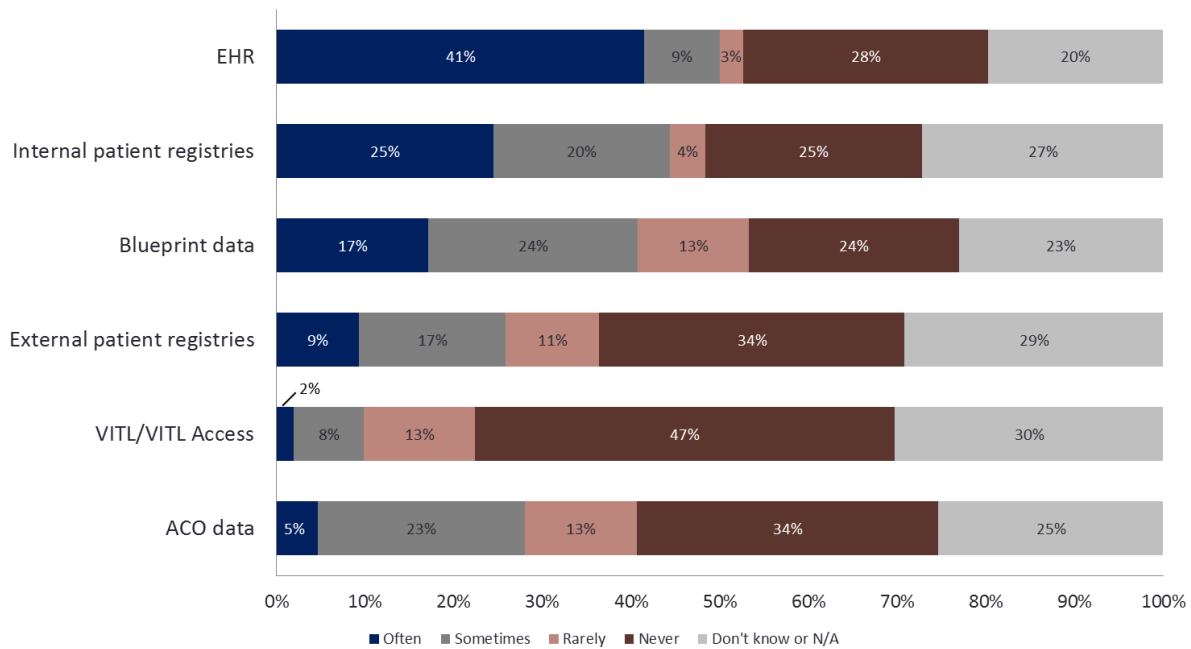
The Patient Ping event notification system (ENS) was used in some regions but not others. Some areas had other notification systems in place or were reluctant to engage with Patient Ping due to cost. In the care coordinator survey, slightly more than half of respondents reported using any ENS, and 78% of those specifically used Patient Ping. Further, 67% of all respondents reported that the ENS has changed the way the practice behaves, indicating a positive impact of the Patient Ping system, with many comments relating to the positive impact of Patient Ping in the open response section of the survey.

Payment reform in support of care integration activities

Shared Savings Programs between ACOs and payers have the potential to incentivize care coordination at the ACO, hospital, FQHC, practice, and community provider levels (including clinical and non-clinical providers) using a broader distribution of shared savings. The limited amount and distribution of shared savings made it challenging to assess this hypothesis. Nonetheless, the alignment of incentives has likely contributed to OneCare's investment in a shared care plan as well as ongoing ACO commitment to and investment in the RCCs. ACOs also reported an increased ability to develop system strategies for care coordination. The impact of the latter is not as clearly demonstrated at this point in time. Many care coordinators reported having limited knowledge of the impact of payment reform on their activities, and a number reported that they will continue to rely on grant and donation-based funding.

Throughout the evaluation, stakeholders expressed the need for additional capacity for mental health and substance use disorder treatment and supportive services including transportation and housing.

While it is too early to say whether the Medicaid Pathway's proposed approach[16] will be impactful on these components of care coordination and integration, the need to integrate relevant payments and services into the State's alternative payment models is central. Several stakeholders expressed concern that the delay in integrating payments is a limiting factor and that more complete integration in the long term is required. Payment reform needs to be mindful of how to sustain and support capacity of these services.

Survey respondents reported a strong preference for care coordination to be part of practice level reimbursement, with care coordination itself managed by a practice. Similarly, survey respondents were more likely to report confidence in their own care coordination programs than in their ability to coordinate services with other providers. This preference for organizational silos, through clinical models as well as reimbursement strategies, is a challenge for care integration.

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[16] Vermont Agency of Human Services. Medicaid Pathway 2016 Report: Report to the Vermont Legislature; December 2016.

Moving Forward

Convening and collaborative structures

Regional Care Collaboratives

The infrastructure and relationships built through the RCCs were viewed as a valuable use of resources and time by participants. In many cases the regional hospital was the lead organizer and facilitator and was interested in continuing that role. However, even hospital facilitators were unsure of long-term sustainability without the commitment of other resources. Individuals involved with RCCs discussed how Accountable Communities for Health would be the natural progression of formalizing the structure and continuing the work of the RCCs. The other challenge to this work is scaling the focus from coordination on a small defined patient group to a larger population in the community.

Integrated Communities Care Management Learning Collaborative and Core Competency Trainings

There are several ways in which the learning established during the Learning Collaborative and Core Competency Trainings will endure. The tools that were shared and developed, such as the "Camden Cards," are available publicly on the VHCIP and Blueprint websites. In addition, the Core Competency Trainings included "train the trainer" sessions and web-based videos to build capacity for the participants to train others on the core concepts and skills gained through the Core Competency series. A central challenge to retaining the knowledge and skills gained is turnover of care coordinator staff. Sustaining the enhanced capacity to provide high quality care coordination will require commitment by organizational leadership to support on-going staff training. This may be helped by an informal coalition among organizations that participated to continue to share resources and to collaborate to offer trainings within their regions. Another option is for the ACO structure to support implementation of the Integrated Care Model (ICM) and continue high-quality training at the local and regional level.

Accountable Communities for Health Peer Learning Lab

The Public Health Institute's final report[11] on the ACH program includes recommendations for the state. The prioritized recommendations include:

- Provide state support for local ACH communities;

- Evaluate ACH efforts in the context of Vermont health reform;

- Support continued peer learning across ACH sites; and

- Align statewide initiatives, specifically, ACOs, Blueprint, and public health initiatives.

It is not clear whether the state will be able to act on these recommendations to provide ongoing support and integration. Further, the ACH evaluation revealed that fewer than half of the participants (43%) "agreed" or "strongly agreed" that they understood sustainable financing. Therefore it is uncertain whether the ACH will be able to continue beyond the life of the VHCIP grant.

Specific models of care integration

Blueprint for Health Practice Transformation and Care Management Models

PCMH, CHTs, and SASH have been paid in part through the Centers for Medicare & Medicaid Services' Multi-Payer Advanced Primary Care Practice (MAPCP) demonstration through which Medicare participated in the model, and which ended in 2016. Medicare funding for activities of this nature was continued in the Vermont All-Payer ACO Model (APM) Agreement signed by the State and CMS in October 2016. Several stakeholders commented on the fact that it is very unusual to have a model where ACOs may not directly manage care management activities like these. While it is anticipated that programs will continue to be funded through the APM, many stakeholders expressed concern that funding will not be adequate to cover all costs and will not be increased to meet full demand for programs.

Care Coordination and Integration Sub-grants

The sub-grants had mixed success achieving sustainability. Across the board, sub-grantees articulated a cost of maintaining these programs that could not be covered by current payment models and a hope that this will change with on-going health reform efforts. However, in spite of this challenge, the Southwestern Vermont Health Care's TCM model will continue as a strategic investment and WRFP will continue specific elements (including health confidence assessment and motivational interviewing) that are readily integrated into the current practice model. Similarly, the Dual Eligible Project will be adapted and focus on patients with COPD. While the Rutland supportive care pilot will end, the collaborative initially convened to implement this pilot will continue to work together. Even with the promise of a multi-payer ACO, organizations that were investing in these programs expressed concern that the payment may not be sufficient. This has important implications for scaling any care coordination model in Vermont.

Transitional Care Management at SVMC: To move toward financial sustainability, SVMC contracted with Polaris to do a financial analysis of the Transitional Care Nursing Program as well as the Community Care Team/Health Promotion Advocate. While Polaris did not estimate a positive return, it was determined that it was the right thing to do for patients and the program was included in the 2017 SVMC hospital budget submission to the Green Mountain Care Board. The INTERACT Program was funded for one year for implementation into area nursing homes, after which INTERACT was brought on site to train super users for each nursing home to sustain this program.

White River Family Practice Chronic Disease Management: Several elements will be sustained including patient-reported health confidence assessment and integration into care and practice, as well as continuing motivational interviewing training. While it is not clear that a decision was made at the time of the report, it appears that the practice is unlikely to be able to financially sustain a care coordinator or part-time mental health provider due to lack of reimbursement.

Dual Eligible Project in Caledonia and Essex County: Many of the tools and processes learned from this project have been integrated into care coordination. To address the challenge of prioritizing across

dramatically different needs, the team decided to focus on patients with COPD, as this population was identified as an important driver of hospital utilization. The Health Coach has been hired permanently by Northeastern Vermont Regional Hospital as a community health worker in the Community Connections program and will continue to work with "duals" as well as others regardless of insurance type. NVRH stated that they hope that new funding mechanisms coming out of health reform in Vermont will make resources available for programs like this. In addition to sustaining the specific program, NVRH reported that the project further strengthened their regional partnerships and care coordination processes, which were identified as essential in this uncertain phase of health care reform in Vermont.

Supportive Care Pilot through the Rutland VNA: At the time of the writing of this final report, the Supportive Care pilot ended, and the sub-grantee reported that there was no way to continue under current reimbursement models since providers could not bill for these services. Some aspects could continue, but the sub-grantee's report included no specific plan for this. While the program has not continued, those participating in this collaborative have started a subcommittee on palliative and hospice care. This subcommittee has been educating providers and community members through film and presentations.

Health data infrastructure in support of care integration activities

The continued use of specific data tools such as Patient Ping and the Blueprint Clinical Registry is dependent on the ability of organizations to develop effective workflows to incorporate these tools into usual practice within their organization. In some regions, event notification systems were in place prior to Patient Ping, and this was a barrier to Patient Ping adoption. Organizations are eager for an effective tool to share care plans and are hopeful that the OneCare Vermont (OCV) shared care plan tool, Care Navigator, will fill this need. This tool is being piloted in four communities.

The Learning Collaborative fostered research, design, and business case development for sharing information and developing shared care plans, which is an essential foundation for building the IT tools to share information. Maintaining the energy of those conversations and continuing to work towards an electronic platform to share information is the next step. The shared care plan that OCV is developing may fill this need. Engaging many of those who participated in the Learning Collaborative and soliciting their feedback in piloting and rolling out of the tool will help to ensure broader adoption and use.

Payment reform in support of care integration activities

On-going payment reform efforts, including the continued development and implementation of a risk-bearing ACO, will be critical to sustaining and expanding care coordination and integration initiatives. The ACOs played a key role in developing systems for integrating care, such as the RCCs, and will continue to take a central role as the state continues to advance alternative payment models. A significant challenge will be how to integrate specialized services (mental health, substance use, developmental disabilities, and long-term services and supports) into payment reform. Case management is currently funded for those with opioid addiction and serious mental illness, but there is need for case management for other people who do not qualify under these two conditions. While key informant interviews and site visit discussions focused on Medicaid, successful integration will be limited

if it is not implemented across payers. Further, given the impact of social determinants of health on both cost and health outcomes, and the success of programs that address these determinants, future payment reform efforts will need to identify strategies to include non-medical services, such as social service agencies, including through involvement in shared savings.

Conclusion

There was much hope that the RCCs could evolve into Accountable Communities of Health to sustain established partnerships and to develop a focus on population health beyond care coordination for the most complex patients. In addition to facilitating care integration and coordination of clinical care, these infrastructure activities have the potential to address the urgent social determinants of health that focus group participants and providers noted must be addressed prior to treating specific health needs. Parallel to the community level collaborative structure development, there is hope that the payment models will continue to innovate to be more inclusive of reimbursement of specialized services and non-traditional partners that are so critical to addressing social determinants of health.

> *The relationship-building and strengthening of community connections are a critical outcome of VHCIP that seeded stronger collaborative relationships for providing integrated care in the future. Training (Learning Collaborative and Core Competency Trainings) provided common language, understanding, and structure for more consistent and predictable care coordination processes and information sharing across organizations. These infrastructure activities are likely to continue and be sustained, at least to some extent, post VHCIP.*

Payment Reform and Financial Incentive Structures

VHCIP Objectives and Primary Activities

VHCIP supported design and implementation of various payment reform and financial incentive structures to promote the use of different delivery models to reduce health care costs while improving quality of care and health outcomes and to prepare Vermont's health care and human services providers for future population-based payment models.

ACO Shared Savings Programs

VHCIP supported implementation of Vermont-specific Medicaid and commercial SSPs. Two of Vermont's ACOs were participating in Medicare's SSP prior to the launch of Vermont's SSPs in 2014, and VHCIP expanded the shared savings approach to Medicaid and commercial payers. All three ACOs operating within Vermont – Community Health Accountable Care (CHAC), OneCare Vermont (OCV), and Vermont Collaborative Physicians (VCP) /Health*first* – participated in at least one payer's SSP. The commercial SSP was open to all commercial plans on the health insurance marketplace, but only Blue Cross Blue Shield Vermont had a sufficient number of covered lives to participate. The SSPs were implemented in 2014 (Year1) and operated for three years. Participation remained consistent throughout VHCIP (Table 5).

Table 5: Participation in ACO Shared Savings Programs under VHCIP[17]

ACO	Year 1 FY 2014	Year 2 FY 2015	Year 3 FY 2016
Community Health Accountable Care (CHAC)	Medicaid Commercial	Medicaid Commercial	Medicaid Commercial
OneCare Vermont (OCV)	Medicaid Commercial	Medicaid Commercial	Medicaid Commercial
Vermont Collaborative Physicians (VCPs)/ Health*first*	Commercial	Commercial	Commercial

Note: All ACOs participated in Medicare SSP for years 1 and 2. CHAC and OneCare also participated in year 3 while VCP did not.

VHCIP supported the tracking of health care expenditures and quality indicators for the ACOs participating in both the Medicaid and commercial SSPs for all three years, comparing costs to an annually established expected amount. Achieved shared savings were distributed based upon the ACOs reaching quality score thresholds. Quality measures used for the SSPs were aligned with Blueprint for Health measures. Cost savings were achieved for Medicaid in 2014 and 2015 and quality scores were sufficient for partial distribution of savings, although not all ACOs achieved savings in each year. Savings for Year 2 (2015) were lower than Year 1 (2014) (Tables 6 and 7). As of the writing of this final report, results for 2016 are being compiled and will be reported to the GMCB.

The SSPs introduced performance based payment for ACOs and their affiliated PCPs. Shared savings, if achieved, were earned only if the ACO met certain quality scores across a spectrum of payment measures. Quality scores were computed for each payer (Medicaid and commercial) using an aligned set of payment measures and points for performing better than established benchmarks. A summary presentation of SSPs results through 2015 developed by the GMCB noted that all of the ACOs had strong quality scores overall, but the SSPs did identify some clinical areas where improvement could occur. For example, there was an opportunity to improve chlamydia screening across both ACOs participating in Medicaid, and an opportunity to improve alcohol and other drug dependence treatment across all ACOs[18,19]. Patient experience survey scores also indicated improvement opportunities. In 2015, Patient experience scores combined for Medicaid and commercial beneficiaries showed that results were below the national 50th percentile for 8 of the 12 measures with benchmarks and below the 25th percentile for three measures. VHCIP managed the patient survey vendor, reducing administrative burden on participating practices.

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[17] Green Mountain Care Board.

[18] Presentation to VHCIP Payment Models Design and Implementation Work Group Participants, October 17, 2016.

[19] Detailed reports on quality results (by payer/by ACO) are publically available on the GMCB web site (http://gmcboard.vermont.gov/payment-reform/ACO-shared-savings).

SSP reports were produced by the VHCIP analytics vendor using both claims data and a random sample of clinical data reported by the respective ACOs and presented to GMCB. Results were routinely presented to the VHCIP Steering Committee, Core Team and other workgroups, as well as to the GMCB, and posted to GMCB's web site for public consumption. Collection of clinical data-based measures was resource intensive and time-consuming for ACOs and practices, but there was dedicated collaboration among the ACOs in this effort, as well as strong support by ACOs for their participating practices.

Tables 6 and 7 summarize financial performance and quality scores for ACOs participating in the Medicaid and commercial SSPs in 2014 and 2015.

Table 6: ACO Performance in 2014[20]

2014 ACO Financial Expenditure Targets and Savings						
Aggregated Financial Totals	**Commercial**			**Medicaid**		
	CHAC	**OneCare**	**VCP**	**CHAC**	**OneCare**	**VCP**
Total Lives	9,353	22,260	8,526	26,587	37,929	N/A
Expected Aggregated Total	$31,829,851	$76,413,313	$23,581,249	$67,803,470	$81,686,552	N/A
Target Aggregated Total	$30,817,275	$74,489,076	$22,796,150	N/A	N/A	N/A
Actual Aggregated Total	$34,377,496	$81,899,734	$25,292,905	$59,956,030	$74,931,984	N/A
Shared Savings Aggregated Total	($2,547,645)	($5,486,421)	($1,711,656)	$7,847,440	$6,754,568	N/A
Total Savings Earned	$0	$0	$0	$7,847,440	$6,754,568	N/A
Potential ACO Share of Earned Savings	$0	$0	$0	$3,923,720	$3,377,284	N/A
Quality Score	56%	67%	89%	46%	63%	N/A
%of Savings Earned	75%*	85%*	100%*	85%	100%	N/A
Achieved Savings	$0	$0	$0	$3,335,162	$3,377,284	N/A

*If shared savings had been earned.

[20] Green Mountain Care Board (http://gmcboard.vermont.gov/payment-reform/ACO-shared-savings).

Table 7: ACO Performance in 2015[21]

2015 ACO Financial Expenditure Targets and Savings						
Aggregated Financial Totals	**Commercial**			**Medicaid**		
	CHAC	**OneCare**	**VCP**	**CHAC**	**OneCare**	**VCP**
Total Lives	10,084	27,137	10,061	28,648	50,091	N/A
Expected Aggregated Total	$36,930,312	$93,486,032	$28,163,838	$64,814,757	$101,495,989	N/A
Target Aggregated Total	$35,826,535	$91,213,299	$27,318,913	N/A	N/A	N/A
Actual Aggregated Total	$38,386,092	$97,270,203	$31,784,052	$62,405,070	$102,802,367	N/A
Shared Savings Aggregated Total	($1,455,781)	($3,784,171)	($3,620,213)	$2,409,687	($1,306,378)	N/A
Total Savings Earned	$0	$0	$0	$2,409,687	$0	N/A
Potential ACO Share of Earned Savings	$0	$0	$0	$603,279	$0	N/A
Quality Score	61%	69%	87%	57%	73%	N/A
%of Savings Earned	80%*	85%*	100%*	75%	95%*	N/A
Achieved Savings	$0	$0	$0	$452,459	$0	N/A

*If shared savings had been earned.

ACO Capacity-Building and Infrastructure Development Funding

All three ACOs received VHCIP funding to support capacity-building and infrastructure development needed to support the shared savings model and future alternative payment models. Care Navigator, a web-based, shared care plan that is being hosted by OneCare and being piloted at eight primary care sites, is an example of an outcome of this funding. ACOs also collaborated with the Blueprint for Health for data analytics and practice profiles.

Blueprint for Health Patient-Centered Medical Home Pay for Performance

The Pay-for-Performance (P4P) program, first implemented through the Blueprint for Health in 2008, was enhanced and expanded through VHCIP. VHCIP fostered expanded care management collaborations across the state that included the Blueprint's regional project management leadership, and supported the Blueprint through new investments in the Clinical Registry to expand the number of Blueprint CHTs.

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[21] Green Mountain Care Board (http://gmcboard.vermont.gov/payment-reform/ACO-shared-savings).

VHCIP also enhanced direct payments to Blueprint practices, including SASH, supporting aging in place, and Hub and Spoke providers.

Episode of Care Payment (also referred to as Bundled Payment)

Vermont's initial SIM application included development and implementation of Episode of Care payments for certain conditions. After engaging in research and development, implementation of Episode of Care (EOC) payments was removed from VHCIP activities and goals with permission from CMS. The decision not to pursue episode-based payments during SIM was done for several reasons: 1) considering the number of potential beneficiaries and providers impacted by and the total dollars spent for a given episode, there were relatively few Medicaid episodes that were considered viable; 2) general concern about providers' capacity to engage in another payment reform initiative; 3) coordination of participation across EOC and SSPs was more complex than initially anticipated (e.g., co-mingling of funds); and 4) interest had shifted toward more comprehensive population-based (versus condition specific population) payment models. EOC was mentioned only briefly in comments received through the provider survey, with respondents noting the importance of ensuring that if EOC is used, it should be applied universally across payers to avoid differential patient treatment based on how services are reimbursed.

Payment Reform and Specialized Service Providers

VHCIP leadership recognized early on that the SSPs focused primarily on medical services and costs. Long-term services and supports (LTSS) and certain types of mental health and substance use disorder services are predominately funded by Medicaid, however, in an effort to maintain alignment with commercial and Medicare programs, these were carved out of the services for which ACOs were accountable under the Medicaid SSP. ACOs receiving shared savings payments had the flexibility to distribute shared savings within their network of participating providers; while participating specialized service agencies--including non-medical service organizations--may have received shared savings payments, and such decisions were at the discretion of each ACO.

The Medicaid Pathway initiative was added to the VHCIP operational plan to explore how Medicaid-specific services and providers could be included in future alternative payment models. The Medicaid Pathway team reviewed available data and solicited stakeholder input on alternative approaches for paying for Medicaid services[22]. This initiative built on the Integrating Family Services (IFS) pilot, which focused on children's mental health in two regions of the state.

Although not directly funded by VHCIP, the IFS pilot provides some insights into how specialized service providers and non-medical service agencies can be included in alternative payment models. Under IFS, the lead agency is paid a "case rate" in place of traditional fee-for-service payments for children's mental health services, enabling more flexibility to meet the needs of children and their families. This case rate model is a marked shift toward transformative blended funding (bringing together funding

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[22] The Medicaid Pathway Information Gathering Process Stakeholder Feedback and State Response, November 3, 2016

from various sources to improve health) that has significant potential to address fragmentation of services.

Factors Influencing Implementation

Primary Care Providers Involvement in Shared Savings Programs and Alternative Payment Models

Payment reform initiatives were implemented across the state so that providers working in practices were often involved in one or more incentive or performance-based payment arrangements, including SSPs, P4P (patient-centered medical home payments via the Blueprint).

The SSPs advanced providers' participation in payment arrangements tied to quality. Although shared-savings programs are still grounded in a fee-for-service model, savings were distributed to the ACOs only if they achieved quality score thresholds. All three ACOs participated in SSPs for Medicaid and/or commercial plans, and ACOs represented the spectrum of attributing PCPs, including: FQHCs; hospital-owned; and independent physicians. Vermont's implementation of the SSPs was focused primarily on those services and providers previously identified in the Medicare SSP: hospital and physician services and providers. This resulted in alignment across the programs that was seen as beneficial. As noted above, there are variations in benefits by payer. The limitation of the SSPs to hospital and physician services was recognized by the VHCIP leadership, which led to the formation of a Medicaid Pathway initiative. Medicaid Pathway helped to define how community-based social service organizations could be integrated into future alternative payment models. The lessons learned from the SSPs and work performed as part of the Medicaid Pathway initiative informed the All-Payer ACO Model. Within the SSPs, the ACOs (or their affiliated providers) were not responsible if the total healthcare expenditures for attributed beneficiaries were greater than budgeted amounts. The Vermont All-Payer ACO Model Agreement will introduce shared risk for ACOs through comprehensive population-based payments where ACOs would be held financially responsible if total cost of care was greater than a targeted amount.

Awareness and impact of performance-based payment models

Providers participated in SSPs through their affiliation with one of the three Vermont ACOs – CHAC, OneCare or VCP. Shared savings and quality scores were computed at the ACO level. Distribution of savings varied among participating providers and affiliated partners, so that providers were not necessarily aware of the specific incentives, and, consequently, participation in performance-based payment arrangements did not necessarily translate to changes in the way providers practice.

Half (50%) of the PCPs responding to the provider survey indicated that they work in practices where some portion of their practice's payments are based on performance of care, cost, efficiency, or other performance metrics, but 28% responded that they "don't know" if this is the case. PCPs responding "don't know" were more likely to work in hospital-affiliated practices or FQHCs than independent practices (solo, single or multi-specialty).

Further, there were diverse opinions on the impact of performance-based payments on decisions regarding clinical, administrative or operational improvements. Of those who do work in practices with performance-based payments, 34% noted that performance payments made decision-making "somewhat better" or "a lot better," while 28% said that performance payments made decision-making "somewhat worse" or "a lot worse." Of the remainder, 28% responded "no change" and 10% responded "don't know."
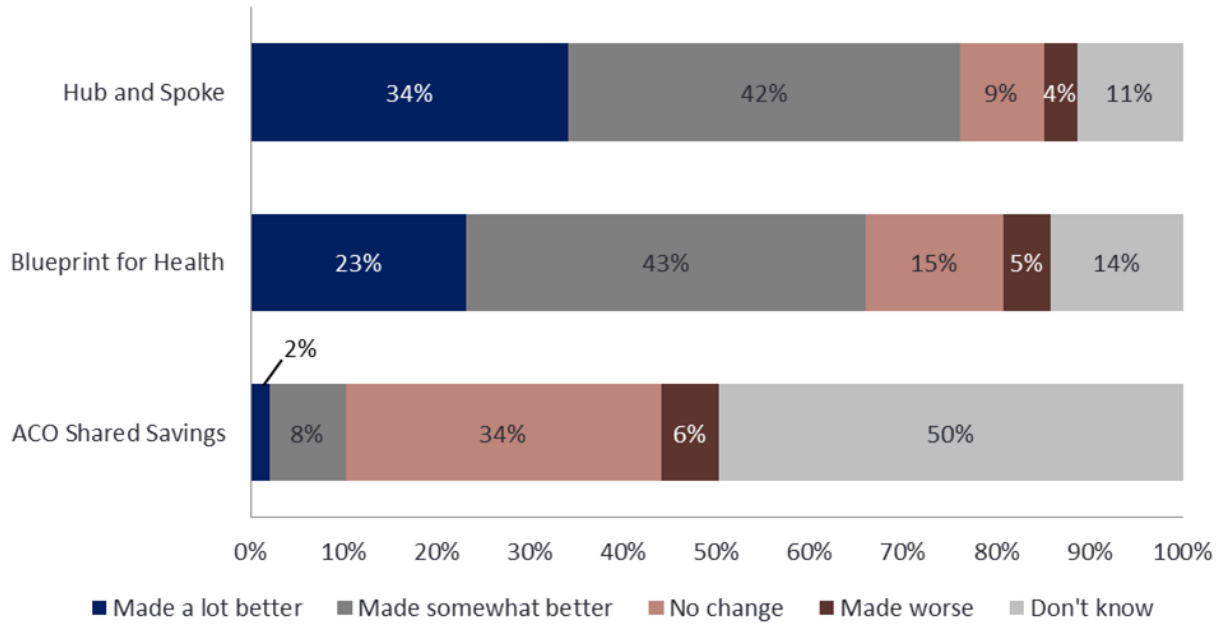
Among the Hub and Spoke, Blueprint for Health, and ACO SSPs, PCP respondents to the provider survey rated Hub and Spoke as having the greatest impact on patient quality, outcomes, and cost. Across all three programs, PCPs rated the program impact on cost low relative to the impact on quality and outcomes. Responses were generally consistent across organizational type.

PCPs were consistently less able (responding "don't know") to differentiate the impact of SSPs relative to P4P (Blueprint, and Hub and Spoke). It could be that the SSPs were more recent initiatives and/or were more removed from everyday practice for individual providers. For example, shared savings were realized at the ACO level and not necessarily distributed to individual providers. In contrast, Hub and Spoke provided direct payments to the practice that were then used to hire nurses and mental health clinicians to work in the community or be embedded in practices (Figures 6, 7, and 8).

Figure 6: Primary care provider perception of program impact on cost
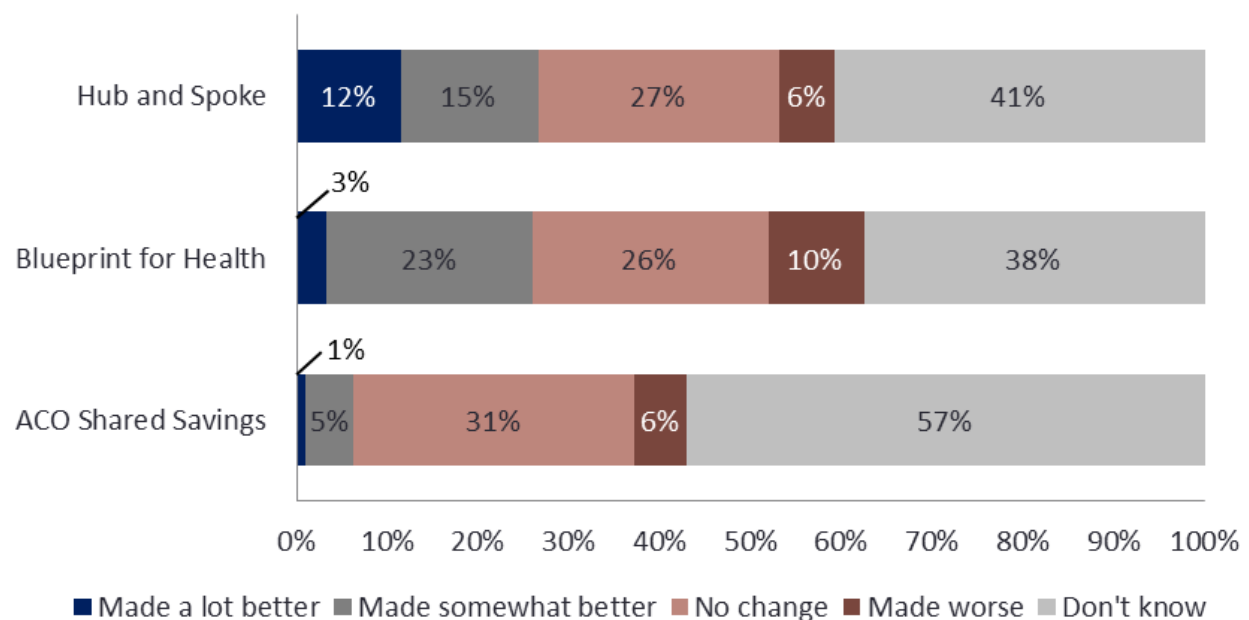
Figure 7: Primary care provider perception of program impact on quality of services

	Made a lot better	Made somewhat better	No change	Made worse	Don't know
Hub and Spoke	34%	42%	9%	4%	11%
Blueprint for Health	23%	43%	15%	5%	14%
ACO Shared Savings	2%	8%	34%	6%	50%

Figure 8: Provider perception of program impact on patient outcomes

	Made a lot better	Made somewhat better	No change	Made worse	Don't know
Hub and Spoke	26%	48%	7%	3%	16%
Blueprint for Health	15%	39%	20%	1%	25%
ACO Shared Savings		11%	32%	3%	53%
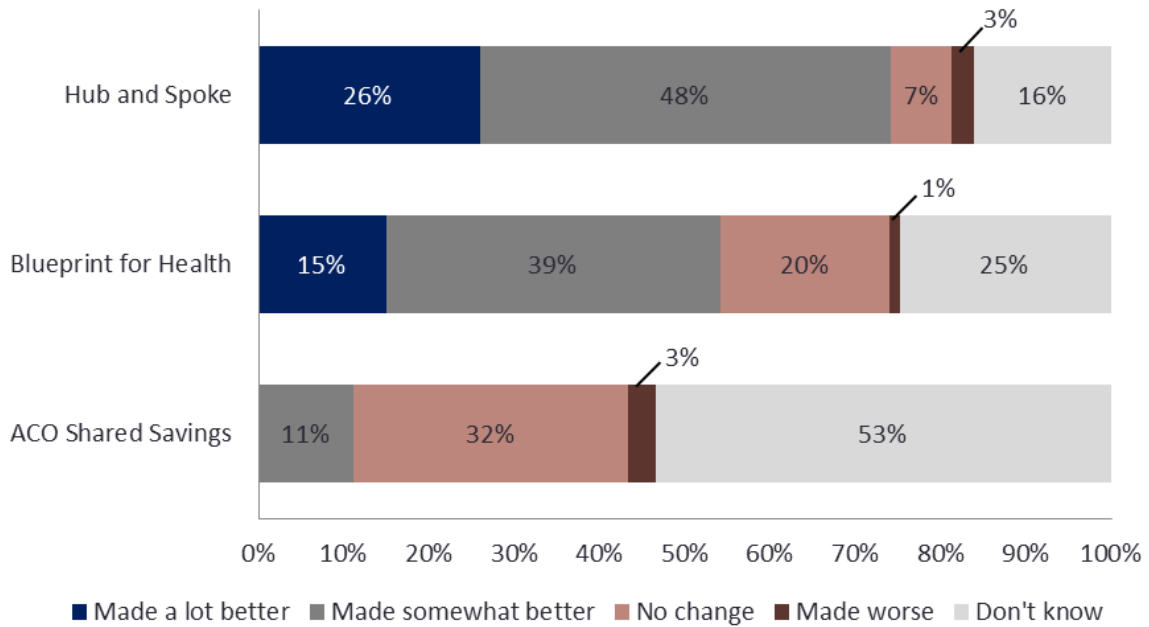
An outcome of the SSP was building collaboration among the ACOs and providers resulting in relationships that can then be leveraged for future reform efforts. For example, the ACOs joined together to conduct research on shared care plans and to implement a pilot in four communities across the state.

Additional support or technical assistance providers anticipate needing in making transition to population-based payment methods

Based upon findings from stakeholder interviews and the provider survey, additional support and/or technical assistance will be needed for ACOs and their affiliated PCPs to transition to population-based payment methods that put these organizations at risk for total cost of care. As noted earlier in this report, it is essential that future payment models support care coordination at the practice level. To date, these services have been supported by various time-limited funding streams, including VHCIP. There is general agreement that primary care practices, in particular small practices, would not have the resources to pay for care coordinators without supplemental funding. It was also noted that while the SSPs did introduce performance-based payments, shared savings (if achieved) were reduced if the ACOs did not achieve quality thresholds.

PCPs were asked in the provider survey about their personal readiness for performance-based compensation and what they would need to be better prepared. It is clear that more work is needed to prepare both PCPs and their practices to be ready for alternative payment models. About 40% felt that they and their practice are "somewhat ready," but nearly 30% felt "not at all ready" (Figure 9). PCP's organization type (hospital-affiliated, FQHC, independent practice) did not seem to influence personal readiness, but those in FQHC and independent practices were slightly more likely to believe that their practices were "not at all ready."

Figure 9: Readiness of primary care providers and their practices to participate in performance-based compensation
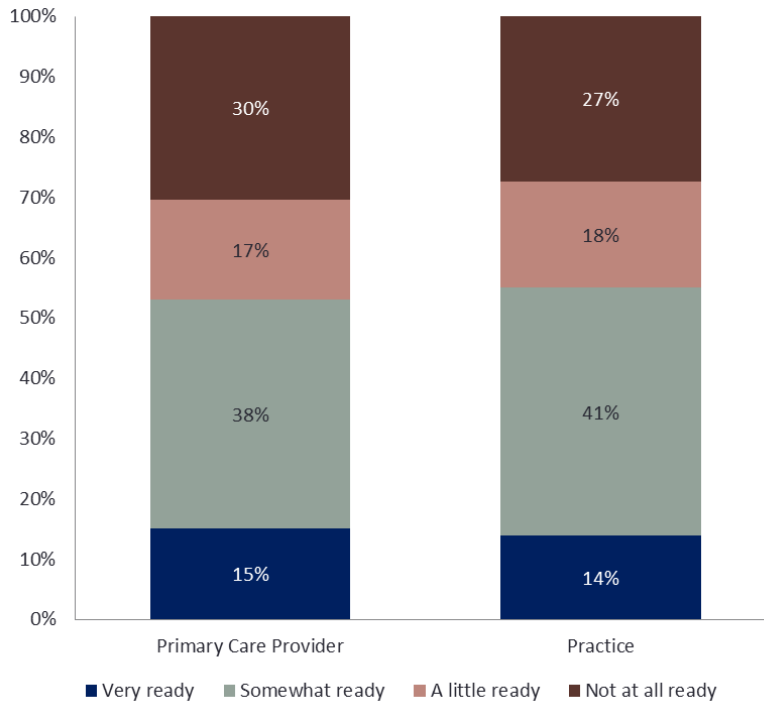
A follow-up survey question queried PCPs on what they felt was needed to be better prepared (Figure 10).

Figure 10: Primary care providers' perceived needs to enhance readiness for performance-based payment
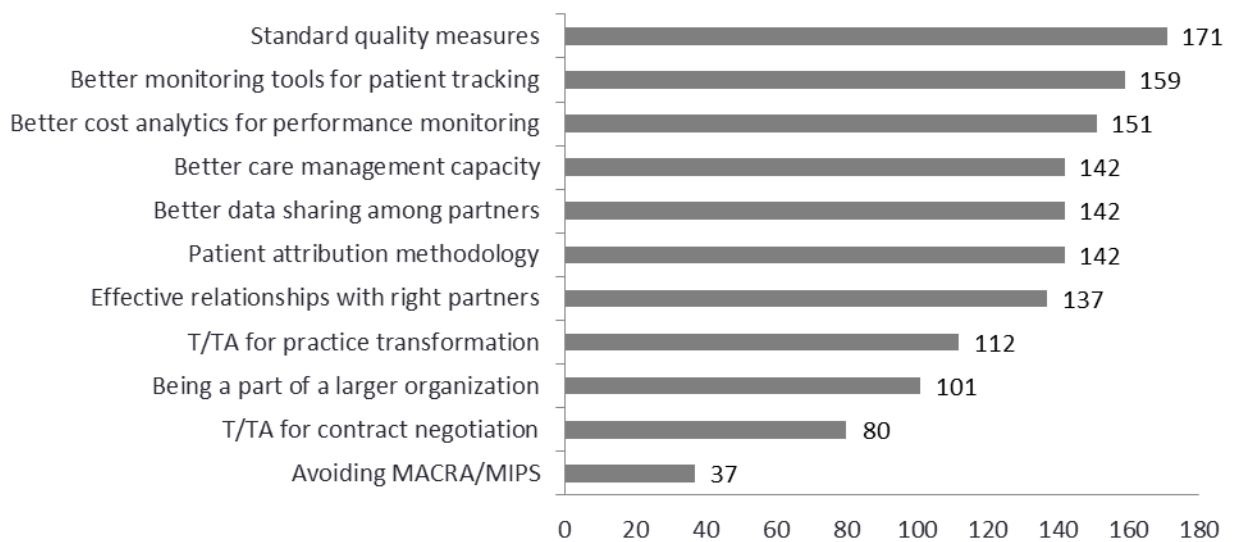
Moving Forward

Advancing Alternative Payment Models

VHCIP has informed the next iteration of payment reform in Vermont. Lessons learned and findings from VHCIP-supported initiatives were incorporated directly into the All-Payer ACO Model.

Sustaining Care Integration

Care coordination administrative functions supported by VHCIP dollars must be integrated into payment models if they are to be sustained. There was general consensus that physician practices, especially small, independent practices would find it difficult, if not impossible, to maintain these care coordination positions without direct funding like the appropriation of shared savings.

Ability of payment reform to improve quality of care

Comments offered in the provider survey suggest that there is some skepticism that performance based payments will work. Comments highlight the following themes:

- Payment reform can change the health delivery system, but a full overhaul over a longer timeframe is needed to change culture.

- Goals of payment reform are good but must acknowledge local efforts and consider the reality of the current health care landscape.

- Primary care bears the brunt of complex payment reform activities and quality reporting.

- Shared savings are difficult to achieve when quality is already high.

- Measures are not truly assessing quality, and the administrative burden and cost associated with performance-based payment outweighs the financial incentives.

- Cost and quality measurement should be based on social determinants of health and not just medical diagnosis.

Conclusion

VHCIP accomplished its goal of implementing SSPs for Medicaid and commercial products. All three ACOs participated and represented PCPs across the spectrum – FQHC, hospital-owned, and independent practice. VHCIP built upon the advanced primary care program established by the Blueprint and learned lessons from the SSPs to inform the development of the All-Payer ACO Model. PCMH, CHT, SASH and Hub and Spoke support is included in the All-Payer ACO Model Agreement, and it is considered essential that future payment models continue to support the type of care coordination provided by these initiatives. Community-based providers were not incorporated into the SSPs for a variety of reasons, but this limitation was recognized and was being addressed through the Medicaid Pathway initiative. The APM Agreement requires the state to produce plans for inclusion of additional Medicaid services into future payment models.

Use of Clinical and Economic Data to Promote Value-Based Care

VHCIP Objectives and Primary Activities

VHCIP provided funding to the three Vermont Accountable Care Organizations (ACOs) to support health data infrastructure building. Additional funds supported analytic tools for CHAC and OneCare and data quality initiatives to support all three ACOs. VHCIP's data strategy focused on infrastructure investments to increase the utility and availability of clinical data and enabling a health information technology (IT) infrastructure to support shared risk and value-based payment arrangements. VHCIP data infrastructure development has successfully focused on five concepts that are central to a robust and adequate infrastructure, including expanding electronic health record penetration and access to data, addressing gaps in connectivity and clinical data quality of health care organizations through the Health Information Exchange, supporting predictive and retrospective data analytics, improving quality reporting and measurement, and providing tools to improve patient self-management[23] (Figure 11).

Figure 11: VHCIP Data Strategy

- EHRs
- HIE Services
- Data Infrastructure Supporting Payment Reform
- Analytics
- Quality Reporting
- Patient Tools
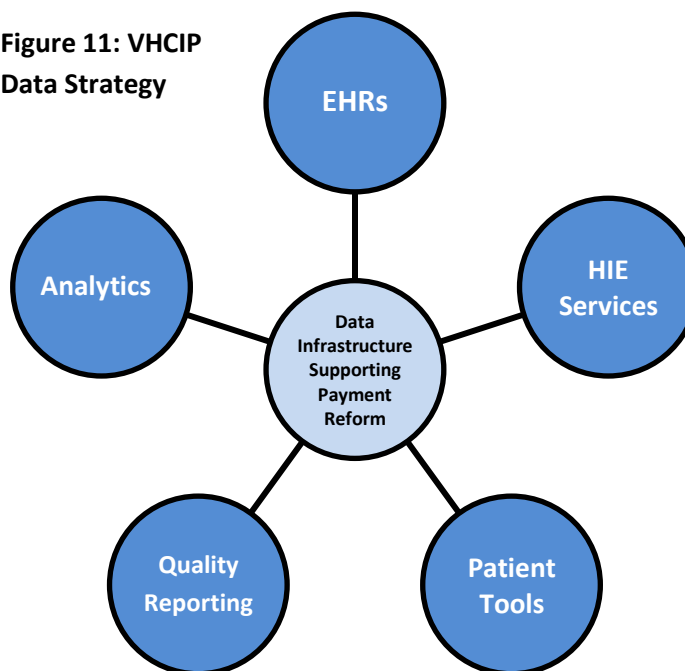
Providers report data and data infrastructure as important to health care reform. Figure 10 (shown in the Payment Reform and Financial Incentive Structures section of this report) represents responses to the VHCIP provider survey regarding readiness to participate in alternative payment models and illustrates the importance of data or data infrastructure to support health care organizations. Data and data infrastructure are critical to addressing the challenges noted in Figure 10: standard quality measure data collection, development of monitoring tools for patient tracking, cost analytics for performance monitoring, data sharing, and patient attribution methodology.

With an awareness of the potential to further encumber clinical and non-clinical providers and organizations, VHCIP strategically created a data infrastructure and data use approach by building upon

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[23] Health Information Technology to Support Accountable Care Arrangements. Office of the National Coordinator for Health Information Technology, October 2014.

and leveraging existing data aggregation and dissemination activities and systems. Rather than developing parallel data initiatives, the existing foundational work of the Blueprint, Vermont Information Technology Leaders (VITL), Department of Health, and Department of Vermont Health Access has been leveraged for VHCIP purposes with VHCIP-centric value added. Similar to VHCIP, these existing efforts leverage stakeholder input to gain insight to data needs to deliver usable and actionable data for clinical and non-clinical stakeholders.

Electronic Health Record Expansion

Funded under a contract with VHCIP, Vermont Health Information Technology Leaders (VITL) assisted non-Meaningful Use[24] providers including five Specialized Service Agencies (SSAs) and the Department of Mental Health State Hospital with the acquisition of EHRs. Concurrently, Home Health Agencies were supported in linking to VITLAccess, which provides a secure view of clinical data available through the Vermont Health Information Exchange (VHIE) to authorized providers. This initiative greatly enhances Home Health Agencies' EHR data by providing up-to-date information on patients including lab test results, radiology exam reports, patient demographics, transcribed reports, medication histories, and clinical summaries. A total of 600 users in Home Health Agencies were provided access.

The Data Quality Improvement Project, one of the VHCIP work streams, focused on enhancing the quality of EHR data. The initiative analyzed ACO members' data quality for each of 16 data elements as well as assisted in the improvement of workflow and data entry into the EHR. Later this initiative was expanded to improve data quality and usability for the DAs and SSAs. VITL worked with health care organizations to improve their own data capture and to ensure that data elements from each participating health care organization were formatted identically. A total of 997 providers participated in this initiative. Workflows were initiated to also focus on modifying practice workflows to meet Universal Transfer Protocol transformations requirements in partnership with the ICCMLC.

> *Even with the history of EHR utilization in Vermont and the value added by VHCIP activities, it is clear that more work needs to be done to maximize the utility, specifically through capacity building at the health care organization and health care workforce level. This is increasingly important for newer data resources for which health care organizations have less experience. Similarly, as the workforce involved in data utilization expands, so will the need for training and technical assistance.*

According to the VHCIP provider survey, the data system most commonly used by providers is their EHR, with 77% reporting they use it "often." Supplementing this, data tools that have become available through delivery reform efforts have become part of provider practice; among respondents, 32% use Blueprint data, 18% use VITL/VITLAccess, and 15% use ACO data either "often" or "sometimes." Providers indicate that their practice is

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[24] Meaningful use is using certified electronic health record technology to: Improve quality, safety, efficiency, and reduce health disparities. Engage patients and family. Improve care coordination, and population and public health. Maintain privacy and security of patient health information. (https://www.healthit.gov/providers-professionals/meaningful-use-definition-objectives).

in need of greater capacity to use data for patient care and quality improvement, and this is true across data sources. Less than half (43%) stated their practice is "very capable" in using the EHR and only 5% "very capable" in using ACO data (Figure 12).

Relatively, EHRs have had a longstanding role in health care and health care reform and the use and promulgation of EHRs has been systematically promoted in Vermont. Through federal funding, VITL was established as one of 62 Regional Extension Centers in 2011. This federal award focused on assisting hospitals and physicians in the adoption and meaningful use of EHRs. Even with the history of EHR utilization in Vermont and the value added by VHCIP activities, it is clear that more work needs to be done to maximize the utility, specifically through capacity building at the health care organization and health care workforce level. This is increasingly important for newer data resources for which health care organizations have less experience. Similarly, as the workforce involved in data utilization expands, so will the need for training and technical assistance. For example, the VHCIP care coordinator survey demonstrates that care coordinators utilize EHRs frequently albeit at a much lower rate than their provider counterparts (Figures 4 and 5). Overall data from both provider and care coordinator surveys underscores the reliance on "internal" data more than "external" data.

Figure 12: Data source capability of use by primary care providers
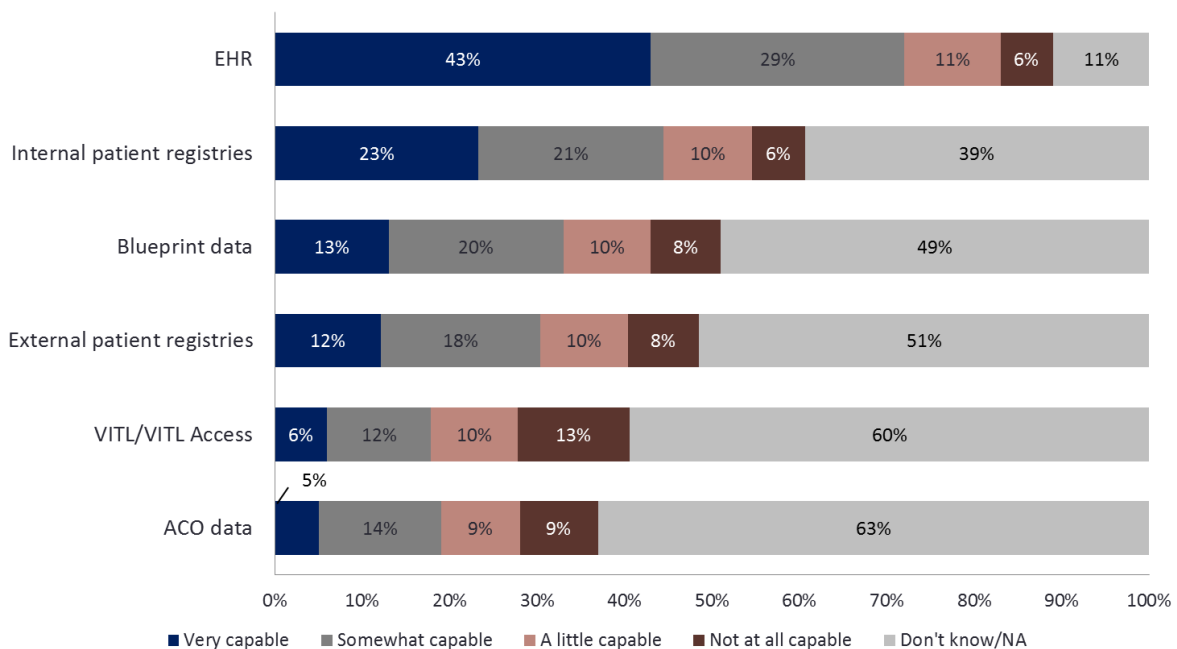
The Gap Remediation Project, another VHCIP work stream, enhanced the utility of data and EHRs by addressing gaps in connectivity and clinical data quality. The ACO Gap Remediation component improved electronic availability of Vermont SSPs participant measures among ACO member organizations. The project included five deliverables: Interface and EHR Installation, Data Analysis, Data Formatting, Terminology Services, and SET Team activities. Quality measure reporting improved

significantly for Vermont OneCare. OneCare beneficiaries represented in quality measure reporting changed from 17% to 64% during the project period. Finally, the Vermont Care Partners (VCP) Gap Remediation project improved the data quality for Vermont DAs and SSAs.

Data Warehousing

The Data Warehousing work stream included three independent projects: The Vermont Care Partners (VCP) Data Repository project, the Clinical Registry Migration project, and statewide planning to develop a cohesive data warehousing strategy. The VCP Data Repository allows the DAs and SSAs to send specific data to a centralized data repository. In addition to acting as a centralized repository for DA/SSA data, it is expected that this project will provide VCP members with advanced data analytic capabilities to improve the efficiency and effectiveness of their services, to demonstrate value, and to participate in payment and delivery system reforms. The Clinical Registry Migration project moved the Blueprint for Health Clinical Registry from its previous environment to be hosted within VITL's infrastructure. Statewide planning activities focused on developing a long-term strategy for data warehousing systems to support analytics.

Event Notification System (ENS)

The ENS project has implemented a system to proactively alert participating providers regarding their patients' medical service encounters. VITL and the Vermont ACOs worked with the state to perform discovery and design of proposed ENS solutions. The selected ENS solution provides admission, discharge, and transfer data to participating providers. A total of 15 data feeds were established which facilitated medical service encounter alerts for 88,406 lives[25]. While event notification was seen as positive overall, some communities reported that they may not participate because they already have an ENS in place. Other regions reported that they may not participate because they do not want to commit to the associated costs.

Analytic Tools

A secure connection from the VHIE to the ACO analytic vendors, known at the ACO Gateway, was established with VHCIP funding to provide data on ACO attributed beneficiaries. Through this initiative the ACOs were able to obtain direct access to timely data feeds to be used for population health analytics. This data was used to support members in their work within SSPs. However, feedback during key informant interviews and site visits indicated that current analytics to support patient targeting and participation in the SSPs were inadequate. This is further supported by responses to both the VHCIP provider and care coordinator survey as shown in Table 8.

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[25] http://legislature.vermont.gov/assets/Legislative-Reports/VHCIP-Report-to-Legislature-April-2017-FINAL.pdf

Table 8: Adequacy of analytic capability and support

Please state the extent to which you agree/disagree with the following statement: I have adequate analytic capability and support to use data to improve patient care at the practice	Percent Primary Care Providers	Percent Care Coordinators
Strongly agree	12%	13%
Somewhat agree	30%	41%
Somewhat disagree	21%	18%
Strongly disagree	24%	16%
Don't know	14%	12%

Forty-two percent (42%) of providers felt they had adequate analytic support as compared to 54% of care coordinators. There were differing opinions regarding where and how capacity should be built, especially as to whether statewide capacity supporting individual practices should be built or whether practices should build their own internal capacity. To this end WRFP was awarded VHCIP funds (one of the sub-grants) to acquire enhanced analytic software and to hire a part-time consultant to manage data analysis, software training, and population health surveillance. WRFP's work suggests that risk stratification relative to patient-reported measures can assist in prospectively identifying those patients who are at risk of potentially avoidable deterioration in health status and for whom care coordination interventions can reduce hospital use.

Care Management Tools

During VHCIP, health care organizations did not have regional or statewide electronic systems to enable care coordination efforts effectively between providers, care coordinators, patients, and families. On a regional basis, care coordination activities are supported by regular meetings of the RCCs as well as regular meetings of care coordinators. Care coordination still frequently occurs by fax and phone and would be greatly enhanced through the use of an electronic care coordination platform. The need for a system like this was surfaced through the ICCMLC; however, there were already multiple technical solutions in various stages of implementation across payers, providers, and regions during the VHCIP project period. By the end of VHCIP, there were several smaller, regional systems in the state and OneCare launched Care Navigator, which is intended to be used statewide to improve electronic communication for shared care plans and care management.

As part of the planning for a shared care plan, VHCIP's stakeholders identified several barriers to electronic data sharing, including consistent consent management. The consent policy was found to be a critical foundational component to shared care planning and proved to be a difficult element to establish. Stakeholders felt development of a standard consent policy was a critical building block and predecessor to development of a shared care plan.

OneCare selected Care Navigator, which is a shared care management software platform focused on providing actionable care coordination. Roll out will focus on identification of high-risk populations using clinical, quality and claims data from EHRs and population health analytics software.

Factors Influencing Implementation

According to the VHCIP care coordinator survey, approximately 76% of respondents reported being data driven (somewhat or strongly agree); however, only 54% agreed (strongly or somewhat) that they had adequate analytic capability and 57% agreed (strongly or somewhat) that they had adequate access to data. The majority of respondents reported relying primarily on internal data sources. However, a notable number (28%) of care coordinators were not well acquainted with data sources and were not sure whether their organization relied more on internal or external data. In terms of event notification, slightly more than half of respondents reported using any ENS, and 78% of those specifically used Patient Ping. Further, 67% of all respondents reported that event notification changed the way their practice behaves, indicating a positive impact of the Patient Ping system.

Approximately 60% of PCPs reported being data driven (somewhat or strongly agree); however, only a small percentage (12%) strongly agreed that they had adequate analytic capability and support to use data for practice transformation. PCPs reported that data analysis capacity is primarily internal, with only 6% relying on external support. In terms of new tools, 18% had used the ENS, and half of the PCPs felt that it had changed the way staff and practice behave. Fifty percent (50%) of providers using event notification stated that it had an impact, while 29% said they did not know, and 22% said they did not agree that it had an impact. Comments on the care coordinator survey highlight the following themes:

- Frustration due to limited access to data and limited ability to share across providers, particularly Vermont's All-Payer Claims Database (the Vermont Health Care Uniform Reporting and Evaluation System, or VHCURES) and state-level data.

- Deficits in local capacity to analyze data.

- Challenges in transitioning from the prior version of the Blueprint Clinical Registry to the new version.

- Limited usability of VITL.

While significant and focused initiatives have continued to build the data infrastructure in Vermont, data shows that use and application by health care organizations and the health care workforce lags slightly behind infrastructure development. It is expected that while data infrastructure improvements make high quality data accessible to health care organizations, there is a lag to the adoption and proficient use of the systems. Concurrent approaches to data infrastructure improvement and assisting health care organizations build their internal capacity to use data systems will be an on-going balance to maintain for future health care reform efforts. Tailoring to the specific needs of the practice may be a strategy to be employed. Given the breadth of practice sizes and practice types, the potential that a solely uniform approach can be applied is unlikely. Rather some standardized approaches such as those focused on data quality as well as practice specific approaches such as those employed by White River Family Practice may be merited.

Interviews and site visits indicated that clinical practices are at varying levels of sophistication when it comes to population health monitoring, panel management, and overall use of data. It is unclear at both the local and statewide level how further advancements will be made, in particular how funding will fuel and sustain these advancements. For example, Blueprint/VHCIP collaborative initiatives have advanced clinical practice transformation, and the associated payment strategies sustain the infrastructure. As practices continue to advance in population health monitoring and panel management, health reform efforts will need to address how to support such advancement and help drive efforts that will focus on the practice, regional, and state levels.

> *Blueprint/VHCIP collaborative initiatives have advanced clinical practice transformation and the associated payment strategies sustain the infrastructure. As practices desire to advance in population health monitoring and panel management, health reform efforts will need to address how to support such advancement and help drive efforts that will focus on the practice, regional, and state levels.*

A consistent view did not emerge on the value of Blueprint data sheets, VITL, and the use of an organization's own EHR. Site visit responses include positive perspectives and negative perspectives on each of these tools. Similarly, respondents had varied thoughts as to whether it is a better strategy to build data infrastructure and analytic capacity locally or centrally. This inconsistent understanding of next steps is indicative of a reform effort that is innovative and advanced. While a clear roadmap to guide the health care system through reform efforts may not be feasible, VHCIP astutely promoted best practices in data use and data infrastructure and engaged stakeholders in dialogue and communication at each step of their process and inquiry. There were doubts among stakeholders about whether health care reform efforts will continue; as a result, there was some hesitancy to make investments and future plans. Future health care reform efforts should mirror VHCIP work to communicate and disseminate information, keeping the messages clear and consistent.

Finally, participants in site visits indicated that there is too much data to collect. In particular, while they understood the need for accountability, they were concerned that there is simply too much volume and not enough value for them. For example, there were measures required for different entities that for all essential purposes were the same, but varied slightly in the way in which they were calculated. Alignment of quality measures should continue to be an important goal. Additionally, some key informants reported that there were still too many different ways to access data and too many portals that needed to be used to gain access, resulting in poorer utilization of the data. Some organizations built in auxiliary staff roles to bring together data from various sources into the patient record. While NCQA accreditation for PCMH was felt to have some meaningful and useful elements, many considered it overall burdensome and lacking a good cost/benefit in terms of value and burden.

Moving Forward

VHCIP has created a data and data infrastructure environment which enables low capacity practices to more effectively participate in health care reform. It has also fostered an environment of innovation among higher capacity practices which has resulted in the creation of data and data infrastructure

demand to continue to raise the bar on practice effectiveness in the use of data. This section identifies a number of "calls to action" for future health care reform efforts that are aimed at continuing to build capacity and foster transformation.

Facilitate proficiency in using data infrastructure and data sources by continuing to incorporate data and system use into trainings such as through the RCCs: While health care organization and workforce proficiency in and perceived value of these resources was lower than desired, they were central to building capacity to perform in a shared risk and value-based health care environment.

Promote buy-in and communication by continuing efforts to engage stakeholders regarding data and data infrastructure initiatives: This includes continued engagement of organizations traditionally involved such as VITL and Blueprint, as well as organizations with emerging roles such as ACOs.

Develop strategies that improve data systems and data use at the health care organization level, HSA level, and state level: While some strategies will be cross-cutting and increase the capacity of health care organizations, tailoring to local and regional needs should be considered.

Provide support for cost analytics, return on investments and cost benefit analysis: Health care organizations were hesitant to build or maintain capacity without a clear understanding of how it will be sustained. This is specifically true for organizations participating in SSPs where organizations consider investing resources for data infrastructure and data support up front without guarantee of obtaining shared savings.

Discussion

The previous sections provided findings and discussion regarding the three theme areas that were the focus of the State-led evaluation. In this section, we provide a summary of the key implementation successes and implementation challenges in these three theme areas followed by listing of factors that cross-cut the three areas.

Care Integration

Implementation Successes

- Building on and strengthening RCCs: The RCCs in each HSA had a history of inter-organizational collaboration, particularly around care coordination. Membership in the RCCs continued to expand under VHCIP, with more community-based providers joining in. Continued support for the RCCs through VHCIP enhanced their status as important convening structures within the HSAs, especially with regard to their care coordination role. From the care coordinator survey, while 25% reported not being aware of RCCs, among those who were, 80% stated that they had "some" or "significant" positive impact on quality of care. Of those aware of Community Health Teams (CHTs) (only 2% were not), 91% stated they had "some" or "significant" impact on quality of care.

- Continuing the development of workforce capacity related to care coordination: VHCIP instituted the successful strategy of using the ICCMLC and Core Competency Trainings to develop care coordination capacity. The ICCMLC promoted a shared language around care coordination and shared best practices, such as identifying a "lead care coordinator" and other strategies for cross-agency collaboration. Of care coordinators aware of the ICCMLC, (30% were not), 86% noted that they had "some" or "significant" positive impact on quality of care. Eighty percent (80%) had the same perception of the Core Competency Trainings. Also, through VHCIP, trainings were video-taped and made available on line for self-directed learning.

- Focusing on data to drive care integration: The RCCs are becoming increasingly sophisticated in the use of data to identify high need and high-risk patients in need of services and to monitor these patients over time. Capacity building with regard to data use for decision making was part of the ICCMLC capacity development. Seventy-six percent (76%) of care coordinator survey respondents "strongly agreed" or "somewhat agreed" with the statement "data drives the transformation of the practice and the practice's behavior."

- Engaging a wide and representative range of service providers and service delivery agencies in reform efforts: Vermont's State-led efforts at health reform have historically emphasized local buy-in and transparency, and these core implementation strategies carried over to VHCIP, especially with regard to care integration. Another way buy-in and transparency occurred through VHCIP was through supporting the infrastructure development of the three

Accountable Care Organizations (ACOs), which enabled them to engage their member organizations in meaningful ways.

- Innovating through sub-grants: The four sub-grants that focused on care coordination created or expanded innovative approaches to care integration. Despite uncertainty of funding, three of these sub-grants, or at least components of them, will continue to be supported by their host organizations.

Implementation Challenges

- Insufficient information technology to facilitate care integration work: Among key informants, there was frustration noted over barriers to data sharing. Coordination still primarily occurs by fax and phone rather than electronically. While some systems, such as Patient Ping, were being used by some, IT generally was not seen as facilitating care integration work. OneCare was working on a shared care plan platform that staff had been piloted in some settings. The results of this work were unknown at the time of writing this report.

- Uncertainty regarding support for RCCs and care management services post grant funding: Some to all of the care management activities and structures (training, RCCs) may be picked up by other entities or supported at some level through the state, given how critical they are to providing high-quality services and serving patients. Alternative payment models will facilitate financial support of care management, but there is still substantial work to do before such models are fully implemented. There is uncertainty in the shorter term about how these services and structures will be supported. The train-the-trainers strategy and development of self-directed core competency training will help sustain capacity to some extent.

- Involvement of primary care providers (PCPs) in RCCs: While the RCCs have had good success in engaging multi-disciplinary and cross-agency groups, PCPs tend to be less involved. Only 32% of PCPs responding to the provider survey reported being involved with personally or having representation on the RCCs. Of those who were involved, 73% noted that RCCs had a positive impact on improving quality of care coordination. PCPs have a powerful voice and can be strong advocates for care management with higher engagement leading to stronger advocacy.

- Alignment of financial incentives to support care management: While financial incentives exist to provide care coordination, incentives that enhance cooperation have not been leveraged in significant ways. The Medicaid Pathway discussions as well as the Accountable Communities for Health Peer Learning Lab have been important forums to explore better financial alignment.

Payment Reform

Implementation Successes

- Engaging all three ACOs and a full spectrum of PCPs (hospital-affiliated, FQHCs, and independent practices) in payment reform: ACOs, especially, were strong partners to VHCIP leadership in the development and roll-out of payment initiatives. The three ACOs served as the mechanism through which providers became aware of and participated in VHCIP payment reform activities.

- Aligning quality measures: Substantial work was conducted by stakeholders in aligning quality measures across payers to facilitate collection and reporting. The quality measures used in VHCIP informed the list of quality measures agreed upon for the All Payer ACO Model.

- Implementing Shared Savings Programs: Some of the Vermont ACOs were already participating in the Medicare Shared Savings Program. VHCIP expanded this to Medicaid and commercially (Blue Cross Blue Shield Vermont) insured. All three ACOs participated and two of the three were eligible for distribution of savings (based on cost savings and sufficient quality scores), although not from all payers.

- Collaborating to change payment methods: Pay-for-Performance (P4P) Programs, first implemented through the Blueprint for Health in 2008, expanded the number of Blueprint CHTs and enhanced support for Blueprint practices, Support and Services at Home (SASH, supporting aging in place), and Hub and Spoke providers (Medicaid Health Homes, providing care to those with substance abuse disorders).

- Enhancing system and provider infrastructure and capacity to participate in alternative payment models: Beyond the success in implementing shared savings, the greater value of SSPs was to enhance system and providers' capacities to engage with alternative payment models. Through participation in SSPs, providers developed a better understanding of financial risk and costs of care, what it takes to shift organizational culture toward value-based payments from volume-based payments, how to track and use quality metrics, and best practices to optimize quality.

- Initiating Medicaid Pathway research and planning: The SSPs were focused primarily on medical providers and services as opposed to long-term services and supports and other non-medical services. The Medicaid Pathway initiative helped to define how such services could be integrated into future alternative payment models and informed the All-Payer ACO Model Agreement.

- Developing and moving to agreement on All-Payer ACO Model: The APM created an advanced alternative payment model designed to encourage delivery of well-coordinated, high quality person-level care within a defined all-inclusive population-based payment.

Implementation Challenges

- Lack of awareness of participation in performance-based payment models, such as the SSPs, at provider level: Over a quarter (28%) of PCPs responding to the provider survey responded that they "don't know" if some portion of their practice's payments are based on performance of care.

- Uncertainty of impact of performance-based payment models on practice operations at the provider level: Twenty-eight percent (28%) of providers in practices with some performance based payments believed that participation had "no change" on decisions regarding clinical, administrative or other operational improvements at the practice, 31% believed that participation had made decision-making "somewhat better" and 19% "somewhat worse." Responses indicated that more work is needed to engage providers in connecting payment reform to practice operations to achieve desired reductions in costs of care and quality improvement.

- Provider confidence in their perceived readiness for alternative payment models: About 40% of PCP survey respondents indicated that they and their practice were only "somewhat ready" to participate in alternative payment models, with nearly 30% responding that they are "not at all ready." Standard quality measures, better tools for monitoring and tracking, and better cost analytics for performance monitoring were the top three responses to the question about what would help them feel better prepared.

- Lack of community-based provider involvement in alternative payment models: Engaging such organizations was challenging for many reasons, including sharing patient data, lack of existing contracts with insurers, and variation in benefits across payers. While these organizations were not included in the SSPs, the Medicaid Pathway initiative was established to explore strategies for incorporating these types of services and organizations into future payment reform efforts.

Use of Clinical and Economic Data to Promote Value-Based Care

Implementation Successes

- Leveraging existing data aggregation and dissemination activities and systems: Rather than developing parallel data initiatives, VHCIP's data infrastructure efforts built on existing foundational efforts, including Blueprint, VITL, and the statewide HIE plan.

- Expanding use of EHRs and access to data systems beyond just medical providers: As examples, Specialized Service Agencies were supported to acquire EHRs and Home Health Agencies were linked to VITLAccess. Bringing along these types of providers is essential to realizing the goals of health reform.

- Engaging relevant stakeholders in decision-making: Representatives from the provider community, all ACOs, Blueprint, VITL, and other key stakeholders all were involved in strategic planning and decision making with regard to data initiatives, which generated organizational leadership and systems-level buy-in to activities.

- Building capacity of workforce: Data and systems use were part of the Learning Collaboratives. The RCCs worked at enhancing their group's sophistication with regard to use of data. The ACOs also played a very large role in building the capacity of their constituent organizations to collect and use data for quality improvement and decision making.

Implementation Challenges

- Varying levels of capacity and sophistication around data use: While 43% of PCPs responding to the provider survey noted that they felt "very capable" using their EHRs in support of patient care or quality improvement, 46% felt only "somewhat capable," "a little capable," or "not at all capable" (remaining answered "don't know"). Perceived capability in use of other systems, including internal and external registries, VITL, Patient Ping, ACO data, or Blueprint data was much lower than for EHRs. Among care coordinators responding to the survey, there were far fewer who actually used any of these systems, including EHRs; among those who did use these systems, they had a similar perception of their capability as PCP respondents.

- Underutilization of external systems (e.g., Patient Ping, VITL): While some regions had heavier use of these systems than others, survey results indicated an underutilization of these systems, although the reasons were not explored in the survey. Some key informants noted the inconvenience and frustration of having to log into multiple portals to access the systems. Underutilization could also be due to a lag in the adoption and proficient use of the systems.

- Uncertainty between building data capacity locally or centrally: PCP and care coordinator survey results showed that respondents were more likely to use their own systems (e.g., EHRs and

internal registries) versus external systems/sources (e.g., VITL, Patient Ping, ACO data, Blueprint data, and external registries). Key informants raised the issue of whether future data infrastructure resources are best used to develop local capacity or central capacity, while not generally having the answer to the dilemma. Discussions about this issue recognized the potential value of these external systems while noting that they were currently not as useful as they could potentially be.

- Lack of data to support cost analytics: Key informants noted that the lack of data to understand costs and conduct return on investment or cost/benefit analysis significantly hampered their ability to make investments and to feel comfortable becoming involved in performance-based contracts. "Better cost analytics" was the third highest response to the survey question about what was needed to improve providers' readiness to participate in alternative payment models.

Cross-Cutting Strategies

While the three theme areas were discussed separately in the report, it is clear that each one complements the other. For example, without a robust health data infrastructure, care integration and payment reform are compromised. Care integration and care management must be front and center in any discussion of payment reform and data infrastructure.

An examination of the implementation successes and challenges reveals cross-cutting VHCIP strategies common to all and worth replicating in future undertakings, including the following:

- Emphasizing stakeholder engagement at all levels and in all VHCIP efforts and supporting transparency;
- Building on previous efforts and previous established infrastructure;
- Establishing vision at state level but enabling/encouraging local adaptation and implementation; and
- Emphasizing relationships, including between VHCIP leadership and stakeholders and across stakeholders; and
- Building understanding that health reform is complex, takes time, and is an iterative process.

The goals of VHCIP were to achieve better care, better health, and lower health care costs. While examining whether these goals were met was beyond the scope of the State-led evaluation, it is clear that within the three areas that were evaluated, significant strides forward were made that ultimately contribute to better care, better health, and lower health care costs. VHCIP continued Vermont's rich history of health care innovation and built upon successful strategies and structures (as opposed to starting anew). VHCIP is certainly not an end in and of itself; it built upon previous health reform successes and learnings and provides further successes and learnings that will inform Vermont's continued efforts toward better care, better health, and lower health care costs.

Appendices

Acronym List

Acronym	Definition
ACO	Accountable Care Organizations
ACH	Accountable Communities for Health
APM	All-Payer ACO Model
CAHC	Caledonia and South Essex Accountable Health Community
CHF	congestive heart failure
CHT	community health teams
CMS	Centers for Medicare and Medicaid Services
CMMI	Center for Medicare & Medicaid Innovation
COPD	chronic obstructive pulmonary disease
DA	Designated Agencies
DOH	Department of Health
ED	emergency department
EHR	electronic health record
EMR	electronic medical record
ENS	event notification system
EOC	episode of care
FQHC	Federally Qualified Health Center
GMCB	Green Mountain Care Board
HIPAA	Health Insurance Portability and Accountability Act
HIT	health information technology
HITECH	Health Information Technology for Economic and Clinical Health
HPA	Health Promotion Advocate
HSA	health service areas
ICM	integrated care management
ICCMLC	Integrated Communities Care Management Learning Collaborative
IFS	Integrating Family Services
INTERACT	Interventions to Reduce Acute Care Transfers
IOM	Institute of Medicine
LTSS	long term support services
MAPCP	Multi-Payer Advanced Primary Care Practice
NP	nurse practitioner
NVRH	Northeastern Vermont Regional Hospital
OCV	OneCare Vermont
P4P	pay-for-performance

PA	physician assistant
PCMH	patient centered medical homes
PCPs	primary care providers
PMPM	per member per month
RAVNAH	Rutland Area Visiting Nurse Association and Hospice
RCCs	Regional Care Collaboratives
RRMC	Rutland Regional Medical Center
RTI	Research Triangle Institute
SASH	Support and Services at Home
SDOH	social determinants of health
SIM	State Innovation Model
SSA	Specialized Service Agencies
SNF	skilled nursing facility
SSP	Shared Savings Programs
SVMC	Southwestern Vermont Health Care and Medical Center
TCM	transitional care management
TCN	transitional care nurse
VCO	Vermont Care Organization
VCP	Vermont Collaborative Physicians
VHCIP	Vermont Health Care Innovation Project
VHIE	Vermont Health Information Exchange
VITL	Vermont Information Technology Leaders
VNA	Visiting Nurse Association
WRFP	White River Family Practice

Evaluation Questions

Care Integration

- What are key care integration approaches, ***including facilitating structures (such as cross-region and multi-sector collaborations) supported by VHCIP? How do these programs interact with other care integration models*** being tested/ implemented across the state?
- What are the key characteristics of each approach in the sites that are studied, and how do they vary in evidence base, design, setting, focus, resource utilization, ***affiliation with a larger network, coordination/duplication with other providers and cost, and*** in comparison to national care models?
- ***How do stakeholders define success - what are the primary principles/characteristics of a successful model? This applies both to specific client-facing models as well as facilitating structures.***
- What ***qualitative and quantitative*** evidence is available to demonstrate effectiveness of each approach? How solid is the evidence? What are the key lessons learned from each?
- What environmental and organizational features enhance care integration approaches? What features result in barriers?
- Based on resources, cost, and perceived success ***of specific SIM-funded care integration programs***, which appear to be most suitable for scaling up? ***Which SIM-funded facilitating entities should be expanded?***
- ***How have payment reform activities impacted the viability of SIM-related care integration models?***
- What information do health care providers (physicians, nurses, care coordinators, social workers, others) need from other provider/care settings in order to provide high quality, coordinated and integrated care? How available, timely and high quality is this information? How are shared clinical plan data used and shared? ***In particular, how have SIM-related investments in health data sharing impacted care integration programs?***

Use of Clinical and Economic Data to Promote Value-Based Care

- ***What data use is being enabled by improved health information technology (VITL, EHRs, registries)?***
- What assistance or support is provided to those intended to use data via one of these technology platforms? **What further assistance or support is needed?**
- How are data ***from these sources*** being received, understood and applied?
- Are there unintended consequences associated with provider practice changes? If so, what are they?
- Are the right data being communicated? ***What types of data would providers (hospitals, primary care, specialty), community health partners (LTDSS, home health, mental health and substance abuse providers), and community social service providers) would be useful and for what purposes?***
- ***To what extent is technology enabling more use of data?***
- ***What is the usability of the technology? Intuitive design; Subjective satisfaction; Efficiency of use; Memorability; Error frequency and severity; Ease of learning***
- What data-related burdens or redundancies do providers/practices cite ***and how might these be addressed (technology or non-technology solutions)?***

Payment Reform and Financial Incentive Structures

- Under what financial and non-financial incentive structure(s) do providers *(hospitals, primary care, specialty), community health partners (LTDSS, home health, mental health and substance abuse providers), and community social service providers)* practice in Vermont?
- *Note: this question would remain but would not be answered through provider survey, but through site visit interviews and from existing records. We learned from the environmental scan that generally non-medical providers are not included in incentive structures.*
- Are providers *(hospitals, primary care, specialty)* aware of the incentive structure under which they practice? If so, how do providers view the current incentive structure(s) under which they practice? Why? *How are providers individually compensated (salary, productivity, etc.)? Have providers received incentive payments from ACO shared savings programs? If so, what percentage of compensation is from incentive structures?*
- What changes, if any, have taken place in the way providers *(hospitals, primary care, specialty),* practice as a result of these incentive structures?
- How does payment reform impact care integration, coordination, and provider *(hospitals, primary care, specialty), community health partners, and community social service providers)* collaboration? *Have providers, community health partners, community social service providers hired/ or plan to hire care coordinators… staff to provide preventive services, such as nutrition counselors?*
- How do attitudes toward incentives and changes providers have made in practice (if any) differ across provider types (**hospital,** primary care, specialty care), practice sizes (solo, small and large group), and ownership (hospital-owned vs independent)?
- Are there non-financial incentives that influence patient care, quality, and provider collaboration?
- What further adaptations at the practice and provider level do providers (*hospitals, primary care, specialty), community health partners, and community social service providers)* anticipate in the transition to next generation payment models, such as shared savings with downside risk, episode-of-care based payment, and global budgeting? What additional support or technical assistance **is needed to make** this transition?
- *How can community-based health and social service providers be included in alternative payment arrangements, including but not limited to shared savings, bundled payment, etc.?*
- How **has** payment reform **influenced** the practice of preventive medicine?