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Vermont Blueprint for Health

2015 Annual Report

January 31, 2016

VERMONT
Blueprint for Health

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Vermont Blueprint for Health in 2015

1 INTRODUCTION

The Vermont Blueprint for Health (the Blueprint) is a state-led, nationally-recognized initiative transforming health care delivery and payments. The foundation is the Blueprint's Transformation Network, a network of Practice Facilitators, Community Health Team leaders, and Project Managers, who work with Patient-Centered Medical Homes (PCMHs), Community Health Teams (CHTs), and local health and human services leaders. This network allows for rapid response to Vermont's health priorities through statewide implementation of new initiatives. Blueprint programs are continuously informed by comprehensive evaluations of health care quality and outcomes at the practice-, community-, and state-levels. As the care delivery system and payment model evolve, the Blueprint's aim is constant: connecting Vermonters with whole person health care that is evidence-based, patient- and family-centered, and cost-effective.

1.1 2015 IN BRIEF

In 2015, Blueprint work focused on three priority areas as outlined in the 2014 Annual Report:

1) Unified community health systems
2) Unified performance reporting and data utility
3) Options for payment modifications.

This work is summarized here and covered in depth later in this report.

In the first area, the Blueprint worked closely with Vermont's three Accountable Care Organizations (ACOs) to align quality and coordination activities. Together, the Blueprint and ACOs also supported the development and maturation of Unified Community Collaboratives (UCCs), groups with inclusive and balanced local leadership structures drawn from health and human service organizations. These Collaboratives are the foundation for the transition to Accountable Health Communities, where local coalitions take responsibility for the wellness of a population and the area's health care budget.

In the area of performance reporting and data utility, the Blueprint partnered with the ACOs to develop a unified approach to data collection, analysis, reporting, and distribution. The aim was to meet the analytic needs of the communities and practices and promote continuous quality improvement s. The Blueprint advanced these efforts in 2015 by acquiring the Blueprint Clinical Registry from the former vendor/host Covisint. It also expanded its data management and analysis work by merging all-payer claims data with clinical data from practices and complementary datasets for specific populations (such as substance abuse treatment data and corrections data) from state partners. The Blueprint also developed more comprehensive and timely performance reports for communities and practices, and contributed to the national literature through publication of Blueprint processes and outcomes in a peer-reviewed journal.

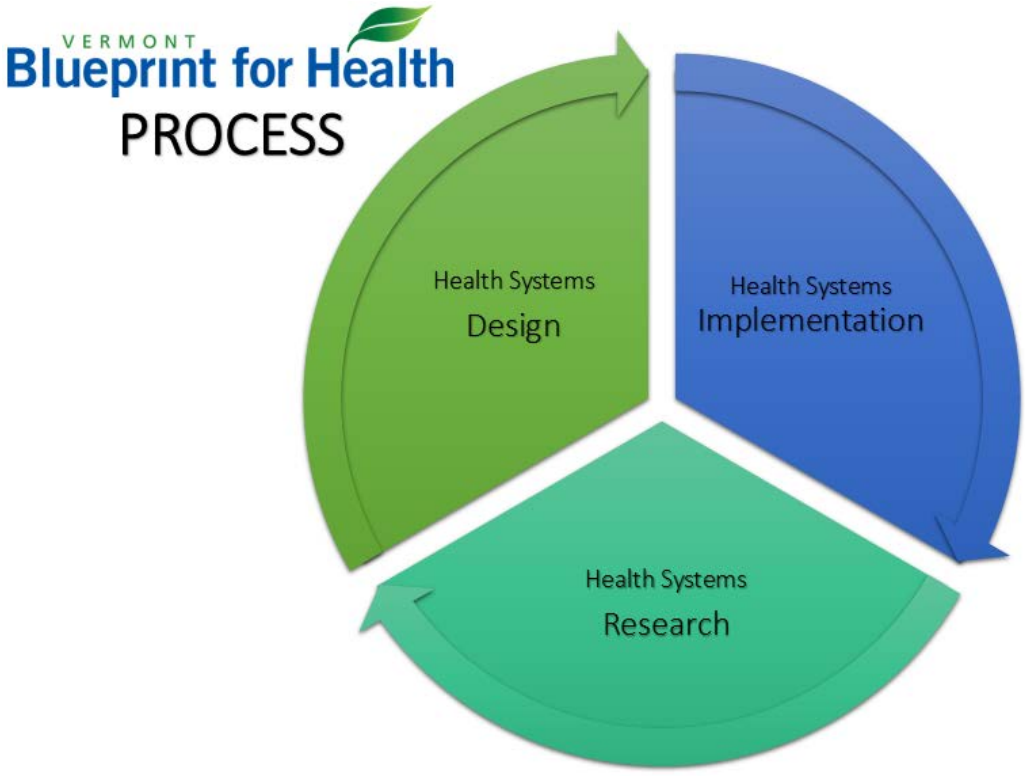
Payment modifications were the third priority area in 2015, and the Blueprint worked collaboratively with stakeholders to design a new payment model that increases payment amounts to practices to more

fully support the expense of operating as a medical home and establishes a payment component based on performance. These changes to the payment model will help Vermont shift away from the volume-based fee-for-service and towards a new payment model that rewards prevention and efficient delivery of high-quality care.

1.2 Serving Vermont Health Reform in 2016 and Beyond

Looking ahead to 2016 and beyond, the Blueprint is considering how the program can be positioned and configured to best serve Vermont's evolving health care system. The Blueprint's unique strengths such as its statewide Transformation Network, evaluation and analytic capabilities, and experience designing and implementing new services serve as a foundation for more reforms aimed at improving health quality and outcomes and reducing expenditures. These strengths are evident in the Blueprint's process, shown below, of health systems design, implementation, and research. Each step feeds the next.

Figure 1: Blueprint Process



1.2.1 Health Systems Design

Health Systems Design is the strength most recently demonstrated in the Blueprint's payment redesign process. In prior years this work included the Adverse Childhood Events (ACEs) prevention brief delivered to the Legislature in late 2014, the Hub & Spoke strategy for medication assisted treatment (MAT), the SASH program for helping elders age safely at home, and the Blueprint program itself. As a state-led program, the Blueprint is responsible for responding to priorities identified by the Vermont Legislature, and by extension, the people of Vermont. The Blueprint's does so by surveying national and international best practices, collecting input from stakeholders here in Vermont, and developing and vetting evidence-based, locally responsive solutions to Vermont's health priorities.

1.2.2 Health Systems Implementation

Health Systems Implementation is the part of the Blueprint process that utilizes the Blueprint's Transformation Network. Project Managers, Practice Facilitators, and CHT leaders work with Blueprint leadership, PCMHs, CHTs, and other affiliated health care providers to introduce and implement evidence-based, locally-responsive programs. These efforts are further supported by corresponding payments. The success of Health Systems Implementation is highly dependent on the engagement of the state's health care organizations, including the ACOs and all of the hospital systems, FQHCs, and independent practices they represent. Daily collaboration between state and local leadership, between public, private, and non-profit sectors, and between health and human services is required for successful implementation. Progress in this part of the process is tracked and measured continuously.

1.2.3 Health Systems Research

Health Systems Research encompasses all of the Blueprint's data collection, data quality assurance, data merging, measurement, analysis, performance reporting, and self- and system-evaluation work. The essential utility behind the Blueprint's Health Systems Research is the Blueprint Clinical Registry (formerly Docsite) for which the state acquired a perpetual software license in late 2015. Beginning in 2016, the reconstructed Registry will be hosted by VITL and managed by the Blueprint.

As a neutral, state-based service the Blueprint has unique access to data from a wide variety of sources. The program has demonstrated the effectiveness of merging clinical data with Vermont's all-payer claims data by producing comprehensive and meaningful reports for practices and communities. Many communities have used these reports to guide continuous quality improvement activities within health care organizations and across medical and social services. Recognizing the value of this reporting, other state services are contributing complementary datasets to the Blueprint's measurement and analytics team, with the goal of serving specific high-needs populations (such as, individuals accessing MAT or connected with the Corrections system) more effectively.

Beyond working to support continual improvement in delivery of health care across Vermont, the Blueprint is engaged in the national health reform dialogue through its participation in the Multi-payer Advanced Primary Care Practice Demonstration and the Milbank Memorial Fund Multi-State Collaborative, and through publication in national peer-reviewed journals.

1.2.4 2016 and Beyond

Each step in the Blueprint's process represents a strength that will continue to serve Vermonters as health care delivery and funding evolve. Leveraging those strengths in 2016, 2017, and beyond is considered at the end of this report, in Section 8.

2 How The Blueprint Works

2.1 The Blueprint is a statewide initiative with local leadership and implementation

The Blueprint combines state level strategic direction with local organization and ownership of care delivery. The state's 14 Health Service Areas (HSAs) each have an Administrative Entity such as a hospital or Federally Qualified Health Center (FQHC) that leads the Blueprint locally. Their work includes local project management, staffing of Community Health Teams (CHTs), and financial management. The Blueprint's Transformation Network includes Project Managers, hired by the Administrative Entities, who lead implementation and engage community partners. Each Administrative Entity has contributed their own financial and human resources, beyond the scope of their Blueprint grants, demonstrating their commitment to the Blueprint's sustainability and success.

2.2 Unified Community Collaboratives identify local health priorities, plan coordinated responses

The Administrative Entities in each HSA have always included local partners in guiding Blueprint implementation. That collaboration is even stronger today with the merging of Blueprint workgroups with Accountable Care Organization (ACO) workgroups. These combined groups are called Unified Community Collaboratives (UCCs). Their leadership teams include the area's Blueprint Project Manager, representatives of ACOs present in that community, local primary care leaders (including a pediatric provider), the hospital, home health or the Visiting Nurse Association, Area Agency on Aging, Designated (mental health) Agency, Designated Regional Housing Organization, and others. They meet to identify local priorities, goals, and strategies, including the configuration of the Blueprint CHT. The ultimate goal of these UCCs is to prepare each health service area (HSA) to function as an Accountable Health Community, responsible for the wellness of the whole population and its health care budget. This model supports the complete integration of high-quality medical care, mental health and substance abuse services, social services, and prevention.

2.3 Patient Centered Medical Homes provide top-quality primary care

Vermont's primary care practices are supported by the Blueprint in the process of achieving and maintaining recognition as Patient Centered Medical Homes (PCMHs) under the National Committee for Quality Assurance (NCQA) standards. These standards promote excellence in six (6) areas:

- patient-centered access
- team-based care
- population health management
- care management and support
- care coordination and transitions
- performance measurement and quality improvement

All Vermont insurers (Medicaid, Medicare, and major commercial insurers) support practices to do this work through per member per month (PMPM) payments to NCQA-recognized PCMHs. New performance-based payments will further promote improvement of utilization patterns and health

quality. The Blueprint's Transformation Network supports practices with Practice Facilitators, professionals trained in quality improvement and change management. Each practice has access to a Facilitator, who provides technical expertise in the NCQA standards and ongoing quality improvement coaching.

2.4 COMMUNITY HEALTH TEAMS EXTEND AVAILABLE SERVICES

Good medical care happens in a doctor's office, but good health happens in a community –the Blueprint's CHTs take on this challenge. CHTs supplement services available in PCMHs and link patients with the social and economic services that make healthy living possible for all Vermonters. CHT services include:

- population/panel management and outreach
- individual care coordination
- brief counseling and referral to more intensive mental health care as needed
- substance abuse treatment support
- condition-specific wellness education and more

The services may be co-located with the practices ("embedded") or centralized in the HSA. Actual service configuration, staffing, and location are determined by local leaders based on community demographics and health needs, identified gaps in available services, and the strengths of local partners. Funded by Medicaid, Medicare, and major commercial insurers, access to CHT teams is offered barrier-free to patients and practices (meaning no co-payments, no prior authorizations, and no billing).

2.5 EXTENDED COMMUNITY HEALTH TEAMS SUPPORT ADDICTION RECOVERY (HUB & SPOKE)

Since the CHTs first began operation, the Blueprint has added two service models to their offerings. One of these service models, called the Care Alliance for Opioid Addiction (Hub & Spoke), expands the availability of medication assisted treatment (MAT) for opioid addiction. Hubs are regional opioid addiction treatment centers, located around the state, that treat patients with especially complex needs, using either methadone or buprenorphine. Spokes are primary care and other specialty practices where buprenorphine is prescribed.

As part of the a statewide partnership that includes the Vermont Department of Health (VDH), the Blueprint has helped to expand access to MAT by opening a new Hub in the Rutland area, expanding Hub caseloads, and encouraging more primary care practices to offer buprenorphine-prescribing services. The program also embeds a nurse and a Master's-prepared, licensed mental health or addictions clinician in each of the Spokes. These staff members provide the additional clinical support and care coordination that MAT patients require. Through the Hub & Spoke approach, each MAT patient has an identified medical home, a single MAT prescriber, a pharmacy home, and access to all CHT services.

2.6 EXTENDED COMMUNITY HEALTH TEAMS SUPPORT HEALTHY AGING-IN-PLACE (SASH)

Since the CHTs launched, the Blueprint has worked with Cathedral Square, a Designated Regional Housing Organization, to add a service model called Support and Services at Home (SASH). SASH connects the health and long-term care systems for Medicare beneficiaries to support aging at home.

SASH is administered by regional Designated Regional Housing Organizations (DRHOs) and serves participants both in subsidized housing and in residences in the community at large.

Each panel of 100 participants is served by a SASH coordinator and Wellness Nurse. Together, they focus on three areas of intervention shown to be effective in reducing Medicare expenditures:

- Transition support after a hospital or rehabilitation facility stay
- Self-management education and coaching for chronic conditions and health maintenance
- Care coordination.

SASH is primarily funded by the Center for Medicare and Medicaid Services (CMS) through its Multi-Payer Advanced Primary Care Practice Demonstration (MAPCP), which is currently scheduled to end on December 31, 2016.

2.7 PAYMENT REFORMS FUEL HIGH-QUALITY, HIGH-VALUE CARE

Funding support for practices to function as PCMHs and for CHTs to operate comes from Medicare (through the MAPCP Demonstration), Medicaid, and major commercial insurers. While participation in the Blueprint program is optional for providers, Medicaid and major commercial insurers are required to participate in these payments. The exception is self-insured employers, though many have opted to participate.

In 2015, the Vermont Legislature approved the first increase in Blueprint payments since program inception. Taking the total new allocation as a starting point, the Blueprint led a consensus-based process to redesign the payment model. As before, funding was split into two payment streams. The first was a (PMPM) payment that PCMHs receive on top of their traditional fee-for-service payments; these support the additional and often un-reimbursable work that is needed to operate as a PCMH. The second payment stream funds CHTs.

Initially, the PCMH PMPM payment was based on the level of NCQA recognition achieved by the practice. The new payment structure (fully described in Section 5), sets a base rate for PCMH payments ($3 PMPM) based on NCQA recognition and participation in UCC quality improvement initiative. In addition to the base payment, the new payment structure features performance-based components designed to promote high-quality, high-value care: up to $0.25 for utilization and up to $0.25 for quality of care. The payment that funds a service area's CHT is approximately $2.70 PMPM. Following an adjustment made in July 2015, payers, both commercial and public, pay in proportion to their market share of members across the state.

2.8 DATA UTILITY, MEASUREMENT & ANALYTICS SUPPORTS A LEARNING HEALTH SYSTEM

The production and use of data is threaded throughout the Blueprint program. This data is used to evaluate the current status of health care delivery in Vermont and the progress made in quality of care, utilization, and cost of services. These evaluations, in turn, play a critical role in improvement.

The data the Blueprint works with include claims from the all-payers claims database, also known as the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), and clinical data from the Blueprint Clinical Registry, formerly known as DocSite. Claims data provides important insights into utilization of services and the cost of care. For example, the Blueprint can identify the rates at which

Vermonters go to the emergency department (ED), changes in rates of visits to primary care providers, and how long patients are staying in the hospital. Data in the Blueprint Clinical Registry comes from clinical documentation entered in practices' electronic medical records (EMRs). EMRs record the care delivered to patients and clinical measurements like height, weight, blood pressure, blood tests results, and much more. Linked claims and clinical data are more powerful than either dataset alone. The linked data can identify, for instance, the number of persons diagnosed with hypertension that have their blood pressure under control based on their most recent reading or the number of diabetics who are obese or who do not have their hemoglobin (Hb) A1c in control. The Blueprint includes these and many more clinically relevant measurements in dashboards for practices, and community-level profiles.

Clinicians use this information to improve care at their practices and communities use it to collaborate on addressing root causes, such as access to prescriptions, transportation, or nutrition support. The Blueprint also routinely evaluates its own performance and reports on program impact and return-on-investment (ROI) through its annual reports to the Vermont Legislature and peer-reviewed articles.

3 BLUEPRINT OUTCOMES FOR 2015

3.1 EARLY 2015 ANALYSIS EVALUATED IMPACT OF PCMH ACTIVITIES BY PROGRAMMATIC STAGE

Earlier this year, the Blueprint published an article in the peer-reviewed journal *Population Health Management* evaluating the impact of health delivery reforms for the years 2008-2013 (see Appendix A). The paper focused on the impact on patients' medical expenditures and utilization for those attributed to a patient-centered medical home (PCMH) compared to those who received their primary care from a non-PCMH practice. One way that this analysis differed from previous analyses is that patients were grouped by the programmatic stage that their PCMH had reached. The reason was to identify how the maturation of a PCMH affected the patient outcomes. In previous analyses, the Blueprint examined outcomes by calendar year. While this approach was straight forward, it diluted the impact that more mature PCMHs had.

The stages of PCMH maturation were divided into Pre-Year (the year prior to starting work with the program), Implementation Year (the year that the practice started to prepare for NCQA scoring and receive CHT staffing six months prior to scoring), NCQA Scoring Year (the year that the practice was independently scored against NCQA standards), Post-Year 1 (the first year after NCQA scoring), and Post-Year 2 (the second year after NCQA scoring). For example, if a practice started in December 2011, then 2009 was their Pre-Year, 2010 their Implementation Year, 2011 their Scoring Year, 2012 their Post-Year 1, and 2013 their Post-Year 2. The comparison population from each calendar year is comprised of people who received the majority of their primary care at sites that had not joined the program (no direct exposure) by December 2013. The comparison group was randomly assigned to each programmatic stage with the proportion from each year mirroring the overall distribution of the comparison group across all calendar years.

To account for differences between participant and comparison groups, rates were adjusted for demographics (e.g. age and gender groups), health status (3M Clinical Risk Groups), select chronic conditions as identified by the Blueprint program (asthma, attention deficit disorder, chronic obstructive pulmonary disorder, congestive heart failure, coronary heart disease, depression, diabetes, and hypertension), maternity, Medicaid and Medicare coverage, and length of enrollment. Medicare-specific adjustors included disability, end stage renal disease (ESRD), and death. Adjusted values were produced at the person level and summarized by relative year and study group.

3.2 EARLY 2015 ANALYSIS SHOWED PCMH PATIENTS HAVE LOWER MEDICAL EXPENDITURES

Based on the Difference in Differences (DID) analytic approach, a technique that calculates the final difference while accounting for any initial difference, the results suggest that patients receiving the majority of their care in a PCMH had reduced annual medical expenditures and utilization rates. After accounting for the initial (albeit statistically insignificant) difference between the PCMH patients and the comparison group in the Pre-Year, the expenditures for PCMH patients in Post-Year 2 practices was $482 less per year than the comparison group. When broken down to specific expenditure categories, the PCMH patients had significantly less inpatient expenditures (DID: $-217.80; p-value: <0.001), and outpatient expenditures (DID: $-154.10; p-value: <0.001). These decreases are also reflected in the utilization rates per 1,000, for which there were decreases in inpatient discharges, inpatient days,

surgical specialist visits, standard imaging, advanced imaging, and echography. The DID in rates of visits to medical specialists was not significant.

One category in which there was virtually no difference between the comparison group and the PCMH patients was emergency department (ED) expenditures. The utilization rates again reflected the expenditures. The results indicate an increase, though not statistically significant, in outpatient ED visits, and a significant increase in potentially avoidable ED visits.

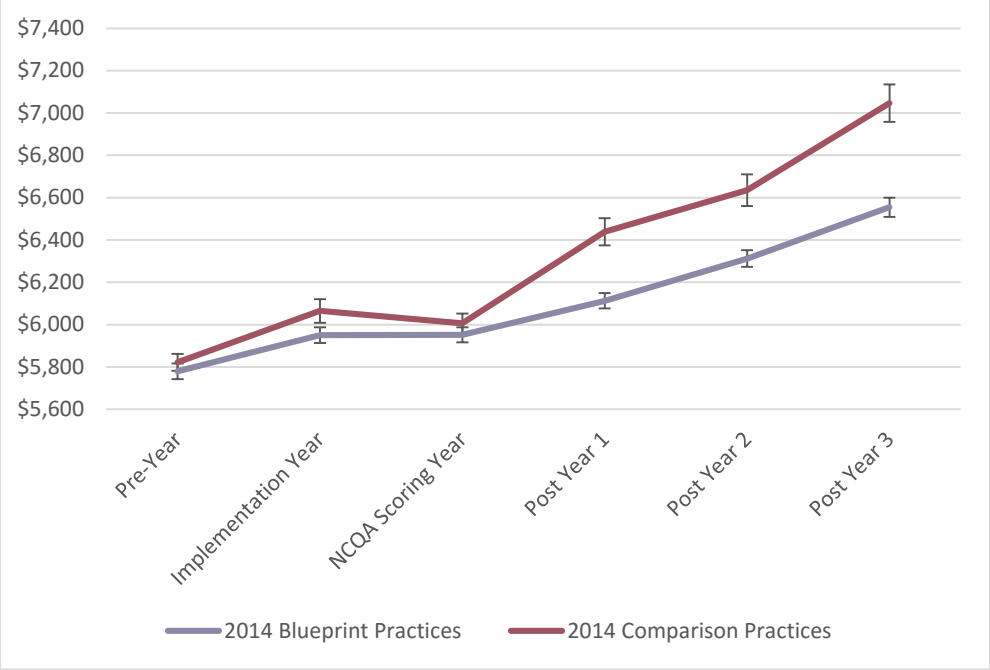
3.3 Early 2015 analysis showed PCMH patients use more special Medicaid services

An expenditure category in which there was an increase was use of special Medicaid services (SMS). These services, covered only by Medicaid, are targeted at meeting social, economic, and rehabilitative needs (e.g., transportation, home and community-based services, case management, dental, residential treatment, day treatment, mental health facilities, and school-based services). The results indicate that DID spending on SMS for PCMH patients increased by $56.50 (p-value: <0.001) relative to the comparison group. One explanation for the trend is that PCMHs and CHTs are better at linking their patients to social and non-medical services, although additional analysis into how communities are bridging the medical and non-medical services divide is needed for a more full explanation of the SMS expenditures. This analysis will most likely occur through the evaluation of UCC development.

3.4 Latest analysis shows more mature PCMHs continue to produce savings

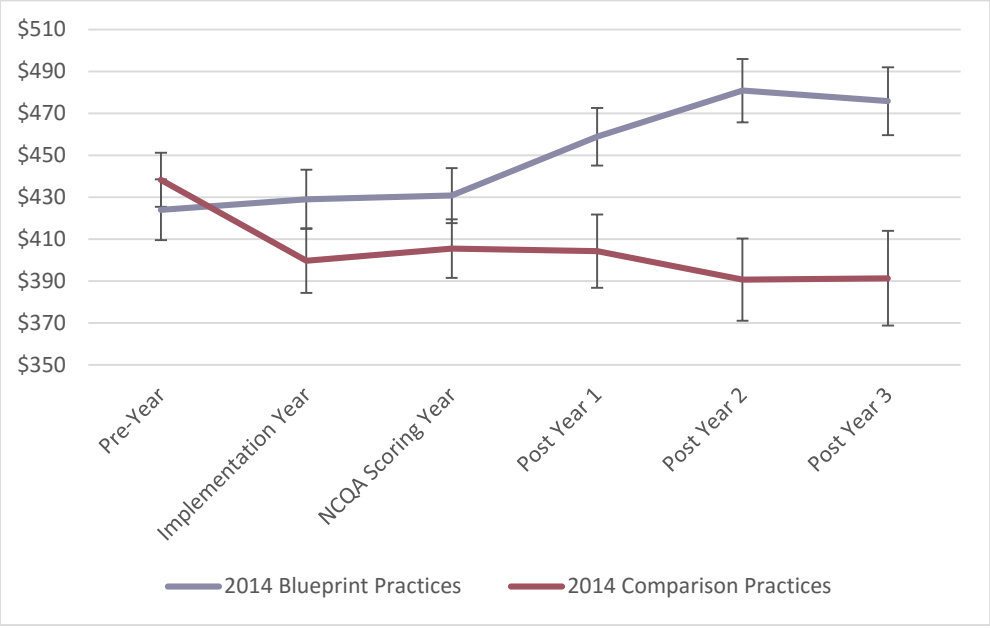
The Blueprint recently reran the programmatic stage analysis with a Post-Year 3 stage using the newly available 2014 claims and clinical data. Based on the methodology described above, the results indicate that the trend of diverging expenditures for patients receiving the majority of their primary care at a PCMH and patients receiving the majority of their care at a non-PCMH practice has continued. Figure 2 shows a significant difference beginning in Post-Year 1 and a greater difference in Post-Year 3. Using DID methodology, PCMH patients attributed to Post-Year 3 practices lowered their annual expenditures by $449.50 (p-value: <0.001) relative to comparison patients. A large proportion of the reduction in total expenditures is due to decreases in inpatient expenditures. Relative to the Pre-Year and the comparison group's expenditures, PCMH patients saw inpatient expenditures reduced by $160.40 (p-value: <0.001) annually.

Figure 2: Total Expenditure per Capita 2008-2014, All Insurers, Ages 1 Year and Older



As with the previous analysis, the SMS expenditures continued to grow Figure 3. Based on DID, PCMH patients saw their SMS annual expenditures grow by $98.90 (p-value: <0.001) relative both to expenditures in the Pre-Year and to the Comparison patients.

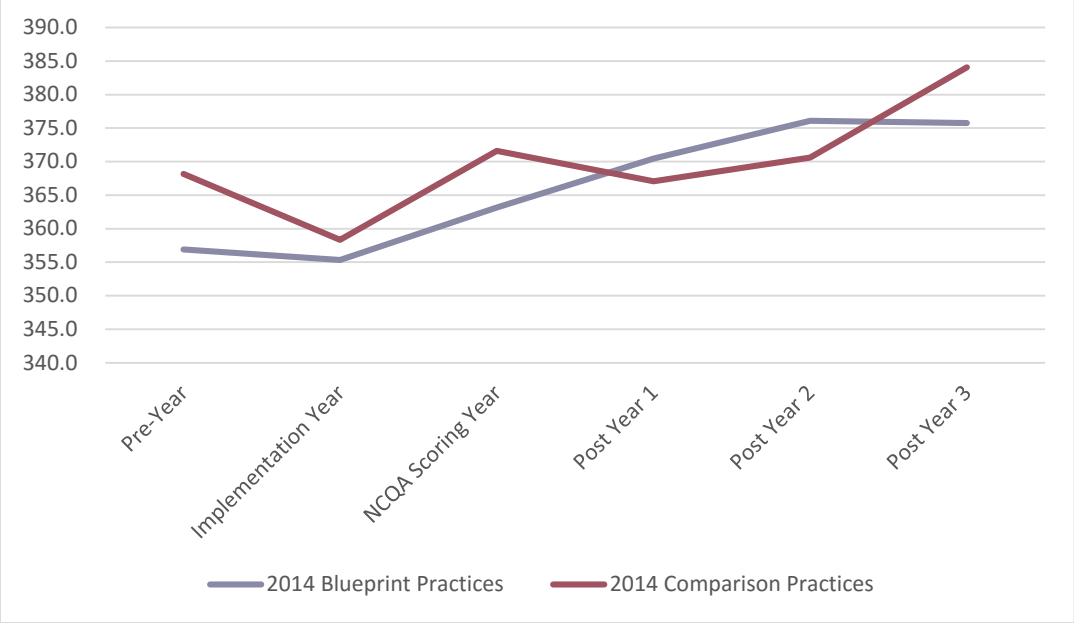
Figure 3: SMS Expenditures per Capita 2008-2014, All Insurers, Ages 1 Year and Older



Utilization rates also followed similar trends as in the previous analysis. DID analysis showed that inpatient discharges decreased by 3.0 per 1,000 (p-value: 0.095) for patients attributed to Post-Year 3 practices. Similarly, inpatient days decreased by 23 days (p-value: 0.076). Also, PCMH patients saw significantly lower relative rates of standard imaging, advanced imaging, and echography. However, while PCMH patients continued to have fewer visits to surgical specialists than the comparison group, DID analysis indicates that the PCMH patients had a slight increase in visits relative to the comparison group when accounting for the Pre-Year visit rates. Also different from the previous analysis, the results show significantly fewer visits to medical specialists (DID: -34.6; p-value: <0.001) for patients attributed to PCMHs than the comparison group.

ED visits for PCMH patients and the comparison groups continue to follow similar trend lines (Figure 4). While PCMH patients attributed to Post-Year 3 practices have significantly lower rates of ED visits, when the initial Pre-Year rates are accounted for (DID analysis), PCMH patients had 3/1,000 more ED visits than then comparison group (p-value: 0.474). Nevertheless, the ED visit trend line for PCMH patients appears to have leveled off. Another year of data will be necessary to see if the trend line holds and whether initiatives in HSAs across the state aimed at decreasing ED visits are effective.

Figure 4: Emergency Department Visits per 1,000 Members 2008-2014, All Insurers, Ages 1 Year and Older



3.5 Return on Investment

While using stage of program maturation to evaluate the growing impact that PCMHs and CHTs are having on health expenditures and utilization is important, funding for the Blueprint program and insurer payments to PCMHs and CHTs is calculated on an annual basis. Therefore to estimate an annualized return on investment (ROI), the reduction in expenditures was translated from programmatic stage to calendar year (CY).

Table 1 shows how the reduction in expenditures (both with and without SMS) for the CY2014 was calculated. First, the number of patients attributed to PCMHs at each programmatic stage in 2014 was established (second column). The patient count was multiplied by the estimated reduction in expenditures at each stage (columns 3 and 4) to find the total reductions for each stage in 2014 (columns 5 and 6). These totals are then summed to estimate the total reduction in expenditures for 2014 across all PCMH stages (last row).

Table 1: Summary of Patients Attributed to Each Programmatic Stage in 2014 for All Payers

Program Stage	Number of Attributed Patients	Difference in Total Expenditures per Person per Year*		Total Difference in Annual Expenditures	
		With SMS	Without SMS	With SMS	Without SMS
Pre-Year	0	--	--	--	--
Implementation Year	0	--	--	--	--
NCQA Scoring Year	5,853	$(54)	$(63)	$(315,631)	$(371,616.70)
Post-Year 1	44,713	$(326)	$(353)	$(14,568,381)	$(15,777,603)
Post-Year 2	60,596	$(323)	$(387)	$(19,575,995)	$(23,475,138)
Post-Year 3	180,357	$(492)	$(536)	$(88,682,334)	$(96,659,904)
Total				$(123,142,342)	$(136,284,263)

*Difference in expenditures between PCMH patients and comparison group for programmatic stage; no difference-in-difference (DID)

Table 2 shows the estimated return on investment in the CY2014 across all payers. The second column shows the amount of money that had been invested in 2014. It includes PCMH PMPM and CHT payments by Medicaid, Medicare, and commercial insurers and the Blueprint program budget, which includes staff salaries, community grants, contracts, and other operating expenditures. Column 3 shows the estimated reduction in total expenditures including Medicaid SMS for 2014. Based on a cost-gain ratio of total investment against reduction in total expenditures, the health care system saw a gain of approximately $5.80 in reduced expenditures for every dollar invested. Column 4 shows the reduction in medical expenditures without Medicaid SMS spending. The gain here was a reduction in expenditures by $6.50 for every dollar invested.

Table 2: Estimated Return on Investment for All Payers in Calendar Year 2014

All-Payer	Investment	Reduction in total expenditures w/ SMS	Reduction in expenditures w/o SMS
Reduction in expenditures		$123,142,342	$136,284,263
PCMH Payments	$6,590,964		
Core CHT Payments	$8,893,643		
Total Payments	$15,484,607		
Blueprint Program Budget	$5,633,236		
Total investment	$21,117,843		
Return on investment		5.8	6.5

Note: Blueprint Program Budget is the average of the FY2014 and FY2015 budgets to estimate the calendar year 2015 budget. Also note the budgeted amount does not reflect actual programmatic expenditures, which may be lower.

3.6 Analysis of Return on Investment for the Medicaid Population

To calculate the return on investment by the State of Vermont for the Medicaid population in 2014, the same methodology as described for all payers was used (i.e. multiplying the number of Medicaid enrollees attributed to each PCMH-stage in 2014 by the reduction in expenditures for each PCMH-stage and calculating the total reduction of expenditures across all PCMH-stages). The reduction in expenditures for each stage was calculated in a model specific to the Medicaid population. Investments include both federal and state funding of PCMH and CHT payments and the Blueprint program budget.

When including SMS spending, the reduction in expenditures did not fully offset investments– for every state and federal Medicaid dollar spent on the Blueprint program, total costs decreased by only $0.90. However, when limiting the analysis to medical services typically covered by other payers, Medicaid saw a three dollar gain for every dollar invested (Table 3). Although total expenditures for Medicaid did not result in a net gain, the expenditure pattern shows decreased use of traditional health services and increased use of community-based supports – a promising balance of investments in health and the social determinants impacting health.

Table 3: Estimated Return on Investment for Medicaid in Calendar Year 2014

Medicaid	Investment:	Reduction in expenditures w/ SMS	Reduction in expenditures w/o SMS
Reduction in expenditures		$8,644,011	$29,554,703
PCMH Payments	$2,202,342		
Core CHT Payments	$2,172,308		
Total Payments	$4,374,650		
Blueprint Program Budget	$5,633,236		
Total investment	$10,007,886		
Return on investment		0.9	3.0

Note: “Blueprint Program Budget” is the average of the FY2014 and FY2015 budgets to estimate the calendar year 2015 budget. Also note the budgeted amount does not reflect actual programmatic expenditures, which may be lower.

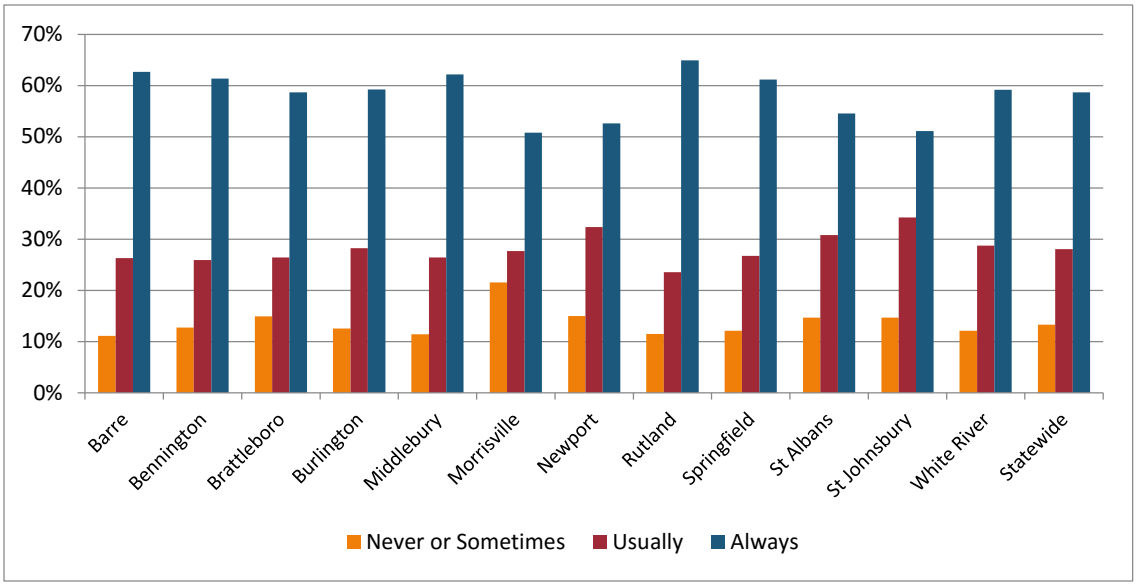
3.7 Patient Experience – The Consumer Assessment of Health care Providers and Systems (CAHPS) Survey

Every year, the Blueprint, in conjunction with the Green Mountain Care Board and the Vermont Health Care Innovation Project, invites practices across the state to participate in the Consumer Assessment of Healthcare Providers and Systems (CAHPS) PCMH survey. This survey helps practices and the Blueprint evaluate patients’ experiences at their primary care practice. The areas that the survey covers are:

- access to care (i.e., ability to get a desired appointment or answer during or after office hours, and wait time)
- communication (i.e., a provider’s ability to explain and answer questions about care or listen to concerns)
- self-management care (i.e., did provider discuss specific goals for patient’s health)
- office staff (i.e., were office staff respectful and helpful)
- coordination of care (i.e., did a provider follow up on tests ordered or was provider up-to-date on care received from a specialist)
- shared-decision making (i.e., provider talking to patient about reasons why a patient may or may not want to take specific prescription medicines)
- mental health and substance use (i.e., did provider discuss issues such as depression, stress, or personal or family problems with the patient)

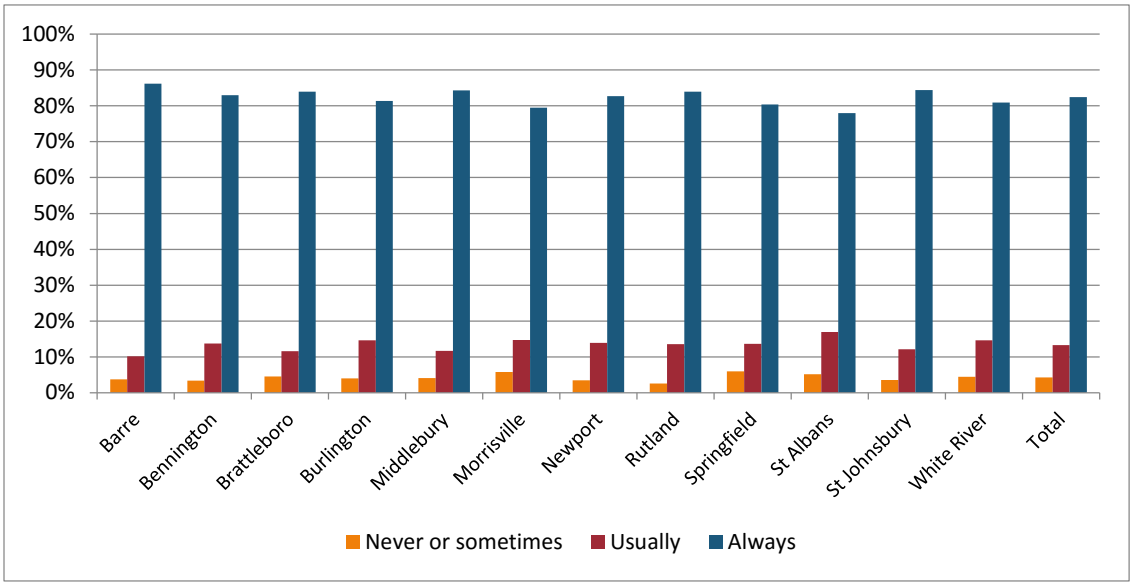
Overall, Vermonters scored their primary care providers and practices favorably. The below figures (Figures 5-9) show a sample of the response rates for some of the areas covered by the CAHPS-PCMH survey. For example, Figure 5 shows the combined responses to all five “access to care” questions for each of the HSAs. While there is some variation across the HSAs, all scored above 50 percent for “Always”. Figure 6 shows the composite response rates for the six “communication” questions. Providers scored even better in this category of questions with the “Always” response ranging from 78 percent to 86 percent. Figure 7 shows the response rates for “Shared-Decision Making”. Again, the majority of patients reported that their provider spoke to them a lot about their reasons for or for not taking prescription medication. In the next two figures, (Figure 8 and Figure 9), however, the responses are more centered around a 50/50 split, indicating providers can improve on incorporating the patient’s goals into treatment and putting more emphasis on the patient’s emotional well-being and personal situation. These two factors are central elements to a patient-centered approach to health care.

Figure 5: Response Rates for Composite Access to Care



Questions include: “In the last 12 months, when you phoned this provider's office to get an appointment for care you needed right away, how often did you get an appointment as soon as you needed?”; “In the last 12 months, when you made an appointment for a check-up or routine care with this provider, how often did you get an appointment as soon as you needed?”; “In the last 12 months, when you phoned this provider's office during regular office hours, how often did you get an answer to your medical question that same day?”; “In the past 12 months, when you phoned this provider's office after regular office hours, how often did you get an answer to your medical question as soon as you needed?”; and “Wait time includes time spent in the waiting room and exam room. In the last 12 months, how often did you see this provider within 15 minutes of your appointment time?”

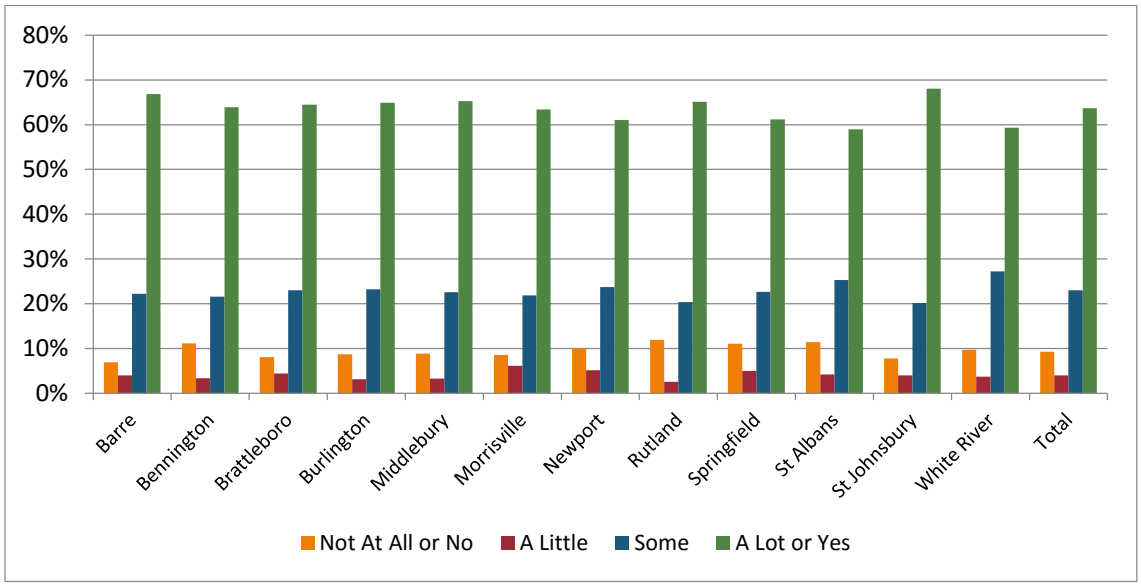
Figure 6: Response Rates for Composite for "Communication"



Questions include: “In the last 12 months, how often did this provider explain things in a way that was easy to understand?”; “In the last 12 months, how often did this provider listen carefully to you?”; “In the last 12 months, how often did this provider give you easy to understand information about these health questions or concerns?”; “In the last 12 months, how often did this provider seem to know the important information about your medical history?”; “In the last 12 months, how often did this

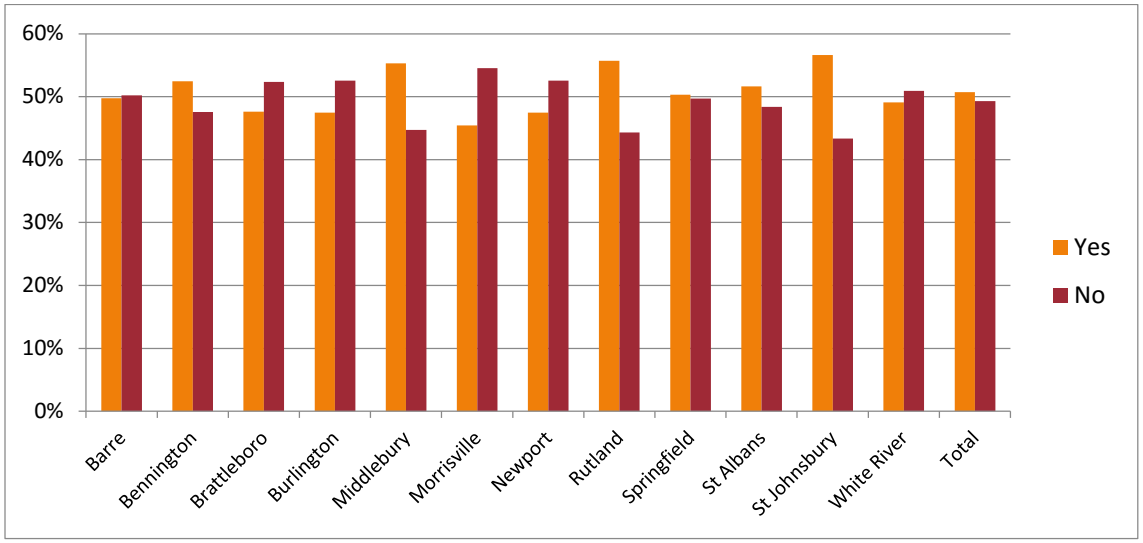
provider show respect for what you had to say?"; and "In the last 12 months, how often did this provider spend enough time with you?"

Figure 7: Response Rates for Composite "Shared Decision Making"



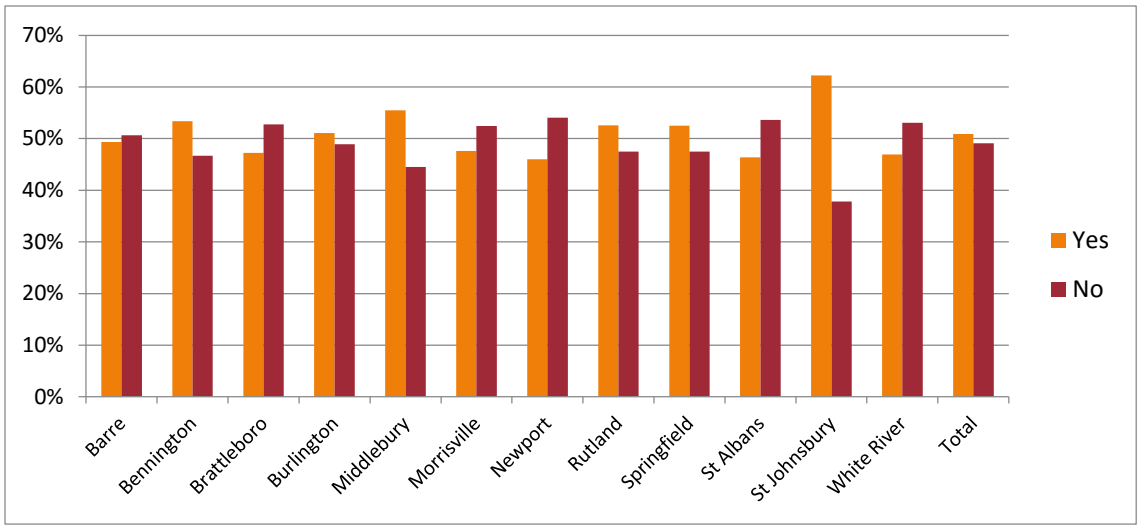
Questions include: "When you talked about starting or stopping a prescription medicine, how much did this provider talk about the reasons you might want to take a medicine?"; "When you talked about starting or stopping a prescription medicine, how much did this provider talk about the reasons you might not want to take a medicine?"; and "When you talked about starting or stopping a prescription medicine, did this provider ask you what you thought was best for you?"

Figure 8: Response Rates for Composite "Self-Management Support"



Questions include: "In the last 12 months, did anyone in this provider's office talk with you about specific goals for your health?" and "In the last 12 months, did anyone in this provider's office ask you if there are things that make it hard for you to take care of your health?"

Figure 9: Response Rates for Composite "Mental Health and Substance Abuse"



Questions include: “In the last 12 months, did anyone in this provider's office ask you if there was a period of time when you felt sad, empty or depressed?”; “In the last 12 months, did you and anyone in this provider's office talk about things in your life that worry you or cause you stress?”; and “In the last 12 months, did you and anyone in this provider's office talk about a personal problem, family problem, alcohol use, drug use, or a mental or emotional illness?”

4 LEADERSHIP AND CULTURE HIGHLIGHTS FOR 2015

In 2015, the Blueprint partnered with Vermont's three Accountable Care Organizations (ACOs) to design health care delivery and a payment structure that will improve health outcomes and efficiency.

4.1 BACKGROUND: WHAT ARE ACOS?

Accountable Care Organizations (ACOs) are groups of doctors, hospitals, and other health care providers who join together to provide high-quality, coordinated care. They can participate in numerous types of payment models, including the commercial and Medicaid Shared Savings Programs in Vermont. When certain defined process and outcomes goals are met and costs are kept down, savings may be shared by insurers (public or private) through shared savings plans with the ACO and distributed among member providers.

In Vermont, three statewide ACOs have formed – OneCare Vermont (OneCare), Community Health Accountable Care (CHAC), and Vermont Collaborative Physicians (Healthfirst). The participating members are linked by common business interests and could roughly be characterized as representing hospital systems and independent providers (OneCare), Federally Qualified Health Centers (CHAC), and independent providers (Healthfirst), although there are significant exceptions to this rule.

Beyond their formal role as shared-savings ACOs, these organizations are functioning as provider networks advocating for the interests of their constituents – an important advance in organizational capacity in Vermont's health care landscape.

4.2 BLUEPRINT/ACO INTEGRATION

Vermont's three ACOs could behave as competitors (for members, patients, funding, power), but together with the Blueprint for Health they have formed an alliance dedicated to putting population and patient needs first.

Throughout 2015, Blueprint leaders met weekly with leadership of the three ACOs to plan payment reforms, a shared data utility and collective reporting, and the establishment and maturation of Unified Community Collaboratives (UCCs, also known as Regional Community Performance Committees) in each health service area.

4.3 ESTABLISHMENT OF UNIFIED COMMUNITY COLLABORATIVES

The partnership of Blueprint and ACO leadership is mirrored at the local level in UCCs, groups that merge the long standing Blueprint Integrated Health Services workgroups with the ACOs' Regional Clinical Performance Committees. The resulting Collaboratives are intended to identify priorities for improvement, select service models and strategies, and guide planning, implementation and oversight for coordination and quality initiatives.

4.4 UCC LEADERSHIP TEAMS REPRESENT BOTH HEALTH CARE AND HUMAN SERVICES

UCC formation began with establishment of representative leadership teams. By design each leadership team has balanced representation – including primary care leaders from each ACO in the area (including

a pediatrics provider) as well as leaders from other major local service provider groups such as the area's Hospital, Designated (mental health) Agency, Home Health or the Visiting Nurse Association, Area Agency on Aging, and Designated Regional Housing Organization.

4.5 Field Staff Integration

The Blueprint and ACO field teams have joined forces to support the local UCCs. The combined field team, jointly led by the Blueprint and ACOs, leverages the Blueprint's Transformation Network and the ACOs' provider and clinical partnerships. Blueprint Project Managers, CHT Leaders, and Facilitators act as neutral conveners in their HSAs and work in partnership with the ACOs' local clinical representatives. The field staff from across the state also meet together regularly for shared Blueprint/ACO updates, best-practice sharing, peer support, and professional development such as training in new continuous quality improvement tools.

5 PAYMENT REFORMS AND FUNDING HIGHLIGHTS FOR 2015

5.1 2015 MARKS FIRST INCREASE IN PAYMENTS TO PCMHS IN PROGRAM HISTORY

As of early 2015, Blueprint payments to Patient-Centered Medical Homes (PCMHs) and Community Health Teams (CHTs) had not increased since the program's launch. Feedback from both practices and CHTs indicated that these payments were no longer sufficient to cover the cost of the work required to operate as a medical home. These concerns brought into question the viability of the Blueprint program even as early evidence from Medicare and Blueprint evaluations indicated that the program was producing a positive return on investment and improving health outcomes.

New appropriations in the state budget were needed to cover Medicaid's portion of any payment increase for the 2016 state fiscal year (July 1, 2015 through June 30, 2016) and beyond. The programmatic changes, basic payment models, and proposed payment amounts were formally introduced in a report submitted to the Vermont State Legislature in October 2014. These reforms included 1) a new medical home payment model (described below), 2) doubling of the medical home payment amounts, 3) a shift of CHT payments to a market share basis, and 4) doubling of the CHT payment amounts. In January 2015, the Governor's budget recommended a new appropriation to support Medicaid's portion of the payment increases based on the October report. This was followed by a challenging Legislative session due to a large budget deficit. Despite these challenges, on May 16, 2015, the session ended with a new appropriation of $2,446,075, about 50% of the amount needed for Medicaid to fully implement the payment proposals.

5.2 CONSENSUS PROCESS DETERMINED ALLOCATION OF NEW FUNDING

After May 16, leadership from the three ACO provider networks, the Blueprints leadership committees, commercial insurers, and leadership in the Department of Vermont Health Access (DVHA), which oversees Vermont's Medicaid program, reviewed the best options for use of the new funds. Priorities (highest to lowest) for payment changes emerged as 1) increasing medical home payment amounts but at a lower level than originally proposed, 2) adopting a new medical home payment model, and 3) shifting CHT payments to a market share basis. Unfortunately, the amount appropriated for increased payments was not enough for any increase to CHT payments. Based on these priorities, on June 18, 2015 the Blueprint leadership committees supported a formal recommendation for payment modifications, and this recommendation was presented to the Green Mountain Care Board so that payment changes would be included the 2015 rate approval process for commercial insurers.

5.3 CHANGES TO PCMH PAYMENTS

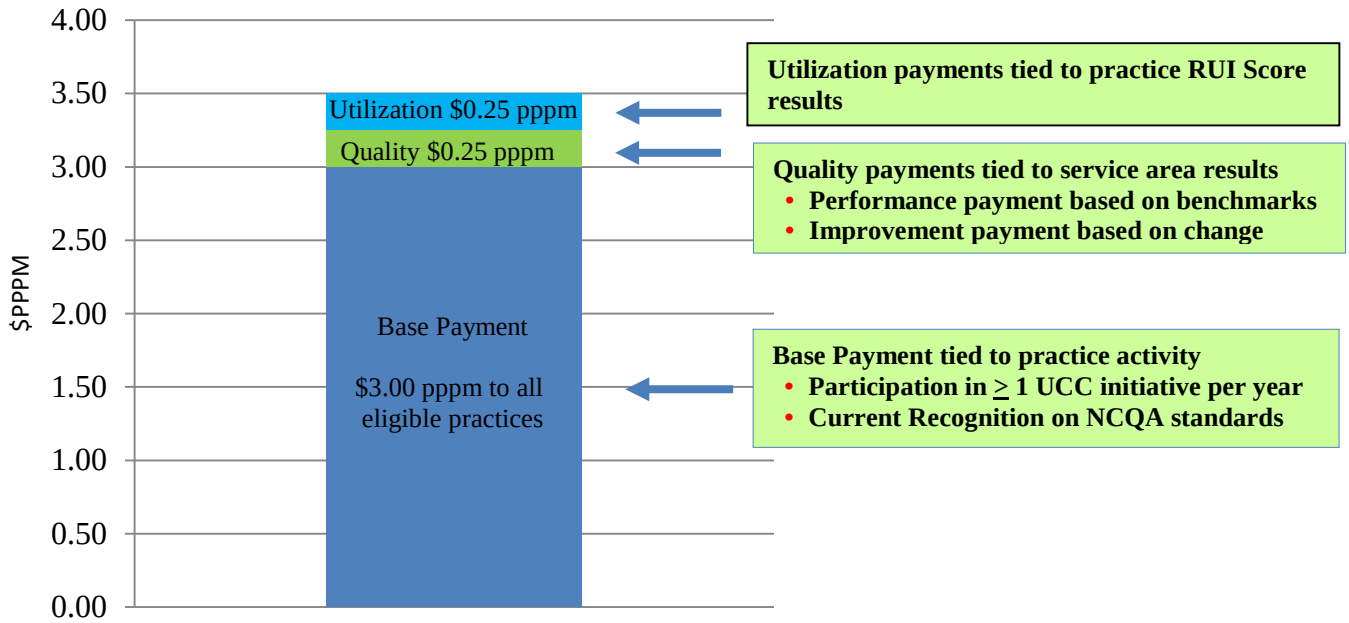
5.3.1 Increased base payment requires NCQA pass and UCC participation

The first change in payments reflects the first two priorities identified above: payment increases and adoption of a new payment model. While Blueprint payments to PCMHs have always had the purpose of incentivizing practices to adopt the patient-centered integrated care model of the medical home, the new payment structure adjusted the focus of these incentives. The new model moved from PMPM (per-member per-month) payment levels based on a practice's NCQA recognition score (averaging $2.05 PMPM; ranging from $1.36 to $2.39 PMPM) to a base payment of $3.00 PMPM contingent on qualifying

for or maintaining recognition as a PCMH and participation in the UCC. One reason for this decision was practice feedback indicated that the effort required to achieve the highest level of recognition did not result in corresponding increases in the standard of care practices were able to provide. A shift to a pass/no-pass payment model allowed providers to focus on the must-pass elements in NCQA scoring, plus any additional areas they determined clinically relevant for their practice and patients. The other aspect of the base payment, the participation in UCC development and quality improvement initiatives, is meant to further incent collaboration with other practices and other medical and social service providers in the service area.

The new payment model also included two performance-based payments, up to an additional $0.50 PMPM: one based on a composite of quality measures and the other based on health service utilization.

Figure 10: Structure of the new Medical Home Payment Model



5.3.2 Quality performance payment incentivizes improvement on core measures

The second part of the new PMPM payment model includes the two performance-based payments based on quality of care and utilization of health care services. Combined they offer up to $0.50 PMPM. The quality performance payment is based on an HSA's outcomes in four measures that are part of the Centers for Medicare & Medicaid Services (CMS)-defined Medicare ACO core quality measures:

1. Adolescent Well-Care Visits
2. Developmental Screening in the First Three Years of Life
3. Diabetes in poor control (i.e. Hemoglobin A1c >9%)

4. Rate of Hospitalization for Ambulatory Care Sensitive Conditions[1]

Several fundamental decision points were used in the selection of these four measures:

- These measures reflect the priorities of each of the three provider networks (ACOs) in Vermont.
- Each measure can be generated at a service area level using Vermont's centralized data sources without any need for additional data collection or reporting by providers.
- Each measure is tied to prevalent underlying health concerns involving complex medical and social determinants.
- Each measure can be improved through better coordination, outreach, and transitions between medical and non-medical providers.
- The blend of the four measures emphasizes improved coordination, quality, and prevention across a broad spectrum of the life span.

Current results suggest an opportunity for improvement. An example highlighting variation in results across Vermont's service areas is shown in Figure 11.

The HSA outcomes for each of these measures were compiled into a single score based on whether the HSA's outcome for each measure was above or below the state average or whether the HSA qualified for a high achiever distinction, and whether scores improved from one measurement period to the next. The scoring methodology is described Appendix B. The purpose of basing a practice's payment on HSA outcomes was again to encourage providers to participate in population and community health improvement initiatives with the goal of greater collaboration across medical and social provider groups.

Outcomes for each of these four measures are reported in the Blueprint's HSA Adult and Pediatric Profiles (available here: http://blueprintforhealth.vermont.gov/reports_and_analytics/hospital_service_area_profiles). Of note, the HSA outcomes for each of these measures were adjusted by demographic characteristics, payer mix, and health status so as to be comparable to the state average.

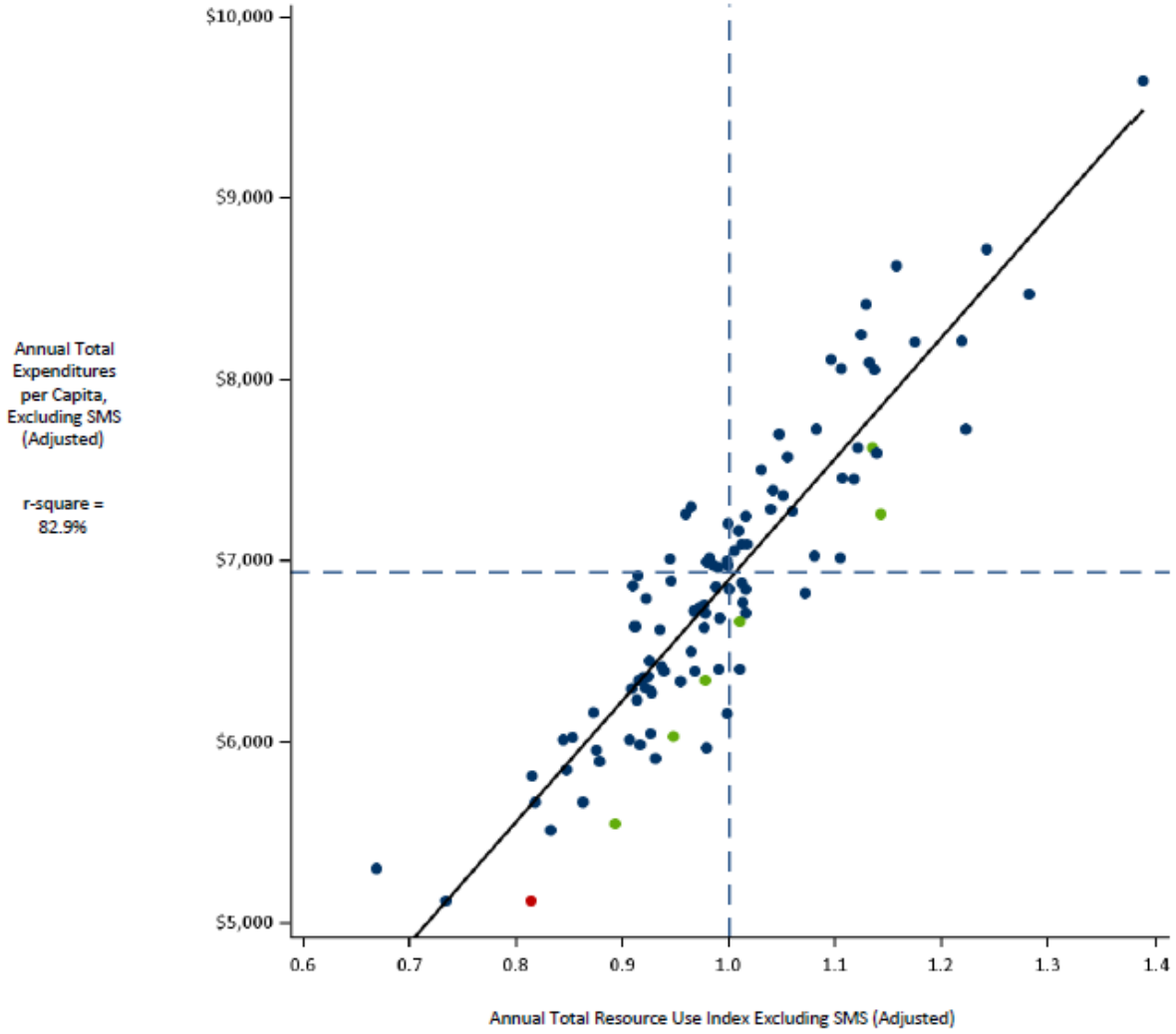
5.3.3 Utilization performance payment incentivizes improved efficiency

The utilization performance payment is based on Total Resource Utilization Index (TRUI). The TRUI is a standardized measure that reflects overall utilization and is endorsed by the National Quality Forum. It removes the influence of price variation and can be compared across organizations and geographic settings. Changes in the TRUI have a predictable impact on health care expenditures. The total index is comprised of four domains (Inpatient, Outpatient Facility, Professional, and Pharmacy). TRUI results are routinely generated for each practice and each service area using standardized methodology, and the results are reported back to practices and service areas in Blueprint profiles. Initially, the utilization payment was planned to be based on HSA outcomes. However, feedback from practices indicated a need for part of the performance payments to be based on a practice's performance, which the practice has direct influence over. The Blueprint and ACOs agreed a mixed model would strike the necessary balance and modified the payment model so that utilization payments would be based on practice

[1] PQI Chronic Composite (which includes the admission rate per 1000 for diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, heart failure, or angina without a cardiac procedure)

performance, as identified by the TRUI score listed in a practice's Blueprint practice profile. Payment model methodology is described in more detail Appendix B. Figure 11 shows the relationship between the TRUI and annualized expenditures per person for each practice (blinded). The data shows a strong correlation between utilization and cost, and also demonstrates the potential for reducing both across the state.

Figure 11: Annual Total Expenditures vs. Total Resource Use Index by Practice



Note: This figure is from a specific practice profile, in which the practice is represented by the dot shown in red. The green dots are other practices in the same HSA. The blue dots represent all practices around the state. The payment is based on the TRUI, or placement on the X-axis.

5.3.4 Timeline and magnitude of new payments

The new base payments and criteria went into effect for Medicaid on July 1, 2015. Commercial payers will implement the new base payments on January 1, 2016. Both Medicaid and commercial payers will implement the performance-based portion of the PMPM payment on January 1, 2016. Medicare will continue with the same payment model as before since it was previously negotiated in Vermont's agreement to participate in CMS's Multi-Payer Advanced Primary Care Practice (MAPCP) Demonstration.

The one modification is that since a practice is no longer incentivized to increase their NCQA score in the new payment model for Medicaid and commercial payers, a practice's NCQA score as of July 1, 2015 will serve as the minimum score for Medicare payments for the remainder of the demonstration. If a practice's score increases, however, the higher score will be used to calculate Medicare payments. Table 4 shows the distribution of patients attributed to PCMHs by insurer and the impact the increased PMPM payments will have on annualized PCMH payments by insurers.

Table 4: Annualized Impact of Increased PCMH Payment Rates.

Payer	Previous (Pre-July 1, 2015) Annualized PCMH Costs	Payer-Reported Attributed PCMH Patients*	Market Share of Attributed PCMH Patients	Increased Annualized PCMH Costs ($3.21 PPPM Avg.)	Increased Annualized Cost Difference	Percent Change From Previous Costs
BCBSVT	$2,721,019.40	107,819	36.30%	$4,153,187.88	$1,432,168.48	52.63%
Cigna	$34,305.60	1,404	0.47%	$54,082.08	$19,776.48	57.65%
Medicaid	$2,625,359.48	109,496	36.86%	$4,217,785.92	$1,592,426.44	60.66%
Medicare	$1,655,788.56	68,448	23.04%	$1,655,788.56	$0.00	0.00%
MVP	$273,290.04	9,866	3.32%	$380,038.32	$106,748.28	39.06%
Total	$7,309,763.08	297,033	100.00%	$10,460,882.76	$3,151,119.68	43.11%

*Estimates are based on insurer-reported PCMH-attributed patients in 2015-Q2.

5.4 CHANGES TO CHT PAYMENTS

The second major adjustment to Blueprint payments shifted CHT payments to a market-share basis. Previously, a fixed proportion of the overall CHT payments were assigned to each payer. However, due to changes in the commercial insurance market and the expansion of Medicaid, the relative proportions of patients attributed to each of the payers have changed substantially since these proportions were first determined, resulting in an unbalanced payment burden among the payers. Initially, the Blueprint worked with the Legislature and provided data needed to appropriate enough money to cover the increase in Medicaid's share. Table 5 shows the distribution of patients used to assign payers' CHT payments prior to July 1, 2015. It also shows current (2015-Q2) patient attribution numbers and the distribution across payers at the time of the payment methodology change.

Table 5: Annualized Impact of Basing CHT Payment on Market Share

Payer	Share of CHT Costs Pre-July 1, 2015	Previous (Pre-July 1, 2015) Annualized CHT Costs	Payer-Reported Attributed CHT Patients*	Market Share of Attributed Patients	Market-Share Annualized CHT Costs	Market-Share Annualized Cost Difference	Percent Change From Previous Costs
BCBSVT	24.22%	$2,302,103.76	107,819	36.78%	$3,583,903.56	$1,281,799.80	55.68%
Cigna	13.66%	$1,298,378.92	1,404	0.48%	$46,668.96	-$1,251,709.96	-96.41%
Medicaid	24.22%	$2,302,103.76	109,496	37.35%	$3,639,647.04	$1,337,543.28	58.10%
Medicare	22.22%	$2,112,004.36	68,448	23.35%	$2,028,798.72	-$83,205.64	-3.94%
MVP	11.12%	$1,056,952.68	6,000	2.05%	$199,440.00	-$857,512.68	-81.13%
Total	95.44%	$9,071,543.48	293,167	100.00%	$9,498,458.28	$426,914.80	4.71%

*Estimates are based on insurer-reported PCMH-attributed patients in 2015-Q2.

Following the Blueprint Executive Committee's approval of the new market-share-based payment structure at the end of June 2015, market share has been determined by insurer-generated PCMH attribution numbers on a quarterly basis. Insurer claims-based patient attribution counts, which are de-duplicated on a statewide level, have historically averaged about 54% of practice-reported patient counts, which include duplicates at a statewide level. Total CHT cost was previously based on one full-time equivalent ($70,000) for every 4000 practice-reported patients, and is now based on one full-time equivalent ($70,000) for an equivalent population measure of 2,162 payer-claims-attributed patients, in the medical home population. Market share of the insurer claims-based patient attribution counts now determines each insurer's quarterly share of the CHT cost. This shift to a market-share basis for CHT payments resolved a funding gap of approximately 5% of CHT costs which went unpaid in early 2015 due to insurer payment disagreements related to market-share shifts, and avoided a much larger potential funding gap that would have occurred in the absence of a market-share adjustment. This new payment approach aims to maintain stable funding for CHTs, while assuring that insurers pay a fair share of the cost as shifts occur in Vermont's insurance market. This process went into effect for Medicaid and commercial payers on July 1, 2015. The one exception to these changes, as with PCMH payments, was Medicare, which had previously negotiated its proportion of CHT payment in its agreement to participate in the MAPCP Demonstration.

5.5 Impact of Payments

In the legislation appropriating additional funds for increasing Blueprint payments to PCMHs and adopting a new payment model, the legislature requested an evaluation of the impact these payment increases had. At time of this report, the Blueprint does not have data on specific impacts for health expenditure or utilization since the commercial payers are implementing the base and performance

payments on January 1, 2016, and Medicaid is implementing performance payment on the same date. Medicaid has paid the higher base payments since July 1, 2015; however this is a period for which claims and clinical data are not yet available.

However, assuming reductions in expenditures and the Blueprint program budget hold steady over the next year, we can approximate the overall impact of payment increases on the return on investment. Table 6 replicates Table 2 but increases the payments by the estimates of total payments shown in Tables 4 and 5. Of note however, that the trend lines for expenditures in Figure 2 continue to diverge as PCMHs mature, indicating that the return on investment shown in Table 6 may underestimate actual returns. Nevertheless, Table 6 indicates a positive return on investment if slightly lower that the 2014 return on investment.

Table 6: Projected Impact on All Payers of Increased PCMH and CHT Payments in 2016

All-Payer	Investment	Reduction in total expenditures w/ SMS	Reduction in expenditures w/o SMS
Reduction in expenditures		$123,142,342	$136,284,263
PCMH Payments	**$10,460,883**		
Core CHT Payments	**$9,498,458**		
Total Payments	$19,959,341		
Blueprint Program Budget	$5,633,236		
Total investment	$25,592,577		
Return on investment		4.8	5.3

While the impact on health outcomes and expenditures can only be projected at the time of this report, the most immediate result of the payment increases is the retention of all practices in the Blueprint program. Prior to the increase in payments and finalization of the payment model, some practices warned they could not afford to continue to participate because previous payment levels did not cover the often unbillable or un-reimbursable services required of PCMHs. With the new payment model, all of these practices have either maintain or are planning to maintain their PCMH recognition. Furthermore, three new practices were recognized as PCMHs in 2015, and nine more are seeking recognition in 2016.

Another result is that since one of the quality measures for the performance-based payments is based on clinical data, practices have worked more closely with the Blueprint and its data quality team to improve the flow and quality of clinical data into the Blueprint Clinical Registry. Not only is this data important for assessing payment amounts, but it complements the wealth of information found the VHCURES claims data and allows for a deeper understanding of population health at the state- and local-levels.

Finally, planning for the new payment model has increased collaboration between the three ACOs. Representing different provider interests and diverse populations, they worked together with the Blueprint to develop a mutually beneficial payment model, which included agreement on four quality measures deemed most effective for improving population health. The ACOs have also worked collectively to build the local UCC structure. Each UCC is committed to moving forward in pursuit of a

cohesive and collaborative approach to improving population health in their community. Knowing that the base payment will require engagement in this effort, providers are engaging in the UCCs either directly or through their ACOs.

6 DATA COLLECTION, ANALYSIS AND REPORTING HIGHLIGHTS FOR 2015

6.1 DATA COLLECTION, ANALYSIS, AND REPORTING HIGHLIGHTS

The Blueprint is continuously expanding and refining an end-to-end data collection, analysis, and reporting process. From ensuring high-quality practice data is flowing to the statewide clinical registry, to merging clinical and claims data, to producing reports that inform quality improvement priorities, this work is a foundational part of the Blueprint's value to Vermont practices, patients and communities.

6.2 THE BLUEPRINT CLINICAL REGISTRY IN 2016

The Blueprint's registry has been aggregating clinical data for the last seven years. Data flows from Patient-Centered Medical Homes' (PCMHs') Electronic Medical Records (EMRs) to the Vermont Health Information Exchange (VHIE), operated by Vermont Information Technology Leaders (VITL), to the clinical registry. The clinical registry is also used for direct clinical data entry and clinical data management by some Blueprint partners, including the Support and Services at Home (SASH) program, some Community Health Teams (CHTs), Tobacco Cessation Counselors, and Self-Management Support Programs.

The registry software product, "DocSite" was operated by the vendor Covisint Corporation. When Covisint decided to discontinue support of their health care software products, the State developed a plan to acquire a perpetual license to use the DocSite software application and source code. The registry will be hosted by VITL. Blueprint staff and contractors will manage its development, maintenance, and operations. DocSite, as managed by Covisint, went offline on August 31, 2015. Contracts for the purchase of the perpetual use software license and management of the new clinical registry – to be known as the Blueprint Clinical Registry – were signed in December 2015. The acquisition of the perpetual use software license was supported by State Innovation Model Testing funds through the Vermont Health Care Innovation Project. The Blueprint Clinical Registry will re-launch to users in 2016.

The revitalized clinical registry will continue to enable data collection from providers across the state, creating a comprehensive clinical dataset documenting medical care and health outcomes for the majority of Vermonters. This dataset, together with all-payer claims data, is the basis for the Blueprint's performance reporting to practices and communities and its program and health system evaluations.

6.3 INTERFACE CONNECTIONS FROM BLUEPRINT PRACTICES EMRS TO THE VHIE AND REGISTRY

The programs and services provided through the Blueprint are supported by a statewide health information technology (HIT) infrastructure.

One important part of the infrastructure is the VHIE, which is operated by VITL. The Blueprint and VITL continue their collaborative relationship, providing connectivity to the VHIE and assisting Blueprint practices with improving the quality of data that are being sent to the Blueprint clinical registry (DocSite).

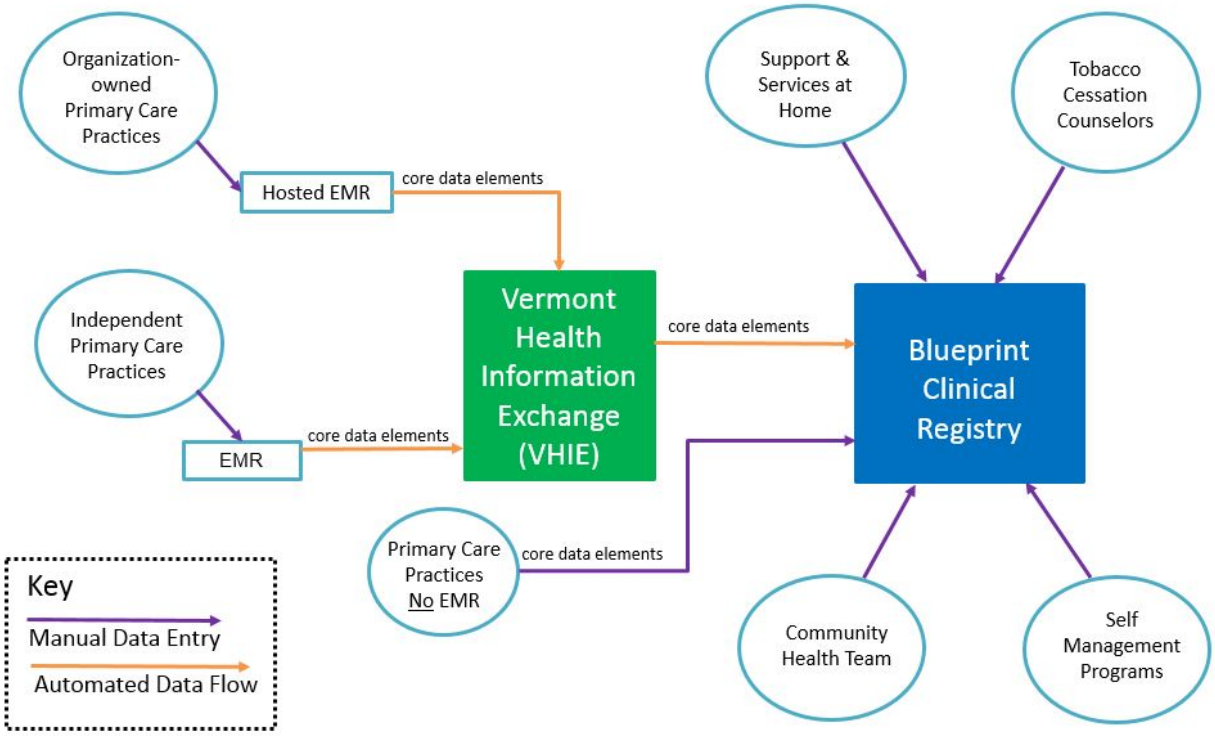
With the assistance of the Blueprint, VITL connects practice EMR systems to the VHIE via three different types of interfaces:

- Admit, Discharge and Transfer orders (ADT)
- Continuity of Care Documents (CCD)
- Medical Document Management (MDM) reports

The Blueprint clinical registry is the single largest consumer of clinical data from the VHIE. The registry serves as a data aggregator and reporting engine with the capability for population health analysis across the state.

In addition to data coming from interfaces with the VHIE, PCMHs can also send information to the registry via flat files, while program users, such as SASH, CHT, and TCC, can perform direct manual data entry. Figure 12 shows a schematic of the Blueprint's statewide clinical HIT infrastructure.

Figure 12: Vermont Health Information Technology Flows



6.4 End-To-End Health Care Information Transmission - Data Quality

6.4.1 Data Quality Project ("Sprint") Introduction

Data quality in practice EMRs and the VHIE is essential for meaningful reporting and accurately targeted improvement activities. Newer team-based care models used in PCMHs may include regular use of health information technology reports, such as panel reports (or lists) of patients that need attention, such as women over 50 who are overdue for a mammogram or diabetic patients with HbA1c over 8 who

need an office visit. Quality data is also required for reliable outcome measurements and the comparative effectiveness analyses use by practices, communities, and state health care leaders.

The Blueprint employs a team-based approach, known as "Sprints", across organizations to ensure accurate, timely, and reliable end-to-end data extraction, transmission, and registry reporting to support the delivery of high-quality health services. To date, the Sprints have uncovered a number of common data quality issues, such as patients still flagged as active who are actually deceased or patients attributed to a provider who no longer practices at that location.

Sprints connect representatives of individual PCMHs or full hospital/ health systems with Blueprint data quality specialists. Sprint project teams work together in weekly meetings, using a joint action plan, to rapidly resolve data quality issues. The Sprint is considered complete and successful when the lead clinician for the project and a Blueprint project team representative verify and attest to continuity of data quality from the source EMR through the VHIE to the clinical registry, based on reports generated from the registry.

The data quality improvements achieved by the Sprints benefit users of data from the VHIE, ranging from the PCMHs and hospital/health systems themselves, to the Accountable Care Organizations (ACOs), to the Unified Community Collaboratives, to state health care improvement and reform leaders – all of whom need access to high-quality, trustworthy, and secure information.

6.4.2 Core Data Quality

The Blueprint Sprint team experience has identified a core set of data quality issues consistent across a majority of practices. Issues fall into two major categories:

- Demographic and administrative data known as Admit, Discharge, and Transfer (ADT) data
- Clinical data made up of encounters recorded in the EMRs and laboratory results.

6.4.3 Admission, Discharge, and Transfer (ADT) Data

Proper provider-to-patient panel attribution is the biggest issue addressed in all communities during the Sprint process. This data set can be anywhere from 25% to 95% inaccurate and encompasses:

- Active and inactive providers
- Active, inactive, and deceased patient status
- Proper patient attribution to a provider

6.4.4 Clinical Data

Major issues encountered with the clinical data center around unstructured or free-text data entry into the EMR, disparate nomenclatures used by medical records systems for structured data entry, and the packaging, transmission, and acceptance of that data by other systems consuming it.

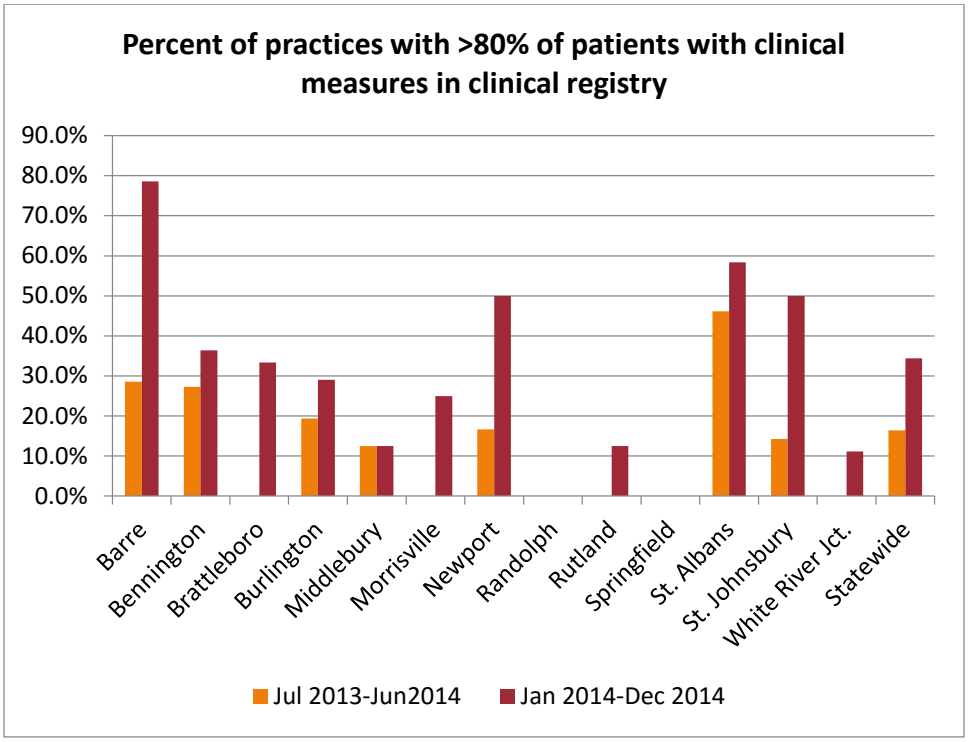
Since data quality issues vary from one EMR or information system to another and from one practice to another within a health care enterprise, the Sprint team addresses each community and its medical information systems with a plan of action designed to identify problems and incompatibilities with the data and establish a baseline from which the team can work and measure improvement.

The Blueprint has made a commitment to continue and expand end-to-end data transmission and quality efforts through the Sprint process in 2016.

6.4.5 Sprint Project Progress

The Blueprint's Sprint process helped 83% of PCMHs increase the percentage of their patients who have clinical measures in the clinical registry (measuring the data available for July 2013 to June 2014 against the data available for January 2014 through December 2014). Having more patients with clinical measures in the clinical registry supports more meaningful reporting and more accurate comparative analysis. It also enables more complete links between clinical and claims data.

Figure 13: Percent of practices by HSA with over 80% of their patients with clinical measures in the clinical registry



6.4.6 Sprint Projects in 2015

In 2015, the Sprint Management Team targeted a number of practices for Sprint data quality projects in Vermont. Unfortunately, Covisint's decision to sunset its maintenance of the DocSite software in 2015 led to a lack of skilled resources to assist with Sprint projects and ultimately system availability. As a result, the Sprint program continued to conduct data quality projects and establish new practice interfaces to the VHIE, but this data could not be filed into the clinical registry.

As soon as the DocSite software, licensed for application and source code use by the Blueprint in December 2015, can be re-established as a production system to be known as the Blueprint Clinical Registry, demographic and clinical data interfaces for the following practice sites will be connected to the Registry. At that time, all backlogged messages, being held by the VHIE since August 31, 2015, will be transferred into the Registry.

Table 7: Practice Sites with Interfaces Established to the VHIE in 2015

Blueprint 2015 Live VHIE Sites Awaiting Connection to Registry		
Health Service Area	**Organization Name**	**Offered Service Name**
Bennington	Brookside Pediatrics and Adolescent Medicine LLP	CCD
Brattleboro	Grace Cottage Family Health	CCD
Burlington	Alder Brook Family Health	CCD - ADT
Burlington	Charlotte Family Health Center, Inc.	ADT - Flat File
Middlebury	Porter - 9 Clinical Sites	ADT - CCD
St. Albans	Franklin County Home Health Agency	ADT - CCD
St. Johnsbury	NVRH - 4 Clinical Sites	ADT - CCD
Windsor	MAHHC - 3 Clinical Sites	ADT - CCD
St. Johnsbury	NCHC - 3 Clinical Sites	ADT - CCD
Morrisville	NCHC - 1 Clinical Site	ADT - CCD
Newport	NCHC - 1 Clinical Site	ADT - CCD

During 2015, 22 new interfaces were established between Blueprint practices and the VHIE. Of those interfaces:

- 10 are demographic information (ADT) interfaces
- 11 are clinical care summary document (CCD) interfaces
- 2 are flat file interfaces

In 2015, the Sprint team had initially targeted 18 onboarding and data quality Sprints for completion. The team met 80% of its stated goals in relation to new interfaces connected to the VHIE. Due to lack of Covisint resource availability and eventual DocSite system availability, the team met only 11% of its stated goals for the establishment of interfaces sending data into DocSite.

As of December 2015, two onboarding and data quality Sprints have been completed with data filing into Docsite with 11 projects pending final data quality checks and production interfaces to the Blueprint Clinical Registry. Five sites were deferred for either programmatic reasons or practice readiness, and one new site was added. In 2015, the Sprint Management Team worked with a total of 52 practice sites using 7 EMR systems in nine health services areas (HSAs).

Table 8. Sprint Project Work in 2015

Blueprint Sprint Program 2015		
Health Service Area	**Health Care Organization**	**Clinical Sites**
Bennington	Southern Vermont Medical Center Pediatrics - Complete	Sites - 1
Windsor	White River Family Practice - Complete	Sites - 1
Bennington	Brookside Pediatrics - Live VHIE, Pending Registry	Sites - 1
Burlington	Alder Brook Family Health - Live VHIE, Pending Registry	Sites - 1
Burlington	Charlotte Family Health - Live VHIE, Pending Registry	Sites - 1
Middlebury	Porter Medical Center - Live VHIE, Pending Registry	Sites - 13
Randolph	Gifford Medical Center - Live VHIE , Pending Registry	Sites - 9
St. Johnsbury	Northern Vermont Regional Medical Center - Live VHIE, Pending Registry	Sites - 9
St. Johnsbury	Northern Counties Health Care - Live VHIE, Pending Registry	Sites - 5
Windsor	Grace Cottage - Live VHIE, Pending Registry	Sites - 1
Windsor	Mt. Ascutney Hospital and Health Center - Live VHIE, Pending Registry	Sites - 2
Bennington	Battenkill - Deferred	Sites - 1
Bennington	Keith Michl, MD-PC - Deferred	Sites - 1
Bennington	Shaftsbury Medical Associates - Deferred	Sites - 1
Morrisville	Community Health Services of Lamoille Valley - Deferred	Sites - 3
Morrisville	Paul Rogers, MD - Deferred	Sites - 1
Upper Valley	Little Rivers Health Care - Deferred	Sites - 5
Burlington	Good Health PC - Pending VITL	Sites - 1

6.4.7 Planned 2016 Sprint Project Work

In 2016, the Sprint Management team plans to complete data quality and interface onboarding projects for all remaining eligible practices in Vermont. Currently, there are four health care organizations that have begun the Sprint process of onboarding their demographic information (ADT interfaces) in 2015 and will be working on the submission of clinical data (CCD interfaces), including required data quality efforts, in the early part of 2016.

As Sprint projects are completed, an additional six sites will be added to the program. Two existing sites have acquired new EMR systems and need to go through the process again in the coming year. The Sprint team will assist these sites in performing data migration, focusing on quality initiatives, and establishing the required interfaces.

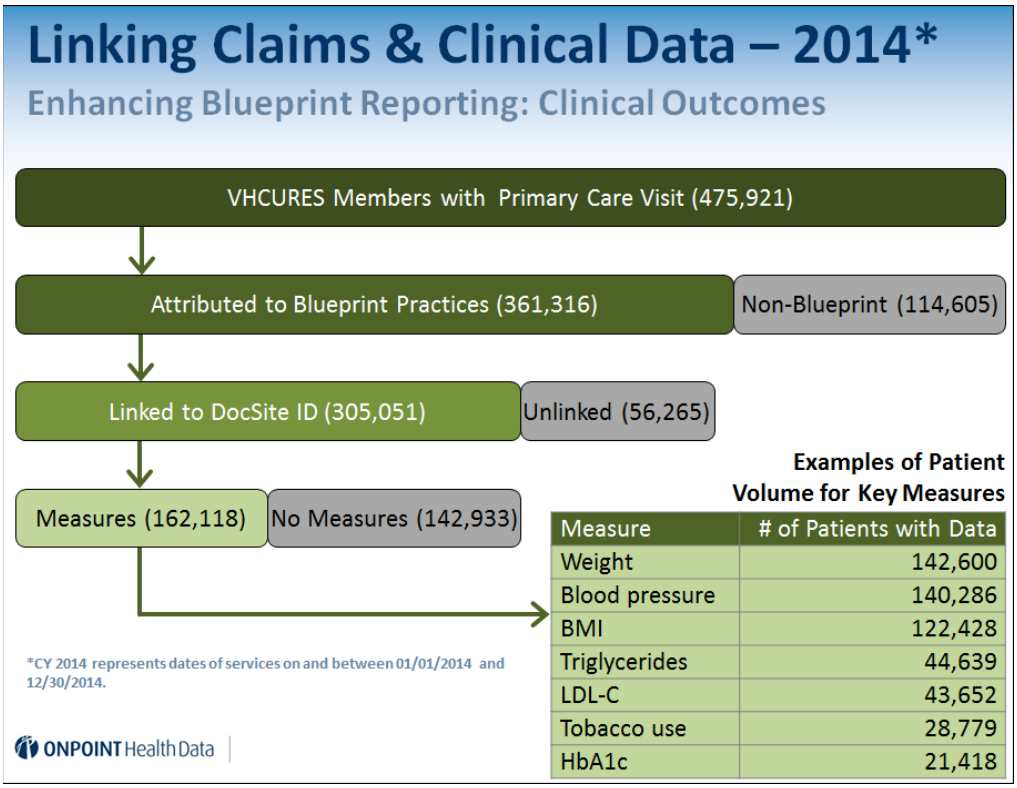
In total, the Sprint Management team has a goal of completing eleven onboarding and data quality Sprints in 2016, in addition to two new EMR implementations, accounting for 32 practice sites. As the

Sprint team approaches the end of onboarding the eligible primary care practices during the first half of 2016, we begin to investigate the integration of additional sources of data, including specialty practices, hospital inpatient discharge data, emergency room visits, and expanded data sets from FQHC practices.

6.5 How Clinical and Claims Data are Aggregated for Comprehensive Reporting

The Blueprint has developed a process for aggregating Vermont's clinical data, from the clinical registry, and claims data, from the all-payer claims database, Vermont Health Care Uniform Reporting and Evaluation System (VHCURES). After analysis of the data in the clinical registry for quality and completeness, de-identification of this data, and linkage of individuals' clinical records in the registry with individuals' claims records in VHCURES, the Blueprint's analytics vendor, Onpoint Health Data (Onpoint), determines the portion of the population in VHCURES for which clinical data can be assessed with claims, as shown in Figure 14.

Figure 14. Step Down of Available Clinical Measures in the Registry for Individuals with a Primary Care Claim in VHCURES



Examples of Patient Volume for Key Measures

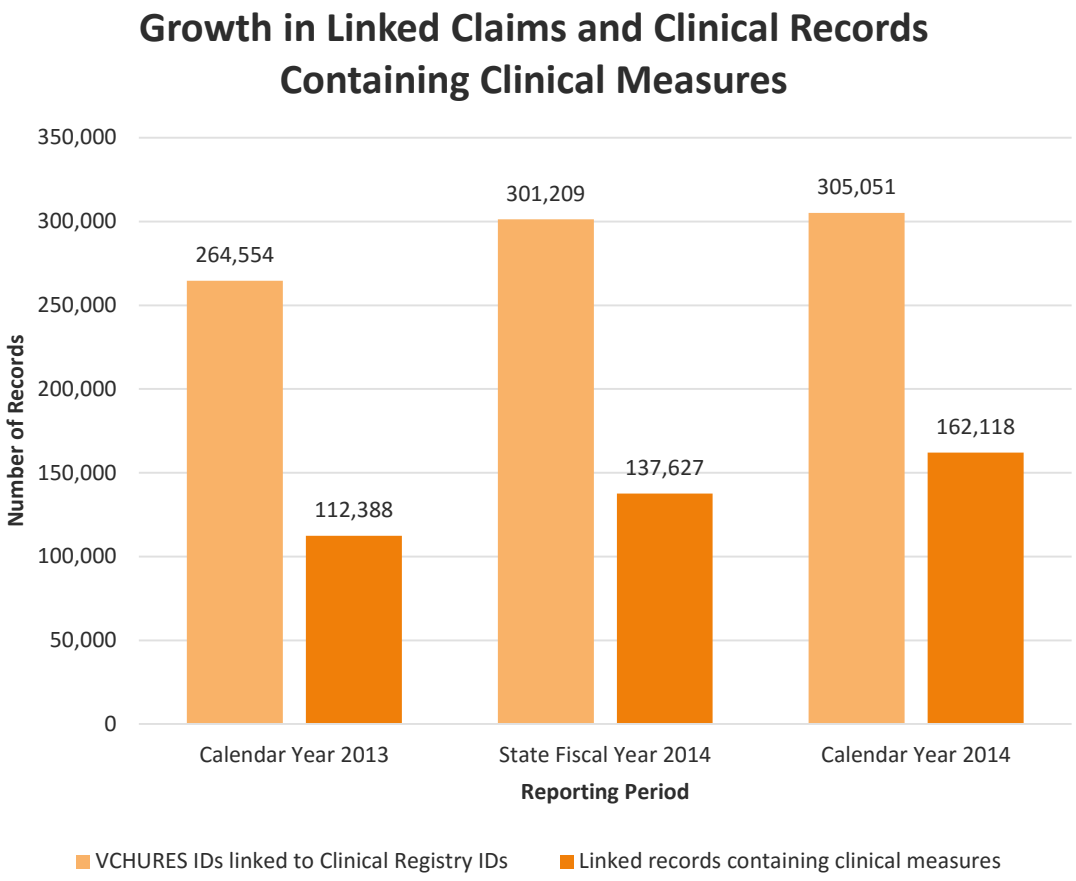
Measure	# of Patients with Data
Weight	142,600
Blood pressure	140,286
BMI	122,428
Triglycerides	44,639
LDL-C	43,652
Tobacco use	28,779
HbA1c	21,418

Note: that 2014 is the latest full calendar year for which data is available.

This population has increased every six months, driven by the Blueprint Sprint projects' work improving connections from PCMH or hospital/health system EMRs to the VHIE and clinical registry. An Onpoint analysis of calendar year 2013 clinical and claims data connected 264,554 clinical registry IDs with VHCURES member IDs. Within these 264,554 linked records, 112,388 included clinical measures. Six months later, Onpoint's analysis of state fiscal year 2014 (7/1/13 – 6/30/14) clinical and claims data connected 301,209 clinical registry IDs with VCHURES member IDs and found 137,627 of these included clinical measures. Within these 301,209 linked records, 137,627 (46%) included clinical measures.

Onpoint's analysis of calendar year 2014 clinical and claims data found 162,118 linked records that included clinical measures (53% of the 305,051 linked registry and VCHURES records from that reporting period).

Figure 15: Growth in Linked Claims and Clinical Records Containing Clinical Measures



One of the benefits of analyzing the step-down in available linked data is it helps to identify limitations on data quality and connectivity down to the specific practice site and organization. VITL and Blueprint data quality teams can use these gaps to target their work, identifying those HSAs and practices where clinical data is not being captured or sent to the VHIE and the Registry – and where a Sprint project may be warranted.

Nevertheless, the data that is available can begin to tell a compelling story of population health across regions. Figure 16 shows claims-based data on the percent of an HSA's diabetic population that received HbA1c testing (chart on the left), and the clinical-based data on proportion of those with HbA1c testing whose percent of glycosylated HbA1c is greater than 9%, an indication that their diabetes is not well controlled (chart on right). As another example of how the merging of claims and clinical can benefit the health system, Figure 17 shows the difference in costs and utilization rates associated with diabetics who have their diabetes in control (HbA1c < 9%) and diabetics who do not (HbA1c ≥ 9%). These types of

cost comparison dashboards, using clinical and claims data, can be used to provide meaningful guidance for community- and practice-level quality improvement initiatives.

Figure 16: Sample Part of Dashboard of ACO Measures Included in Blueprint HSA Profiles

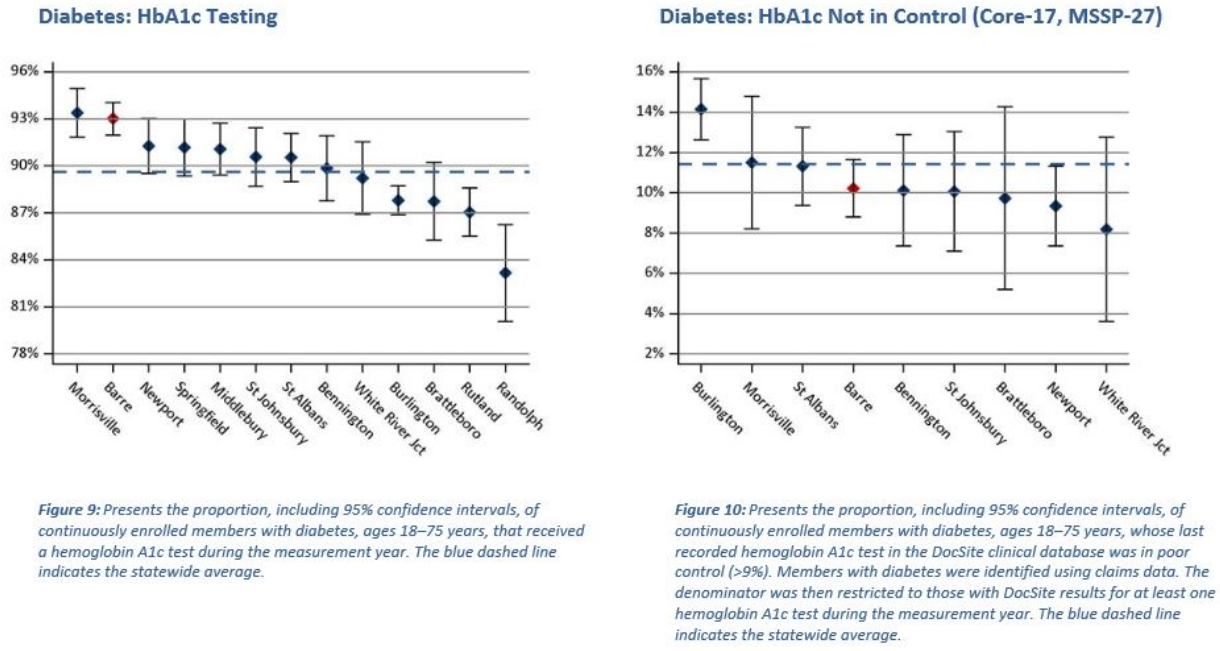


Figure 9: *Presents the proportion, including 95% confidence intervals, of continuously enrolled members with diabetes, ages 18–75 years, that received a hemoglobin A1c test during the measurement year. The blue dashed line indicates the statewide average.*

Figure 10: *Presents the proportion, including 95% confidence intervals, of continuously enrolled members with diabetes, ages 18–75 years, whose last recorded hemoglobin A1c test in the DocSite clinical database was in poor control (>9%). Members with diabetes were identified using claims data. The denominator was then restricted to those with DocSite results for at least one hemoglobin A1c test during the measurement year. The blue dashed line indicates the statewide average.*

Figure 17. Comparison of Diabetic Patients by HbA1c Control Status, Statewide

Comparison of Patients by HbA1c Control Status, Statewide

Metric	Diabetes A1c in Control	Diabetes A1c Not in Control
Members	5,923	1,007
Annual expenditures per capita	$13,938 ($13,498, $14,377)	$15,563 ($14,455, $16,672)
Inpatient hospitalizations per 1,000 members	178.3 (167.5, 189.2)	218.8 (189.4, 248.2)
Inpatient days per 1,000 members	835.7 (812.2, 859.2)	1,021.8 (958.2, 1,085.4)
Outpatient ED visits per 1,000 members	634.3 (613.8, 654.8)	743.3 (689.0, 797.5)

Note: Risk-adjusted rates with 95% confidence intervals are provided in parentheses. Outliers beyond the 99th percentile have been excluded.

Table 2: *Presents a comparison of health care expenditures and utilization in the measurement year for continuously enrolled members, ages 18–75 years, whose diabetes hemoglobin A1c was in control (≤9%) compared to those with poor control (>9%). Rates have been adjusted for age, gender, and health status. The rates in this table are presented at the state level only. Members with poor control had statistically significant higher total expenditures, inpatient hospitalizations, inpatient days, and outpatient ED visits.*

6.6 Data Reports to Practices and HSAs

6.6.1 Practice Profiles offer comparative reporting for quality improvement

Building on the Blueprint's data aggregation utility and data analysis capabilities, the program produces Practice Profile reports for 123 of 126 practices active in the program (the remaining 3 practices are too small for meaningful comparative analysis). There are distinct profiles for adults and for pediatric populations. These profiles report on a wide range of quality and utilization measures and compare practice results to local peer practices and a state average. In 2015 the Blueprint produced two sets of profiles, with each new release coming 6 months apart. The regular release of the profiles, with historical information included, provides primary care practices with a longitudinal look at their outcomes. They also help practices and Blueprint Practice Facilitators identify and prioritize quality improvement projects.

Since September 2014, practices have been receiving whole population profiles with data from all payers combined into a single report. Previously, performance data came separately from each payer. Providers rarely consider payer affiliation in their interactions with patients, so payer-specific data has limited usefulness in improving care. Very few practices had the resources to piece these reports together and assess performance for their patient population overall. Blueprint overcame this challenge with whole population profiles that include data for Vermont residents enrolled in major commercial health plans, Medicaid enrollees for whom Medicaid was the primary payer (excluding dual-eligible

beneficiaries), and Medicare enrollees for whom Medicare was the primary payer (ages 18 years and older and including duals).

The Blueprint distributes practice profiles directly to the primary contact on file with the Blueprint for each practice and to the Project Manager and Practice Facilitator representing the geographic hospital service area (HSA), as defined by the Vermont Department of Health (VDH), in which the practice is located.

6.6.2 HSA Profiles show health care quality and utilization for whole populations

The Blueprint also develops profiles at the hospital service area (HSA) level, essentially an aggregation, or "roll up," of the profiles for all practices within an area. These HSA Profiles provide data comparing utilization, expenditures, and quality outcomes within an individual HSA to all other HSAs and the statewide average.

Partnering with Vermont's ACOs, the Blueprint offers the HSA Profiles as a way to best operationalize statewide data collection and reporting, especially for ACO measures with a clinical component. To reduce the burden of clinical data collection (often through practice-level chart review) for production of the ACO measures, the Blueprint takes an extract from the statewide clinical registry (DocSite/The Blueprint Clinical Registry) and sends it to the analytics vendor, Onpoint Health Data. The clinical data extract is then linked to the claims data from VHCURES to produce clinical and hybrid measures (Figure 16).

Socioeconomic and behavioral data from the Behavioral Risk Factor Surveillance System/BRFSS, a telephone survey conducted annually by the Vermont Department of Health (VDH), is also included in the HSA profiles (Figure 18). This inclusion helps communities identify root causes of health disparities and identify behaviors that may impact health outcomes.

Figure 18: Sample Part of Dashboard of BRFSS Measures Included in Blueprint HSA Profiles

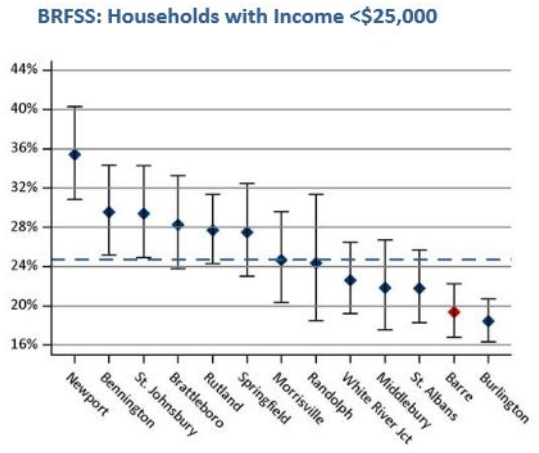


Figure 32: Presents the proportion, including 95% confidence intervals, of Vermont residents, ages 18 years and older, that reported a household income of less than $25,000 per year. This data was collected through the Behavioral Risk Factor Surveillance System (BRFSS). The blue dashed line indicates the statewide average.

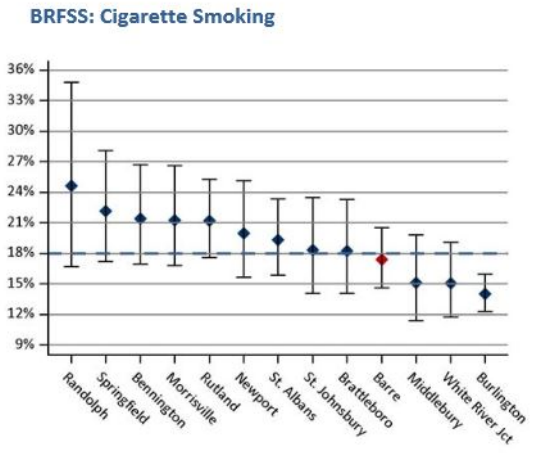


Figure 33: Presents the proportion, including 95% confidence intervals, of Vermont residents, ages 18 years and older, that reported being cigarette smokers. This data was collected through the Behavioral Risk Factor Surveillance System (BRFSS). The blue dashed line indicates the statewide average.

The regular production of timely HSA Profiles across all payers that feature ACO core measures and key population health indicators serves as a starting point for community-wide quality improvement initiatives. Additionally, in January 2016, performance payments are being implemented based on utilization (as reported in Practice Profiles) and quality measures (as reported in HSA Profiles).

Complete sets of both adult (ages 18 and older) and pediatric (ages 1 through 17) Blueprint HSA Profiles can be found on the Blueprint website, at
http://blueprintforhealth.vermont.gov/reports_and_analytics/hospital_service_area_profiles

6.7 COMMUNITY NETWORK ANALYSIS

6.7.1 The Challenge of Measuring Community Networks

Vermont's health care and human services organizations have partnered to varying degrees for as long as both have existed. The Blueprint strengthens these partnerships, by formalizing a convening role (the Project Manager) and workgroups (first the Integrated Health Services Workgroups, now the Unified Community Collaboratives (UCCs)). Anecdotal evidence abounds for the importance of this role and activity, but community network development had been uniquely difficult to quantify. In 2013, as part of the Blueprint program evaluation, contracted researchers trialed a new methodology for mapping and measuring community networks. This research was repeated, with improvements, in 2015.

6.7.2 Mapping and Measuring Blueprint Communities Using Network Analysis

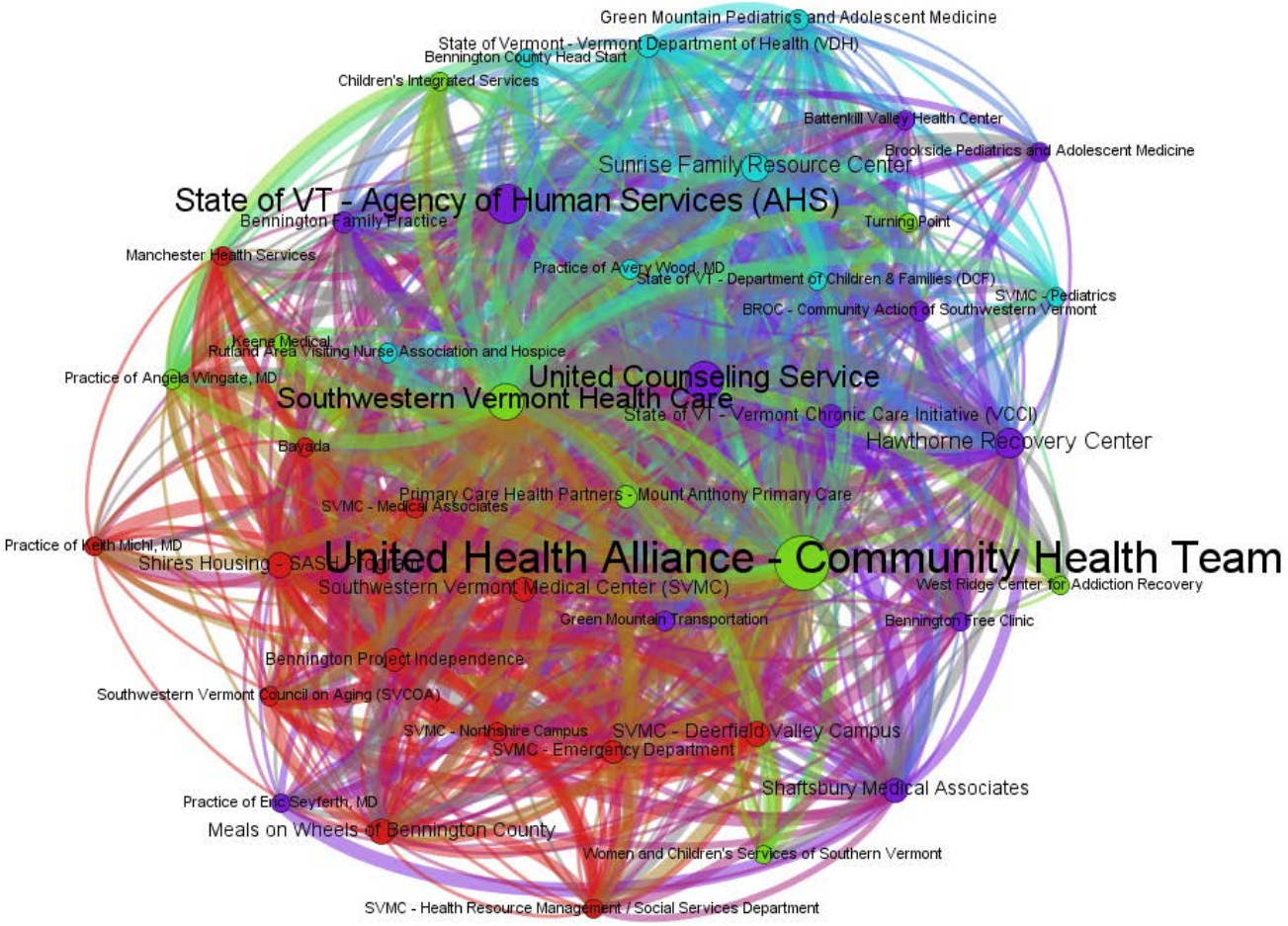
Network Analysis offers an opportunity to visualize the community networks and quantify overall connectedness and the position of key organizations. The methodology begins with a survey of community partners in each HSA. Survey participants are asked to indicate how their organization interacts with each other organization listed in the survey, based on six types of interactions:

1. Having patients/clients in common
2. Sharing information about specific patients/clients
3. Sharing information about programs, services and/or policy
4. Sharing resources (e.g. joint funding, shared equipment, personnel, or facilities)
5. Sending referrals
6. Receiving referrals

The researchers then map relationships using network analysis software (Gephi). A force-based algorithm pulls connected organizations closer together and pushes unconnected organizations further apart, creating a picture representing each organization in a position that takes into account its relationship to every other organization in the network. This relationship is quantified in several ways, most importantly a centrality score. Measures of an individual organization's position in the network include centrality, degree of connectedness, and sub-network membership. Useful measures of the overall HSA network include network density, average degree of member connectedness, and modularity (meaning the presence and strength of sub-networks or neighborhoods within the larger network). Any of these measures may be compared across communities, presenting the possibility of identifying characteristics of high-functioning networks.

Figure 19 shows the community network map, with all six types of interactions included, for the Bennington HSA. This map was produced in the Blueprint's 2015 network analysis research.

Figure 19. Bennington HSA Community Network Map



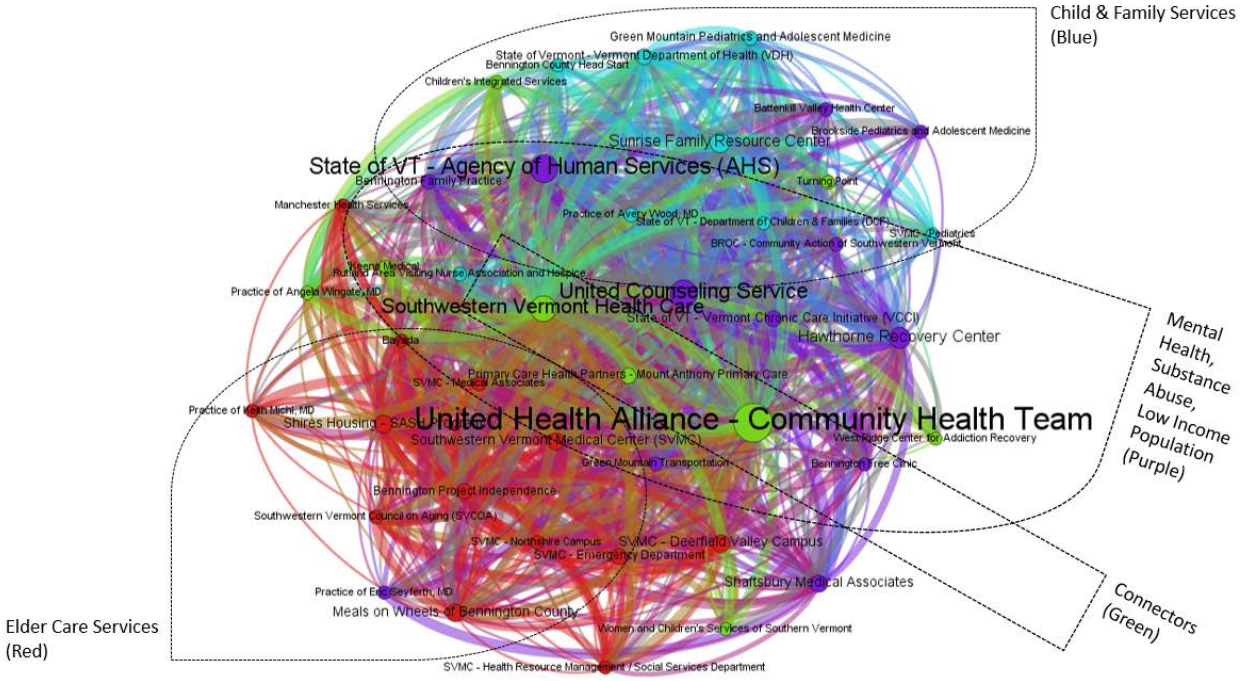
The map shown in Figure 19 includes nodes (dots) representing organizations surveyed and edges (lines) showing the relationships that connect them.

The size of the nodes indicates their relative Betweeness Centrality (larger nodes have higher Betweeness Centrality scores), a measure of how often the organization appears on the shortest path between randomly selected pairs of organizations in the network. This measure can help communities identify the organizations in their network best positioned to help connect organizations to each other, to lead coordination projects, or to rapidly disseminate critical information.

The color of the nodes shows each organization's network neighborhood membership. Organizations are more likely to be connected with other organizations marked in the same color than with the average randomly selected organization in the network. Figure 20 below shows researcher and community observations of the types of organizations that make up each neighborhood in the Bennington network. This analysis can help communities understand the basis for existing partnerships

within the larger network, and help them assess whether specific types of services are adequately connected to all the populations that need them. For instance (in an example drawn from another HSA, not shown here) if elder care organizations are clustered in one part of a map, and substance abuse services treatment are clustered in another, this might raise the question of whether older community members have adequate access to substance abuse treatment services. If further local discussion and evaluation confirmed that better connected services would benefit this population, elder care and substance abuse treatment programs could work together to share more information, establish referral protocols, and develop other strategies for improving access.

Figure 20: Bennington Network Map with Network Neighborhood Observations



7 CARE PROGRAMS HIGHLIGHTS FOR 2015

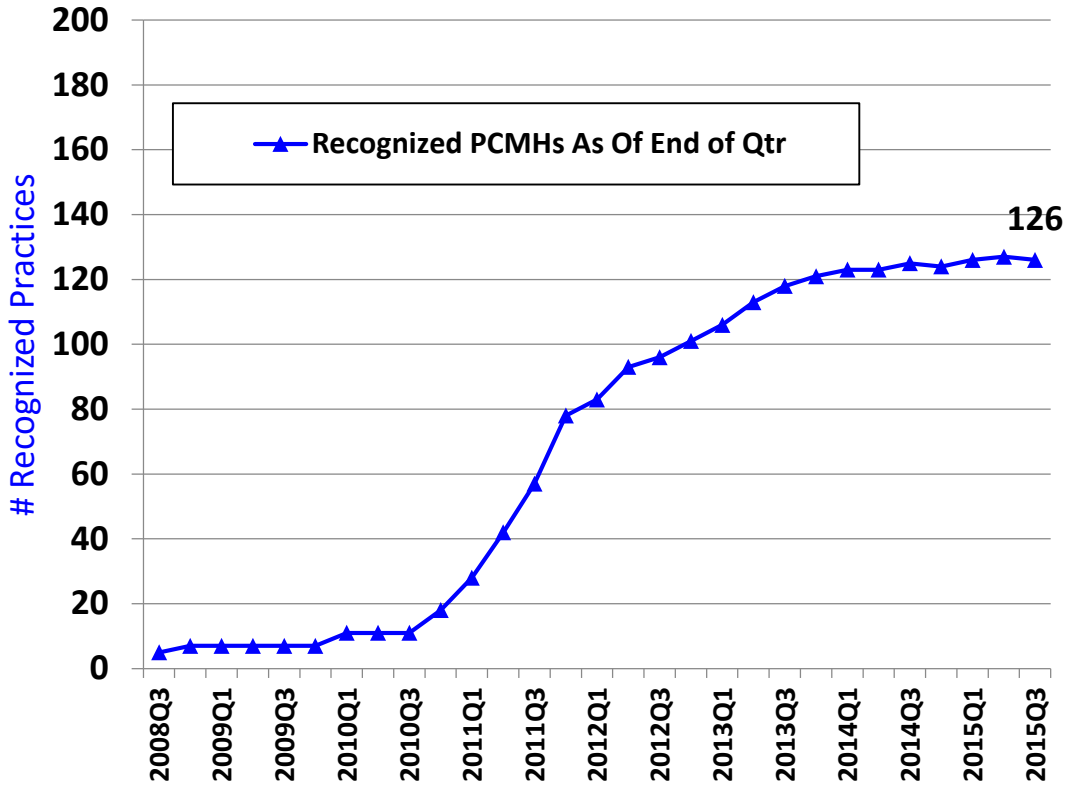
7.1 PATIENT CENTERED MEDICAL HOMES (PCMHS)

7.1.1 Re-commitment of practices to Blueprint participation

The Blueprint Patient Centered Medical Homes (PCMHs) re-committed themselves to providing evidence-based, patient and family-centered, cost-effective care in 2015. The year began with an uncertain budget environment, in which the governor proposed the first increase in Blueprint funding for primary care practices since the program began. Some primary care practices doubted whether they could continue to participate in the program, citing the financial and administrative burden of instituting, maintaining and documenting patient centered medical home practices, without a substantial increase in funding for this work. A group of practices indicated intention to withdraw from the program in writing. By the end of the year, however, not only were all existing Blueprint practices still engaged and actively participating, but several new practices chose to do the work required to join the program. This re-commitment and growth may be attributed primarily to the increase in funds granted by the legislature in 2015, a new payment design (see Section 5), and the Blueprint's responsiveness to practice feedback.

The Blueprint estimates that there are 140 primary care practices in Vermont, with 126 enrolled in the Blueprint and more preparing to join.

Figure 21: Growth in Recognized PCMHs 2008-2015



7.1.2 Participating in redesign of national NCQA processes

The National Committee for Quality Assurance (NCQA) asked the Blueprint to participate in a re-envisioning of how practices all across the country will demonstrate that they have put the organization's rigorous, evidence-based standards into action. The goal was to limit the administrative burden of demonstrating quality of care and patient-centeredness.

What the NCQA called its "Engagement Pilot" was trial implementation of the newly designed first-time recognition process. Right now that process can be thought of as studying and preparing for the final exam of NCQA scoring. The new/proposed process involves regular meetings of practice staff and NCQA representatives, with iterative submission of documentation and iterative scoring. Blueprint Practice Facilitators helped practices connect with the NCQA, understand the scoring process, implement quality improvement projects, document their work, and keep up with the timeline of submissions. The newly recognized PCMHs reported feeling confident and supported throughout the process.

At the same time, a group of existing practices due to renew their PCMH recognition participated in the NCQA's "Sustaining Pilot." The purpose of this process redesign was to minimize the administrative burden of demonstrating that high-quality care continues without interruption. The NCQA began with a feasibility study, assessing the documentation already available in the practices, to understand whether they could limit the documentation required to those records already generated during the provision of care. Alternatively, the NCQA is considering leveraging newer technology to help streamline the process by which practices provide proof of continuity for a limited number of clinically important elements. For example, could NCAQ sufficiently evaluate how practices function through live screen-sharing sessions? The streamlined renewal process also limits the number of elements the practice must demonstrate to the NCQA to the most clinically important, "must pass" elements of the standards. Practices participating in this pilot had positive feedback about the changes, and helped the NCQA further refine the new process.

7.2 Community Health Teams

7.2.1 CHT staff help plan and implement area quality improvement initiatives

As Unified Community Collaboratives (UCCs) formed and matured in each community this year, the work of Community Health Teams (CHTs) took on a new focus. Each UCC identified high needs and high utilizing populations in their area and priorities for quality improvement, based on data from Blueprint Health Service Area Profiles and other sources. Often, quality improvement projects were adopted to align with Accountable Care Organization (ACO) priorities and the ACO core measure set, such as emergency department utilization or reducing all-cause 30-day hospital readmissions. Communities also had discretion to work on emerging initiatives meaningful to their community, such as Adverse Childhood Experiences (ACE). Once QI projects were identified, work groups formed to create Plan Do Study Act (PDSA) cycles that document planned interventions, identify data collection strategies and evaluate effectiveness. CHT staff members participated in these work groups and were often tasked with implementing the interventions in their day-to-day work.

7.2.2 CHT Leader meetings offer peer-to-peer learning

In each of the 14 Blueprint Health Service Areas (HSAs) in the state, a CHT Leader supervises the day-to-day work of CHT staff. CHT Leaders participate in monthly meetings of all ACO and Blueprint field team

staff (including Project Managers, Practice Facilitators, CHT Leaders, and Quality Improvement Consultants). They also meet separately each month to share information about the successes and challenges their Community Health Teams experience and collectively develop Best Practices. These CHT Leader meetings have matured in 2015, providing new value to the participants. Each community's CHT Leader can leverage the knowledge they gain in these meetings and many have adopted successful strategies from other leaders to use with their own staff and patients. Some of the topics covered this year include:

- Implementation of Screening, Brief Intervention, and Referral to Treatment (SBIRT) in both the Emergency Department (ED) and primary care practices.
- Successes and failures from ED utilization projects
- Impact of CHT staffing models on quality improvement projects chosen by the UCCs
- Brainstorming approaches to reducing Adverse Childhood Experiences (ACE)
- Strategies for collecting patient consent for information sharing among community partners

7.2.3 Flat funding challenges CHT staffing models

Due to budget limitations, the full increase in funding requested by the Blueprint for both PCMHs and CHTs was not granted in the 2015 legislative session. Blueprint leadership, advised by its Executive Committee, chose to use the partial funding increase to adjust CHT payments to reflect insurer market share and increase PCMH payments. No new funding was provided to the CHTs, which have not had an increase in funding since the inception of the Blueprint program. Due to this, several HSAs have chosen to lay off some CHT staff or close positions when staff members leave. Additionally, some CHTs have chosen to hire fewer licensed professions (for instance Registered Nurses and Social Workers). At the same time, CHT workload and project complexity has increased. CHTs participated in the quality improvement projects chosen by the UCCs, and 11 of 14 participated in the Integrated Communities Care Management Learning Collaboratives sponsored by the Vermont Health Care Innovation Project (VHCIP). This work requires CHT staff time beyond their time with patients. Flat funding challenges the ability of CHTs to devote the necessary time to patients, improvement work, and new initiatives the legislature has requested such as Adverse Childhood Experience (ACE) intervention and suicide prevention services.

7.3 SUPPORT AND SERVICES AT HOME

7.3.1 Support and Services at Home (SASH) is federally funded and evaluated

Support And Services at Home (SASH) is a key component of Medicare's Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration program, funded by the Center for Medicare and Medicaid Innovation (CMMI) and awarded to the Blueprint in 2011. This leveraging of federal funds complements the targeted payment streams already part of the Blueprint.

Originally scheduled to end on June 30, 2014, CMMI extended funding for the MAPCP demonstration in Vermont initially through December 31, 2014 and, upon further consideration, for an additional two years, through December 31, 2016.

CMMI based this extension on promising evaluation results, released in 2014, showing a reduced rate of growth in total Medicare expenditures and expenditures for post-acute care among SASH participants

involved in the program for at least one year[2]. Most importantly, the evaluation noted the qualitative finding that SASH successfully integrates services across community-based organizations and links care teams to primary care practices, hospitals, and CHTs.

7.3.2 The SASH Partnership coordinates medical and social services for Medicare beneficiaries

Administered statewide through Cathedral Square and five Designated Regional Housing Organizations (DRHOs), the SASH model is a caring partnership of non-profit housing, hospitals, community-based health, and social services agencies collaborating to support participants' efforts to remain healthy and safe at home. SASH participants are typically elder Vermonters. By design the program serves all Medicare beneficiaries as needed, so participants may live either in subsidized housing or in residences in the community at large. Each panel of 100 SASH participants is served by one full-time housing-based SASH Coordinator and one quarter-time Wellness Nurse. Staffing is provided by the non-profit affordable housing organizations and primary partners including Home Health Agencies, Area Agencies on Aging, and Community Mental Health Organizations. Each SASH team meets regularly with other SASH teams in the region, as well as with the CHT, representatives of local Home Health Agencies, Area Agencies on Aging, and mental health providers. A Memorandum of Understanding (MOU) between all partner organizations formalizes the roles and responsibilities of the team members. This SASH partnership connects the health and long-term care systems for Medicare beneficiaries statewide. Together, these systems facilitate streamlined access to the medical and non-medical services necessary for this vulnerable population to remain living safely at home.

7.3.3 SASH grew to serve 4,800 Vermonters by the end of 2015

Starting as a single pilot team in Burlington in 2009, SASH grew to 26.5 teams by the end of 2012, added 10 new teams in 2013, 15.5 teams in 2014, and 2 in 2015. With 54 teams in place, the total number of people served by SASH grew from 4,122 participants at the end of 2014 to 4,800 participants at the end of 2015 – an increase of 14%.

7.3.4 Evidence-based SASH interventions aim to reduce Medicare expenditures

SASH teams focus their efforts around three areas of intervention proven most effective in reducing unnecessary Medicare expenditures:

- Transition support after a hospital or rehabilitation facility stay
- Self-management education and coaching for chronic conditions and health maintenance
- Care coordination

Evidence-based practices provided by the core SASH team (SASH coordinators and Wellness Nurse) also include a comprehensive health and wellness assessment, creation of an individualized care plan, on site one-on-one nurse coaching, care coordination, and health and wellness group programs.

7.3.5 SASH Outcomes

SASH teams are now in place in every county and HSA in Vermont and showing positive outcomes. An independent evaluation of the SASH model comparing a group of SASH participants to two control

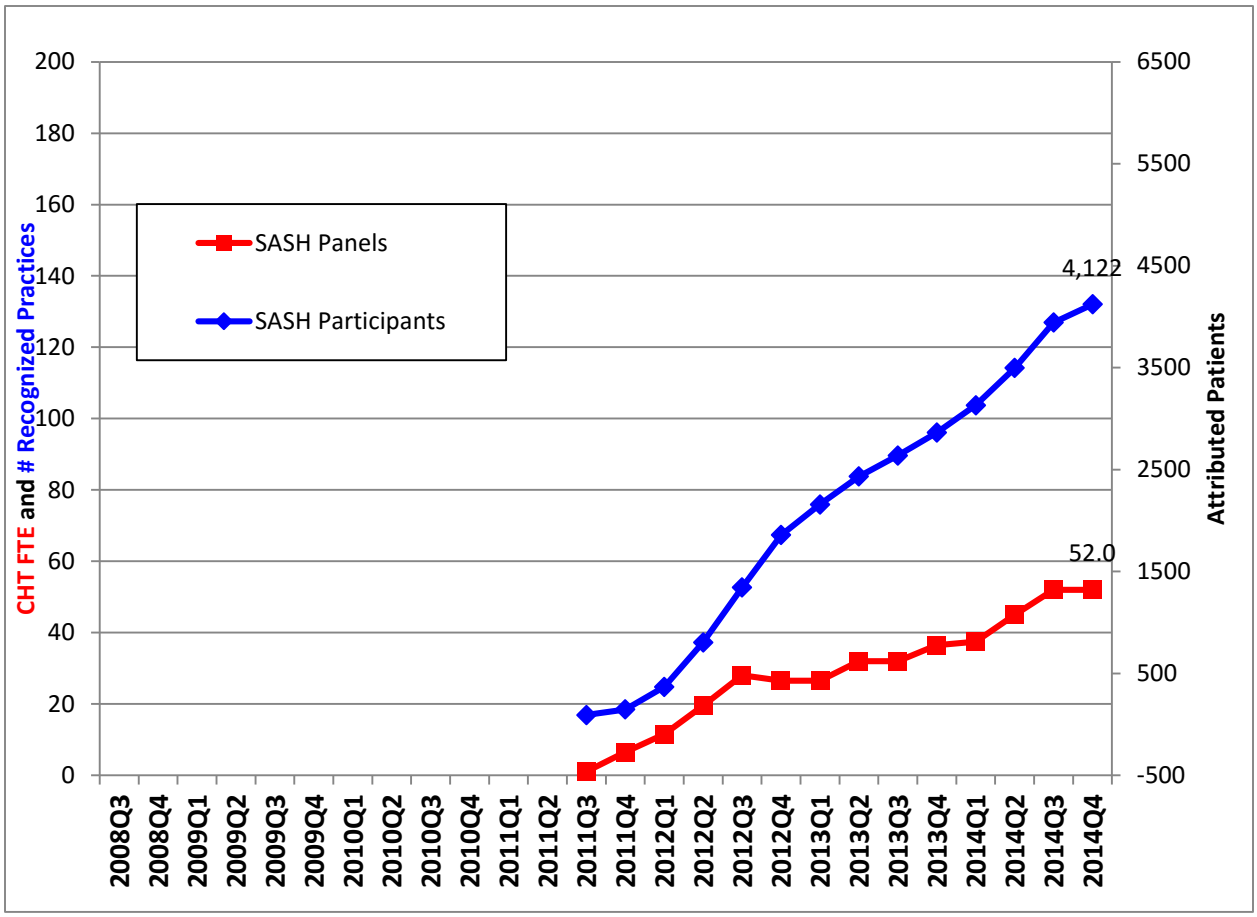
[2]U.S. Department of Health and Human Services, Assistant Secretary for Planning and Evaluation, Office of Disability, Aging and Long-Term Care Policy. *Support and Services at Home (SASH) Evaluation: First Annual Report*, by RTI International and LeadingAge. September 2014.

groups showed statistically significant reductions in Medicare spending growth for the SASH group. Additionally, key outcome measures tracked for a cohort of individual SASH participants (N=1,062), over a four year period (July 1, 2011 to July 1, 2015) of SASH participation, showed the following trends:

- The percentage of participants with documented advance directives in place grew from 26% to 66%. Significant cost savings associated with end of life planning haves been documented in the research literature with estimates that end of life spending per person life is $5,585 less if an advance directive is in place.
- The proportion of participants with immunizations (annual flu and shingles) grew substantially, from 1% to 34% for shingles and from 42% to 56% for annual flu immunizations.
- The rate of falls for the cohort varied over the 4 year period. From 2014-2015, fall rate decreased from 37% to 28%.
- The proportion of SASH participants diagnosed with hypertension and with documented blood pressure readings classified as “in control” by the National Quality Forum standard, increased from 4% to 60%. Diagnosed hypertension decreased from 96% to 40%.

Refer to Figure 22 for a timeline of growth the SASH Model across Vermont.

Figure 22. SASH Implementation July 2011 through December 2015



More information about SASH can be found at http://sashvt.org

7.4 Hub & Spoke: The Care Alliance For Opioid Addiction

Vermont's innovations combating opiate abuse over the past two years are getting results:

- 65 percent more Vermonters are getting treatment
- We are moving addicts into recovery instead of jail
- By getting rescue kits to anyone who will take them we have prevented hundreds of overdose deaths
- Most importantly, we've removed the stigma that discriminates against our friends and family members struggling so hard against this terrible disease.

However, there is more work to do. The rate of overdose deaths due to heroin and fentanyl is rising in Vermont[3] and, in spite of increased capacity, the health and specialty addictions service systems continued to be unable to meet demand for treatment in Vermont. Heroin use appears to be increasing

[3] The Vermont Office of the Chief Medical Examiner reports 19 heroin and 11 fentanyl overdose deaths in 2013 and in 2014 there were 32 from heroin and 17 from fentanyl. Better news is that the number of accidental overdose deaths from prescription opioids is declining from 41 in 2013 to 31 in 2014.

in Vermont, attributed to both its availability and relatively low cost compared to prescription narcotics. As narcotic prescribing protocols for pain are tightened, the resulting reduced availability of medication may have the unintended consequence of increasing demand for heroin by people with addiction. Community members report that buprenorphine is available "on the street" indicating that diversion continues to be a problem. Vermont's neighbors in the region are experiencing a similar trend in overdose deaths, and it does not yet appear that we have stemmed the tide in what is commonly described as an "epidemic" of addiction to both prescribed and illicitly obtained opioids. Community groups across the state are organizing increased access to treatment services, to support law enforcement's efforts to reduce drug trafficking, and to support those whose lives are impacted by addiction. These grass roots activities combined with the continued strong commitment by policy makers to frame addiction as a public health issue are the truly positive notes in what is otherwise a grim situation.

The Blueprint for Health, in collaboration with the Vermont Department of Health (VDH) Division of Alcohol and Drug Abuse programs and community health and human services partners, continued expansion of the Hub & Spoke treatment initiative throughout 2015. Key program and evaluation milestones are described here. As most readers are familiar with the initiative and the core components of medication assisted treatment (MAT), descriptions of these are included in Appendix C.

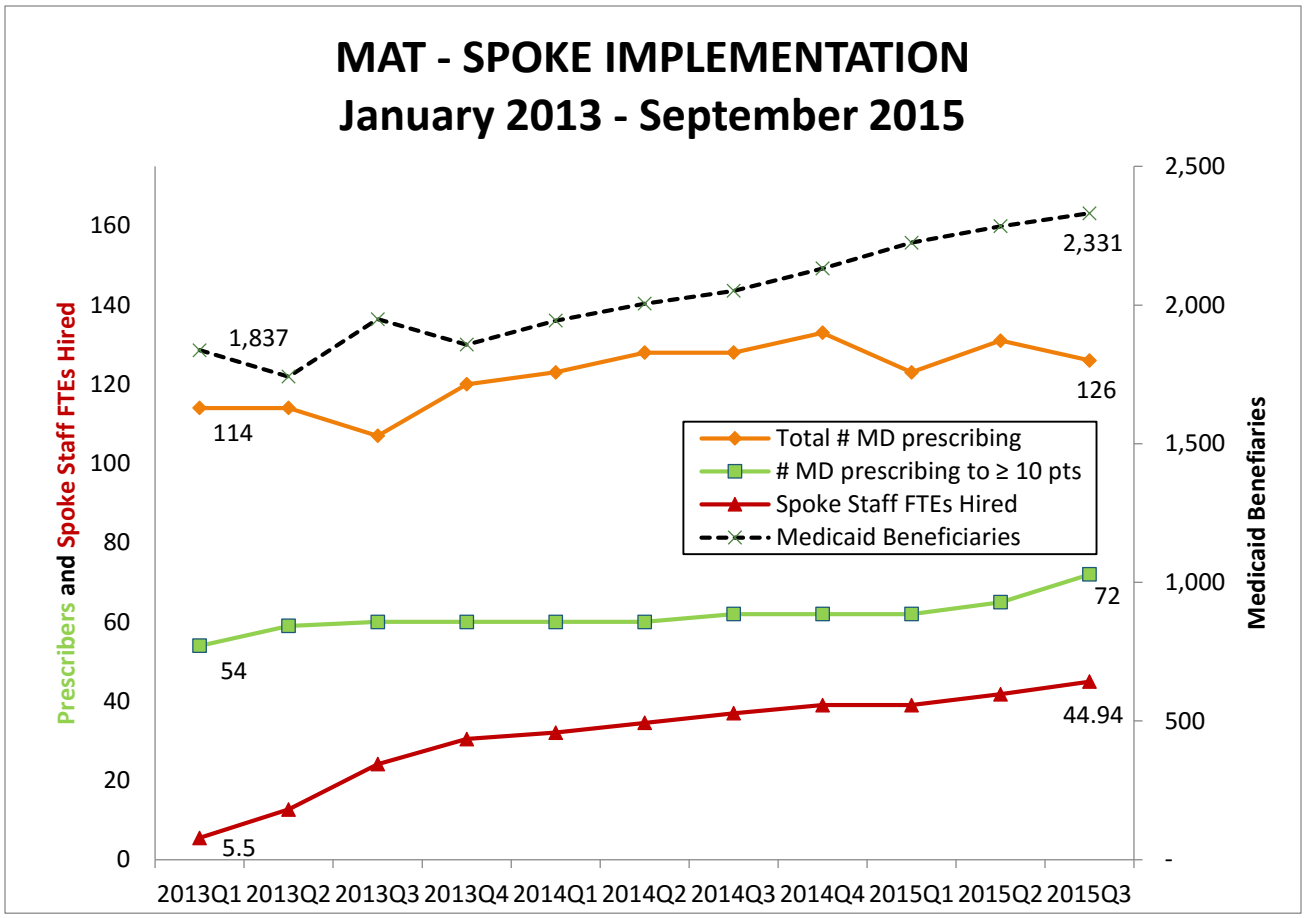
7.4.1 Access to Care

By federal regulation physicians providing MAT with buprenorphine must be "waivered" and the number of patients they can prescribe to is capped at no more than 30 in the first year, and upon request, up to 100 patients after that. The long term nature of the treatment, combined with these caseload caps, results in the need to continuously engage new providers in MAT in order to meet demand. The Blueprint tracks three measures of access to MAT in general medical settings:

- number of unique Medicaid beneficiaries seen each month,
- total number of physicians who actively prescribe buprenorphine to Medicaid beneficiaries
- number of physicians who see 10 or more patients

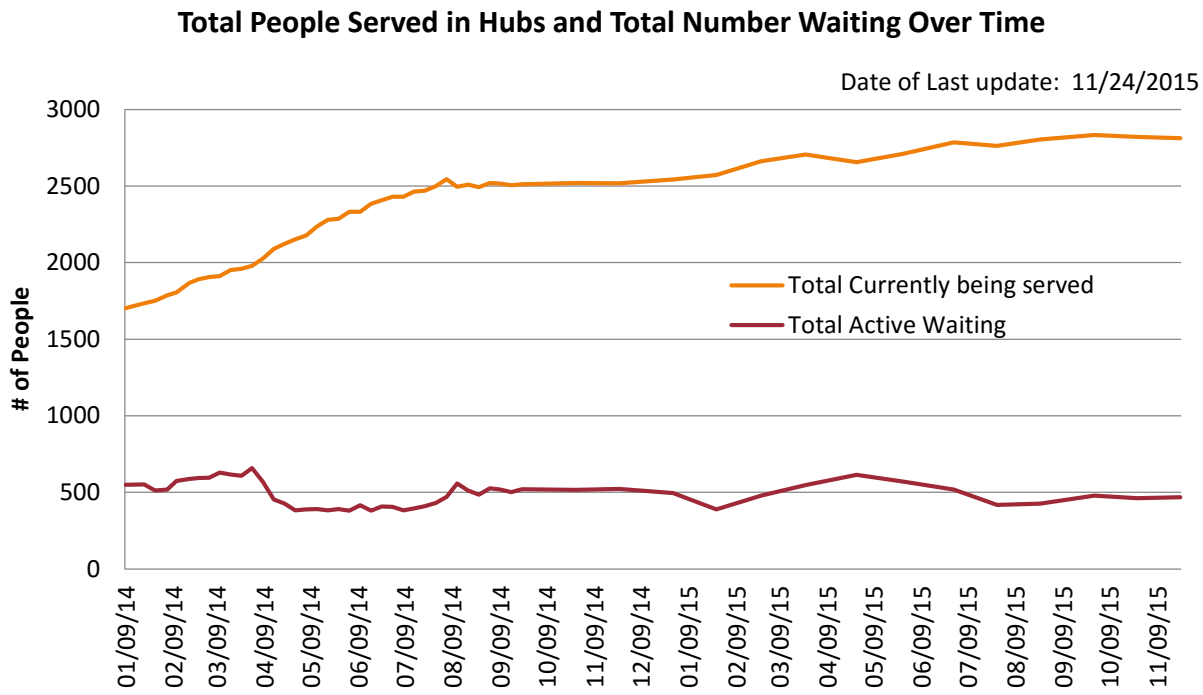
The addition of the nurse and the addictions/mental health counselor ("Spoke staff") to the practices increases the support to physicians and practices providing MAT. Since January 2013 we have seen a modest increase in the total number of physicians prescribing buprenorphine to Medicaid beneficiaries (from 114 to 126). The number of physicians who actively treat 10 or more Medicaid patients has also increased (from 54 to 72). The total number of unique Medicaid patients served by Vermont physicians each month has grown from 1,837 in March 2013 to 2,331 in September 2015. Since the Hub & Spoke initiative was implemented, the total number of Spoke staff hired has grown to nearly 45 full time equivalents by September 2015.

Figure 23: Spoke Implementation



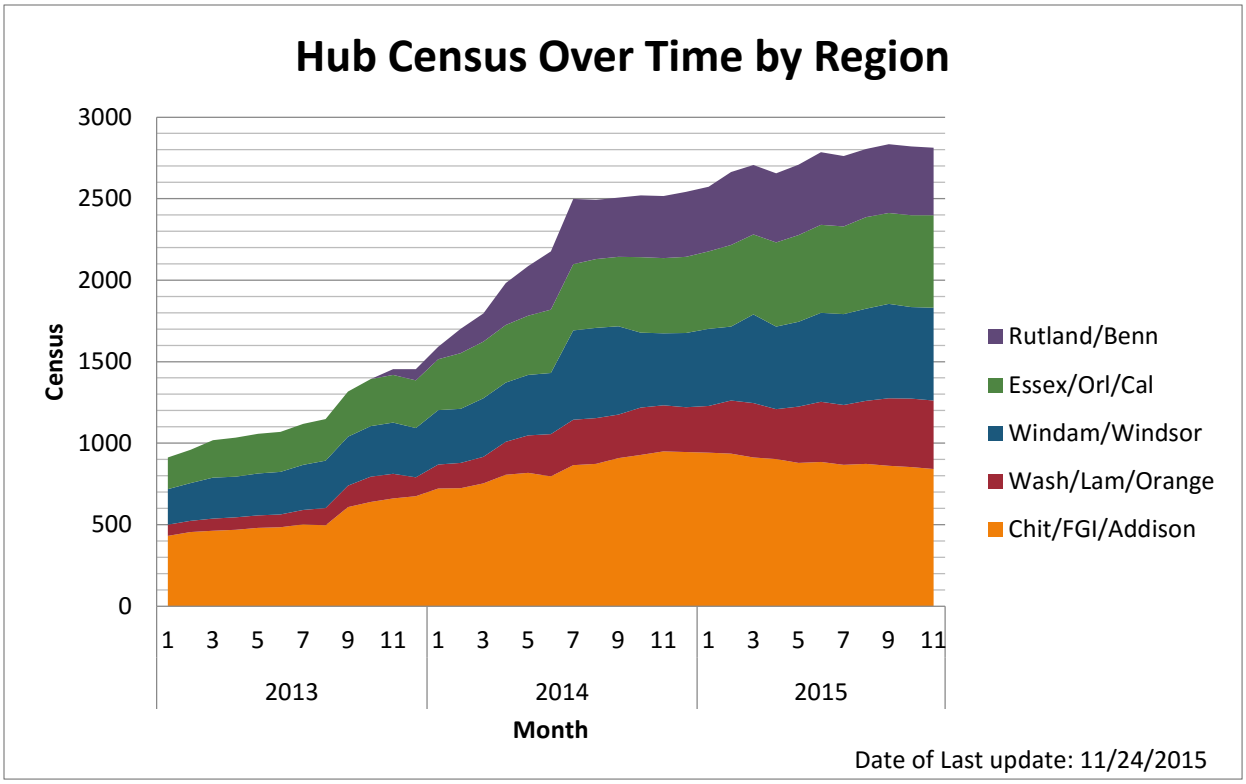
The initiative's partnering entities, Department of Vermont Health Access (DVHA) and the Alcohol and Drug Abuse Division of the VDH also track waiting lists and caseload in the Hub programs. The wait list figures for Hub services remain persistently high at just under 500 people statewide.

Figure 24: Hub Patients Served and Waiting List over Time



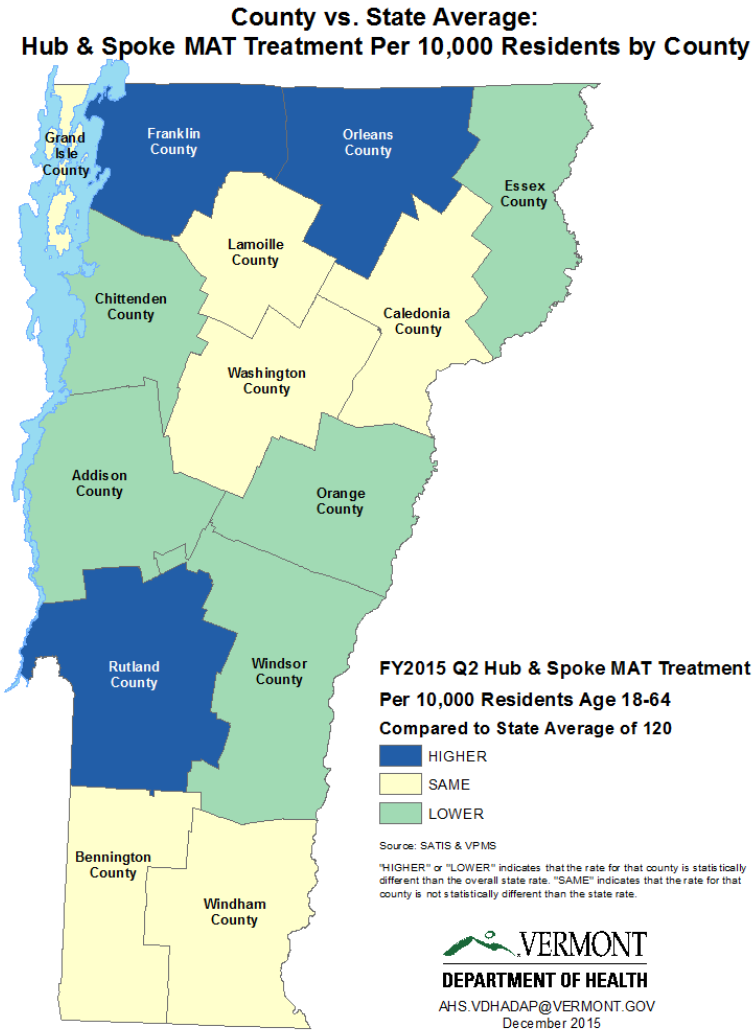
The number of Vermonters served in "Hub" programs has almost doubled in two years (from less than 1,000 in 2013 to 2,812 in December 2015). Significantly, over one third of the Hub patients receive dispensed buprenorphine – an important contribution of DVHA to the initiative, and which also allows patients to transition back to general medical settings for ongoing care.

Figure 25: Hub Census over Time by Region



Looking at combined Hub & Spoke access by county, it is quickly apparent that certain regions, especially Chittenden County, lack access to MAT at either a Hub or in general medical settings (Spokes). Chittenden, Addison, Essex, Orange and Windsor counties have lower than the statewide average access for Hubs & Spokes combined.

Figure 26: MAT Treatment per 10,000 Residents by County



7.4.2 Recruitment of New Providers

In collaboration with the leadership of DVHA and VDH, the Blueprint actively encourages physicians to offer MAT, especially to patients they may already see for primary care. The most often cited barriers to providing MAT are:

- patient complexity
- provider time
- lack of access to specialty care
- concern that the practice will be flooded with too many addictions patients
- skepticism about the efficacy of MAT

To help address these barriers, we offer training and support for practices to implement MAT protocols through the use of Blueprint Practice Facilitators, Learning Collaboratives, and providing Spoke nurses

and counselors in advance of seeing patients for MAT to design the work flow, set up program protocols, and begin the intake assessment process.

7.4.3 Notable Communities Improving MAT Access

There are several notable communities and leaders who worked to expand access in 2015.

The Porter Medical Group faced the unique challenge of having no providers in Addison County who offered MAT. This presented hardships for area residents who needed to travel out-of-county for care and put additional pressures on the already stretched resources in Burlington and Rutland. The providers at ***Bristol Internal Medicine*** systematically began to grow a program by sharing the clinical responsibility among four physicians and contracting for addictions Spoke staff from the local Designated Agency. The program has grown to over 75 patients in the course of 2015 and has by all accounts, been extremely successful.

The collaboration between the ***Hawthorne Recovery Center*** in Bennington, ***United Counseling Services***, the Blueprint, and ***Southwestern Vermont Medical Center*** has significantly improved access to care in the region. SVMC took a leadership role in recruiting two physicians from the hospital-owned practices to begin offering MAT in collaboration with the Hawthorne Recovery Center. United Counseling Services provides the addictions counselors for the Spoke teams county-wide, and the Blueprint project manager actively convenes all the practices together to develop systemic approaches to common issues. For instance, all providers now share a common treatment contract, observed dosing is helping to limit diversion of prescribed medication, and a Spoke staff has specialized in working closely with probation and parole on behalf of patients who are involved with the legal system. Also, by enhancing specialty services, Hawthorne Recovery Center is better supporting the local primary care MAT providers by providing a local referral option for patients who need more intensive or specialized care.

The Board of the ***Community Health Services of the Rutland Region (CHCRR***) voted this year to support the expansion of MAT to the ***Brandon*** office and beyond. Strong leadership by the providers in the Brandon practice created the pathway for expansion and is quadrupling the number of providers offering MAT at the Rutland area FQHC.

Two ***pediatricians*** in the ***Windsor*** area developed a grant to offer MAT to the parents of children in the practice. They took 2015 to plan and develop the programing and will begin offering services in early 2016. This groundbreaking approach to family care holds great promise and responds to a clear need in our community.

Most impressive of all is the commitment of the ***University of Vermont Medical Center*** (UVMMC) to begin offering MAT. Consistent with the excellence of the academic medical center, the UVMMC leadership has led an intensive planning effort with community partners to expand access to MAT and reduce the waiting list for care in Chittenden County. More than 25 physicians have become waivered, and this fall they began transitioning patients from the Chittenden Hub back to their UVMMC primary care provider for MAT. To insure that practices are not “flooded” providers are beginning with small panels (5 or less) and the Department of Psychiatry is opening an intensive program to receive new MAT patients and help stabilize them before stepping down to general medical offices.

7.4.4 Building a Culture of Community Response

In ***Central Vermont***, the new medical director of the ***Hub*** reached out the Blueprint MAT team of Spoke staff to assist with triaging the Hub program waiting list for services. Working on the principle that the responsibility to treat people who request care should be shared by all the area providers, the MAT team and the Hub intake coordinator contacted people on the wait list. They assessed each person's needs and preferences and worked to connect people to services. Throughout August they were able to get everyone who wanted care into treatment either in the Hub, area Spoke practices, or other substance abuse treatment. As the MAT team works across all the area MAT programs and understands the strengths of each program, they were able to match patients to providers. Collectively they were able to eliminate the waiting list. The experience is changing the relationships between providers in the region, and although staffing shortages in the Hub have limited the program's ability to take new patients at present – the Hub medical director insists that "there is **no** waitlist for any referral from an area MAT provider."

Led by the ***Blueprint Community Health Team Leader***, the ***Burlington area*** providers began meeting weekly in the late fall to review the waiting list for MAT services maintained by the ***Chittenden Center*** (the area Hub). By mid-December the participating organizations had worked out a universal consent and disclosure agreement allowing true interagency collaboration to triage the waiting list and match clients to services in a much more timely fashion. Similar to the experience in Central Vermont, this work is helping to grow a sense of collective responsibility for access to care within the region and to help increase the participation of the specialty addictions Hub program in the health neighborhood.

7.5 Improving the Standard of Care

Annually, VDH transfers $165,000 to DVHA to support co-occurring substance use and mental health care in the Blueprint primary care practices. Since 2012, the Blueprint has used these funds to support practice improvement in MAT through a series of learning collaboratives. The faculty is provided by the Geisel School of Medicine at Dartmouth. Continuing medical education credits were obtained through Dartmouth Hitchcock Medical Center. The learning collaborative approach combines didactic lectures, small groups of independent practice teams coming together, collecting common outcome measures, and sharing both outcomes data and clinical experience. The goals are to educate and support physicians and their practice teams, to increase the numbers of patients appropriately prescribed buprenorphine, to reduce the non-medical use and diversion of the medication, and to use evidence-based practice guidelines to improve patient and community outcomes. Four cohorts of practice teams comprised of 34 physicians and 97 team members serving more than 1,600 patients have participated in regional learning collaboratives. Provider engagement was objectively underscored by continued participation of 26 of the 27 practices that joined a collaborative. The participating practices measure substantial improvement in care including:

- prescribing buprenorphine only to patients who meet diagnostic criteria for opioid addiction
- adhering to dosage range recommendations
- conducting regular, observed random drug urine screens
- increasing frequency of office visits for unstable patients
- routinely using the Vermont Prescription Monitoring System
- maintaining patients in treatment (retention)

- documenting coordination of care with specialty providers

The Figures 27-30 show the improvements in the measures for practices participating in the Learning Collaboratives.

Figure 27: Average % of at least monthly urine drug screens n=1,661

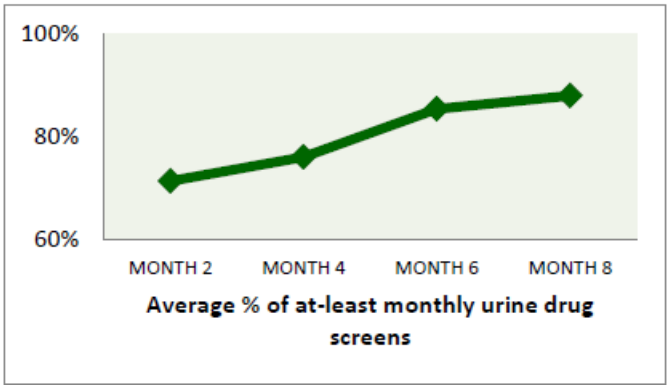


Figure 28: Average % of unstable patients seen weekly n=1,661

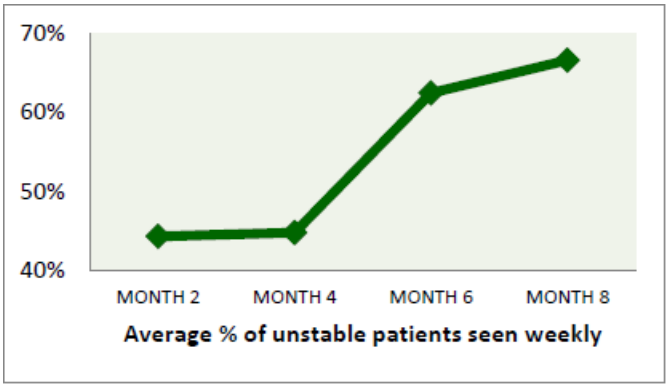


Figure 29: Average % of VPMS access at admission and quarterly thereafter n=1,661

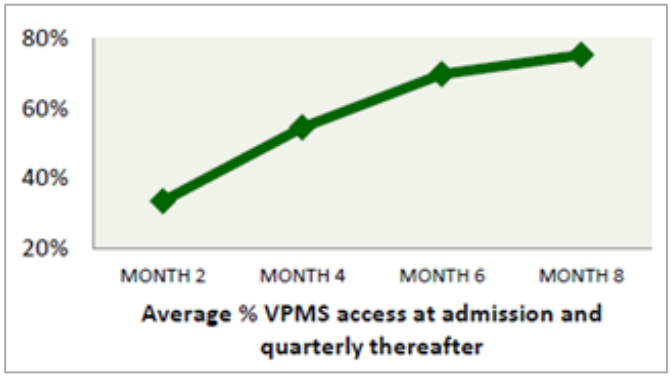
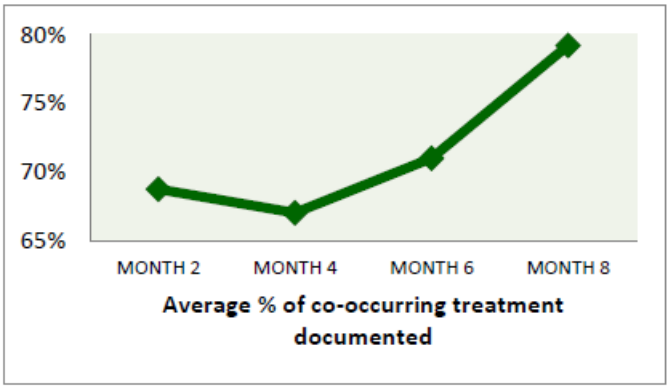


Figure 30: Average % of co-occurring treatment documented



7.5.1 MAT Analytics and Evaluation Plan

The Blueprint and the VDH Division of Alcohol and Drug Abuse Programs have developed an analytic plan to evaluate the impact of MAT on Medicaid beneficiaries. The Blueprint's analytic contractor, Onpoint Health Data, will conduct this multi-stage evaluation. The Vermont study, which will proceed in phases, will test the impact of MAT on health care expenditures and utilization, clinical health outcomes, incarceration, and employment in Vermont.

7.5.1.1 MAT preliminary baseline study

Analysis of health care claims 2007-2013 (prior to full implementation of the Hub & Spoke program) was conducted for Medicaid beneficiaries receiving MAT in both specialty opioid treatment programs (OTP) and general medical office (OBOT) settings. The study focuses on Medicaid beneficiaries because it is the dominant insurer for MAT and is the only payer participating in the services enhancements to OBOT settings. The results of this analysis are reported below.

7.5.1.2 Impact of Hub & Spoke enhancements

A pre-post study will measure the differences in outcomes after the investments in the Hub & Spoke initiative. The study will cover the following time frame: with 2007-2012 used as the baseline; 2013 as an implementation year; and 2014 as year one post implementation. This analysis will also be performed on subsequent calendar years.

7.5.1.3 Incarceration data analysis

The Blueprint has arranged for regular extracts from the Department of Corrections "Offender Management System" and will begin working with this data in early 2016. This will link health care claims to incarceration data.

7.5.1.4 Clinical data analysis

A report on the Medicaid Adult Core Measure will be sent to Centers for Medicare and Medicaid Services (CMS) as required under the Health Home State Plan Amendment. This reporting includes claims measures such as Emergency Department use and clinical measures such as Adult Body Mass Index (BMI) and hypertension control. The Blueprint Clinical Registry will be the source for the clinical measures.

7.5.1.5 Employment data analysis

Blueprint is seeking feeds from the Department of Labor on the employment status of Medicaid beneficiaries treated for opioid addiction. This analysis will further test key social outcomes of treatment for opioid addiction.

7.5.2 Preliminary Baseline Study: MAT and Health Care Costs

Vermont's all-payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), served as the primary data source for a baseline study on the impact of MAT of health care costs and utilization. The study population included members with full Medicaid coverage, ages 18–64 years, who had claims in VHCURES indicating treatment for opioid addiction between the calendar years 2008 and 2013. Within each year, members participating in MAT were compared to members with opioid addiction who received substance abuse treatments other than MAT (non-MAT). Expenditures and selected utilization measures were evaluated for the MAT and non-MAT groups over the six-year period.

For each calendar year, MAT and non-MAT members were evaluated using demographic, health status, total medical expenditures, medical expenditures excluding addiction treatment costs, and selected utilization measures (e.g., inpatient use, emergency department use). Demographic measures included age, gender, and county of residence. Health status indicators included selected chronic disease diagnoses targeted by Blueprint (e.g., diabetes) and 3M Clinical Risk Group (CRG) categories, which are used to help identify differences in health status for other conditions (e.g., cancer) among the MAT and non-MAT populations. Members with claims indicating maternity or hepatitis C also were identified.

To remove the effect of extreme outlier cases, total expenditures were capped at the 99th percentile for each year, and measures were adjusted for partial enrollment within the year. A measure of continuity of enrollment in Medicaid ("Medicaid in the Prior Year") was assigned for a member who was enrolled in Medicaid during both the current year and the prior year.

7.5.2.1 Demographic Results

The study analyzed results for 8,656 Medicaid beneficiaries over a six year period. The MAT group was slightly younger and more likely to be female (55% vs. 43%) than the non-MAT group of beneficiaries with opioid addiction. MAT members had a higher rate of maternity compared to non-MAT (9% vs 4%). This is expected given that pregnant women are prioritized for MAT treatment. MAT members also had a higher rate of hepatitis C (14% vs 9%). The MAT group was more likely than non-MAT members to have continuity of coverage in Medicaid as indicated by having Medicaid in the prior year (75% vs 47%).

7.5.2.2 Cost Results

Total annual health and addictions treatment expenditures for the MAT group were slightly less (-$60) than for the non-MAT group, but not statistically significant. Excluding the key MAT treatment costs (the bundled rate for methadone treatment and the pharmacy costs for buprenorphine), the total health care costs for the MAT group were significantly lower (-$2,012) annually than for the non-MAT group and the result was statistically significant (<0.001). This differential in health care costs was primarily driven by lower rates of inpatient discharges, inpatient days, and outpatient emergency department visits, which were significantly lower in the MAT group compared to the non-MAT group. The differences were consistent across all years (2008-2013). Enrollment in Medicaid both in the current

year and the prior year lowered average annual expenditures regardless of whether MAT treatment costs were included ($1,341: *P*<0.001) or excluded ($1,4514; *P*<0.001).

7.5.2.3 Discussion

These preliminary results indicate that receiving the more intensive and targeted MAT treatment was associated with decreased total annual average expenditures for health care compared to Medicaid members with opioid addiction receiving other treatment methods – a reduction that was large and statistically significant when key MAT treatment costs (methadone bundled rates and buprenorphine pharmacy) were removed. Given the higher rates of maternity and Hepatitis C in the MAT group, this finding of lower health care costs for opioid addicts receiving MAT is quite promising. While this preliminary baseline study does not confirm whether the cost of the new Hub & Spoke system enhancements in MAT will outweigh potential savings, these baseline results make a compelling case for such investments. In addition, the finding that continuous enrollment in Medicaid was also associated with reduced expenditures independent of MAT services indicates that expansion of Medicaid coverage for people with opioid addiction may be cost effective for the system overall.

7.6 VERMONT CHRONIC CARE INITIATIVE (VCCI)

The Vermont Chronic Care Initiative (VCCI) is a statewide Medicaid health care reform program that provides care coordination and intensive case management services to non-dually-eligible Medicaid members that are high risk and high cost. These patients often have multiple chronic conditions and complex health histories. VCCI primarily focuses on improving outcomes and reducing unnecessary utilization by using a holistic approach that addresses socio-economic barriers to health and health care.

7.6.1 Determining Eligibility for VCCI Services

Since 2011, VCCI has specifically targeted eligible members in the top 5% high-utilizing Medicaid population, since these members account for an estimated 39% of Medicaid expenditures. Eligibility for VCCI services is determined primarily, though not solely, on the following criteria:

- Included in top 5% of Medicaid cost/utilization
- High emergency department and hospital utilization
- Multiple prescribed medications (poly pharmacy)
- One or more chronic health conditions
- Co-occurring conditions of substance abuse or mental health
- Not receiving other CMS-funded case management services, such as Choices for CARE, PACE, CRT, etc.
- Not dually eligible for Medicare

VCCI further targets beneficiaries determined to be “impactable” based on an analysis of clinical acuity and recent utilization patterns conducted by the program analytics contractor. For each Medicaid member, this analysis considers the member’s:

- Chronic Disability and Payment System (CDPS) score
- Actual per-member-per-month cost to the Medicaid program
- Number of chronic conditions

- Number of emergency department and inpatient encounters
- Evidence of fragmented, uncoordinated care, such as several encounters with different providers in a short amount of time

Finally, at-risk members are also identified for VCCI services through direct referrals from:

- Primary care providers
- Emergency department staff
- Field and embedded program staff
- Other internal and external statewide partners, including Blueprint CHT staff who partner with VCCI at the local/Health Service Area (HSA) level for direct referrals and transitions of care support between levels of service for the Medicaid population

7.6.2 Outreach to VCCI Clients

VCCI reaches Medicaid members primarily through a team of licensed case managers/care coordinators (nurses, LADCs and/or LICSWs) operating at the local level. VCCI staff serves members in a variety of settings, such as embedded resources within provider practices and hospitals with a high volume of Medicaid members. Embedded staff facilitates:

- Direct communication, care coordination, and referrals
- Transitions between the hospital and the patient's primary care provider (PCMH)
- Access to a PCMH when one is not being utilized

Multiple hospitals also provide VCCI with daily secure data transfers on emergency department and inpatient admissions to further support members post-hospitalization and minimize hospital readmission rates, an area of significant expenditures among the top 5%.

Employed by DVHA, VCCI case managers/care coordinators are also located in state Agency of Human Services (AHS) district office settings and work closely with AHS partners, including AHS District Field Directors, Economic Service Division/eligibility staff, Department of Corrections (DOC) probation and parole colleagues, and VDH/local health office leadership and staff.

7.6.3 Blueprint-VCCI Collaboration

The Blueprint works with VCCI – considering VCCI staff part of the Blueprint's Extended CHT. VCCI Case Managers/Care Coordinators work closely with the Primary Care provider, AHS partners, CHT staff, and other local partners to identify and assure wrap-around services are in place to support the Plan of Care. The VCCI staff are also members of most of the statewide Unified Community Collaboratives (UCCs, also known as Regional Clinical Performance Committees) and participate with Blueprint CHT colleagues in the VHCIP "Integrated Communities" learning collaborative.

7.6.4 VCCI Outcomes

VCCI rate reductions and savings reported here were provided to the Blueprint by VCCI, based on analysis by their vendors. The methodology, using a Historical Control Design, involved comparing actual cost trends following VCCI intervention to projected costs based on pre-intervention costs trends. Full savings-calculation methodology and additional information is available upon request from VCCI.

Figure 31: Inpatient Admissions, 30-Day Readmissions, and Emergency Department Visits for VCCI-targeted Medicaid Population

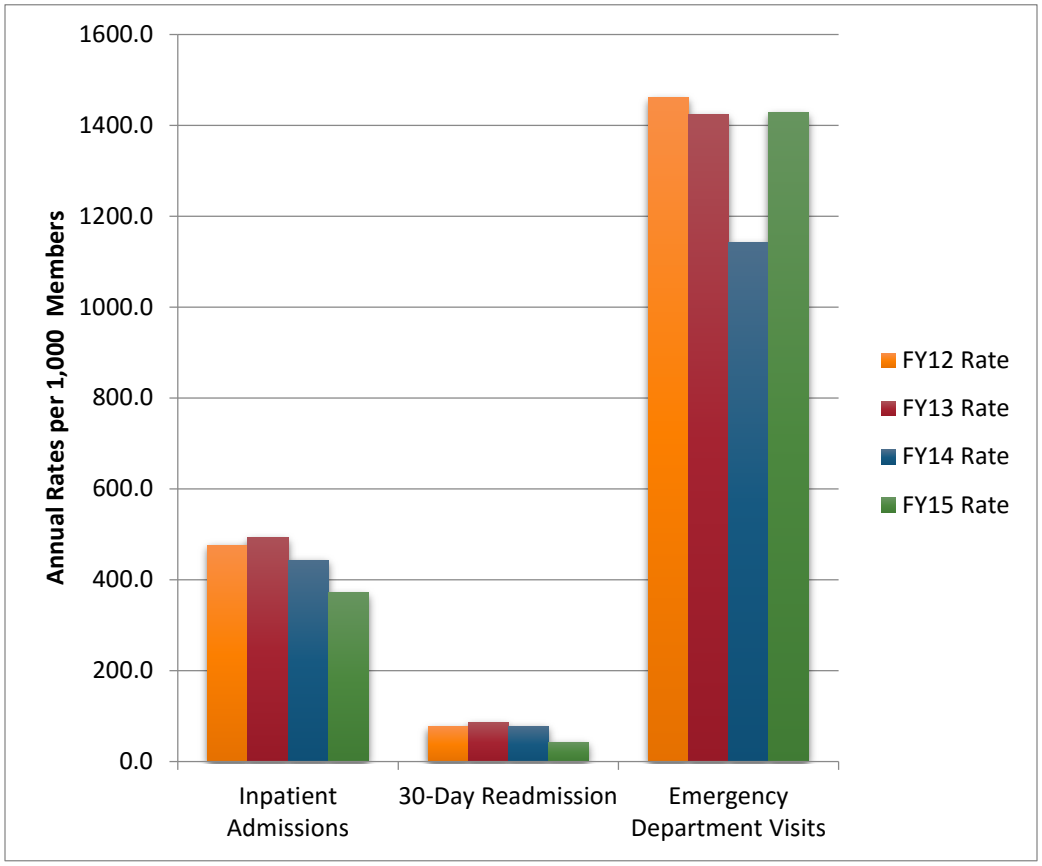
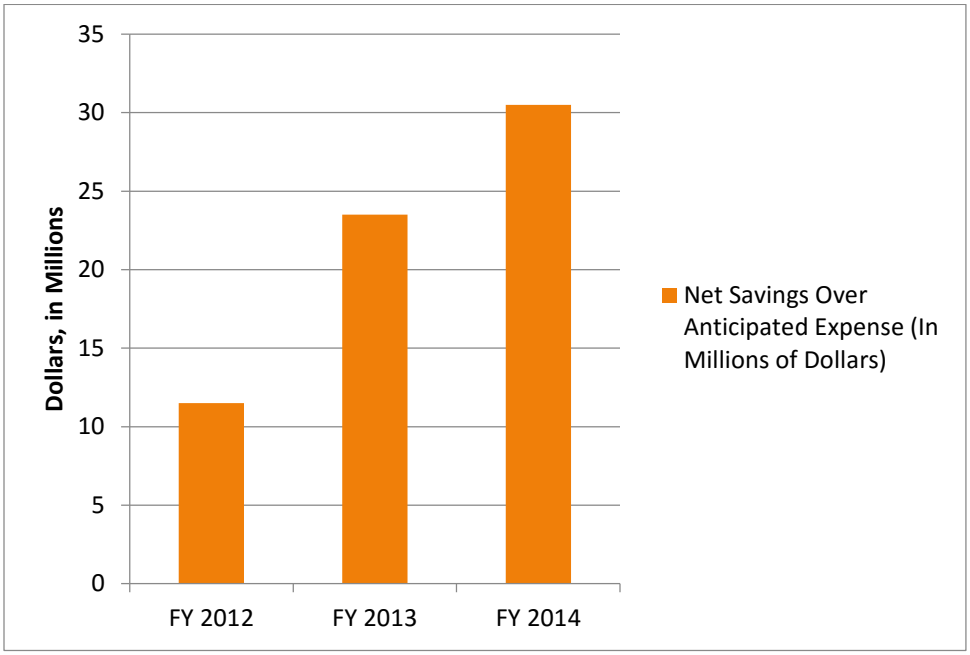


Table 9. Percent Rate Changes in Inpatient Admissions, 30-day Readmissions, and Emergency Department Visits Realized for VCCI-targeted Medicaid Population (Increase in ED utilization in FY2015 is likely a result of change in PCP access for Medicaid members.)

	Inpatient Admissions	30-Day Readmission	Emergency Department Visits
% Change FY12 to FY13	3.39%	10.78%	-2.52%
% Change FY13 to FY14	-10.09%	-8.84%	-19.85%
% Change FY14 to FY15	-16.21%	-44.96%	25.08%

DVHA analysis of Medicaid claims, indicates that VCCI demonstrated net savings[4] over anticipated costs of $30.5 million in state fiscal year 2014 (July 1, 2013 through June 30, 2014) (Figure 32). Since most providers are currently reimbursed by the state's Medicaid program through a fee-for-service model, reductions in unnecessary spending achieved by VCCI translate directly to savings for the state's Medicaid program budget.

Figure 32: VCCI Savings for Eligible Members in the 'Top 5%" of Medicaid



[4] VCCI patients are distributed across Blueprint and non-Blueprint practices; therefore the VCCI versus Blueprint PCMH contribution to reduction in expenditures for patients attributed to PCMHs could not be assessed at this time. VCCI will be able to assess clinical improvement, utilization, and cost savings in the new Enterprise Care Management system for the VCCI cohort, Blueprint PCMHs, and ACO affiliated practices and their attributed Medicaid members.

8 PLANNING FOR THE FUTURE

In 2016, Vermont is poised to enter the next stage of healthcare reforms with the potential for a novel level of system integration, coordination across providers, and all payer payment models that promote quality and value.

8.1.1 The Health Care Reform Environment

Vermont's three Accountable Care Organizations (ACOs) are in negotiations that, if successful, would enable them to form a single ACO in which the vast majority of health care providers are part of a unified network with their financial interests tied to improving health care quality, health outcomes, and controlling the growth in health care costs. At the same time, the Green Mountain Care Board (GMCB) and the Administration are negotiating with the Centers for Medicare and Medicaid Innovation (CMMI) to support the next phase of value-based payment models through capitated payments to ACOs. Vermont's existing shared savings programs with the three ACOs, across all payers, has set the stage for this next phase of reform.

The opportunity right now is to develop a more coordinated statewide health system with financial incentives that promote better quality and health instead of volume of services. While the outcome of each of these negotiations is uncertain, Vermont will continue to plan for an all payer model for capitated payment with or without a new waiver.

8.1.2 A Strong Foundation of Advanced Primary Care Working with Community Networks

As these high-level negotiations take place, leadership from the three ACOs and their affiliated primary care providers have spent the last year working with the Blueprint program to establish a more unified, community-oriented approach to the care they deliver. High quality primary care, well-coordinated team-based services, more balanced investment in social and medical services, and data-driven quality improvement are widely recognized as important ingredients for an effective health system. In Vermont, these elements have been introduced through a Transformation Network, which includes Practice Facilitators, Project Managers, and Community Health Team (CHT) Leaders working with Patient-Centered Medical Homes (PCMHs) and CHTs, and participating in data-guided learning forums. The Transformation Network works to establish a statewide foundation that demonstrates sustained and improved benefits (i.e., better care, lower costs).

The three ACOs and the Blueprint team have worked together to strengthen this foundation by forming Unified Community Collaboratives, also known as Regional Clinical Performance Committees, in each service area. These groups use comparative results on core measures to guide planning for local coordination and quality initiatives. Local planning is supplemented by statewide forums where Blueprint and ACO field teams share information and best practices, participate in professional development, and provide input for state-level planning. The strong foundation of primary care working with community networks positions Vermont to take full advantage of the opportunities that may arise from any administrative and financial restructuring.

Today's dynamic health care environment – including the maturation of the ACO framework and advancement towards an all payer model – presents exciting opportunities for Vermonters and the health system that will serve them. The Blueprint program is well suited to assist the ACOs and other

providers with evolution to a more integrated health system, and in particular a system with more seamless coordination between medical and social services.

The Blueprint's expertise in health systems science (design, implementation, and research) and data systems will continue to be valuable assets, and the Blueprint's experience as a supportive convener of state and local networks will be useful during the next phase of reforms. These reforms will be complex and require fundamental changes in the way that providers of all kinds work together. The Blueprint team will continue to prioritize the role of trusted facilitator, assisting providers in their mission and helping to plan and implement new strategies that meet the needs of Vermont's citizens.

9 HEALTH SERVICE AREA HIGHLIGHTS FOR 2015

Each year Blueprint Project Managers in each HSAs tell us what the highlights of their year were, for inclusion in the Annual Report. They report on which practices are part of the program in their area, staffing of their CHTs and Extended CHTs (with Hub & Spoke and SASH teams), how many referrals their CHT received, and more. This year we also asked them to tell us a little about their area's Unified Community Collaborative (UCC), describe a key Quality Improvement project, and a major achievement their team is proud of. Please read on for more about what the Blueprint achieved in each Health Service Area, in the words of local leaders.

BARRE HEALTH SERVICE AREA

Project Manager – Mark Young, RN

At a Glance:

- 33,002 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 14.3 FTE Community Health Team Staff
- 5.5 FTE Spoke Staff
- 15 Community Self-Management Workshops offered
- 5.5 SASH Teams; 414 Participants (Capacity = 550)
- 1835 CHT referrals
- 372 patients treated by MAT staff

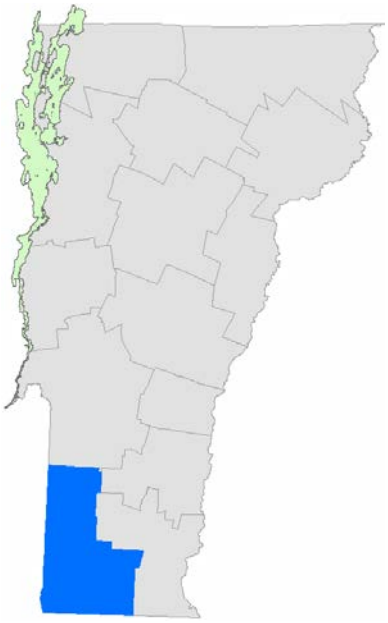
MEDICAL HOME PRACTICES

OneCare Vermont
CVMC Adult Primary Care - Barre
CVMC Adult Primary Care - Berlin
CVMC Family Medicine - Berlin
CVMC Family Medicine - Mad River
CVMC Family Medicine - Waterbury
CVMC Green Mountain Family Practice
CVMC Integrative Family Medicine - Montpelier
CVMC Pediatric Primary Care - Barre
CVMC Pediatric Primary Care - Berlin
Green Mountain Natural Health
UVMMC Family Medicine - Berlin

Community Health Accountable Care
The Health Center - Plainfield

Highlights

UCC name: Community Alliance for Health Excellent (CAHE)
The majority of community partners are represented on the CAHE steering committee. Our group uses a decision matrix tool to help prioritize proposed projects. The state-wide learning collaboratives help guide active QI projects chosen by the CAHE. The CAHE community partner collaboration has created a balanced focus on health care and social determinants of health, both of which are crucial factors to recognize in the care management process.
Spotlight QI Project: Chronic Care Management Project
This project began as a six-month pilot involving a small panel of patients, half receiving care management and the other half receiving usual care. A certain set of criteria determined participants chosen. They received care management based on certain evidence-based guidelines. While the initial pilot patient population was small, results showed evidence of increased home health use, falls risk screening, care plan completion, and advance directive completion, as well as a decrease in PCP and inpatient utilization. The CAHE voted to expand the pilot and use the regional Integrated Communities Care Management Learning Collaborative as a venue for organizing and implementing the larger care management project.
Major achievement: CVMC received a great to implement Screening, Brief Intervention, and Referral to Treatment (SBIRT) in medical homes. SBIRT is a comprehensive, integrated, public health approach to the delivery of early intervention and treatment services for patients at risk for alcohol or other substance use dependence. Two (2) full-time SBIRT clinicians currently provide support to patients at six (6) of our medical homes.



BENNINGTON HEALTH SERVICE AREA

Project Manager – Jennifer Fels, RN, MS

At a Glance:

- 16,407 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 6.75 FTE Community Health Team Staff
- 5.2 FTE Spoke Staff
- 10 Community Self-Management Workshops offered
- 3 SASH Teams; 295 Participants (Capacity = 300)
- 8582 CHT referrals
- 304 patients treated by MAT staff

MEDICAL HOME PRACTICES

Keith Michl, MD
Brookside Pediatrics and Adolescent Medicine

OneCare Vermont
Avery Wood; MD
Bennington Family Practice
Eric Seyferth; MD
Mount Anthony Primary Care
SVMC Deerfield Valley Campus
SVMC Medical Associates
SVMC Pediatrics
SVMC Northshire Campus
Shaftsbury Medical Associates

HealthFirst
Green Mountain Pediatrics

OneCare Vermont and Community Health Accountable Care
Battenkill Valley Health Center

Highlights

UCC name: Regional Clinical Performance Committee
We have 24 organizations and services represented. Our goals for 2016 include implementing a pre-diabetes coaching program and aligning ACO and Blueprint measures and initiatives. We are fortunate to have medical and human services partners willing to work together to improve the health of our population, improving the person experience, and reducing healthcare costs. Our partners are also moving towards a data-driven network to support the health of the community.

Spotlight on QI Projects:
For the MAT teams, we are working on the implementation of a common SPOKE patient contract and a referral and communication process among obstetric services and office-based opioid treatment. For reduction of hospital admissions and readmissions, we are developing a heart failure admission reduction program, implementing a pulmonary rehabilitation program, and focusing on medication reconciliation across the continuum of care. For Emergency Department (ED) utilization, the Community Care Team, made up of multiple agencies, has been formed to address patients with high use of the Southwestern Vermont Medical Center (SVMC) ED.

Major achievement: The Aging and Disability Resource Connection (ADRC) is a Vermont pilot project to support a program of "no wrong door" options counseling. Key stakeholders include SVMC, SASH, Council on Aging, VCIL, Brain Injury Association, transitional care nurses, and Bennington Blueprint patient-centered medical homes. This team has developed common data elements, known as a Universal Transfer Protocol, for a shared care plan.

BRATTLEBORO HEALTH SERVICE AREA

Project Manager – Wendy Cornwell, RN, BS, BSN

MEDICAL HOME PRACTICES

OneCare Vermont
Brattleboro Family Medicine
Brattleboro Internal Medicine
Brattleboro Primary Care
Grace Cottage Family Health
HeartSong Health: Ani Hawkinson
Just So Pediatrics
Maplewood Family Practice
Putney Family Healthcare
Windham Family Practice

At a Glance:

- 14,674 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 9.07 FTE Community Health Team Staff
- 3.5 FTE Spoke Staff
- 40 Community Self-Management Workshops offered
- 5.5 SASH Teams; 306 Participants (Capacity = 550)
- 1671 CHT referrals
- 297 patients treated by MAT staff

Highlights

UCC name: Windham County Health Service Area Regional Clinical Performance Committee
All primary care practices in the Brattleboro HSA are participants in the OneCare Vermont ACO. Our HSA has established an ACO Steering Committee that meets regularly. Our RCPC has provided an opportunity to strengthen community partnerships, leading to improved collaboration. Our goal is to provide comprehensive "wrap around" community care for Windham County residents.

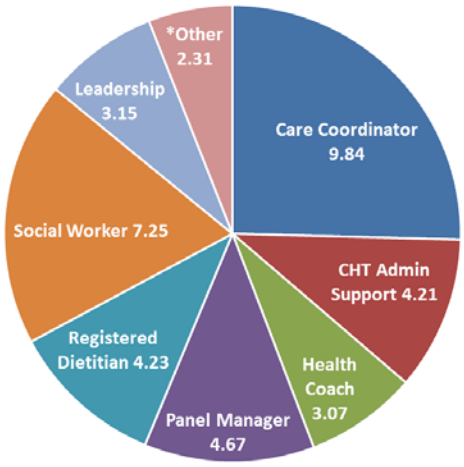
Spotlight on QI Projects:
For primary care patient panels with a history of chronic controlled substance use, there is a QI project in progress that ensures these patients have a controlled substance agreement with provisions for pill counts and urine drug screens. The goal is to lower MED scores for these patients. Through the Integrated Communities Care Management Collaborative, we are working with patients that have both mental health and substance abuse disorders and who are high utilizers of the ED. Our workgroup includes 15 community agencies and organizations. Our RCPC is also focusing on improvement in Medicare hospice utilization and the improvement of quality of life at the end of life.

Major achievement: Brattleboro Memorial Hospital's Diabetes Self-Management Education Program has maintained certification from the American Diabetes Association and thus continues to provide excellence in evidence-based diabetes care to our population.

BURLINGTON HEALTH SERVICE AREA

Project Managers – Pam Farnham, Penrose Jackson

Burlington Health Service Area Resource Allocation in FTE



*Other includes: Referral Manager, Psychiatrist, Psychologist, Certified Diabetic Educator, Accupuncturist

At a Glance:

- 93,393 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 40.98 FTE Community Health Team Staff
- 9.25 FTE Spoke Staff
- 25 Community Self-Management Workshops offered
- 16.5 SASH Teams; 1660 Participants (Capacity = 1650)
- 5676 CHT referrals
- 422 patients treated by MAT staff

Highlights

- Our UCC, called the Chittenden County Regional Clinical Performance Committee, currently includes 20 community partners, has developed mission and values statements, and has a leadership team. We currently focus on 3 QI projects.
  - Increase hospice and palliative care in Chittenden County by 5% in the next year
  - Decrease potentially avoidable Emergency Department visits for URI, UTI, diarrhea, and vomiting
  - Test team-based shared care management interventions with at-risk populations
- 25 new MAT prescribers in 2016
- Opioid task force aimed to address the wait list for opioid treatment:
  - Developed values and a shared purpose
  - Team developed and prioritized strategies to increase MAT capacity

MEDICAL HOME PRACTICES

Mountain View Natural Medicine
Champlain Center for Natural Medicine
Frank Landry, MD, PLC

OneCare Vermont
Adult Primary Care – Burlington
Adult Primary Care – Essex
Adult Primary Care – South Burlington
Adult Primary Care – Williston
Burlington Primary Care
Family Medicine – Colchester
Family Medicine – Hinesburg
Family Medicine – Milton
Family Medicine – South Burlington
Pediatric Primary Care – Burlington
Pediatric Primary Care – Williston
Timberlane Pediatrics North
Timberlane Pediatrics South

HealthFirst
Alder Brook Family Health
Charlotte Family Health Center
Chris Hebert, MD
Essex Pediatrics
Evergreen Family Health
Gene Moore, MD
Good Health
Hagan, Rinehart and Connolly Pediatricians; PLLC
Richmond Family Medicine
Thomas Chittenden Health Center
Winooski Family Health

Community Health Accountable Care
Community Health Centers of Burlington

MIDDLEBURY HEALTH SERVICE AREA

Project Manager – Susan Bruce

At a Glance:

- 18,064 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 7.25 FTE Community Health Team Staff
- 1.5 FTE Spoke Staff
- 5 Community Self-Management Workshops offered
- 3.5 SASH Teams; 259 Participants (Capacity = 350)
- 3000 CHT referrals
- 130 patients treated by MAT staff

MEDICAL HOME PRACTICES

OneCare Vermont
Bristol Internal Medicine
Little City Family Practice
Middlebury Pediatric and Adolescent Medicine
Neshobe Family Health
Porter Internal Medicine
Rainbow Pediatrics

HealthFirst
Middlebury Family Health Center

Community Health Accountable Care
Mountain Health Center

Highlights

UCC name: Community Health Action Team (CHAT)
In partnership with all three Vermont ACOs and approximately 30 agencies and organizations throughout the Middlebury Health Service Area, we formed the CHAT Unified Community Collaborative committee. To date, our UCC has elected to take part in the Integrated Communities Care Management Learning Collaborative. We are exploring other QI projects, such as increasing hospice utilization, implementing SBIRT, and decreasing ED utilizations.
Spotlight on QI Project: Integrated Care Coordination
Begun on August 19 as part of the statewide care management learning collaborative, we have 15 health and human services agencies and departments involved in this project. For those who would benefit from wrap-around services, our goal is to form an integrated care team that develops a shared plan of care for individuals and families identified as having moderate to high utilization rates, multiple chronic conditions, and social determinants impacting their health. Barriers of the engagement process are being analyzed currently.
Major achievement: We hired a new QI Facilitator (Alexandra Jasinowski, pictured above on right) in our HSA, and she completed her first successful NCQA recognition process with a practice. She has also serves as the facilitator for the Care Management Learning Collaborative project, achieving active participation from the UCC sub-committee for this project.

MORRISVILLE HEALTH SERVICE AREA

Project Manager – Elise McKenna, RN, MPH

MEDICAL HOME PRACTICES

Cambridge Family Practice Associates
Dr. Bisbee Personalized Healthcare
Stowe Natural Family Wellness

HealthFirst
Paul Rogers, MD

Community Health Accountable Care
Hardwick Area Health Center

OneCare Vermont and Community Health Accountable Care
Morrisville Family Practice
Stowe Family Practice

At a Glance:

- 16,575 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 6.45 FTE Community Health Team Staff
- 3.6 FTE Spoke Staff
- 5 Community Self-Management Workshops offered
- 2 SASH Teams; 189 Participants (Capacity = 200)
- 1400 CHT referrals
- 194 patients treated by MAT staff

Highlights

UCC name: Executive Community Healthcare Organization (ECHO)
There are a total of six (6) HSA-wide QI initiatives integrated through the UCC, including 100% all cause readmission reviews by hospital and primary care, home visits for medication reconciliation post-hospitalization, Care Management Team Learning Collaborative for complex patients, ED visit follow-up calls by care coordinators, developmental screenings for all children under three (3) years old, and PCP referral request from patients seen in the ED.

Spotlight on QI Projects:
In partnership with Community Health Services of Lamoille Valley (CHSLV) and Lamoille Home Health and Hospice (LHHH), all patients 65 and older receive a home visits for medication reconciliation after being discharged from Copley Hospital. A transportation pilot program that serves over 30 unique patients was completed this year. It fills the gaps for patients needing transportation not covered by existing programs. The funding is now supported by all medical homes in the HSA. In partnership with LHHH, a new 24-hour ED Hot Line has been established to perform next-day follow-up home visits for patients discharged from the ED. Calls to the Hot Line are made by ED staff after identifying patients who could benefit from a home visit.

Major achievement: Two new medical home practices, Dr. David Bisbee Personalized Healthcare and Appleseed Pediatrics, participated in the NCQA engagement pilot and will receive recognition status.

NEWPORT HEALTH SERVICE AREA

Project Manager – Julie Riffon, LICSW, PCMH CCE

At a Glance:

- 12,616 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 4.8 FTE Community Health Team Staff
- 1 FTE Spoke Staff
- 7 Community Self-Management Workshops offered
- 3.5 SASH Teams; 310 Participants (Capacity = 350)
- 1780 CHT referrals
- MAT staff shared with St. Johnsbury HSA

MEDICAL HOME PRACTICES

OneCare Vermont
North Country Pediatrics
North Country Primary Care Barton
Orleans
North Country Primary Care Newport

Community Health Accountable Care
Island Pond Health Center

Highlights

UCC name: Newport Health Service Area RCPC/UCC
Our UCC formed and began to meet this year. We identified several community quality improvement priorities, including improving outcomes for people with COPD, increasing the number of referrals to hospice services and doing so earlier in the process, decreasing ED utilization for non-emergent reasons, and decreasing the rate of obesity.
Spotlight on QI Projects: Hospice Utilization
Our UCC has set a goal to increase the number of referrals to hospice and increase the length of stay (LOS) from a baseline of 3 referrals and an average LOS of 20 days. In Phase 1, our primary care practices improved their in-office referral process workflow, including use of the EHR. Key hospice staff provided education to these providers and their staff on the importance of early referrals. Public education events were also extended to the community to explain hospice benefits to increase knowledge of these services among patients and their loved ones. Referrals increased to 17 during the measurement period, and the average LOS increased to 22 days. In Phase 2, panel management of patients with a diagnosis that might indicate an opportunity for discussion of an early referral to hospice as one option for care will occur through a report developed in the EHR used by North Country primary care physicians.
Major achievement: Two of our primary care practices achieved Level 3 recognition by NCQA as patient-centered medical homes, using the more challenging 2014 NCQA PCMH standards. They were the first practices in Vermont to do so.

RANDOLPH HEALTH SERVICE AREA

Project Manager – Jennifer Wallace

At a Glance:

- 11,237 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 4.5 FTE Community Health Team Staff
- 1.4 FTE Spoke Staff
- 6 Community Self-Management Workshops offered
- 2 SASH Teams; 144 Participants (Capacity = 200)
- 449 CHT referrals
- 97 patients treated by MAT staff

MEDICAL HOME PRACTICES

South Royalton Health Center

OneCare Vermont and Community Health Accountable Care
Bethel Health Center
Chelsea Health Center
Gifford Health Center at Berlin
Gifford Primary Care
Rochester Health Center

Highlights

UCC name: Randolph Executive Community Council (RECC)
Our UCC passed a charter that focuses on learning how to best serve all segments of the Randolph HSA population through person-centric, wrap-around support. We aim to address the social determinants of health, including the availability of housing, food, education, employment, health care services, community-based resources, transportation, and social supports in our HSA. Our UCC is evolving with a lot of enthusiasm from community partners. All people are considered neighbors, and generational relationships are essential building blocks to our community.

Spotlight on QI Project: Uncontrolled Diabetes
The purpose of this project is to decrease the number of patients with uncontrolled diabetes, defined as having an Hba1c level greater than 9. The team convened to examine management of diabetic patients at Gifford, including review and revision of the existing policy for the diabetic clinic and treatment of diabetic patients. The team is currently exploring several changes at the diabetic clinic, as well as diagnosis-based scheduling for labs and follow-up appointments. The primary outcome measure for the project relates to Hba1c control. Measures are tracked quarterly on the Primary Care Dashboard.

Major achievement: With a new Project Manager on board since June, the Randolph HSA Blueprint program has undergone a "reboot". An entirely new CHT team was hired this year, and together they have achieved quick successes in dramatically increasing referrals to CHT and designing and using a shared care plan in the Gifford EHR for every person served. Additionally, the Extended Community Health Team (ECHT) meets monthly with an average of 20 agencies in attendance. A multi-agency release of information form was created by the ECHT and is used to coordinate care amongst agencies. Many members of the ECHT also participate in the state-wide learning collaborative, focusing on shared care plans for individuals with complex health conditions.

RUTLAND HEALTH SERVICE AREA

Project Manager – Sarah Narkewicz, RN, MS

At a Glance:

- 26,825 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 13.5 FTE Community Health Team Staff
- 4.5 FTE Spoke Staff
- 44 Community Self-Management Workshops offered
- 5 SASH Teams; 470 Participants (Capacity = 500)
- 1600 CHT referrals
- 247 patients treated by MAT staff

MEDICAL HOME PRACTICES

Drs. Peter and Lisa Hogenkamp

OneCare Vermont and Community Health Accountable Care
Brandon Medical Center
Castleton Family Medical Center
Mettowee Valley Family Health Center
Pediatrics Associates
Rutland Community Health Center

HealthFirst
Marble Valley Family Medical Center

Highlights

UCC name: Rutland Regional Incubator for Health System Improvement & Collaboration (RRIHSIC)
Our QI workgroup (RCPC) focuses on COPD and reducing readmissions, increasing appropriate referrals to palliative care, developing and distributing common education materials across the community, and developing a registry. The Medicare readmission rate has decreased from 16.67% at the end of 2014 to 14.2% at the end of 2015.Over 10 local health and human services organizations participate in our Integrated Community Care Coordination Collaborative, which identifies high users of hospital services, appoints a lead care coordinator, engages the patient, and uses a shared care plan. Providers from RRMC and CHCRR also meet monthly as a Clinical Integration Committee to work together on quality of care. Efforts include using secure texting, electronic transfer of discharge information, closing the loop on referrals for lab testing and specialty consultation, improved lab and diagnostic imaging ordering for medical necessity, and development of a common opioid treatment contract.
Spotlight on QI Project: Pediatric Care Coordination Collaborative and Pediatric Referral Committee
This project identifies families that can benefit from shared care planning via a scoring tool. A system and team are under development for meeting with these families to create the shared plan of care. The Pediatric Referral Committee convenes staff from multiple programs in the region that provide services for children and families. The format of monthly meetings involves discussing systems, participating in case discussions, hearing educational presentations from service providers, and sharing updates from each organization.
Major achievement: The Core CHT participated in a four-state CMS Innovation Grant called the Pediatric In Home Asthma Program. This program identifies pediatric patients with uncontrolled asthma and provides tailored asthma education to the family, including medication review and a home environmental assessment with modifications for reducing asthma triggers. Improvements have resulted in decreased ED utilization in this population.

SPRINGFIELD HEALTH SERVICE AREA

Project Manager – Trevor Hanbridge

At a Glance:

- 12,660 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 4.63 FTE Community Health Team Staff
- 1.5 FTE Spoke Staff
- 9 Community Self-Management Workshops offered
- 1 SASH Team; 116 Participants (Capacity = 100)
- 1275 CHT referrals
- 129 patients treated by MAT staff

MEDICAL HOME PRACTICES

OneCare Vermont and Community Health Accountable Care
Charlestown Family
Chester Family Practice
Ludlow Health Center
Rockingham Medical Group
Springfield Community Health Center

Highlights

UCC name: Springfield Unified Community Collaborative
Our UCC elected a leadership subcommittee responsible for the agendas and facilitation of meetings. This subcommittee will organize, present, and support the work of the UCC and meets between UCC meetings to track collaboration and action items from the UCC work. It includes leaders from the Council on Aging, Adult Day, Springfield medical staff leadership, the Designated Agency, and Valley Health Connections and Home Health.
Spotlight on QI Project: Integrated Communities Care Management Learning Collaborative QI Project
Formed as a subcommittee of our UCC, the Integrated Communities Care Management Learning Collaborative has outlined criteria for the population to study and develop interventions for as part of the collaborative. These criteria include adults with five (5) or more ED visits in a one-year period who have a mental health diagnosis and at least three (3) chronic medical conditions.
Major achievement: Through our HSA's Adverse Childhood Experience (ACE) group, known as *Aces-in-Action*, we are a statewide leader in support of the ACEs initiatives, services, and programming. We work and plan collaboratively with many local agencies, including the Designated Agency, DCF, the Parent Child Center, VDH, AHS leadership, the local school system, and Project Action. We coordinated and hosted several public forums on ACEs where a local panel of experts and providers presented on region-wide collaboration in support of early identification, prevention, and interventions for trauma-informed work and ACEs. We also expanded and sustained our *HealthTransit* transportation initiative with the award of a HRSA grant that provides education and direct transportation services for health and wellness.

ST. ALBANS HEALTH SERVICE AREA

Project Manager – Lesley Hendry

At a Glance:

- 22,658 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 8.95 FTE Community Health Team Staff
- 6.6 FTE Spoke Staff
- 10 Community Self-Management Workshops offered
- 2.5 SASH Teams; 183 Participants (Capacity = 250)
- 1753 CHT referrals
- 330 patients treated by MAT staff

MEDICAL HOME PRACTICES

OneCare Vermont
Cold Hollow Family Practice
Enosburg County Pediatrics
NMC – Northwestern Primary Care
Northwestern Georgia Health Center
Richford Health Center
St. Albans Primary Care
St. Albans Health Center
Swanton Health Center

HealthFirst
Max Bayard; MD; PC
Mousetrap Pediatrics – Enosburg
Mousetrap Pediatrics – St. Albans

Community Health Accountable Care
Alburg Health Center

Highlights

UCC name: St. Albans Regional Clinical Planning Committee
All ACO participating providers and affiliates meet once a month to plan for community-wide quality improvement projects, resource allocation, and governance planning for the next phases of payment and delivery reform. Providers are sharing quality improvements and new tools to improve population management. We use Basecamp to provide a platform for sharing processes and tools.

Spotlight on QI Project: Blueprint ACO Learning Collaborative
Our HSA is running a learning collaborative to improve ACO measures and implement population management. The five-session collaborative began May 15, 2015 and reports results to the UCC. Eleven (11) participating teams come from primary care, inpatient case management, home health, the mental health designated agency, and VDH. We are grouping the 42 Vermont ACO measures by type of measure and learning about the process for improving on each type of measure. To date, we have completed 3 of 5 sessions, and the teams have addressed the screening, prevention, and at-risk population measures. The fourth session to address utilization measures is scheduled for January 29, 2016.

Major achievement: Our Care Management and Coordination Workgroup reports directly to the St. Albans UCC. It includes 12 teams from a variety of practices and organizations that participate in bi-weekly meetings, as well as the statewide Integrated Communities Care Management Learning Collaborative.

ST. JOHNSBURY HEALTH SERVICE AREA

Project Manager – Laural Ruggles, MBA, MHA

At a Glance:

- 14,186 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 7.25 FTE Community Health Team Staff
- 9 Community Self-Management Workshops offered
- 2 SASH Teams; 146 Participants (Capacity = 200)
- 4301 CHT referrals
- 95 patients treated by MAT staff

MEDICAL HOME PRACTICES

OneCare Vermont
Corner Medical
Kingdom Internal Medicine
St. Johnsbury Pediatrics

Community Health Accountable Care
Concord Health Center
Danville Health Center
St. Johnsbury Family Health Center

Highlights

UCC name: The "A Team" (pictured above)
Leaders from NVRH and key community organizations have come together to create a common set of goals, share data on important health measures, and pool their talents and resources to improve health and the quality of life in our region. While each organization brings its own set of services and programs to the table, the leaders are committed to unifying, aligning, and focusing their strategic plans and visions to create a true accountable health community. We have chosen to focus on the health and social needs of people with COPD and vulnerable families and children.

Spotlight on QI Project: Pediatric Care Coordination
St. Johnsbury Pediatrics is leading an effort to improve pediatric care coordination for 25 identified patients and families. The project includes a welcome letter introducing care coordination, a shared care plan and patient summary, a monthly QI meeting with the care team, including two (2) family health partners, relationships with community resources and schools, and a partnership with a social worker specializing in children with special health care needs from VDH. The Family Experience Questionnaire assesses the family's experience of the care they are receiving, including a measure for if their provider's office created a shared care plan. To date, 6 shared care plans, 18 questionnaires, and 4 care conferences have been completed.

Major achievement: The A Team received a grant from the Laura and John Arnold Foundation to support Collaborating for Clients, a groundbreaking initiative brining nonprofit organizations together in an effort to reduce hunger and improve the lives of low-income families. This partnership will work to address food insecurity and help families find affordable housing, job training, steady employment, and health care services.

UPPER VALLEY HEALTH SERVICE AREA

Project Manager – Donna Ransmeier

At a Glance:

- 3,886 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 1.75 FTE Community Health Team Staff
- 4 Community Self-Management Workshops offered
- 1 SASH Team; 47 Participants (Capacity = 100)
- 1024 CHT referrals
- 15 patients treated by MAT staff

MEDICAL HOME PRACTICES

Newbury Health Clinic
Upper Valley Pediatrics

Community Health Accountable Care
Bradford
E. Corinth
Wells River

Highlights

UCC name: Upper Valley Health Service Area Unified Community Collaborative/Regional Clinical Performance Committee (UCC-RCPC)
The formation of a UCC was a natural progression for our Upper Valley Blueprint Advisory Committee. We decided to work on the measure "follow-up to mental health inpatient hospitalization within 7 days of discharge". Our medical and mental health providers, ACO representatives, housing and elderly assistance agencies, VDH, and our pediatric service providers are all equally invested in researching and developing an improvement plan for this metric. We believe that better communication between hospitals, mental health agencies, independent mental health providers, and primary care is necessary.

Spotlight on QI Project: Panel Management
Our goal has been to establish and maintain regular and consistent patient panel management in all of our medical homes. Patients monitored include those with diabetes who have an HgA1c over 8.0 and no visit for 3 months, hypertension patients (BP of 140/90 or higher) and no visit for 3 months, children due for well-child visits and adults due for yearly physicals, and pneumonia and influenza vaccination reminders. Due to these efforts, the number of patients with uncontrolled diabetes and no visits for 3 months dropped by 45% in 2015. Over 80 children received well-child exams for which they were overdue.

Major achievement: Our Regional Coordinator for self-management workshops revitalized the program, attracting participants through creative efforts, such as scheduling workshops at convenient times and places (Senior Centers and workplaces at lunch time) and offering small incentives, such as healthy snacks and walking shoes, which were donated from local merchants.

WINDSOR HEALTH SERVICE AREA

Project Manager – Jill Lord, RN

At a Glance:

- 9,630 claims-attributed Vermont primary care patients served by Blueprint practices in the past two years
- 7.35 FTE Community Health Team Staff
- 2.5 FTE Spoke Staff
- 13 Community Self-Management Workshops offered
- 1 SASH Team; 123 Participants (Capacity = 100)

MEDICAL HOME PRACTICES

OneCare Vermont
Mt. Ascutney Hospital Physician Practice
Ottauquechee Health Center

HealthFirst
White River Family Practice

Highlights

UCC name: Windsor HSA Coordinated Care Committee
A leadership team has been formed, made up of key representatives recommended by the Blueprint and the ACOs, and meets on a quarterly basis. Two (2) key priorities have been identified through data review and adopted, including ED readmissions and COPD readmissions, quality of life, and best practice approach.

Spotlight on QI Projects
Through our Adolescent Depression Screening project, White River Family practice has screened over 350 adolescents this year and referred appropriate patients to local counseling services, including an onsite Blueprint counselor from the Clara Martin Center. Some of our providers have expanded their practice by prescribing antidepressants when indicated while an adolescent awaits counseling. Through the SIM grant, we are following a panel of patients with the goal of decreasing ED and hospital admissions through close care management. For Well Child Visits for Adolescents, we send informative letters to families explaining the importance of these visits.

Major achievements: We organized regional community health team meetings to share information and build collaboration between the teams in proximity to our boundaries. Two (2) satellite, community-based clinics were established to assist individuals with completing their advance directives. Our medication assisted treatment (MAT) staff worked with the pediatricians of the Mt. Ascutney Hospital Physician Practice to plan services for addicted moms in recovery. We provide support groups for elderly residents to fight loneliness and isolation due to disability and poverty, and we started a new group for those with cognitive impairment.

APPENDIX A

POPULATION HEALTH MANAGEMENT
Volume 0, Number 0, 2015
Mary Ann Liebert, Inc.
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Original Article

Vermont's Community-Oriented All-Payer Medical Home Model Reduces Expenditures and Utilization While Delivering High-Quality Care

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Abstract

Patient-centered medical home programs using different design and implementation strategies are being tested across the United States, and the impact of these programs on outcomes for a general population remains unclear. Vermont has pursued a statewide all-payer program wherein medical home practices are supported with additional staffing from a locally organized shared resource, the community health team. Using a 6-year, sequential, cross-sectional methodology, this study reviewed annual cost, utilization, and quality outcomes for patients attributed to 123 practices participating in the program as of December 2013 versus a comparison population from each year attributed to nonparticipating practices. Populations are grouped based on their practices' stage of participation in a calendar year (Pre-Year, Implementation Year, Scoring Year, Post-Year 1, Post-Year 2). Annual risk-adjusted total expenditures per capita at Pre-Year for the participant group and comparison group were not significantly different. The difference-in-differences change from Pre-Year to Post-Year 2 indicated that the participant group's expenditures were reduced by −$482 relative to the comparison (95% CI, −$573 to −$391; $P < .001$). The lower costs were driven primarily by inpatient (−$218; $P < .001$) and outpatient hospital expenditures (−$154; $P < .001$), with associated changes in inpatient and outpatient hospital utilization. Medicaid participants also had a relative increase in expenditures for dental, social, and community-based support services ($57; $P < .001$). Participants maintained higher rates on 9 of 11 effective and preventive care measures. These results suggest that Vermont's community-oriented medical home model is associated with improved outcomes for a general population at lower expenditures and utilization. (*Population Health Management* 2015;xx:xxx–xxx)

Introduction

Increasing health care costs without corresponding improvements in care quality and population-level health outcomes have led many states to pursue a variety of health care reforms. Vermont has pursued a coordinated statewide approach to health, wellness, and disease prevention through a broad set of delivery system reforms. These involve the transition of primary care practices to National Committee for Quality Assurance (NCQA)-recognized patient-centered medical homes (PCMHs), augmentation of medical services with multidisciplinary staff from community health teams (CHTs), and coordinated funding support from both private and public payers.[1] The goals were better control over growth in medical expenditures, a reduction in unnecessary hospital care, and improved quality of care across the population. The program is designed to achieve these goals through: local leadership and organization; consistent statewide quality standards (ie, NCQA PCMH standards) and measurement of performance against those standards; close coordination between primary care, CHT staff, and community-based services; and an emphasis on prevention, improved control of established health problems, and healthier lifestyles.

Description of the Blueprint for Health program

Launched in 2003 as a Governor's initiative, the Blueprint for Health's (Blueprint) initial aim was to improve care

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[2]Onpoint Health Data, Portland, Maine.

and control costs for citizens with chronic conditions. Legislation in 2007 codified and expanded the scope of Blueprint's mission.[2] Working with a broad set of stakeholders, the Blueprint team organized the health service model around local leadership, resources, and infrastructure. State grants were used to support local project management, practice facilitators, learning collaboratives, and patient self-management programs in each of Vermont's 14 service areas.[1]

In order to participate, a primary care practice had to undergo independent scoring by the Vermont Child Health Improvement Program (VCHIP) team based at the University of Vermont. Local facilitators and project managers in the service areas were available to help practices prepare for scoring and operation as a medical home. NCQA standards identify procedures and policies considered essential to high-quality care based on peer-reviewed evidence and expert opinion. They address access to care, medication and care management, continuity of care, and quality improvement initiatives.[3] Vermont practices have scored well regularly, even as the NCQA has increased the rigor of their standards with each update.[4]

When a practice committed to a scoring date, they were provided access to staffing from the CHT. These teams were comprised of diverse staff that could include nurse coordinators, social workers, counselors, dietitians, health educators, and others. The precise structure and operations of the teams were guided by input from workgroups in each community that included leadership from medical home practices, the local hospital, health centers, the public health district office, mental health providers, home health organizations, and other community stakeholders. In each area of the state, an administrative entity managed the local CHT, hired the project manager, and worked with practices to coordinate staffing and scheduling. The staffing provided by the CHT augmented the medical home practice team, driving better integration of medical and nonmedical services, and improving coordination with other community providers. Additionally, community-based self-management programs operated alongside PCMHs and CHTs to help patients address tobacco use, chronic pain, diabetes, and behavioral health. Learning collaboratives allowed service areas to learn from one another's successes, failures, and best practices.

Two payment reforms were implemented to support PCMH and CHT operations: (1) a capitated payment that goes directly to the practice based on their NCQA PCMH score, and (2) a capitated payment that goes to the administrative entity in each service area to operate the CHT. These payments, combined with Blueprint grants, have supported statewide expansion of the model. Details on program structure and operations have been reported previously.[1,5]

In 2008, two communities established Blueprint pilot programs with Vermont's major commercial insurers and Medicaid participating in the payment reforms. In 2010, with Medicare preparing to join as part of the US Centers for Medicare & Medicaid Services' (CMS's) Multi-Payer Advanced Primary Care Practice (MAPCP) demonstration, the Vermont legislature passed a subsequent statute calling for statewide expansion of the Blueprint model.[6] Subsequently, the number of participating practices increased dramatically—from 18 in December 2010 to 123 by December 2013. This phase marked an intensive period of continuous practice- and community-level changes in Vermont, with practices undergoing 6 to 12 months of preparation to score as a medical home accompanied by parallel expansion of CHT operations.

Investment in the Blueprint initiative consisted of the Blueprint annual budget, which included community grants, personnel costs, and program administrative costs. Multi-payer investments included annual per person payments made to PCMHs and CHTs by Medicaid, Medicare, and the 3 major commercial insurers. The Blueprint annual budget remained relatively stable between 2008 and 2013, increasing from $4.8 million to $4.9 million (unpublished data, Department of Vermont Health Access Business Office, 2013).[7,8] The average annual payment made by payers to PCMHs and CHTs over the same period were $23.22 and $32.58 per person, respectively, for a combined total of $55.80 (unpublished data, administrative reports to Vermont Blueprint for Health, 2008–2013), which is very close to the total $54.74 per person payment in 2013. The average number of persons attributed to Blueprint practices in 2013 was 268,892, bringing the total annualized payments in the last year of this study period to $14.7 million.

The purpose of this study, which builds on previous assessments,[9] is to analyze the Blueprint program's impact on population-level outcomes as practices opt to transition to NCQA-recognized PCMHs, CHTs bridge the divide between medical and nonmedical services, and both participate in locally organized health reform. In this context, Vermont serves as a statewide laboratory to examine whether these health reforms improve quality of care and slow the growth of health care costs through a reduction in unnecessary utilization.

Methods

Using a sequential cross-sectional design, this study reviewed annual outcomes from 2008 through 2013 for participants versus a comparison population at each stage of program implementation and maturation. Methods were designed to evaluate whether outcomes diverged between participant and comparison populations as practices steadily joined the program, implemented transformative processes, and matured their operations. This approach is similar to that employed by CMS in its MAPCP demonstration.[10]

Data sources

Vermont's all-payer claims database, the Vermont Health Care Uniform Reporting and Evaluation System (VHCURES), served as the primary data source for this study. A more detailed description of the database has been published previously.[9] Measures were constructed from commercial, Medicaid, and Medicare claims from 2008 to 2013. A roster of Blueprint practices was used to identify provider-to-practice affiliations and thereby established which patients were attributed to Blueprint practices based on claims.

Study population

This study combined members from the following populations: commercial, ages 1–64 years; full Medicaid, ages

1–64 years; and Medicare, ages 1 year and older. Members younger than 1 year of age were excluded because of the frequent difficulty of separating maternal and perinatal claims. The full Medicaid category included people for whom Medicaid was the primary payer and excluded dually eligible Medicare members. The Medicare population focused on Medicare fee-for-service beneficiaries with both Medicare parts A and B and those dually eligible for Medicare and Medicaid. To be eligible for inclusion, members were required to have had at least 1 primary care visit in the preceding 24-month period as of December 31 of each calendar year. Evaluation and Management codes were used to determine the practice at which each member received the plurality of their primary care. Blueprint participants included Vermont residents who received the plurality of their primary care at any of the 123 practices that began operating as PCMHs on or before December 31, 2013. The comparison group included Vermont residents who received the plurality of their primary care at practices not operating as PCMHs on or before December 31, 2013. The process flow is documented in Figure 1.

The participant population was grouped according to the stage of participation that their practice reached in each calendar year, providing an opportunity to evaluate program impact on population outcomes at each stage of a complex multiyear change process. These stages included: Pre-Year (the year prior to starting work with the program), Implementation Year (the year that the practice started to prepare for NCQA scoring and receive CHT staffing 6 months prior to scoring), NCQA Scoring Year (the year that the practice was independently scored against NCQA standards), Post-Year 1 (the first year after NCQA scoring), and Post-Year 2 (the second year after NCQA scoring). For example, if a practice started in December 2011, then 2009 was their Pre-Year, 2010 their Implementation Year, 2011 their Scoring Year, 2012 their Post-Year 1, and 2013 their

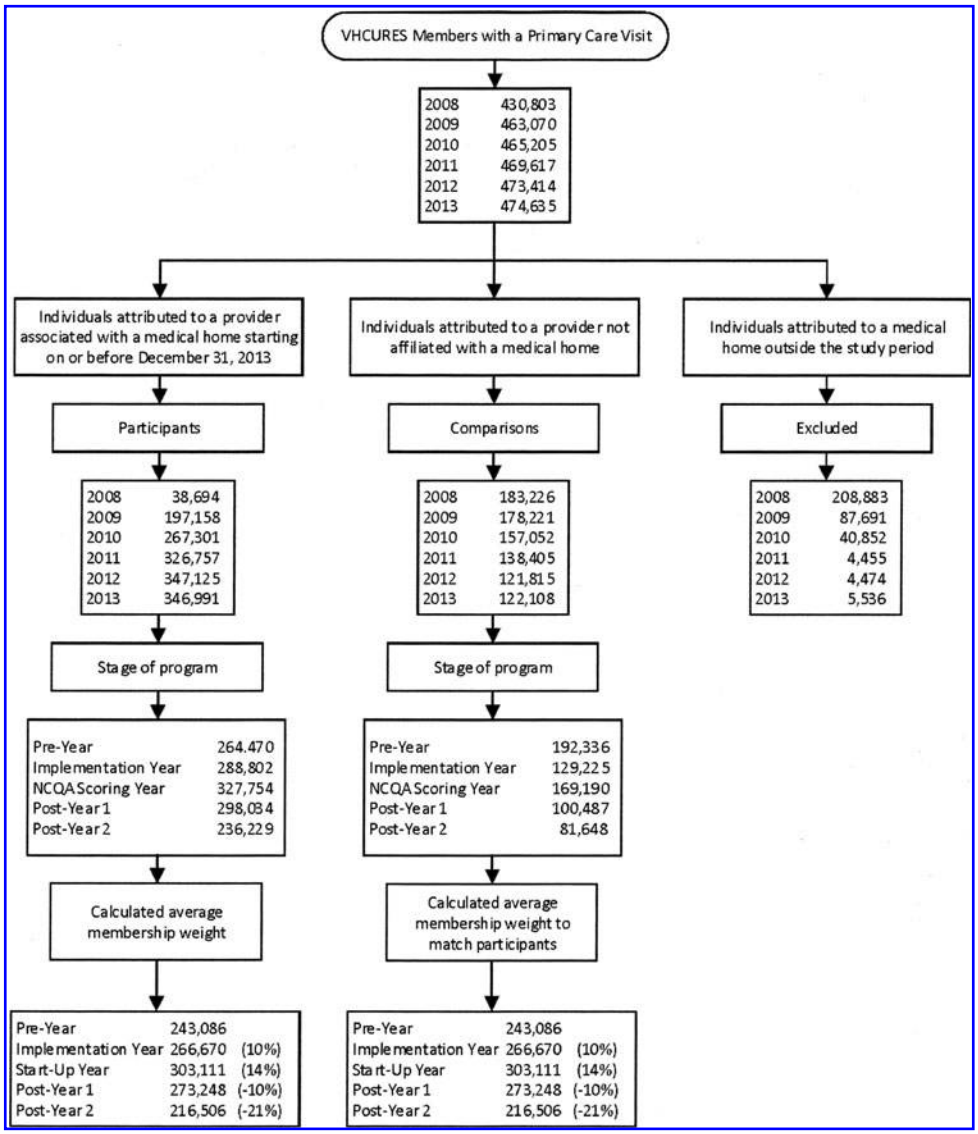

FIG. 1. Selection of study populations. Protocol for selecting sample population for patients receiving the plurality of their care from either Blueprint for Health or comparison practices through the all-payers claims database Vermont Health Care Uniform Reporting and Evaluation System (VHCURES). NCQA, National Committee for Quality Assurance

Post-Year 2. The comparison population from each calendar year is comprised of people who received the majority of their primary care at sites that had not joined the program (no direct exposure) by December 2013. The comparison group was randomly assigned and weighted to the same groupings to match the proportion of participants from each calendar year. This approach was used to ensure that overarching environmental influences impacted both groups similarly. Members attributed to medical homes outside of the study period were excluded.

Outcome measures

Claims-based measures included expenditures, utilization, Resource Use Index (RUI), and quality in terms of rates of preventive care. Expenditures were defined as the allowed amount from Vermont's claims data, calculated by summing the plan paid and member out-of-pocket payments. Utilization measures included total inpatient discharges and days; outpatient emergency department (ED) visits; potentially avoidable ED visits; standard imaging; colonoscopy; echography; advanced imaging; and primary care, medical specialist, and surgical specialist visits. RUI, an application of HealthPartners' Total Care Relative Resource Values (TCRRVs),[11] measures total utilization across all major components of care and has been tested and applied previously to Vermont claims data.[12] In accordance with the National Quality Forum-endorsed methodology, TCRRVs were converted to an RUI to allow relative comparisons. The RUI is a ratio of either study group's TCRRV to the statewide average TCRRV by relative year. In contrast to simple utilization rates, TCRRVs enable case-mix adjustment.

To provide insight into quality, the following NCQA Healthcare Effectiveness Data and Information Set measures were generated: breast cancer screening; cervical cancer screening; use of imaging studies for low back pain; comprehensive diabetes care (ie, hemoglobin A1c (HbA1c) testing, eye exam, nephropathy screening, and low-density lipoprotein cholesterol (LDL-C) screening); well-child visits in the third, fourth, fifth, and sixth years of life; adolescent well-care visits; appropriate testing for children with pharyngitis; and appropriate treatment for children with upper respiratory tract infection.[3]

This study treated Special Medicaid Services (SMSs) targeted at meeting social, economic, and rehabilitative needs (eg, transportation, home and community-based services, case management, dental, residential treatment, day treatment, mental health facilities, school-based services) as nonmedical services. Because these services are only covered by Medicaid, total expenditures and RUI were calculated without these services. This separation allowed an evaluation of more commonly supported health care services across all insurers, and therefore an evaluation of outcomes for the whole population.

Analytic approach

This study used a difference-in-differences (DID) method to evaluate the relative changes between the participants and the comparison groups over the successive stages of PCMH recognition and maturation. Participants and controls in the Pre-Year served as baseline measurements.

To account for differences between participant and comparison groups, rates were adjusted for demographics (eg, age, sex), health status (3M Clinical Risk Groups), select chronic conditions as identified by the Blueprint program (asthma, attention deficit disorder, chronic obstructive pulmonary disorder, congestive heart failure, coronary heart disease, depression, diabetes, and hypertension), maternity, Medicare and Medicaid coverage, and length of enrollment. Medicare-specific adjustors included disability, end-stage renal disease, and death. Adjusted values were produced at the person level and summarized by relative year and study group.

Evaluation of measures involved capping results at the 99th percentile by major insurer to minimize the influence of outlier cases. Expenditure measures were adjusted for inflation based on US Federal Reserve economic data. To account for partial enrollment, measures were adjusted for member months during a calendar year. SAS version 9.3 (SAS Institute Inc., Cary, NC) was used for all analyses.

Results

Study Population

Participant and comparison group demographics, health status, and payer differences are provided in Table 1 for Pre-Year and Post-Year 2. At Pre-Year, the participant group was more likely to be enrolled in Medicaid, less likely to be enrolled in Medicare, and more likely to have selected chronic conditions. These differences continued into Post-Year 2.

Expenditures

Expenditure results are provided in Table 2 and Figure 2. Annual risk-adjusted total medical expenditures per capita (Fig. 2A), in US dollars, at Pre-Year for the participant group and comparison group were not significantly different ($P = 0.100$). By Post-Year 2, the participant group was significantly lower than the comparison group ($P < .001$). The DID change from Pre-Year to Post-Year 2 indicated that the participant group reduced expenditures relative to the comparison group (–$482.4; 95% CI, –$573.4 to –$391.4; $P < .001$). This reduction was driven largely by inpatient expenditures (–$217.8; 95% CI, –$280.6 to –$155.0; $P < .001$) and outpatient (hospital) expenditures (–$154.1; 95% CI, –$183.8 to –$124.5; $P < .001$), accounting for 45% and 32% of the total reduction, respectively. Relative to the comparison group, the DID reduction in professional ($P < .001$) and pharmacy ($P < .001$) had less impact on the overall change. In conjunction with lower expenditures on traditional health care, participants insured through Medicaid showed a relative increase in expenditures for SMS ($P < .001$; Fig. 2B).

Utilization

Results for standard measures of utilization supported expenditure findings (Table 2). Relative to the comparison group, inpatient discharges and days were reduced by 8.8 per 1000 members ($P < .001$) and by 49.6 per 1000 members ($P < .001$), respectively. These utilization trends over program maturation are shown in Figure 3. Use of common

TABLE 1. DEMOGRAPHICS AND HEALTH STATUS FOR PARTICIPANT AND COMPARISON STUDY GROUPS

	Commercial, Medicaid, and Medicare, Ages 1 Year and Older							
	Pre-Year				*Post-Year 2*			
Measure	*Part.*	*Comp.*	*Diff.*	P	*Part.*	*Comp.*	*Diff.*	P
% Male	46.0%	46.2%	−0.3% (−0.6%, 0.0%)	0.05	46.0%	46.5%	−0.5% (−0.8%, −0.2%)	<.001
% Healthy CRG	48.7%	48.6%	0.1% (−0.2%, 0.4%)	0.39	44.2%	48.3%	−4.1% (−3.8%, −4.3%)	<.001
% Maternity	1.6%	1.6%	0.0% (−0.0%, 0.1%)	0.36	1.7%	1.6%	0.0% (−0.1%, 0.1%)	0.49
% Blueprint Selected Chronic Conditions	23.5%	20.5%	3.0% (2.8%, 3.2%)	<.001	26.5%	19.5%	7.0% (6.8%, 7.3%)	<.001
% Medicaid	22.2%	15.6%	6.6% (6.4%, 6.9%)	<.001	22.5%	17.4%	5.1% (4.9%, 5.4%)	<.001
% Medicare	18.0%	21.0%	−3.0% (−3.2%, −2.8%)	<.001	23.1%	25.1%	−2.0% (−2.3%, −1.8%)	<.001
% Disabled (Medicare Only)	24.3%	23.2%	1.1% (0.5%, 1.6%)	<.001	26.0%	24.4%	1.5% (1.0%, 2.1%)	<.001
% ESRD (Medicare Only)	0.35%	0.38%	−0.04% (−0.11%, 0.04%)	0.38	0.35%	0.32%	0.03% (−0.04%, 0.10%)	0.42
% Died During Year (Medicare Only)	2.1%	3.0%	−0.9% (−1.1%, −0.7%)	<.001	2.13%	2.94%	−0.8% (−1.0%, −0.62%)	<.001
Average Age, y	38.9	41.8	−2.9 (−3.0,− 2.7)	<.001	43.4	43.0	0.4 (0.0, 0.8)	<.001

In the Pre-Year, N for the participant group was 264,470 and the unweighted membership for the comparison group was 192,336. For Post-Year 2, the N for the participant group was 236,229 and the unweighted membership for the comparison group was 81,648. The comparison group membership was then weighted for a matched comparison with the participant group.
CRG, Clinical Risk Group; Comp, comparison group; Diff, difference; ESRD, end-stage renal disease; Part, Blueprint for Health participant group.

outpatient hospital facility services (eg, standard imaging, advanced imaging, echography) also declined significantly in the participant group relative to the comparison group. The DID in outpatient ED visits increased in the participant group relative to the comparison group but was not statistically significant ($P = 0.207$).

Relative to comparisons, the RUI also demonstrated a significant reduction in inpatient ($P < .001$) and outpatient hospital ($P < .001$) utilization for participants.

Quality: preventive and effective care measures

Coinciding with lower expenditures and utilization, the participant group maintained higher rates on 9 of 11 effective and preventive care measures through Post-Year 2 (Table 2). In Post-Year 2, participants had significantly higher rates of adolescent well-care visits ($P < .001$), breast cancer screening ($P < .001$), cervical cancer screening ($P < .001$), and appropriate testing (as defined by NCQA measure)[13] for pharyngitis ($P < .001$). Rates for imaging for low back pain, treatment of upper respiratory infection, and well-child visits for children were not significantly different. Participants with diabetes had higher rates of eye exams ($P < .001$), HbA1c testing ($P < .001$), LDL-C testing ($P < .001$), and nephropathy screening ($P < .001$). Only 2 measures—diabetes LDL-C and eye exam—were significant in DID.

Discussion

This study demonstrates favorable expenditure, utilization, and quality outcomes for the whole population, ages 1 year and older, who received the majority of their primary care in the medical home and CHT setting compared to a similar population receiving primary care from nonparticipating providers. The difference in medical expenditures was driven by several factors, including lower hospitalization rates and outpatient facility use.

Results for expenditures and utilization generally began to diverge as practices prepared for medical home scoring and began working with CHT staff, with further divergence occurring as program operations matured. The findings in this 6-year general population study highlight the importance of providing sufficient time for complex delivery system reforms to mature. They reinforce results from the Gesinger Health System's 7.5-year medical home initiative, where time of exposure to the program was associated with favorable outcomes for Medicare beneficiaries, such as reductions in hospital-based care.[14]

Although overall decreases in medical expenditures are promising, they also must be reviewed in the context of programmatic and payment investments. As indicated in the introduction, the total annualized investment in the final year of the study period was $4.9 million (unpublished data, Department of Vermont Health Access Business Office, 2013) in programmatic costs and $14.7 million in payments (unpublished data, administrative reports to Vermont Blueprint for Health, 2013) for a total of $17.9 million. This study found that the relative annualized per person decrease in medical expenditures for Post-Year 2 was $482.4 based on the DID analysis (Table 2). When applied to the 216,505 persons attributed to Post-Year 2 practices (Figure 1), the total annual reduction in expenditures is $104.4 million.

Table 2. Expenditure, Utilization, and Quality Outcomes of the Blueprint for Health

	Pre-Year				*Post-Year 2*				*DID*	
	Part.	*Comp.*	*Diff.*	P	*Part.*	*Comp.*	*Diff.*	P	*Diff.*[a]	P
Annual Expenditures per Capita										
Total Expenditures	$5659	$5704	−$44.5	0.100	$6331	$6858	−$526.9[b]	<.001	−$482.4 (−$573.4, −$391.4)	<.001
Total Expenditures Excluding SMS	$5238	$5264	−$26.3	0.297	$5923	$6464	−$541.5[b]	<.001	−$515.2 (−$600.9, −$429.4)	<.001
Inpatient Expenditures	$1112	$1061	$51.6[b]	0.005	$1330	$1496	−$166.2[b]	<.001	−$217.8 (−$280.6, −$155.0)	<.001
Outpatient Total Expenditures	$1502	$1496	$6.5	0.451	$1745	$1893	−$147.6[b]	<.001	−$154.1 (−$183.8, −$124.5)	<.001
Outpatient ED Expenditures	$192	$186	$5.9[b]	0.002	$242	$238	$4.0	0.190	−$1.9 (−$8.4, $4.6)	0.560
Professional Total Expenditures	$1295	$1327	−$32.0[b]	<.001	$1296	$1366	−$70.4[b]	<.001	−$38.4 (−$52.9, −$23.9)	<.001
Pharmacy Expenditures	$853	$884	−$31.2[b]	<.001	$925	$994	−$69.6[b]	<.001	−$38.4 (−$56.7, −$20.1)	<.001
Other Total Expenditures	$517	$512	$4.4	0.589	$619	$691	−$71.6[b]	<.001	−$76.0 (−$102.7, −$49.3)	<.001
Special Medicaid Services Total	$413	$416	−$2.6	0.788	$415	$361	$53.9[b]	<.001	$56.5 ($26.8, $86.2)	<.001
Annual Utilization per 1,000 Members[c]										
Inpatient Discharges	87.3	87.0	0.3	0.813	96.2	104.8	−8.6[b]	<.001	−8.8 (−12.4, −5.2)	<.001
Inpatient Days	390.9	394.7	−3.8	0.621	465.6	518.9	−53.4[b]	<.001	−49.6 (−75.7, −23.4)	<.001
Outpatient ED Visits	355.6	365.0	−9.4[b]	<.001	382.1	386.3	−4.2	0.223	5.2 (−2.9, 13.2)	0.207
Potentially Avoidable ED Visits	63.9	66.2	−2.3[b]	0.033	65.6	66.1	−0.5	0.202	3.4 (0.6, 6.1)	0.017
Primary Care Visits	3,775.8	3,801.5	−25.7[b]	0.013	3,683.9	3,737.5	−53.6[b]	<.001	−27.9 (−60.4, 4.7)	0.094
Medical Specialist Visits	817.7	861.1	−43.4[b]	<.001	853.3	910.0	−56.7[b]	<.001	−13.3 (−31.4, 4.8)	0.150
Surgical Specialist Visits	1,066.1	1,101.2	−35.1[b]	<.001	1041.5	1,099.3	−57.8[b]	<.001	−22.8 (−39.1, −6.4)	0.006
Standard Imaging	852.5	886.2	−33.7[b]	<.001	863.4	940.0	−76.6[b]	<.001	−42.8 (−55.2, −30.5)	<.001
Advanced Imaging	223.8	231.6	−7.8[b]	<.001	238.5	261.0	−22.5[b]	<.001	−14.7 (−20.4, −8.9)	<.001
Echography	265.1	274.2	−9.0[b]	<.001	287.5	314.9	−27.4[b]	<.001	−18.4 (−24.8, −12)	<.001
Colonoscopy	45.3	45.9	−0.6	0.269	46.8	47.1	−0.3	0.690	0.3 (−1.5, 2.2)	0.716
Resource Use Index (RUI)										
Total RUI	0.985	1.010	−0.025[b]	<.001	0.960	1.040	−0.080[b]	<.001	−0.055 (−0.058, −0.052)	<.001
Inpatient RUI	1.003	0.997	0.005	0.747	0.943	1.057	−0.115[b]	<.001	−0.120 (−0.136, −0.104)	<.001
Outpatient Facility RUI	0.990	1.010	−0.020[b]	<.001	0.958	1.043	−0.085[b]	<.001	−0.065 (−0.078, −0.052)	<.001
Professional RUI	0.979	1.021	−0.043[b]	<.001	0.970	1.030	−0.060[b]	0.006	−0.017 (−0.022, −0.012)	0.001
Pharmacy RUI	0.975	1.025	−0.050[b]	<.001	0.990	1.010	−0.020[b]	<.001	0.030 (0.027, 0.033)	0.003
Quality: Preventive and Effective Care (%)										
Adolescent Well-Care Visits	48.9%	43.2%	5.7%[b]	<.001	48.2%	43.2%	5.0%[b]	<.001	−0.7% (−3.6%, 2.2%)	0.647
Breast Cancer Screening	78.2%	77.0%	1.2%[b]	0.003	76.5%	74.6%	1.9%[b]	<.001	0.7% (−1.9%, 3.3%)	0.583
Cervical Cancer Screening	62.0%	60.8%	1.2%[b]	<.001	68.0%	65.3%	2.7%[b]	<.001	1.5% (−0.5%, 3.6%)	0.144
Children with Pharyngitis	82.8%	81.8%	1.0%	0.106	87.1%	80.8%	6.3%[b]	<.001	5.3% (−1.4%, 11.9%)	0.123
Diabetes – Eye Exam	48.6%	49.7%	−1.1	0.096	48.1%	44.9%	3.2%[b]	<.001	4.3% (0.0%, 8.5%)	<.001
Diabetes – HbA1c	83.1%	80.5%	2.6[b]	<.001	90.6%	87.1%	3.5%[b]	<.001	0.8% (−3.5%, 5.1%)	0.710
Diabetes – LDL-C	70.4%	69.5%	0.9%	0.113	76.9%	71.3%	5.6%[b]	<.001	4.7% (0.4%, 9.0%)	0.030
Diabetes - Nephropathy	74.0%	70.4%	3.6[b]	<.001	79.6%	72.8%	6.8%[b]	<.001	3.3% (−1.0%, 7.5%)	0.136
Low Back Pain	83.8%	82.6%	1.2%	0.058	83.8%	84.1%	−0.3%	0.747	−1.5% |(−7.5%, 4.5%)	0.624
Upper Respiratory Tract Infection	92.4%	87.6%	4.8%[b]	<.001	90.4%	90.2%	0.2%	0.825	−4.6% (−11.6%, 2.5%)	0.205
Well-Child Visits	74.4%	72.7%	1.7%[c]	0.004	75.4%	74.1%	1.3%	0.147	−0.3% (−5.1%, 4.5%)	0.900

[a]Differential change between participants and comparisons Post-Year 2 to Pre-Year.
[b]Differences significant to greater than 95%.
[c]Number of events per 1000 members.

In the Pre-Year, N for the participant group was 264,470 and the unweighted membership for the comparison group was 192,336. For Post-Year 2, the N for the participant group was 236,229 and the unweighted membership for the comparison group was 81,648. The comparison group membership was then weighted for a matched comparison with the participant group.

Comp, comparison group; Diff, difference; DID, difference in differences; ED, emergency department; LDL-C, low-density lipoprotein cholesterol; Part, Blueprint for Health participant group; SMS, special Medicaid services.

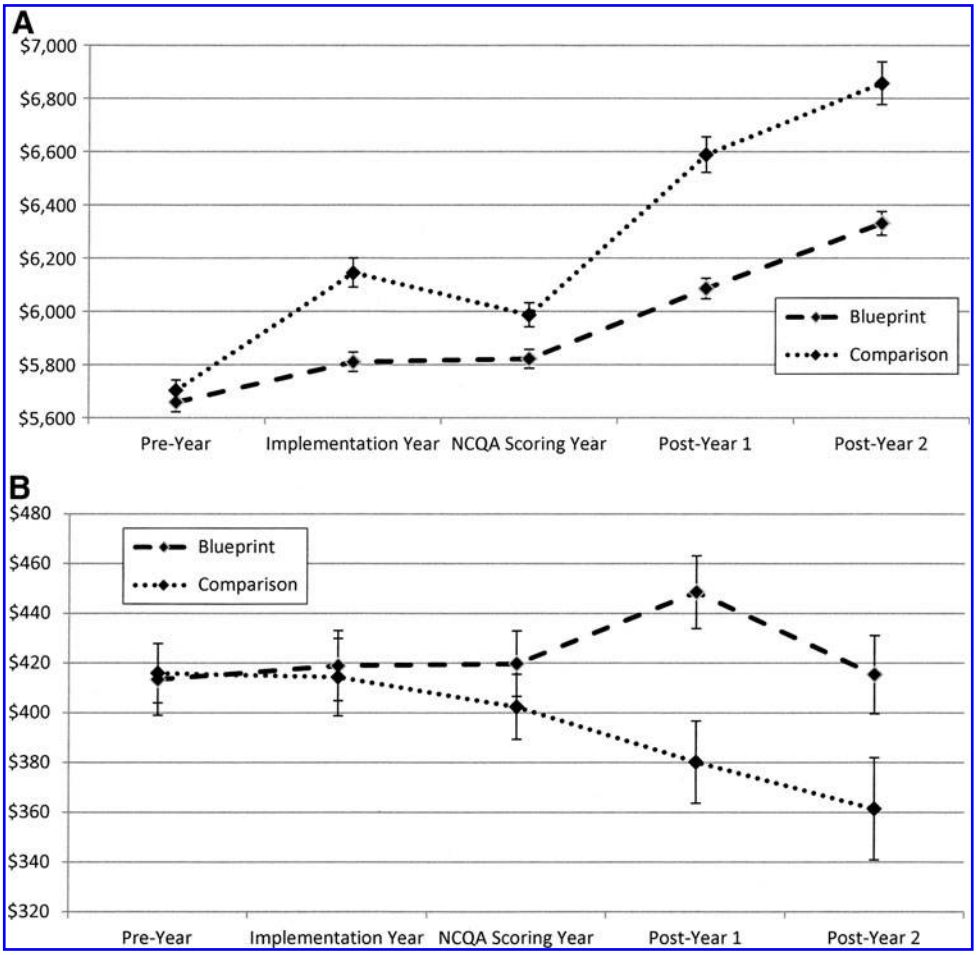

FIG. 2. Expenditures per capita, all insurers, members ages 1 year and older. **(A)** Total medical expenditures per patient receiving the plurality of care in either Blueprint for Health or comparison practices over programmatic stages and maturation (excludes social support service expenditures shown in Fig. 2B. **(B)** Total Special Medicaid Services expenditures per patient receiving the plurality of care in either Blueprint for Health or comparison practices over programmatic stages and maturation. NCQA, National Committee for Quality Assurance

Based on an annualized cost-gain ratio, medical expenditures decreased by approximately $5.8 million for every $1 million spent on the Blueprint initiative.

The findings from Vermont also suggest that the Blueprint model helped Medicaid beneficiaries connect with services targeting unmet economic and social needs. Based on research showing that increases in social service expenditures can reduce medical spending,[15,16] this analysis put SMS into its own expenditure category with the purpose of identifying how the Blueprint program is affecting the ratio of social and medical expenditures.

Although these results show some promising outcomes, they also point to opportunities for improvement and the need for additional analyses that would support communities' efforts to improve services. For example, rates of outpatient ED visits remained similar in both groups. A better understanding of how populations are using the ED may help PCMHs and CHTs in each service area plan better access and outreach strategies.

The Blueprint program involves a complex health services environment that is continually evolving; therefore, outcomes cannot be attributed to only 1 component of the model, such as primary care practices becoming recognized as a PCMH or the community outreach by the CHTs. More likely, the results reflect an array of structural, programmatic, and cultural changes occurring as PCMH and CHT operations matured and interactions strengthened within an extended network of community providers.

Much time and many resources were invested in the development, rollout, and maturation of the Blueprint program. Because of the time needed to accomplish many of the elements involved in effecting change, preparing for scoring as a medical home, and incorporating CHT staff into the practice workflow, a 12-month implementation cycle for each practice was common. This time frame was needed even with support through insurer payments and the investment of Vermont government in leadership and administrative support, practice facilitators, technology, and self-management programs through grants to each service area. The results reported in this study occurred in association with this investment in the change process, a vital component for sustained primary care improvement.[17]

The steadily diverging outcomes between participant and comparison populations reinforce the importance of allowing sufficient time and observation to adequately evaluate this type of reform.[14,18] Despite the complexity involved,

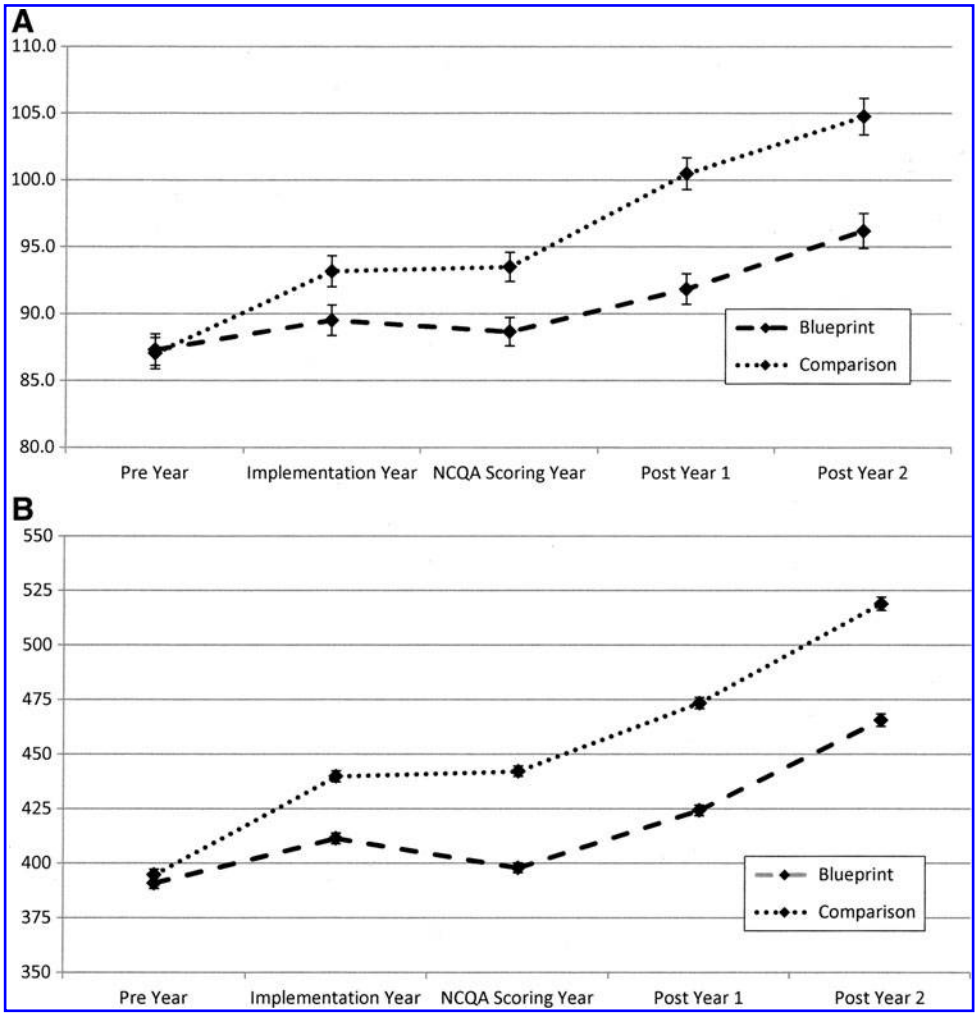

FIG. 3. Inpatient utilization levels, 2008–2013, all insurers, ages 1 year and older. **(A)** Number of inpatient discharges per 1000 patients receiving the plurality of care in either Blueprint for Health (Blueprint) or comparison practices over programmatic stages and maturation. **(B)** The number of inpatient days per 1000 patients receiving the plurality of care in either Blueprint for Health (Blueprint) or comparison practices over programmatic stages and maturation. NCQA, National Committee for Quality Assurance

insurer investments in PCMHs and CHT staff were more than offset by a reduction in per capita expenditures. During the study period, PCMH payments averaged slightly more than $2.00 per member per month (PMPM) and CHT payments averaged $1.50 PMPM for the Blueprint program. For a medical home initiative, these investments rates ($3.50 to $4.00 PMPM) were low and did not include the additional transformation support provided through community grants. Nevertheless, the results provide a strong rationale to continue supporting PCMHs, CHTs, the transformation infrastructure, and a multimodal evaluation in order to determine whether favorable results persist, whether results equate to improvements in the health of the population, and whether comparative evaluation can identify the elements most important for an effective delivery system.

Limitations

The results of this study are encouraging, yet factors beyond medical homes and CHTs may influence the findings. However, although potential factors beyond participation in the Blueprint program may have accounted for the favorable outcomes, they are unlikely to be a dominant factor given that results for the participant and comparison groups were similar during the Pre-Year, and the difference only emerged as the program expanded and matured. Furthermore, early results from CMS's MAPCP demonstration indicate substantial slowing in the growth of Medicare expenditures for beneficiaries attributed to Vermont Blueprint practices compared to beneficiaries attributed to PCMH and non-PCMH practices in the neighboring states of New Hampshire and Massachusetts.[10] One factor that may have contributed to differences between participants and comparisons is inherent differences in the members attributed to each group. However, these differences would have been minimized by the adjustments for disparities in demographics, health status, and maternity. Another factor could have been a selection bias in the form of a specific type of patient choosing a PCMH over a traditional practice and the motivations behind that choice (ie, were healthier or sicker

patients more likely to choose PCMHs). Unfortunately, identifying the motivations behind a patient's choice of a practice or provider over another was beyond the scope of this study. Further studies into patients' awareness of the PCMH model and the incentives for switching to, switching from, and remaining in a PCMH would address this issue as well as assess individual engagement in health decisions.

This study could be strengthened if the same members could be tracked as cohorts across years; however, Vermont's VHCURES currently contains only de-identified member information, limiting this option. Despite these limitations, it is important to note that the demographic and health characteristics did not change substantially in each cross-sectional sampling of the participant and comparison groups, and that the results remained comparable because of both risk adjustment and comparison assignment to balance the influence of calendar year. Lastly, external factors, such as the overall economy and insurance benefit design, may have influenced the reported outcomes.[19] However, because both study groups were comprised of Vermont residents with similar insurance coverage and exposed to the same overall economic influences, it is unlikely that these factors led to diverging outcomes.

Conclusion

Advanced primary care initiatives are under way across the United States.[20] Although payment structures, care support models, and implementation strategies vary, 4 essential undertakings have been identified across 17 multi-payer initiatives including: convening stakeholders, establishing provider participation criteria, determining payment, and measuring performance.[21] Implementation in Vermont required addressing these 4 components programmatically, and then balancing programmatic design with local innovation through direct investments in community-based teams, local leadership, and a locally organized transformation and self-management infrastructure. This approach has been designed to stimulate reforms aimed at improving overall population health through enhanced access and coordination of medical and nonmedical services in communities independent of an individual's socioeconomic status or insurance benefits.[17,22,23] This approach may amplify the effectiveness of Vermont's PCMH model, and direct comparison to other initiatives is required to determine whether a more complex, community-oriented approach adds value to a more selective focus on the practice setting.

A number of initiatives implementing the PCMH model across the country also have reported early favorable trends, especially for people with complex chronic conditions.[24–30] However, different study designs, small sample sizes, payer-specific reports, variable measures, and short study periods limit the ability to compare programs and definitively identify successful strategies. These circumstances highlight the need for a coordinated evaluation of PCMH programs using consistent measures and methods to identify design principles and strategies that contribute to a high-quality, high-value health system.[31,32]

Author Disclosure Statement

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APPENDIX B: PAYMENT METHODOLOGY

Quality Performance-Based Payment

The quality performance-based payment will be based on hospital service area (HSA) outcomes for the following measures:

1. Adolescent Well-Care Visits
2. Developmental Screening in the First Three Years of Life
3. Diabetes in poor control (i.e. Hemoglobin A1c >9%)
4. Rate of Hospitalization for Ambulatory Care Sensitive Conditions: PQI Chronic Composite (which includes the admission rate per 1000 for diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, heart failure, or angina without a cardiac procedure)

A total of three points for HSA outcomes will be available for each measure summing up to 12 points across all four measures. Points for each measure will be awarded for an HSA achieving an average (or rate per 1000 for the Chronic Composite measure) result at or above thresholds in the current measurement period and for improvement from the previous measurement period to the current measurement period. Measurement periods occur every six months and include results from attributed patients in the 12 month look-back.

There are two thresholds: the minimum threshold, which is the statewide average or rate, and the high achiever, which is the 90th percentile of Vermont HSA results or national results, whichever is higher. An HSA will get one point for being at or above the state average and will get 3 points for qualifying for as a high achiever. If the HSA is not in the High Achiever level, it is eligible for improvement points. Improvement points are described in Table a.

Table A: Improvement Scores

If not High Achiever, the following change scores apply	Points
Worsening of percent or index score	0 points
Maintaining (or not achieving minimum improvement)	1 point
Improving at or above the minimum improvement	2 points

The minimum improvement is a percent difference of 5%, meaning that if one HSA's average increases from 50% to 55% and another from 5% to 10%, both HSAs have an increase of 5%. Of note, an improvement for Adolescent Well-Care Visits and Developmental Screening is an increase by 5%. An improvement for Diabetes, Poor Control is a decrease of 5%. Also of note, since the PQI Chronic Composite is a rate per 1000, the minimum improvement is a decrease in the HSA rate by 1.5 per 1000.

The score for each measure is calculated by adding the threshold score to the improvement score, unless the HSA is in the high achiever level. In that case, the HSA gets the maximum score of 3. The points for each measure are summed for a Quality Measure Score. The combined score is associated

with one of three payment levels up to the full $0.25 available for the Quality Performance-Based Payments. Table b shows the payment levels for which scores are eligible.

Table B: Quality Score and Payment Eligibility

Score	Payment
≥3 points	$0.07
≥6 points	$0.13
≥9 points	$0.25

Utilization Performance-Based Payment

The utilization performance-based payment is based on practice-level Resource Use Index (RUI) score. This measure is based on software developed by HealthPartners as part of their Total Cost of Care (TCOC) measurement system, which has been endorsed by the National Quality Forum (NQF). This methodology applies nationally accepted weighting methods such as Medicare Severity Diagnosis Related Groups (MS-DRGs) for inpatient services, Current Procedural Terminology codes (CPTs) and associated Ambulatory Payment Classifications (APCs) for outpatient facility services, and CPTs and associated Resource-Based Relative Value Scale (RBRVS) relative weights for professional services) to measure the relative intensity of services.

Each patient-centered medical home (PCMH) in the Blueprint program receives an RUI score relative to the state average, which is indexed at 1. The lower the RUI score the better a practice ranks for their attributed adult members and pediatric members. Both the practice RUI scores for the adult populations and pediatric populations were divided into quartiles. Q1 is the mid-way score between the first quartile, the one with the highest scores and the second quartile. Q2 is the median score demarking the second and third quartiles. Q3 is the mid-way score between the third quartile and the fourth, the quartile is the lowest scores. The three quartiles with the lowest scores are eligible for three payment levels, as shown in Table C.

Table C: RUI Score Quartiles and Eligible Payment Levels

Quartile Range	Payment Level
>Q1	$0.00
Q1 to Q2*	$0.07
Q2 to Q3*	$0.13
<Q3*	$0.25

* Inclusive of lower bound

If a practice has both an adult and pediatric RUI score, then the payment a practice receives will be based the score of the population that makes up more than 75% of the practice's total population. If the majority population makes up less than 75% of the practice population, then the higher score of the two populations will be used.

APPENDIX C: VERMONT "HUB & SPOKE" INITIATIVE – TREATMENT FOR OPIOID ADDICTION

Three partnering entities - the Blueprint for Health, the Department of Vermont Health Access (DVHA), and the Vermont Department of Health (VDH) Division of Alcohol and Drug Abuse Programs (ADAP) - in collaboration with local health, addictions, and mental health providers have implementing a statewide treatment program. Grounded in the principles of Medication Assisted Treatment[1], the Blueprint's health care reform framework, and the Health Home concept in the Federal Affordable Care Act, the partners have created the Care Alliance for Opioid Treatment, known as the Hub & Spoke initiative. This initiative:

- *Expands access to Methadone treatment* by opening a new methadone program in the Rutland area and supporting providers to serve all clinically appropriate patients who are currently on wait lists

- *Enhances Methadone treatment programs (Hubs)* by augmenting the programming to include Health Home Services to link with the primary care and community services, provide buprenorphine for clinically complex patients, and provide consultation support to primary care and specialists prescribing buprenorphine

- *Embeds new clinical staff (a nurse and a Master's prepared, licensed clinician) in physician practices that prescribe buprenorphine (Spokes)* through the Blueprint CHTs to provide Health Home services, including clinical and care coordination supports to individuals receiving buprenorphine

Under the Hub & Spoke approach, each patient undergoing MAT has an established medical home, a single MAT prescriber, a pharmacy home, access to existing Blueprint CHTs, access to Hub or Spoke nurses and clinicians, and access to VCCI services as appropriate.

[1] Medication Assisted Treatment (MAT), the use of medications, in combination with counseling and behavioral therapies, is a successful treatment approach and is well supported in the addictions treatment literature. The two primary medications used in conjunction with counseling and support services to treat opioid dependence are methadone and buprenorphine. MAT is considered a long-term treatment, meaning individuals may remain on medication indefinitely, akin to insulin use among people with diabetes.

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Donna Ransmeier, Little Rivers Health Center

Blueprint Payment Implementation Work Group (continued)

Jack Reilly, Mount Ascutney Hospital & Medical Center
Carla Renders, MVP Health Care
Julie Riffon, North Country Hospital Center
Jeffrey Ross, Department of Vermont Health Access
Laural Ruggles, Northeastern Regional Hospital
Jenney Samuelson, Vermont Blueprint for Health
Robyn Skiff, University of Vermont Medical Center
Richard Slusky, Director of Health Care Reform, Green Mountain Care Board
Beth Tanzman, Vermont Blueprint for Health
Tim Tremblay, Vermont Blueprint for Health
Lynn Trepanier, Blue Cross Blue Shield of Vermont
Jennifer Wallace, Gifford Medical Center
Robert Wheeler, Blue Cross Blue Shield of Vermont
Karla Wilson, Little Rivers Health Center
Mark Young, Central Vermont Medical Center

Mental Health and Substance Abuse Advisory Committee

Peter Albert, LICSW, PrimariLink Retreat Health Care
Mark Ames, Vermont Recovery Network
Susan Atwell-Hall, Blue Cross Blue Shield of Vermont
Ena Bakus, Green Mountain Care Board
Rick Barnett, Psy.D., LADC, Vermont Psychological Association
Barbara Benton, Otter Creek Associates/Matrix Health Systems
Bob Bick, Howard Center for Human Services
Charles Biss, Vermont Department of Mental Health
Steve Broer, Northwestern Counseling Services
Barbara Cimaglio, Vermont Department of Health - Alcohol & Drug Abuse Programs
Ginger Cloud, Central Vermont Medical Center
Anne de la Blanchetai Donahue, Vermont Legislative Representative, Co-Chair Mental Health Oversight Committee
William Eberle, Another Way
Laurie Emerson, NAMI Vermont
Peter Espenshade, VAMHAR
Pam Farnham, University of Vermont Medical Center
David Fassler, Vermont Association of Child & Adolescent Psychiatry, Council of Mental Health and Substance Abuse Professionals
Caryn Feinberg, Vermont Mental Health Counselors Association
Jennifer Fels, United Health Alliance
Betsy Fowler, LICSW, LADC, Northeastern Vermont Regional Hospital
Gordon Frankle, MD, Rutland Regional Medical Center
Kathy Holsopple, Vermont Federation for Families
Penrose Jackson, University of Vermont Medical Center
Rodger Kessler, PhD, ABPP, University of Vermont Medical Center
Ryan Lane, Vermont Department of Health - Alcohol & Drug Abuse Programs
Marcia LaPlante, Vermont Department of Health, Substance Abuse Prevention
Jill Lord, Mount Ascutney Hospital and Health Center
Patty McCarthy Metcalf, Friends of Recovery Vermont Meyer, Shelburne Psychological Counseling Services
Gail Middlebrook, Northeast Kingdom Human Services
Melissa Miles, Bi-State Primary Care Association
Sarah Narkewicz, Rutland Regional Medical Center
Nick Nichols, Vermont Department of Mental Health
Lesley Hendry, Northwestern Medical Center
Eilis O'Herlihy, National Association of Social Workers, VT Chapter
Bruce Rogers, Brattleboro Retreat
Simone Rueschemeyer, Behavioral Health Network of Vermont
Julie Tessler, Vermont Council Developmental & Mental Health Services
Diane Tetrault, VT Mental Health Counselors Association
Gloria van den Berg, Alyssum Inc.
Susan Walker, Turning Point of Windham County
Jim Walsh, Windham Center Psychiatric Services Health Center at Bellows Falls

APPENDIX F: PARTNERSHIPS WITH NATIONAL INITIATIVES

CENTERS FOR MEDICARE AND MEDICAID SERVICES (CMS)

Vermont is one of 8 states chosen to be part of the Multi-payer Advanced Primary Care Practice (MAPCP) Demonstration through the Center for Medicare and Medicaid Innovation (CMMI). For more information, refer to (http://www.cms.gov/DemoProjectsEvalRpts/MD/ItemDetail.asp?ItemID=CMS1230016). This opportunity includes Medicare into the Blueprint multi-payer payment reforms as a fully participating insurer. In 2014, CCMI extend the MAPCP Demonstration in Vermont for an additional 2.5 years, through December 2016.

INSTITUTE OF MEDICINE OF THE NATIONAL ACADEMIES (IOM)

The Blueprint Executive Director serves as a member of the IOM Roundtable on Value and Science-Driven Health Care (http://iom.edu/Activities/Quality/VSRT.aspx), which has been convened to help transform the way evidence on clinical effectiveness is generated and used to improve health and health care. The stated goal is that by the year 2020, 90% of clinical decisions will be supported by timely and accurate information reflecting the best available evidence. The Blueprint Executive Director also sits on the IOM Consensus Committee on the Learning Health Care Systems in America. This group has undertaken the study of transforming the current delivery system into one of continuous assessment and improvement for both the effectiveness and efficiency of healthcare.

NATIONAL ACADEMY OF STATE HEALTH POLICY (NASHP)

NASHP provides a forum for constructive, nonpartisan work across branches and agencies of state government on critical health issues facing states. It has been a long-term supporter of the Blueprint, and Blueprint team members have shared their expertise and experience in multiple venues. Presentations at conferences and conference calls, policy brief preparation, serving on advisory groups, and site visits have been part of this valuable collaboration. Topics addressed include payment reform, data collection and utility, legislative approaches, Patient-Centered Medical Homes, Community Health Teams, and integration of mental health and substance abuse treatment. A Blueprint Assistant Director serves on the NASHP ReForum Advisory group. More information can be found at http://www.nashp.org/about-nashp

APPENDIX G: PRESENTATIONS AND MEETINGS

2015 Out of State Meetings			
1/15/2015	CMS Exploring Medicaid Health Homes: Opioid-Dependency Focused Health Homes	Webinar	B. Tanzman
3/3/2015	Presentation to CPC Adjunc Meeting of the Multi-Stakeholder Faculty	Baltimore, MD	C. Jones
3/9/2015	Presentation to the All-Payer Claims Database (APCD) Council: Linked Claims & Clinical Data Sources	Webinar	M. Hazard & T. Tremblay
3/16/2015	4th Annual Leadership Summit - Patient Centered Medical Homes & Behavioral Health Integration; Case Study: The Vermont Blueprint for Health	Buena Vista, FL	B. Tanzman
3/17 & 3/18/2015	IOM Roundtable Members Meeting	Washington, DC	C. Jones
4/1/2015	Maine Quality Counts; Primary Care Transformation: Lessons from Across the Nation - Speaker Panel	Augusta, ME	J. Samuelson
4/24/2015	NESCO Behavioral Health Medicaid Leadership Network Regional Meeting: Vermont's Opioid Addiction Treatment Health Home	Providence, RI	B. Tanzman
4/28/2015	IOM Core Metrics Report Relase Participant	Washington, DC	C. Jones
4/29/2015	Reform to Transform - Getting to Better Health: Connecting Care and Community	Meriden, CT	J. Samuelson
05/19/15 - 05/20/15	NASHP 5th Learning Consortium: Supporting State Strategies to Design and Deliver Whole-Person Care in Ambulatory Settings - Vermont's Opioid Addiction Treatment Health Home	Philadelphia, PA	B. Tanzman
5/29/2015	Milbank - Investing in Population Health	New York, NY	C. Jones
6/17/2015	NASHP Mtg. - Federal State Discourse on Assessing State Demonstrations	Washington, DC	C. Jones
6/22/2015	Foundation for Health Reform	Washington, DC	B. Tanzman
6/23/2015	Outcomes Building Sustainability	Alexandria, VA	B. Tanzman
6/23/2015 - 6/24/2015	Technical Advisory Committee Participant - MacColl Center	Washington, DC	C. Jones
7/13/2015	Medicaid Innovation Accelerator Program (IAP) - IAP Learning Collaborative: Substance Use Disorders (SUD)	Webinar	B. Tanzman
7/28/2015	National Governor's Association Meeting: Complex Care Programs Policy Academy	Washington, D.C.	C. Jones
9/15/2015	ASTHO: Maximizing Partnerships to Expand Care Coordination Vermont's Opioid Addiction Treatment Health Home	Webinar	B. Tanzman
9/21/2015	GHRI Technical Advisory Committee - Participant	Washington, D.C.	C. Jones
9/22/2015	GHRI Technical Advisory Committee - Participant	Washington, D.C.	C. Jones
9/24/2015	National Academy of Medicine's Leadership Consortium for Value & Science-Driven Health Care - Participant	Washington, D.C.	C. Jones
10/19/2015	Payer's Summit on Behavorial Health Management - Capacity Based Payments for Behavorial Health Integration and ROI: The Vermont Blueprint for Health	Alexandria, VA	B. Tanzman
10/20/2015	Integrating Behavorial Health Services for Individuals with Complex Needs; The Vermont Health Home for Opioid Addiction	Dallas, TX	B. Tanzman
10/22/2015	TAC Follow-Up Webinar Presentation	Webinar	C. Jones
10/22/2015	Transformation Network	Webinar	J. Samuelson
10/30/2015	The National Association of Health Data Organizations 30th Anniversary Meeting - Effective Use of APCD Data	Washington, D.C.	J. Samuelson
11/5/2015 - 11/6/2015	Transformation with Accountable Care Organizations, Community Care Organizations, DSRIP and Others. Presentations: Vermont's Unified Community Collaboratives	Detroit, MI	C. Jones
11/5/2015 - 11/6/2015	Transformation with Accountable Care Organizations, Community Care Organizations, DSRIP and Others. Presentations: Vermont's Unified Community Collaboratives	Detroit, MI	J. Samuelson
12/8/2015	SIM Annual Meeting: Presentation	Augusta, ME	C. Jones
12/8/2015	SIM Annual Meeting: Sustainability Panelist	Augusta, ME	C. Jones

2015 In State Meetings			
1/8/2015	Business Round Table - Speaker Panel	Essex, VT	C. Jones
1/16/2015	Vermont House Committee on Health Care - Blueprint 101 Presentation	Montpelier, VT	C. Jones
1/18/2015	Business Roundtable Annual Meeting - Blueprint and Health Systems Advancement	Essex, VT	C. Jones
2/10/2015	Vermont House Committee on Health Care - Blueprint Presentation	Montpelier, VT	C. Jones
2/10/2015	Vermont Appropriations - Blueprint Presentation	Montpelier, VT	C. Jones
2/10/2015	VHCIP Care Management Care Model Work Group Meeting - Blueprint Presentation	Montpelier, VT	J. Samuelson
2/11/2015	One Care Leadership Council - Blueprint Presentation	Montpelier, VT	C. Jones
2/23/2015	Blueprint/ACO Integration and Community Health Systems - Payment Models Work Group	Montpelier, VT	C. Jones
2/26/2015	Vermont House Committee on Health Care - Blueprint Presentation	Montpelier, VT	C. Jones
3/4/2015	CHAC Governing Board - Blueprint Phase II Delivery System Reform	Montpelier, VT	C. Jones
3/13/2015	North Country Hospital Physicians Retreat - Blueprint Presentation	Newport, VT	C. Jones
3/23/2015	VHCIP Care Management Care Model Work Group Meeting - Blueprint Presentation	Montpelier, VT	J. Samuelson
4/2/2015	VNA Board of Directors - Blueprint Plans & Role for Home Care	Berlin, VT	C. Jones
4/16/2015	Testimony - Vermont House Health Committee	Montpelier, VT	C. Jones
5/19/2015	Vermont Business Round Table - Health Care Working Group	Burlington, VT	C. Jones
10/1/2015	VITL Summit	Burlington, VT	M. Mohlman
10/20/2015	2015 Vermont Collective Impact Conference: Vermont Blueprint for Health	Fairlee, VT	C. Jones
10/21/2015	Northern Counties Health Care, Inc.'s Annual Meeting - Panel Discussion	Lyndonville, VT	C. Jones
10/23/2015	Transforming Primary Care & Behavorial Health - Panel: Vermont's Response to Keynote Address	Essex, VT	B. Tanzman
10/23/2015	Transforming Primary Care & Behavorial Health - Vermont's Evolving Community Health Systems: Blueprint for Health and New Reforms	Essex, VT	B. Tanzman

APPENDIX H: ACRONYMS

Acronym	Definition
ACO	Accountable Care Organization
CHT	Community Health Team
DVHA	Department of Vermont Health Access
EMR	Electronic Medical Record
HIT	Health Information Technology
MAT	Medication Assisted Treatment
NCQA	National Committee for Quality Assurance
PCMH	Patient Centered Medical Home
PMPM	Per-member per-month
SASH	Support and Services at Home
VCHURES	Vermont Healthcare Uniform Reporting and Evaluation System
VDH	Vermont Department of Health
VHIE	Vermont Health Information Exchange
VITL	Vermont Information Technology Leaders