COLORADO
Lieutenant Governor Dianne Primavera

January 17, 2020

Greetings:

The Colorado State Innovation Model (SIM) changed the way health care is delivered and paid for in Colorado. And while SIM's overarching objectives were directed at systemic reforms across the state's health care landscape, at its core, the initiative was about people- and improving the health of Coloradans by increasing access to "whole person" care.

The final evaluation reports now available on the SIM website – including the SIM Final Report, SIM Final Evaluation Outcomes Report, SIM Final Evaluation Process Report, and SIM Return on Investment (ROI) Analysis – offer a detailed analysis on SIM's many successes, as well as the challenges and lessons learned.

While SIM officially came to an end on July 31, 2019, its impact will be felt for years to come. As Governor Polis and I continue to work with all of you to help implement our "Roadmap to Saving Coloradans Money on Health Care," the following SIM lessons and findings will be at the top of our minds:

- **Integrated physical and behavioral health results in cost savings**. Results from the analyses of SIM's ROI are extremely encouraging, showing an estimated cost savings of $178.6 million through January 1, 2018. In addition, several cost and utilization measures analyzed in the SIM Final Evaluation Outcomes report also showed positive impacts- such as a reduction in emergency department utilization, and lower rates of 30-day hospital readmissions for mental health conditions. Evaluators used different methodologies to calculate cost savings (or avoided costs), and the results of their analyses raise questions that merit future investigation and research.
- **Integrated physical and behavioral health also improves care delivery.** SIM's success in improving access to the right care, at the right time, in the right place is most powerfully expressed through the stories of the patients and the providers who were involved in the initiative, which can be found on the SIM website. The Evaluation Reports offer further evidence of improved care quality, resulting in improved outcomes. This information will be critical in directing future state efforts to strengthen and improve primary care delivery- work that is currently being pursued by the Colorado Primary Care Payment Reform Collaborative.
- **Systems change requires strong relationships and cross-sector partnerships**. Colorado SIM was unique, among other states who received SIM awards, in its level of stakeholder engagement. The relationship and trust building that occurred over the course of the initiatives - between payers and providers, care team members working in integrated setting, state agencies and public partners - were instrumental to SIM's success.

I encourage you not only to read the wealth of information contained in the reports, but to find new ways to engage in care delivery and payment reform efforts currently underway in Colorado. SIM shows that true reform takes sustained engagement, motivation, and cooperation- it is now up to all of us to take up the reigns and work together to advance the health of all Coloradans.

Sincerely,

Dianne Primavera
Lieutenant Governor

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# Final Evaluation Reports Submission Cover Letter

**July 31, 2019**

**Background:** In our initial proposal, Colorado SIM proposed to include Final and Summative Evaluation Reports as part of the final evaluation. Over the course of time it became apparent that these reports made more sense titled the Process and Outcomes Evaluation Reports. In 2015 TriWest was selected through a competitive selection process to be the State Led Evaluator (SLE) for Colorado SIM. The following is a review of challenges encountered in our work on the evaluation that should be kept in mind when reviewing this report.

**Data Lag and Quality Challenges:**

- Substantial portions of the analyses are based off claims data from the All-Payer Claims Database (APCD), managed by the Center for Improving Value in Health Care (CIVHC). Due to the lag in reporting of claims data, this analysis includes data from 2015 – 2017. This limits our ability to measure the impact of the initiative since we have limited data for the implementation periods of the cohorts: practice transformation support was provided to cohort 1 from February 2016 through March 2018; to cohort 2 from September 2017 through June 2019; and to cohort 3 practices from June 2018 through June 2019. This means that only eleven months of cohort 1 and four months of cohort 2 are included in these analyses and cohort 3 is excluded. Our logic model posits that the initiative will impact cost and utilization first by increasing utilization of certain upstream services when patients are able to access the physical and behavioral care that they need and that this improvement in care will lower the utilization of more costly downstream acute services. Since it may take years to see these effects, future analyses may be able to more accurately measure the impact that SIM had on cost and utilization.
- Medicaid and CIVHC both underwent data processing vendor changes during the 2016-2017 period. There was a significant delay in available data and inconsistencies in the data across the partners. The SIM Office worked extensively with Medicaid and CIVHC to identify the time period and extent of variation and agree to a process moving forward.
- Payer data was regularly asked for but was extremely difficult to collect. As a result, the evaluation was unable to address several payment reform questions.
- The operational activities of the initiative ended so close to the initiative closeout date of July 31st, which created a considerable backlog of work to finalize the data and assessments that was collected from practices occurred. The initiative had essentially six weeks to finalize much of this data. Just checking the data quality and finalizing the data in and of itself would have been taxing in that short timeframe. To additionally analyze that data, create a report, review, and finalize said report was extremely challenging.

The project described was supported by Funding Opportunity Number CMS-1G1-14-001 from the U.S Department of Health and Human Services (HHS), Centers for Medicare & Medicaid Services (CMS). The Colorado State Innovation Model (SIM), a four-year initiative, is funded by up to $65 million from CMS. The content provided is solely the responsibility of the authors and does not necessarily represent the official views of HHS or any of its agencies.

- In late 2017 it became apparent that some of the evaluation questions that initially selected in 2015 were too extensive or did not have an available data source. To address this issue the SIM office instructed TriWest to lead an effort to narrow the scope of the evaluation. While this effort occurred, it was not a thorough as it could have been. Evaluation questions were maintained without available data sources. This did not become apparent until final evaluation plans were presented midway into AY 4 with the outline of the methodology.
- The SIM Office worked to review and fact-check the evaluation report but are not responsible for the results, analysis or interpretation included in this evaluation.

The project described was supported by Funding Opportunity Number CMS-1G1-14-001 from the U.S Department of Health and Human Services (HHS), Centers for Medicare & Medicaid Services (CMS). The Colorado State Innovation Model (SIM), a four-year initiative, is funded by up to $65 million from CMS. The content provided is solely the responsibility of the authors and does not necessarily represent the official views of HHS or any of its agencies.

# Colorado State Innovation Model Evaluation

## Process Evaluation Report

**Final: July 31, 2019 (revised October 9, 2019)**

Colorado SIM Office
Denver, CO 80203

The project described was supported by Funding Opportunity Number CMS-1G1-14-001 from the U.S. Department of Health & Human Services, Centers for Medicare & Medicaid Services. The contents provided are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services, or any of its agencies. The research presented here was conducted by the awardee. Findings might or might not be consistent with or confirmed by the findings of the independent federal evaluation contractor.

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# Executive Summary

This Final SIM Process Evaluation Report is one of two final evaluation reports submitted by TriWest Group, the Colorado SIM statewide evaluator, addressing the implementation of and outcomes achieved by the Colorado State Innovation Model (SIM), a federally funded, Governor's Office health reform initiative. This report describes findings from the process evaluation of the initiative, focusing on SIM implementation activities across the state. A companion report is the Final SIM Outcome Evaluation Report.

In this Executive Summary, we present brief descriptions of the SIM initiative, our evaluation, key findings, and select recommendations. The remaining chapters, as listed below with chapter numbers in parentheses, provide detailed expansions of these items:

1. **Introduction and Report Organization (1).** Background and context on SIM initiative and its participants.
2. **Methodology (2).** Brief evaluation methods and data descriptions, sources, and limitations.
3. **Practice Transformation (3).** Practice descriptions and practice transformation activities, value of technical support and small grant program overview.
4. **Workforce (4).** Identifying/understanding gaps, addressing the gaps, behavioral health provider capacity, training and onboarding, renovations, and brief summary of provider satisfaction and burnout.
5. **Practice Level HIT (5).** Description of the SIM data activities, development of the SPLIT/CQM reporting tool, data and HIT challenges, improvement of data capture and quality, information sharing across providers, role of the CHITA, population management and care coordination, improve integrated care via process, redesign, culture change, and HIT.
6. **Statewide HIT (6).** Developed and implemented a statewide roadmap, telehealth strategy, HIE connectivity, eCQM reporting process, facilitating and sharing information between primary care providers and behavioral healthcare providers.
7. **Payment Reform (7).** Engaging payers, Multi-Payer Collaborative, multi-stakeholder symposiums, moving toward more valued-based payments.
8. **Population Health (8).** Population health activities, saturation model, provider education efforts, promotion efforts, alignment with SIM goals, consumer engagement outreach.
9. **Conclusions (9).** Summary of evaluation results and general recommendations.

## Evaluation Overview

In 2015, Colorado was awarded up to $65 million in federal funding and support from the Center for Medicare and Medicaid Services (CMS) in the form of a cooperative agreement to implement SIM. The proposal and planning process included large-scale stakeholder engagement and contributions to ensure the statewide model would be comprehensive and sustainable. This model was developed to address the "Quadruple Aim[1]" to improve patient experience (both the quality of and satisfaction with care), improve population health, reduce/avoid healthcare costs, and improve the work life of providers. There were four key elements (pillars) of the model:

- **Practice Transformation.** Over the course of implementation, SIM selected and provided support to 319 primary care practice sites in their efforts to integrate behavioral and physical healthcare. Additionally, SIM selected four community mental health centers (CMHCs) to implement bi-directional integration efforts. These practice sites received practice transformation support, specifically focused on integrating physical care and behavioral healthcare. In addition, sites received value-based payments from health plans to support their work[2] to provide patient-centered, team-based integrated care. Through technical assistance provided by Practice Transformation Organizations, SIM helped practice sites create infrastructure and new processes to improve integration and prepare them for greater success with value-based payment models. During their participation, sites also completed a variety of assessments designed to help guide quality improvement efforts.
- **Payment Reform.** SIM engaged seven public and private payers constituting a Multi-Payer Collaborative (MPC) that worked together prior to SIM implementation and committed to continue efforts to support behavioral and physical healthcare integration. As a requirement of SIM participation, the primary care practice sites received compensation through at least one alternative payment model. In some cases, this support was a new or enhanced payment model started as part of SIM participation. But the support often represented a continuation of value-based payment arrangements that were in place prior to a practice site applying for SIM participation. The Multi-Payer Collaborative had six health plan members at the end of SIM.
- **Health Information Technology (HIT).** The SIM strategy for improving HIT quality and utilization focused on support at the individual practice site level and at the state level.

[1] The SIM began with a focus on the "Triple Aim" of lower costs, better care, and better patient experience, then elected to add a focus on workforce during its initial planning year.

[2] Some of these value-based payments were in place prior to SIM. Although having this support was a requirement for participation in SIM, those agreements were made between the practices and payers. SIM did not broker these agreements.

At the individual practice site level, efforts focused on optimization of electronic health records (EHRs) to support practice transformation efforts, quality improvement, and reporting of clinical quality measures. Wider-ranging statewide efforts included SIM contributions to a statewide HIT roadmap, support for increased broadband access and telehealth capacity in the state, support for eConsult initiatives, development of an electronic clinical quality measure (eCQM) solution, development and support of a Clinical Health Information Technology Advisor (CHITA) workforce, and health information exchange (HIE) connectivity.

- **Population Health**. The SIM strategy for improving health at the state level included local support for community efforts to reduce stigma, promote coordination of health systems, and reduce barriers to accessing care. This strategy was developed through two major efforts. The first was funding for local public health agencies (LPHAs) and behavioral health transformation collaboratives (BHTCs) for projects targeting stigma reduction, community education, and coordination. The second was partial funding of the Regional Health Connector (RHC) program to connect the systems that keep people healthy, including primary care, public health, social services, and other community resources.

Each cohort, experienced SIM differently, with variations in participation requirements, assistance provided, and length of participation. In addition, the SIM model recognized variances across practices, and it was designed to produce different types of outcomes for different groups. For example, patients experienced changes in access to care and utilization. Practice sites, similarly, experienced changes in levels of integration and practice operations. Furthermore, changes in approaches to value-based payments affected some payers. Because of these different components, a single methodological approach was insufficient for evaluating the many aspects of the various SIM efforts. Therefore, our evaluation utilized a mixed-methods approach that used qualitative data, quantitative data, and multiple analytical methods (e.g., descriptive, time-series, within- and between-group comparisons).

## Process Evaluation Findings

The following section reviews the final evaluation questions addressed in this report and provides a very brief overview of findings. These are very general highlights chosen by the evaluation team to offer broad information. We encourage readers to seek out chapters of interest to explore these questions in detail.

**Practice Transformation (PT1). To what extent did practice sites and bi-directional programs move along the continuum of integration? How did they change over time? Did practices report an ability to sustain any changes made during SIM?** Practices monitored achievement and prioritized goals with practice transformation milestones that reflected common attributes

of high-performing primary care practices. These milestones were adapted for use by the CMHC programs. Our analyses found statistically significant progress in integration across cohorts and time periods, with results indicating that average levels of integration increased substantially over time. Though specific resources available for sustainability are uncertain, practices generally reported they were committed to continuing to offer integrated physical and behavioral healthcare.

**Practice Transformation (PT2). What challenges were encountered by SIM practices in their integration/ transformation efforts?** The most commonly cited challenges were workforce capacity and a lack of trained providers and practitioners, with some of the most acutely felt shortages around behavioral health providers in rural communities; inadequate funding to implement and sustain integrated care; inadequate knowledge of integrated care; difficulty with data and technology; a lack of clear expectations and communication among and between participants; and logistics of workflow within the clinic setting.

**Practice Transformation (PT5). What steps did practice sites take to assess and continually improve delivery of integrated care via process redesign, culture change, and HIT?** Practices regularly completed assessments designed to measure their improvement processes and integrated care progress, which were then scored and delivered to practice sites to discuss with their Practice Facilitators and Clinical Health Information Technology Advisors to guide next steps. Results of these assessments showed continual improvement on the part of practice sites. Notably, sites made gains in using their EHRs to report clinical quality measures, managing patient populations, and engaging in quality improvement efforts.

**Practice Transformation (PT7). To what extent have gaps in the SIM integrated care workforce been identified and addressed?** Interviews conducted between 2016–2019 revealed that workforce issues are recognized and felt, but they have not been completely addressed. Not all respondents, particularly early in SIM were aware of workforce efforts, although this proportion increased over time. Challenges remain, particularly around a lack of trained providers. Multiple respondents added that even among existing providers, not all are familiar with or trained to offer integrated physical and behavioral healthcare. Multiple SIM activities in these areas, many of them focused on improving provider education, have created a foundation for further work in this area in Colorado.

**Practice Transformation (PT10). Do/did practice sites and bi-directional programs see value in various elements of technical assistance they received (PFs, CHTAs, SPLIT tool, etc.)?** Practice needs varied, and the types of technical assistance needed likewise varied. For example, for those sites that struggled with EHRs, having help with their EHRs was valuable. Help with using data in quality improvement processes was new to some sites, and that assistance was valuable. Also of value were the assistance with the SPLIT tool and the collection and use of

CQM data. Sites also valued information from PFs and CHITAs about what other sites were doing. Information was also provided in the Collaborative Learning Sessions.

**Payment Reform (PR1). To what extent were value-based payment models implemented? What were the barriers to this transition? Did implementation result in improved integration and quality of care?** Alternative payment model support provided a foundation for participating practice sites to establish business approaches that accommodate transformation to more integrated care. And though many practice sites were moving toward VBPs in the future, there was no evidence that practice site revenues yet reflected this diversification. Despite this, fewer than 1% of practice sites that completed SIM were *not* supported with a value-based payment by a SIM-participating health plan[3]. The third component of this question—did implementation result in improved integration and quality of care—cannot be answered with the data that were available.

Our interviews revealed three broad categories of APM challenges: the current complex system of financing and the distinctive aspects of the Colorado healthcare market; readily accessible shared tool and agreed-upon definitions that support and define reform; and a needed pathway for open and ongoing communication between providers and payers, with opportunities for learning, listening, and negotiating.

**Health Information Technology (HT1). Are primary care practice sites and CMHCs using valid, reliable data (in the form of clinical quality measures [CQMs] and others) to drive change?** Data quality improved considerably, based on Practice Monitor assessments completed by practices and CHITAs. The monitor additionally provided evidence of progress in creating data-driven improvements. Cohort 1 reported a 15-percentage-point increase in completed, routine activities between the baseline and final assessments, with the majority of that growth (13 percentage points) taking place between the baseline and midpoint assessments. Cohort 2 similarly saw the most substantial increase between baseline and midpoint: 20 percentage points, with an additional five-percentage-point improvement between midpoint and final. Cohort 3, because of its abbreviated participation period, reported a 25-percentage-point increase between its baseline and final assessments.

**Health Information Technology (HT1.1). To what extent were SPLIT and SIM (short-term) CQM reporting mechanisms developed as planned? Implemented?** Responses were mixed and changed over time. Several PFs and CHITAs who supported cohort 1 practice sites struggled with SPLIT and reported that it had a reputation for being "unreliable." Specifically, these

[3] Many sites had agreements with payers for APMs prior to SIM participation. While SIM required that all participating practice site be supported by at least one APM from at least one payer, SIM did not broker any agreements between payers and providers.

respondents cited issues with logins, failure to be user-friendly, and a troubled rollout that resulted in fixes that frustrated users. Cohorts 2 and 3 used SPLIT version 2.0, which had fewer complaints and increased buy-in.

**Health Information Technology (HT1.2). What challenges (if any) were encountered?** Challenges to improving data quality were common and relatively unchanging across reporting periods and cohorts. On the HIT assessment, practice sites most often remarked that new workflows around data collection and reporting were difficult to implement because of either inherent software/technological issues or difficulties with staff training. Less frequently, practice sites reported that the data work (defining, capturing, and verifying) was duplicative and a drain on provider and practice resources.

**Health Information Technology (HT2). What progress was made in developing and implementing the statewide HIT roadmap?** Partnering with statewide entities, the SIM HIT Workgroup engaged stakeholders in the healthcare community to collaboratively develop a guide for statewide HIT efforts. Several HIT stakeholders in Colorado supported this plan, including the SIM HIT Workgroup, the Office of eHealth Innovation (OeHI), and the Governor's Office of Information Technology (OIT).

**Health Information Technology (HT2.1). To what extent was a telehealth strategy developed? Implemented? (primary care and CMHCs)** According to PF and CHITA interviews, telehealth efforts at the practice-site level varied considerably. Some PFs said the sites they coached had no telehealth efforts. PFs reported that other sites were able to establish or expand on existing services. This disparate field of responses made it difficult to connect practice-level progress to the overall SIM telehealth strategy initiative. PFs and CHITAs were not included in the implementation of the telehealth strategy, thus these results more likely represent individual practice site efforts rather than the overall SIM statewide efforts. Also, PFs and CHITAs potentially lack a clear understanding of how the work ties to a larger statewide picture of telehealth expansion.

**Health Information Technology (HT2.2). To what extent did connectivity to HIEs improve across the state? For SIM practices? For CMHCs?** HIE Connectivity appears to have improved over the duration of the SIM project. Respondents who reported improved HIE connectivity indicated these improvements resulted from (1) an increased number of users within practice sites having access to HIE logins and (2) more requests from external agencies for continuity of care documents.

**Health Information Technology (HT2.3). What progress was made on creating an automated eCQM reporting process?** Significant progress was made on creating and implementing an automated eCQM reporting process over the course of the four-year SIM project. SIM funded

and led the oversight and planning efforts of the eCQM solution, providing facilitation of the governance charter, assisting in visioning the architecture, and developing a data validation framework. This work has led to a commitment for transition and continuation of the solution under OeHI's statewide HIT Roadmap, and funding for continued data governance has been secured for FY 2019–2020.

**Health Information Technology (HT3). What progress was made on facilitating ways to share information between primary care providers and behavioral healthcare providers? This includes CHITA support, practice level coordination of communication, and technologies for data sharing.** According to the perspective of the PTO staff working with practices sites, those BHPs who were either embedded, co-located, or bi-directional made more progress when sharing information than did those BHPs who were externally located. Practice sites prioritized this activity and made considerable progress. By the end of their respective participation periods, no sites reported that they had not started or were just beginning these activities.

**Health Information Technology (HT4). To what extent did the addition of a technical support person (CHITA) result in better quality and better use of data in practices?** CHITAs were greatly valued for their assistance with CQMs, extracting reports, and helping to "talk tech" or liaise with EHR vendors. CHITAs were able to put data in front of care team members who would not otherwise have seen it.

**Health Information Technology (HT4.2). To what extent did practices increase or improve use of electronic health records (EHRs) or health information exchanges (HIEs) for population management and/or to track and coordinate patient care?** Improved use of EHRs for HIE for population management was particularly evident in practice sites that received small grants. Six of the cohort 1 small grant awardees used technology funding to help build registries. In cohort 2, four sites built registries. None of the cohort 3 grantees specifically mentioned population health management or registries. Many of these registries were linked to and fed by electronic screening and assessment tools so that a practice site could easily and automatically identify its high-risk patients based on the results that automatically populated the EHR and, in most cases, triggered a clinical decision point for follow up—either by the provider, care coordinator, or behavioral health provider.

**Health Information Technology (HT4.4). Do practices believe that support for these data improvements will lead to better health outcomes?** Practices remain enthusiastic about these activities and reported considerable improvements around data literacy, data teams, and population management.

**Population Health (PH2). What SIM resources were provided to communities to employ strategies to reduce stigma, raise awareness, and promote health, based on local need? What**

**activities were undertaken using these resources?** SIM investments touched nearly all areas of the state, even during the first year, and all areas over the life of the project. Spending tended to be more diffuse in some urban areas and more concentrated (based on population) in rural areas.

Community-level strategies included competitive grants to support eight Local Public Health Agencies (LPHAs) and two Behavioral Health Transformation Collaboratives BHTCs, development and implementation of a new Regional Health Connector workforce, and a new Veteran Health Connector model.

**Population Health (PH3). How much did SIM-funded activities (specifically RHC, LPHA/BHTC efforts) align with one another and with the SIM objectives to coordinate within existing systems, support implementation of prevention/education strategies, and build community capacity to sustain these efforts?** Each of the eight SIM-funded LPHAs and two BHTCs worked in its respective communities on specific projects, all related to behavioral health. Each of the focus areas align closely with SIM goals as stated in the population health driver. All SIM-funded RHC/VHC projects were required to relate to CQMs chosen by and monitored within the broader SIM efforts. This approach ensured alignment between the RHC/VHC efforts and SIM goals.

## Process Evaluation Summary, Lessons Learned, and Recommendations

The SIM initiative was an ambitious and comprehensive effort, touching many aspects of healthcare in Colorado. Major activities took place in four areas: practice transformation, payment reform, health information technology, and population health. Each of these was supported by a series of stakeholder engagement workgroups, which were guided by a SIM Steering Committee, with an Advisory Board providing oversight.

The summary above summarizes key findings of the process evaluation, aligned with the corresponding evaluation questions. Below, we provide our assessment of the sustainability of program successes, and report lessons learned about the evaluation process itself.

### Evidence suggests many activities will be sustained.

The data presented in this report provide evidence that many SIM activities are likely to be sustained. Some examples of these include:

- Practice sites report a strong interest and desire to continue their integration efforts.
- The Population Health Workgroup call-to-action provides a framework for ongoing efforts for community health activities, including the work of LPHAs and the RHCs.

- CHI has secured funding commitments for at least some regions to continue the RHC workforce, and these efforts are ongoing.
- Workforce activities in the form of provider education opportunities seem likely to be continued by SIM partners. The state Office of eHealth Innovation is continuing work on improving HIT across Colorado.

### Diverse stakeholders provided valuable perspectives, but they also created challenges.

The Colorado State Innovation Model (SIM) was created from a large, statewide stakeholder engagement effort. Overall implementation retained this engagement focus, forming eight subject matter workgroups, a SIM Steering Committee (made up of workgroup chairs), and an Advisory Board. This provided valuable perspectives and helped to sustain interest and enthusiasm for SIM throughout the 4.5 years of implementation. The engagement of these stakeholders also likely has helped to drive the sustainability of the project, with many members agreeing to continue SIM work in various capacities.

However, these diverse perspectives also created some challenges. Each person participating in SIM brought unique ideas and insights—and specific priorities and agendas. Trying to navigate a large number of these competing goals resulted in less focus in the evaluation effort and sometimes pulled attention away from the most important metrics and outcomes. We would recommend future evaluation efforts of this nature do more to balance stakeholder input with a narrower focus on the most important aspects of the implementation to be measured. It may be useful to focus stakeholder engagement on implementation of the SIM drivers, and less on the evaluation of outcomes. This does not in any way denigrate the very important contributions made by the evaluation workgroup members to evaluation efforts.

### SIM office turnover created challenges for the implementation and the evaluation.

Between the project planning phase and completion of SIM, the office experienced nearly complete turnover in staff. This created implementation interruptions and changes as new leadership and program managers brought new perspectives to the project. To some degree, continuity within the workgroups helped to mitigate any loss of institutional memory or perspective. However, workgroup focus and direction was somewhat lost during these periods of transition. These adjustments were particularly difficult because of the short timeframe for such a large initiative.

The evaluation also suffered during these transitions and would have benefitted from TriWest, as the evaluator, taking a more directive role in selecting evaluation questions and focus while emphasizing collaboration accommodation somewhat less.

# 1 Introduction and Report Organization

## Introduction

This report is one of two final evaluation reports we (TriWest Group, the Colorado SIM statewide evaluator) prepared, addressing the implementation of and outcomes achieved by the Colorado State Innovation Model (SIM), a federally funded, Governor's Office health reform initiative. It addresses the process evaluation of the initiative, focusing on SIM implementation activities across the state. A companion report contains findings from the outcome evaluation.

In 2015, Colorado was awarded up to $65 million in federal funding and support from the Center for Medicare and Medicaid Services (CMS) in the form of a cooperative agreement to implement SIM. The proposal and planning process included large-scale stakeholder engagement and contributions to ensure the statewide model would be comprehensive and sustainable. This model was developed to address the Triple Aim and was expanded to the "Quadruple Aim" to improve patient experience (both the quality of and satisfaction with care), improve population health, reduce/avoid healthcare costs, and improve the work life of providers.

Colorado SIM's overarching goal was to improve the health of Coloradans by increasing access to integrated primary care and behavioral health services in coordinated community systems, with value-based payment structures, for 80% of state residents by 2019.

To achieve its goals, the SIM office implemented multiple strategies:

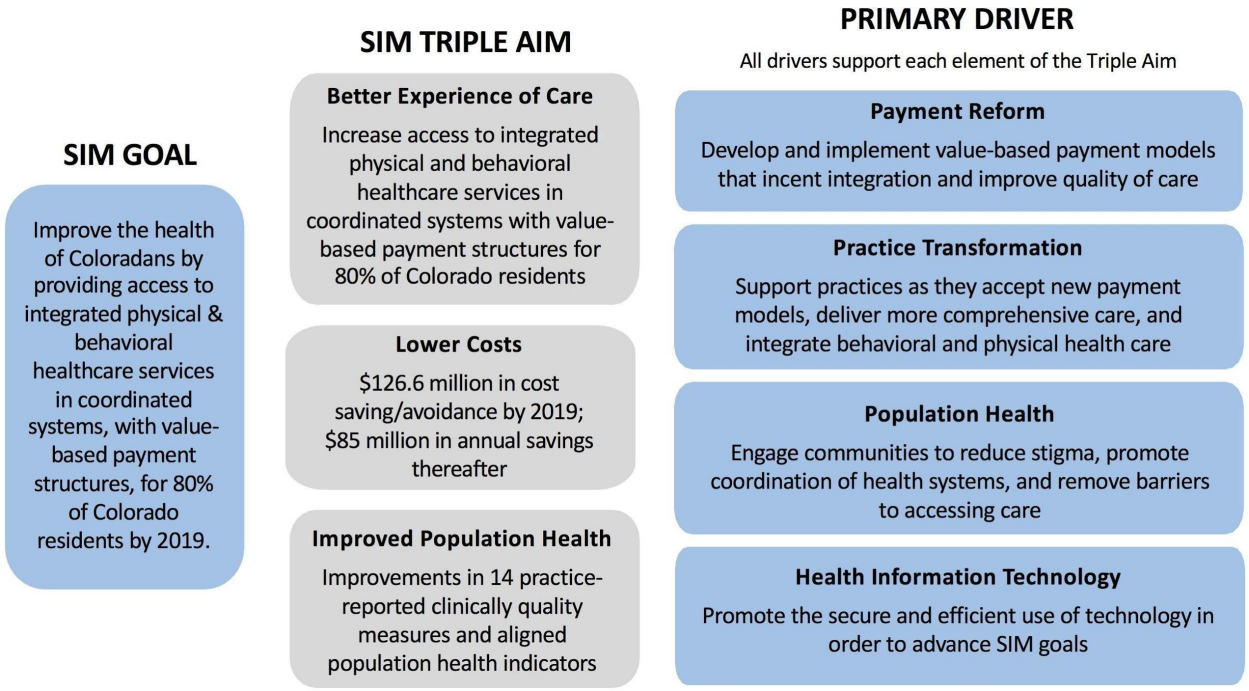
1. Help 319[4] practice sites integrate behavioral and physical health in primary care settings and test alternative payment models,
2. Assist four community mental health centers (CMHCs) in their bi-directional efforts to integrate physical and behavioral healthcare,
3. Facilitate communication between providers and payers and support practice sites as they navigated multiple aspects of value-based payments,
4. Support population health improvement efforts through funding projects within local public health agencies (LHPAs) and two Behavioral Health Transformation Collaboratives (BHTCs),

[4] While more sites initially signed participation agreements, 319 primary care practice sites completed SIM participation.

5. Improve community coordination and support population health efforts by providing partial funding for a Regional Health Connector program,[5]
6. Facilitate consumer engagement and workforce development needed to support overall transformation efforts through structured workgroups and targeted small projects,
7. Participate in statewide HIT infrastructure improvement efforts in close collaboration with the Governor's Office of eHealth Innovation (OeHI).

These strategies were organized into four primary drivers, as illustrated in Figure 1.

**Figure 1. SIM Updated Driver Diagram: Year 4 Operational Plan**




Appendix A of this document contains the program logic model, which connected specific SIM resources and activities to outputs, outcomes, and, ultimately, the Quadruple Aim.[6] The following describes four key elements to this model:

- **Practice Transformation:** Over the course of implementation, SIM selected and provided support to 100 physical health practice sites[7] in cohort 1 (February 2016–April

[5] Additional funding was provided by the EvidenceNOW Southwest program: http://www.practiceinnovationco.org/ensw/

[6] "Quadruple Aim" refers to the "Triple Aim" described in the SIM driver diagram plus an additional aim of improving workforce readiness and satisfaction.

[7] Of the 100 sites that initially signed PPAs or MOUs, eight withdrew over the course of SIM participation. The final count of cohort 1 practices was 92 sites.

2018), 156 sites in cohort 2[8] (August 2017–June 2019), and 88 practice sites in cohort 3[9] (June 2018–June 2019) in their efforts to integrate behavioral and physical healthcare. Additionally, SIM selected four community mental health centers (CMHCs) to implement bi-directional integration efforts. These practice sites received practice transformation support, specifically focused on integrating physical care and behavioral healthcare. In addition, sites received value-based payments from health plans to support their work to provide patient-centered, team-based, integrated care. SIM helped practice sites create infrastructure and new processes to prepare them for greater success with value-based payment models. During their participation, sites also completed a variety of assessments designed to help guide quality improvement efforts. Further description of these sites can be found in the Practice Transformation chapter of this report.

- **Payment Reform.** SIM engaged seven public and private payers (the Multi-Payer Collaborative) that worked together prior to SIM implementation and that committed to work with SIM to support behavioral and physical healthcare integration. As a requirement of SIM participation, the primary care practice sites received compensation through at least one alternative payment model. In some cases, this support was a new or enhanced payment model started as part of SIM participation. But the support often represented a continuation of value-based payment arrangements that were in place prior to a practice site applying for SIM participation. The Multi-Payer Collaborative had six health plan members at the end of SIM.
- **Health Information Technology (HIT).** The SIM strategy for improving HIT quality and utilization focused on support at the individual practice site level and at the state level. At the individual practice site level, efforts focused on optimization of electronic health records (EHRs) to support practice transformation efforts, quality improvement, and reporting of clinical quality measures. Wider-ranging statewide efforts included SIM contributions to a statewide HIT roadmap, support for increased broadband access and telehealth capacity in the state, support for e-Consult initiatives, development of an electronic clinical quality measure (eCQM) solution, development and support of a Clinical Health Information Technology Advisor (CHITA) workforce, and health information exchange (HIE) connectivity.
- **Population Health**. The SIM strategy for improving health at the state level included local support for community efforts to reduce stigma, promote coordination of health systems, and reduce barriers to accessing care. This strategy was developed through

[8] Of the 156 sites that initially signed PPAs or MOUs, 12 withdrew over the course of SIM participation. The final count of cohort 2 practices was 144 sites.

[9] Of the 88 sites that initially signed PPAs or MOUs, five withdrew over the course of SIM participation. The final count of cohort 3 practice sites was 83.

two major efforts. The first was funding for local public health agencies (LPHAs) and behavioral health transformation collaboratives (BHTCs) for projects targeting stigma reduction, community education, and coordination. The second was partial funding (along with EvidenceNOW Southwest) of the Regional Health Connector (RHC) program to connect the systems that keep people healthy, including primary care, public health, social services, and other community resources.

Major components of the initiative were developed and guided by a group of stakeholders with specific expertise in these areas. These stakeholders participated throughout the life of the initiative as part of SIM workgroups and were engaged in the planning and sustainability phases as well.

## Organization of This Report

This report, following the format of each of the two previously issued Annual Evaluation reports (2017 and 2018), is broken into chapters organized by the SIM primary drivers and by the evaluation questions presented in the program logic model (Appendix A). However, specific evaluation findings and topics can touch multiple drivers, and themes often overlap. Each evaluation report has been reviewed by the SIM team. In particular, recommendations made in these reports, as well as early findings and drafts of this report, were broken out by workstream and were assigned to specific program managers and workgroups to discuss findings and determine steps to address them.

Following the Introduction and Methodology, this report is organized into subject-specific chapters related to the drivers (Practice Transformation, , Workforce Development, Health Information Technology in Practices, Health Information Technology Statewide, Implementation of Value-Based Payments, and Population Health). Each chapter includes process evaluation results from the primary driver activities identified in the SIM operational plan. This includes a summary of activities and lessons learned; detailed process evaluation questions; and data collected, analyzed, and presented to answer these questions. When findings relate to multiple drivers and appear in multiple chapters, we emphasize aspects of the findings that align most closely with a specific chapter's evaluation question. When appropriate, we add references for these findings and indicate where they are discussed in other chapters and with other evaluation questions. In the conclusion of each chapter, we discuss how the activities and outputs of the SIM efforts within each of the SIM primary drivers are linked to the objectives of the initiative.

# 2 Methodology

## Brief Evaluation Methods and Data Description

The SIM initiative was a comprehensive and complex undertaking. Some activities and interventions focused at the individual primary care or CMHC practice site level (e.g., integration of physical and behavioral healthcare, patient satisfaction, and some Health Information Technology [HIT] improvements). Others target population-level outcomes through mechanisms that are broader than just practice transformation (e.g., workforce, prevention, education, regulation, population health, and statewide HIT supports). Additionally, the promotion of value-based payment models touched both SIM practice-site-level drivers and population-level drivers. Changing incentives, in the form of value-based payments, is intended to impact performance of both SIM and non-SIM practice sites while maintaining focus on the types and quality of services provided by practice sites.

The SIM model was designed to produce different types of outcomes for different groups. For example, patients experienced changes in access to care and utilization. Practice sites, similarly, experienced changes in levels of integration and practice operations. Furthermore, changes in approaches to value-based payments affected some payers. Because of these different components, a single methodological approach is insufficient for evaluating the many aspects of the various SIM efforts. Therefore, our evaluation utilizes a mixed-methods approach that uses qualitative data, quantitative data, and multiple analytical methods (e.g., descriptive, time-series, within and between group comparisons). We have designed this report so that individual chapters will generally stand on their own for those readers interested in specific topics who may not choose to review the entire report. Therefore, each individual chapter describes data sources and analysis methods in more detail, whereas this chapter provides a high-level overview of data sources and methods.

TriWest Group (TriWest) worked with the SIM office and stakeholders to design a program logic model and 26 evaluation questions related to program implementation and outcomes (see Appendix A). Data to respond to these questions came from a variety of sources; an overview of these sources follows. The Final SIM Outcome Evaluation methodology chapter contains more detail about data sources and limitations.

## Specific Data Sources

**All Payers Claims Database (APCD)** data from the Center for Improving Value in Health Care (CIVHC). These data comprise patient-level encounter and claims records detailing services received, service costs, and patient and provider characteristics. These data cover all patients of submitting payers in both SIM and non-SIM practice sites. While the APCD does not include all

payers in Colorado, CIVHC estimates about 75% of the population's medical claims are contained within the system.

**CIVHC's attribution of patients to practice sites**. Attribution covers all patients and all practice sites in the APCD data, including both SIM and non-SIM sites. CIVHC and stakeholders jointly developed this attribution methodology, which provides us the specific patients attributed to each provider (by National Provider ID) associated with SIM practice sites. In the case of primary care practice sites, attribution is based on the provider receiving the plurality of the outpatient primary care claims for a specific patient. In the case of bi-directional sites, the SIM office and CIVHC facilitated the transfer of panel lists from the bi-directional practice sites to the APCD. CIVHC then transfers these to TriWest and Milliman (see information on Milliman, below). Bi-directional sites have worked with one another and with technical assistance providers to develop consistent attributions. We describe this work further in the SIM Evaluation Methodology document.

**Clinical quality measures (CQMs): CIVHC claims-based proxies.** For the final outcome evaluation report, CIVHC has reported clinical quality measures to us based on proxies that are calculated using APCD data. Please see that report for greater detail on these proxy measures.

**Clinical quality measures (CQMs): Practice-site-reported**. In order to measure improvements in access to and the quality of care—as well as patient health—SIM selected 13[10] CQMs to be reported quarterly by participating practice sites. These CQMs comprised 10 adult measures (six primary measures and four secondary measures) and 5 pediatric measures (four primary measures and one secondary measure). Measurement definitions used in this document come from the *Colorado SIM Clinical Quality Measure Specifications Guidebook*[11] unless otherwise noted. More information regarding reporting requirements for each CQM can also be found in the guidebook.

**Local Public Health Agencies (LPHAs), Behavioral Health Transformation Collaboratives (BHTCs), and Regional Health Connectors (RHCs***)* are organizations reporting on community-level population health initiatives. Each of these programs provided quarterly progress to the SIM office. TriWest uses qualitative and—to a small degree—quantitative data from these reports to summarize program activities and self-reported outcomes. In addition, we have conducted key informant interviews with stakeholders about these programs and have

[10] In addition to these CQMs, SIM calculated claims-based proxy measures of clinical quality (eCQMs) for this evaluation. These measures are reported in the 2018 Annual Evaluation Report.

[11] Bienstock, A., Kaufmann, E., Knierim, K., & Russell, L. (2016). Colorado State Innovation Model: Clinical quality measure specifications guidebook. Colorado State Innovation Model. Retrieved from http://www.practiceinnovationco.org/wp-content/uploads/vfb/2016/06/FINAL_SIM-CQM-GUIDEBOOK_20160609.pdf

surveyed LPHA and RHC staff. We also include data collected and reported by the Colorado Health Institute (CHI) regarding the RHC program.

**Milliman's analysis of APCD data**. Milliman, SIM's actuarial partner, calculates per member per month (PM/PM) costs attributable to patients at both SIM sites and non-SIM practice sites. In addition, Milliman uses APCD data to calculate utilization of certain key services (e.g., emergency department visits) and to attribute rates for these utilization variables to SIM practice sites. Milliman has provided these measures to TriWest for patients in SIM practice sites as well as a comparison group of patients in non-SIM practice sits.

**Patient surveys**. TriWest used data from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey, administered by the Department of Healthcare Policy and Finance (HCPF), to gauge patient satisfaction in SIM practice sites. In 2016, the CAHPS survey was conducted primarily with non-SIM practice sites (although four SIM practice sites were included). In 2017, all 20 CAHPS sites selected for surveying were participating in cohort 1 of SIM. These results will allow us to examine patient perspectives for these SIM practice sites. In addition, 15 cohort 1 practice sites provided aggregate survey data for their patient populations.

**Population health measures**. These include 32 population health measures (e.g., fall hospitalization rates among older adults, rates of depression diagnoses) that align with the patient-level clinical quality measures collected at the practice level (e.g., screening for depression). They are reported on a statewide basis annually by the Colorado Department of Public Health and Environment (CDPHE). These measures are also available at smaller geographic levels, such as counties, although they are not tied to specific patients or practice sites. TriWest uses these measures for all SIM drivers (especially LPHA grants and RHC activities) that focus on specific geographic regions (either the county or health statistics region). We also measure the degree of SIM "saturation" within these geographic areas. Saturation is a measure of how much SIM activity happened in an area (i.e., proportion of population attributed to SIM practice sites or whether SIM-funded RHC, CMHC, BTHC, or LPHA efforts have been implemented). It also measures the relationship between SIM saturation and changes in a county's population health measures. Because the county values of these measures are three-year aggregates, we anticipate little change resulting from SIM. These measures are useful primarily for describing the counties in which SIM practice sites operated and less useful as outcome measures.

**Provider/practice-site surveys**. Because of anticipated implementation burden on practice sites, we attempted to minimize additional information requests from practice sites beyond what is already available in administrative data or the SPLIT. As part of this approach, we worked with the University of Colorado Department of Family Medicine (UCDFM) in obtaining

data from surveys of practice sites (including a closeout survey conducted at the end of each cohort's participation period) to answer key evaluation questions. Additionally, throughout the project, we gathered information from key SIM partners (e.g., workgroup members, payers, SIM staff, CDPHE staff, Department of Health Care Policy and Finance staff, UCDFM, Colorado Telehealth Network, Colorado Health Institute, etc.) through active participation in SIM Workgroup, Steering Committee, and Advisory Board meetings and through analysis of data submitted by these partners to the SIM office for CMMI reporting purposes. We also gather ed qualitative data through participation in meetings of other important stakeholders.

**Shared Practice Learning and Improvement Tool (SPLIT)**. This tool collected SIM practice-site-reported data related to site-level performance and integration. It contains separate practice-site-level assessments related to the implementation of advanced primary care and degree of integration of physical and behavioral healthcare. It also includes a staff experience survey, milestones, data quality assessment, improvement plan, field notes, and CQMs. Data are assembled by UCDFM, who then provided cleaned files to TriWest.

For all the above data sources, as applicable, we have provided brief descriptions of specific analyses conducted and resulting findings throughout this document. Readers wanting more detailed information regarding the evaluation design and analytic methods are encouraged to review the SIM Evaluation Plan and SIM Evaluation Methodology documents.

## Data Limitations

The process of implementing SIM generated a significant amount of data. This, combined with a desire to avoid additional burden on participating practice sites and to effectively utilize the data already available, means that most data for this evaluation come from existing data sources rather than from the production of original data collection designed to answer specific evaluation questions. In addition, some data were unavailable for the evaluation. Most notably, we were unable to obtain reports from all payers regarding the types and quantities of value-based payments. A need to protect proprietary information, combined with the administrative burden of reporting at a practice-site level, make payers understandably reluctant to share this information.

The primary data limitation for this evaluation, then, stems from the use of data not necessarily collected for the specific purpose of answering the evaluation questions. The implications of this vary greatly depending on the nature of the specific question being asked. Therefore, each chapter contains a brief section on the limitations of data available for the specific aspect of the SIM evaluation being analyzed. Additionally, when findings are presented, we discuss significant caveats.

# 3 Practice Transformation

## Introduction

The SIM Operational Plan describes the structured approach to achieving the overall SIM goal: improving the health of Coloradans by improving access to integrated primary care and behavioral healthcare services in coordinated community systems—with value-based payment structures—for 80% of state residents by 2019. This approach is based on the premise that integration of physical and behavioral healthcare within one clinical setting enhances whole-patient care.

## Practice Descriptions

As outlined in the Colorado State Innovation Model (SIM) Operational Plan, SIM had two specific efforts to increase patient access to integrated physical and behavioral healthcare services in Colorado: the primary care effort and the bi-directional integrated health homes.

The primary care effort recruited primary care practice sites to participate in practice transformation efforts in three distinct cohorts at different times over the course of the initiative.[12] These primary care practice sites integrated behavioral healthcare into their sites with assistance from the SIM office, administrative and payer support in moving toward value-based payments (VBPs), and Practice Transformation Organizations (PTOs) under guidance by the University of Colorado Department of Family Medicine (UCDFM). This included support in the form of access to the Shared Practice Learning Improvement Tool (SPLIT), which allowed practice sites to identify and prioritize practice transformation goals, track progress, and complete assessments.

The second effort, the bi-directional integrated health homes, created integrated health homes in 4 of the 17 community mental health centers (CMHCs) in Colorado. These CMHCs were the Community Reach Center, the Jefferson Center for Mental Health, Mental Health Partners, and the Southeast Health Group. Bi-directional integration focused on the joining of mental and physical health as well as prevention services into a community behavioral health settings. Because CMHCs serve as the primary locus of care for many Coloradans[13]—particularly those managing a serious mental illness (SMI) or addiction—the CMHCs believe that the integrated health home represented the best opportunity for the greatest cost reduction and better outcomes for individuals with the greatest needs and highest costs of care.[14] Under the

[12] Cohorts were implemented in separate SIM implementation years. Cohort 1 began participation during Year 1. Cohort 2 in Year 2 and cohort 3 in Year 3.

[13] https://www.colorado.gov/pacific/healthinnovation/sim-practice-transformation

[14] https://www.colorado.gov/pacific/healthinnovation/sim-practice-transformation

strategic leadership of Colorado Behavioral Healthcare Council (CBHC),[15] these sites worked to create alignment within the broader SIM initiative, and, like the primary care practice sites, received technical assistance from PTOs, gathered and reported integration progress through the SPLIT, gathered health outcome and quality data, and received cost and payment data from the All Payer Claims Database (APCD).

The four CMHCs and the primary care sites received assistance from the SIM office and PTOs that managed Practice Facilitators (PFs) and Clinical Health Information Technology Advisors (CHITAs). PFs and CHITAs assisted practice sites and CMHCs to implement practice milestones and practice improvement plans that moved towards greater integration of behavioral and physical healthcare in primary care and community behavioral health settings.

SIM, UCDFM, and TriWest collaborated in fall 2018 to conceptualize practice participation and engagement levels over the course of SIM. Our goal was to create a useful, meaningful measure of the amount of SIM transformation and support that practice sites received. The SIM partners recognized this would vary naturally because of different prescribed lengths of participation by cohort as well as because of practice sites withdrawing before their cohort's scheduled participation ended. This measurement was operationalized as SIM "doses" and comprised a 4-point dose scale: (1) no dose, (2) low dose, (3) medium dose, and (4) full dose.

- **No dose** includes practice sites from all three cohorts that initially participated. They signed a practice participation agreement (PPA) or memorandum of understanding (MOU) but withdrew before completing baseline assessments
- **Low dose** includes practice sites from cohorts 1 and 2 that completed baseline assessments and then withdrew before completing interim assessments. It also includes cohort 3 practice sites that withdrew before completing their final assessments. Because of the shorter term of cohort 3's participation, these sites did not complete interim evaluations by design.
- **Medium dose** includes practice sites from cohorts 1 and 2 that completed interim assessments and then withdrew before completing final assessments. This dose also includes all cohort 3 practice sites that completed final assessments. Because of the abbreviated participation of cohort 3, this is the maximum dose possible for that cohort, with 83 practice sites having received it. We have included these 83 sites in the subsequent analyses and reference them throughout.

[15] CBHC is the membership organization for Colorado's network of community behavioral health providers. With funding from the Colorado SIM office, CBHC facilitated and managed the SIM Bi-Directional Pilot Program with these four CMHC pilot sites.

- **Full dose** includes practice sites from cohorts 1 and 2 that completed their final assessments and participated until the cohorts dissolved. This dose includes 92 cohort 1 practice sites and 144 cohort 2 sites. However, throughout this report, many of the analyses and charts will state that they are based on 145 cohort 2 practice sites. This figure is a result of one cohort 2 practice site closing in February 2019, though the site worked with its PF to complete all final assessments. So, although the practice site did not officially complete SIM participation and is considered to have received a medium dose, its data are valid and valuable. As such, we have opted to include this site's full suite of completed assessments in our evaluation.

We recognize that not all readers will necessarily read all chapters, so footnotes throughout the report will indicate that a given number of practice sites may vary from final cohort counts and will direct them to this section for additional information.

The following maps show by cohort the SIM practice sites that completed the initiative[16] and their respective Health Statistics Region.

[16] The number of reporting sites (n) may vary based on the completeness (or "dose") of any individual practice site's participation in SIM cohorts.

**Figure 2. Map of Cohort 1 Sites Completing SIM and Health Statistics Regions**

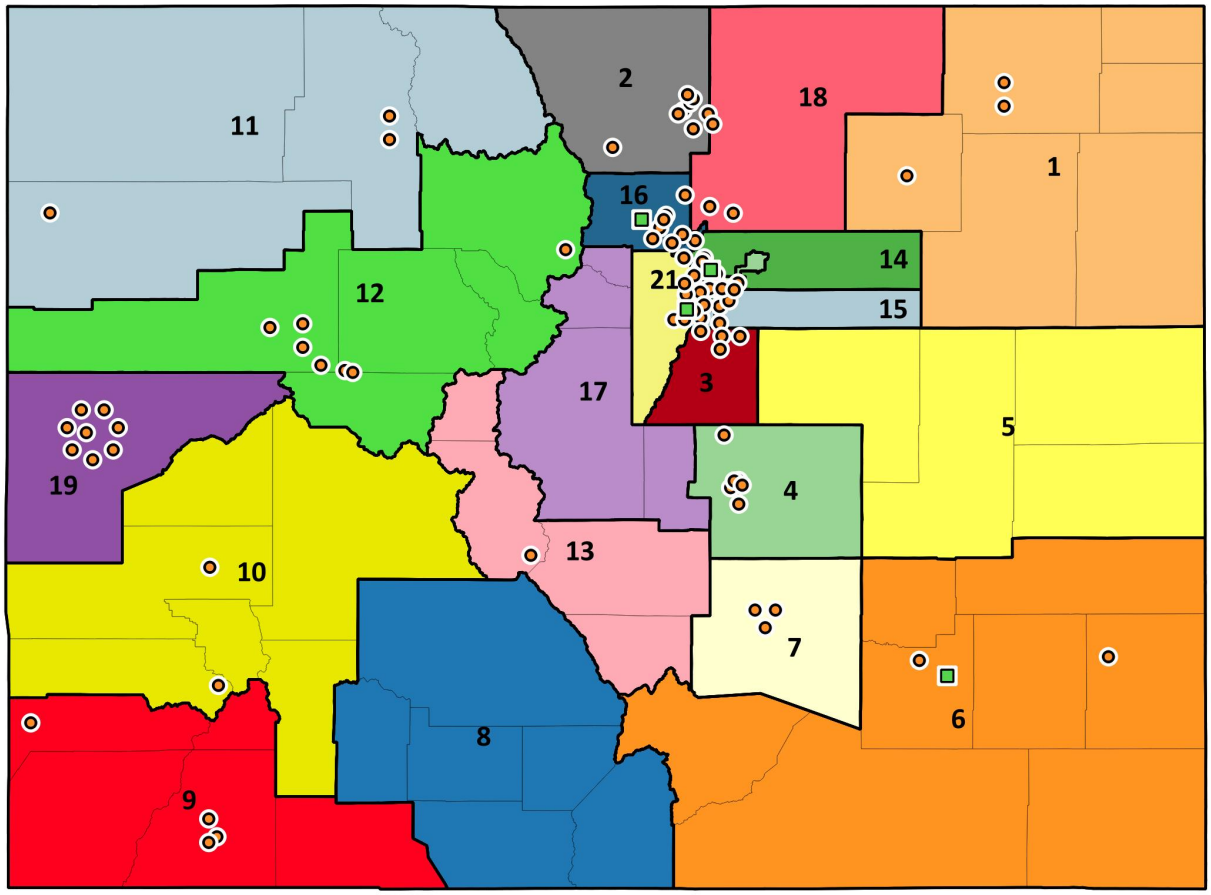
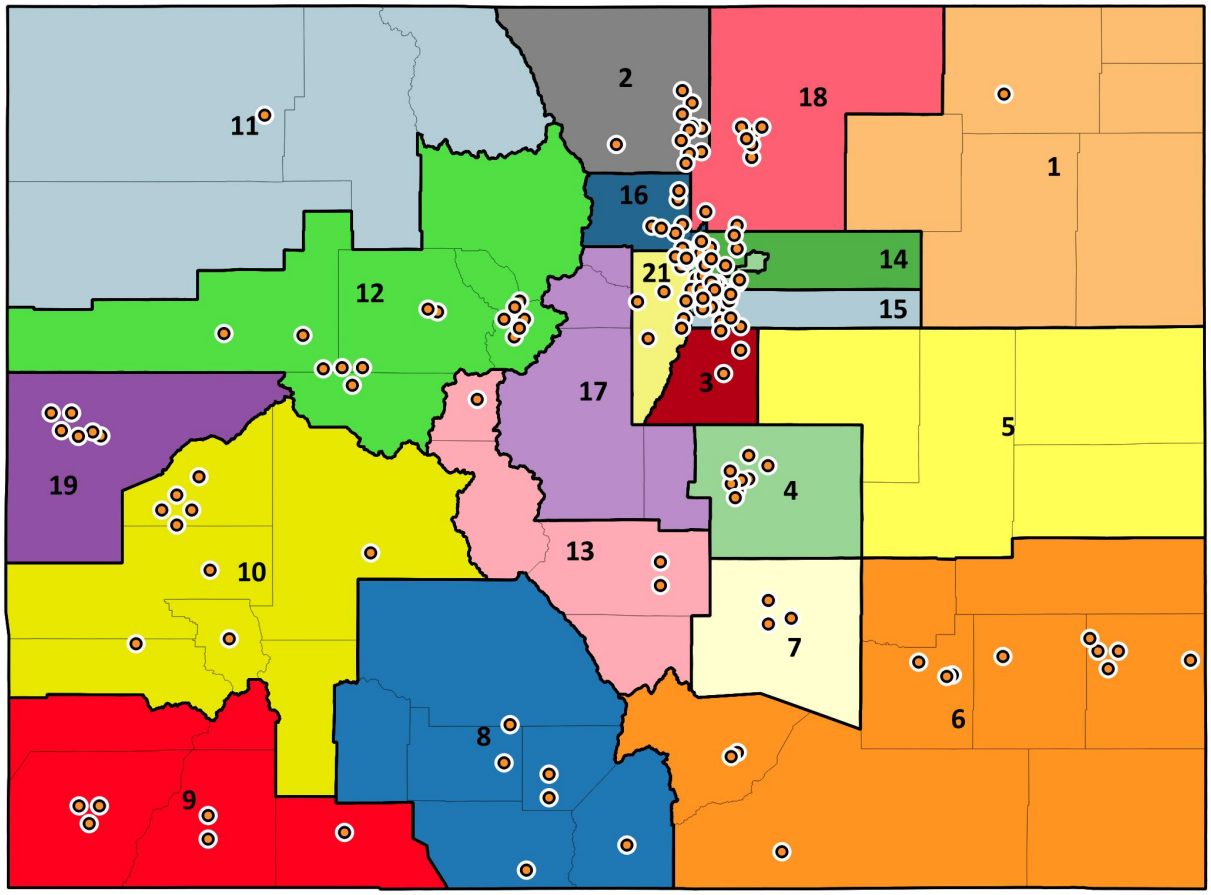


**Figure 3. Map of Cohort 2 Sites Completing SIM and Health Statistics Regions**




Health Statistics Regions

County Borders

**Completed Cohort 2 Sites**

- Primary Care Provider (PCP)

*Some site locations have been slightly adjusted for visibility.*

**Close-Up of Denver Area**

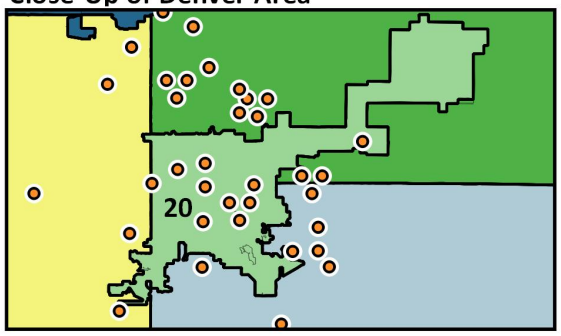
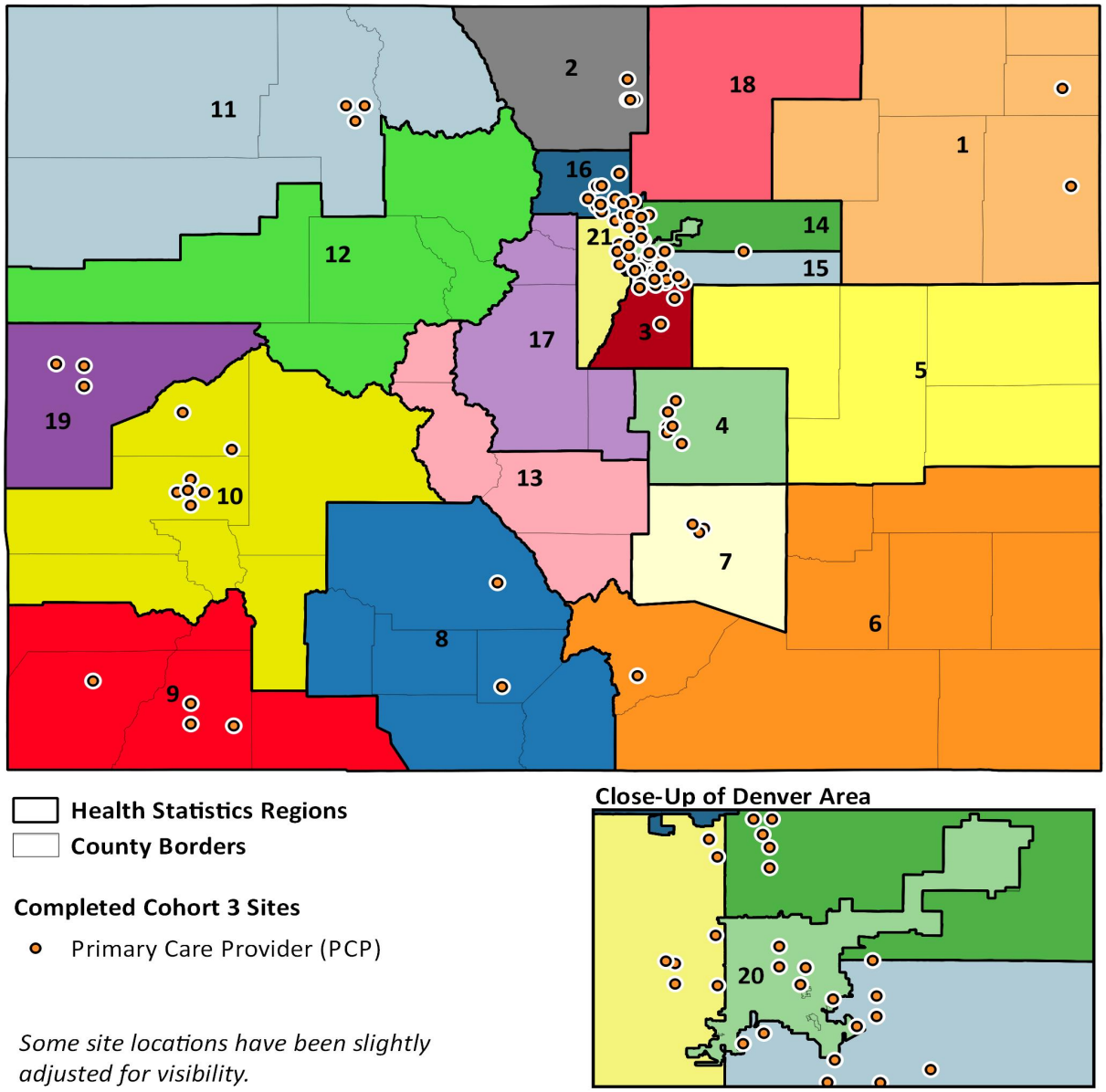


**Figure 4. Map of Cohort 3 Sites Completing SIM and Health Statistics Regions**




## Primary Care Practice Site Descriptions

The initial SIM operation plan called for supporting three cohorts of primary care practice sites in integrating behavioral healthcare, with an ultimate aim of supporting 400 primary care practice sites throughout the state. To be eligible for SIM, applying practice sites were required to be physically located in Colorado, meet the Institute of Medicine definition for primary care,[17] and currently use an electronic health record (EHR) system. Table 1 below includes the

[17] IOM defines primary care as "the provision of integrated, accessible healthcare services by clinicians who are accountable for addressing the large majority of personal healthcare needs (Such as preventative counseling, screening, early intervention, management of acute problems as well as coordination of care)." Taken from SIM RFA: http://resourcehub.practiceinnovationco.org/wp-content/uploads/2017/11/SIM-Cohort-3-RFA-Packet.pdf

total number of primary care sites that applied and participated in three different cohorts at different times during the SIM implementation. Cohort 1 began participation in 2016 and completed two full years of SIM. Cohorts 2 and 3 began in 2017 and 2018, respectively, with cohort 2 having approximately 18 months of participation and cohort 3 having approximately nine months.

**Table 1. SIM Applicants and Participants**

| SIM Primary Care Practice Applicants and Participation | | | | |
|---|---|---|---|---|
| **Cohort Start Year** | **Initial Applicants** | **Offered Participation** | **Accepted Participation** | **Full Participation Through SIM** |
| Cohort 1 (2016) | 168 | 117 | 100 | 92 |
| Cohort 2 (2017) | 226 | 168 | 156 | 144 |
| Cohort 3 (2018) | 94 | 90 | 88 | 83 |
| **Total** | **488** | **375** | **344** | **319** |

All cohort applications were reviewed by a committee inclusive of statewide partners experienced in transformation work. For cohort 1, there were 168 applicants. Of these, 117 practice sites were offered participation, and 100 accepted. Five practice sites withdrew before baseline assessments when their system was sold, and five withdrew between the midpoint and final assessments. As a result, 92 practice sites completed the full intervention and evaluation.

For cohort 2, 226 practice sites applied, and 168 were offered participation. Twelve sites declined participation, and another withdrew before providing baseline assessments, resulting in 156 practice sites being fully enrolled in cohort 2. Six practice sites withdrew between baseline and midpoint assessments, and five withdrew between midpoint and final assessments, resulting in 144 sites that completed the two-year intervention. However, one of the withdrawing practice sites actually completed final assessments in working with its PF, so data for the evaluation were available for 145 sites.

Finally, 94 practice sites applied for cohort 3, and 90 were offered participation. Two sites declined, and four withdrew prior to providing baseline assessments. One practice site withdrew between the baseline and final assessment, resulting in 83 practice sites that completed the nine-month intervention period.

**From the outset, the SIM office realized that a variety of characteristics would shape how practice transformation affected different practice sites and impact outcomes (see**

Table 2, below). These practice characteristics were primarily taken from the practice sites' self-reported information from their SIM applications. The one exception was location. We used the practice-site-provided zip codes to match to rural-urban commuting area (RUCA) codes[18] for this designation. Characteristics used for breakout analyses included whether the site served adults or children (or both), whether the site was situated in a more urban or more rural area (defined within this report by RUCA code categorizations), the size of the site (based on the number of annual patient visits), the volume of traditionally underserved patients at the practice site (as defined by the percentage of Medicaid or uninsured patients served by the site), and the type of practice organization. These characteristics were self-reported by the practice sites at the time of application.

Table 2 and figures that follow show the various sub-groupings of characteristics used to describe SIM-participating practice sites and to examine differences in transformation successes and challenges. Because multiple partners were involved in SIM evaluation, these characteristics are not universal. For example, some partners recoded affiliation and organization types for separate analyses. As such, these characteristics should not be presumed to apply to all reports and evaluations; they are defined for this report only. The data below contain breakouts by initial and final cohort participation.

**Table 2. SIM Practice Characteristics**

| Colorado SIM Practice Site Subgroupings for Data Analysis | | |
|---|---|---|
| **Subgroup Category** | **Groupings** | **Definitions** |
| **Practice Type** | | |
| | Adult Primary Care | Entirely serves adult patients |
| | Pediatric Primary Care | Entirely serves patients < 18 years |
| | Mixed Primary Care | Serves both adults and children |
| **Urban/Rural Practice** | | |
| | Urban | Urban areas defined by RUCA codes 1–3 |

[18] The rural-urban commuting area (RUCA) codes classify U.S. census tracts using measures of population density, urbanization, and daily commuting. The most recent RUCA codes are based on data from the 2010 decennial census and the 2006–10 American Community Survey. Whole numbers (1–10) delineate metropolitan, micropolitan, small town, and rural commuting areas based on the size and direction of the primary (largest) commuting flows. For more information, see https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes.aspx.

| Colorado SIM Practice Site Subgroupings for Data Analysis | | |
|---|---|---|
| **Subgroup Category** | **Groupings** | **Definitions** |
| | Rural | Rural areas defined by RUCA codes 4–10 |
| **Practice Size** | | |
| | Small | 0–5,999 annual patient visits |
| | Medium | 6,000–14,999 annual patient visits |
| | Large | 15,000+ annual patient visits |
| **Proportion of Patients Underserved** | | Defined by percentage of patients insured by Medicaid or uninsured |
| | Low | 0%–10% of all patients |
| | Medium | 11%–30% of all patients |
| | High | 31%–50% of all patients |
| | Very High | >50% of all patients |
| **Organization Type** | | UCDFM Definitions |
| | Private Solo or Group | Private Solo or Group |
| | Hospital/Health System | Hospital/Health System |
| | HMO | HMO |
| | FQHC or Lookalike | FQHC or Lookalike |
| | School-Based Health Center | School-Based Health Center |
| | Safety Net Clinic | Safety Net Clinic |

**Figure 5. Practice Sites by Type**

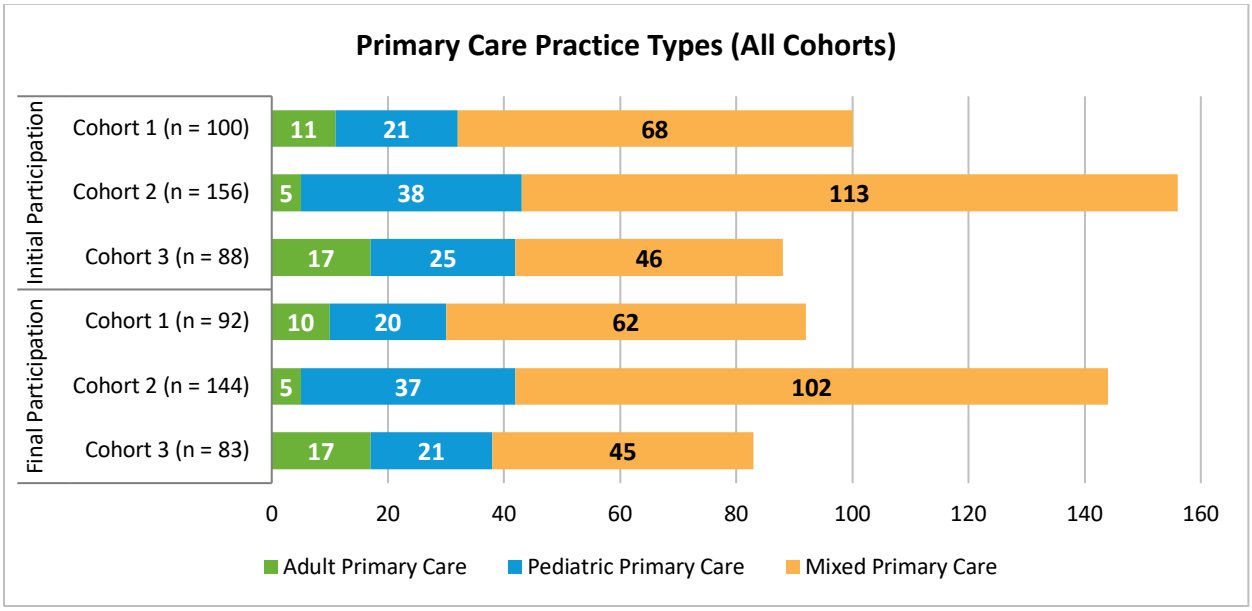



**Figure 6. Practice Sites by Location**

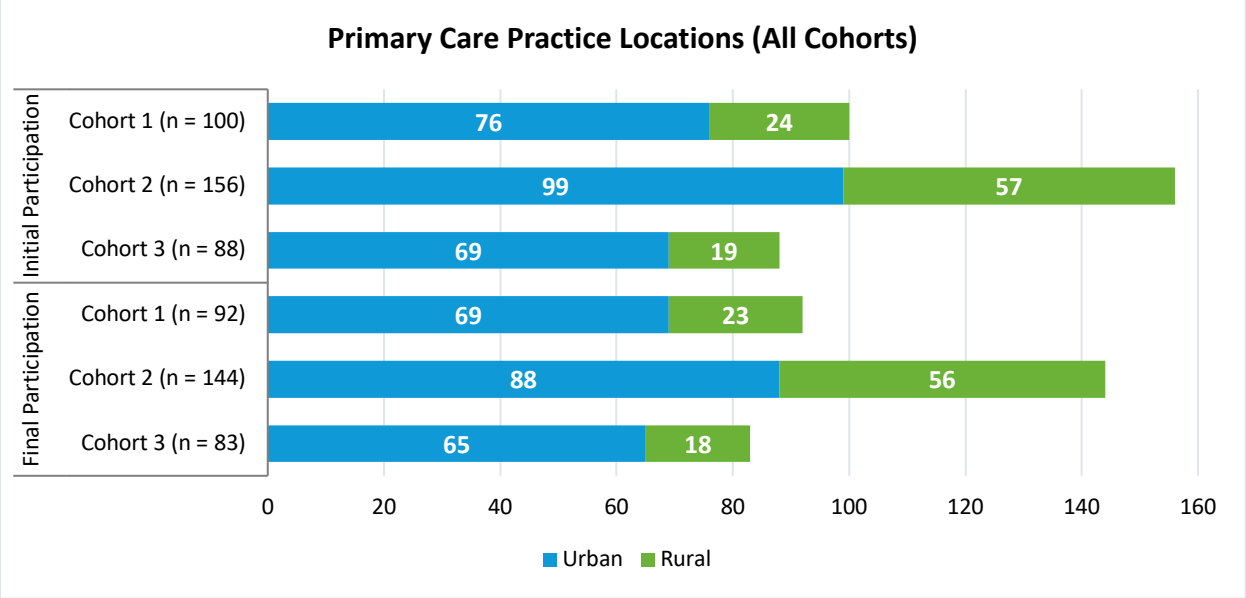


**Figure 7. Practice Sites by Size**[19]

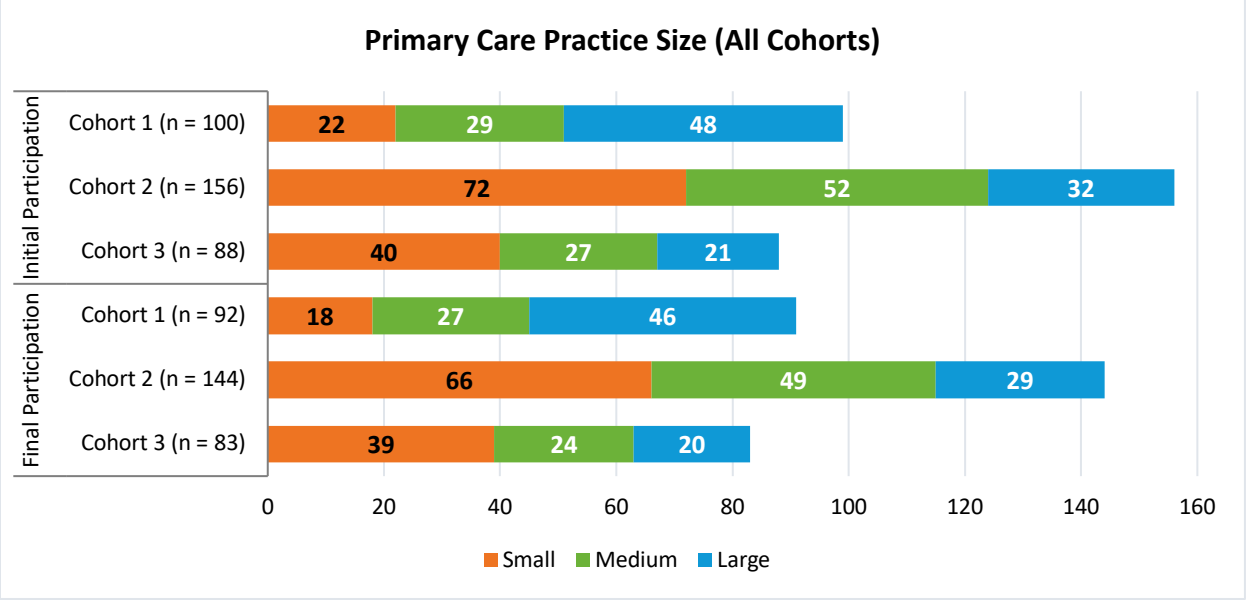
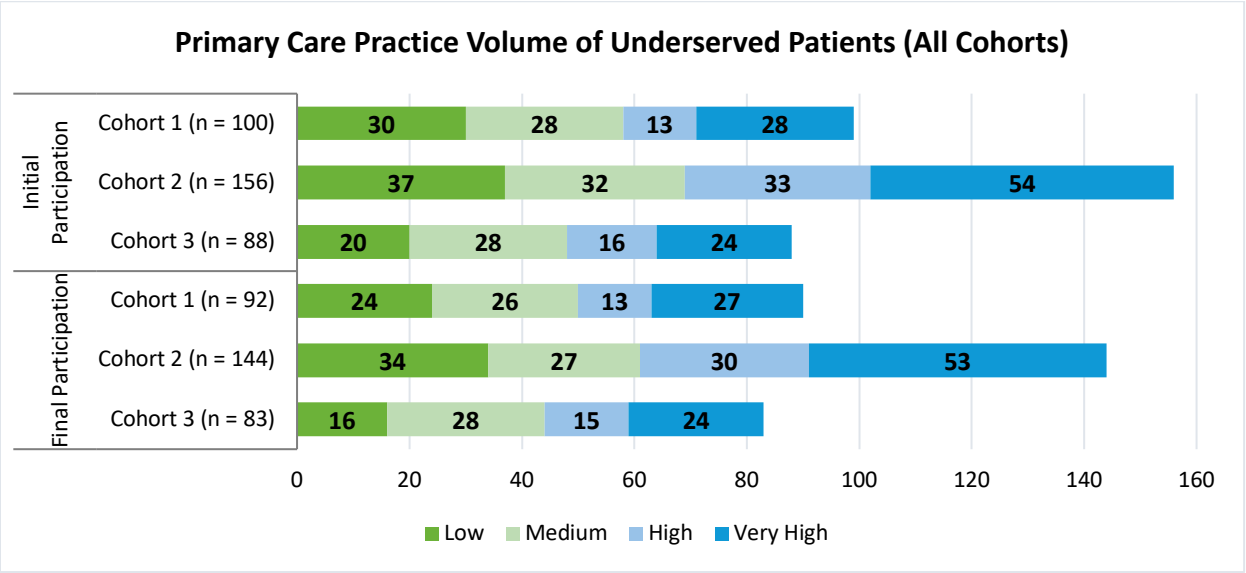


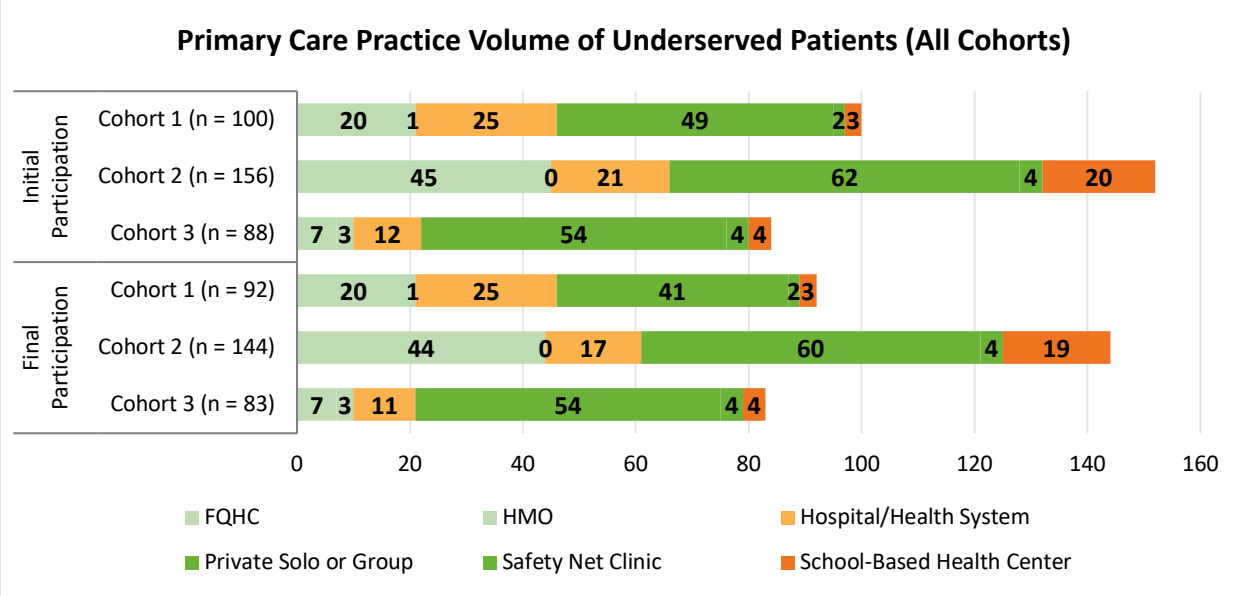

**Figure 8. Practice Sites by Volume of Underserved Patients**[20]




[19] Breakout may not match N for cohort because of missing practice site data.

[20] Breakout may not match N for cohort because of missing practice site data.

**Figure 9. Practice Sites by Organization Type**[21]




## Community Mental Health Centers (CMHCs) Descriptions

SIM selected four CMHCs to participate in bi-directional integration effort through a competitive application process.[22] These CMHCs were the Community Reach Center, the Jefferson Center for Mental Health, Mental Health Partners, and the Southeast Health Group. In 2017, these sites collectively offered primary and mental healthcare, along with prevention services to 31,722 patients in their targeted SIM efforts.

CMHCs have committed to reporting data from a range of assessments to monitor their progress and to report a set of clinical quality measures (CQMs) to build practice site data capacity. CBHC received funding from SIM to provide leadership and oversight for participation in the initiative. The University of Colorado Department of Family Medicine managed the practice coaching activities for the CMHCs and practice sites. Also, CBHC linked the CMHCs to various SIM opportunities for provider education and convened bi-annual learning collaboratives. In addition, as they did with the SIM cohort primary practice sites, the PTOs provided each CMHC with a PF to support general transformation work and a CHITA to support practice technology needs.

The graphs below show the primary characteristics of the CMHCs. These characteristics do not match exactly with categorizations of the primary care practice sites. For example, one of the

[21] Breakout may not match N for cohort because of missing practice site data.

[22] Bi-directional integration focuses on the joining of primary care and prevention services into a community behavioral health setting.

CMHCs served a primarily pediatric population, whereas the remaining three served adults under their SIM efforts.

**Figure 10. CMHC Primary Patient Populations** [23,24]

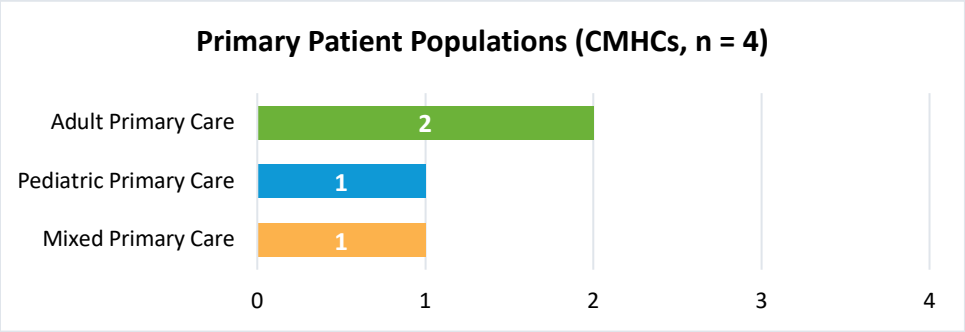
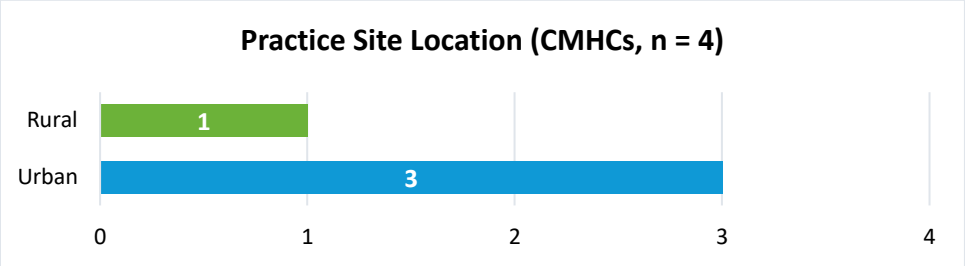



**Figure 11. CMHCs by Location**




Three of the CMHCs were located in urban areas (i.e., the Denver Metro area) whereas the other was rural, located in Southeast Colorado.

The CMHCs differed from the primary care practice sites, and none of the four approached integration in the same way. Because there were only four of these sites, and because they were so distinct, we have provided greater detail in brief overviews, below, regarding their approaches. This level of detail is not practical to report across all primary care practice sites.

The information was taken from CMHC-reported summaries and proposal narratives, and these narratives reflect the sites' own views of their work. They include targeted population descriptions and information as well as goals for administration. CMHCs did not report on their entire patient panel, and numbers discussed here include only targeted patients who were enrolled in their bi-directional health homes. All CMHCs have previous experience with providing integrated care. SIM provided the opportunity to continue to improve, expand, and enhance the integrated care these centers provide.

[23] Unlike cohorts 1, 2, and 3, all four CMHCs participated throughout SIM. There are no differences in initial and final breakouts.

[24] Patient population here differs from prior reports based on updated information from the practice sites.

**Table 3. CMHC Number of Patients Served**

| CMHC | Initial CMHC Submission Count | COAPCD Match Rate | Matched to APCD Count |
|---|---|---|---|
| **CRC** | 334 | 99.3% | 332 |
| **MHP** | 921 | 94.0% | 866 |
| **SHG** | 2,618 | 99.1% | 2,595 |
| **JCMH** | 2,240 | 93.5% | 2,093 |
| **Total** | **6,113** | **96.3%** | **5,886** |

**Community Reach Center (CRC)** focused on reaching the serious and persistent mental illness (SPMI) population in Commerce City. As mentioned in their SIM proposal, CRC chose this population because significant mental and physical health issues are difficult to separate, and when left untreated lead to "significantly shorter lifespans compared with the general population." During the two fiscal years prior to their 2015 SIM application, CRC served 1,786 clients with SPMI in 2014 and 1,899 in 2015. Over their SIM participation, CRC saw 108 unique patients for 218 primary care visits in SIM Year 2 and the no-cost extension (2016), 165 unique patients for 469 primary care visits in SIM Year 3 (2017), and 98 unique patients for 244 primary care visits in SIM Year 4 (2018).

**Jefferson Center for Mental Health (JCMH)** targeted children and families with serious mental illness (SMI), serious emotional disorder, and substance use disorders who were also without a primary care provider. Upon application to SIM, JCMH anticipated having 750 patients enrolled by the end of Year 2, 1,875 patients enrolled by the end of Year 3, and 3,000 patients by the end of Year 4. Using the clinic's historical data to forecast, JCMH predicted this would result in 18,000 annual visits by the end of Year 4. Over their SIM participation, Jefferson Center saw 737 unique patients for 1,258 primary care visits in SIM Year 2 and the no-cost extension, 1,087 unique patients for 2,121 primary care visits in SIM Year 3, and 1,344 unique patients for 874 primary care visits in SIM Year 4.

**Mental Health Partners (MHP)** aimed to create a panel of approximately 1,000 clients by the end of July 2019—with SIM supporting the development of this new panel. The center targeted adults with SMI and co-occurring substance use disorders within three traditionally underserved populations: Hispanic individuals, individuals experiencing homelessness, and individuals with cognitive impairments. Over their SIM participation, MHP saw 401 patients for 1,125 primary care visits over SIM Year 2 and the no-cost extension, 575 unique patients for 2,426 primary care visits over SIM Year 3, and 542 unique patients for 2,343 primary care visits in SIM Year 4.

**Southeast Health Group (SHG)** chose to increase its capacity to serve children, youth, and adults with co-occurring behavioral and physical health conditions in the six counties of Southeastern Colorado. The site's goal was to serve at least 25 additional patients each year, with an increasing percentage of those patients having co-occurring physical and behavioral health conditions. At the time of their application, the site forecast that 31% of 650 patients would fall into this group by the end of 2018. Over SIM participation, SHG saw 1,777 unique patients for 691 primary care visits over SIM Year 2 and the no-cost extension, 2,601 unique patients for 2,299 primary care visits over SIM Year 3, and 1,823 unique patients for 883 primary care visits over SIM Year 4.

## Practice Transformation Activities

Key purposes of physical and behavioral integration are to ensure that fewer people are lost in the process of referral to external services, difficulties are identified earlier, interventions are initiated sooner, and overall care is better coordinated. Additionally, integration potentially reduces total cost of care since many routine behavioral health issues can be addressed from within primary care, without the need for referral to external subspecialists. For patients, integrated behavioral health services often enhance their experience because of the convenience of receiving comprehensive care in one clinical setting and as the result of improved communication among treating providers. The SIM initiative aims to assist primary care practices and CMHC programs in their efforts to move along the continuum toward higher levels of integration of physical and behavioral care within the medical home setting.

SIM practice transformation milestones reflect common attributes of high-performing primary care practices and CMHC programs. These milestones were organized based on a well-recognized framework, Bodenheimer's "10 Building Blocks of High-Performing Primary Care."[25] As depicted in the SIM Framework graphic (Figure 12), the building block concepts are consistent with themes articulated in other published frameworks. For example, the *Colorado SIM Practice Transformation Toolkit*[26] references the *Lexicon for Behavioral Health and Primary Care Integration*[27] for definitions and information on the concepts of integrated behavioral healthcare.

[25] Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 building blocks of high-performing primary care. *Annals of Family Medicine 12*(2), 166–71.

[26] Colorado State Innovation Model (SIM) Practice Transformation Toolkit. http://resourcehub.practiceinnovationco.org/tools/

[27] Peek, C.J., & The National Integration Academy Council. (2013). Lexicon for Behavioral Health and Primary Care Integration: Concepts and Definitions Developed by Expert Consensus. AHRQ Publication No.13-IP001-EF. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from http://integrationacademy.ahrq.gov/sites/default/files/Lexicon.pdf

SIM cohort 1 practice sites and CMHC programs were encouraged to prioritize building blocks and milestones using the Milestone Activity Inventory (MAI) assessment to meet their self-identified needs and plans for becoming more integrated. The cohort 1 practice site and CMHC program experiences and lessons learned from that approach led the MAI to evolve into the Milestone Attestation Checklist (MAC) for the CMHC programs and cohorts 2 and 3. With the implementation of the MAC, the SIM office also implemented a more structured approach or model for prioritizing building block and milestone efforts.

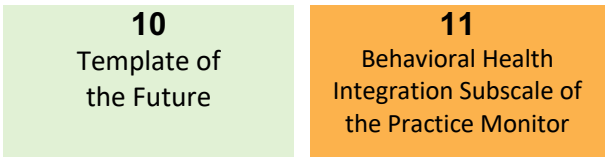
The structured approach was adopted to provide more standardization for practice sites so that payers could have some verification that practice sites were completing foundational integration work and then moving to activities higher on the building block framework. This approach retained the focus on integrated care and brought more focus on moving towards implementing strategies to be successful in alternative payment models and other areas of integration. The MAC was based on Bodenheimer's building blocks of advanced primary care with milestones developed in partnership with the multi-payer collaborative and the Practice Transformation Workgroup.

The SIM Implementation Guide clarifies the general philosophy behind the integration of these building blocks with the SIM initiative:

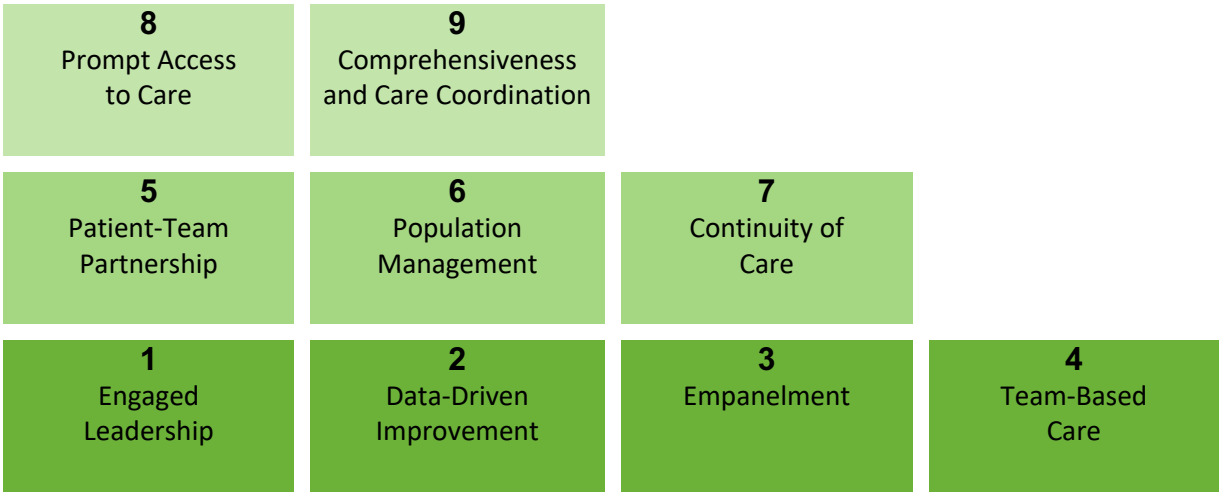
> *"it is important for each practice to become familiar with the models of integrated behavioral healthcare, be able to identify their current stage along the continuum of integrated care and develop plans to move along the continuum toward truly integrated care. The SIM practice transformation building blocks outline key activities and skills needed to develop integrated care in the context of healthcare reform. The intent of SIM is to support practices to develop the skills of an advanced primary care practice (as formulated through the 10 building blocks) and to use those skills to improve patient outcomes, practice productivity, and the integration of behavioral health."*

The following graphic presents the 10 building blocks as categorized by Bodenheimer and associates. As we detail in the following section, SIM adopted these building blocks and added an eleventh, the "Behavioral Health Integration Subscale of the Practice Monitor."

**Figure 12. Building Blocks**[28]




[28] Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 building blocks of high-performing primary care. *Annals of Family Medicine 12*(2), 166–71.




These building blocks overlapped with an integrated care framework used extensively throughout the *Colorado SIM Milestone Implementation Guide,* and they acted as a model for conceptualizing the categories of collaboration between medical providers and behavioral health providers. That integrated care framework includes three general forms or levels of integration: coordinated care, co-located care, and integrated care. SIM practice sites and CMHC programs use the Integrated Practice Assessment Tool (IPAT)[29] to assess their levels of integration, specifying them into one of six IPAT levels (two each for the three general levels of integration). However, the IPAT worked better as an internal tool to facilitate conversations about integration and did not do well showing change over time. Therefore, it was not used in the final evaluation analyses.

To further assess how completely each building block had been implemented, the *SIM Milestone Implementation Guide* Comprehensive Primary Care Practice Monitor[30] (Practice Monitor) was also used. Data from the Practice Monitor will be used in this chapter, depending on the particular evaluation question. Milestone data and data from key informant interviews will also be used as appropriate.

## Movement on the Integration Continuum

**PT1. To what extent did practice sites and bi-directional programs move along the continuum of integration? How do they change over time? Do practice sites report an ability to sustain any changes made during SIM?**

[29] Waxmonsky, J.A., Auxier, A., Wise-Romero, P., Heath, B. Integrated Practice Assessment Tool (IPAT). Available at: https://www.integration.samhsa.gov/operations-administration/IPAT_v_2.0_FINAL.pdf

[30] Comprehensive Primary Care Practice Monitor: http://resourcehub.practiceinnovationco.org/filters/?tags[]=107

We present material in this section describing SIM practice site and bi-directional program efforts to move along the continuum of integration, which is the focus of evaluation question PT1. To address this evaluation question, we summarize the presentation of behavioral health integration from the Practice Transformation chapter of the 2019 SIM Final Outcome Report. Please see that chapter for a full presentation on integration findings.

As depicted in Figure 12, SIM added a supplemental building block to the Bodenheimer 10 blocks. In this summary, we provide an overview of results from analyses of data for this block, Building Block 11, Behavioral Health Integration (BHI) Subscale of the Practice Monitor. The measure of behavioral health integration (BHI) used in this analysis is the completeness of BHI implementation. We used 14 items from the Practice Monitor for the practice sites to rate the completeness of implementation of BHI. The Practice Monitor for the CMHCs had 13 BHI items. The differences in those items reflect the fact that physical healthcare was integrated into a behavioral health setting in the CMHCs. In the primary care practice sites, behavioral healthcare was integrated into a physical health setting. In both cases, for CMHCs and for cohort practice sites, we summed and divided the ratings from the items by the maximum possible sum to get a percentage of maximum possible completion score (composite score). Those composite scores are shown in Table 4 below. Please see the Practice Transformation chapter of the 2019 SIM Final Outcome report for more details, including a breakdown of the range of scores on this measure.

We explored the effects of cohort (1,2, and 3) and changes over time by analyzing cohort baseline, midpoint, and final assessment data. Since cohort practice sites and CMHCs were assessing integration from different aspects of healthcare integration, we have presented separate tables for the cohorts and for the CMHCs (see Table 5). Because of the small number of CMHCs (4), statistical analyses involving CMHCs were not completed.

Furthermore, though all cohorts had baseline and final assessment data, cohort 3 did not have midpoint data. This absence is a result of the relatively short period of cohort 3 activity. Cohort 3, in contrast to cohorts 1 and 2, was active for nine months prior to completion of the final assessments. Cohort 1 was active for a full two years, and cohort 2 was active for nearly two years. In addition, though we list baseline, midpoint, and final scores within the same columns for the cohorts, each cohort has a unique baseline and final assessment period. Interpretations of changes between baseline and final scores, in particular, should consider that cohort 3, upon final assessment, had fewer months of SIM participation than the other two cohorts.

**Table 4. Practice Monitor Building Block 11 Behavioral Health Integration Composite Scores (Cohorts)**

| Practice Monitor Building Block 11. Baseline, Midpoint, and Final | | | |
|---|---|---|---|
| **Percentage of Maximum Possible** | **Baseline** | **Midpoint** | **Final** |
| Building Block 11, BHI | | | |
| Cohort 1 | 61.0% | 71.6% | 78.7% |
| Cohort 2 | 52.6% | 74.2% | 85.7% |
| Cohort 3 | 55.3% | –[31] | 77.4% |

**Table 5. Practice Monitor Building Block 11 Primary Care and Behavioral Health Integration Composite Scores (CMHCs)**

| Practice Monitor Building Block 11. Baseline, Midpoint, and Final | | | |
|---|---|---|---|
| **Percentage of Maximum Possible** | **Baseline** | **Midpoint** | **Final** |
| Building Block 11, BHI | | | |
| CMHCs | 71.2% | 84.6% | 90.4% |

Statistical analysis of baseline composite scores indicates that there is a significant overall difference between the cohorts ($F=4.0$, $df=2,329$, $p<.05$). Post hoc comparisons indicate that cohort 2 was significantly lower at the .05 level than cohort 1 in the completeness of integration composite score at baseline. Cohort 3 was not significantly different from either cohort 1 or cohort 2.

Analysis of the final assessment for each cohort was also statistically significant ($F=10.7$, $df=2$, $317$, $p<.01$) with post hoc comparisons revealing that cohort 2 was higher in completeness of integration than cohorts 1 and 3. Since cohort 3's final assessment was basically equivalent to the midpoint assessments for cohorts 1 and 2 in terms of time since baseline, an analysis was completed to compare cohorts at the midpoint. That analysis showed the differences between cohorts to be non-significant. Analysis of change scores from baseline to the midpoint shows that cohorts 2 and 3's levels of integration increased statistically more than cohort 1 ($F=11.1$, $df=2$, $321$, $p<.01$) although the improvement for all cohorts was evident.

The effect of assessment period on behavioral health integration is sizeable and highly statistically significant. Specifically, the results of one-way ANOVA regression models, indicate that average levels of behavioral health integration increased substantially over time ($F=163.45$, $df=2$, $890$, $p<.001$).

[31] Because cohort 3 sites participated for only nine months, there is no midpoint measure for cohort 3.

## Integration/Transformation Activities

**PT5. What steps did practice sites take to assess and continually improve delivery of integrated care via process redesign, culture change, and HIT.**

We drew data to provide feedback on this evaluation from the Comprehensive Primary Care Practice Monitor (Practice Monitor). We used these data to summarize the completeness of implementation for **Building Block 2, Data-Driven Improvement**. This analysis includes data from Building Block 2A (QI processes) and Building Block 2B (data-driven improvement activities). The set of items from the Practice Monitor for this building block were the same for all cohorts and for the CMHCs.

### Practice Monitor Building Block (BB) 2

We used the five-item subscale from the Practice Monitor Building Block 2A QI Processes (BB2A) to rate the completeness of implementation of a quality improvement process. Those items are listed here to show the wide range of activities involved in the QI process score. We summed and divided the ratings from the five items by the maximum possible sum to get a percentage of maximum possible completion score. We present those scores in Table 6.

- Our practice has a sustainable, effective quality improvement team that meets regularly and deals effectively with challenges.
- QI team meetings are well-organized, with agendas, meeting summaries, and prepared leaders and members.
- The QI team uses QI tools (e.g., AIM statements, process mapping, PDSA) effectively.
- QI team members reliably follow up on assignments and tasks with good team accountability.
- Staff members are actively and regularly involved in QI team meetings.

We also used the four-item subscale from the Practice Monitor Building Block 2B Data-Driven Improvement (BB2B) to rate the completeness of implementation of data-driven improvement. We have listed those items to show the wide range of activities involved in the data-driven improvement score. We summed and divided the ratings from the four items by the maximum possible sum to get a percentage of maximum possible completion score. Those scores are shown in Table 6.

- Clean and accurate quality measurement data are available for targeted conditions.
- We are able to extract data from our medical record systems for registries (lists of patients with particular conditions and with key information about those patients).

- Workflows for maintaining accurate registry data have been reliably implemented.
- Quality measures and other data are used as a central area of focus for the practice site's improvement activities.

Practice quality improvement processes and data-driven improvement scores are presented in Table 6 at baseline, midpoint assessments, and at the final assessment. Cohort and CMHC start dates were staggered, with each having differing numbers of assessments. As a result, we created separate tables for the cohorts (Table 6) and for the CMHCs (Table 7). Please note that cohort 3 had only two assessments: one at baseline and one at final. Because of the small number of CMHCs (4), we did not complete statistical analysis involving CMHCs.

The key finding from the analyses presented below is that all cohorts and CHMCs demonstrated improvement in Building Block 2 efforts. Specific comparisons at points in time show how the cohorts compare with each other.

The first set of scores in Table 6, BB2A Quality Improvement Process, shows that the percentage of maximum possible completeness of implementation at baseline for the three cohorts is 64.8% for cohort 1 and cohort 2 and 59.3% for cohort 3. This difference is not statistically significant ($F=1.2$, $df=2, 329$, $p=.3$). For BB2 Data-Driven Improvement and for BB2 Overall, the baseline percentages of maximum possible completeness were also similar for the three cohorts ($F=.22$, $df=2, 392$, $p = .803$ and $F=.64$, $df=3, 329$, $p=.53$).

**Table 6. Building Block 2 Data-Driven Improvement Composite Scores (Cohorts)**

| Practice Monitor Building Block 2. Baseline, Midpoint, and Final | | | |
|---|---|---|---|
| **Percentage of Maximum Possible** | **Baseline** | **Midpoint** | **Final** |
| BB2A. Quality Improvement Process | | | |
| Cohort 1 | 64.8% | 80.0% | 82.8% |
| Cohort 2 | 64.8% | 87.8% | 92.1% |
| Cohort 3 | 59.3% | | 85.4% |
| BB2B. Data Driven Improvement | | | |
| Cohort 1 | 66.2% | 75.0% | 77.2% |
| Cohort 2 | 68.2% | 84.1% | 90.7% |
| Cohort 3 | 67.4% | | 86.1% |
| BB2. Overall | | | |
| Cohort 1 | 65.4% | 77.8% | 80.3% |
| Cohort 2 | 66.4% | 86.1% | 91.5% |
| Cohort 3 | 62.9% | | 85.7% |

At the final assessment, however, the differences are statistically significant and somewhat surprising, given that cohort 3's SIM effort was funded for less than one year (compared to cohorts 1 and 2, which operated with funding for close to two years each). For the Quality Improvement Process, the difference between groups was significant ($F=14.2$, $df=2, 317$, $p<.05$) with post hoc comparisons showing cohort 2 at a higher level of completeness of implementation than were cohort 1 or cohort 3. For BB2B Data-Driven Improvement, the differences between cohorts was also statistically significant ($F=25.6$, $df=2, 317$, $p<.05$) with post hoc comparisons showing cohort 1 significantly lower than cohort 3, which was significantly lower than cohort 2. That same pattern of differences was present in BB2 overall.

Treating the final assessment for cohort 3 as the equivalent of the midpoint—or second assessment—for cohorts 1 and 2 and statistically analyzing the groups at their midpoints results in a similar pattern of findings as above. Specifically, for Quality Improvement Process, Data Driven-Improvement, and Overall scores, cohort 1 has a significantly lower average completeness percentage compared to the completeness scores for cohorts 2 and 3 ($F=8.1$ for QI, $F=14.3$ for Data-Driven Improvement and $F=13.4$ for Overall [$df = 2, 321$, $p<.05$]).

**Table 7. Building Block 2 Data-Driven Improvement Composite Scores (CMHCs)**

| Practice Monitor Building Block 2. Baseline, Year 1, and Year 2 | | | |
|---|---|---|---|
| **Percentage of Maximum Possible** | **Baseline** | **Midpoint** | **Final** |
| BB2A. Quality Improvement Process | | | |
| CMHCs | 71.3% | 86.3% | 90.0% |
| BB2B. Data Driven Improvement | | | |
| CMHCs | 51.6% | 64.1% | 79.7% |
| BB2. Overall | | | |
| CMHCs | 62.5% | 76.4% | 85.4% |

## Integration Sustainability

**SIM1.1. Which partnerships should be sustained?**
**SIM1.2. What aspects of SIM should be sustained?**
**What will be the primary barriers to sustaining SIM efforts beyond the life of SIM Funding?**
**How confident are you that at least some SIM practice sites will sustain their transformation efforts?**

Key informant interviews with stakeholders (SIM office, Governor's Office, HCPF and CDPHE staff, along with workgroup members and vendor partners) and Practice Facilitators (PFs) and Clinical Health Information Technology Advisors (CHITAs) were used to collect feedback on integration sustainability. We asked stakeholders about the partnerships that should be sustained and asked PFs and CHITAs about integration efforts that should be sustained.

## Which Partnerships Should Be Sustained?

We interviewed SIM stakeholder key informants and asked if there "are specific partnerships that should be continued after SIM?" Overall, respondents indicated that a wide range of partnerships, with some funding, should be continued and that a structure should be in place to continue the SIM work on integrated care. Some respondents recognized that some partnerships that had developed as a result of SIM would continue on their own but that a more formal, structured approach would be necessary to continue progress. Two respondents suggested that the structure be part of the Governor's efforts through the Office of Saving People Money on Healthcare or perhaps a new Office of Transformation and that state agencies, (e.g., HCPF) be involved along with private agencies (e.g., the Colorado Health Foundation, interested universities).

> On average, responses indicated that the ongoing focus should be to continue listening to consumers, providers, and communities to show that the focus on integrated care is big and extensive and that Colorado wants to provide support for this to continue.

Stakeholders identified specific partnerships that supported the work of integrated care. They noted that insurance companies and other payers were important to ongoing payment reform—a critical inclusion for making progress to support integrated care. At the statewide level, partnerships between state agencies and between public and private institutions (e.g., foundations and universities) are important to continuing SIM's work. An example result of those partnerships was the community-level work of the Regional Health Connectors (RHCs), which stakeholders hoped would continue. Partnerships between the Practice Transformation Organizations (PTOs)—and especially between PFs and CHITAs—were acknowledged as important to the progress of integrated care. Finally, specific efforts—such as those of SBIRT, project ECHO, CIVHC and Milliman's work, the learning collaboratives, and with the consumer/advocacy community—were important, and their continuation was perceived as being necessary. As one respondent said, "I can't think of a partnership that shouldn't continue." That comment summarized that the collaboration throughout SIM and the efforts to work in partnership have been among the most important aspects of SIM.

## What Aspects of SIM Should Be Sustained?

PFs and CHITAs provided feedback through key informant interviews about aspects of SIM integration efforts that should be sustained. Respondents were asked the specific questions posed in the evaluation questions listed on the prior page (What partnerships should be sustained? What other aspects of SIM should be sustained?). Their responses tended to focus on operational aspects of integration and integration sustainability at the practice site and CMHC levels. Respondents identified specific components of integrated care, such as the continued use of milestones; improved use of EHRs; and the related importance of reporting and using CQMs, risk stratification, and quality improvement to manage patient populations. Those components would support more of a population health and wellness approach, which is the direction PFs and CHITAs identified that integrated care is moving practice sites.

Respondents offered multiple comments about integrating more than behavioral health. They also urged integration of other staff, such as care coordinators and care managers, in a more team-based or wraparound approach. Central to that integration was having Behavioral Health Provider (BHP) resources and the ability to connect patients and BHPs through warm handoffs. PFs and CHITAs frequently mentioned the need for more BHPs and the need for BHP training in integrated care. Respondents mentioned additional BHP needs, including the need for more BHPs for pediatric sites and more work with CMHC partners for collocated BHPs. According to the interviews, practice sites valued having BHPs on site; they also valued their relationships with CMHCs to meet longer-term patient behavioral health needs.

Additionally, respondents identified communication and collaboration with payers as an important aspect of SIM to sustain.[32] This continued work will enable them to move from a fee-for-service approach to an alternative payment model. Practice sites valued the integrated care approach but needed funds to both pay BHPs and to support care coordinator and care manager positions.

Finally, support, such as from PFs and CHITAs, to guide them and help with integrated care was cited by PFs and CHITAs as important for integrated care to continue its progress. Similarly, the resources for practice sites to continue to learn through webinars or sharing information with other sites was also mentioned as an important aspect of sustaining the integrated care work. Practice sites need to be connected with other people and with other sites doing this work to pull together and support each other.

PFs and CHITAs stated that much of the work was sustainable with ongoing support and continued work. Although PFs and CHITAs did not specifically mention the idea stakeholders identified—to have a structure and resources to help sustain integration efforts—the concept

[32] Please see the Payment Reform chapter for more information on this work.

was clearly present in their responses. For example, one respondent mentioned the importance of working with Behavioral Health Organizations (now part of the Regional Accountable Entities or RAEs) as an important relationship to establish for facilitating the behavioral health component of integrated care. RAE responsibilities help ensure that Medicaid members have access to primary care and behavioral healthcare services. Some concern exists that the RAEs have not been involved enough to facilitate the continuity of integrated care efforts. However, the RAEs did not begin activities until July 1, 2018, late in the SIM program.

## What Are the Primary Barriers to Sustaining SIM Efforts?

Practice Facilitators and CHITAs were also asked what the primary barriers to sustaining SIM efforts beyond the life of SIM funding would be. The four primary barriers they identified were (1) lack of funding to sustain integrated care, (2) the staff and time resources necessary to provide care, (3) the loss of practice support from PFs and CHITAs with SIM ending, and (4) finding and funding behavioral health providers.

All four types of barriers were based in a perceived lack of funding at SIM's end. Respondents who identified "funding" were primarily speaking to a need for alternative payment models to move them out of a fee-for-services environment and for funding mechanisms such as the ability to bill for and get reimbursed for aspects of integrated care (e.g., coordination and behavioral healthcare).

When respondents identified a lack of resources, they mentioned staff and time resources, especially in smaller practice sites, rural practice sites, and sites that were not in a health system. Respondents noted that staff resources in those sites are very valuable. PFs and CHITAs expressed concern that once SIM ended, the loss of PF and CHITA support and of the Collaborative Learning Sessions (CLSs) that helped support staff, maintain collaboration, and maintain a focus on integration activities (e.g., moving forward on building block activities, making better use of Electronic Health Records [EHRs]) may result in a "slow drift away from integrated care." For additional information on the value of technical assistance, please see the Value of Technical Support section of this chapter.

Additionally, respondents also mentioned the importance of behavioral health providers (BHPs) to practice sites. The expressed concern that the shortage and turnover of BHPs was perceived as an important barrier to address. As one respondent stated, "Patients have needed this care for years, and there is nothing else PCPs can do without behavioral health."

## How Confident Are You That At Least Some SIM Practice Sites Will Sustain Their Transformation Efforts?

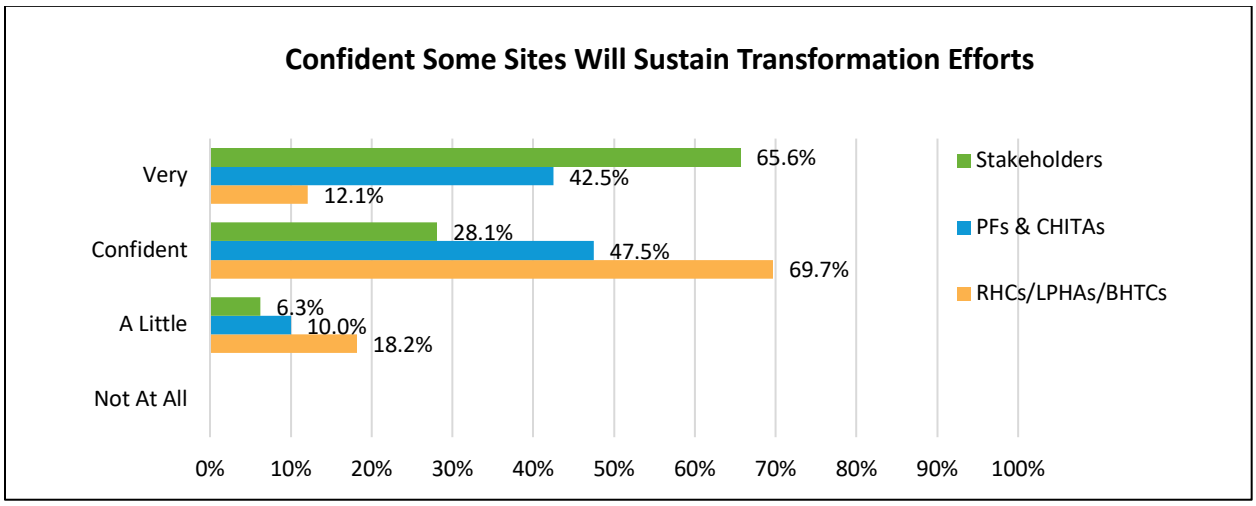
In 2019, all stakeholder, PF/CHITA, Regional Health Connectors (RHC), Local Public Health Agency (LPHA), and Behavioral Health Transformation Collaborative (BHTC) key informant interviews asked respondents to rate how confident they were that "at least some SIM practice sites will sustain their transformation efforts." Although these informants were removed from direct practice experience, they worked directly with many sites and provided an additional perspective on the degree to which efforts could be sustained beyond what practice sites reported in their closeout surveys (discussed later in this chapter). However, the context of this information deserves special regard. The responses offer broad, external perspectives and could reflect limited understandings of specific issues happening within any individual practice site.

The graph below (Figure 13) shows that a high percentage of respondents in each group were either "Confident" or "Very Confident" that at least some sites will sustain their transformation efforts. Those two response categories accounted for 93.7% of stakeholders, 90% of PF and CHITA ratings, and 81.8% of RHC/LPHA/BHTC ratings.

Respondents indicated that the changes incorporated as a result of SIM were "foundational" basic operating practices that will continue. However, some respondents tempered their ratings by cautioning that if the resources are not there—and some believe they are not yet there—sustaining their transformation efforts will be more difficult. This limitation could especially be the case for smaller practice sites. Larger practice sites and practices within healthcare systems were identified as being more likely to sustain their transformation efforts. Providers have seen first-hand how "transformation efforts are changing their patients' lives."

Some respondents noted that sites were definitely moving forward with funding streams through the Medicaid APM and possibly through their RAEs for care coordination funding. Please see the next section for a discussion of challenges to integration.

**Figure 13. Confidence That Some Sites Will Sustain Transformation Efforts**




## Is the Integration of an Onsite BHP for Practice Sites (or Integrated Primary Care for CMHCs) and the Provision of Integrated Care Services Financially Sustainable?

As part of the final assessments for SIM completed by each cohort, the University of Colorado Department of Family Medicine (UCDFM) conducted closeout surveys with all practice sites and the CMHCs. In this section, we provide a summary of three relevant questions from those surveys to offer additional feedback on the sustainability of SIM transformation efforts.

The first of these questions was asked of practice sites that indicated they, at the time of the survey, offered integrated care in the form of an onsite, part-time or full-time behavioral health provider. The item asked if the "integration of an onsite behavioral health provider and the provision of integrated care services will be financially sustainable for this practice site." This equivalent question posed to the CMHCs was "is the provision of integrated primary care and behavioral health services financially sustainable for this center?"

The graph below (Figure 14) shows the responses for each of the cohorts and the CMHCs. For the cohorts 1 and 2, between 27% and 29% responded, "Yes, with current revenue." Combining the two types of "yes" responses resulted in 57% of cohort 1, 70% of cohort 2, and 61% of cohort 3 indicating that integrated care was financially sustainable. In contrast, only one of the four CMHCs said integrated care was financially sustainable (25%).

A follow-up question asked whether a practice site or center would "continue to offer integrated care even though the revenues may not be sufficient or is unknown." The second graph (Figure 15) below shows that respondents indicated at a high level that they will continue to offer integrated care even though the revenues may not be sufficient or is unknown.

These responses may imply that practice sites believed they were seeing or would see a cost savings or that they had expanded patient access to offset behavioral health costs. Additionally, the responses may indicate that sites recognized the value of having integrated care, for both patients and for the practice site, for reasons beyond financial considerations. However, tracking and forecasting at the practice-site level is difficult, and evidence exists that these responses may more accurately capture practice site perceptions than they provide a clear indication of what may occur in later periods.

**Figure 14. Closeout Survey: Sustainability of Integrated Care**

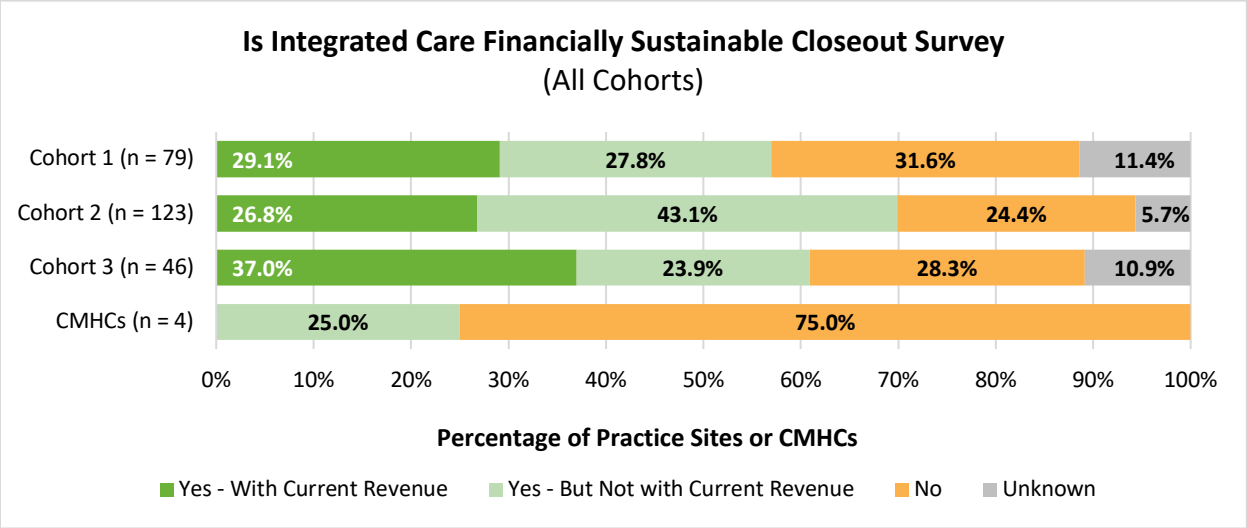
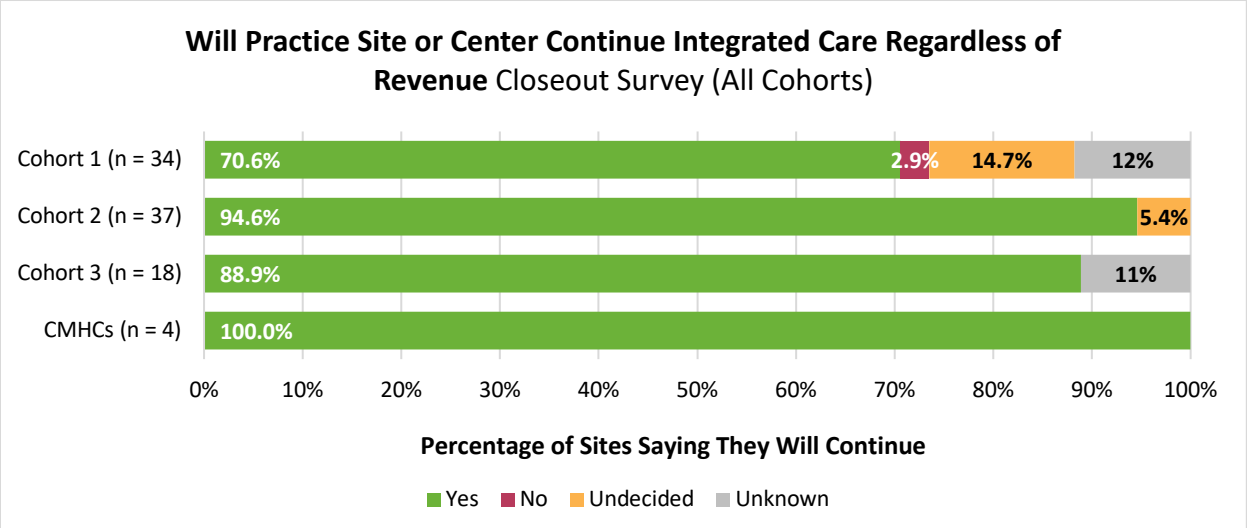



**Figure 15. Closeout Survey: Continuation of Integrated Care Regardless of Revenue**




Nearly all practice sites that had an internal behavioral health provider (either full time or part time) at the time they ended their SIM participation reported they would continue their integrated care efforts, regardless of revenue streams, even if the current revenue streams are

not adequate. This indicates that SIM practice sites believe in the value and importance of providing integrated care and is encouraging in terms of the likelihood that much of the practice transformation accomplished throughout SIM will continue.

## Challenges to Integration

We present material in this section describing challenges to SIM practice site and bi-directional program efforts to become more integrated, the focus of evaluation question PT2.

**PT2. What challenges were encountered by SIM practice sites in their integration/ transformation efforts?**

In the 2018 Annual Evaluation Report,[33] we posed this evaluation question to stakeholders, Practice Facilitator (PF), and CHITA key informants. In that report, 50 of 63 people interviewed (79.4%) commented on the challenges to implementing integrated care for cohort 1. From those interview comments, six themes emerged that related to challenges. Each of the themes was mentioned by more than 10% of the people who commented. We have presented those themes in this report to provide perspective on the challenges and how those challenges might have changed for cohorts 2 and 3—and for SIM overall.

In 2019, in addition to interviewing stakeholders, PFs, and CHITAs, we also interviewed RHCs, LPHAs, and BHTCs. A total of 112 key informants were interviewed in 2019; 95 of these interviewees (84.8%) provided comments about challenges encountered.

As compared to the challenges identified in 2018, the challenges mentioned by key informants in 2019 showed the following changes:/

- Almost half (48.3% or 43 interviews) of the interviews commented on workforce capacity as a primary barrier to successful implementation of integrated care. That proportion is an increase from the 34% in 2018 when it was the third most frequently mentioned challenge.
- Inadequate funding to implement and sustain integrated care was mentioned in 37.1% of interviews. That was a decrease from the 63% in 2018 when it was the most frequently mentioned challenge.
- Data and technology challenges were identified at about the same frequency (21.3%, up from 18% in 2018).

[33] TriWest Group. (2018). *Colorado State Innovation Model evaluation: Quarterly Report July – September 2017*. Denver, CO. Colorado State Innovation Model Office, Colorado Department of Health Care Policy and Finance.

- Lack of knowledge about integrated care decreased substantially in 2019 (18%, down from 36% in 2018).
- Lack of clarity in expectations and communication remained about the same (12.4%, about the same as the 14% in 2018).
- Logistics of workflow remained at similar levels (9%, a little lower than in 2018).

### Theme 1: Inadequate Funding to Implement and Sustain Integrated Care

> *"Understanding payer expectations was an initial challenge that has improved as understanding of the issues improved and payers are more involved."*

As shown above, a total of 33 respondents in comments about funding challenges out of the 89 interviews (37.1%) with comments about barriers to implementing integrated care. Interviewees. Interviewees identified several specific factors contributing to the perception of inadequate funding. These factors included the need to pay for a behavioral health provider with insufficient resources, lack of understanding about payment reform and value-based payments, risk and uncertainty about sustaining financial support for integrated care, and difficulty with billing for behavioral health services.

Interviewees stated that practice sites or the systems they operated within were expected to make significant changes based on the hope that the funding would follow. The risk and uncertainty were seen as significant barriers to sustained practice transformation. From a financial planning perspective, practice sites needed more certainty that funding would adequately cover the cost of implementing and sustaining a new way of providing care. Some interviewees recognized that having payers involved—and in the same room to discuss payment issues—has been a significant positive effect.

Interviewees also identified a lack of knowledge related to value-based payments and billing/coding as challenges related to funding. Some practice sites were more familiar with value-based payments from previous experiences with other practice transformation efforts. Others were new to these financing models and needed a better understanding to effectively change their sites. The issue of reimbursement for behavioral health services and the related billing needs overlapped with the difficulties of finding and paying for behavioral health providers/services. These issues also crossed into challenges related to data and technology.

### Theme 2: Inadequate Knowledge About Integrated Care

According to interviewees, knowledge of integrated care and how to manage a successful implementation effort increased as a result of SIM efforts with cohort 1, but these items remain challenging. Interviewees specifically mentioned the need to better understand different

models of integrated care (e.g., on-site vs. consultative) and how to identify which fits best for a given practice site. Additionally, cultural issues were identified involving all types of providers. For example, having a champion in the practice site helps. Also, the fit of the BHP is important (i.e., can BHPs work in a primary care clinic, in a team-based environment, with the clinic's patients, and do they want to be involved in an integrated care program?). Likewise, primary care clinic managers and providers may need more information about integrated care models to build and sustain successful programs. One interviewee expressed concerns about confidentiality issues and whether patients want to receive behavioral health services in a physical health practice site.

> *"The knowledge about integrated care models and how to help practice sites become integrated increased. Interviewees were less focused on hiring a BHP and more focused on components of integration, such as practice site culture, finding the right model for a site, and figuring out how to get the right model in place."*

### Theme 3: Lack of Workforce Capacity

Lack of access to behavioral healthcare providers in Colorado was a challenge prior the SIM initiative. According to interviewees, this lack of access remains a significant barrier. Interviewees commented on both the insufficient numbers of providers across the state and the lack of behavioral healthcare providers with knowledge and/interest in integrated care. This challenge will likely continue post SIM.

> *"Finding BH professionals who want to engage with practices [is a challenge]. Some CMHCs have been willing to partner and some have not. That's uneven across the state. Credentialing is a barrier. Funding is not adequate. Practices are overcoming a lot of barriers. [We are expecting a lot from practice sites and providers]."*
>
> SIM Stakeholder

Some practice sites that used small grant funding to hire behavioral health providers reinforced this finding, reporting that they experienced difficulty recruiting and retaining BHPs. At the time of mid-project reporting, Two of 16 (13%) grantees had not yet hired a provider one year into their grants, and two had hired and lost BHPs. Both practice sites that lost behavioral health providers during the first year overcame many of the common challenges, including setting up a physical space, adjusting workflow, and training primary care providers and staff. Both identified specific and measurable ways in which the patients and the practice site overall had benefitted by having a behavioral health provider.

Two practices in the San Luis Valley reported that the rural nature of the service area presented "significant recruitment challenges." While system-affiliated or supported practices may be able

to share in providers and resources, smaller or independent clinics may not be able to find providers. However, this was not a uniquely rural problem: a cohort 2 practice site in a metro area reported they initially had trouble finding the right candidate, and a separate site reported the need for workforce development as a major barrier.

Licensure and credentialing were other challenges related to workforce. Appropriate credentialing is required for BHPs to bill and to be reimbursed for patient care. According to interviewees, this process was difficult and time consuming.

### Theme 4: Data and Technology Challenges

Several factors were cited as challenges related to data and technology, and many were neither new nor surprising. These factors include EHRs that were cumbersome, had limited capabilities, and were not set up to work with behavioral health data. Interviewees also described major challenges with EHRs prior to attempting to implement integrated care. The addition of integrated care and the need to share information across primary care and behavioral healthcare compounded the challenges with EHRs. Not surprisingly, federal regulations related to sharing information about substance use treatment (42 CFR Part 2) were mentioned as an ongoing challenge.

Small, single-provider practice sites that have never worked with quality improvement efforts were mentioned as having difficulty in this area because of workload. However, one interviewee stated that SIM helped practice sites think differently about providing care and using data. For example, the benefit of population management involving collecting, quantifying, and evaluating measures is emerging.

### Theme 5: Lack of Clear Expectations and Communication

Interviewees cited the need for better communication and more clarity around expectations. Respondents acknowledged that communication improved through SIM's experience with cohort 1, and they cited resulting changes in milestones expectations as an example of this improvement. This concern was addressed for cohorts 2 and 3 through extensive changes made to the milestones. In the most recent key informant interviews, interviewees acknowledged that communication improved but still presented a challenge. This comment related more to internal practice-site culture and to communities rather than with SIM communications. The interviewee specified that people needed to listen to others within their practice site and understand the needs within their community in order to be successful at integrated care.

### Theme 6: Logistics of Workflow Within a Clinic for Successfully Implementing Integrated Care

The practical details of making integrated care work in a clinic setting are challenging. Specific factors cited include the amount of resources necessary to make changes, the impact of turnover (which can be significant if losing a BHP or a person key to integrated care), setting up physical space within a clinic for a behavioral health provider, and clarifying roles for a new BHP.

Practice sites can be resistant to workflow changes or modifying the way they do things. They are becoming more open to changing workflows as they see the positives of integrated care.

## Value of Technical Support

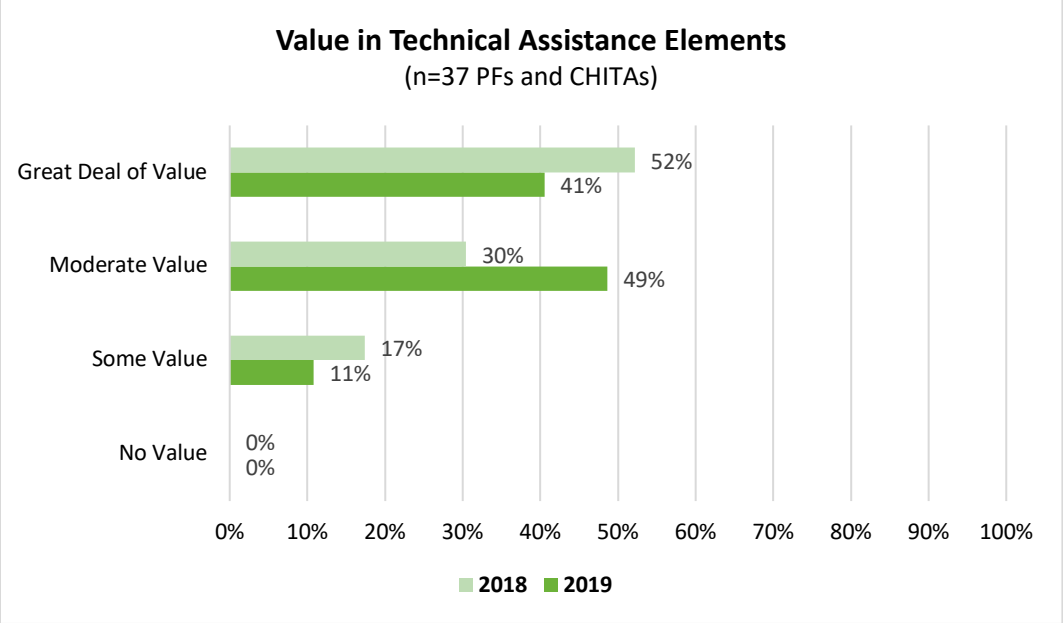
We present material in this section that describes the value of technical assistance to SIM practice site and bi-directional program efforts to become more integrated, the focus of evaluation question PT10 and HT4.

**PT10. Do/did practice sites and bi-directional programs see value in various elements of technical assistance (TA) received (PFs, CHITAs, SPLIT tool, etc.)?**
**HT4. To what extent did the addition of a technical support person (CHITA) result in better quality and better use of data in practice sites?**

In 2018 and 2019, key informant interviews conducted with PFs and CHITAs indicated that the various elements of technical assistance (TA) provided to practice sites and bi-directional programs were of "Moderate" to a "Great Deal of Value." Figure 16 shows that in 2018 82% of respondents rated the value of TA either of "Moderate" or a "Great Deal of Value." In 2019, those two ratings increased to almost 90% of respondents. This increase was expected since PFs and CHITAs worked directly with practice sites and bi-directional programs and were almost all able to make this rating.

The broad nature of this question resulted in comments about many aspects of the TA received. The needs of practice sites varied, and the types of technical assistance needed likewise varied. For example, for those sites that struggled with EHRs, having help with their EHRs was valuable. Help with using data in quality improvement processes was new to some sites, and that assistance was valuable. Also of value were the assistance with the SPLIT tool and the collection and use of CQM data. Sites also valued information from PFs and CHITAs about what other sites were doing. Information was also provided in the Collaborative Learning Sessions.

**Figure 16. Perceived Value of Technical Assistance**




UCDFM conducted a technical assistance satisfaction survey with cohort 2 and 3 practice sites as part of ongoing SIM quality improvement efforts. The survey included items regarding the practice sites' satisfaction with TA provided by PFs and CHITAs as well as regional health connectors (RHCs).[34] Practice sites were also asked whether they believed they benefitted from SIM participation and whether they would recommend SIM to another practice. Highlights reported to the SIM office by UCDFM include:

- 95% of all respondents reported they would recommend SIM participation to other practices.
- 75% said that access to APMs through SIM participation helped them to achieve their practice transformation goals.
- 90% reported that the business support services they were aware of the practice site receiving through SIM were of value to the site.

Other highlights reported from UCDFM regarding the SIM Practice Closeout Survey:

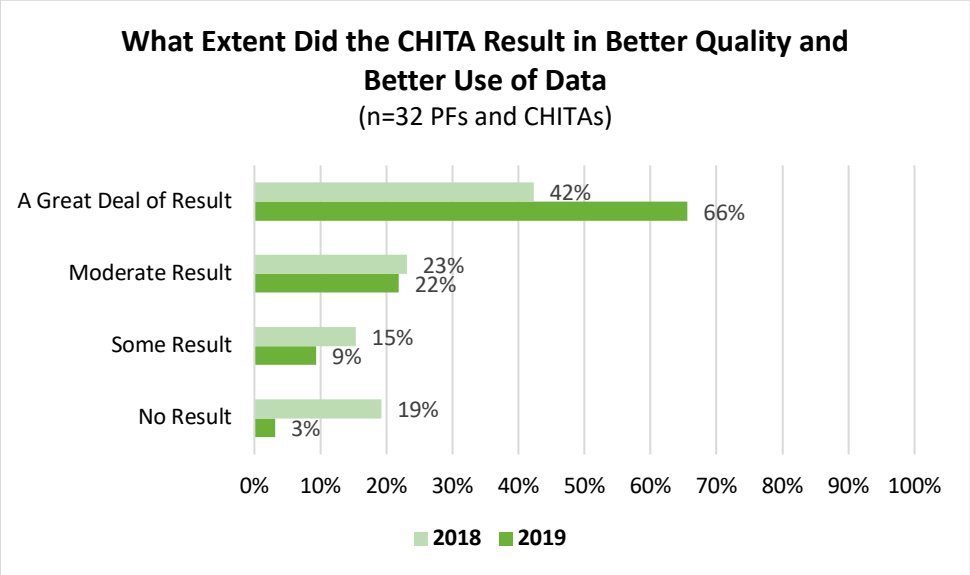
- Across all SIM cohorts:
  - Over 85% of practice sites indicated that participating in the SIM Initiative had assisted the site in its work to improve integration of behavioral and physical health.

[34] The RHC program, also supported in part by SIM, is described in the Population Health chapter of this report.

- Across SIM cohorts 2 and 3:
  - Over 95% of practice sites indicated interest in participating in future practice transformation initiatives similar to SIM, with approximately 60% of practice sites specifying they would be "extremely interested."

In a follow-up question for both years (2018, 2019), we asked PFs and CHITAs about the extent having a technical support person (i.e., the CHITA) resulted in better quality and better use of data. The responses to this question revealed a large increase in the percentage of respondents in 2019 who said CHITAs resulted in better use and quality of data to a "Great Extent." Both PFs and CHITAs noted that having the CHITA role was very valuable to practice sites in working with EHRs and vendors to collect, report, and use data.

**Figure 17. CHITA Support Resulting in Better Use and Data Quality**




## Additional Technical Assistance

### Small Grant Program Overview

The SIM office created competitive grants of up to $40,000 and established a small grants program, which originally had approximately $3 million in federal funds from CMMI and approximately $3 million in funds from the Colorado Health Foundation (CHF) for all three cohorts. The purpose of the program was to provide SIM primary care practice sites with competitive small grants to advance behavioral health integration goals as outlined in practice improvement plans. Based on feedback from stakeholders after the cohort 1 awards, the federal funding stream was reinvested in larger achievement-based payments for cohorts 2 and 3, which helped them achieve their transformation goals. And the small grant funding was

limited to the CHF dollars only. The SIM office made awards to 107 practice sites among all three cohorts.

The funding categories for cohort 1 were:

- Train new and existing practice staff (including methods to better coordinate referral to specialty mental health settings) (CMMI funding)
- Upgrade existing technology to support integrated care (CMMI funding)
- Support methods to foster patient and family engagement in integrated care (CMMI funding)
- Seed funding to support behavioral health clinicians (CHF funding)
- Capital costs to support renovations that foster integrated care (CHF funding)
- Technological solutions to support systematic screening for behavioral health problems. (CHF funding)

The funding categories for cohort 2 and 3 were:

- Training and on-boarding of new and/or existing clinical staff in how to integrate behavioral health screening and treatment into your practice (CHF funding)
- Upgrades and customizations to existing technology to support integrated care, including systematic screening for, treatment of, and referral for treatment of behavioral health issues. (CHF funding)
- Methods to foster patient and family engagement in integrated care. (CHF funding)
- Seed funding to support the hiring (or contracting) and initial salary expenses for licensed behavioral health clinicians. (CHF funding)
- Capital costs to support renovation of clinical and/or team space that fosters integrated, collaborative care. (CHF funding)

The table below shows the number of practice sites awarded within each of the funding categories.

**Table 8. Total Number of Practice Sites Awarded Funding by Categories**

| Small Grant Funding | | | | |
|---|---|---|---|---|
| **Total Number of Practice Sites Awarded Funding Category** | | | | |
| **Funding Category** | **Cohort 1[35]** | **Cohort 2** | **Cohort 3** | **All Cohorts** |
| Training and onboarding of staff | 11 | 7 | 6 | 24 |
| Patient and family engagement | 8 | 4 | 4 | 16 |
| Upgrades to existing technology | 16 | 15 | 11 | 42 |
| Hiring a Behavioral Health Professional | 16 | 26 | 11 | 53 |
| Technology solutions[36] | 15 | | | 15 |
| Renovations[37] | | 7 | 6 | 13 |

In cohort 1, a total of 66 practice sites submitted applications—42 to the CHF funding stream and 24 to the SIM funding stream. A total of 27 sites were selected to receive funds through the CHF funding stream, and 20 were selected to receive funds through the SIM funding stream. In cohort 2, a total of 107 practice sites submitted applications, and 38 were selected to receive funding through the CHF funding stream. In cohort 3, a total of 32 practice sites submitted applications, and 22 were selected to receive funding through the CHF funding stream. The following table shows the total dollar awards across cohort and funding categories.

**Table 9. Total Dollar Amount of Small Grant Awards**

| Small Grants (Total Dollar Amount of Awards) | | | | |
|---|---|---|---|---|
| **Funding Category** | **Cohort 1 Sites[11]** | **Cohort 2 Sites** | **Cohort 3 Sites** | **Total Across All Cohorts** |
| Training and onboarding staff | $138,996.20 | $17,267.00 | $60,532.23 | **$216,795.43** |
| Patient and family engagement | $99,159.92 | $4,595.00 | $50,800.00 | **$154,554.92** |
| Upgrades to existing technology | $385,736.34 | $141,523.92 | $277,438.41 | **$804,698.67** |
| Hire a Behavioral Health Professional | $542,674.00 | $932,740.00 | $295,053.73 | **$1,770,467.73** |
| Technology solutions[38] | $335,751.00 | | | **$335,751.00** |
| Renovations[39] | | $153,874.00 | $66,175.63 | **$220,049.63** |

[35] Combines Year 1 and Year 2 totals.

[36] Only offered to cohort 1.

[37] Only offered to cohorts 2 and 3.

[38] Only offered to cohort 1.

[39] Only offered to cohorts 2 and 3.

Regular meetings between the SIM program implementation manager, SIM small grants administrator, and the Colorado Health Foundation representatives ensured the evolution of the program and alignment with the strategic goals of both organizations.

**Qualitative data analysis of small grants has been analyzed by funding category and placed within respective chapters throughout this report.** Specifically, the Workforce, Practice HIT, and Population Health chapters include detailed examples of how these grant funds were used to further practice transformation efforts. Analysis includes the total dollar amount and number of practice sites that received funds, the total number of sites that requested funding, the number that received funding, and a description of the grant activities—including successes and challenges. Overall lessons learned and ideas for sustainability are included here as these concepts span all cohorts and funding categories.

# 4 Workforce

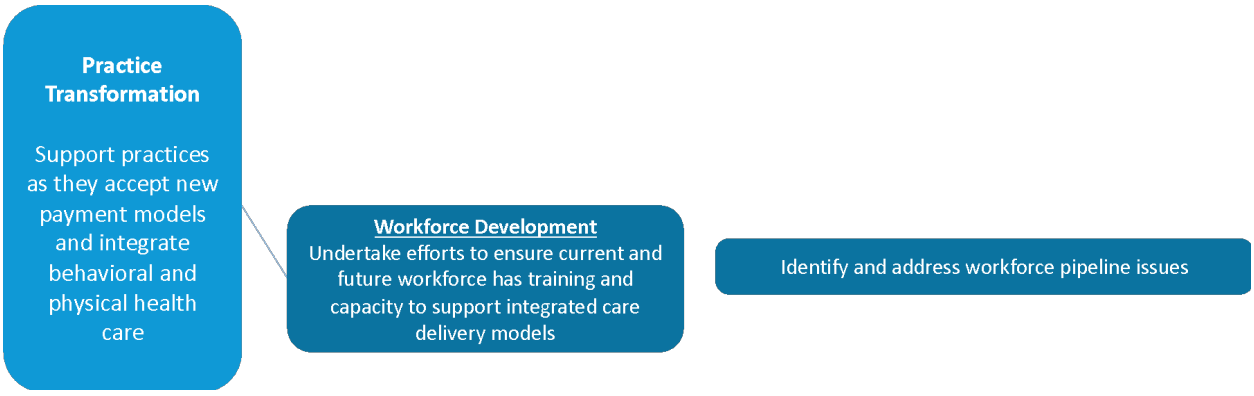
## Introduction

The SIM Operational Plan provides an overview of the structured approach to achieving the overall SIM goal to improve the health of Coloradans by increasing access to integrated physical and behavioral healthcare services in coordinated community systems, with value-based payment structures, for 80% of Colorado residents. Accomplishing that goal requires a focus on what is often referred to as the "Triple Aim": improved experience of care, improved population health, and reduced per capita costs. In addition, Colorado SIM adopted a fourth aim: to preserve or even enhance the satisfaction of the workforce. This addition advances the Triple Aim to the "Quadruple Aim."

The Operational Plan's four foundational pillars, or drivers, provide the base of the SIM approach and serve to support SIM efforts in four primary areas:

- Practice transformation
- Payment reform
- Population health
- Health information technology (HIT)

**Figure 18. Secondary Practice Transformation Driver**




Expanding, strengthening, and supporting the physical and behavioral healthcare workforce available to provide integrated care is a key lever. As shown in the Secondary Practice Transformation Driver (Figure 18 above), SIM workforce development efforts focused on "ensur[ing] current and future workforce has training and capacity to support integrated care delivery models" and, further in the key activities, "identify[ing] and address[ing] workforce

pipeline issues."[40] SIM simultaneously focused on statewide efforts to support this workforce in the form of "develop[ing] educational opportunities for providers…" and in "support[ing] communities to coordinate with health systems."[41]

SIM workforce-related, practice-transformation-specific efforts associated with the Practice Transformation Secondary Workforce Driver are addressed by two SIM statewide evaluation questions that consider gaps in the behavioral health workforce. In the next two sections, we present data collected that address those evaluation questions and contribute to our understanding of SIM efforts to improve access to behavioral health services in primary care settings and to address gaps in the integrated care workforce. In the final section of this chapter, we present data to address and report on the evaluation question about provider satisfaction and burnout.

**Provider Training and Education.** SIM efforts to improve training and education for providers in integrated care settings have been multi-pronged and collaborative with multiple agencies and organizations. Many of those are summarized in a paper from the 2018 Integrated Behavioral Health (IBH) Consortium,[42] co-hosted by the University of Denver and the Office of Behavioral Health, that involved an extensive group of attendees from a broad array of groups, including SIM-funded practice sites, SIM office staff, community mental health centers (CMHCs), the Colorado Workforce Development Council, Colorado state agencies, health and behavioral health agencies, and foundations.

The IBH Consortium paper describes workforce as a "cross-cutting dimension that transcends every pillar and is essential to achieve the goals of SIM." It also emphasizes that "further development of education and training programs across the state should be strategic in order to directly impact workforce growth."

As a result, training efforts were guided by a set of eight core competencies[43] for behavioral health providers working in primary care settings. The eight core competencies were developed in partnership with SIM, at the Colorado Consensus Conference in November 2015, and

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[40] Colorado State Initiative Model (SIM). (2018, September). *Colorado SIM operational plan award year 4 update*. Practice Transformation Primary Driver section. Retrieved from https://drive.google.com/file/d/1Zpl0p-1LDMC-oeaI5TVpPxVnJOuG7qUx/view

[41] Colorado State Initiative Model (SIM). (2018, September). *Colorado SIM operational plan award year 4 update*. Population Health Primary Driver section. Retrieved from https://drive.google.com/file/d/1Zpl0p-1LDMC-oeaI5TVpPxVnJOuG7qUx/view

[42] University of Denver (2018). *Thinking Beyond 2019: Sustaining Integrated Behavioral Health in Colorado, A Briefing Report on the 2018 Integrated Behavioral Health Consortium*. Denver, CO. University of Denver Graduate School of Social Work.

[43] Miller, B. F., Gilchrist, E. C., Ross, K. M., Wong, S. L., Blount, A., & Peek, C. J. *Core Competencies for Behavioral Health Providers Working in Primary Care*. Prepared from the Colorado Consensus Conference. February 2016.

coordinated by the Eugene S. Farley, Jr., Health Policy Center at the University of Colorado. The core competencies form the basis for the IBH Certificate of Completion that was developed for use as the IBH Best Practices Training Bundle. These core competencies have also been integrated throughout the state in pipeline educational programs to help train current and new behavioral health providers. The team knows of three accredited programs that teach these core competencies but have not yet acted to institutionalize the learning outcomes.

SIM stakeholders used the core competencies to develop a series of integrated behavioral health training modules. There are 18 modules available to providers at no charge through the University of Colorado website (https://CUeLearning.org). Some of these modules provide Continuing Medical Education (CME) credits. All content available in the training modules is also available for public use at www.co.gov/cdhs/behavioral-health-workforce-development. As of May 2019, more than 800 people had accessed the modules through the CU eLearning platform, the OBH IBH Best Practices Symposium, in-person trainings, and additional training activities. SIM partnered with the following organizations to develop and implement online eLearning modules for providers working in behavioral health integration:[44]

- The Colorado Department of Public Health and Environment (CDPHE) developed a group of three modules that focus on depression.
- The Office of Behavioral Health (OBH) developed 11 modules that address topics on integrated care for specific populations, on aspects of integrating substance use, and mental healthcare. Topics include delivery of whole-person care for aging patients; veterans; people with intellectual or developmental disabilities; Screening, Brief Intervention, and Referral for Treatment (SBIRT); and burnout in primary care. These modules comprise the elective options for the Integrated Behavioral Health (IBH) Training Bundle. Those are hosted on the following website: https://www.colorado.gov/cdhs/behavioral-health-workforce-development.
- The University of Colorado Department of Family Medicine (UCDFM) developed a set of four modules that together constitute the required components of the IBH Training Bundle.

The IBH Training Bundle was offered extensively, including at the IBH Best Practices Symposium, at Colorado State University's IBH Learner Scholar Symposium, in the University of Denver's MSW curriculum, in the SCL Health Fellowship program in Grand Junction, by Denver Health's IBH Academy, and in webinars hosted by OBH. A Certificate of Completion is provided to all participants who complete the bundle.

[44] https://CUeLearning.org

SIM supported the University of Denver (DU) Graduate School of Social Work's efforts to implement a training program for Master of Social Work students in integrated behavioral health through partnership with the Health Resources and Services Administration's (HRSA) Behavioral Health Workforce and Training Program Grant (BHWET). As mentioned above, DU's program incorporates the IBH Training Bundle modules. The bundle curricula include four key modules developed by the University of Colorado Department of Family Medicine (UCDFM) (i.e., Introduction to Behavioral Health for Primary Care, BHP and the Care Team, Integrated Workflow, and Patient Engagement and Behavioral Health) and 13 topic-specific modules from which learners choose two. Modules that address integrating behavioral health for specific and vulnerable people include psychological trauma, substance use disorders, children and youth, provider resilience and burnout, veterans, seniors, SBIRT, opioid use disorders, and intellectual and developmental disabilities.

To date, 58 students in the Master of Social Work program have received HRSA stipends during their final internship, provided the internship was completed in an IBH setting. These internships were completed across the state in federally qualified health centers in the Denver Metropolitan area, the Four Corners region near Durango, and in the Western Colorado region of the state, including Glenwood Springs and Grand Junction. The BHWET funding for these MSW students will continue through June 2021. Many of these students who have completed this training program have been hired by the respective practice sites where they trained. The focus of this BHWET training program is for the students to learn evidence-based practices, team based-care, and cultural and linguistic competency in order to work with some of the state's most vulnerable populations. The goal is to train at least 60 more students in the next two training groups.

Beginning with the start of SIM-funded practice transformation work, the University of Colorado Department of Family Medicine developed and hosted 14 Collaborative Learning Sessions (CLS) over the course of the initiative. Seven of these sessions were held on the Western Slope and seven were held in the Denver Metro and Front Range area. They provided opportunities to network, share ideas and experiences, gain different perspectives on similar SIM efforts that help practice sites and CMHCs integrate care, and gain the skills needed to succeed with alternative payment models. Some noteworthy plenary speakers included Paul Grundy, MD, MPH, FACOEM, FACPM; Susan H. McDaniel, PhD.; Marci Neilson, MD; Rob Valuck, PhD; Robert McNellis, MPH, PA; and Frank DeGruy, MD, MSFM.

Attendees consistently reported finding the CLS one of the most valuable components of their SIM participation, and they expressed appreciation for the connection to peers, other practice sites, and key community members engaged in working to improve healthcare and the lives of their patients. Some responses from participants to the question, "What was the most significant thing you learned or took away from this CLS?" are captured below:

"*That we can make some simple yet dramatic changes to the way our clinic looks at and utilizes the integrated model in an effective way to better serve our clients as a whole person."*

*"Appreciated the breakout session on sustaining BH in primary care. Learned a lot about billing and how to get paid for the BH services you provide."*

*"Appreciated the mindfulness session and training on the social determinates of health."*

*"The team building break-out sessions were very engaging and really relevant and helpful."*

*"How important it is to have a patient family advisory council in order to help manage our practice with not just quality metrics in mind but also quality patient care."*

*"Received information on how to include the whole team in transformation"*

*"Patient Advisory information with success stories, challenges, trials and tribulations. Very helpful to have diverse networking in one place."*

*"Practice transformation is multi-faceted and that many individuals/entities are working hard to provide enhanced care to patients. How to engage staff to tap into internal motivation."*

These sessions were required for all "SIM-only" practice sites and were optional for those practice sites participating in both SIM and CPC+. Altogether, 3,179 people received training and technical assistance through these sessions. Similar CLS events were conducted by CBHC for the CMHCs.

The Health Access branch of the Primary Care Office of CDPHE developed and is using a statewide Provider Directory Database that could help identify where there are workforce needs. SIM has collaborated with the Provider Directory team to explore using provider information to study the distribution of the current workforce and where gaps exist.

Finally, Senate Bill 18-024, which passed in 2018, expanded access to behavioral healthcare through the Colorado Health Service Corps program that is managed by the Primary Care Office at CDPHE. This legislation enables CDPHE to identify health professional shortage areas and prioritize loan repayment and scholarships to BHPs working in these areas. CDPHE conducted a survey of BHPs in spring 2019, with some funding support from the SIM office, to assess integrated workforce capacity. The results of this survey were not available at the time of publication.

Together, these state- and community-level efforts moved workforce efforts forward with continued progress towards addressing workforce needs. People who have been involved in

SIM at the workgroup level, such as in the Workforce Workgroup, will continue to be involved in those efforts after the end of SIM.

## Identifying/Understanding the Gaps That Exist in the SIM Integrated Care Workforce

**PT7. To what extent have gaps in the SIM integrated care workforce been identified and addressed? Consider resources needed for primary care and behavioral health staffing, treatment, practice transformation, HIT, consumer engagement, and financial support.** Key Informant interview data from stakeholders, and then from Practice Facilitators and CHITAs, were used to address this question.

In late 2016 and early 2017 key informant interviews, conducted with key stakeholders (Implementation Workgroup members, state agency staff, SIM office, HCPF, CDPHE, CDHS, OBH and the Governor's Office, and other partners including vendors[45]) indicated that SIM had raised awareness of the need to address workforce needs related to integrated care.

One interesting aspect of the stakeholder responses was that only a small percentage of respondents was aware enough of the issues to rate the degree to which gaps in the integrated care workforce had been identified and addressed (17.9%, 7 of 39). They recognized that this may be a long-term effort and suggested that more attention to this area was needed.

Interviews conducted in 2018 asked stakeholders the evaluation question, "[T]o what extent have gaps in the SIM integrated care workforce been identified and addressed?" Analysis of responses found that workforce issues had been identified but not completely addressed. Respondents reported that the value of having behavioral health integrated within primary care settings is widely acknowledged. Awareness of issues in this area had clearly increased in 2018 with 21 of 42 interviewed (50%) making the rating. Respondents were becoming more aware of specific issues such as the BHP shortage and the belief that financial or payor support for integrated behavioral health in primary care is critical and not yet adequate to sustain positions. SIM-funded small grants to support BHPs were very helpful, and Regional Health Connectors (RHCs) helped connect behavioral health and primary care. Practice Facilitators (PFs) and Clinical Health Information Technology Advisors (CHITAs) provided important support for practice site integrated care implementation efforts. However, respondents expressed uncertainty about what would happen when SIM ended.

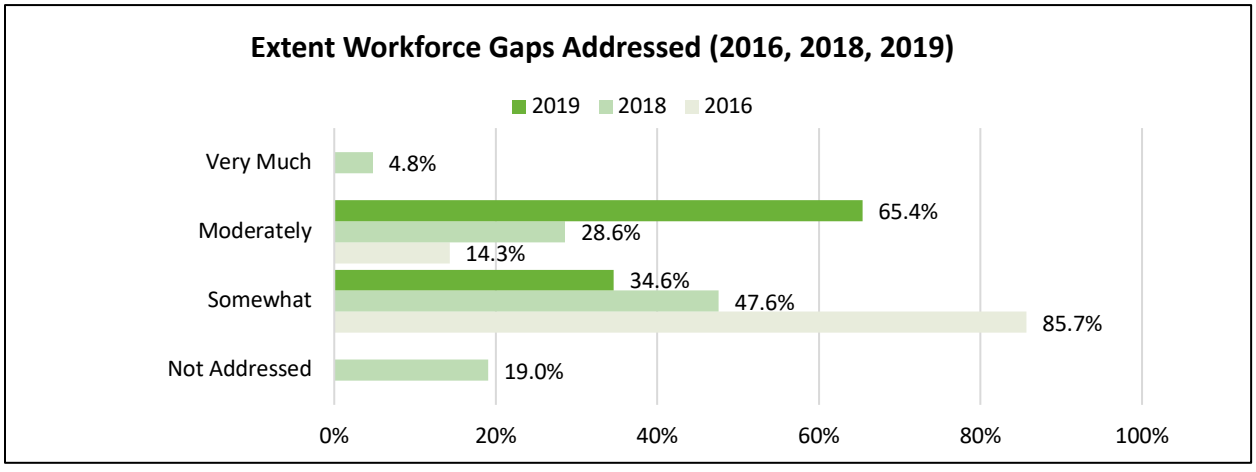
[45] TriWest Group. (2017). *Colorado State Innovation Model evaluation: Annual report*. Denver, CO. Colorado State Innovation Model Office, Colorado Department of Health Care Policy and Finance.

Awareness of the issue continued to improve in 2019 with 72.2% of respondents (26 of 36) rating the extent that workforce gaps have been identified and addressed. Stakeholders recognized the benefits of funding for BHPs and reimbursement for BHP services, and acknowledged the shortage of BHPs, as areas in need of continued investment and improvement.

The graph below (Figure 19) shows stakeholder ratings of the extent to which integrated care workforce gaps have been identified and addressed during the four implementation years of SIM. In 2016, 85.7% of respondents said workforce gaps had been identified and addressed "Somewhat." In 2018, the percentage of "Somewhat" responses dropped to 47.6% while the percentage of "Moderately" responses increased to twice the 2016 level (14.3% to 28.6%). Responses shifted positively again in 2019 with a move from "Somewhat" (down to 34.6%) to an increase to 65.4% at "Moderately."

Though not represented in the graph, PFs, CHITAs, RHCs, and LPHA/BHTCs were also asked in 2019 to rate the extent workforce gaps had been identified and addressed. They mostly rated this lower than the "key stakeholder" group (i.e., Steering and Advisory Committee members, Governor's Office, SIM staff, and workgroup chairs): at "Somewhat" (43% for PFs/CHITAs to 48% for RHCs/LPHAs/BHTCs) or at "Moderately" (41% for PFs/CHITAs to 33.3% for RHCs/local public health agencies and BHTCs). It is likely that the lower ratings from these respondents stem from their proximity to the practice sites and day-to-day needs that are more immediately impactful when the gaps are not addressed. In contrast, stakeholders are aware of the statewide, long-term efforts to impact partnerships, training, and ongoing payment reform efforts.

**Figure 19. Extent Workforce Gaps Were Addressed (Key Stakeholders)**

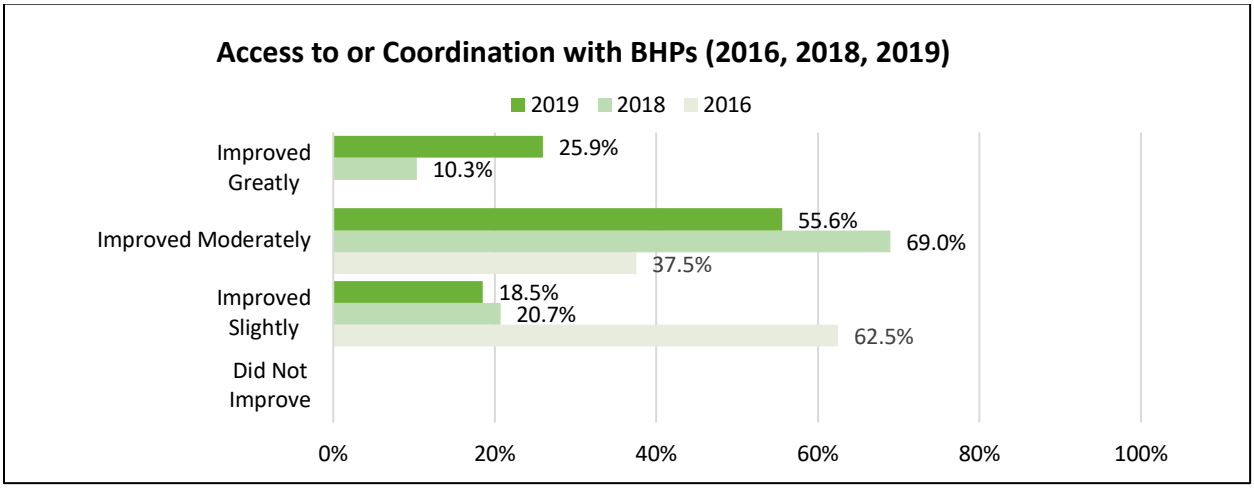


## Addressing the Gaps in the SIM Integrated Care Workforce

**PT7. Follow-up question: Has SIM's ability to identify and address gaps improved?**
Key Informant interview data from stakeholders, and then from Practice Facilitators and CHITAs, were used to address this question.

In a follow-up question, stakeholders were asked if access to or coordination with behavioral health providers (BHPs) improved as a result of SIM. Stakeholder responses to this question reflect their more removed perspectives (TriWest did not conduct interviews with behavioral health or primary care providers) on access to BHPs (Figure 20). Responses followed a similar pattern of change as seen for the question about the extent gaps were addressed. In 2016, 62.5% of respondents said access to or coordination with BHPs had "Improved Slightly." In 2018, the percentage of "Improved Slightly" responses dropped to 20.7% and the percentage of "Moderately" responses increased substantially from 2016 level (37.5% to 69%). Responses shifted positively again in 2019, moving from "Improved Moderately" (decreased to 55.6%) to an increase to 26.9% at "Improved Greatly."

**Figure 20. Extent Access to or Coordination with BHPS Improved**




Comments from stakeholders provide important feedback and understanding about the types of gaps and needs and the extent that the gaps have been addressed, as shown in the graph above (Figure 20). They commented about the core competencies mentioned above and resulting training and support efforts such as PF and CHITA support, the RHC workforce, the Collaborative Learning Sessions, eLearning modules and other professional development efforts. All those efforts are positive and helping to better prepare BHPs for work in integrated care settings. Also mentioned are the difficulties with funding BHPs and reimbursing those services in a primary care site. Those are also areas where there has been progress, and SIM's efforts collaborating with payers in the Multi-Payer Collaborative is cited as a positive

development. Perhaps the bottom line is that much has been done, much more needs to be done, and all that work should be continued.

Practice Facilitators, CHITAs, RHCs, and LPHA/BHTC interviewees also provided comments about the extent to which the integrated care workforce gaps have been identified and addressed. Their comments tended to call out workforce shortages, particularly in rural areas, as gaps that need to be addressed. They have seen some positive development from the work with payers, but the funding for BHPs is lacking. Practice sites are being creative, but there is a shortage of BHPs, especially those who are licensed or certified to work in integrated care. Some are training existing staff to help with the BHP role.

## Small Grant Funding for Workforce Activities

**Table 10. Small Grants for Workforce Funding Categories**

| Small Grants for Workforce Funding Categories | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Total Number of Practice Sites Applied and Awarded** | | | | | | | | |
| **Funding Category** | **C1 Applied**[46] | **C1 Awarded**[12] | **C2 Applied** | **C2 Awarded** | **C3 Applied** | **C3 Awarded** | **All cohorts applied** | **All cohorts awarded** |
| **Training and onboarding of staff** | 20 | 11 | 24 | 7 | 10 | 6 | 54 | 24 |
| **Hiring behavioral health professional** | 23 | 16 | 67 | 26 | 14 | 11 | 104 | 53 |
| **Renovations** | | | 25 | 7 | 11 | 6 | 36 | 13 |

Small grants were awarded in three funding categories to support workforce activities: (1) training and onboarding of staff, specifically staff to support integrated care; (2) hiring of a behavioral health professional; and (3) clinic or practice site renovations specifically for integrated care efforts. For each of these funding categories, we discuss what activities were developed or implemented, successes seen as a result of funds, and what challenges were faced. We also include quotes from grant recipients for a practice-level perspective.

## Adding or Increasing Behavioral Health Provider Capacity

Small grant funds for hiring a behavioral health professional were made available to practice sites in all three cohorts. Ultimately, 104 practice sites applied for this type of funding

[46] Includes Small Grant Y1 and Y2 award totals.

assistance, and 53 were awarded. A small number of cohort 2 and cohort 3 sites used these funds in conjunction with funds from the renovation category. SIM practice sites were able to apply for small grants to cover costs associated with hiring behavioral health providers (BHPs) or expanding hours of existing BHPs. These funds could also be used to support collaborative agreements with a local behavioral health agency to provide behavioral health services for the clinic.

Sixteen cohort 1 practice sites received a BHP small grant. Of these, five hired full-time BHPs, and four hired part-time BHPs (ranging from 10–20 hours per week[47]). Twenty-six cohort 2 sites received BHP small grants. Seven were able to recruit and hire new BHPs, and three others expanded current services. One site was able to extend telepsych services to provide psychotropic medication to more patients. Eleven cohort 3 sites received BHP small grants. Three of these sites expanded the hours of current integrated care providers. A Pearson's product-moment correlation was run to assess the degree to which winning a BHP small grant was related to sites having a full- or part-time BHP available onsite at the time they completed their closeout surveys. There was no statistically significant correlation between receiving a grant and having an onsite BHP, $r(.095)$, $p = .328$.

Sites in all three cohorts reported that the process of recruiting and hiring had taken longer than expected because of delays in credentialing and finding a qualified, licensed BHP who fit the clinic culture. As one small grant recipient said, "While the recruitment efforts were aggressive and geographically wide, just three qualified applicants were identified to interview." Corroborating this challenge, two other practice sites noted the difficulty of finding BHPs who were compatible with the unique job requirements and limitations, which were perceived to be time-related (i.e., "never enough time to do what was expected") and administrative (i.e., "limited, unsustainable positions after the grants ran out"). One site had difficulty finding a partner agency in its region with an innovative mindset. Through the RHC in its area, the site was eventually able to connect to and establish collaborative agreements with a behavioral health service provider in the community.

Others found challenges after the BHP had been recruited, hired, and onboarded. These challenges included finding space, working with EHR vendors to prioritize integrated care workflows, and staff and provider learning curves. Two sites, dependent on system-wide IT teams, were delayed because of competing priorities at the system level.

Across all three cohorts, the BHPs helped clinics improve integrated care workflows by facilitating warm handoffs, increasing the rate of screening for behavioral health needs, and incorporating patient behavioral health data into the EHR to inform collaborative care plans.

[47] Some sites used funds to expand the hours of an existing BHP rather than hire a new provider.

*"This project has been extraordinary. We have integrated an LPC into our practice and are able to provide our patients with quick access to behavioral health treatment as well as to track their progress with an electronic screening that is also integrated in our EHR. We use a shared EHR and have direct access to the notes of our LPC and as he is onsite, we are able to discuss our patients and their needs in real time. We have been able to prevent multiple ER visits due to his onsite presence and have been able to watch many patients respond very positively to our co management."*
[Cohort 2 small grant recipient]

## Training and Onboarding

Small grant funds for training and onboarding were made available to practice sites in all three cohorts. Fifty-four practice sites applied for this type of funding assistance, and 24 were awarded. Practice-reported successes include onboarding of new BHPs, training on integrated care protocols for primary care staff and newly hired BHPs, training sessions on topics such as best practices and evidence-based strategies, trauma-informed care, team-based care, reflective supervision, and motivational interviewing. One cohort 2 site reported it was able to successfully recruit and hire a bilingual BHP as a significant achievement. Cohorts 1 and 2 experienced similar challenges, including a limited work pool and delayed onboarding as pending hires completed licensing and credentialing requirements. Onboarding could provide lead time for the practice to establish new billing procedures and clinic workflows. Challenges in providing training were few. The most-often-cited challenge to training was ensuring that providers were able to attend necessary training without disrupting services or workflows in the practice sites.

*"The funding provided training dollars for [a] UMass Center for Integrated Care training that is being completed by our primary care provider. Our Providers are sharing resources with each other from all sets of trainings."*
[Cohort 3 small grant recipient]

## Renovations

Small grant funds for office renovations were made available to all three cohort practice sites. Thirty-six sites applied for this type of funding assistance, and 13 were awarded. Often these funds were used in conjunction with funds to hire a BHP. Practice-site-reported successes included remodeling existing space for BHPs to meet one-on-one with clients, providing group therapy sessions, and offering behavioral health classes. Several grant recipients reported that newly dedicated behavioral health space improved patient movement, staff workflows, and efficiency by providing privacy to clients; freed up medical exam rooms for primary care appointments; and promoted warm handoffs between PCPs and BHPs. One site reported that

with dedicated clinic space for BHPs there is less staff frustration and confusion in general with workflows. In addition to supporting privacy and confidentiality of clients seeking behavioral health services, dedicated BHP space helps clinic medical services' workflows continue unhindered as designated medical exam rooms are specifically used for physical health services. One family practice site in cohort 2 is using newly renovated space for "medication-assisted therapy (MAT) and an enhanced intensive outpatient program (EIOP) for substance and opioid use disorder treatment." Few challenges were identified in completing renovations. Most often cited were delays in beginning construction, usually a result of building permits and staff turnover—especially of the BHPs.

> *"Before the office renovation grant we were lacking in the availability for a Behavioral Health Specialist to intervene during a clinical encounter as our Behavioral Health Specialist hours were set based on exam room availability. The remodel of our existing space allowed a private location for patients to meet with a behavioral health specialist for a longer time in a more comfortable setting. This renovation project facilitated more timely access to behavioral health visits and allowed the exam rooms to open up and not slow the flow of the medical team."*
> [cohort 2 small grant recipient]

> *"With the completion of the renovation we have seen improvement in screenings, warm hand-offs, referrals and appointments for 1:1 behavioral health session."*
> [cohort 2 small grant recipient]

## Brief Summary of Provider Satisfaction and Burnout

**PT8. To what extent are primary care and behavioral health providers satisfied with the experience of integrating primary and behavioral healthcare? Report burden? Does satisfaction increase and burden decrease over time?**
Clinician and Staff Experience Survey data were used to address this question.

To address this evaluation question in this section, we summarize the presentation of burnout and satisfaction findings from the Practice Transformation: Integration Efforts chapter of the 2019 Outcome Evaluation Report. Please see that chapter for a full presentation of burnout and satisfaction findings.

This summary is an overview of results from Clinician and Staff Experience Survey (CSES) data for the three SIM cohorts over time. Workplace satisfaction and burnout served as the key outcomes, or dependent variables, of interest. We explored the effects of cohort (1,2, and 3) and practitioner role as either "behavioral," "physical," or "other" (independent variables) on

changes in workplace satisfaction and burnout. Additionally, we evaluated change over time by analyzing changes from cohort baseline data over time to cohort midpoint and the final data point.

The measure of burnout is a single item in the CSES that reads as follows: "Using your own definition of 'burnout,' please indicate which statement best describes your situation at work." Burnout rating choices ranged from 0 to 4, with higher scores indicating higher levels of burnout. We used two measures to capture feelings of workplace satisfaction. The first was a single item indicator that asked respondents to rate their level of agreement with the statement, "Overall, I am satisfied with my work in our practice." The second measure was a composite measure of satisfaction that used all 15 CSES items by totaling all ratings and using a simple mathematical formula to create a 100-point scale. For both satisfaction measures, higher scores indicate higher levels of satisfaction.

Results of CSES data provided a multifaceted portrait of workplace satisfaction and burnout. In general, several key results stood out as particularly noteworthy, based on statistical analysis. Two points are important in considering the findings. First, the number of completed surveys was high (N=15,448), a positive indicator of staff enthusiasm and interest. Second, the large number of respondents also provided high levels of statistical power to find statistical significance with relatively small differences that may or may not be meaningful. Whether changes are meaningful depends on how staff and practice sites experience those changes. We can outline several key results as follows:

## Overall Patterns

- Overall, workplace satisfaction was generally high, with a large majority (85%) agreeing or strongly agreeing that they are satisfied with the work they do at their practice sites.
- Most respondents reported no burnout or occasional stress in the workplace (76%), but 7% reported high levels of burnout. The other 17% reported that they were gradually burning out.

## Cohort Effects

- Although the effects of cohort on workplace satisfaction were mixed, there was evidence, using the composite measure of satisfaction, of an increase in workplace satisfaction for cohorts 2 and 3 as compared with cohort 1.
- Levels of burnout were lower for cohorts 2 and 3 as compared with cohort 1. Cohort averages (0–4 range) were 1.16 for cohort 1, 1.12 for cohort 2, and 1.09 for cohort 3. These differences are statistically significant.

### Practitioner Roles Effects

- Effects of practitioner roles are highly significant and influence both burnout and workplace satisfaction.
- There is substantial evidence that physical health providers report more negative workplace experiences when compared with behavioral health providers. Specifically, our results indicate that:
  - Physical providers experience slightly lower levels of workplace satisfaction when compared with behavioral providers.
  - Physical providers experience higher levels of workplace burnout when compared with behavioral providers. Both these differences are statistically significant.
- The higher levels of burnout among physical health providers were most evident for cohort 2.
- The lower levels of workplace satisfaction among physical health providers were most evident for cohort 1.

### Time Period Effects

- There is partial evidence (statistically significant at the .10 level) that levels of workplace satisfaction declined (using the composite measure of satisfaction) from the baseline to midpoint time periods but that satisfaction increased between the midpoint and final timepoints.
- Levels of workplace burnout remained unchanged from the baseline to final time points.

## Open-Ended Comments to Burnout and Satisfaction Questions

In addition to the 15 satisfaction items and burnout item, the CSES includes two open-ended items.

- **Item 1, Satisfaction Improvement**. After responding to satisfaction items, respondents are asked to "[p]lease provide comments for any of the above items that you think could be improved."
- **Item 2, Workplace Experience and Satisfaction Improvement**. After the burnout question, respondents are asked, "What is one specific suggestion you have for how your practice could increase your overall experience and satisfaction with your job?"

Because of the high number of CSES surveys completed (15,488), we employed a text-mining methodology to extract themes from responses by quantifying recurring key words and

phrases. As Table 11 shows, 5,726 respondents provided valid responses to the first question, and 6,874 responded to the second.

**Table 11. CSES Number and Percentage of Open-Ended Responses**

| CSES Total N and Percentage of Open-Ended Responses | | |
|---|---|---|
| **Category** | **N** | **% of Total** |
| Total CSES Respondents | 15,448 | 100% |
| Responses to Workplace Improvement Question | 5,726 | 37% |
| Responses to Additional Suggestions Question | 6,874 | 44% |

When asked about ways to improve workplace satisfaction (Item 1), respondents provided multiple distinct responses. The words "time," "patients," "work," and "staff" had the highest occurrences. The word "time" was mentioned in 1,537 (or 27%) of all responses, followed by the word "patients" (1,391 mentions or 24%), the second-most mentioned word.

Analysis of frequently repeated words allows us to discuss the underlying meaning. For instance, the appearance of "time" was associated with two main themes. The first was the desire for more "time off" or time to rest and manage personal life issues. However, "time" also appeared repeatedly as a reference to time spent with patients. The second reference—to "patients"—was most often expressed in association with specific patient needs (e.g., behavioral healthcare) that could improve the workplace experience. This was consistent with anecdotal information gathered by SIM staff in podcasts, articles, and videos that outline how providing whole-person care that meets patients' needs improves staff morale and workplace satisfaction. Please see the full presentation of findings in the Practice Transformation chapter of the summative report.

When asked to provide suggestions related to improving workplace experiences and satisfaction (Item 2), respondents gave answers that, following text-mining processing, indicated several distinct patterns. One was an indication that ideas related to patients and time are important elements across both CSES open-ended questions. A possible interpretation is captured by this response from a respondent:

> *"Focus on customer service at the front and improve training for our front desk staff, allow for more **time** in the room with **patients** or set expectations with **patients** from the beginning about what we can reasonably accomplish in the **time** allowed, and involve clinical staff in all decisions involving our work prior to rolling new things out."*

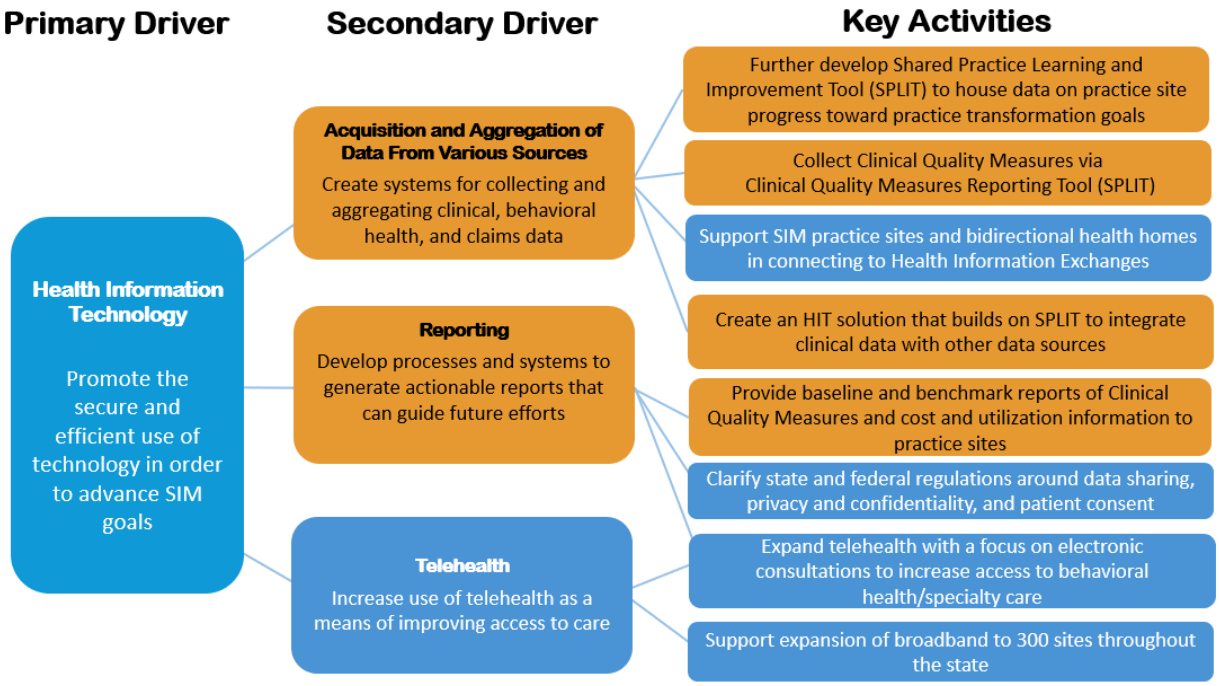
# 5 Practice Level HIT

## Introduction

Health Information Technology (HIT) is a primary SIM driver of change. The aims of the driver were to, first, promote the secure and efficient use of technology to advance goals of connecting practice and bi-directional sites to platforms for data exchange. Secondary goals include (1) promoting accurate and timely collection of clinical and claims data, (2) developing the ability to report these data to several sources and entities, and (4) supporting expansion of telehealth services.

The driver diagram below (Figure 21) depicts the HIT primary driver, secondary drivers, and related key activities. SIM HIT efforts can be divided into two separate, although related, efforts. First are statewide efforts, designed to further HIT improvements across the state, and second are activities taking place within individual SIM-participating primary care practice sites and CMHCs. These activities relating specifically to SIM practice sites are highlighted in orange in the driver diagram below.

**Figure 21. HIT Driver Diagram**




This section of the final SIM Final Process Evaluation Report includes a description of the key activities and accomplishments related to the practice-level HIT initiatives. TriWest worked with the SIM office and SIM workgroup members to develop the following practice-level, process evaluation questions:

**HT1. Are primary care practice sites and CMHCs using valid, reliable data (primarily in the form of clinical quality measures [CQMs]) to drive change?** (Several sub-questions related to specific processes, technologies as well as specific data collection and reporting mechanisms are discussed).
**HT3. What progress was made on facilitating ways to share information between primary care providers and behavioral healthcare providers?** (This includes CHITA support, practice-level coordination of communication, and technologies for data sharing).
**HT4. To what extent did the addition of a technical support person (CHITA) result in better quality and better use of data in practices?**

## Introduction and Description of SIM Data Activities

SIM has developed reporting processes and systems to collect, aggregate, and report on clinical quality measures (CQMs) from primary and behavioral health providers and cost data. These systems are used by primary care practice sites and the bi-directional health homes (i.e., the community mental health centers [CMHCs]) supported through SIM.

CQMs are data reported quarterly to the Shared Practice Learning and Improvement Tool (SPLIT) tool. The data include practice-level numerators, denominators, and values for each CQM submitted through the SPLIT. The expectation was that practice sites report on at least 4–6 measures each quarter, though sites could choose to report on more. Which measures they reported was left to each site's discretion. The SPLIT database also provided several baseline and benchmark reports so that practice sites and practice transformation coaches had one location to complete assessments, document progress, and report on CQMs. Although the SPLIT tool has been a useful warehouse to report, store, and disseminate CQMs, practice sites found it burdensome.

Practice sites noted that having to collect and report CQMs to multiple entities was a burden to sites and could be a barrier to participation in multiple payer APMs. This reported concern was the main reason SIM pursued an electronic clinical quality measure (eCQM) solution. The ability for practice sites to have data extracted from electronic health record (EHR) systems once and reported to many healthcare and payer entities would reduce reporting burdens and improve a practice site's ability to accurately and efficiently participate in a variety of APMs from multiple payers. As a result, the eCQM solution was a key focus for the HIT Workgroup.

Further supporting both secondary drivers featured in this chapter—acquisition/aggregation of data, and reporting—were the various SIM assessments. Housed and completed on SPLIT, practice sites received periodic feedback reports with actionable information. Table 12 below contains an overview of practice assessments and reporting schedules.

Table 12. SPLIT Assessments

| SPLIT Assessment Datapoints (All Practice Sites) | | | |
|---|---|---|---|
| **Assessment** | **Description** | **Reporting Period** | **Practice Sites Completing** |
| **Clinician and Staff Experience Survey** | Providers and staff report on satisfaction, burnout, and work-life balance. | Baseline | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| | | Midpoint 1 | Cohort 1, Cohort 2, CMHCs |
| | | Midpoint 2 | Not applicable |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| **Health Information Technology Assessment** | Identifies HIT barriers, opportunities, and prioritization of QI work. | Baseline | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| | | Midpoint 1 | Cohort 1, Cohort 2, CMHCs |
| | | Midpoint 2 | Cohort 2, CMHCs |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| **Integrated Practice Assessment Tool** | Measures practice's level of behavioral health integration. | Baseline | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| | | Midpoint 1 | Cohort 1, Cohort 2, CMHCs |
| | | Midpoint 2 | Not applicable |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| **Milestone Activity Inventory/Milestone Attestation Checklist** | Measures practice's progress towards implementing integrated care. | Baseline | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| | | Midpoint 1 | Cohort 1, Cohort 2, CMHCs |
| | | Midpoint 2 | Cohort 2, CMHCs |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| **Practice Monitor** | Measures how practice is implementing building blocks. | Baseline | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| | | Midpoint 1 | Cohort 1, Cohort 2, CMHCs |
| | | Midpoint 2 | Not applicable |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |
| **Closeout Survey** | Assesses practice's participation in SIM and interest in future practice transformation initiatives. | Baseline | Not applicable |
| | | Midpoint 1 | Not applicable |
| | | Midpoint 2 | Not applicable |
| | | Final | Cohort 1, Cohort 2, Cohort 3, CMHCs |

Practice Facilitators and CHITAs assigned by the PTO organization to work with a particular site reported field notes monthly for each practice site and bi-directional home the PFs and CHITAs served. These roles were both funded by SIM and offered technical assistance and practice transformation guidance and support. Sometimes, these two roles were filled by the same staff member.

Annual key informant interviews with stakeholders (SIM and other agency staff, SIM workgroup members, and vendor partners) and with Practice Facilitators and CHITAs asked questions about areas in which informants were expected to have direct SIM experience and involvement. In this case, Practice Facilitators and CHITAs answered the HIT questions. We used general text analysis techniques to analyze qualitative data: we identified themes, then grouped comments by theme. We have included both generalized comments (paraphrasing direct perspectives from informants) and direct quotes to illustrate these perspectives.

The primary limitation of these data is that they are primarily descriptive in nature and rely on extensive qualitative data. The quantitative assessment data also had limitations: CHITAs and PFs did help guide some completion, but other respondents may vary across reporting periods, lowering reliability. The findings here are descriptive of the SIM project but may not be generalizable to other SIM projects or other Colorado initiatives.

## Development and Use of SPLIT/CQM Reporting Tool

The SPLIT/CQM Reporting Tool is the central feature supporting many of the activities that support the two secondary drivers of Practice Level HIT: *Acquisition and aggregation of data from various sources* and *reporting*. This was a significant investment by SIM. This tool was made available to practice site staff, Practice Facilitators, CHITAs, Regional Health Connectors (RHCs), and University of Colorado Department of Family Medicine (UCDFM) analysts as well as TriWest, the statewide evaluator.

The Shared Practice Learning and Improvement Tool (SPLIT) is a secure web platform that keeps track of how well healthcare teams performed on key building blocks of advanced healthcare delivery. SPLIT was supported by an experienced UCDFM team that included data analysts, software developers, help desk, and subject matter experts.

The team supporting SPLIT helps projects:

- Assess practice performance on structural and clinical quality metrics
- Organize and track project deliverables
- Share information across projects, roles, and organizations on a unified platform
- Gather feedback data to help teams identify strengths, recognize areas of need, and prioritize their work in practice transformation and quality improvement
- Manage data streams for project operations and evaluation

The SPLIT platform housed all of the practice-level information such as HIT assessment, Milestone Activity Inventory/Milestone Attestation Checklist, Clinician and Staff Experience Survey, Integrated Practice Assessment Tool, Practice Monitor, quality measures, and field and practice progress notes. It stores assessment data of both the primary care practice sites and the community mental health centers.

The SPLIT platform helped to support practice sites as they worked towards integration efforts. Practice site staff, PFs and CHITAs, and RHCs were able to access reports and data to support quality improvement initiatives and to track the progress of a practice's improvement plan.

There were some initial challenges with the SPLIT platform. Some were caused by vendor constraints and delays in the build-out of the platform; others were caused by end-user perception that the tool was "clumsy," difficult to use, and had several "bugs that needed to be fixed." The overall perception from several cohort 1 practice sites was that issues were not being addressed in a timely fashion, causing further frustration with the tool.

Based upon this feedback, UCDFM worked to address the issues and re-released SPLIT version 2.0. This re-release occurred prior to cohort 2 accessing the platform. This retooling of the platform appeared to have resolved many of the challenges identified during cohort 1, and although cohort 2 practice sites could not speak to these changes over time, PFs and CHITAs with sites in both cohorts agreed that version 2.0 improved significantly.

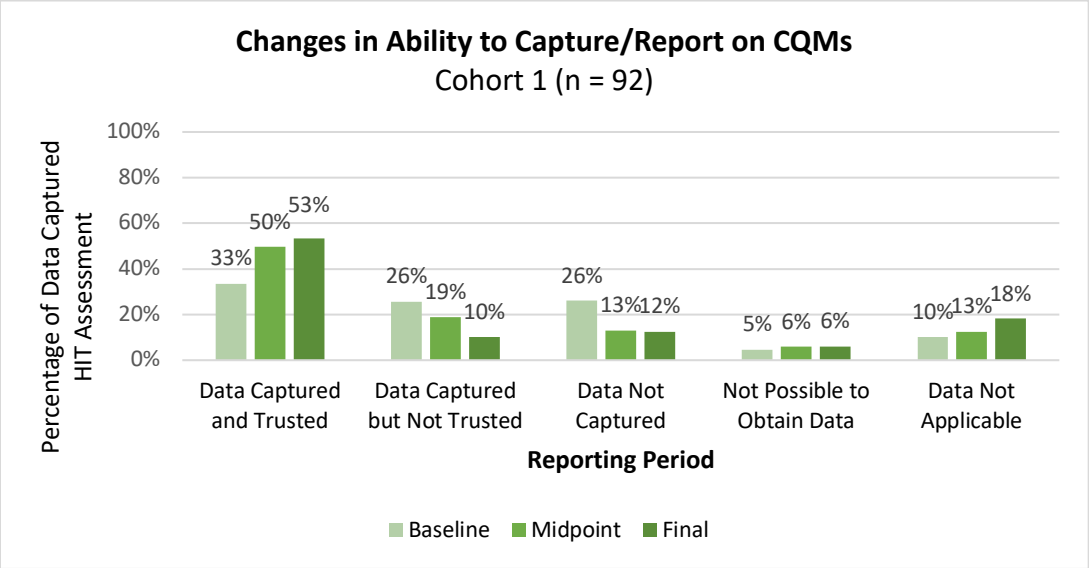
**HT1. Are primary care practice sites and CMHCs using valid, reliable data (primarily in the form of clinical quality measures [CQMs]) to drive change?**

SIM practice sites regularly completed the Health Information Technology (HIT) assessment approximately every six months during SIM participation. Because of varying lengths of participation, there were three reporting periods for cohort 1, four reporting periods for cohort 2, and two reporting periods for cohort 3. The HIT assessment asked practice sites to report their data quality for each listed CQM: "green" indicated that the practice site viewed the CQM as captured and trusted; "yellow" indicated the CQM was captured but not trusted by the practice site; "red" indicated that the CQM was not captured; "black" indicated that it was not possible to obtain the CQM, often because of limitations in the practice site's EHRs; and "blue" indicated that the CQM was not applicable to the practice site or the site did not see that population (e.g., a pediatrics practice reporting on adult measures). The HIT assessment asked practice sites to report on their CQM data quality but not the CQM numerators, denominators, or outcomes. This section only discusses data quality.

All cohorts reported improvements in CQM data quality over SIM participation. Figure 22, Figure 23, and Figure 24 include CQM data quality aggregated by cohort and show the percentage of CQMs reported in each category at the cohort level. We provide detailed breakouts of data quality by CQM later in this section.

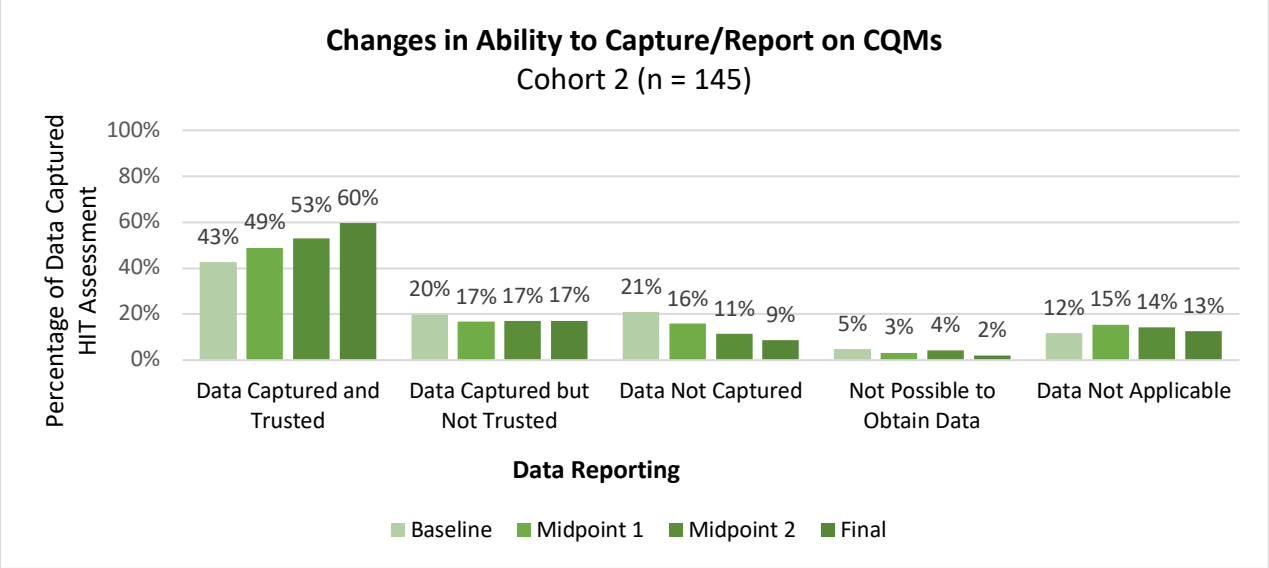
> *"We've brought a lot of awareness to CQMs and incorporating HIE and aligning best practices based on collaborative learning [*sessions*]. It's gotten a lot better. I started 2.5 years ago and felt like there were a bunch of different pathways and conversations…. The collaborative learning sessions have been really good."*
> [CHITA who supported a total of 64 practice sites across cohorts 1, 2 and 3]

**Figure 22. Changes in Ability to Capture CQMs in Cohort 1**



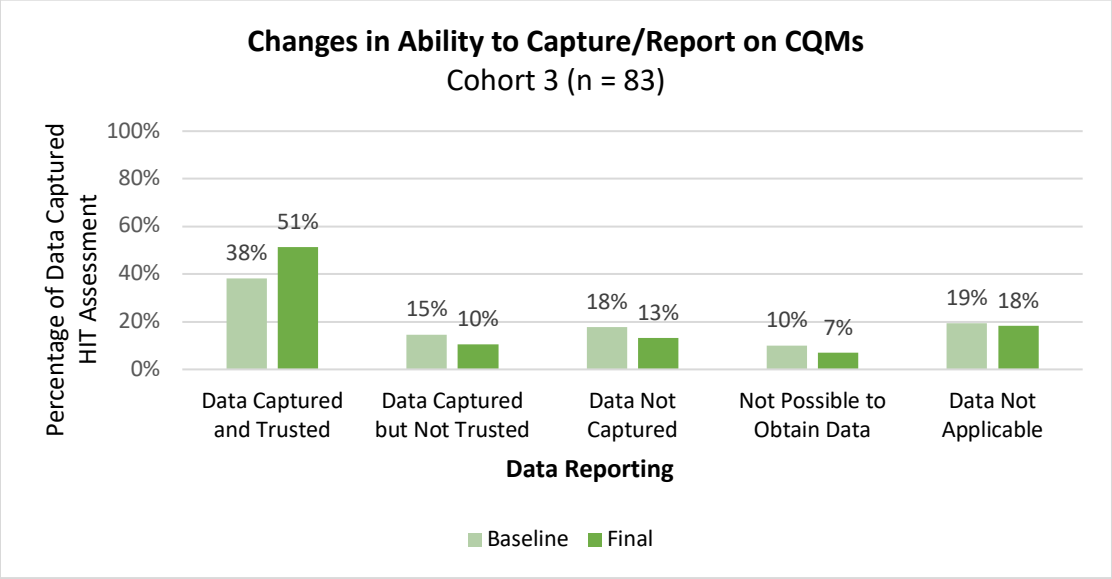

Cohort 1 practice sites reported 33% of their CQM data were captured and trusted on the baseline assessment, with a further 26% of data captured but not trusted, and another 26% were not captured. At the final assessment, 53% of cohort 1's CQM data were reported as captured and trusted, with only 10% of data not trusted and 12% not captured. "Blue" data, or data that were not possible to obtain, remained steady at 5% at baseline and 6% on both the midpoint and final assessments.

**Figure 23. Changes in Ability to Capture CQMs in Cohort 2[48]**




Cohort 2 practice sites reported 43% of the CQM data were captured and trusted on the baseline assessment, with 20% of data captured but not trusted and 21% of data not captured. At the time of the final assessment, 60% of cohort 2's data were reported as captured and trusted. "Yellow" data that were captured but not trusted dropped from 20% to 17%, the level that remained at midpoint 1, midpoint 2, and the final reporting period. "Red" data decreased to 9% at the final assessment.

**Figure 24. Changes in Ability to Capture CQMs in Cohort 3**




[48] One cohort 2 practice site completed all assessments before withdrawing, and those data are included in this analysis. The n = 145 includes this site, though 144 cohort 2 practice sites officially completed SIM. For additional information, please see the Practice Transformation chapter of this report.

Cohort 3 practice sites reported 38% of the CQM data were captured and trusted on the baseline assessment, with 15% not trusted and 18% not captured. Cohort 3's CQM data quality also improved overall, with 51% of data captured and trusted at the final assessment accompanied by decreases in "yellow" and "red" data: 10% of data were captured but not trusted, and 13% of data were not captured.

CQM data quality improved considerably in aggregate, but changes were more uneven across individual CQMs. Although there was no distinction among any types of CQMs in the HIT assessment, we have divided the CQMs into primary care and behavioral healthcare categories, which are included in Table 13 and Table 14 below; this was a clearer way to present the HIT results, and there were natural cleaves: across cohorts, physical CQMs data were approximately 23% more trusted than behavioral CQM data.

**Table 13. Physical CQMs Breakout**

| Physical CQMs |
|---|
| ■ Asthma management |
| ■ Diabetes hemoglobin A1c control |
| ■ Hypertension |
| ■ Obesity – Adolescent |
| ■ Obesity – Adult |

**Table 14. Behavioral CQMs Breakout**

| Behavioral CQMs | |
|---|---|
| ■ Depression (SIM) | ■ Maternal Depression |
| ■ Depression (CPC+) | ■ Alcohol Abuse |
| ■ Developmental Delay Screen | ■ Substance Use |
| ■ Fall Safety Screen | ■ Tobacco Use |

Figure 25–Figure 30 below include breakouts of individual CQMs. The methodology for these breakouts differed from the cohort aggregates discussed above. To best report on changes to data quality, we calculated averages from only practices reporting "green," "yellow," and "red" data. Practice sites reporting a CQM as "blue" or "black" were excluded from denominators in this analysis. We have identified the number of practice sites reporting next to the reporting period in the charts below. A number of cohort 1's HIT assessment items changed over the cohort's reporting periods with some added, dropped, or combined questions. Furthermore, the cohort 1 charts below include only CQMs that appeared on both the first and last assessments. Cohorts 2's and cohort 3's items were more consistent; we included all CQMs on their respective charts.

**Figure 25. Cohort 1 Physical CQMs**

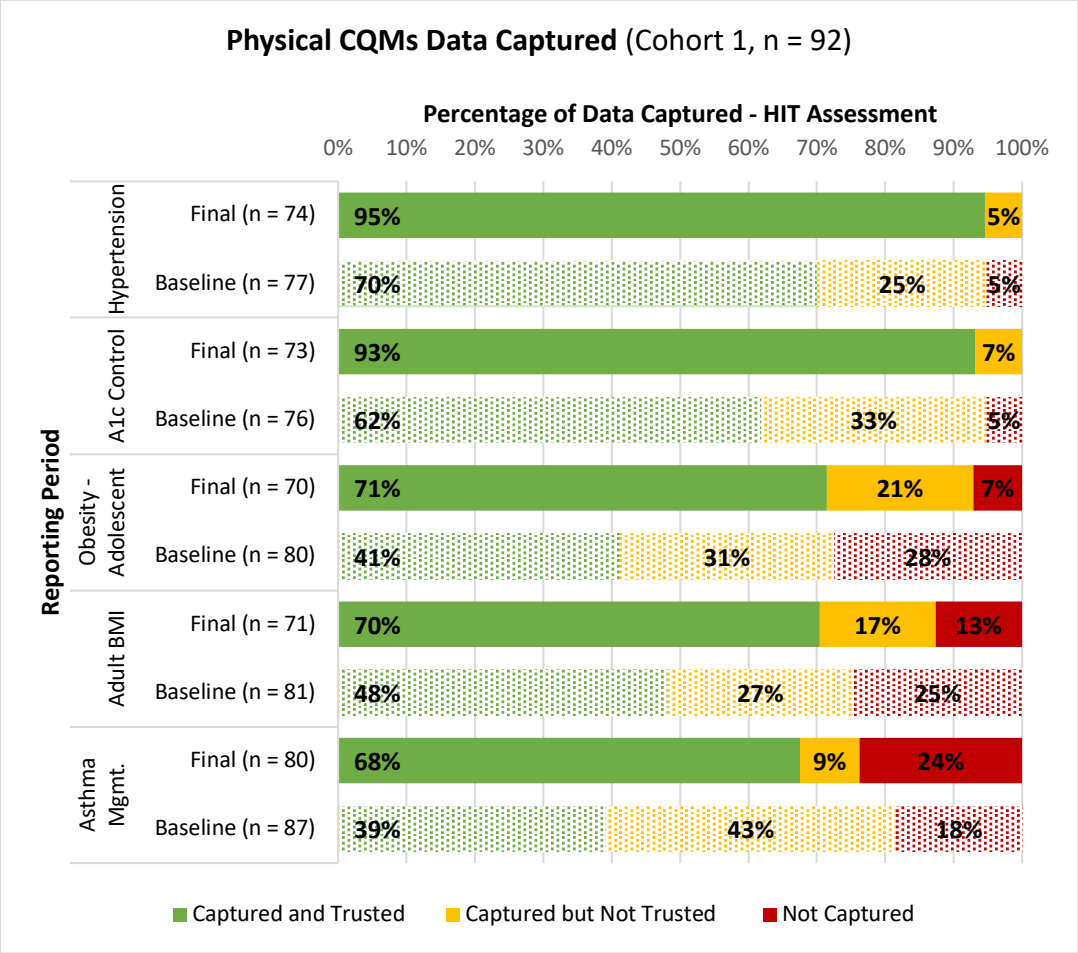
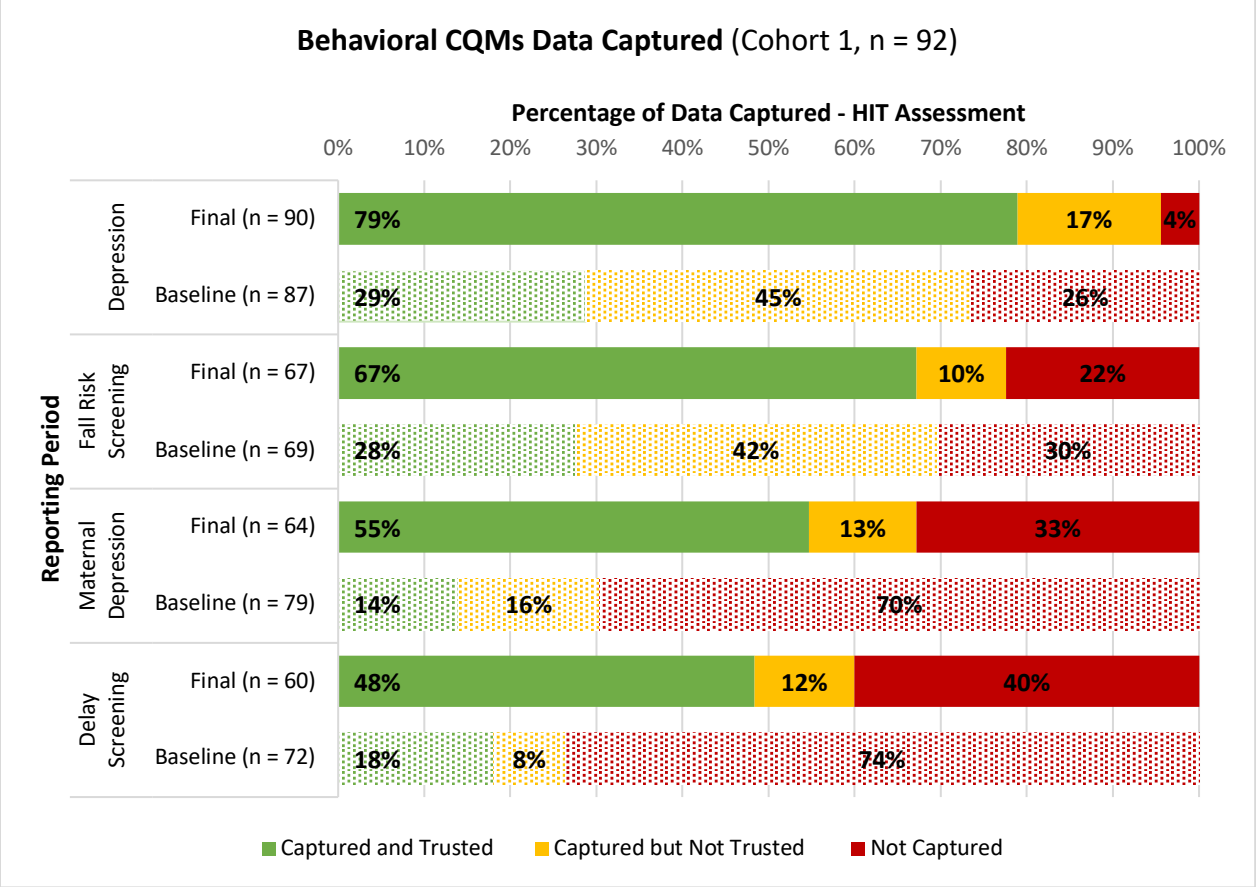


**Figure 26. Cohort 1 Behavioral CQMs**




Data quality improved across all physical and behavioral CQMs in cohort 1. For example, the Depression Screening CQM rose from 29% "Captured and Trusted" at baseline to 79% "Captured and trusted" at the final assessment.

**Figure 27. Cohort 2 Physical CQMs**

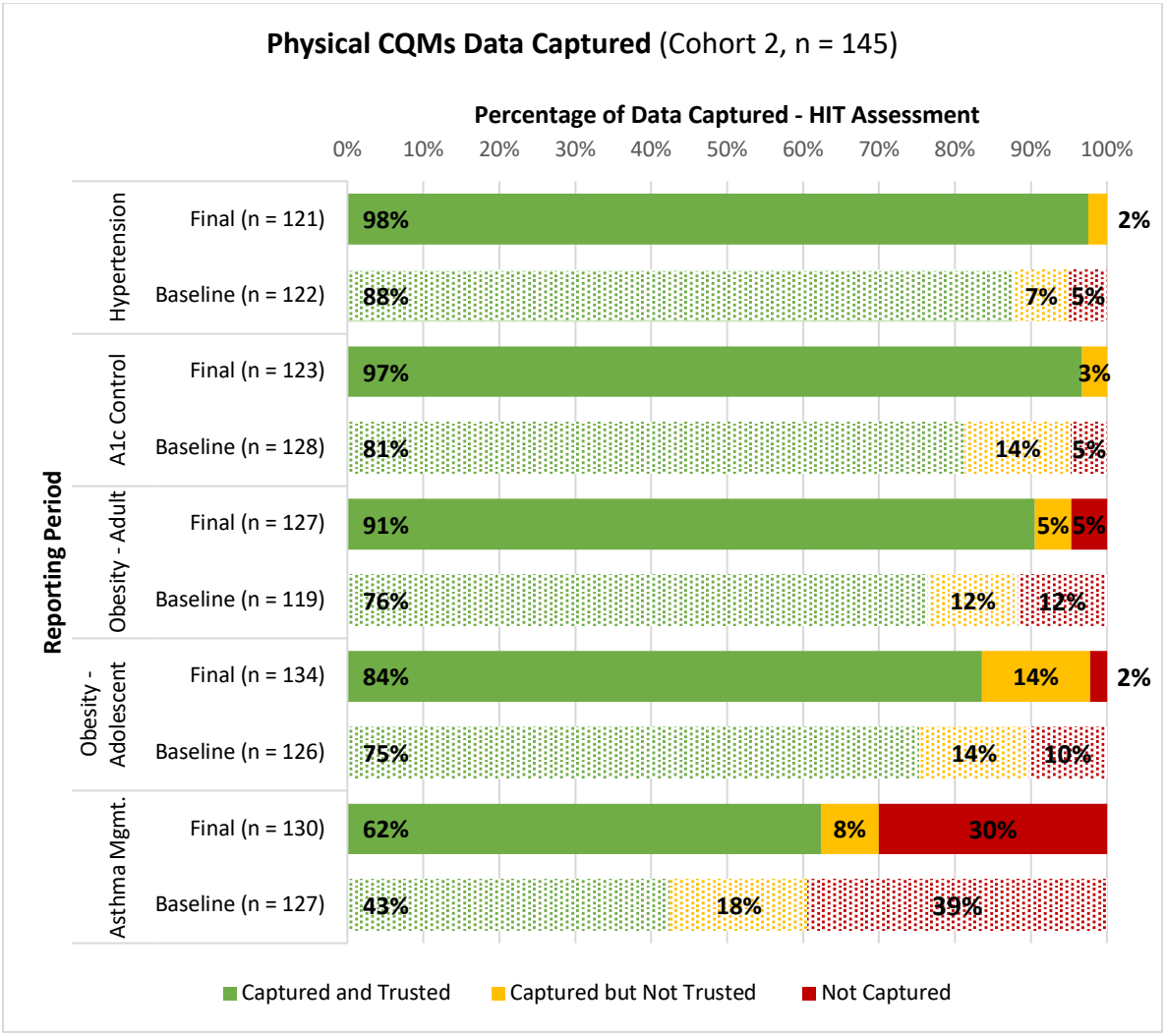
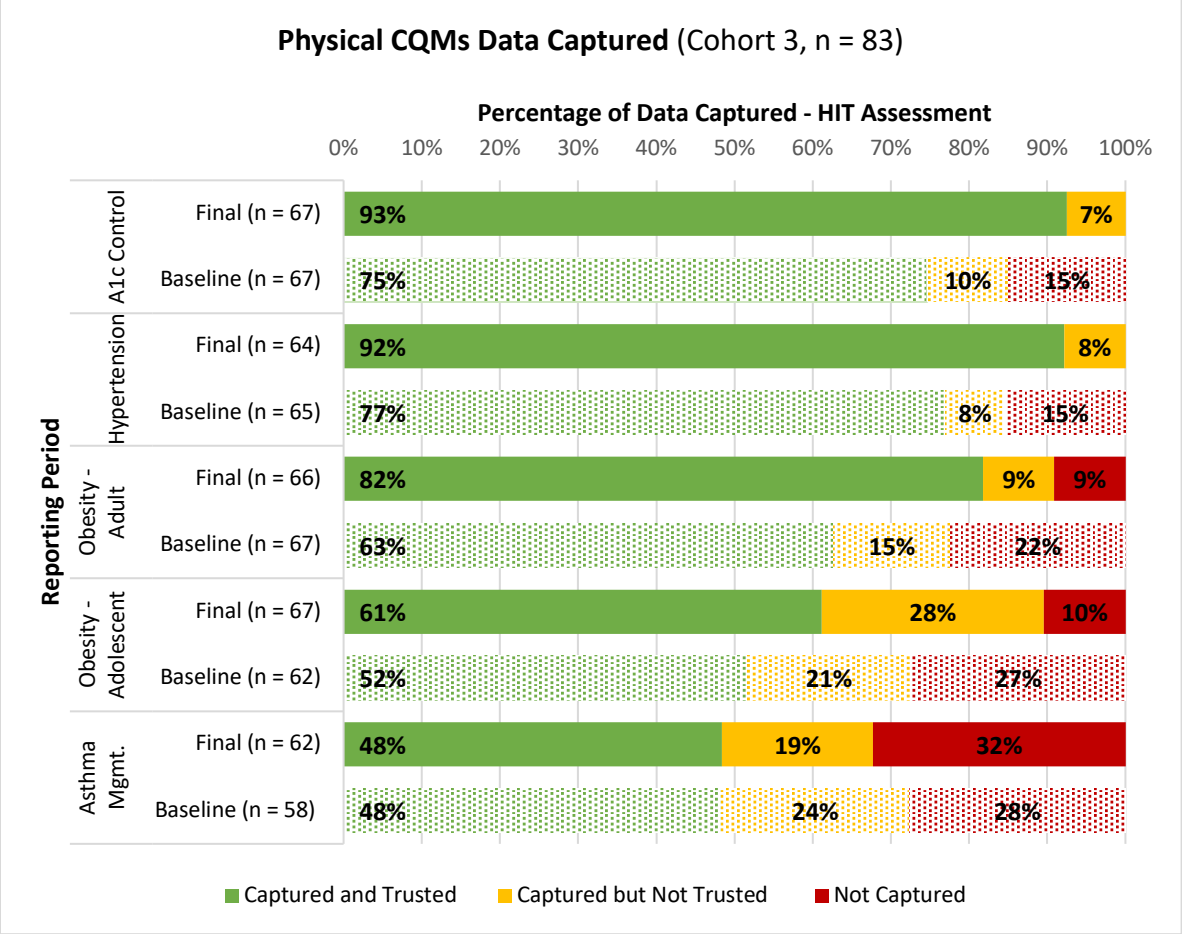


**Figure 28. Cohort 3 Physical CQMs**




Cohorts 2 and 3 reported generally higher data quality baseline scores—particularly physical CQMS—as compared to cohort 1, and these cohorts saw more moderate gains over the course of SIM participation. The sole exception was cohort 3's Asthma Management CQM, which remained static at 48% of practice sites reporting it captured and trusted. This plateau is likely a result of practices sites rating their data too generously on the baseline assessment and then overcorrecting at the second reporting period. In other words, the practice sites developed a deeper understanding of the CQM; they were not necessarily doing less before.

**Figure 29. Cohort 2 Behavioral CQMs**

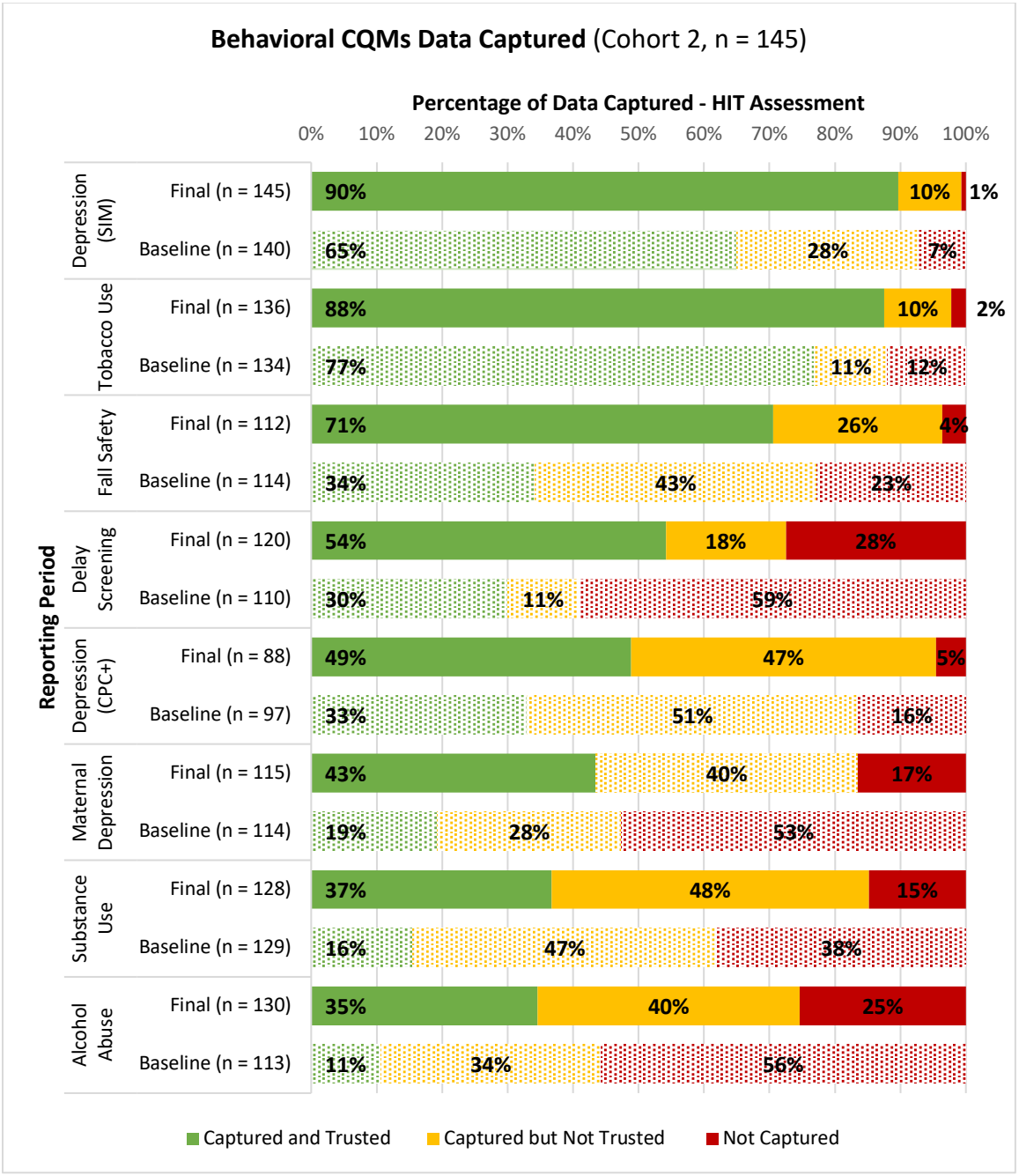
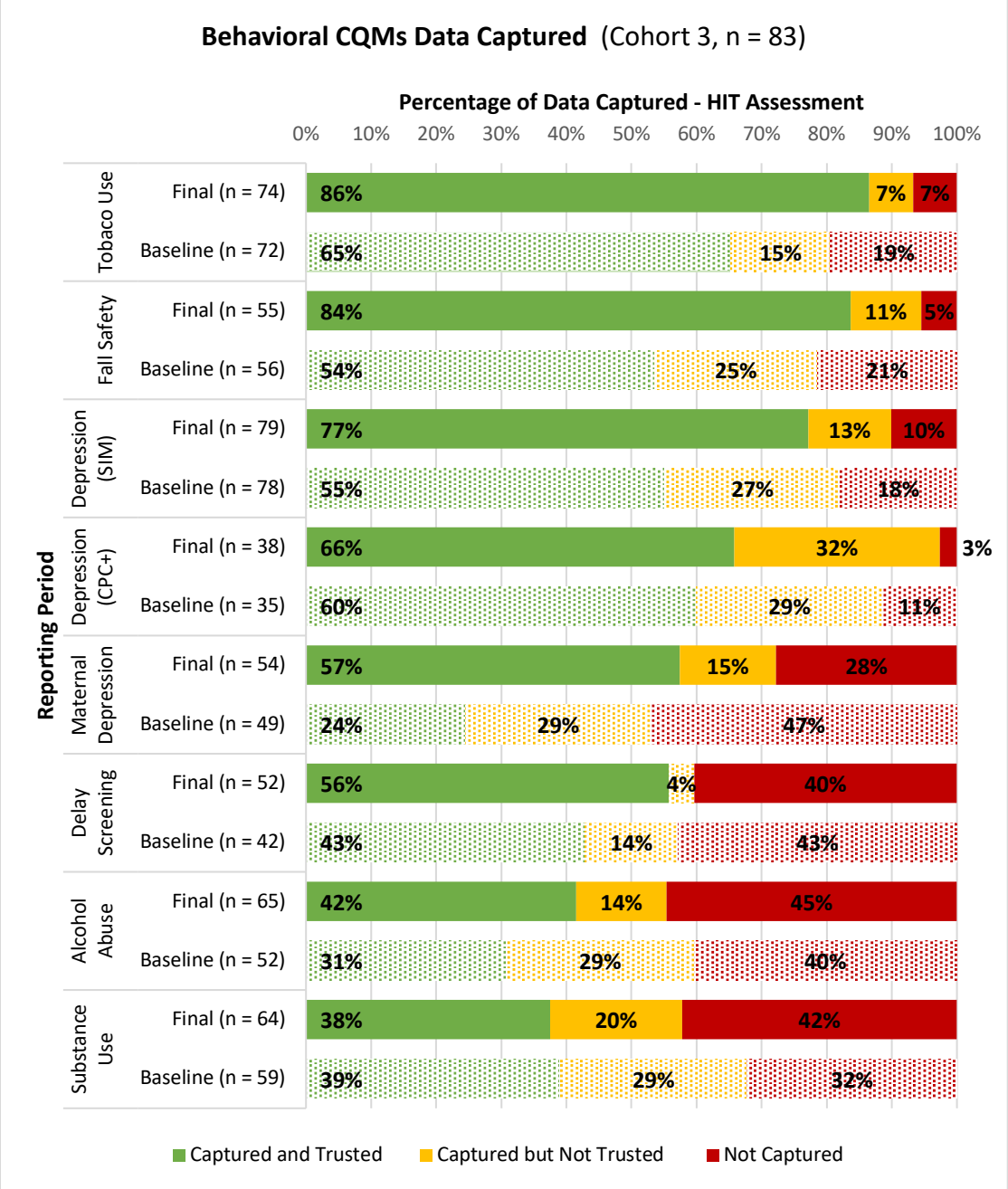


**Figure 30. Cohort 3 Behavioral CQMs**




Cohorts 2 and 3 saw less progress across behavioral CQM data quality over the course of SIM participation. This result aligns with feedback from other SPLIT assessments and interviews: behavioral healthcare—particularly around alcohol or other substance use conditions—faces additional challenges around stigma and privacy concerns.

**HT1.1. To what extent were SPLIT and SIM (short-term) CQM reporting mechanisms developed as planned? Implemented?**

During all three years of key informant interviews (2016, 2018, and 2019), we asked stakeholders, PFs, CHITAs, and HIT Workgroup co-chairs about the SPLIT tool. Responses were mixed regarding the extent the Shared Practice Learning and Improvement Tool (SPLIT) was developed and implemented by the University of Colorado Department of Family Medicine (UCDFM). Some PFs and CHITAs agreed that the tool was implemented as planned, that the tool was beneficial, and that practice sites found value in it.

However, several PFs and CHITAs who supported cohort 1 practice sites struggled with SPLIT and reported that it had a reputation for being "unreliable." Specifically, these respondents cited issues with logins, failure to be user-friendly, and a troubled rollout that resulted in fixes that frustrated users. One cohort 1 PF said that practice sites see the tool as "more of a frustration than a benefit." Another reported that a practice site did not use the tool because technical incompatibility issues with the EHR made the tool inaccessible. At least four key informants were concerned that the practice sites in cohort 1 went through the trial and error of implementing a new system and the system never worked well. Initial rollout difficulties may have left some sites divested and seeing little benefit or value in the tool.

Because cohort 2 practice sites only worked with the SPLIT version 2.0, PFs and CHITAS who supported them reported fewer negative views and more buy-in of the tool. One key informant pointed out that the CQM reporting, currently residing in the SPLIT, is vital but still has a long way to go. This was underscored by several open-ended comments in the HIT assessment, which showed that while practice sites appreciated the SPLIT utility, they contended that reporting and assessment requirements were unnecessarily duplicative across instruments. Although that reported frustration may have been rooted in redundancies across the assessments rather than in SPLIT itself, some practice sites appeared to conflate the two.

Practice sites also recognized that payers need CQM reporting to support value-based payment models and that effective reporting tools are critical. Many sites were optimistic that the new eCQM solution would be that mechanism and would report directly to SPLIT, alleviating some of the early reporting frustrations.

Several key informants stated that practice sites can see the importance, functionality, and purpose of the SPLIT because it provides a baseline and shows progress across practice sites throughout the state. Some sites are interested in obtaining this information; they are interested in comparing their performance to their peers' performances. Several sites view accessing this information across practice sites as a key element of what should be sustained beyond SIM.

In addition to the concerns noted above, in Spring 2019 a SIM partner identified and corrected a coding error that afflicted a limited set of SPLIT data. This error impacted the baseline HIT assessment for cohort 1. Other cohorts, assessments, and assessment periods were not reported to be impacted. As a result, some figures in this report may differ from prior evaluation reports. Data and analyses included here should be considered superseding.

## Data and HIT Challenges

**HT1.2. What challenges (if any) were encountered?**

### From the Practice Perspective

Challenges to improving data quality were common and relatively unchanging across reporting periods and cohorts. On the HIT assessment, practice sites most often remarked that new workflows around data collection and reporting were difficult to implement either because of inherent software/technological issues or difficulties with staff training. Less frequently, practice sites reported that the data work was duplicative and a drain on provider and practice resources.

In addition to our analysis on the practice characteristics previously considered (type, size, location, and volume of underserved patients), we ran analyses to determine whether there were differences in private solo/group practices as opposed to system-owned practices using information collected during key informant interviews and reviews of HIT assessment open-ended questions. The hypothesis was that if, as informants and assessment respondents reported, data and technology work were resource-intensive, having access to additional support and expertise could result in greater growth or achievement over SIM participation. However, there were not meaningful differences in HIT progress nor ultimate achievement found across practice site characteristics ($p>.05$).

The HIT assessment asked practice sites to rank 13 different barriers to improving data quality from most to least pressing. The following tables contain these rankings. Table 15 below is an aggregate of responses from multiple data points: the final HIT assessment for cohort 1, the baseline and final assessments for cohort 2, and the baseline and final assessments for cohort 3. Below that, Table 16–Table 18 contain breakouts by cohort and reporting period. Most to least pressing was calculated by weighting responses and ordering by points.

**Table 15. Data Quality Barriers in all Cohorts**

| HIT/Data Quality Barriers – All Primary Care Practices | |
|---|---|
| **Barrier – Most to Least Pressing** | **Rank** |
| Accessing Cost and Utilization Data | 1 |
| Optimizing EHR Documentation Workflows | 2 |
| Building and Using Registries to Manage Patient Groups | 3 |
| Coordinating Patient Care with Other Subspecialties | 4 |
| Risk Stratifying Patients | 5 |
| Building and Validating New eCQMs | 6 |
| Using Cost and Quality Data to Inform Payer Contracts | 7 |
| IT Support for Internal Business Planning and Clinic Operations | 8 |
| Acquiring and Using Telehealth Technology | 9 |
| Managing EHR Vendor Problems | 10 |
| Reporting CQMs to Outside Entities | 11 |
| Connecting to an HIE | 12 |
| Other | 13 |

The listing of barriers in aggregate shows that practices have the most difficulty with accessing cost and utilization data, optimizing EHR documentation workflows, building and using registries to manage patient groups, coordinating care with other subspecialties, and risk-stratifying patients.

The cohort breakout tables below contain the barriers in a different order than the aggregated table above. We include these to illustrate the shifting barriers the cohorts encountered, and we order them from most to least pressing as calculated from the baseline assessment. Cells in the table are shaded to signal difference from the aggregate averages above: orange denotes a more pressing barrier than the aggregate average, and green denotes a less pressing barrier. No shading indicates the barrier is ranked the same as in the aggregate average.

**Table 16. Cohort 1 Data Quality Barriers**

| HIT/Data Quality Barriers – Cohort 1 (n = 92) | Rank | |
|---|---|---|
| **Barrier – Most to Least Pressing** | **Baseline[49]** | **Final** |
| Accessing Cost and Utilization Data | - | 1 |
| Optimizing EHR Documentation Workflows | - | 2 |
| Building and Validating New eCQMs | - | 3 |
| Building and Using Registries to Manage Patient Groups | - | 4 |

[49] Item did not appear on cohort 1's baseline assessment.

| HIT/Data Quality Barriers – Cohort 1 (n = 92) | Rank | |
|---|---|---|
| **Barrier – Most to Least Pressing** | **Baseline[49]** | **Final** |
| Coordinating Patient Care with Other Subspecialties | - | 5 |
| Acquiring and Using Telehealth Technology | - | 6 |
| Risk Stratifying Patients | - | 7 |
| IT Support for Internal Business Planning and Clinic Operations | - | 8 |
| Managing EHR Vendor Problems | - | 9 |
| Using Cost and Quality Data to Inform Payer Contracts | - | 10 |
| Reporting CQMs to Outside Entities | - | 11 |
| Connecting to an HIE | - | 12 |
| Other | - | 13 |

**Table 17. Cohort 2 Data Quality Barriers**

| HIT/Data Quality Barriers – Cohort 2 (n = 145) | Rank | |
|---|---|---|
| **Barrier – Most to Least Pressing** | **Baseline** | **Final** |
| Optimizing EHR Documentation Workflows | 1 | 2 |
| Accessing Cost and Utilization Data | 2 | 1 |
| Risk Stratifying Patients | 3 | 5 |
| Coordinating Patient Care with Other Subspecialties | 4 | 4 |
| Building and Using Registries to Manage Patient Groups | 5 | 3 |
| Using Cost and Quality Data to Inform Payer Contracts | 6 | 6 |
| Building and Validating New eCQMs | 7 | 8 |
| Acquiring and Using Telehealth Technology | 8 | 9 |
| Managing EHR Vendor Problems | 9 | 10 |
| IT Support for Internal Business Planning and Clinic Operations | 10 | 7 |
| Reporting CQMs to Outside Entities | 11 | 11 |
| Connecting to an HIE | 12 | 12 |
| Other | 13 | 13 |

**Table 18. Cohort 3 Data Quality Barriers**

| HIT/Data Quality Barriers – Cohort 3 (n = 83) | Rank | |
|---|---|---|
| **Barrier – Most to Least Pressing** | **Baseline** | **Final** |
| Building and Using Registries to Manage Patient Groups | 1 | 3 |
| Building and Validating New eCQMs | 2 | 6 |

| HIT/Data Quality Barriers – Cohort 3 (n = 83) | Rank | |
|---|---|---|
| **Barrier – Most to Least Pressing** | **Baseline** | **Final** |
| Accessing Cost and Utilization Data | 3 | 2 |
| Optimizing EHR Documentation Workflows | 4 | 1 |
| Coordinating Patient Care with Other Subspecialties | 5 | 4 |
| Risk Stratifying Patients | 6 | 5 |
| Reporting CQMs to Outside Entities | 7 | 10 |
| IT Support for Internal Business Planning and Clinic Operations | 8 | 7 |
| Using Cost and Quality Data to Inform Payer Contracts | 9 | 9 |
| Managing EHR Vendor Problems | 10 | 8 |
| Acquiring and Using Telehealth Technology | 11 | 11 |
| Connecting to an HIE | 12 | 12 |
| Other | 13 | 13 |

## From the Small Grant Recipient Perspective

Those practice sites that received small grants for technology solutions and technology upgrades identified several challenges. In cohort 1, these challenges included technical issues requiring vendor support, compatibility issues of new software or applications with current EHRs, the amount of time required to change processes to support new technology and tools, and maintaining staff and provider engagement in the work—particularly when it was delayed.

In Cohort 2, 4 of the 15 (26%) small grant recipients identified challenges in changing workflows, working with EHR vendors, competing priorities and projects, delays in implementation from outside vendors, staff turnover, and the pace at which culture change occurred.

In Cohort 3, 5 of the 11 (45%) recipients found challenges in integrating new technology to existing EHRs, training staff on a new technologies and recognizing the learning curve, how to accommodate delays in workflows while staff became proficient, and the challenge of working with EHR vendors while "waiting until they finished with other clients or projects before they are available."

## From the PF and CHITA Perspective

We interviewed 37 PFs and CHITAs and asked a two-part question regarding challenges: what barriers their practice sites have encountered in the EHR improvement process and whether the *return on investment* was sufficient.

The question was open-ended and did not include a defined rating scale. However, three major themes stood out. Of the 32 responses, 24 (75%) cited cost as a barrier, 18 (56%) mentioned lack of vendor responsiveness or poor customer service, and 14 (44%) mentioned EHR functionality or limitations. Overall, the general opinion was that EHR improvements are costly and may or may not result in overall improvements. Additionally, respondents noted that investment in EHRs does not always guarantee improved functionality and can sometimes result in additional and unexpected costs far beyond the initial improvement.

PFs and CHITAs reported high costs associated with paying either the vendor or a third-party developer for reports, dashboards, and the development and validation of new or existing CQMs. Three PFs spoke of EHR vendors requiring the purchase of an analytics module or additional functionality in order to extract CQMs. One PF said, "Some EHRs really try to avoid any third-party analytics, so they block their data or require additional purchases." The second barrier, a lack of vendor responsiveness, results from limited availability or limited interest in assisting in validating CQMs and delays in returning phone calls or responding to support service requests placed by practice sites.

PFs and CHITAs further reported that some practice sites went through two to three tools in order to get the improvement and function they required. Citing what has "been a costly and rocky road," a clinic in Boulder County found out that its current EHR is no longer ONC-certified.[50] The clinic decided to replace the EHR with one that has greater functionally rather than to continue "cobbling together a bundle of various integrations of applications and tools."

Other barriers reported by at least one PF or CHITA were (1) scheduled upgrades causing a loss of customized templates and reports, (2) EHR vendors not catching up to the innovation of integrated care (thus their systems have yet to be developed to support successful integrated care workflows, processes, and reporting), and (3) the lack of vendor support or interest in CQM validation affecting workflows and culture in a divisive way ("If there's not good data, why bother?").

As vendors move towards a model of either limiting CQM development (without additional costs to the practice sites) or choosing not to support certain CQMs at all, practices are forced to invest in third-party solutions or go without. One of these solutions, Azara, is a centralized tool, and is viewed as a worthwhile investment having responsive support service. One PF said, "[the site] trust[s] AZARA more and think[s] it gives better data."

[50] The Office of the National Coordinator (ONC) for Health Information Technology is a division of the Department of Health and Human Services. ONC offers a certification program for third-party HIT conformity.

PRIME Registry is another tool that appears to be worth the investment. It is a specialty outpatient quality registry, using data from the EHR to map to a set of quality measures that are presented on a dashboard for clinicians and managers to view and track measure performance data.

> *"[H]aving Prime has been a big thing for a big chunk of the clinics…. SIM played a critical role in getting…that. They were the ones able to advocate for the collective whole and were able to get them [Prime vendor] to be more responsive."*
> [PF/CHITA from HealthTeamWorks]

One PF stated that the eCQM tool could be the solution to this lack of vendor data validation and looked forward to full implementation in the near future.

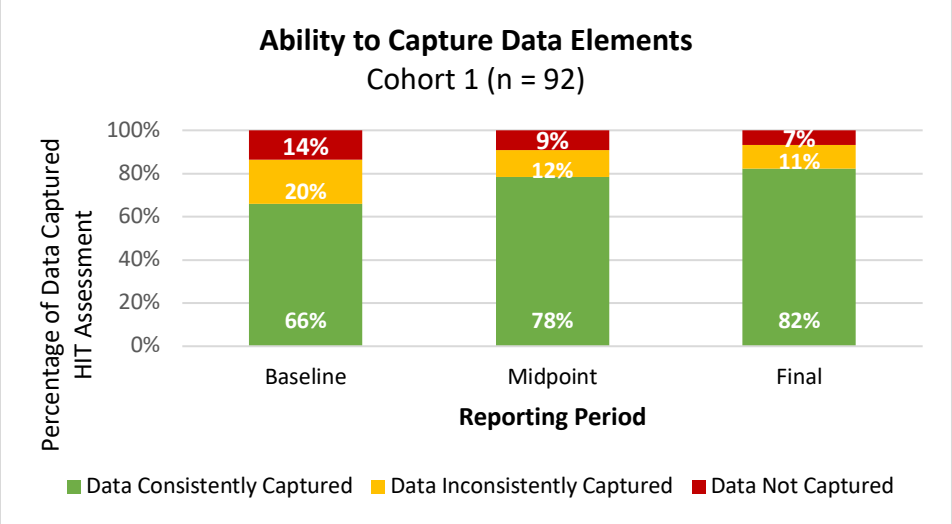
## Improvement in Data Capture and Data Quality

Additional progress towards improved data quality can be measured by data elements. These elements are smaller pieces of data that were necessary to address the conditions included in the SIM core measure (CQM) set. For instance, data elements of a patient's height, weight, and date of birth must be captured to get the adult obesity screening measure.

**HT1.3. To what extent is data quality improving (data capture and CQM reporting)?**

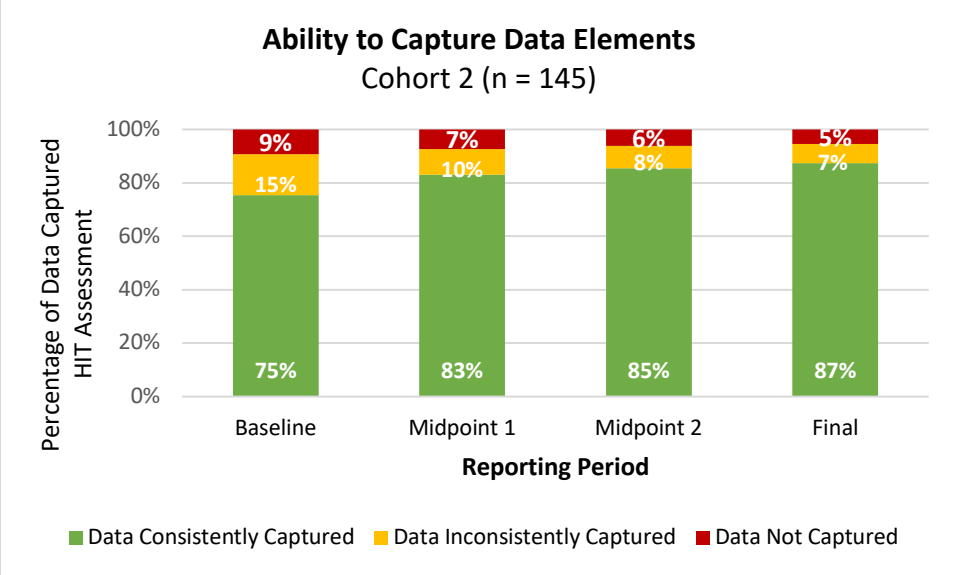
The HIT assessment asked practices to report their data quality for each listed data element. Similar to data quality reporting for CQMs, practices rated each element either "green," indicating the data were consistently captured; "yellow," indicating the data were inconsistently captured; or "red," indicating the data were not captured. Unlike the CQMs, there were no options for "black" or "blue" data: practices were generally expected to be able to report on these items, which may be considered foundational. Figure 31, Figure 32, and Figure 33 below include the cohort-wide aggregation of data element quality. Further breakouts and discussion of specific data elements follow.

**Figure 31. Cohort 1 Data Elements**




Cohort 1 practice sites reported 66% of their data elements were captured and trusted on the baseline assessment, with 20% inconsistently captured and 14% not captured. At the final assessment, 82% of data elements were captured consistently, with inconsistently captured data decreasing to 11% and not-captured data dropping to 7%. The improvement was largest between the baseline and midpoint assessments as "green" data elements increased by 12 percentage points. The improvement between midpoint and final "green" data was four percentage points.

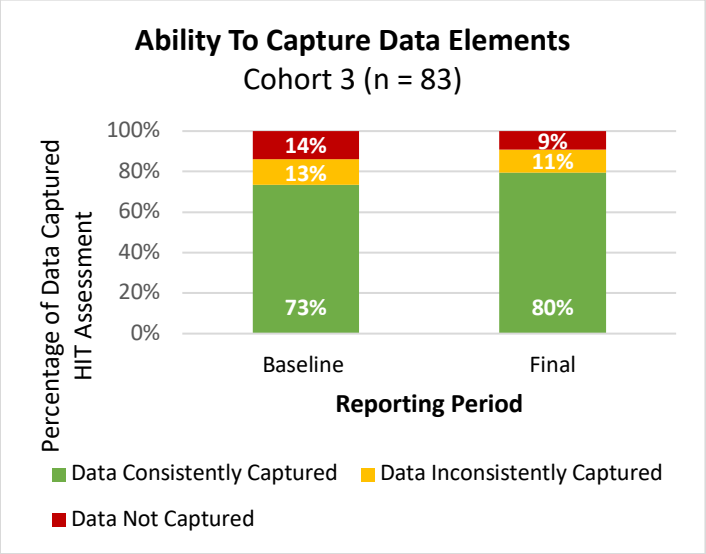
**Figure 32. Cohort 2 Data Elements**




Cohort 2 reported a somewhat higher baseline that cohort 1 reported, with 75% of its data elements consistently captured, 15% inconsistently captured, and 9% not captured. Here, too,

the most significant improvement occurred between the baseline and second assessment periods: “green” data increased eight percentage points to 83%; “yellow” data decreased five percentage points to 10%, and “red” data decreased two percentage points to 5%. More modest improvements of 1–2 percentage points were seen between midpoint 1 and midpoint 2. On their final assessment, cohort 2 practice sites reported 87% of data elements were captured consistently and 7% inconsistently; 5% were not captured.

**Figure 33. Cohort 3 Data Elements**




Cohort 3’s baseline assessment was slightly lower than cohort 2’s but still considerably higher than cohort 1’s: 73% of cohort 3’s data elements were consistently captured, 13% were inconsistently captured, and 14% were not captured. Cohort 3 did not participate in SIM long enough to have a midpoint assessment. On its final assessment, “green” data increased seven percentage points to 80%, whereas “yellow” data dropped two percentage points to 11%, and “red” data fell five percentage points to 9%. It is likely that cohorts 2’s and cohort 3’s higher baselines are at least partly a result of the reduced learning curve and increased insight from cohort 1’s beginnings.

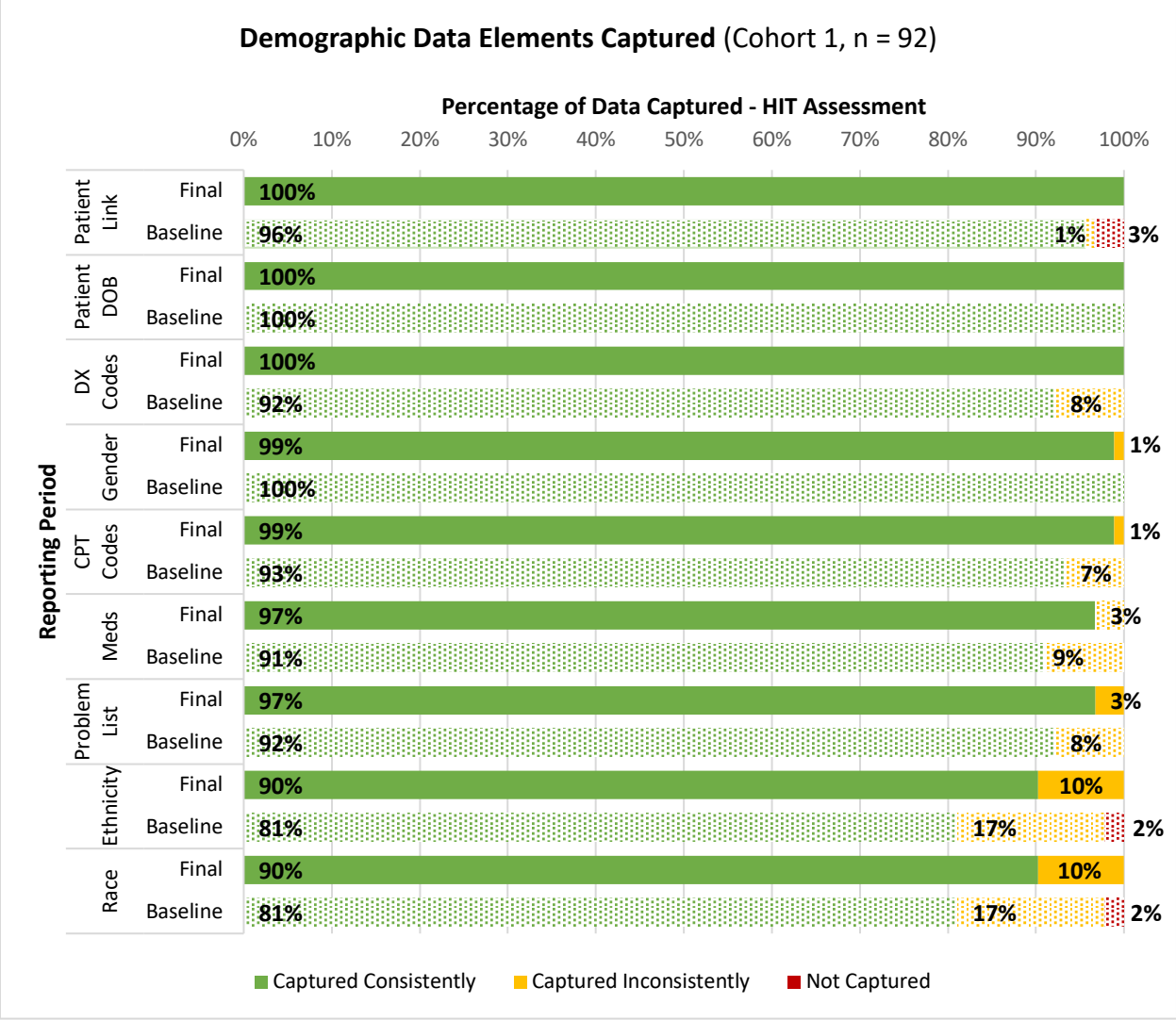
Practice-assessed quality of data elements improved substantially in aggregate, but—as with the CQMs discussed previously—progress was more fragmented at the individual-data-element level. To demonstrate this distinction, we have divided the data elements into three categories: “demographic,” “physical,” and “behavioral.” These categories, too, appeared naturally in the data and were adapted to more clearly present results.

**Table 19. Data Elements (DE) Breakouts**

| Demographic DEs | Physical DEs | Behavioral DEs |
|---|---|---|
| ■ CPT Codes<br>■ Diagnosis Codes<br>■ Ethnicity<br>■ Gender<br>■ Medications<br>■ Patient Date of Birth<br>■ Patient Link Number<br>■ Problem List<br>■ Race | ■ Blood Pressure<br>■ BMI – Adults<br>■ BMI – Children<br>■ Colon Cancer Screen<br>■ Height<br>■ Hemoglobin A1c Control<br>■ Immunizations<br>■ Mammogram<br>■ Weights | ■ Alcohol Treatment<br>■ Depression Screen<br>■ Depression Follow-Up<br>■ Developmental Delay Screen<br>■ Fall Risk Screen<br>■ Maternal Depression<br>■ Substance Use<br>■ Substance Use Follow-Up |

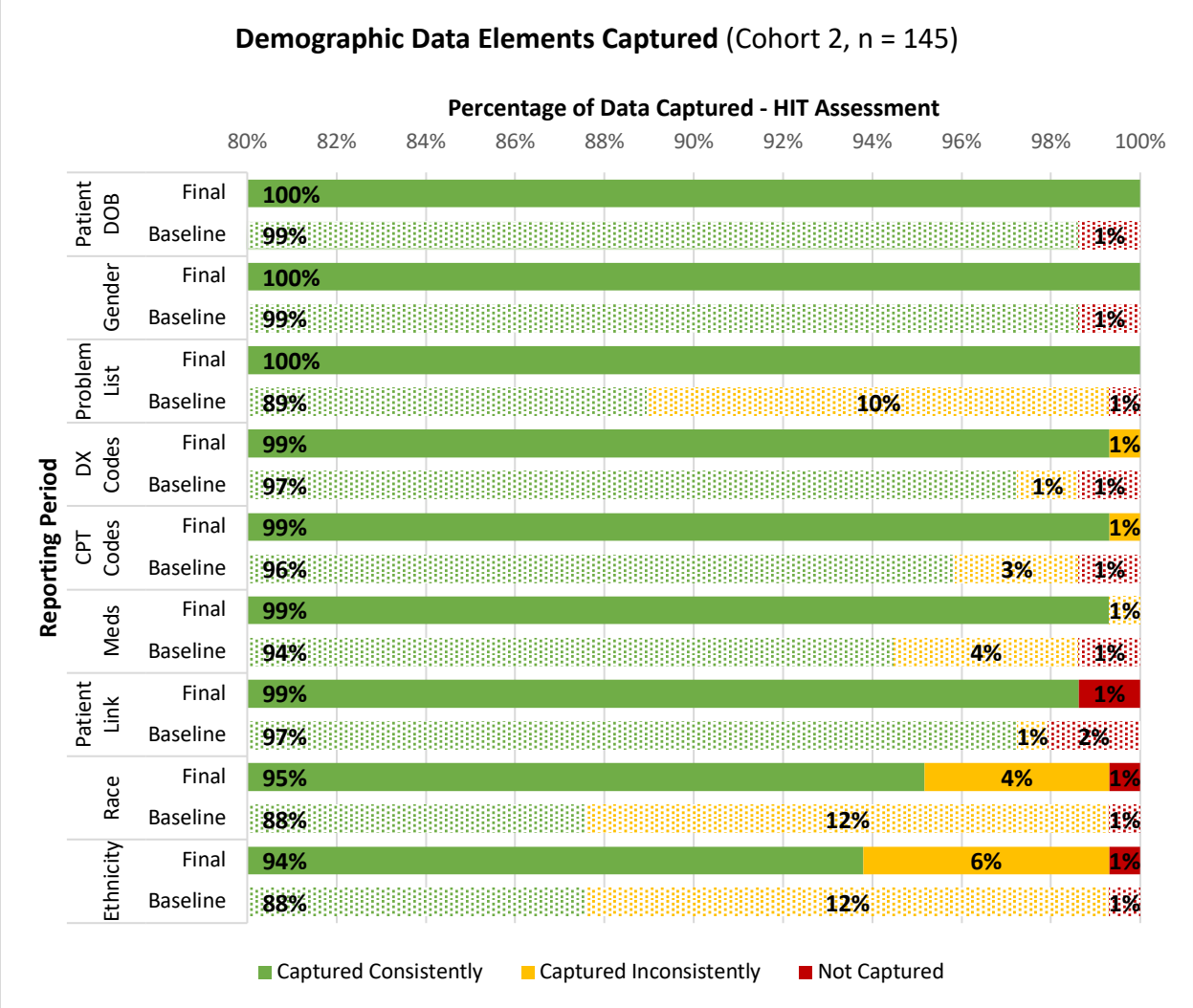
Demographic data elements include information such as the patient link number associated with the practice site's HIE as well as the patient's date of birth, gender, race, medications, and problem list. Demographic data elements are generally reported to be the most consistently captured. Per interviews with key informants and self-reported responses on the SPLIT assessments, many practice sites identified these pieces of data as offering a straightforward, easily-achievable approach to begin improving their data quality. Several practice sites noted that they had trained and empowered their front office staff to collect this information during scheduling/confirmation calls or face-to-face in the waiting room.

**Figure 34. Cohort 1 Demographic Data Elements**



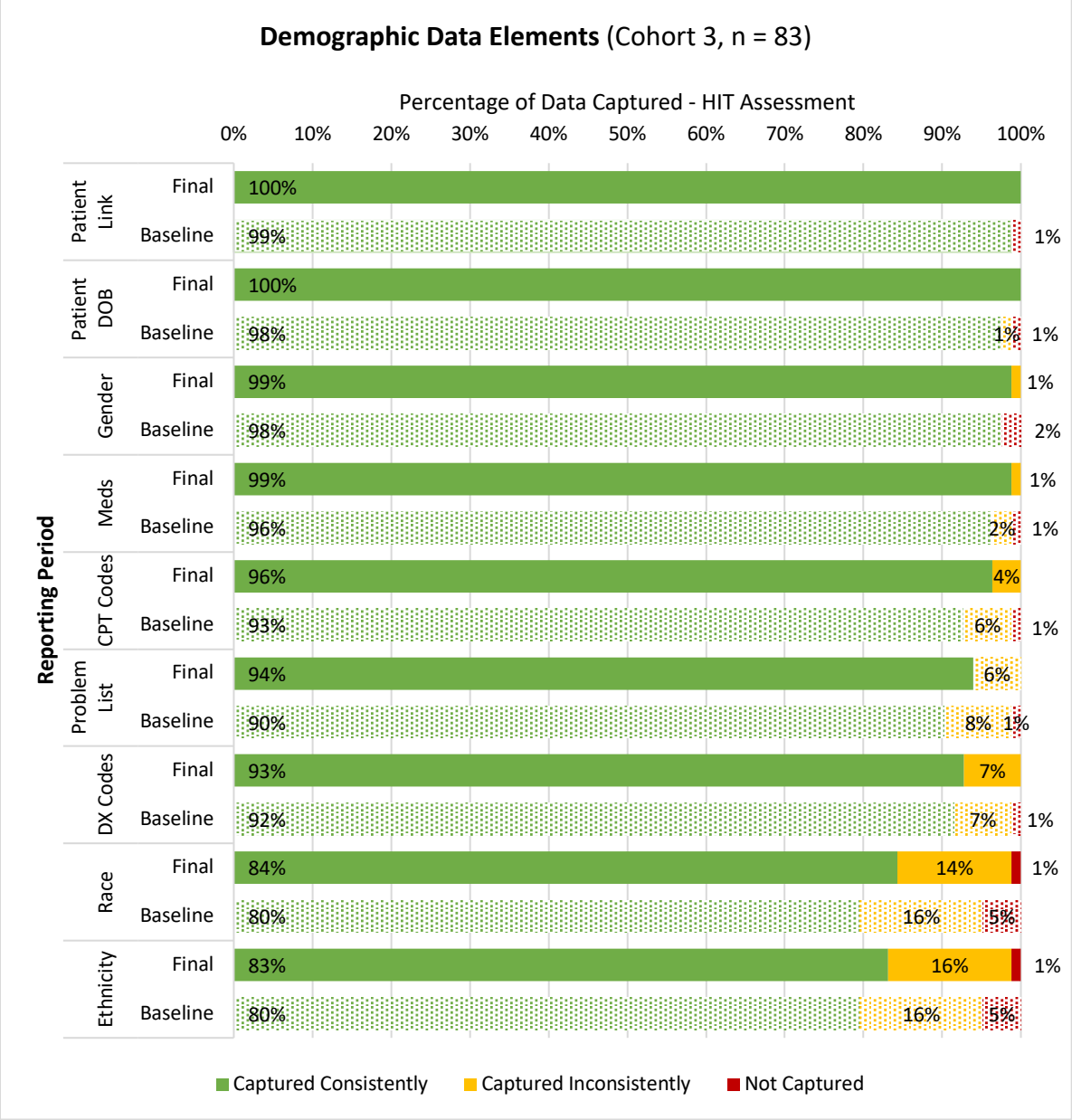

Demographic data element data quality improved substantially over cohort 1's SIM participation. On the final assessment, the lowest "green" score was 90%. Three data elements (patient link, patient date of birth, and diagnostic codes) were reported to be captured consistently 100% of the time, with patient gender and CPT codes captured consistently 99% of the time. The most-improved demographic data elements were patient race and ethnicity, which increased 9% from baseline to final assessment.

**Figure 35. Cohort 2 Demographic Data Elements**



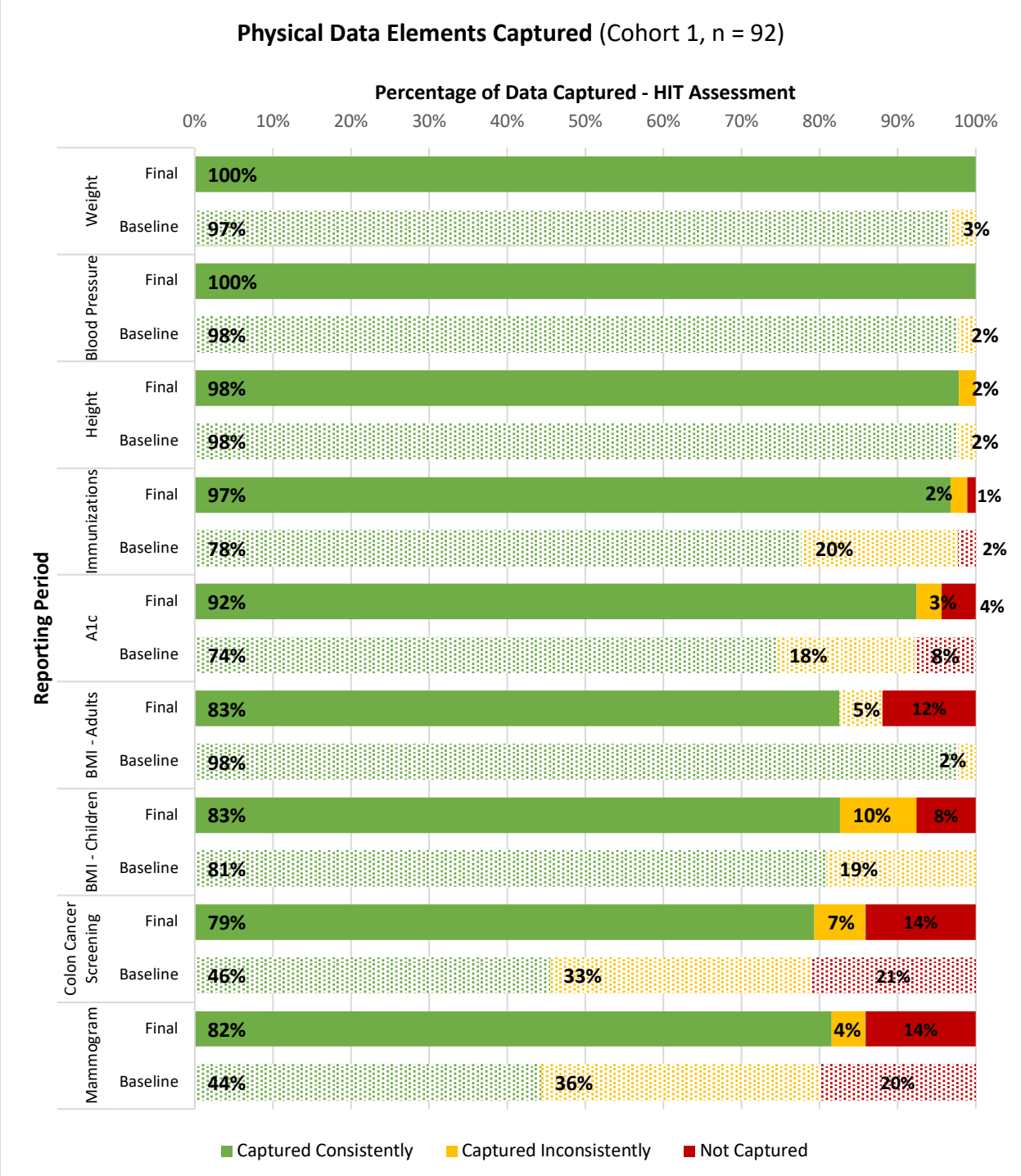

Cohort 2 also reported increased data quality across its demographic data elements. The lowest reported consistently captured data element on the final assessment was patient ethnicity at 94%. 100% of Cohort 2 reported that date of birth, gender, and the patient's problem list were consistently captured.

**Figure 36. Cohort 3 Demographic Data Elements**




On their final assessment, 100% of cohort 3 practice sites similarly reported that patient link and date of birth were captured consistently. Race and ethnicity were the least-consistently reported demographic data elements in the final assessment period, being consistently captured by 84% and 83% of practice sites, respectively.

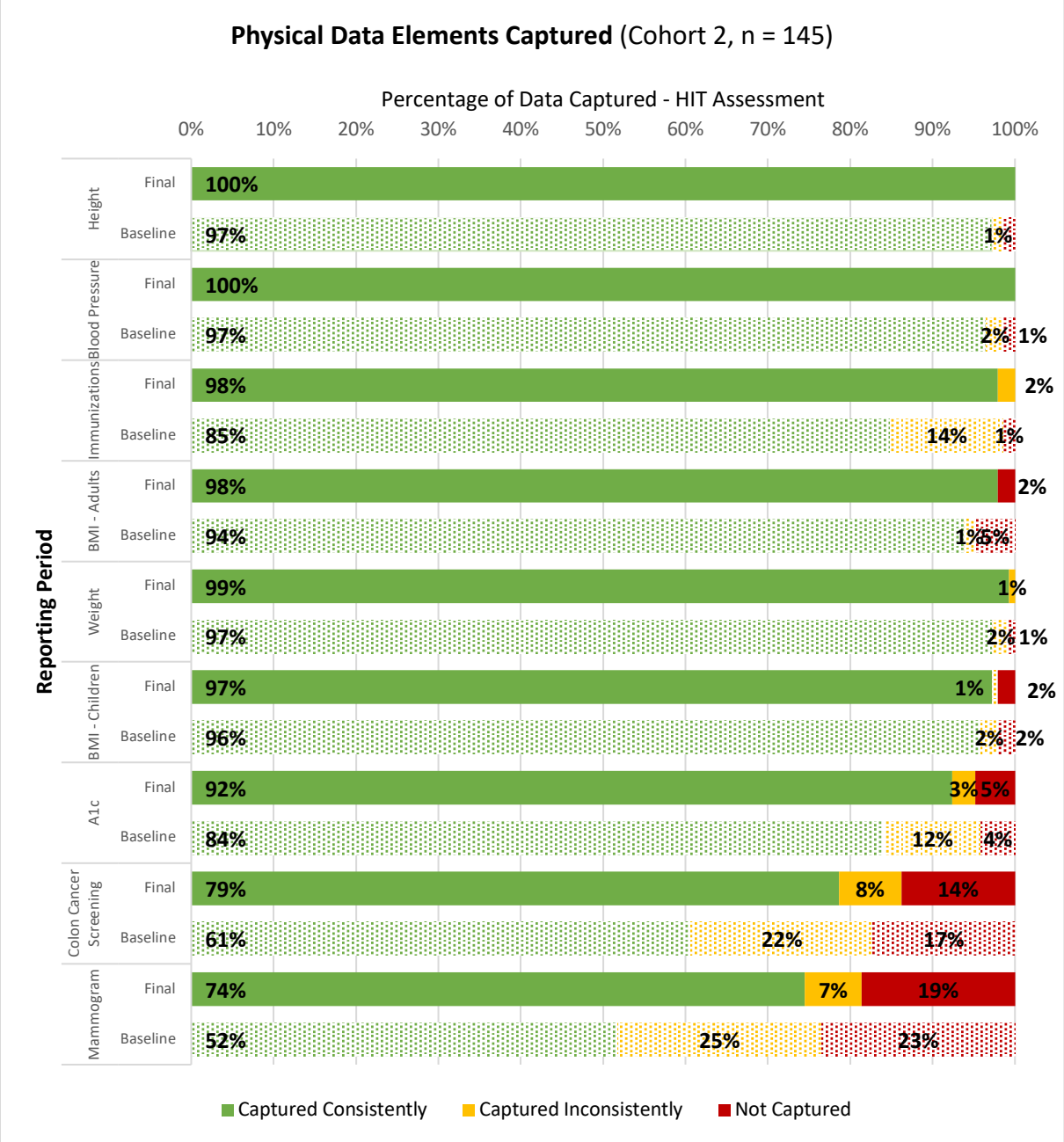
**Figure 37. Cohort 1 Physical Data Elements**




Cohort 1 improved data quality for all physically-oriented data elements except adult body mass index. It is unclear what drove this decrease. However, if considered with the increased capture across other data elements, this variation may be a result of new patients seeking care and skewing denominators. Of note are the large increases in the two cancer screening data

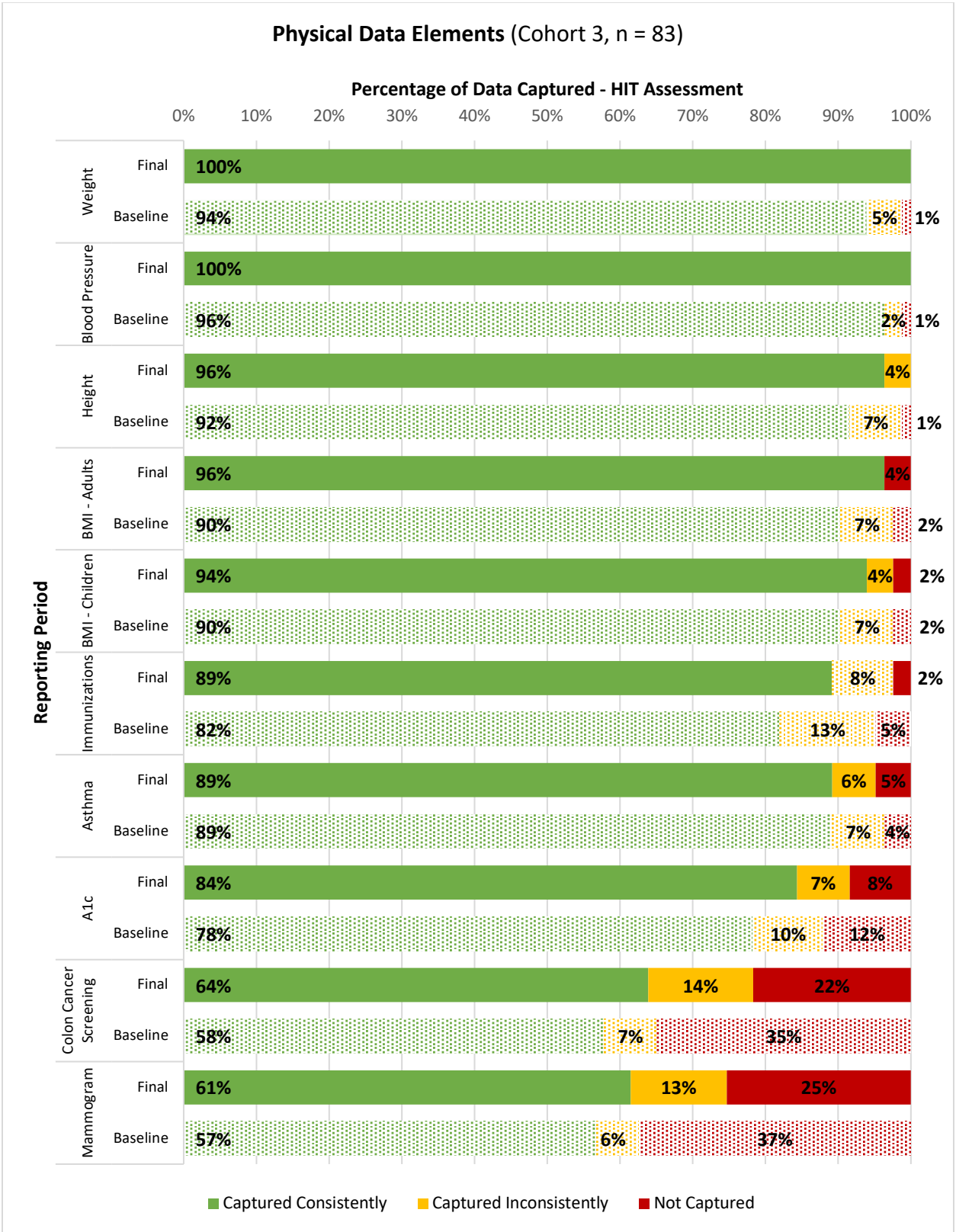
elements of mammograms (from 44% at baseline to 82% at final) and colon cancer screens (46% to 79%).

## Figure 38. Cohort 2 Physical Data Elements



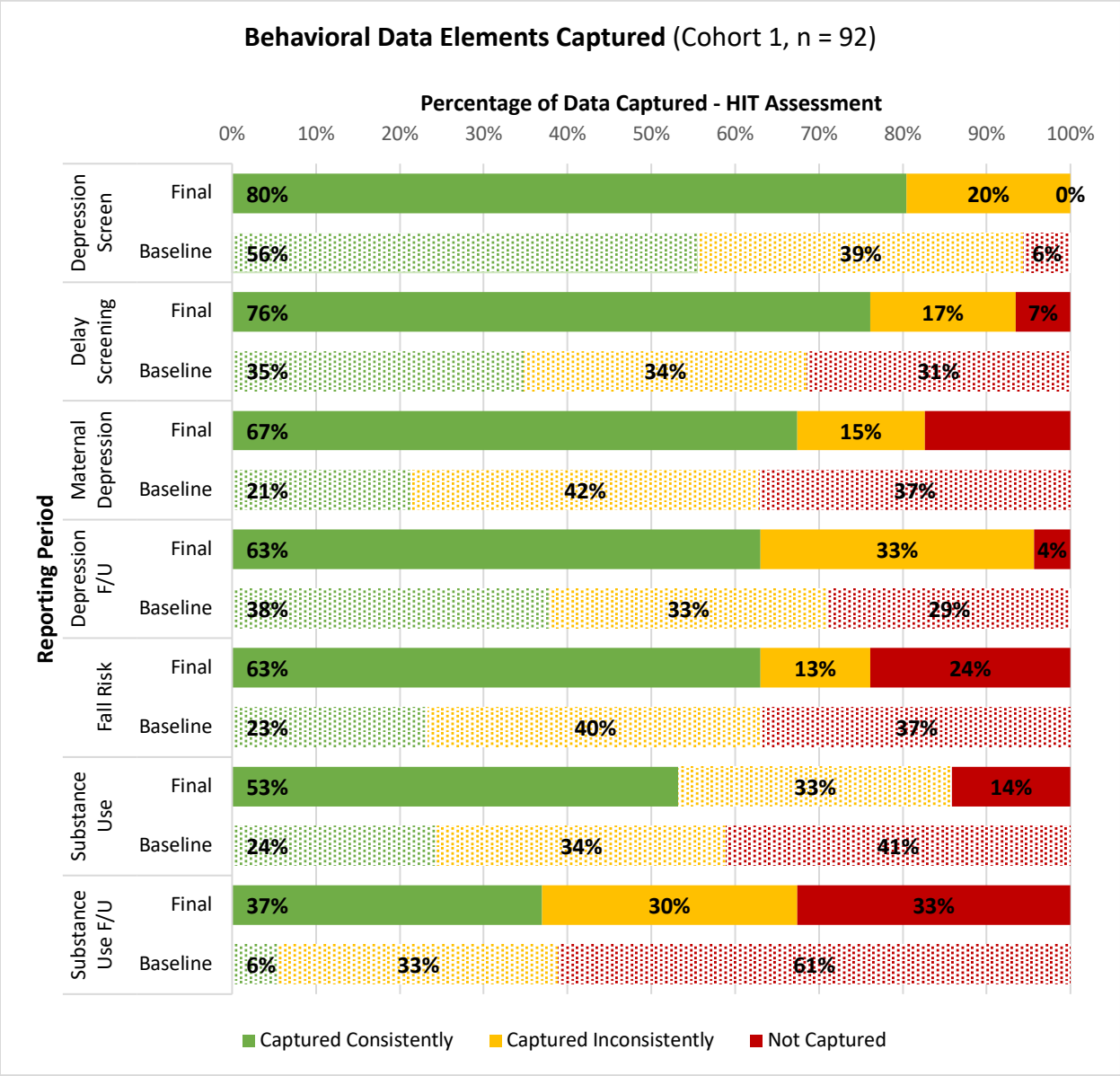

Cohort 2 improved capture of all physical data elements over SIM participation. Like cohort 1, cohort 2 reported the largest gains in cancer screenings: mammogram captures improved from 52% to 74%, and colon cancer screens from 61% to 79%.

**Figure 39. Cohort 3 Physical Data Elements**



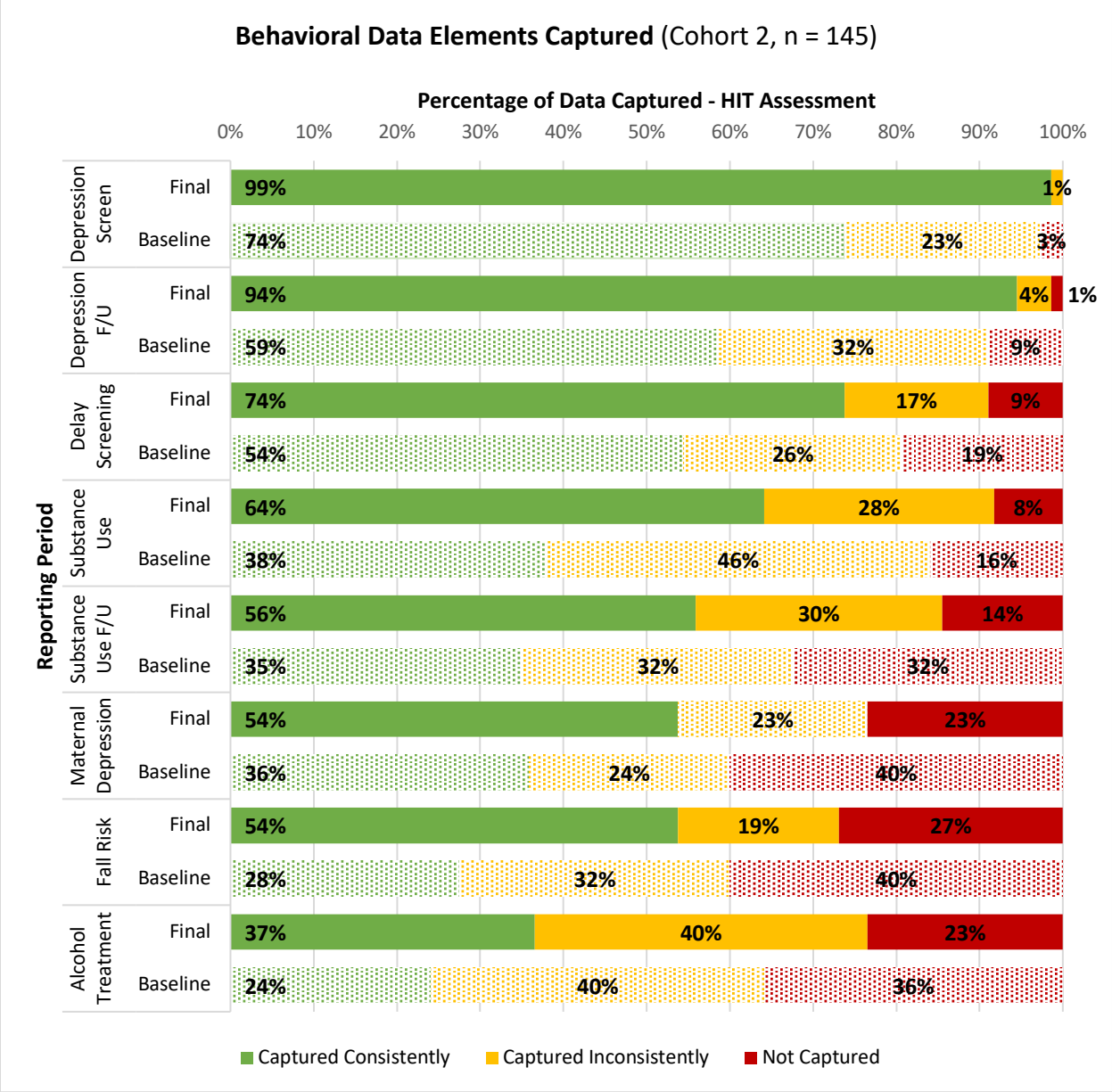
Cohort 3 reported improvement across all physical data elements, though the gains were more modest than were cohorts 1's and 2's, likely reflecting the shorter period of involvement.

**Figure 40. Cohort 1 Behavioral Data Elements**



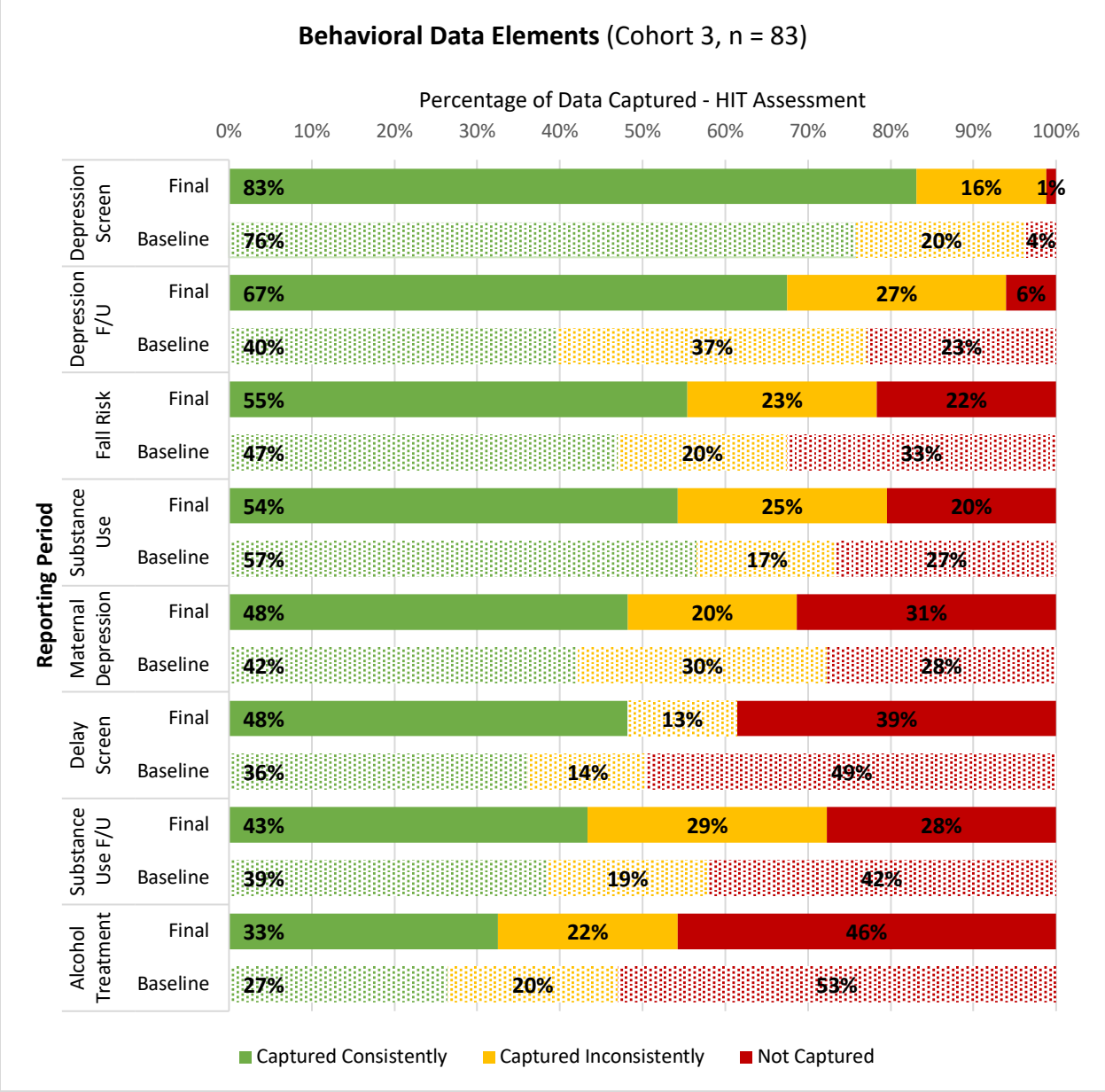

As with the CQMs discussed earlier, behavioral data elements were generally captured less consistently than demographic or physical measures. Cohort 1 improved its consistent capture of behavioral data elements by an average of 34%—the largest behavioral data element percentage-point improvement of the three cohorts.

**Figure 41. Cohort 2 Behavioral Data Elements**




Cohort 2 improved its consistently captured behavioral data elements by an average of 23 percentage points between baseline and final assessment periods. In particular, cohort 2 progressed in capturing depression screenings and follow up: consistently capturing the screens rose from 74% to 99%, and consistently capturing follow up rose from 59% to 94%. These improvements allow practice sites to more effectively target, manage, and treat these populations of patients as sites continue to expand integrated care and combat often-reported stigmas concerning mental and behavioral healthcare.

**Figure 42. Cohort 3 Behavioral Data Elements**




Cohort 3 increased its consistent capture of behavioral data elements by an average of 9 percentage points between baseline and final assessments. The largest single improvement was in the depression follow up data element, rising from 40% to 67%. As with cohort 2, this increase is likely related to practice-prioritized work with these populations.

Although outcomes cannot be directly linked to data element capture rates, these data are foundational to SIM's practice transformation work. Improving consistency across data element supports is necessary for the data-driven change in practice sites, and primary care practices

report they are better positioned to capture and continue this work. We discuss additional analyses of data quality's relationship to SIM goals in the following section.

## HIT Change Over Time

In this section of the evaluation, we analyze improvements in two elements of HIT systems used by practices. In the first, which is related to the ability to report CQMs, we reported the percentage of CQMs that practice sites reported as both captured and trusted. In the second, we report the percentage of data elements that sites captured and trusted. These include elements such as patient date of birth, race, medications list, gender, blood pressure, and certain tests or screening results. All data are based on practice surveys and are therefore self-reported by the practice sites.

For each type of information, we analyze the change over time in the average value reported by practice sites. Our primary interest is in whether that average increased over the two-year SIM participation period, and we report the change from baseline to the final assessment for all practice sites reporting both periods and whether that change is statistically significant.

In addition, we are interested in identifying whether change occurred earlier in the SIM participation or if most of the improvement occurred toward the end. To address this second interest, we compare the baseline-to-midpoint change against the midpoint-to-final change. For this, cohort 1 has a single midpoint measurement. Cohort 2 has two midpoint measurements, and we were able to report change between these midpoints. As with other change over time analysis, we made calculations based on only those practice sites reporting at both the beginning and end of any change.

## Analysis of Ability to Report CQMs

In reporting the percentage of CQMs that were both captured and reported, practice sites included a wide range of values. This variance is visually apparent in the time series graph below, in which each dot is a single practice site's value, with darker dots representing concentrations of practice sites reporting the same value. For each reporting period, multiple sites reported values of both 0% and 100%. On the table that follows, we provide the standard deviation (SD) for each cohort at each assessment period. These take on values that range between 20 and 37 percentage points out of the possible 100 percentage points. For example, baseline cohort 1 practice sites reported an average of 38% of CQMs being captured and trusted, but the typical deviation from that average was 29 percentage points.

Over time and for all cohorts, the variability between practice sites declines only somewhat. A comparison of dots in Assessment Period 1 to the final assessment period makes this visually apparent. The ability to report CQMs was therefore inconsistent between practice sites.

Despite this variability, the average value increased substantially for all cohorts from baseline to final assessment. For cohort 1 practice sites reporting both periods, the average value increased from 38% to 69%. A paired T-test showed this change in the average was statistically significant. Cohort 2, which started with a higher baseline value than did cohort 1, had a 20-percentage-point increase. Cohort 3, which had a shorter time between baseline and final assessment, had a 17-percentage-point increase. Cohort 2 and 3 changes were also statistically significant. We conclude that the ability to capture and report CQMs had meaningfully large and statistically significant increases during participation in SIM for all cohorts.

To analyze whether more change occurred earlier or later in SIM participation, we visually examined the lines connecting the baseline average to each midpoint average and final assessment. Cohort 3 (see Figure 43), represented in orange, had only baseline and final values and may be ignored. Cohorts 1 and 2 both reported for baseline and the first midpoint. As indicated by the dark blue and dark green line segments, the amount of change was larger than in later periods. For cohort 1, which did not report a second midpoint, the lighter green line connects the first midpoint and final assessment, and its slope is flatter (but still upward sloping) than between baseline and first midpoint.

Cohort 2—represented with two lighter blue lines between the midpoint 1, midpoint 2, and final assessment—also had flatter but increasing lines as compared to the initial increase. Based on this visual analysis, it is apparent that for both cohorts, most of the increase in ability to capture and report CQMs occurred earlier in the SIM participation.

**Figure 43. CQM Quality Change Over Time**

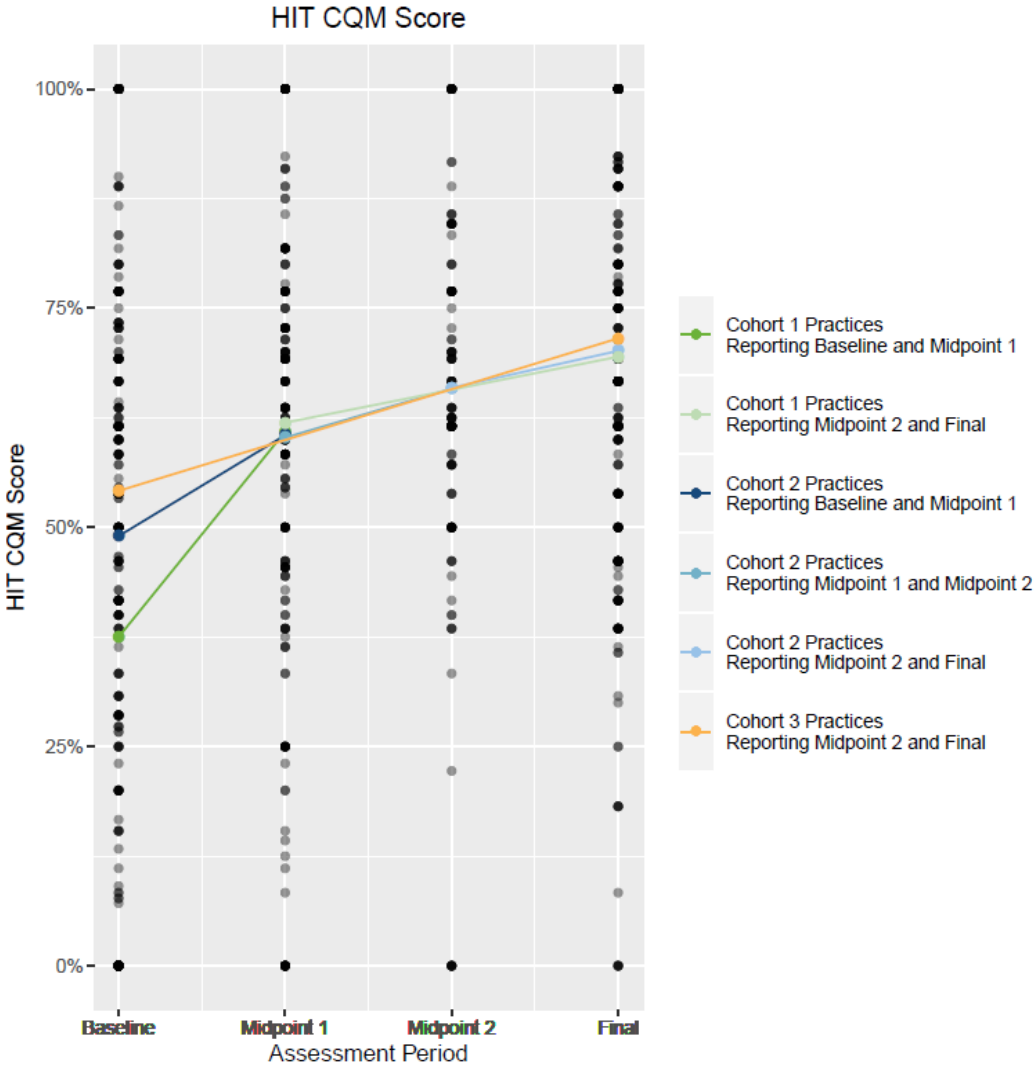



**Table 20. CQM Quality Change Over Time**

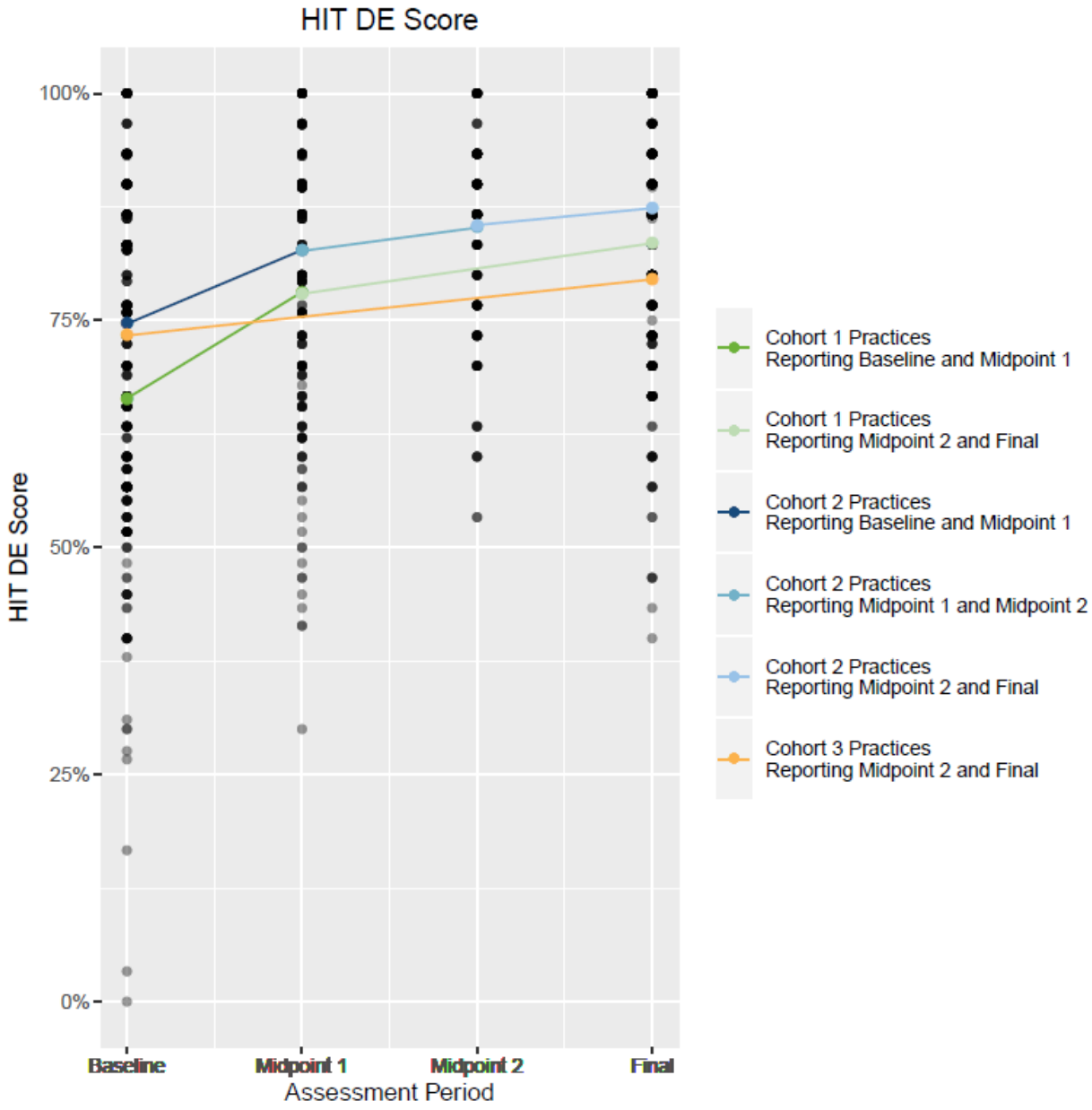
| Cohort | Baseline | | | Midpoint 1 | | | Midpoint 2 | | | Final | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | SD | Mean | N | SD | Mean | N | SD | Mean | N | SD |
| Cohort 1 All Practice Sites Reporting | 38% | 90 | 29% | 62% | 92 | 27% | - | - | - | 69% | 91 | 26% |
| Practice Sites Reporting Baseline and Final | 38% | 89 | 29% | - | - | - | - | - | - | 69% | 89 | 26% |
| Difference/ P Value | - | - | - | - | - | - | - | - | - | 31% <0.01* | - | - |
| Cohort 2 All Practice Sites Reporting | 49% | 153 | 26% | 61% | 153 | 25% | 66% | 148 | 22% | 70% | 145 | 20% |
| Practices Sites Reporting Baseline and Final | 50% | 144 | 26% | - | - | - | - | - | - | 70% | 144 | 20% |

| Cohort | Baseline | | | Midpoint 1 | | | Midpoint 2 | | | Final | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | SD | Mean | N | SD | Mean | N | SD | Mean | N | SD |
| Difference/P-Value | - | - | - | - | - | - | - | - | - | 20%<br><0.01* | - | - |
| Cohort 3 All Practice Sites Reporting | 54% | 84 | 37% | - | - | - | - | - | - | 72% | 83 | 24% |
| Practice Sites Reporting Baseline and Final | 54% | 83 | 37% | - | - | - | - | - | - | 72% | 83 | 24% |
| Difference/P-Value | - | - | - | - | - | - | - | - | - | 17 %<br><0.01* | - | - |

Analysis of the ability to capture and use data elements leads to the same conclusions as were apparent from CQM reporting. All cohorts had large and statistically significant increases in ability to capture this information. And most of the improvement occurred between the baseline and midpoint 1 assessment periods.

As compared to the CQM analysis, the variability between practice sites was much smaller, with standard deviations between 9 and 19 percentage points. Both baseline and final averages were also higher for the data elements than were ability to capture and report CQMs. This last result was not surprising: data elements are of direct value to practice sites in their provision of care to patients, whereas CQMs are of greater value for evaluating clinical quality.

**Figure 44. Date Elements Quality Change Over Time**




## Table 21. Data Element Quality Change Over Time

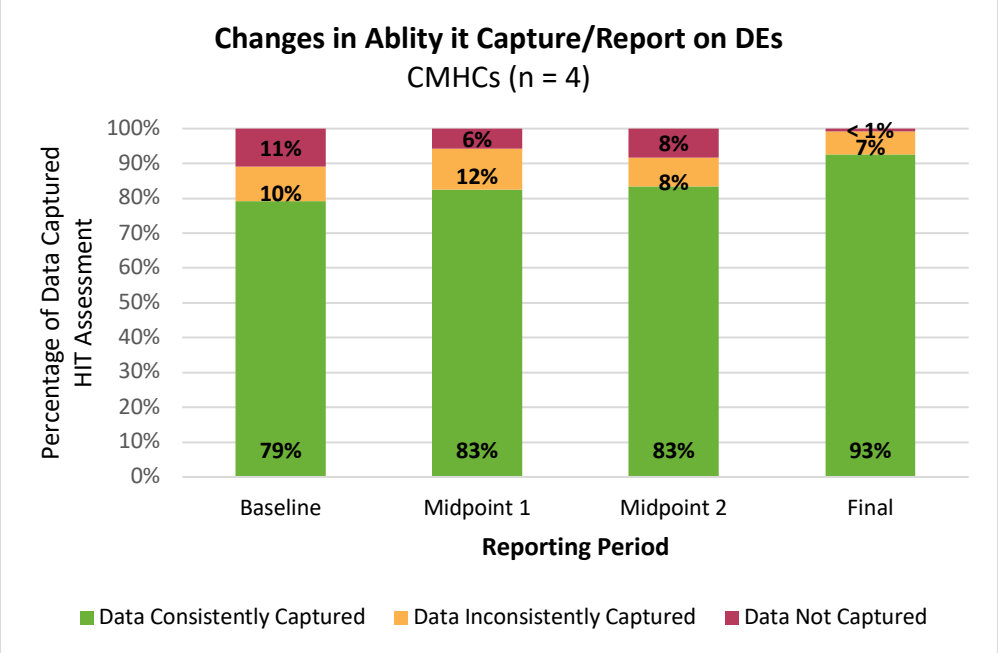
| Cohort | Baseline | | | Midpoint 1 | | | Midpoint 2 | | | Final | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | SD | Mean | N | SD | Mean | N | SD | Mean | N | SD |
| Cohort 1 All Practice Sites Reporting | 66% | 90 | 14% | 78% | 84 | 14% | - | - | - | 83% | 91 | 14% |
| Practice Sites Reporting Baseline and Final | 66% | 89 | 14% | - | - | - | - | - | - | 83% | 89 | 14% |
| Difference/P-Value | - | - | - | - | - | - | - | - | - | 17% <.01* | - | - |

| Cohort | Baseline | | | Midpoint 1 | | | Midpoint 2 | | | Final | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mean | N | SD | Mean | N | SD | Mean | N | SD | Mean | N | SD |
| Cohort 2 All Practice Sites Reporting | 75% | 154 | 18% | 83% | 153 | 14% | 85% | 149 | 11% | 87% | 145 | 9% |
| Practice Sites Reporting Baseline and Final | 75% | 145 | 18% | - | - | - | - | - | - | 87% | 145 | 9% |
| Difference/P-Value | - | - | - | - | - | - | - | - | - | 12% <.01* | - | - |
| Cohort 3 All Practice Sites Reporting | 73% | 84 | 19% | - | - | - | - | - | - | 80% | 83 | 15% |
| Practice Sites Reporting Baseline and Final | 73% | 83 | 19% | - | - | - | - | - | - | 80% | 83 | 15% |
| Difference/P-Value | - | - | - | - | - | - | - | - | - | 6% <.01* | - | - |

## CMHC Data Quality

The CMHCs participating in SIM were so few and unique that their reported assessments could not be meaningfully generalized. Their reported data quality and open-ended answers, though, do present a more uneven improvement than seen in the primary care practice sites, especially around CQMs.

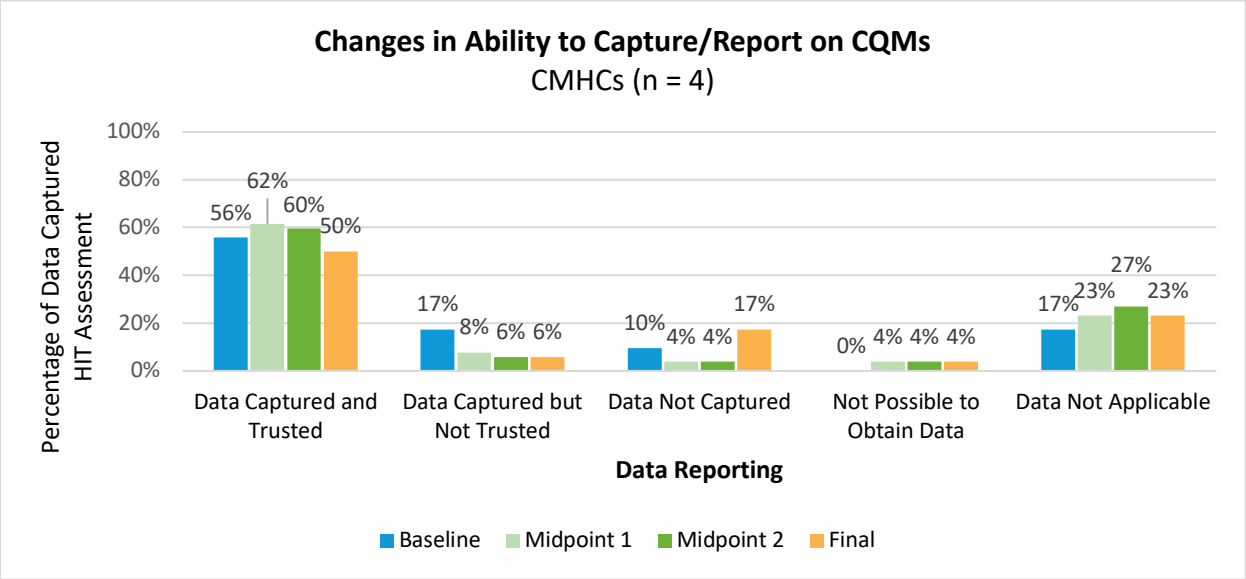
**Figure 45. CMHC Data Elements Quality**



As reported in Figure 45 above, CMHCs reported 79% of data elements were consistently captured on the baseline HIT assessment, 10% were captured inconsistently, and 11% were not captured. Progress was gradual across the two midpoint assessment periods, with 83% of data elements reported as consistently captured across both. There was small increase in data elements that were not captured between midpoint 1 and midpoint 2. The largest improvement was seen from midpoint 2 to the final assessment period: data that were captured consistently jumped 10% to 93%, data captured inconsistently decreased to 7%, and fewer than 1% of data elements were not captured.

Because only four CMHCs participated, as opposed to the participation of 300 primary care practices, comparing the rates of each group directly to one other is inappropriate. However, we observed trends in CQM data quality that add to understanding of some more pressing challenges. Figure 46 below contains CMHCs' reported data quality of CQMs.

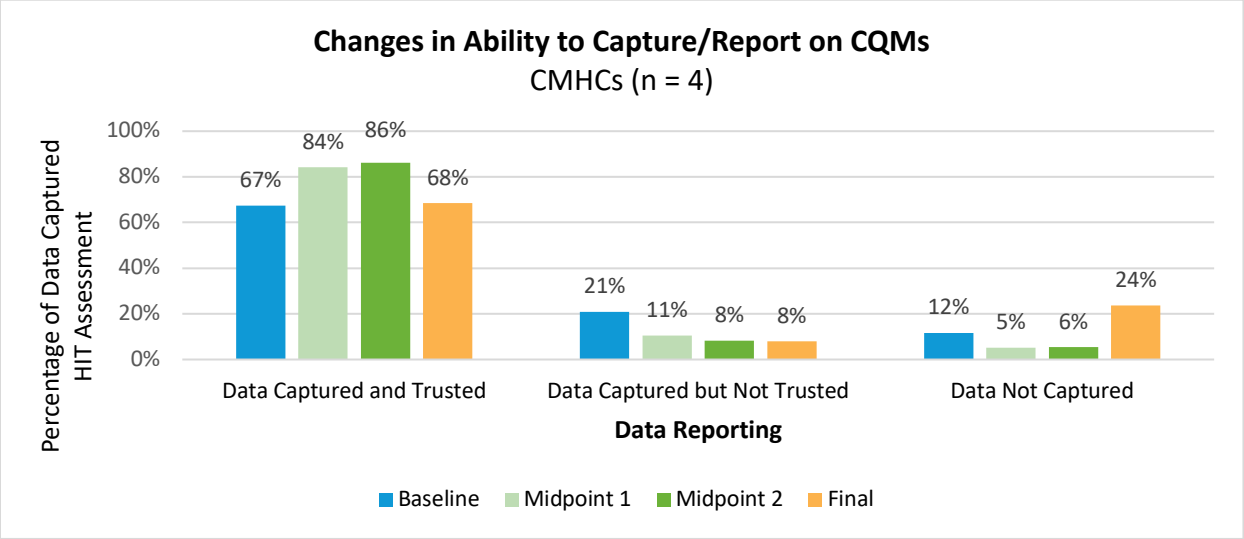
**Figure 46. CMHC CQM Data Quality**




According to these results, the reported data quality of CQMs that were reported to be captured and trusted, unlike with the reporting among primary care practice sites, decreased over SIM participation. CQM data quality improved from 56% at baseline to 62% at midpoint 1, but this level dropped slightly to 60% at midpoint 2 and then decreased more sharply to 50% at the final assessment period. There was also a decrease in data captured but not trusted and an increase in data that were not captured. CMHCs reported a rise in data that were not possible to obtain and a net increase in data that were not applicable to their populations.

To better understand whether data quality itself was declining, we considered only CQMs that were captured for relevant populations, thus excluding data that were not possible to obtain or data that were not applicable.

**Figure 47. CMHCs CQM Data Quality (Refined Analysis)**




In this revised scope, we did not find a net loss in captured-and-trusted data between baseline to final; in fact, this rate increased by one percentage point. However, we still saw increases in midpoint assessments that then dropped dramatically between midpoint 2 and the final reporting period (i.e., a drop from 86% to 68%). Data that was captured but not trusted decreased over SIM, but data that were not captured doubled from baseline to final.

The CMHCs provided additional information in open-ended responses that lend to better understanding: across all four assessment periods, three sites reported that they used two different EHRs that could not talk to each other, placing the onus on the site to reconcile and combine measures. This process reportedly did not go well and increased the likelihood of error.

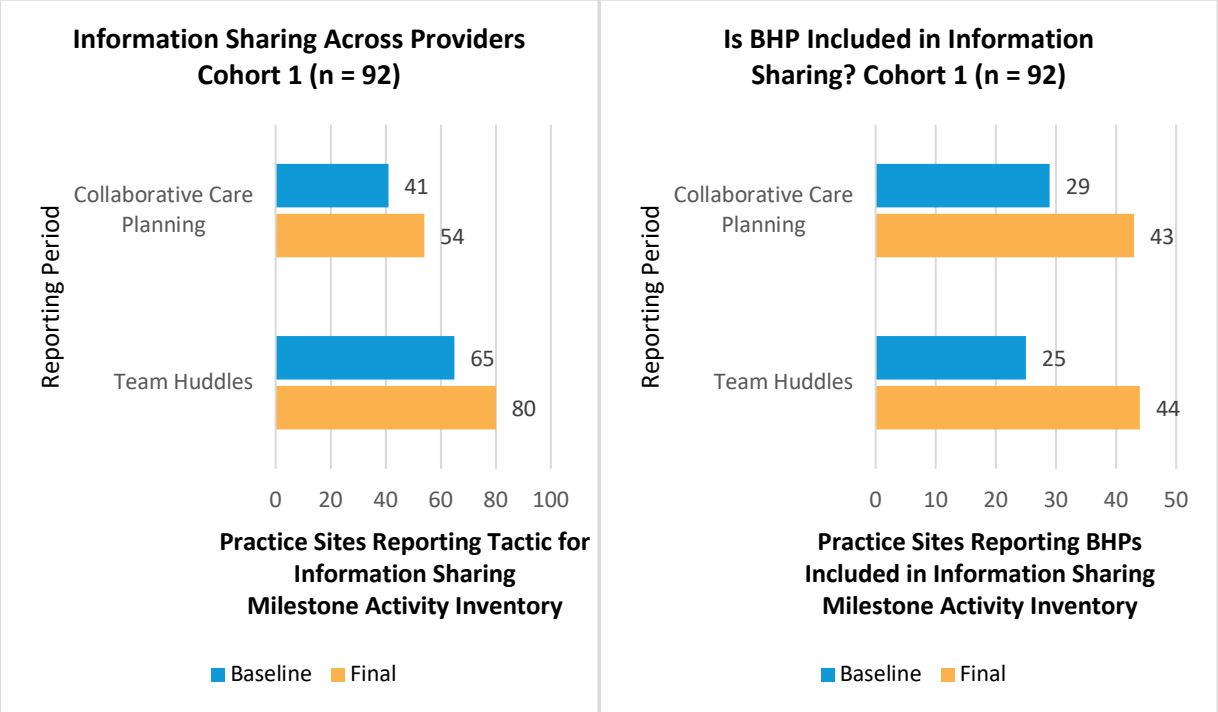
## Information Sharing Across Providers

**HT3. What progress was made on facilitating ways to share information between primary care providers and behavioral healthcare providers?** (This includes CHITA support, practice-level coordination of communication, and technologies for data sharing).

## Practice-Level Perspective

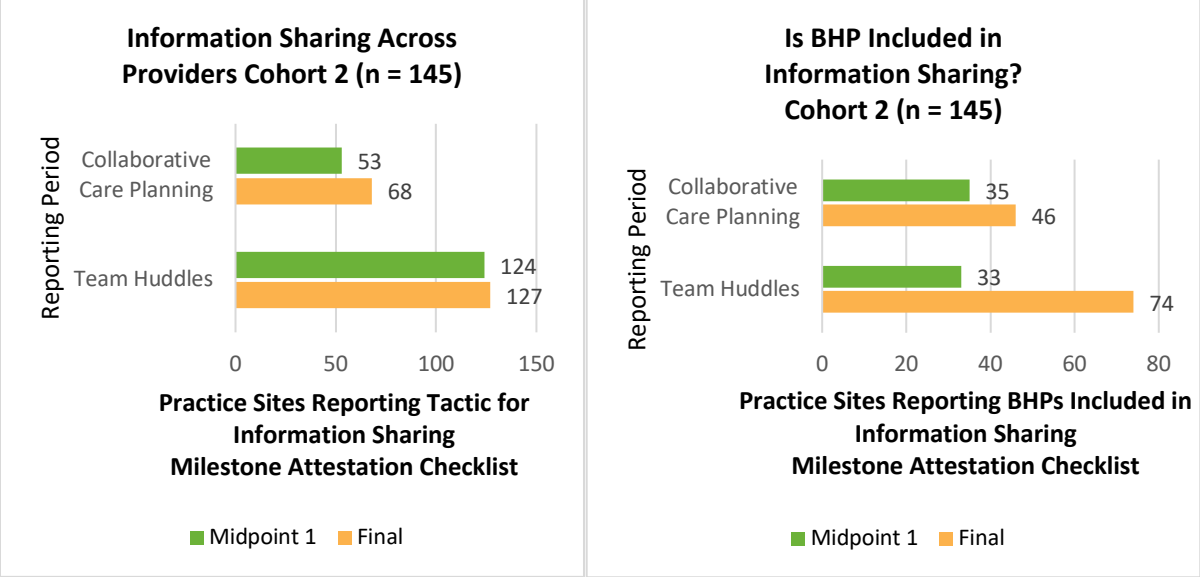
Overall, practice sites in all cohorts improved data sharing between and across providers. Figure 48–Figure 50 below show an expansion in BHP inclusion in practice planning activities as reported on the Milestone Activity Inventory (cohort 1) and the Milestone Attestation Checklist (cohorts 2 and 3). All figures in these graphs reflect the number of practice sites indicating the activity and not the percentage of practice sites. Because of variance in how practice sites structured their SIM work, the number of sites reporting on each measure below varied such that percentages would have been less meaningful because of widely disparate denominators.

**Figure 48. Cohort 1 Information Sharing**




Cohort 1 practice sites expanded their utilization of collaborative care planning sessions from 41 practice sites at baseline to 54 practice sites at the final MAI assessment. Of those 54 cohort 1 sites utilizing collaborative care planning sessions, 43 included their BHP in the sessions. BHP inclusion in team huddles also expanded, with 44 of the 80 practice sites that utilize team huddles reporting that BHPs joined.

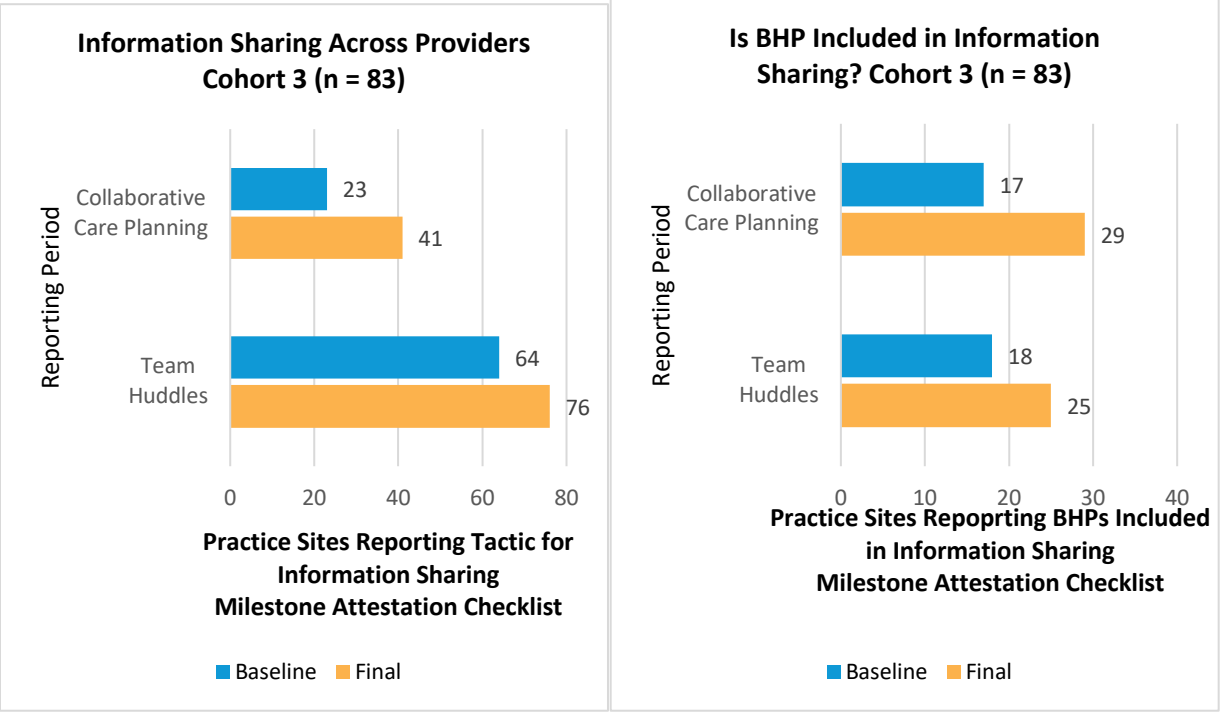
**Figure 49. Cohort 2 Information Sharing[51]**




Cohort 2 practice sites expanded their utilization of collaborative care planning sessions from 53 to 68 practice sites between the first midpoint and final assessment periods. Of those 68 practice sites utilizing the planning sessions, 46 included their BHP. Team huddles improved far more moderately, from 124 practice sites to 127. However, the number of sites including their BHP in the team huddles more than doubled from 33 to 74 over the same period.

[51] The first reporting period presented is Midpoint 1. No practice sites indicated beginning progress on this activity at the baseline assessment.

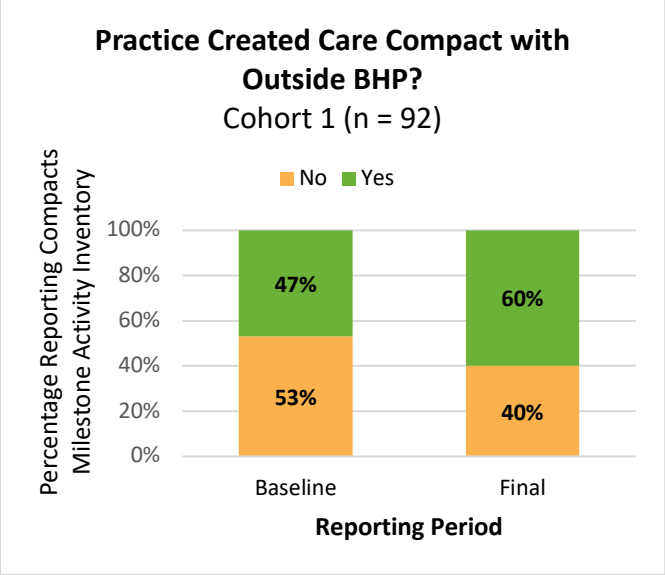
**Figure 50. Cohort 3 Information Sharing**




Cohort 3 practice sites expanded their utilization of collaborative care planning sessions from 23 practice sites at baseline to 41 practice sites at final, with 29 of those including their BHP in the planning sessions. Team huddle utilization grew from 64 to 76 practice sites, with 25 of those including their BHP in the huddles.

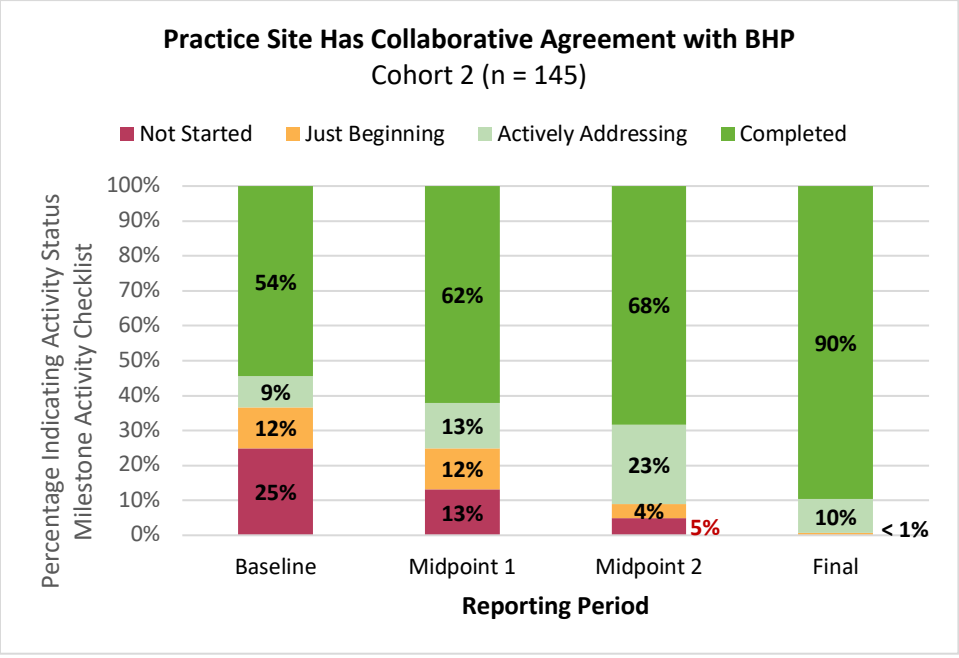
Practice sites further improved their information sharing with external BHPs. As illustrated in Figure 48 below, cohort 1 reported growth in this area. Because all practice sites provided answers for this item, we present the results as percentages.

**Figure 51. Cohort 1 External BHP Compact**




At the baseline MAI assessment, 47% of cohort 1 practice sites indicated they had created care compacts with external BHPs, which could include psychiatrists, psychologists, or community behavioral health centers, depending on local resources and relationships. This rose to 60% at the final assessment.

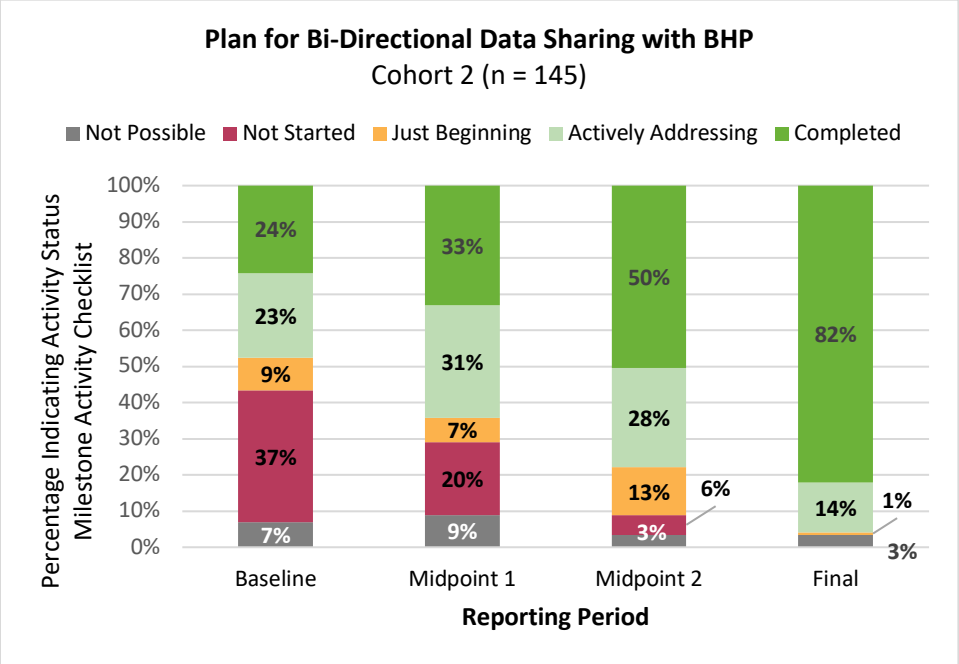
**Figure 52. Cohort 2 BHP Collaborative Agreement**




The MAC assessment included an analogous question with a 4-point scale for responses. Whereas just over half of practice sites indicated they had a collaborative agreement with a

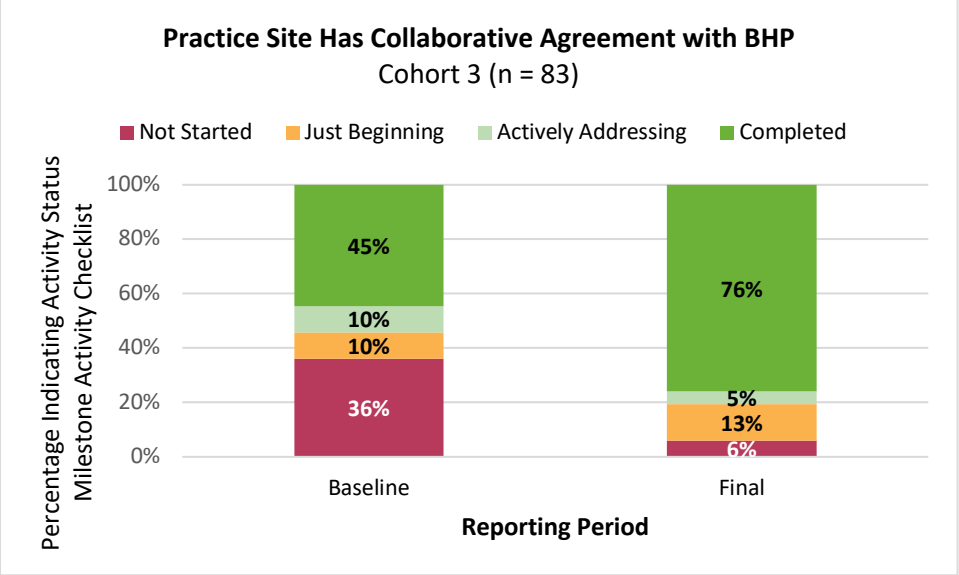
BHP in place at the baseline assessment, that figure rose to 90% at the final assessment. Further, only one practice site reported it was just beginning this activity, and no sites reported they had not started. Cohort 2 recorded the greatest growth in the last leg of SIM participation between the midpoint 2 and final assessment periods: there was a 22-percenage-point increase in practice sites reporting this activity was completed.

**Figure 53. Cohort 2 Bi-Directional Data Sharing Plan**



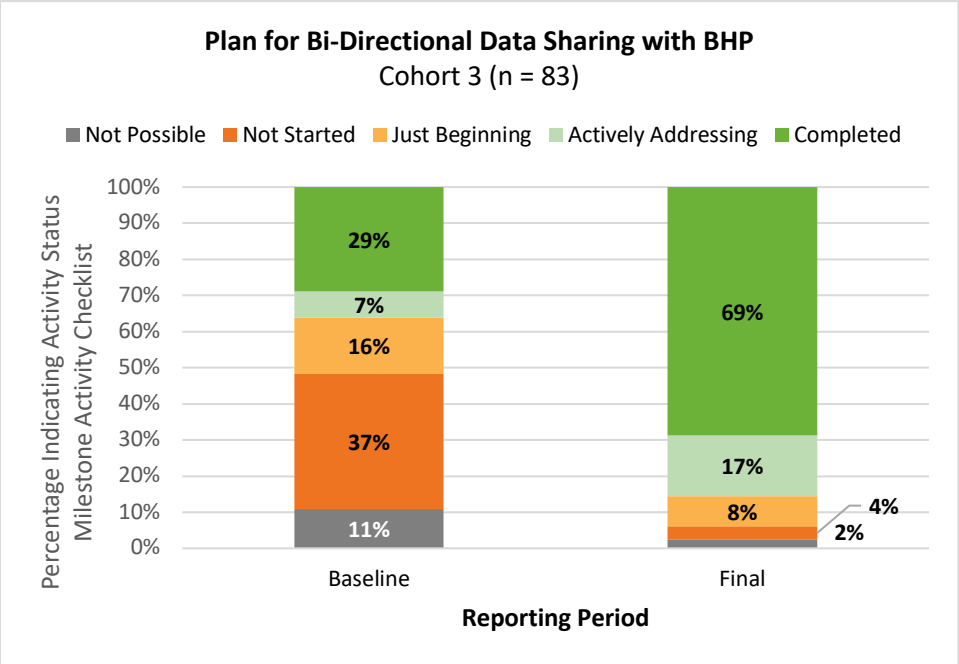

Practice sites also indicated progress toward data sharing with those external BHPs: although less than a quarter of cohort 2 reported having a plan in place at baseline, this increased to 82% at the final assessment. Again, the most drastic improvement took place between midpoint 2 and the final assessment: there was a 32-percentage-point increase in practice sites reporting this plan was completed.

**Figure 54. Cohort 3 BHP Collaborative Agreement**




Cohort 3—even in its abbreviated participation—reported a 31-percentage-point increase in practice sites with collaborative agreements with BHPs. Only 6% of practice sites indicated they had not started this activity, down from 36% at the baseline assessment.

**Figure 55. Cohort 3 Bi-Directional Data Sharing Plan**



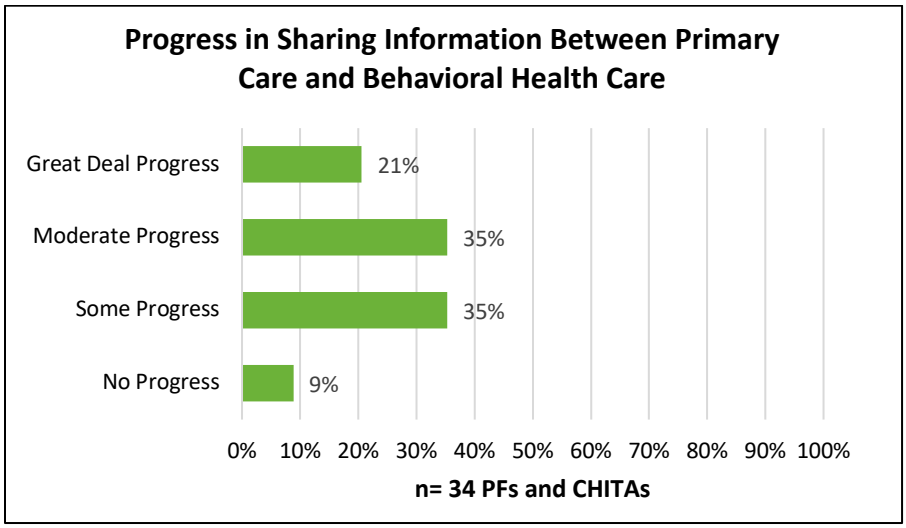

Cohort 3 reported a 40% improvement in practice sites with a plan in place for bi-directional data sharing. Only 2% reported this bi-directional data sharing was not possible, down from 11% at the baseline assessment.

## From the PF and CHITA Perspective

Of the 37 PFs and CHITAs interviewed, 34 provided a rating, and 24 provided additional comments on progress made in sharing information between primary care and behavioral healthcare. The "some progress to a great deal of progress" open-ended comments identify three broad categories of progress:

- Improvements in access to BH information within an HIE
- Encouragement and development of Care Compacts with CMHCs
- Development of monthly Care Conferences with BHP.

**Figure 56. Information Sharing**




Most respondents indicated that more progress in information sharing was realized by embedded integrated care services rather than with bi-directional, although both approaches generally saw some progress.

A continued challenge to sharing information was the interpretation and limitation of 42 CFR Part 2.[52] Four of the PFs and CHITAs cited this as a continued barrier to releasing information. One of the PFs who said there was limited progress spoke to large efforts required to obtain small improvements:

> *"A great deal of effort was spent here for a small amount of reward…focused on what we have and improving that process. So, we spent a lot of time-- both BH and PC--*

[52] This statute protects information regarding treatment for alcohol and substance use. Retrieved from Federal Register. Vol. 82., No. 11 (January 18, 2017) Rules and Regulations https://www.govinfo.gov/content/pkg/FR-2017-01-18/pdf/2017-00719.pdf

*wanted this to be successful…. It was confidentiality issue. BH notes that are so different. A lot of conversations [*had*] happened. …practices stopped referrals. So, we had people from the BHC to come over and meet them, so they had faces and direct faxes and direct numbers. There's still just so far to go. But they really did work on it, and there was improved communication…. A lot of pathways were solidified through SIM."*

## Role of the CHITA

The CHITA's role was to support both HIT and practice transformation efforts in order to accomplish the overall SIM HIT goal to "promote the secure and efficient use of technology in order to advance SIM goals." SIM-funded CHITAs supported practice sites through training in the use of available technology, thereby helping optimize data input and extraction, data integrity, clinical quality measure reporting, and data analysis. They work closely with Practice Facilitators to support quality improvement activities by providing data and reports that provide insight into practice workflows and processes.

Stakeholder feedback, specifically from the CHITAs and PFs, prompted a reevaluation of the CHITA role, expectations, and experience required. The result of this reevaluation was a shift to a more focused role clearly distinguished from that of the Practice Facilitators. It was determined that CHITAs needed more time to accomplish tasks critical for practice transformation work. The primary work of the CHITAs would be narrowed and focused on:

- HIT assessment and identifying data challenges
- Data-related practice workflows
- HIT practice transformation and building sustainability
- Technical assistance

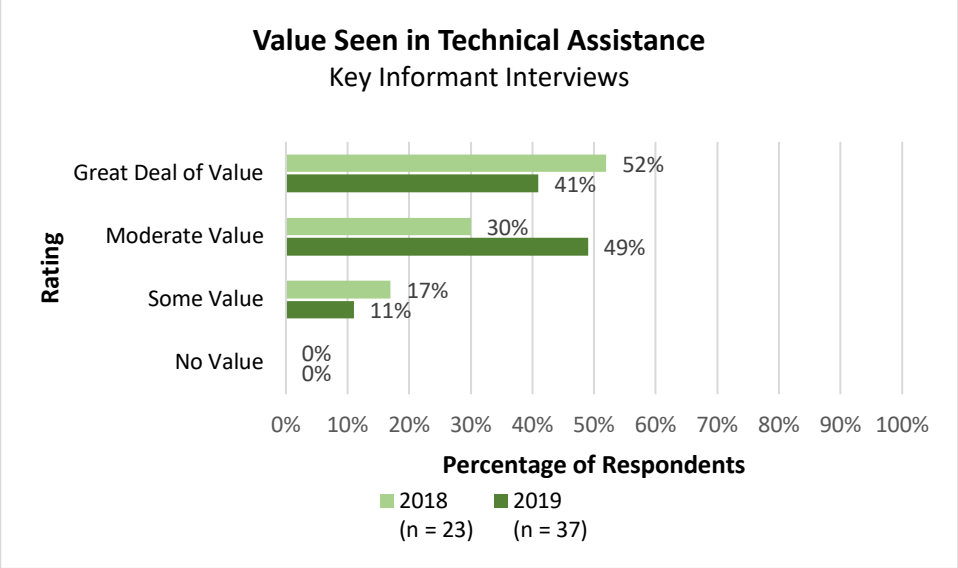
**HT4. To what extent did the addition of a technical support person (CHITA) result in better quality and better use of data in practices?**

### PF and CHITA Perspective

Because we ask the PFs and CHITAs to rate their own work, we expect bias in the following perspectives.

When asked whether practice sites and bi-directional programs see value in various elements of technical assistance (i.e., PFs, CHITAs, SPLIT tool, Stratus), 37 PFs and CHITAs responded. The majority stated that practice sites saw a moderate to a great deal of value from technical assistance (see Figure 57).

**Figure 57. Value in Technical Assistance**




Greatly valued elements:

- **PF coaching** on the PDSA cycle, MIPS benchmarking, and facilitating data-driven QI planning process. **CHITA assistance** with CQMs, pulling reports, and helping to "talk tech" with EHR vendors. CHITAs were able to put data in front of care team members who would not otherwise have seen them.

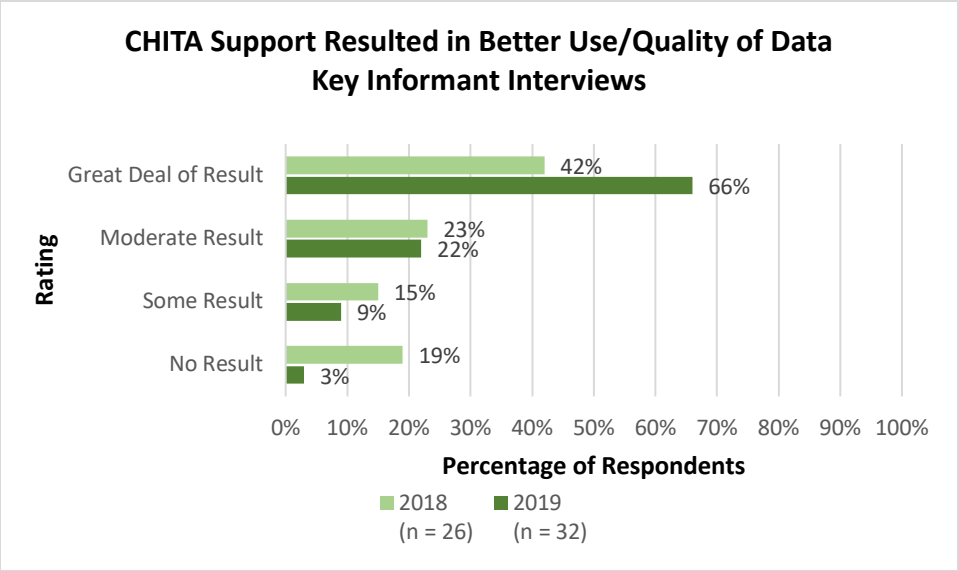
Elements of moderate value:

- **SPLIT platform,** though many PFs and CHITAs thought SPLIT was more helpful to them than it was for practice sites. Many PFs and CHITAs completed SPLIT assessments on behalf of their practice sites, particularly in cohort 1.

Elements with little to no value:

- **Stratus™** was not generally used by many practice sites. PFs report that the tool was cumbersome, inaccurate, and of little value.

Figure 58. Assistance and Data Quality




We asked 37 PFs and CHITAs about the extent CHITA support resulted in better quality and better use of data. Thirty-two responded with a rating seen in the

Figure 58 above. Of these 32, 25 provided an open-ended comment (seven from CHITAs, 13 from PFs, and five from PTO staff who function as both the CHITA/PF).

Several CHITAs were uncomfortable answering this question because of the implicit bias or having "nothing to prove" regarding the role of the CHITA in better quality and better use of data. CHITAs generally rated themselves as having "a great deal of result." But one CHITA acknowledged that high-functioning practice sites had "nowhere to go" and that experienced sites very familiar with CQM work were not as reliant on the CHITA's efforts:

> *"Some practices had a great deal of results. Custom reports form EHR vendors have such a short life span. They are not sustainable because measures change over time and each tweak requires an edit to the report. These get abandoned. The most important thing is interpreting the data, getting the data out of EHR, helping them interpret the CQM."*
> [CHITA for cohort 2 practice site]

Practice Facilitators generally rated the results as "a great deal" of value. "No results" were typically a result of externalities beyond of the CHITA's scope or abilities. Most PFs affirmed that CHITAs made strong attempts but that challenges (e.g., vendor issues, switching EHRs, overcoming system issues that caused one CHITA to track CQMs manually in a spreadsheet "because we were in a data desert between vendors") impeded greater success.

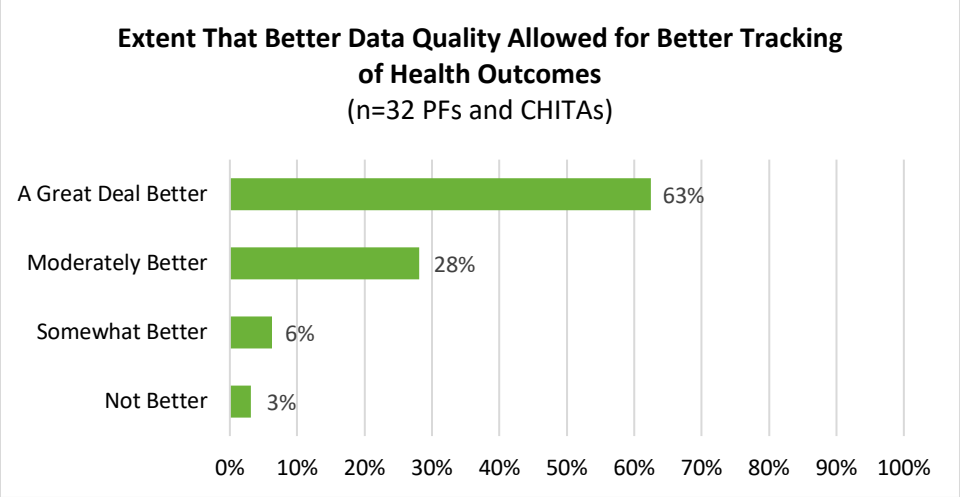
> *"Two thumbs up! Acting as a conduit between the vendors and practices are extraordinarily helpful. The one I work with most is very familiar with measure definitions and can really get into the meat and potatoes of what's going wrong. They've been amazing for tech support."*
> [Cohort 1 Practice Facilitator]

## Population Management and Care Coordination

### Tracking Health Outcomes

Better data quality allows for better tracking of health outcomes. Of the 37 PFs and CHITAs were asked if better data quality allowed sites to better track health outcomes, 32 responded. The overwhelming majority (91%) agreed that better data quality allows for "moderately to a great deal" better tracking of health outcomes.

**Figure 59. Better Tracking of Health Outcomes**




PFs and CHITAs reported continued use of the PDSA cycle from the Institute for Healthcare Improvement as a tool for doing "deeper dives" into the data, helping providers make better clinical decisions. According to the interviewees, these decisions result in better tracking and, thus, a positive effect on health outcomes. Better data quality also led to greater trust in the data by practice sites. Two key informants stated that trust in the data is improving and that sites were "questioning the validity less and less." Trust in data has greater value in improving outcomes.

One PF for several practice sites reported that during QI meetings, "[practice staff] actively talk about ways to improve care based upon the CQM data." Another PF reported using care plans to ask questions such as, "How are you measuring impact? Did it impact outcomes? If so, to what extent?" These conversations promote team-based care decisions, ownership of the data, and improved understanding of how workflows and processes support accurate and complete CQM reporting. This understanding, in turn leads, to better clinical decisions focused on outcomes.

One PF and one CHITAs stated that to fully impact health outcomes, PFs and CHITAs ne to review what the data reports and graphs have to show and then take this information to the care team level. This approach provides them with knowledge about what they are being asked to focus on with their patients. As one PF said, "You need all the people involved to see how it translates to their work every day."

PFs and CHITAs identified two challenges in how data quality impacted health outcomes: limited data in the EHR and other factors such as patient engagement and patient motivation. According to respondents, ensuring better data quality is the first step and reviewing it with the team and discussing a plan of treatment based on the data is the second step. Respondents,

further, noted that working with patients to motivate and engage is the third step. Without strong patient engagement, improved health outcomes will not be achieved.

> *"There's still a lot of work that can be done in meaningful outcome measures, but we're on the way."*
> [Cohort 2 Practice Facilitator]

## Improved Use of Data for Population Management and Coordinating Care

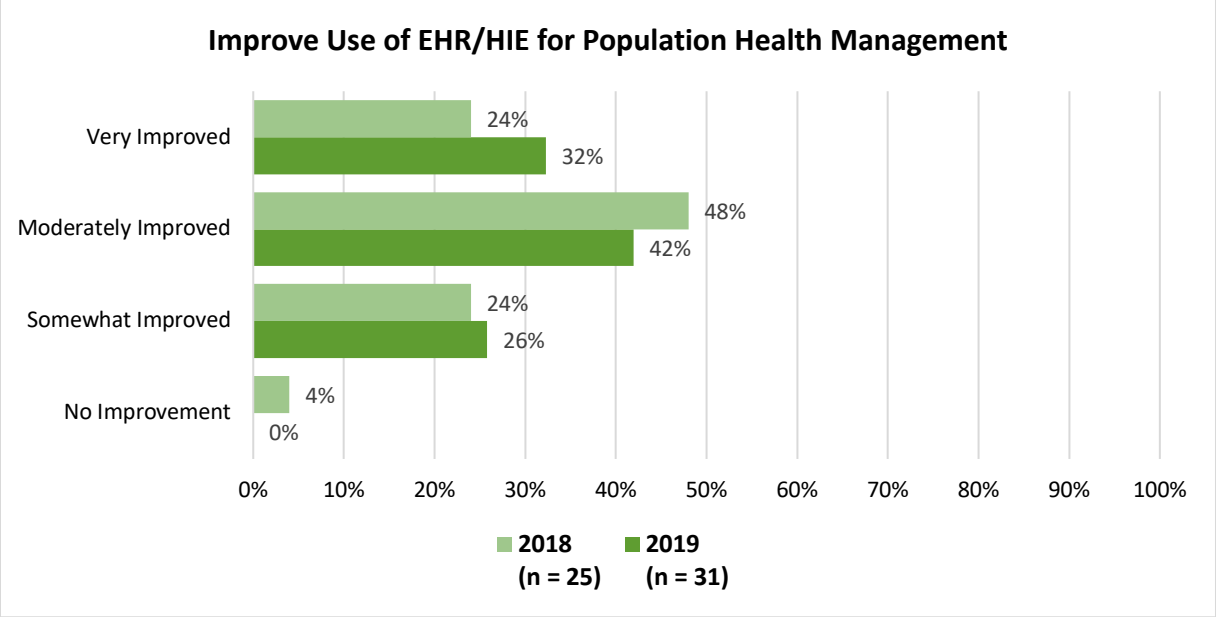
Improved use of electronic health records (EHRs) for HIE for population management was particularly evident in practice sites that received small grants. Six of the cohort 1 small grant awardees used technology funding to help build registries. In cohort 2, four sites built registries. None of the cohort 3 grantee specifically mentioned population health management or registries.

Many of these registries were linked to and fed by electronic screening and assessment tools so that a practice site could easily and automatically identify its high-risk patients based upon the results that automatically populated into the EHR and, in most cases, triggered a clinical decision point for follow up—either by the provider, care coordinator, or behavioral health provider. Most of the registries focused on behavioral health issues (e.g., anxiety; depression; and substance use disorders, including opioids). Two focused on identifying patients with health disparities. Several of these practice sites were able to show an increase in screening and assessments as a result of registry use and follow-up workflows.

> *"This program was amazing. Our practice now functions at an advanced level in our current value based primary care world. We are able to perform population health management in a way that we could never have imagined previously. Thank you!"*
> [Cohort 2 small grant recipient]

> *"This is really happening! I have seen this in several sites. I've seen across the board them doing more mammos, colon rectal screenings. Month after months* [we see] *improvements."*
> [CHITA who support cohort 2 and 3 practice sites]

**Figure 60. EHR/HIE for Population Health Management**



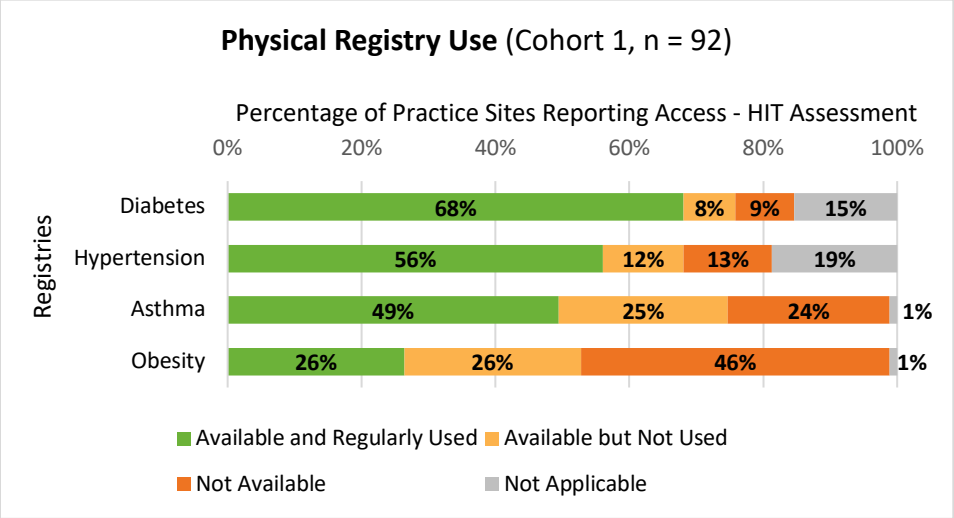

PFs and CHITAs who were interviewed agreed that there had been an improvement in the practice sites they supported using their EHRs and HIEs to improve how they managed their population health. Several said that practice sites had created registries and utilized reports to review gaps in care, to target interventions to certain populations, and to follow up after a hospitalization to help prevent re-admissions. Utilizing reports that generate noncompliance lists from their EHRs, they were able to target patients to help get them up to date.

> *"Both of my facilities were and continue to really use and analyze data. They're not just pulling things from thin air—they're continually looking at data to inform changes, what the community needs, and how to get it…. [T]heir CHITA built up assessments in the EHR, with a flow of 'if-then' for interactions with patients to make sure they're capturing everything."*
> [CHITA who supports cohort 2 practice sites]

Patient registries were another tool available to practice sites for managing patient health, and they can support population management as well as outcomes data. These registries may be set up to identify certain patient populations and subpopulations to target for preventive and routine checks or services that will best serve that specific population (e.g., depending on specifications, a registry may prompt providers to contact a patient with hypertension to schedule a checkup at appropriate intervals, or it may contact patients directly and remind them to schedule an appointment). Registries may be linked to a practice site's EHR or HIE, or they may be built manually.

The HIT assessment asked practice sites about their use of registries, which are discussed below. Practice sites were asked to report on given registries and rate their access on a 4-point scale: available and regularly used, available but not used, not available, and not applicable for populations they did not see or treat. Here, again, we break the registries into physical and behavioral categories to better present results. No distinction between the two is included in the assessments.

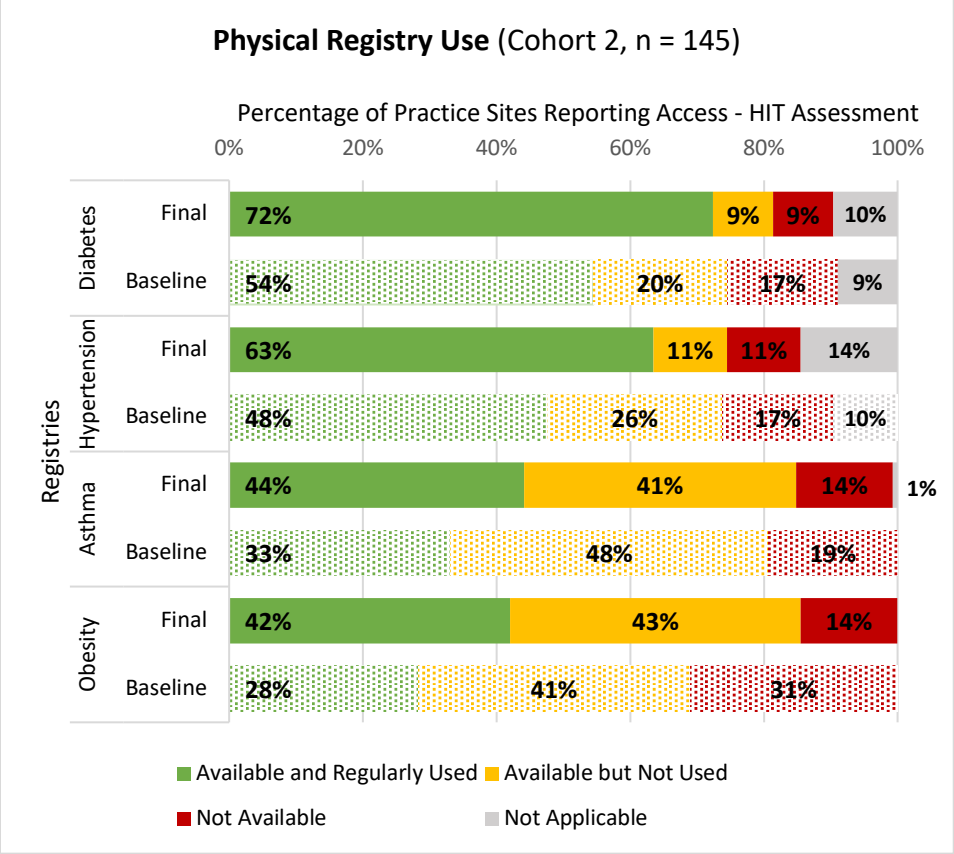
**Figure 61. Cohort 1 Registries – Physical**[53]




Since registry questions only appeared on cohort 1's final assessment, observations of change over time are not possible. Cohort 1's most-used physical registry was for diabetes management, with 68% of practice sites reporting it was available and regularly used. This is to be expected since many sites and LPHAs indicated that diabetes was a primary target for population management during SIM.

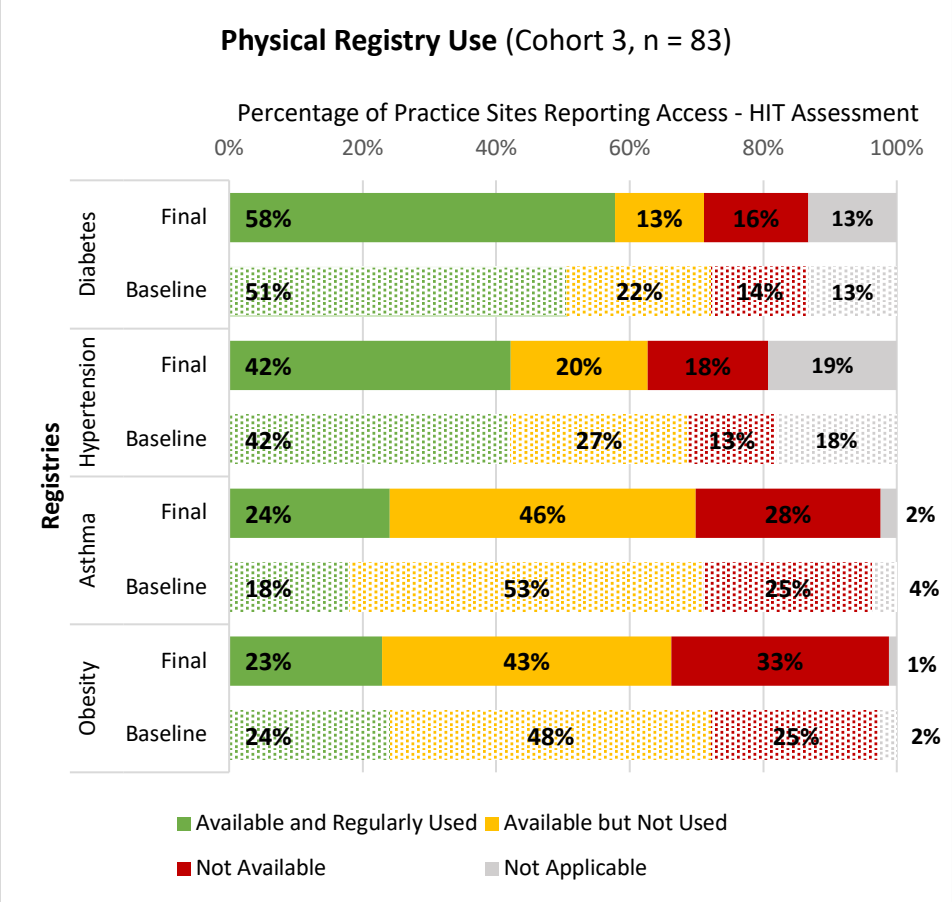
[53] These items only appeared on the final assessment for cohort 1.

**Figure 62. Cohort 2 Registries – Physical**



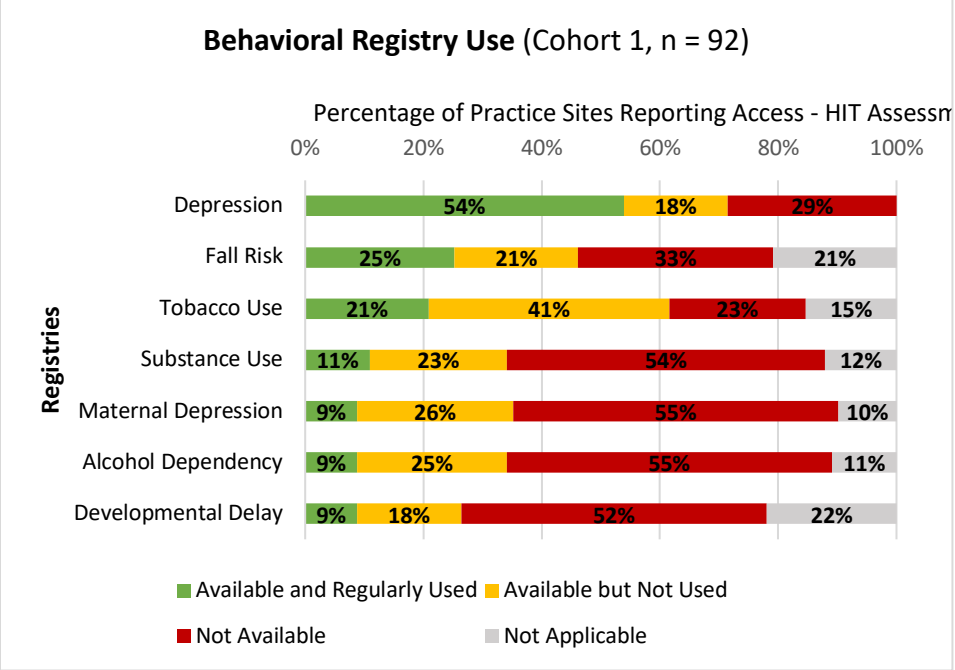

This same prioritization of diabetes management was also evident in cohort 2: 54% of practice sites indicated this was available and regularly used at baseline, which rose to 72% at the final assessment period. Cohort 2 reported improved registry use for all physical conditions between the baseline and final assessments.

**Figure 63. Cohort 3 Registries – Physical**



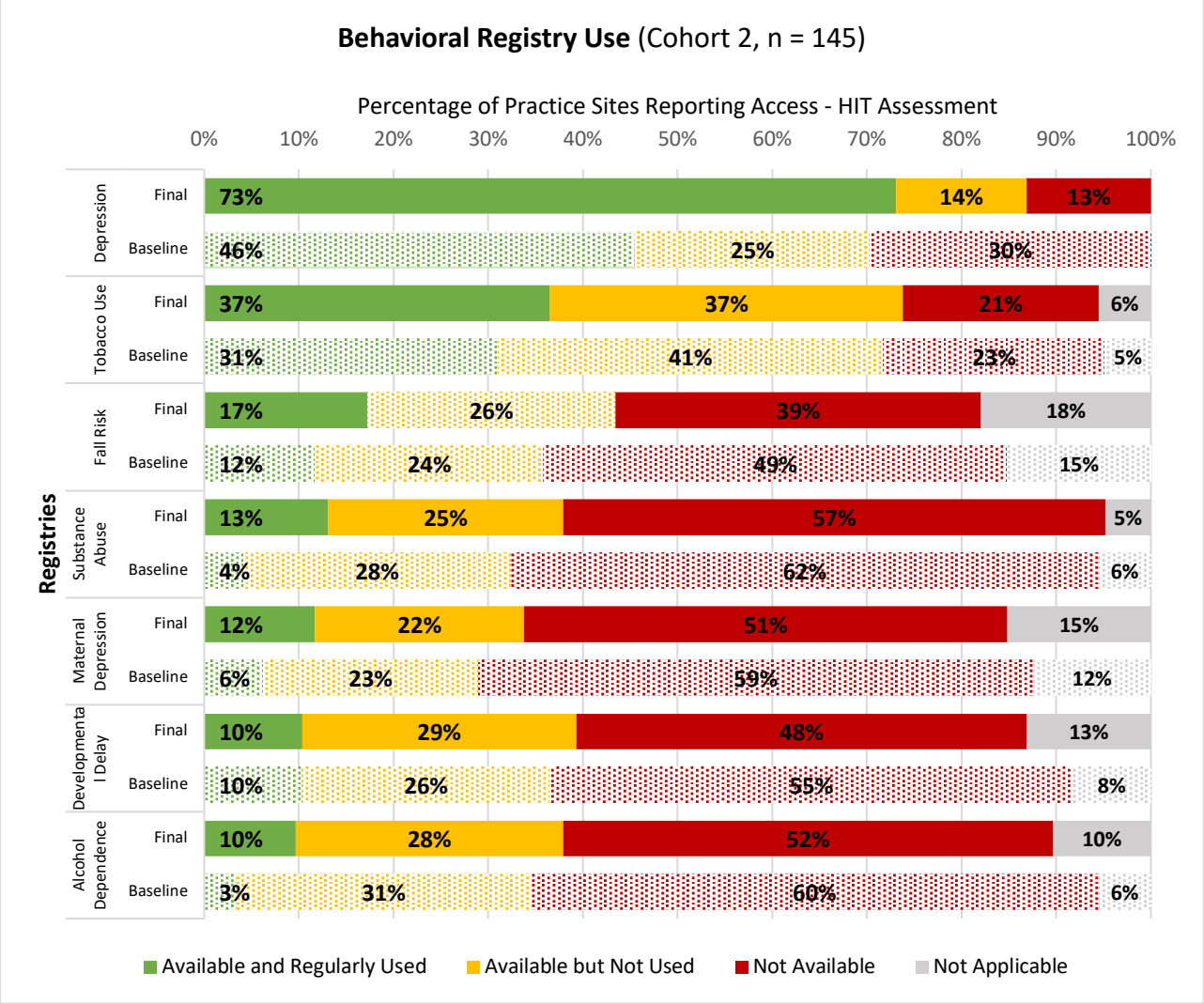

Cohort 3 saw more uneven progress in its physical registry use. Diabetes was again the most used and most improved registry reported, rising from 51% of practice sites reporting it was used and available at the baseline assessment to 58% at final. Hypertension registry use remained static with 42% of sites reporting it available and regularly used at both baseline and final, but there was a 5% increase in practice sites reporting the registry was not available. Practice sites reported a slight decline in obesity registries being available and regularly used; a moderately increased percentage of practice sites reported they were not available. These discrepancies may be caused by unreliable reporting caused by variance in practice staff completing the assessment or by practice sites overrating their registry access at baseline and then correcting at the final assessment period. However, all registries showed decreases in the percentage of practice sites reporting a registry was available but not used, indicating progress as sites may be better utilizing what is available.

**Figure 64. Cohort 1 Registries – Behavioral**



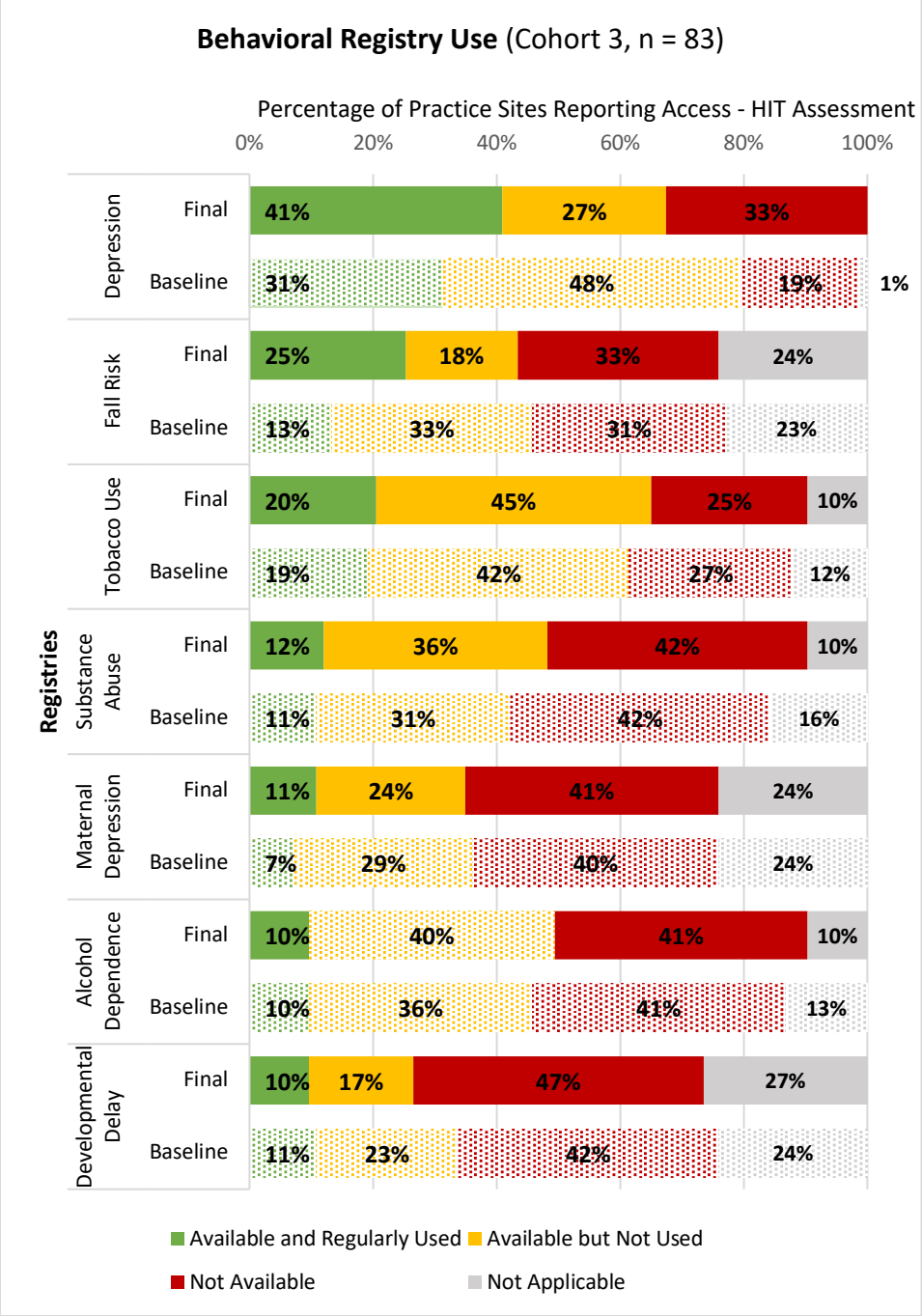

Cohort 1 practice sites reported the most success utilizing their depression registries. Although no single factor is definitively attributable to this change, it is conceivable this improvement is related to the prioritization of depression by practice sites and LPHAs. The elevation of depression as a focus by clinical and public health practitioners within a community may have offered additional motivation or impetus for practices to utilize depression registries. Maternal depression, alcohol dependency, and developmental delay registries were the least available and regularly used at an average of 9% for each. Over half of cohort 1 practice sites indicated that substance use, maternal depression, alcohol dependency, and developmental delay registries were not available, though they did see those populations.

**Figure 65. Cohort 2 Registries – Behavioral**




Cohort 2 reported having difficulties similar to cohort 1's: maternal depression, developmental delay, and alcohol dependence registries were the least used and trusted. There were small decreases in practice sites reporting that registries for alcohol dependence, maternal depression, substance abuse, tobacco use, and depression were available but not used.

**Figure 66. Cohort 3 Registries – Behavioral**




Cohort 3 also reported the least availability and use for developmental delay, alcohol dependence, and maternal depression registries. Across all three cohorts, registries for physical conditions were more widely available and regularly used than those for behavioral conditions. This aligns with previously discussed findings that data quality overall has been lower for behavioral conditions than for physical and is likely affected by privacy and data concerns,

adopting new workflows, and the stigma that often exists generally around behavioral health and substance abuse issues.

## Improve Delivery of Integrated Care via Process Redesign, Culture Change, and HIT

Although SIM has provided guidance, structure, and incentives for participating sites to pursue meaningful practice transformation efforts, continuing to improve and provide integrated care is largely determined by an individual practice site's leadership and commitment to—and comfort with—HIT and data. We evaluated data from SPLIT assessments, interviews, and small grant applications and awards to identify patterns or data that could indicate culture change to support integrated care efforts beyond SIM.

**Figure 67. Building Block 2: Data-Driven Improvement**

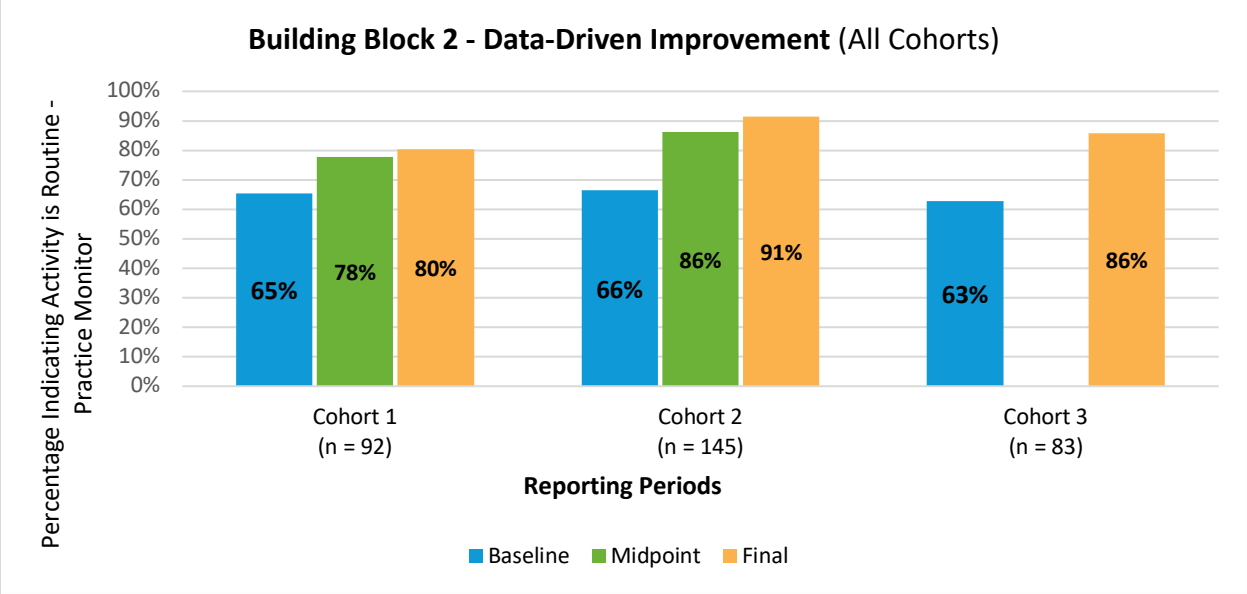
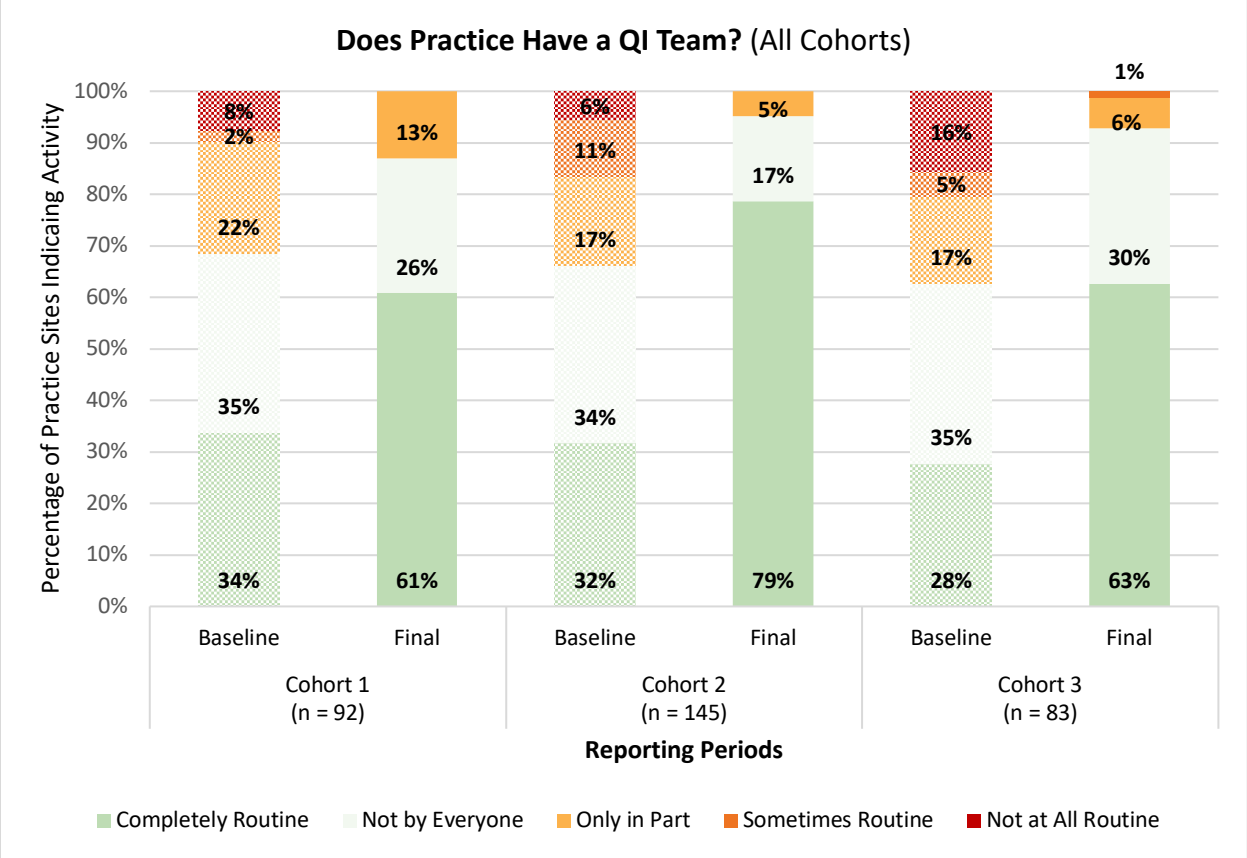



Figure 67 above shows progress in Building Block 2 – Data-Driven Improvement, as reported on the Practice Monitor assessment. The values were calculated by aggregating the percentage of activities rated as "completely routine" out of a possible score of 100%. Cohort 1 reported a 15-percentage-point increase in completed, routine activities between the baseline and final assessments, with the majority of that growth (13 percentage points) taking place between the baseline and midpoint assessments. Cohort 2 similarly saw the most substantial increase between baseline and midpoint: 20 percentage points, with an additional 5-percentage-point improvement between midpoint and final. Cohort 3, because of its abbreviated participation period, reported a 25-percentage-point increase between its baseline and final assessments.

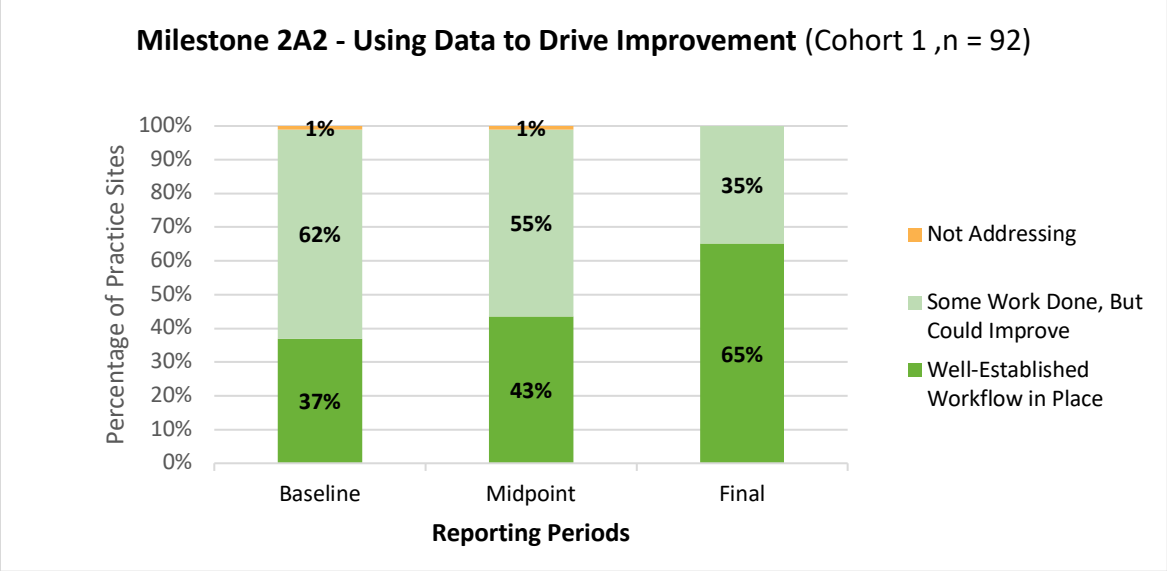
**Figure 68. Practice QI Team**




Practice sites also reported drastic increases in the existence and use of QI teams in their practice sites. At the final assessment period, no practice sites indicated this was not at all routine, and upwards of 60% of practice sites across all cohorts indicated that these were completely routine.

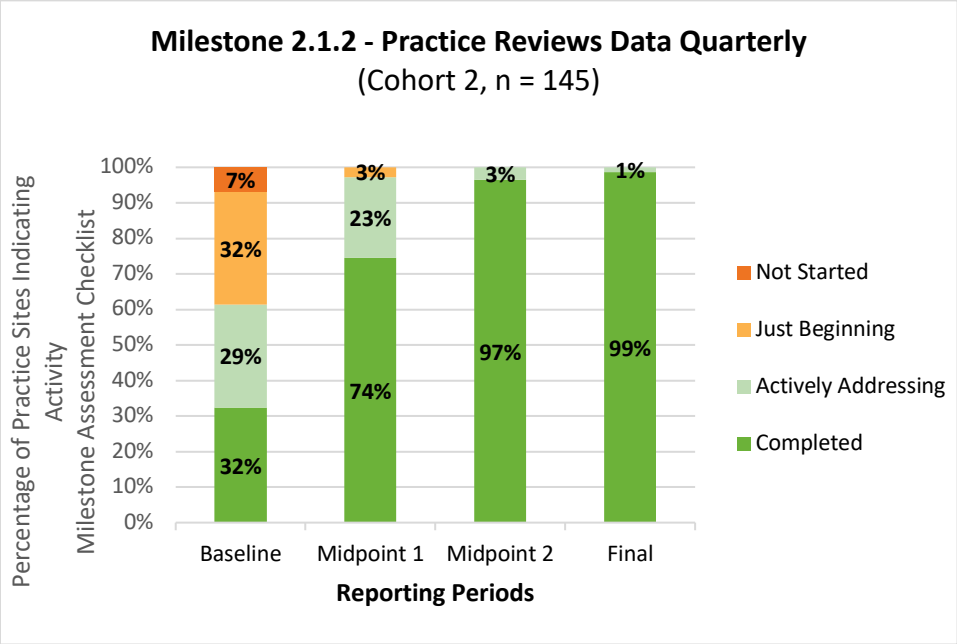
Milestone activity assessment support evidence that practice sites are continuing to incorporate increased comfort with data into their practice routines and operations. The following three figures contain results of practice sites using data to drive improvements. The questions are analogous, but there were slight modifications to the checklist activities after cohort 1, though cohorts 2 and 3 shared the same instrument.

**Figure 69. Cohort 1 Using Data to Drive Improvement**



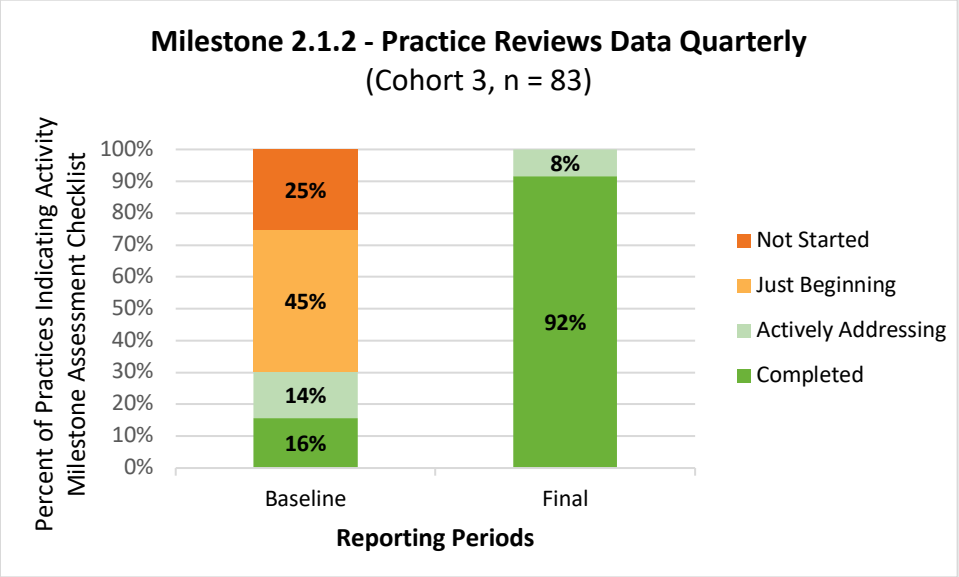

Cohort 1 reported at baseline that 37% of practice sites already had a well-established workflow in place to use data to drive improvement. This increased six percentage points between baseline and midpoint, with a much larger, 22-percentage-point increase of sites reporting a well-established workflow in place at the final assessment. The remaining 35% reported that work could improve, but it had been started. No practices indicated they were not addressing this milestone.

**Figure 70. Cohort 2 Review Data**



Cohort 2 and 3 were asked whether the practice sites reviewed data quarterly with their PF or CHITA. While only 32% of sites indicated this step was complete at baseline, this increased to 99% at the final assessment.

**Figure 71. Cohort 3 Review Data**




Cohort 3 reported similarly striking progress along this activity: at baseline, a quarter of practice sites had not begun this activity, nearly half (45%) we just beginning, and fewer than a third were actively addressing or had completed the activity. At the end of their SIM participation, no cohort 3 practice sites reported they had not started or were just beginning these reviews, 8% were actively addressing it, and a full 92% reported this activity was completed. The solid foundation of improved data literacy will support practice sites from all three cohorts in continuing to offer integrated care and will facilitate additional preparation for future work moving towards value-based payments.

## Small Grant Summary

All primary care practices were able to apply for SIM-funded small grants. These competitive funds were available for projects relating to HIT upgrades, capital improvements, patient engagement, and hiring BHPs. Practice sites could apply for awards of up to $40,000. This section discusses small grants for HIT projects. Information on the other funding dimensions can be found in their respective chapters in this report.

Cohort 1 small grant activities have been reported on extensively in 2017 and 2018 Annual SIM Evaluation Reports. This 2019 Annual Process Report Chapter will have some cohort 1 data for comparison but will primarily focus on cohorts 2 and 3 so as not to be duplicative.

The small grant funding categories included in this chapter will be (1) upgrades and customizations to existing technology to support integrated care (upgrades to existing technology) and (2) technology solutions to support systematic screening for behavioral health problems. We will attempt to carve out "training on new technologies" from all other staff training with qualitative data. We are unable to report on the quantitative breakdown of training costs for each subcategory of training (i.e., integrated care, behavioral health, team-based care, and training on new technologies.)

In Table 22 below, we report the total amount for each Practice Level HIT small grant fund for each category. Requests and awards for upgrades were more than double those of requests for new technology solutions. Technology solutions to support systematic screening for behavioral health problems was a request category for use of the CHF funds and only offered to cohort 1. Cohort 1 had two funding sources, CMMI and CHF. Cohorts 2 and 3 had one funding source, CMMI.

**Table 22. Total Dollar Award Amount**

| Small Grants | | | | |
|---|---|---|---|---|
| **Total Dollar Amount of Award** | | | | |
| **Funding Category** | **Cohort 1 Sites[54]** | **Cohort 2 Sites** | **Cohort 3 Sites** | **Total Across All Cohorts** |
| Upgrades to **existing** technology to support integrated care | $385,736.34 | $141,523.92 | $277,438.41 | $804,698.67 |
| Technology solutions to support systematic screening for behavioral health problems | $335,751.00 | | | $335,751.00 |

Table 23 below shows the total number of practice sites that applied and subsequently were awarded small grants. Forty-two (58%) of those practice sites that applied for funds to upgrade existing technology received an award. Fifteen (65%) of the cohort 1 sites that applied for technology solution funds received an award.

**Table 23. Total Technological Applicants and Awardees**

| Small Grants – Total Technological Applicants and Awardees | | |
|---|---|---|
| **Practices** | **Funding Category** | |
| | **Upgrades to Existing Technology** | **Technology Solutions** |
| Cohort 1 Applied*[55] | 20 | 23 |

[54] Cohort 1 total dollar amount awarded combines small grant Year 1 and Year 2

[55] An * indicates combined small grants for Year 1 and Year 2.

| Small Grants – Total Technological Applicants and Awardees | | |
|---|---|---|
| **Practices** | **Funding Category** | |
| | **Upgrades to Existing Technology** | **Technology Solutions** |
| Cohort 1 Awarded* | 16 | 15 |
| Cohort 2 Applied | 38 | |
| Cohort 2 Awarded | 15 | |
| Cohort 3 Applied | 17 | |
| Cohort 3 Awarded | 11 | |
| All Cohorts Applied | 75 | 23 |
| All Cohorts Awarded | 42 | 15 |

Many small grant recipients reported how much the funds helped to further their practice improvement efforts and practice transformation initiatives. Successes noted by small grant recipient in their midyear and annual reports included incorporating or expanding behavioral health services through either hiring an internal BHP or obtaining care contracts with external BHPs, utilizing the team-based care approach standardized screenings and improved workflows that include warm handoffs to BHPs, renovating space for BHPs, and utilizing BHP expertise to provide trainings and education to the PCP staff on behavioral health issues.

> *"This project has been extraordinary. We have integrated an LPC [License Professional Counselor] into out practice and are able to provide our patients with quick access to behavioral health treatment as well as to track their progress with an electronic screening that is also integrated in our EHR. We use a shared EHR and have direct access to the notes of our LPC and as he is on site we are able to discuss our patients and their needs in real time. We have been able to prevent multiple ER visits due to his onsite presence and have been able to watch many patients respond very positively to our co management."*
> [Cohort 2 small grant recipient]

The use of clinical quality measures (CQMs) was a basis for Quality Improvement (QI) initiatives. These data helped practice sites make informed decisions and drive change. Clinical Health Information Technology Advisors (CHITAs) considered it their role to help practice sites obtain valid and reliable data. Clinical teams then used these data to support change and "fuel improvements." One CHITA observed that one of her practice sites was beginning to see the effects of this work in clinical outcomes and described the site having developed an intrinsic reward to continue this process because it improves patient care.

Some of the challenges cohort 2 and cohort 3 practice sites encountered were similar to those encountered by cohort 1 sites. The most common included difficulty in recruiting BHPs (particularly in the rural areas and bilingual providers), longer-than-expected credentialing times, and delayed responses and long wait periods when working with EHR vendors.

Small grant awards provided practice sites the opportunity to try things they may not have otherwise be able to attempt, leading to the learning of several valuable lessons during the process. In planning, for example, several sites indicated that more time should be spent on designing a timeline for onboarding a BHP and that the timeline should include all phases from recruiting, hiring, and training staff on what an integrated care model is and how to put into practice, creating and implementing integrated clinical workflows and stabling billing procedures.

> *"Integrated care takes a good deal of time to coordinate efforts between (often) disparate services and parts of the practice."*
> [Cohort 3 small grant recipient]

> *"Integrated behavioral health is a huge gift both to patients and providers. Removing barriers to accessing behavioral health is a "game changer" and can save lives!"*
> [Cohort 2 small grant recipient]

Because of the successes seen and lessons learned, many of the small grant recipients report actively working towards sustainability of their small grant activities. This work was done several ways. Some recipients indicated that once the initial hardware or software investment was made, the practice could continue to support any maintenance costs associated with it. Several sites hope to establish billing procedures that will allow for greater reimbursements or new funding streams generated by the BHP. One site partnered with an institute of higher learning to support a jointly funded BHP position and to obtain students needing clinical hours.

> *"The practice site has developed workflows, created an internal quality assurance process to monitor health outcomes, and have developed their internal systems to sustain these projects once the SIM Small Grant funds are expended."*
> [Cohort 3 small grant recipient]

## Small Grants Analysis

We used paired-samples t-tests to determine whether there were statistically significant mean differences in data quality improvements in practice sites that applied for and won technological small grants (n = 57) as compared to sites that applied for technological small grants but did not receive grant awards (n = 101).

We first reviewed the mean improvement in data element data quality as reported on the HIT assessment. Between the baseline and final assessment periods, the mean improvement for sites that won awards was .155. The mean improvement for sites that did not win awards was .116. We used a paired-sample t-test to determine whether there was a statistically significant mean difference in reported data quality of data elements between the baseline and final HIT assessment. The increase for practice sites that won awards was statistically significant (95% CI [.116, .194], $t(56) = 7.927$, $p<.001$).

We also evaluated the mean improvement in CQM data quality as reported on the HIT assessment. Between the baseline and final assessment periods, the mean improvement in sites that won awards was .361. The mean improvement for sites that did not win awards was .22. We used a paired-sample t-test to determine whether there was a statistically significant mean difference in reported data quality of CQMs between the baseline and final HIT assessment. The increase for practice sites that won awards was statistically significant (95% CI [.257, .464], $t(56) = 6.983$, $p<.001$).

We then evaluated the mean improvement in Building Block 2 achievement as reported on the Practice Monitor assessment. Between the baseline and final assessment periods, the mean improvement in sites that won awards was 24.4. The mean improvement for sites that did not win awards was 23.5. A paired-sample t-test was used to determine whether there was a statistically significant mean difference in building block 2 improvement between the baseline and final Practice Monitor assessment. The increase for practice sites that won awards was statistically significant (95% CI [17.8, 30.9], $t(56) = 7.458$, $p<.001$).

# 6 Statewide HIT

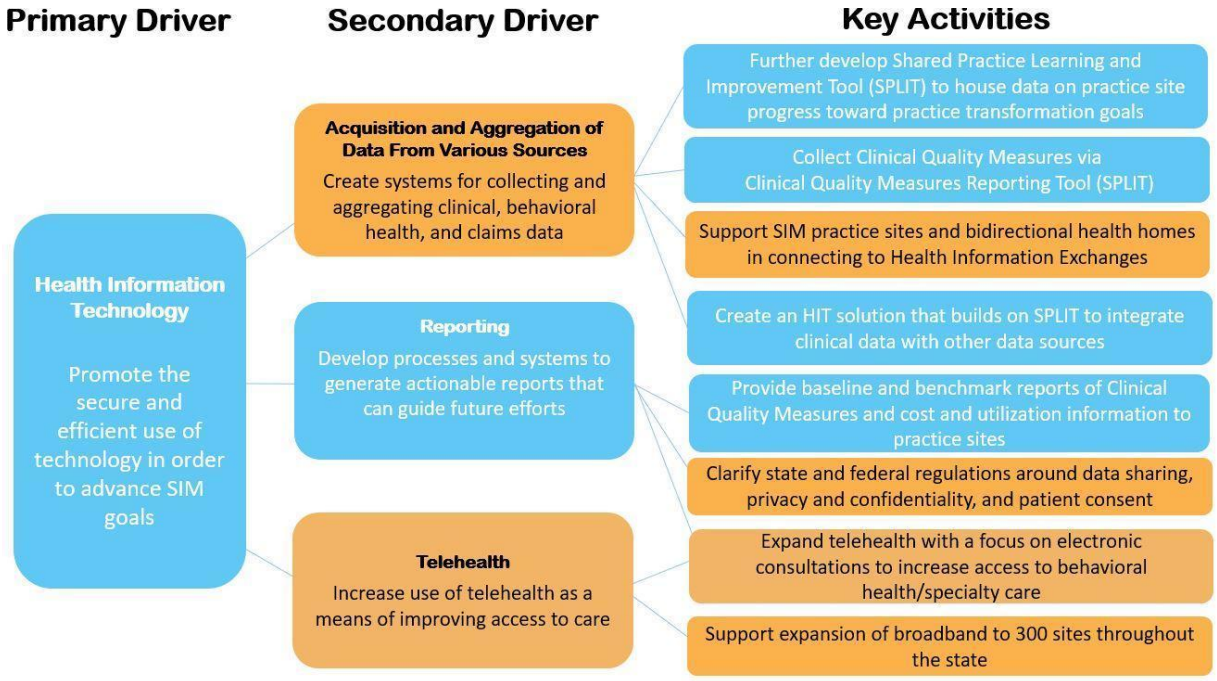
## Introduction

Health Information Technology (HIT) was a primary SIM driver of change. The driver's aims were to promote (1) secure and efficient use of technology to advance the goals of connecting practice and bi-directional sites to platforms for data exchange, (2) accurate and timely collection of clinical and claims data, (3) the ability to report these data to several sources and entities, and (4) support for expansion of telehealth services. SIM implemented several activities to meet these aims, including the following:

- Supporting practice site and bi-directional health home connection to statewide Health Information Exchanges (HIEs)
- Developing and implementing an automated electronic clinical quality measure (eCQM) reporting process that builds on the SPLIT portal to integrate clinical data with claims data
- Working to clarify state and federal regulations around data sharing, privacy and confidentiality, and patient consent
- Facilitating ways to share information between primary care providers and behavioral health providers
- Developing a telehealth strategy
- Expanding broadband to sites throughout the state
- Developing and implementing a SIM HIT Roadmap.

The driver diagram below (Figure 72) depicts the Health Information Technology primary driver, secondary drivers, and related key activities.

Figure 72. HIT Drivers




This section of the final SIM Process Evaluation includes a description of the key activities and accomplishments related to the statewide HIT initiatives, which are highlighted in orange in Figure 72. The activities highlighted in blue are addressed in the Practice Level HIT chapter. This information is organized around each of the statewide process evaluation questions.

## Relationship Between SIM HIT Drivers and the SIM HIT Roadmap

Health Information Technology (HIT) is a primary pillar of SIM and is an extensive part of the SIM operational plan. As seen in the diagram above (Figure 72), SIM has two secondary statewide HIT drivers (orange): (1) acquisition and aggregation of data from various sources and (2) increased use of telehealth in order to improve access to care. Key activities to support the statewide drivers focused on advancing health information sharing by expanding data infrastructures; extracting and reporting clinical quality measures (both manually and electronically); helping sites and bi-directional health homes connect to existing health technology platforms (e.g., broadband services, HIEs); clarifying regulations around data sharing, confidentially, and patient consent; expanding telehealth services; and supporting and improving data sharing among primary care settings as well as between primary care and behavioral health providers. SIM worked closely with its statewide partners and stakeholders to successfully develop a SIM HIT roadmap. This roadmap acted as a guide for implementing many of the HIT strategies and activities that support the project goals.

Since SIM's inception, the SIM office recognized the need for broad, sustainable improvements to statewide infrastructure as a means to fully support integrated care. It also recognized that

four years is not enough time to achieve all necessary changes. In response, the SIM office intentionally partnered with related, longer-term efforts of Colorado's Office of Information Technology (OIT) and the Office of eHealth Innovation (OeHI) to leverage SIM funding toward meaningful changes that will outlive the four-year SIM project.

Because other statewide infrastructure efforts are broader than SIM's, SIM directed focus and funds to the components that most directly related to its efforts: expanding telehealth capabilities and improving healthcare data sharing. To this end, the SIM HIT Workgroup developed strategies to support SIM's goals through the following statewide HIT activities and initiatives:

- Developed an eCQM reporting and analytics process
- Advanced practice HIE connectivity
- Created and implemented a telehealth strategy that included broadband expansion
- Provided funding for technology solutions and upgrades through small grant awards.

SIM's HIT strategies and roadmap laid the foundation for ongoing work beyond the life of the initiative by coordinating with and informing the development of OeHI's Colorado Statewide HIT Roadmap. Many of the same stakeholders and leaders involved in SIM—such as the OeHI State Health IT Coordinator, who also serves as a co-chair of the SIM HIT Workgroup—are involved in OeHI's roadmap efforts, which will continue to build on the foundation for a long-term statewide HIT solution. This solution will continue to focus on engaging stakeholders statewide, refining data governance, identifying funding resources, building on innovation, sustaining the eCQM solution, and expanding technology infrastructure and architecture that focus on identity management, a provider directory, and consent for sharing data.

OeHI's Statewide HIT Roadmap aligns with several of SIM's roadmap and HIT priorities (e.g., eCQM solutions, behavioral health data consent and sharing, statewide infrastructure, master patient index, a provider directory). This alignment allows SIM HIT efforts to continue promoting secure, efficient technology strategies to support improved health outcomes and to expand care and cost efficiency.

## Developing and Implementing the Statewide Roadmap

**HT2. What progress was made in developing and implementing the [SIM] statewide HIT roadmap?**

Meaningful progress has been made over the four years of SIM in the development and implementation of SIM's statewide HIT roadmap. In July 2017, recommendations for a roadmap were submitted to the SIM HIT Workgroup. These recommendations related to processes, a governance model, and phases of implementation. Partnering with statewide entities, the SIM HIT Workgroup engaged stakeholders in the healthcare community to collaboratively develop a guide for statewide HIT efforts. Several HIT stakeholders in Colorado supported this plan, including the SIM HIT Workgroup, the Office of eHealth Innovation (OeHI), and the Governor's Office of Information Technology (OIT).

The SIM roadmap initially included several strategies: electronic clinical quality measures (eCQMs), reporting and analytics, master patient index (to link patients across data systems), automated and integrated consent to share information, a consumer portal for healthcare management, Health Information Exchange (HIE) infrastructure advancement, technical infrastructure for care coordination, HIT portfolio management, data governance processes and tools, and system integration. Working across state partners, including OIT, OeHI, and the Health Information Office at the Department of Health Care Policy and Financing, the initial strategies were translated into use cases that were prioritized based on which strategies could be led by other state entities, and which made the most sense for SIM to lead. This is discussed in more detail below. For the SIM project, a more focused use case was developed. The HIT Workgroup and state agency partners received technical assistance from the Office of the National Coordinator for Health Information Technology to narrow the use cases so that the focus aligned with SIM goals.

### SIM Use Cases

Use cases typically contain a set of possible scenarios with descriptions of interactions between systems, processes, and users in a particular environment. The SIM roadmap originally identified 11 use cases, even though all 11 were not feasible in four years. Leveraging *work* being done by other entities in the state, SIM narrowed the focus by developing two priority use cases in the second award year (AY2) and expanded upon these in the third award year (AY3). The prioritized use cases follow below.

**Use Case 1: Promote Statewide Health Information and Data Sharing**

Use Case 1 focused on sharing health information (both claims and clinical data) across the state by increasing access to—and enhancing the use of—health information exchanges and

telehealth initiatives. Key activities included supporting HIE connectivity, enhancing the use by those already connected, and developing and implementing a telehealth strategy.

**Use Case 2: Enhance Quality Measurement Reporting and Analytics**
Use Case 2 focused on practice sites' ability to extract and report on eCQMs. This clinical data aggregation solution includes a mechanized eCQM extraction and reporting process. This process forms the foundation for efficient eCQM reporting to multiple entities, pulling an extract once and using it to report to many. This helps reduce provider reporting burden. CHITAs worked with sites to align and advance their eCQM reporting. This collaboration included helping practice sites to clarify and define the eCQMs, identifying accurate numerators and denominators, extracting these data from the electronic health records (EHRs), and accurately reporting them to the eCQM solution.

SIM's roadmap, with the two prioritized use cases, was the guiding document for HIT efforts over the duration of the initiative. How these practice-level HIT transformation efforts continue beyond SIM was an important question. Working with OIT to create a long-term, statewide vision and roadmap for data sharing and integration will allow some of the SIM roadmap strategies and initiatives to continue as part of OeHI's Colorado Statewide HIT Roadmap (a published version of the roadmap is available online.[56])

## Telehealth Strategy

**HT2.1. To what extent was a telehealth strategy developed? Implemented?**

Telehealth is becoming an important way to expand patient access to care. SIM's initial objectives for the secondary HIT pillar of telehealth were to develop a telehealth strategy that would increase access to integrated care across Colorado, implement the strategy, and bolster those investments by expanding broadband to 300 rural healthcare sites through the Colorado Telehealth Network (CTN). Expanding access to integrated and specialty care beyond SIM practice sites engaged in practice transformation efforts to the entire state helped SIM reach its goals.

Originally, SIM intended to use telehealth as a means to support SIM's goal to increase access to care, recognizing telehealth's potential as an effective mechanism to increase access to integrated care. The SIM office worked with stakeholders statewide to prioritize funding and to develop a telehealth strategic plan that would improve access to broadband and create

[56] Office of eHealth Innovation. (2017, November). Colorado's Health IT Roadmap. Retrieved from https://www.colorado.gov/pacific/sites/default/files/atoms/files/Colorado%20Health%20IT%20Roadmap%20FINAL%2011-15-2017.pdf

telehealth resource centers as a way to expand use. Table 24 has a glossary of terms to help describe the activities of the telehealth strategy.

**Table 24. Telehealth Glossary**

| Telehealth[57] | Telemedicine[58] | eConsults[59] |
|---|---|---|
| **Telehealth** typically includes a greater breadth of clinical and non-clinical remote healthcare services such as provider training, administrative meetings, continuing medical education in addition to clinical services. | **Telemedicine** is a subset of telehealth and refers solely to clinical healthcare services with a medical provider to support delivery of medical, diagnostic, and treatment-related services. | **eConsults** typically occur between a primary care provider and specialist and are remote asynchronous consultations between providers through a secure platform to exchange health information and discuss patient care. |

To guide the telehealth strategy, SIM convened a group of subject matter experts, including members who directed telehealth programs at various healthcare systems, providers who offered services via telehealth, and other industry leaders who have worked extensively in the field and have a deep understanding of the telehealth environment in Colorado. These subject matter experts' experience and work showed that there was significant existing investment in telehealth across Colorado and that leveraging this work and maintaining a focus on key strategies was the best approach.

## Telehealth and eConsult Experience in Colorado

One key activity under telehealth was expansion of behavioral health services for adult and pediatric populations. To develop the statewide strategy, SIM engaged subject matter experts and contracted with the Spark Policy Institute to complete an environmental scan of practice sites' perceptions, experiences, and knowledge of telehealth. This work led to the creation of a strategy and implementation plan. However, because of concerns from stakeholders that this strategy would likely have led to funding "pilots" with no way to address sustainability post-SIM, this strategy was not pursued. Instead, the telehealth strategy was realigned using a process improvement approach.

[57] Federal Communications Commission (n.d.). Telehealth, telemedicine, and telecare: What's what? Retrieved from https://www.fcc.gov/general/telehealth-telemedicine-and-telecare-whats-what

[58] Federal Communications Commission (n.d.). Telehealth, telemedicine, and telecare: What's what? Retrieved from https://www.fcc.gov/general/telehealth-telemedicine-and-telecare-whats-what

[59] Definition used by SIM in the telehealth RFP.

In late 2017, Public Knowledge conducted a survey to better understand both the current use of telehealth and eConsults throughout Colorado and related barriers and opportunities. The survey targeted SIM-participating providers, PTOs, payers, advocates, vendors, and state agency representatives. The key takeaway was that "[t]here are no clear paths, uniform understanding or concrete outcomes, but value and opportunity exist." The survey results included utilization patterns, barriers, and opportunities for both telehealth and eConsults in Colorado.

From discussion of the survey results, five options for moving forward with telehealth were identified: (1) create an eConsult model, (2) expand on existing use cases to provide integrated care, (3) coordinate care through the Regional Accountable Entities (RAEs), (4) create a new use case, and (5) expand the Extension for Community Health Outcomes (ECHO) project. Following the results from the survey, the Telehealth Strategy Committee further narrowed and aligned the telehealth strategy by proposing two major efforts to support eConsult expansion:

- Working closely with HCPF on implementing internal policy changes that will allow for programmatic implementation of a model for Medicaid eConsults
- Expanding telehealth services across the state by releasing an RFP targeted at healthcare systems to develop an implementation model for eConsults

The first strategy—supporting HCPF in creating a program model for eConsults—included researching existing programs and facilitating conversations to identify and prioritize strategies. Research was needed to (1) address payment levels for both primary and specialty care, (2) develop a way to certify eConsult programs (the platforms and networks would need to meet certain standards to be eligible for reimbursement from Medicaid), and (3) identify any regulatory barriers or opportunities that would affect this work. Conversations aimed at prioritizing strategies for expanding telehealth/eConsult services within HCPF continue to progress.

The second strategy—the release of an RFP—targeted health systems. The main goal of the funding was to build the technology necessary to expand e-Consult programs to providers with different electronic health record (EHR) systems. The RFP required that the recipients be health entities with an established specialty care and treatment network capacity to partner with primary care practices in rural, frontier, and underserved areas. This partnership would then provide e-consultation, follow-up services, and in-person follow-up care as necessary. Ultimately, these entities would increase access to specialty care and treatment using technology, prioritizing Medicaid and Medicare clients. These health entities also needed to work with a provider outside of their current networks, engage the Regional Accountable Entity (RAE), and ensure their networks included a Colorado provider who could offer in-person care when needed.

To further this work, SIM adapted an implementation logic model for the health systems to follow[60] and accountability guardrails around the funding as a way to guide the planning process. SIM awarded contracts to two health systems that focused on how to expand their current e-Consult networks outside the bounds of their own providers and EHRs, allowing them to interface and interact with any providers using a different EHRs. The two awardees, Mind Springs Health and the University of Colorado School of Medicine (CU Medicine), presented their e-Consult implementation models to the HIT Workgroup meeting in February 2019 and attended a convening with CMMI and ONC in May 2019.

Both of these solutions aligned with Medicaid's vision and strategy for incentivizing e-Consults throughout the state, and the awardees are working on securing sustainable funding sources for their programs. CU Medicine currently receives Upper Payment Limit (UPL) funding from Medicaid to support implementation of telehealth and e-Consults. Mind Springs is working closely with its RAE (contracted with Medicaid) to fund telehealth under their current capitated behavioral health payments, further supporting sustainability and advancing SIM's goal of expanding telehealth to improve access to care for all Coloradans.

### Broadband Expansion

Connecting to broadband services, particularly in the rural areas of the state, is critical to accessing high-speed internet. These connections allow sites to meet the technical requirements of HIE connectivity and specification for telehealth opportunities. Multiple respondents cited broadband as a barrier, and SIM made concerted efforts to expand broadband to SIM and non-SIM practice sites. These efforts will continue after SIM. Two partner agencies are engaged in this effort: the Office of Broadband focused on larger scale expansion of the "middle mile" and the Colorado Telehealth Network (CTN), which helps healthcare sites that meet the Federal Communication Commission's Rural Health Care Program criteria for connecting the "last mile."

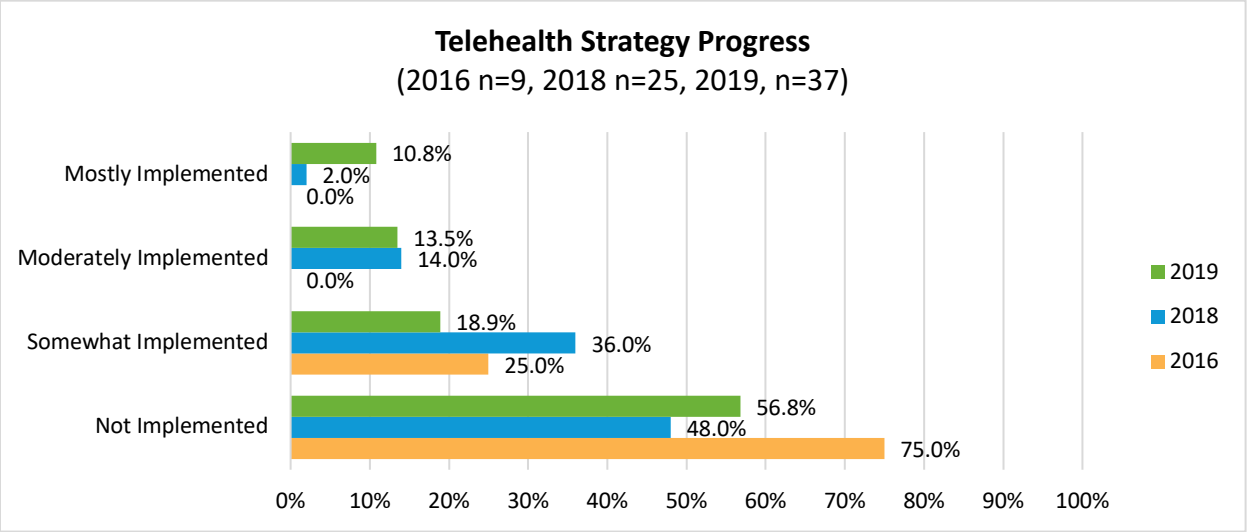
Broadband expansion continues through the Colorado Telehealth Network (CTN). CTN is a statewide consortium that administers federal dollars to help eligible healthcare entities—especially in underserved regions of the state—in gaining access to broadband connectivity for providing healthcare services. At the end of 2017, 126 primary care practice sites and CMHCs across Colorado had added broadband access as part of this effort. An additional 96 sites were added during 2018. In the first two quarters of 2019, 159 sites were added. This expansion exceeds SIM's goal by 81 sites for a total of 381 sites connected across the state.

[60] This logic model was based on the work found in the eConsult toolkit: https://econsulttoolkit.com.

## Key Informant Perceptions of Telehealth Strategy

During all three years of key informant interviews conducted (2016, 2018, 2019), we asked key informants (SIM and Governor's office staff, PFs and CHITAs, and workgroup members) whether a telehealth strategy was implemented. Responses over time are presented in Figure 73. Key informants from the Governor's office and SIM Workgroup members are considered tertiary (and in the case of PFs and CHITAs, secondary) participants to the overall telehealth strategy as these informants did not participate directly in implementation or in telehealth strategy meetings.

**Figure 73. Telehealth Strategy Progress (2016, 2018, 2019)**




In 2016 and 2018, several key informants had difficulty responding to this question because SIM's telehealth strategy changed directions from initial first-year concepts. A few key informants said they were aware of discussions and knew there was an initiative change, but they were either unsure or had lost track of what the latest strategy was, noting they were not certain any progress had been made.

In 2019, key informants had more to say about telehealth and the strategy employed. This increased response rate likely resulted from a greater number of PFs and CHITAs who participated in the interviews. One PF, who had supported multiple practice sites in all three cohorts, summarized an overall picture of telehealth as follows:

> *"There are some that had it [prior to SIM], some who are trying to get it, and others who [because of SIM] have it now. I don't know where they are coming from and if it is part of the statewide strategy."*

Because of limited access to practice staff, in an effort to obtain a practice-level perspective, all PFs and CHITAs were invited to interview. According to PF and CHITA interviews, telehealth efforts at the practice-site level varied considerably. Some PFs said the sites they coached had no telehealth efforts. PFs reported that other sites were able to establish or expand on existing services. This disparate field of responses made it difficult to connect practice-level progress to the overall SIM telehealth strategy initiative. PFs and CHITAs were not included in the implementation of the telehealth strategy, thus these results more likely represent individual practice site efforts rather than the overall SIM statewide efforts. Also, PFs and CHITAs potentially lack a scope of how the work ties to a larger statewide picture of telehealth expansion.

Five PFs and CHITAs (about 14% of Level II key informants) said their practices had not implemented a telehealth strategy but had explored options or were beginning discussions. One PF suggested that sites could use coaching from others who had been successful in implementation. Three spoke to the lack of reimbursement as the biggest barrier to implementation efforts.

One Practice Facilitator stated that unless a practice site had been able to strategically build reimbursements into its Medicaid's Regional Accountable Entity (Medicaid RAE) contract, it was unable to bill for said services. Another PF cited parity laws,[61] which have caveats that bar coverage or full reimbursement for virtual visits (FQHCs, in particular, are not able to bill for telehealth visits). Another PF stated that one of her sites reported patients were "uncomfortable and don't want it," but the Practice Facilitator questioned the validity of this statement. A PF who supports practice sites in a frontier county stated that while the sites desperately need telehealth and that it seems to be an obvious answer for rural and frontier counties, telehealth was too expensive. Thus, none of her sites were using telehealth.

PFs and CHITAs reported conflicting information about differences between independent practice sites versus those sites that are a part of larger health systems. One respondent stated that practice sites within a larger health system have a *greater opportunity* to establish telehealth because services are centralized. But another key informant said being a part of a larger system made *it more difficult* because they were waiting on approval several layers above them. Another said that smaller practice sites do better implementing because they are able to adapt new processes more quickly.

[61] Medicare Learning Network (2018, January). Federally Qualified Health Centers MLN Booklet. Retrieved from https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/fqhcfactsheet.pdf

There were several examples of successful implementation of telehealth strategies for behavioral health. One PF reported that the four psychiatrists in the area were not taking new patients, and none of them accepted Medicaid. Yet, they were able to contract with a psychiatrist from the Front Range:

> *"Now we use a BHP in Denver…. [T]wo hours twice per week we have telemedicine conferences and meetings. It is wonderful. But it just started 4–5 months ago…. This psychiatrist also gives the providers one hour of consultation per week where they present their cases, [and] collaborate, that's helpful."*
> [Cohort 2 Practice Facilitator supporting sites in Southwest Colorado, 2019]

One practice site that received a technology small grant responded,

> *"The small grant funds allowed us to purchase the telehealth equipment and support equipment/services needed to launch a new telehealth program reaching a new student-patient population of over 600 high needs students. The telehealth program is an integrated care program with both [medical and behavioral health] provider's using the platform."*

One PF reported that more than one practice site had negotiated a "strategic way to offer telemedicine [under] their [Medicaid Regional Accountable Entity] RAE contract." Other successes included one site implementing a complete virtual clinic that includes behavioral health services. This virtual clinic launched in February 2019, and the site looks forward to reporting lessons learned. Three practice sites that received small grants implemented virtual psychiatry services through CO Access's telehealth network (this network is only available to those sites in CO Access's Medicaid Regional Accountable Entity and not to all practice sites across the state). Heart Center Counseling in Denver has offered telepsych services to the sites on the Front Range, and at least three PFs reported they have sites working on care compacts to establish care services with them.

## Practice Sites' Perceptions of Telehealth

In the HIT assessment, practice sites generally noted that they were interested in offering telehealth but that implementation was challenging. Practice sites most frequently reported offering BH services, eConsults, and pharmaceutical or medication counseling via telehealth services.

**Table 25. Practice Site Offering of Telehealth**

| Does Practice Site Offer Telehealth Services? | | |
|---|---|---|
| **Cohort**[62] | **Baseline** | **Final** |
| Cohort 1 (n = 92)[63] | - | 26.08% |
| Cohort 2 (n = 145) | 13.79% | 26.20% |
| Cohort 3 (n = 83) | 19.27% | 30.1% |

These sites reported facing several obstacles to offering these services, and there was broad consensus across cohorts regarding those challenges. The most frequently reported concern came from FQHCs, which are not able to bill Medicaid for visits that do not take place face to face. Per CMS, an FQHC visit is defined as "medically necessary face-to-face medical or mental health visit or a qualified preventive health visit between the patient and a physician, NP, PA, CNM, CP, or CSW during which time one or more qualified FQHC services are furnished."[64] These sites are essentially precluded from offering telehealth services.

Other sites reported they were able to bill in creative ways, such as charging a facilities fee for using the practice site space and technology or allowing providers to bill independently rather than having the practice site do billing. However, upon completion of the final HIT assessments, only 9.78% of cohort 1, 14.48% of cohort 2, and 15.66% of cohort 3 practice sites reported they billed telehealth at the same rates as they billed traditional visits. Two practice sites reported offering telehealth but not billing for it at all, though further details were not provided.

These initial findings may suggest that practice sites recognize potential in these services and are interested in offering them to patients. Easing federal restrictions on FQHCs would allow these services to expand, and responses indicate that practice sites would be eager to offer telehealth services, particularly in rural areas and other communities with workforce and provider shortages. Furthermore, in a recent telehealth survey conducted by Public Knowledge, practices identified several financial barriers to providing telehealth. These included inconsistency among payers on a definition of telehealth, difficulty in billing and reimbursement procedures, a lack of a clear return on investment, and initial upfront costs to establish the technology.

[62] Cohort "n" includes only SIM practice sites that remained involved for the duration and completed all assessments.

[63] This question did not appear on cohort 1's baseline assessment.

[64] Medicare Learning Network (2018, January). *Federally Qualified Health Centers MLN Booklet*. Retrieved from https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/fqhcfactsheet.pdf

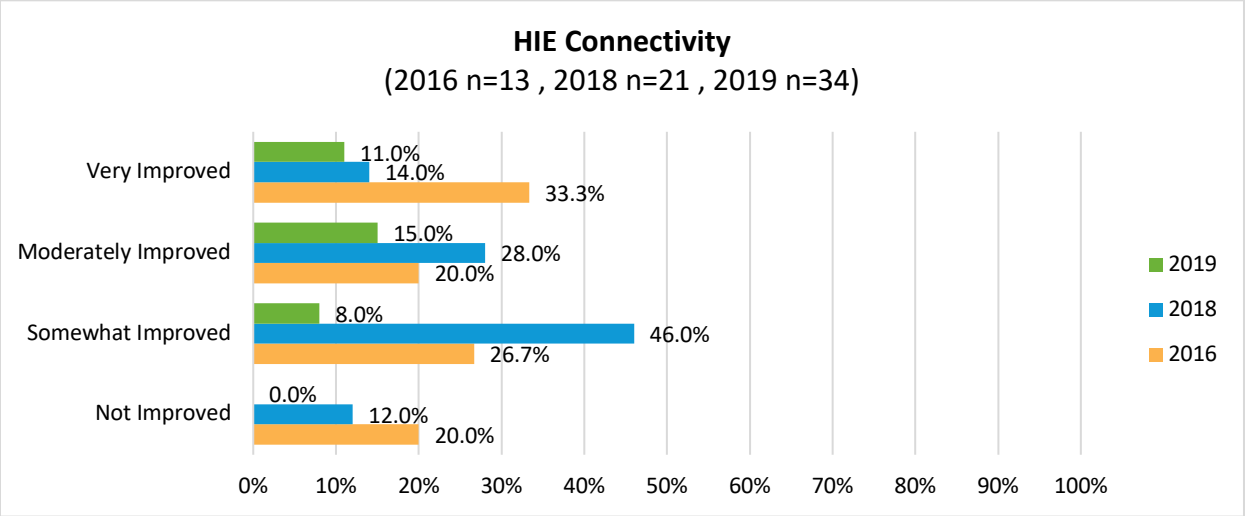
## Telehealth Investments from Small Grants

Some practice sites were able to expand telehealth services with small grant funds. For example, one cohort 1 site purchased an eVisit subscription for its providers and reported that this access had already prevented four patients from unnecessary ED visits within the first several months. The same site reported that although the volume of telemedicine is still small, the site sees the value and believes eVisits can help reduce utilization and costs. Another cohort 1 site used grant funds to access telepsychiatry through the University of Colorado School of Medicine. Yet another cohort 1 practice site began telepsychiatry services but determined that telepsychiatry was no longer needed after the site was able to establish a fully integrated behavioral health provider into its clinic.

Two sites from cohort 2 used small grant funding to support behavioral telehealth services. The first prepared its telehealth center to meet clients' physical and behavioral health needs. The second site extended its telepsychiatry services to provide psychotropic medication management to more patients. Likewise, two sites from cohort 3 used grant funds to support the purchase of laptop computers to implement telepsych services. Another site has started work to launch a Virtual Care Program that will serve both physical and behavioral health needs. Small grant funds are definitely helping practice sites to explore telehealth capacity even though ongoing funds for such services remains uncertain.

**HT2.2. To what extent did connectivity to HIEs improve across the state? For SIM practice sites? For CMHCs?**

**Figure 74. Improvement in HIE Connectivity (Reported by PFs and CHITAs in KIIs)**




HIE Connectivity appears to have improved over the duration of the grant period. However, some practice sites connected to an HIE prior to SIM. Unfortunately, the above response

options (Figure 74) did not include an "N/A" or "already connected," which would have provided greater and more-specific context for describing the progress and current state of HIE connectivity. Additionally, respondents may not have had a panoramic view of statewide HIE efforts that were not directly tied to SIM. For instance, one mechanism by which SIM sought to increase connectivity was through partnering with the Medicaid Health Information Office. Accessing allowable funding per the Health Information Technology for Economic and Clinical Health (HITECH) Act, CORHIO was able to onboard practices to its HIE. While this opportunity did help connectivity—because this partnership leveraged state and federal funding, as opposed to SIM dollars—stakeholders may not have been aware that this work was done.

During the 2019 key informant interviews with PFs and CHITAs, 29 open-ended comments were related to the improvement of HIE Connectivity. Ten (35%) of the 29 comments indicated that many of the practice sites were already connected to an HIE prior to SIM and that SIM was not an impetus for connection. Specifically, three respondents indicated that this connection was a result of other practice transformation initiatives.

Respondents who reported modest improvement indicated these improvements resulted from an increased number of users within practice sites having access to HIE logins and from more requests from external agencies for continuity of care documents. One PF shared that, in the PF's area, HIE was now being used by "prisons, by the corner's (sic) [office], and out on ambulances and fire departments."

Two PFs cited that the ongoing costs of HIE participation were a barrier for some practice sites, and another reported that the practice site did not see value in participation until the local hospital was participating. One other PF reported that her sites were "down on the list" of priorities, delaying connectivity. This open-ended comment does not clarify whether this delay was on the part of practice IT staff, TA support, or the HIEs.

## HIE Connectivity Across the State: SIM and Non-SIM Practice Sites

**Table 26. Number of Participating Colorado Providers Connected to an HIE**

| Number of Participating Colorado Providers Connected to a Health Information Exchange | | | |
|---|---|---|---|
| **Dashboard Source** | **2017** | **2018** | **2019** |
| Quality Health Network (QHN) | 1,184 | 1,126 | 1,193[65] |

[65] https://qualityhealthnetwork.org/PDFs/QHN%20Dashboard%2002%202018.pdf

| Number of Participating Colorado Providers Connected to a Health Information Exchange | | | |
|---|---|---|---|
| **Dashboard Source** | **2017** | **2018** | **2019** |
| Colorado Regional Health Information Organization (CORHIO) | 1,218 | 5,100 | 6,100[66] |

The number of Colorado providers connected to an HIE appears to continue increasing annually. The February 2018 Quality Health Network (QHN) dashboard stated that "1,193 providers or >95% of providers in the QHN service area" are connected. Table 26 compares dashboards over the last three years and shows a steady climb in connectivity. The lower QHN number in 2018 may not be accurate as this came from the dashboard published annually in June, whereas the webpage may have more frequent updates.

## HIE Connectivity of SIM Practice Sites and CMHCs

**Table 27. Practice Sites and CMHCs Connected to HIEs**

| Percentage of SIM Practice Sites and CMHCs Connected to Health Information Exchanges[67] | | | | | |
|---|---|---|---|---|---|
| **Sites Connected to HIE** | | **Baseline** | **Midpoint 1** | **Midpoint 2** | **Final** |
| **Cohort 1** | % | - | - | - | 87.91% |
| | n | - | - | - | 91[68] |
| **Cohort 2** | % | 85.90% | 86.93% | 89.26% | 87.59% |
| | n | 156 | 153 | 149 | 145 |
| **Cohort 3** | % | 76.19% | - | - | 75.90% |
| | n | 84 | - | - | 83 |
| **CMHCs** (n = 4) | | 50.00% | 50.00% | 50.00% | 50.00% |

Insights into HIE connectivity among SIM sites, shown above in Table 27, is similarly ambiguous, largely as a result of data limitations. For example, a question regarding connectivity was only added to the final HIT assessment for cohort 1. Likewise, cohort 3 did not participate long enough to expect to see significant change. And the CMHCs are not appropriately representative to generalize. The question did appear on all four HIT assessments (baseline, midpoint 1, midpoint 2, and final) for cohort 2, which is broken out in further detail in Figure 75 and discussed below.

[66] https://www.corhio.org/library/images/external_dashboard_4-26-19.pdf

[67] Blank cells indicate this question did not appear on the assessment for that cohort or period.

[68] N differs from other cohort 1 figures as a result of missing practice data.

**Figure 75. Cohort 2 Practice HIE Connectivity**

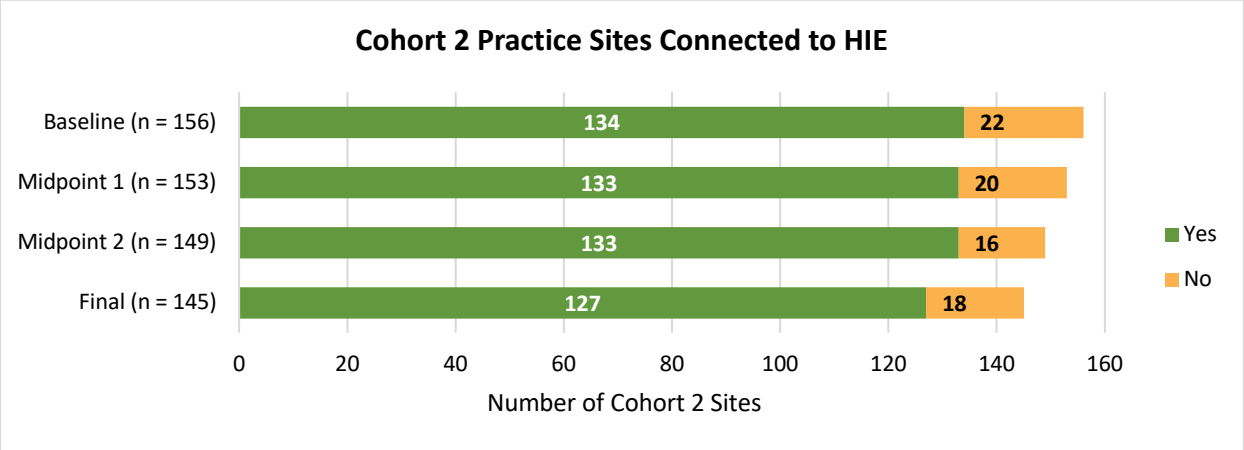



Table 28 contains a breakout of connectivity by practice sites rather than by percentages. This approach allows us to better illustrate change over the course of SIM participation. Although the percentage reporting connectivity rose from 85.90% at baseline to 87.59% at the final assessment, the number of connected sites never increased after the baseline assessment. There are no data that explain the drop in HIE connectively over time; however, it may result from respondent reliability or cost barriers.

**Table 28. Total Number of SIM Practice Sites Connected to Select HIEs**

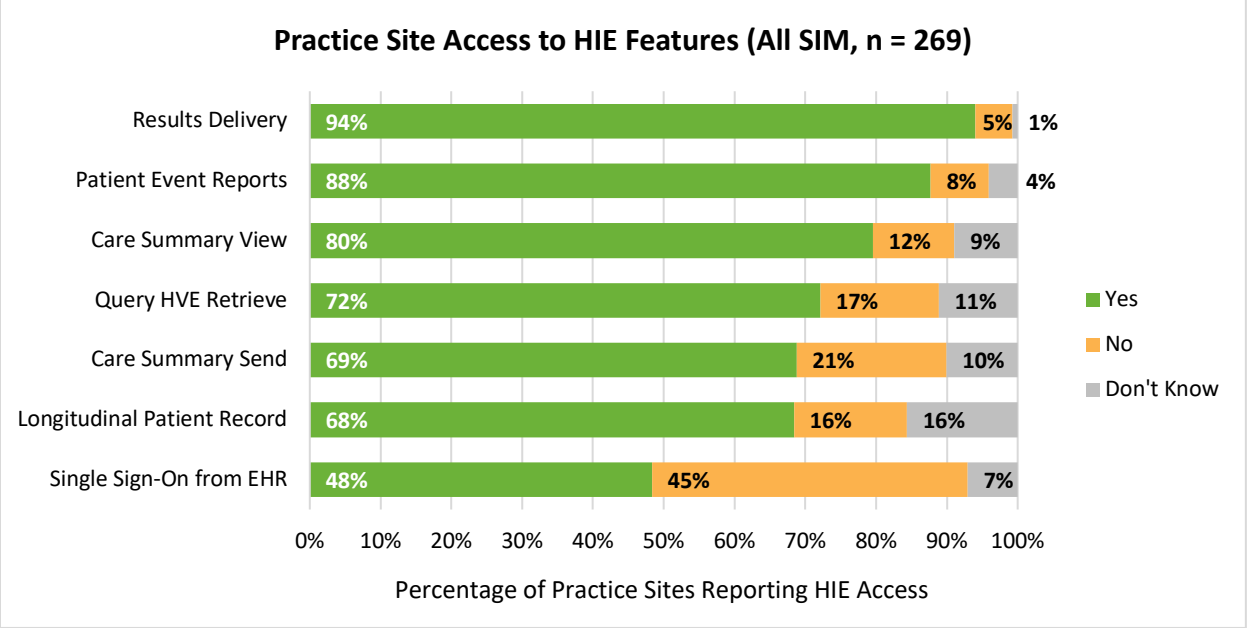
| Total Number of Active SIM Practice Sites and CMHCs Connected to Health Information Exchanges | | | |
|---|---|---|---|
| **Sites Connected to HIE[69]** | **2017** | **2018** | **2019** |
| SIM Practice Sites Connected to QHN Only | 20 | 46 | 29 |
| SIM Practice Sites Connected to CORHIO Only | 101 | 210 | 154[70] |
| SIM Practice Sites Connected to QHN and CORHIO | 3 | 12 | 5 |

The number of SIM practice sites not connected to any HIE decreased modestly over SIM. Because of participation in Accountable Care Organizations (ACO), many SIM practice sites from all cohorts reported being already connected to an HIE prior to SIM. At the time of the final assessment, only 13% of cohort 1, 12% of cohort 2, and 22% of cohort 3 sites indicated they were not connected to an HIE.

[69] Question did not appear on baseline 2016 assessment.

[70] The drop is caused by cohort 1 becoming inactive and no longer completing assessments, not a drop in HIE connectivity.

**Figure 76. Practice Site Access to HIE Features[71] (All Cohorts and CMHCs)**




## Enhanced Use of HIEs

In addition to connecting to an HIE, practice sites reported enhanced use of HIEs through access to, and use of, common features. As shown in Figure 76 above, several of these features are used by most reporting practice sites. Results delivery, the most commonly-used feature and accessed by 94% of SIM sites connected to an HIE, is a strong example of the potential behind these technologies. In a typical workflow, a provider will first order lab work for a patient. The patient then arranges an appointment with the lab, the lab conducts the provider-ordered tests, then the lab delivers lab results directly to the original provider. The provider will then review results, report on them, and schedule another appointment to review the results with the patient. Results delivery is more streamlined with HIE access. The provider can, in some cases, pull the results into the EHR and can send these results to the patient via a patient portal or phone message.

During key informant interviews, one PF stated that the onus to collect results and arrange for a consultation is largely removed from the patient, a shift that can have powerful effects. One practice site she works with began using results delivery to better manage their patients with diabetes. This clinic identified regular ophthalmology exams as strong indicators of future complications from diabetes. To improve health outcomes and lower costs, this practice site ordered these exams annually for its patients with diabetes. The site then consulted with a specialist for results and scheduled follow ups without the patient being responsible for any

[71] High-value elements (HVEs) are data recognized as associated with lower cost and utilization. Assessment data did not specify HVEs nor ask for examples. Details are not available for further analyses.

coordination. This strongly supports the primary HIT driver by promoting the "secure and efficient use of technology in order to advance SIM goals."

**Figure 77. Practice Site Uses Automated Extraction Through HIE for CQM Reporting**[72]

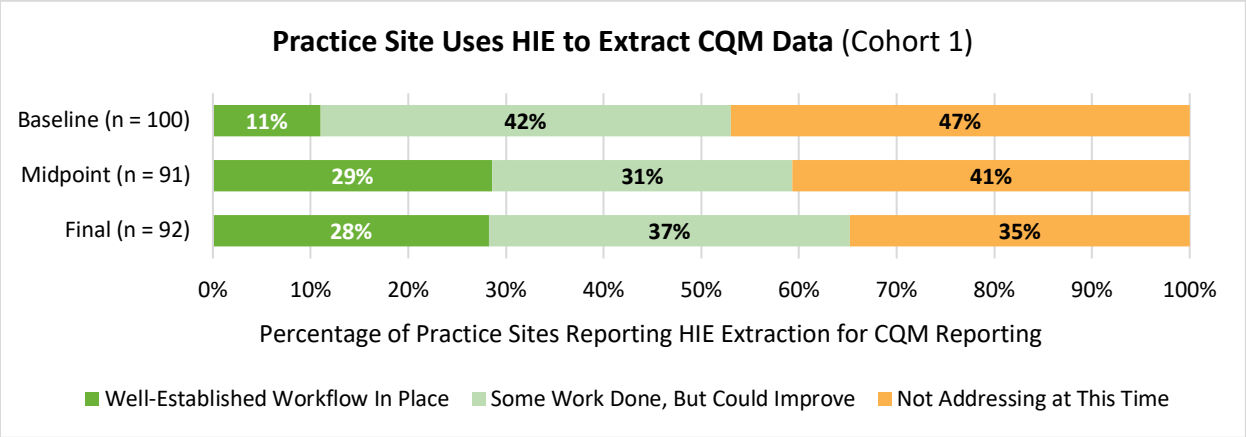



Figure 77 above offers additional evidence that SIM practice sites have expanded the use of HIEs. The Milestone Activity Inventory (MAI) was administered three times to cohort 1 sites and included an item to measure whether practice sites were using automated data extraction through HIEs to supply data for CQM reporting. Forty-seven practice sites reported not addressing this milestone at the baseline assessment. This number decreased to 32 practice sites at the final assessment. The difference in having a well-established workflow in place fluctuated between the midpoint and final assessments because of missing data caused by practice sites electing to skip assessment items, impacting the denominator (the actual reported number of practice sites remained static at 26).

Practice Facilitators and CHITAs provided additional examples of how sites continue to enhance the use of their HIEs. Some practice sites appear to understand the benefits of participation and are able to maximize features, build strategic partnerships, and access a greater amount of clinical information than before connecting.

> *"Now we're looking to expand with CORHIO to have integration with our advanced care planning…. It's going to be done with an iPad and the patient will be able to fill out advance directives, go to the CORHIO cloud, and then the data is available. The idea is then there will be electronic signatures available for [the] provider."*
> [Cohort 2 CHITA]

[72] Midpoint n varies from final n as a result of missing data.

*"More and more practices and systems are actually using the HIE to garner information about their patients and hospitalizations, specialties, stuff like that. There's a greater understanding of the value of what it can do to help provide more comprehensive care."*
[Cohort 2 Practice Facilitator]

*"With cohort 3, they are in a number of other programs and are pretty involved with HIE. It informed a lot of their strategic plans for facilities and establishing different partnerships. It's been really helpful for them."*
[Cohort 3 Practice Facilitator]

"*One of the biggest things… has been some of the new programs that are offered through CORHIO, especially the patient event notifier. That's been big for episodic care especially in the Front Range because there are so many options where to seek treatment, so you may not know if they're getting treatment and certainly not getting the records*."
[Cohort 2 Practice Facilitator]

### HT2.3. What progress was made on creating an automated eCQM reporting process?

Significant progress was made on creating and implementing an automated eCQM reporting process over the course of the four-year SIM project. Beginning in 2017, SIM funded the creation of a solution powered by Colorado Regional Health Information Organization (CORHIO), Quality Health Network (QHN), and Colorado Community Managed Care Network (CCMCN) that can automatically extract and report eCQM measures for practice sites. These measures are aggregated using blockchain technology.[73]

This partnership eventually became known as Health Data Colorado (HDCo), a three-phase process for development of the eCQM solution: implementation, validation, and central storage of the numerators and denominators (with the goal of one-time reporting of data by practice sites for several approved entities.). Activities included governance and policy, program management, funding, technology, and technical assistance. SIM funded and led the oversight and planning efforts of the eCQM solution, providing facilitation of the governance charter, assisting in visioning the architecture, and developing a data validation framework. This work has led to a commitment for transition and continuation of the solution under OeHI's statewide HIT Roadmap, and funding for continued data governance has been secured for FY 2019–2020.

Initially, the SIM office worked with OeHI and the HIT Workgroup to develop data governance. A Request for Proposal sought a facilitator who, with the SIM HIT team, held several discussions

[73] https://blockgeeks.com/guides/what-is-blockchain-technology/

about data governance processes and principles with key stakeholders, including the SIM Advisory Board, HIT Workgroup, OeHI, and eHealth Commission members. These meetings helped provide guidance and an initial framework for the use of SIM-related measure data, and the group established a Data Governance Committee to be facilitated by Colorado Health Institute (CHI).

Phase 1 began with HDCo working with three partners to build architecture within each of the three HIEs to calculate the eCQM measures. These measures are aggregated using blockchain technology, which aggregates practice-site-level data from the three HIEs into a single endpoint that can report data to the SPLIT platform, Medicaid, Medicare, or any APM the practice sites approve to receive the data.

The Data Governance Committee, facilitated by the CHI, developed a governance model and 14 guiding principles, listed below in Table 29. The governance committee met monthly with statewide representation from primary care, mental health, payers, state agencies, and technical partners. The following principles reflect the core values that guide the Data Governance Committee's work:

**Table 29. Data Governance Committee Guiding Principles**

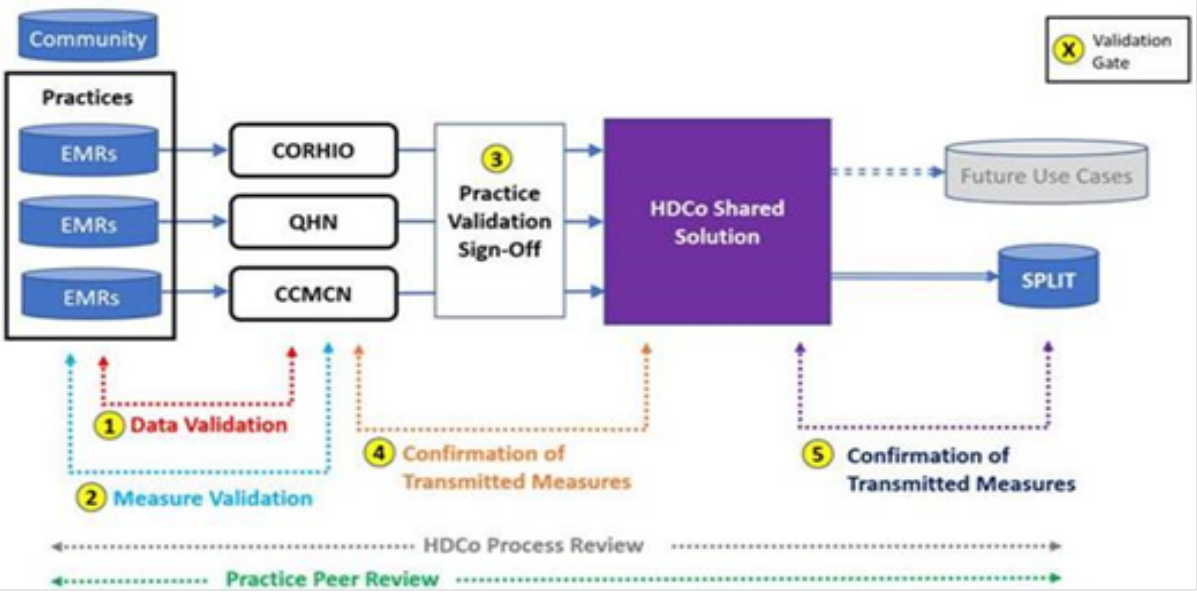
1. Build and establish trust with stakeholders for establishing and using quality measures.
2. Understand and communicate how data will be used.
3. Promote transparency and buy-in across payers and practices.
4. Promote scalability and continually communicate about the Colorado Health IT Road Map.
5. Provide an appeals process for practices that may not agree on the measures.
6. Promote knowledge transfer and how to use measures.
7. Give stakeholders an opportunity to understand data uses and limitations.
8. Create and update use cases as eCQM evolves.
9. Share minimum necessary information to meet eCQM objectives.
10. Reduce practice burden and increase trust of the measures by the recipient.
11. Establish a rigorous validation process for measures across practices, payers, and recipients.
12. Promote "public utility"/ services.
13. Ensure the governance model is iterative.
14. Provide a feedback loop for communications.

Once the committee established data governance, work focused on creating a validation process; developing a transition plan; discussing potential new use cases for Medicaid, Medicare, and specialty care; and piloting the system with a small group of measures.

Much of the work of 2018 aimed on developing a validation framework. This framework ensures that data being accepted, stored, and reported are trusted, valid, consistent, and

usable. Measure validation ensures that quality measures accurately reflect the care that providers are rendering and are acceptable to both payers and to practices. Measure validation comprises a series of steps, or gates, through which practice data must pass to be considered accurate enough to be reported to the final data receiver. There are five measure validation gates. In addition to the validation gates, there are two other validation reviews that occur on an ongoing basis: HDCo Process Review and Practice Peer Review. These gates and review processes are illustrated in the following diagram (Figure 78).

**Figure 78. Data Governance and Data Validation Framework Diagram**




In April 2019, 109 practices sites reported or indicated data on eight of the CQMs. Two of the planned measures were unable to be developed as part of the solution. Currently, CHI monitors the validation process quarterly and shares lessons learned with the SIM HIT Workgroup and eCQM solution partners. This process not only helps to ensure usable data are available. It also garners engagement by stakeholders and trust by providers as they are able to see the value brought to practice sites that use the solution.

CHI also used the eCQM governance framework to advance additional use cases for Medicare and Medicaid, both of which are critical for ensuring the long-term sustainability of the eCQM solution. The Medicare use case revolves around reporting of electronic measures for the Quality Performance Program (QPP) that many primary care and specialty practices in the state must report to. The Medicaid use case focuses on the Alternative Payment Model (APM) that requires certain primary practices to participate in. Both use cases use eCQMs to adjust how providers are paid based on their individual or group performance.

The process to develop this solution was not without its challenges. A governance process takes time to be developed and is a key component when collecting and reporting data on behalf of various stakeholders. This process required an outside facilitator and time to reach consensus by partners. Interoperability of any electronic solution that relies on data from a multitude of EHRs will be challenging and require substantial validation processes. The nature of the partnership of three HIEs supporting varying regions of the state requires collaboration and understanding. Operationalizing a shared solution requires high levels of trust among the partners because of the unpredictability in innovation and future states. Processes and use cases of the future cannot be fully predicted or defined.

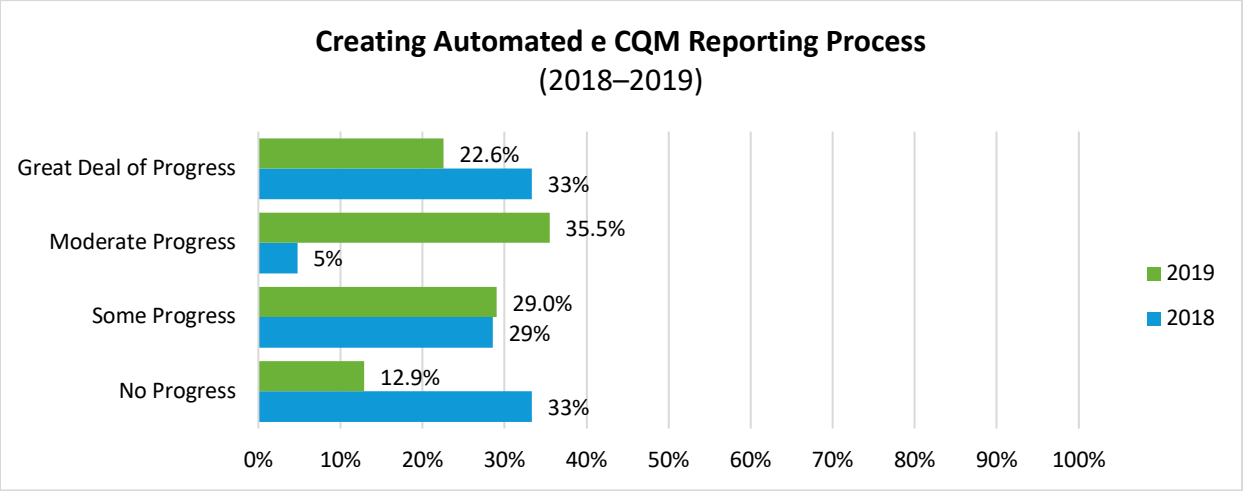
As part of the transition plan, following SIM's conclusion, OeHI will lead the Data Governance Committee, which will expand the infrastructure to support statewide eCQM reporting.

## Level I and II Key Informants' Perspectives on the eCQM Reporting Process

Level I and Level II key informants are from the broader mix of SIM stakeholders, PTO staff, and workgroup members. Those concentrating and involved in the eCQM solution, HDCo partners, CHI, and HIT Workgroup members are more familiar with the work, progress, and vision of the solution. They should be considered primary informants of the process. In contrast, the wider SIM community—including Practice Facilitators, CHITAs, and non-involved stakeholders—should be considered tertiary to the process. Their involvement and assessment of the progress, development, implementation, and testing was limited.

When asked if progress had been made on an automated eCQM reporting process, Practice Facilitators and CHITAs offered mixed responses.

**Figure 79. Creating Automated eCQM Reporting Process**



It appears incongruent that the response of a "great deal of progress" would decrease from 2018 to 2019 as this 12-month period was very productive. This decrease may instead indicate that the PFs and CHITAs did not receive the monthly communication from the data governance committee and so were unaware of the progress being made. During this period, the governance model was established, the committee met regularly, a data validation framework was developed, the pilot project was implemented, and 10 practice sites (which would eventually grow to 49 practice sites) began reporting eCQMs.

Twenty-nine of the 39 informants provided an additional open-ended comment to this question. The most-often-cited reason for progress on eCQM solution was that reporting was EHR-dependent and varied depending on which EHR was used.

> *"That question is EHR-dependent. Not all of them are usable or accurate. It depends on who has been trained and if they have someone to help with vendors."*
> [CHITA supporting cohort 1 and 2 practice sites]

Some EHRs were much more adept at meeting the technical and reporting requirements than others. Some practice sites were engaged and wanted to be able to report electronically, but EHR issues kept them from participating in the opportunity.

**Table 30. Practice Sites Interested in eCQM**

| Number of SIM Practice Sites Interested in eCQM Demonstration Project[74] | | | | |
|---|---|---|---|---|
| | **Baseline** | **Midpoint 1** | **Midpoint 2** | **Final** |
| Cohort 1 | | | | 27 |
| Cohort 2 | 59 | 64 | 66 | 77 |
| Cohort 3 | 39 | | | 41 |

We do not know how many of the sites interested in the demonstration project actually participated. Conversely, there are no consistent data collected to understand why an interested practice site *did not* participate in the project. However, three key informants indicated that cost was a barrier, citing that one of their practice sites was presented with a "$10,000 bill" for the eCQM project. The informants did not indicate whether the bill was for needed EHR vendor work, external IT support, or another entity. Another informant said that the ability to pull CQMs electronically required additional vendor support to build the needed reports, and this was cost prohibitive for the practice site.

[74] Blank cells indicate the question did not appear in those assessments or periods.

Four of the 29 respondents reported "a great deal of progress" and pointed to a certified vendor, Azara, as the reason why. Azara reports directly to CCMCN HIE in an aggregate form, according to one of the informants.

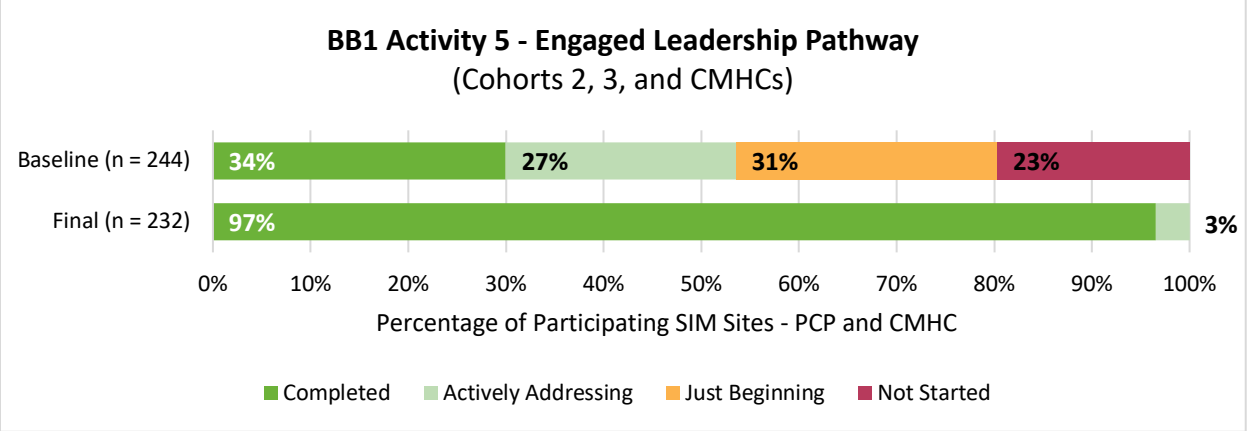
**HT3. What progress was made on facilitating ways to share information between primary care providers and behavioral healthcare providers?**

Recognizing that progress toward integration is largely informed by enthusiasm among practice leadership, a Milestone Attestation Checklist (MAC) item for cohort 2, cohort 3, and CMHCs[75] asked if the practice "has vision for behavioral health integration and has identified a pathway for behavioral health transformation signed by leadership" and offered a scale from 1 (not started) to 4 (completed). As shown in Figure 80 below, practice sites prioritized this activity and made considerable progress. By the end of their respective participation periods, no sites reported this activity was "not started" or "just beginning." Only eight practice sites reported they were "actively addressing" this activity, and 224 practice sites reported this activity was complete.

Practice Facilitators and CHITAs stated that the greatest progress on facilitating ways to share information between primary care and behavioral healthcare providers was dependent upon the level of integration between the two. According to the perspective of the PTO staff working with practices sites, those BHPs who were either embedded, co-located, or bi-directional made more progress when sharing information than those BHPs who were externally located. Five of the 23 informants (23%) who offered an open-ended comment said that the greater progress was made when the BHP was embedded in the practice site and/or using the same EHRs. Conversely, three informants said that those BHPs who were not embedded had limited to no progress. The length of the integration activities also appears to promote or rather maintain sharing of information. One PF said, "We've also had these BHPs in place for five years, so they're used to being collaborative. It's part of the culture now and they attend the daily huddles so they can plan. We share the same EHR."

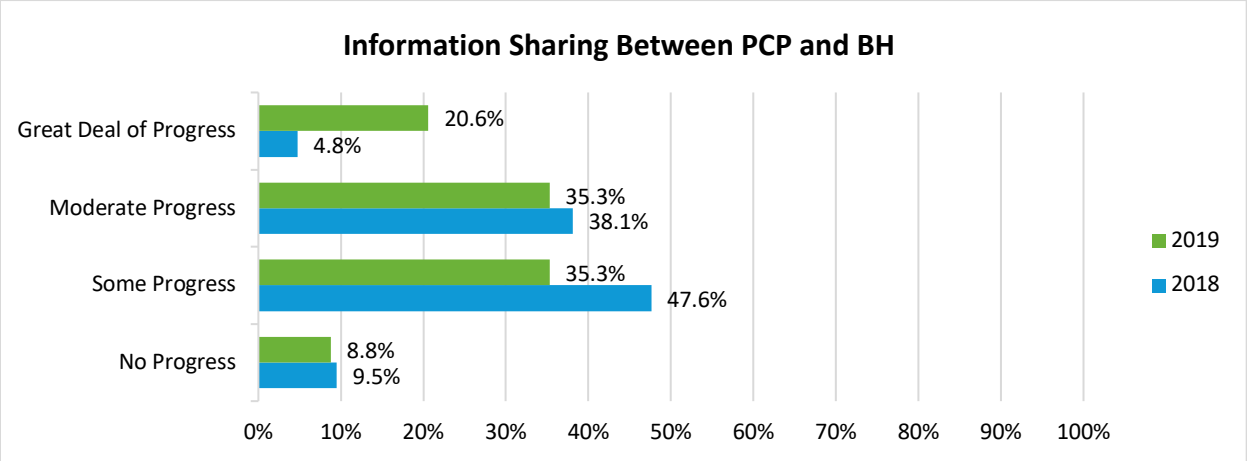
[75] Cohort 1 measured this progress with the Milestone Activity Inventory, which did not include this item.

**Figure 80. Practice Has a Vision for BH Integration and Identified Pathway**




Practice Facilitators identified several approaches that have resulted in moderate to a great deal of progress. These include working on communication in team huddles, using a care plan, allowing access to notes and offering a method of communication between providers, developing care compacts, and having CMHCs continue working to develop better referral systems for primary care.

**Figure 81. Information Sharing Between PCP and BH**




Concerns about what can be shared continue. Three informants said that regulations, and 42 CFR Part 2 in particular, continue to be of concern and a "big barrier." One informant would have liked to see SIM and the HIEs develop a mechanism for sharing BH data. Still others acknowledge the desire to share information and attempts to remove barriers by using care contracts, improved referral forms, shared consents, and monthly care conferences with BHPs, but the informant noted not seeing much progress.

The comments by key informants echo the findings and challenges of the work SIM has done around 42 CFR Part 2. SIM gathered a group of subject matter experts to discuss possible

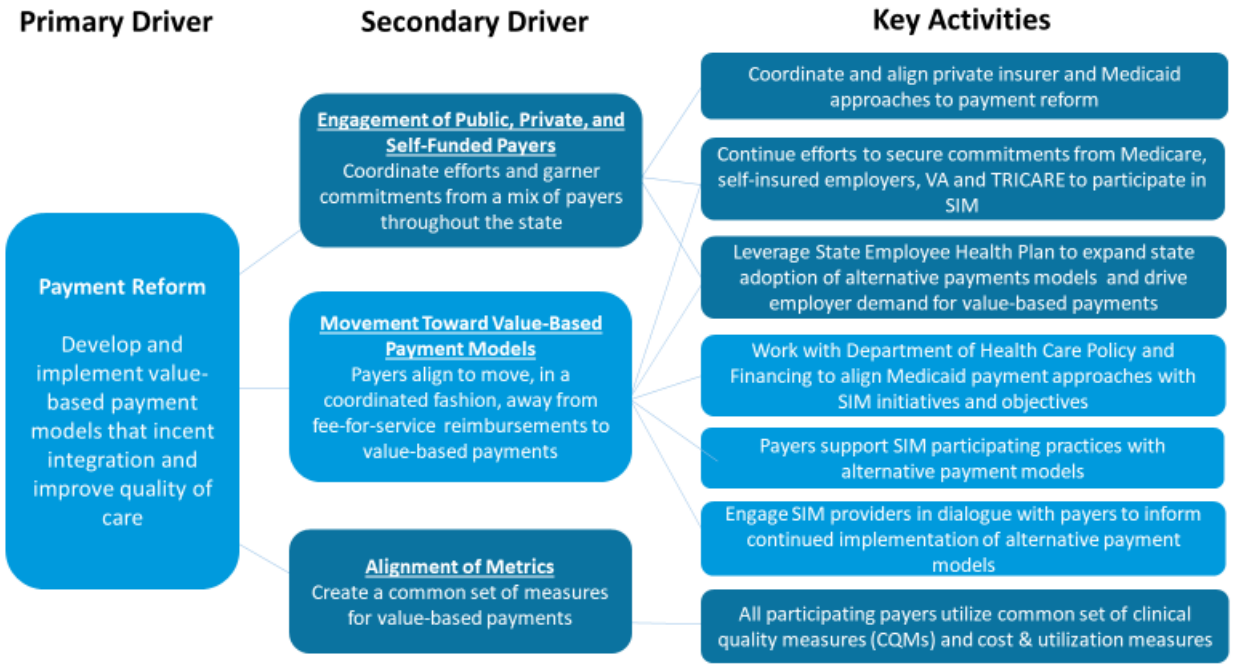
solutions for how to help clarify the federal regulation and looked to best practices from other states. This work led to identifying two issues providers face when attempting to share data. This first is a common misinterpretation of who and what is covered under this regulation. Without clear federal guidance and definitions, individual states and providers are left to their own means, often erring on the side of caution and not sharing the information. The second issue involves how health technology supports valid consents, stores segmented data in a medical record, and then applies releases to specific data that are covered by the appropriate regulation—whether that be HIPAA or 42 CFR Part 2. This level of detail, protection, and release is complicated to ensure within EHRs.

# 7 Payment Reform

## Introduction

Payment reform is a primary driver of SIM efforts and a fundamental component in supporting transitions to more integrated care delivery and moving towards value-based payment. Practice sites may desire to move toward integrated care as a way of improving patient outcomes, but without the ability to receive adequate payment for this care, integration efforts are unsustainable. To help practice sites prepare to move toward value-based payments, SIM targets activities in three areas that are outlined in the Driver Diagram below: (1) engagement of public, private, and self-funded payers; (2) movement toward value-based payment models; and (3) alignment with a common set of measures to support value-based payments.

**Figure 82. Payment Reform Driver Diagram**




From the outset of the initiative, payment reform was identified as a key component to helping providers integrate care and succeed with value-based payment models. Although this encompassed a comprehensive scope of key activities (as highlighted in Figure 82), in this section we focus on the first two SIM secondary drivers in payment reform: (1) engaging payers and (2) moving toward a greater use of value-based payment models. These two efforts are captured in a single evaluation question:

**PR1. To what extent were value-based payment models implemented?** What were the barriers to this transition? Did implementation result in improved integration and quality of care?

For a more comprehensive record of programmatic activities related to payment reform, please refer to SIM Final Program Report.

This chapter responds to the first half of the question set above: To what extent were value-based payment (VBP) models implemented, and what were the barriers to this transition? The third component—did implementation result in improved integration and quality of care—cannot be answered with the data that were available for this evaluation report. Efforts to create discrete categories that would characterize the predominant types of VBPs being received by each SIM practice site, in order to examine whether differences in these models might have impacted outcomes, presented ongoing challenges. This was largely because of limitations around specific APM details that payers were able to share. More information about this data collection effort can be found in the Payer Data section below.

The limitations of each data source are summarized in the Data Sources section below. We are unable to speak to the relationship between the implementation of value-based payments and improved quality of care, as noted above. However, at the end of this chapter, we discuss stakeholder perceptions of the effect of value-based payment implementation.

## Data Sources

To respond to the question, we rely on the following data sources throughout this chapter:

- **Practice site closeout surveys from cohorts 1, 2, and 3 and community mental health centers (CMHCs)** asking sites about progression toward selected goals and plans to continue this work. These data speak directly to practice site experiences with implementation of value-based payments. These surveys also include one question about sites' changing business practices to support Alternative Payment Models (APMs)[76] and several general open-ended questions about practice sites' overall SIM experiences. This data is helpful in that it represents a practice perspective. However, these are self-report measures and it is difficult to know the degree to which the individual(s) at a site tasked with completing the survey were knowledgeable about business practices, payment agreements, the administrative financial aspects of a specific APM, etc.
- **Key informant interviews (KIIs) with key stakeholders** (e.g., SIM staff, SIM workgroup members, vendor partners), Practice Facilitators, and Clinical Health Information

[76] Typically, the term "Value-Based Payment (VBP)" refers very broadly to payment mechanisms that focus on the quality of care over the more quantity focused fee-for-service models. "Alternative Payment Models (APMs)" generally is used to refer to more precisely defined models of value-based care. However, for many stakeholders throughout SIM implementation, and sometimes throughout this report, these terms are used interchangeably.

Technology Advisors (CHITAs). These informants provide us with a high-level view of the progress made by SIM in providing a foundation for value-based payments. These impressions may reflect how much informants understand the work of SIM. The stakeholders interviewed either (1) worked on the implementation of the larger SIM initiative and, therefore have a "big picture view" that is somewhat removed from day to day practice operations, or (2) provided TA to practice sites but did not necessarily have close insight into payment agreements or business practices. So, these perspectives do not represent those of individuals who are directly impacted by value-based payments or payment reform efforts or the direct experiences of SIM-participating practice sites and providers.

- **SIM-provided rosters**, which are based on information verified by payers, and identify which practices are being supported by which payers with an alternative payment methodology (APM) in the SIM initiative.
- **Milestone Attestation Checklist (MAC)**. This is a practice self-assessment completed in conjunction with a Practice Facilitator. It describes progress in practice site implementation of several building blocks[77] of successful practice improvements. This chapter utilizes sections of the MAC that address practice use of value-based payments. A complete description of the MAC can be found in the Methodology chapter of this report.
- **Secondary document review** that includes SIM Sustainability Plan Parts 1 and 2, Multi-Stakeholder Symposium evaluation summaries, field notes recorded by Practice Facilitators, small grant reports, and a draft version of the Final CMMI Report.

As briefly described above, we asked two groups of key informants questions that targeted areas in which they were expected to have some level of experience or knowledge. The first group included stakeholders (e.g., SIM staff, SIM workgroup members, vendor partners), and the second group consisted of Practice Facilitators (PFs) and Clinical Health Information Technology Advisors (CHITAs). Many of these stakeholders were not directly involved with, or impacted by, value-based payments but chose to answer payment reform-related questions; these responses are from a tertiary perspective. Although already discussed, we reiterate that though PFs and CHITAs offer coaching support and technical assistance to practices, the key informant perspectives captured in this chapter are not representative of those people directly impacted by value-based payments as they do not necessarily reflect the perspectives of any individual practice site or health plan.

[77] For more information on the Building Blocks and "good standing" parameters for participating practice sites, please see https://drive.google.com/file/d/0BxUiTIOwSbPUeHdWam1qbENIQXM/view.

Using text analysis techniques, we analyzed the qualitative data from interviews and surveys, identifying themes and then grouping comments by those themes. Some of the themes were the Multi-payer Collaborative (MPC), Multi-Stakeholder Symposium (MSS), value-based payment models (VBPs), alternative payment models (APMs – sometimes used interchangeably with VBPs), payment reform, and Stratus™. We have included both generalized comments (paraphrased or aggregated direct perspectives from informants) and direct quotes to illustrate these perspectives. We also use other data sources—including field notes created by Practice Facilitators and small grant reports—to provide examples and context, where appropriate.

Finally, we have included a descriptive analysis of counts of practice sites and individual beneficiaries being supported by value-based payments by specific participating payers.

## Engaging Payers

The SIM office built upon existing payer commitments, established a forum to build relationships and foster dialogue between payers and practices, and leveraged alignment efforts with other transformation initiatives to support practices in their efforts to transform the way physical and behavioral healthcare is delivered and financially supported in Colorado. To this end SIM employed several methods to engage payers in these efforts.

### The Multi-Payer Collaborative

The Multi-Payer Collaborative (MPC) is a voluntary group of health plans (payers) that convened prior to SIM implementation. By leveraging the support of this group, the SIM office established commitment from both public and private payers to support and expand accountable, whole-person, patient-centered care transformation and to help support practices in providing integrated care with new or existing APMs that are unique to each payer organization. The SIM team worked with the MPC "to ensure sustainable integration of physical and behavioral healthcare, address alignment with other programs and reduce provider burden, and to improve the partnership between practices and payers."[78]

The SIM initiative's approach to statewide payment reform was to actively engage seven (ultimately, six) payers through the MPC. Reflecting a shared commitment toward increasingly rewarding the value of care delivered, payers agreed to support practices that participated in SIM with new or existing alternative payment models (APMs), unique to their organization, that aligned with the Health Care Payment Learning and Action Network (HCPLAN) framework. As part of the Memorandum of Understanding (MOU) that payers signed with the SIM office, each payer committed to make a good faith effort to move up at least one level in the framework for

[78] For more information please see SIM AY4 Operations Plan https://drive.google.com/file/d/1Zpl0p-1LDMC-oeaI5TVpPxVnJOuG7qUx/view

their payment models. As highlighted in the Payer Data section of this report, data collection to provide a comprehensive understanding of the landscape of value-based payments in the state, or to show whether payers changed levels in the framework, continued to be a challenge. Throughout the SIM initiative, an important goal of payment reform efforts was to demonstrate the value of integrated care to both payers and to providers.

The MPC convenes regularly to discuss its commitment to organizational alignment among payers as a means to expand and support primary care practice transformation and payment reform efforts. During meetings, payers participating in the MPC acknowledge that all participants must refrain from sharing competitively sensitive topics. Payers have agreed that all discussions are guided and in compliance with state and federal antitrust laws, requiring that no financial information from participating payers will be shared with other payers or the general public.

MPC members have been instrumental in identifying priorities within the "Building Blocks of Practice Transformation" used by SIM to support practice transformation efforts and to establish "good standing" parameters for participating sites.[79] Throughout the SIM initiative, this group remained committed to efforts to increase communication, build stronger relationships between health plans and providers, and identify areas of measures and metrics alignment between health plans. The MPC also catalyzed a commitment to provide SIM practices with a multi-payer data aggregation tool, with the goals of equipping providers with the information needed to make informed decisions, to help assess cost and utilization data, and to risk-stratify patients in ways that improve delivery of care and reduce or avoid costs.

Early in SIM implementation, key informants—joined with observations from SIM staff, vendor partners, and workgroup members—indicated frustration within cohort 1 practice sites regarding the misperception that there would be a SIM-specific payment model available. This feedback led the SIM office, in partnership with the University of Colorado Department of Family Medicine (UCDFM) and workgroup members, to conclude that there was a need to help providers understand APM expectations and encouraged more regular communication with payer representatives. A focus on payer and provider communication was needed to foster collaboration, education, and a mutual understanding of the challenges faced by both sides. The addition of multi-stakeholder symposiums (discussed below) created significant opportunities for representatives from health plans and practice sites to discuss payment reform strategies and issues.

Accomplishments seen by the MPC efforts during the SIM grant period include the following:

[79] For more information on the Building Blocks and "good standing" parameters for participating practice sites, please see https://drive.google.com/file/d/0BxUiTIOwSbPUeHdWam1qbENIQXM/view.

- Adopted HCPLAN framework[80] to help derive transformation efforts
- Coordinated alignment of practice requirements with other practice transformation initiatives in order to reduce provider reporting burden
- Implemented a data aggregation tool available to practices to track cost and utilization data
- Agreed on a set of 13 aligned quality metrics to measure adult primary care.
- Established a communication and collaboration symposium for payers, practice administrators, and providers to have an opportunity to join in dialogue and network.

## Multi-Stakeholder Symposiums

Multi-Stakeholder Symposiums (MSS) were established in 2017. The MSS's goal is "to bring payers and providers together with practice transformation organizations (PTOs) to develop a mutual understanding and appreciation for what it takes to transform medical practices and integrate care."[81] These symposiums have been held three times annually since that time.

Early on, the SIM office encouraged practice sites to retool and revamp business models to help showcase their data and to tell their stories. Key informant interviews with Practice Facilitators (PFs) and CHITAs revealed that these stories required negotiation skills that many sites had not developed as well as opportunities to build relationships and communicate with health plans. Furthermore, KIIs conducted in 2016 and again in 2018 reported that PFs and CHITAs believed practice sites lacked the understanding of how to negotiate a mutually beneficial relationship with health plans. This problem may have resulted from a lack of value-based payment knowledge, insufficient communication, or misunderstanding of the steps needed to begin contract discussions. Overall, PFs and CHITAs reported that SIM had several positive and substantial ideas and that considerable work went into discussions of APMs and payment reform.

As the following quotes indicate, key informants (particularly PFs and CHITAs) tended to agree that having the payers participating either in the MPC or in the Multi-Stakeholder Symposium was beneficial to their work:

[80] https://hcp-lan.org/

[81] Colorado State Initiative Model (SIM). (2018, September). *Colorado SIM operational plan award year 4 update*. Retrieved from https://drive.google.com/file/d/1Zpl0p-1LDMC-oeaI5TVpPxVnJOuG7qUx/view

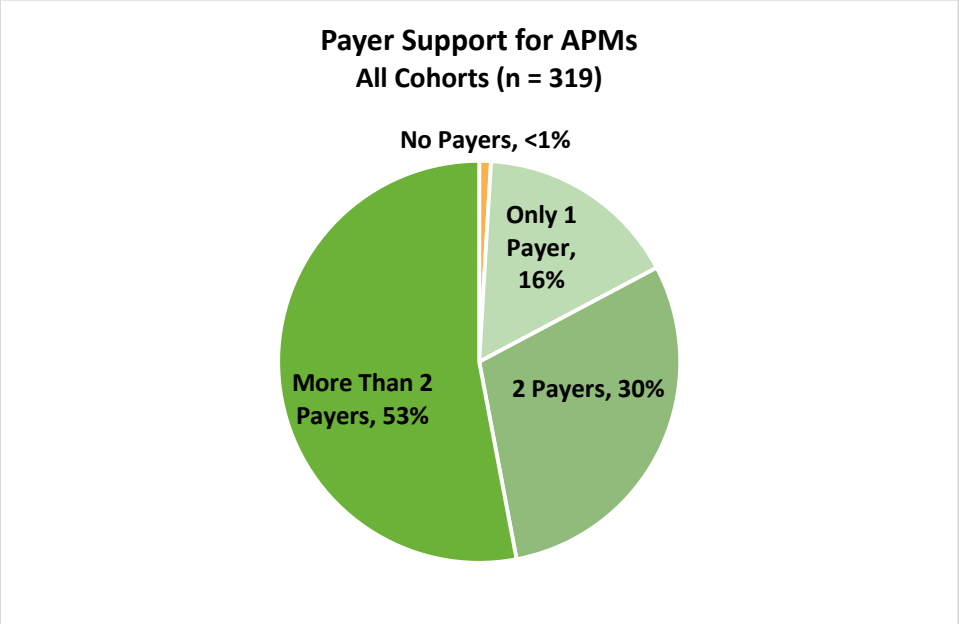
*"This exercise made me appreciate initiatives like SIM that give us the opportunity to be at the same table and get on the same page of what's going on in each individual realm…. At the core of good healthcare is relationships."*
[Cohort 1 practice site representative]

*"I always call them 'payer-partners' because we get a lot of our data from our payers. For utilization, we do look to our payers to help us understand where we are, where we should be putting efforts and it's a very important part of our relationship."*
[Cohort 1 provider]

## Moving Toward More Value-Based Payments

A key SIM goal was ensuring that all participating primary care practice sites had access to a least one alternative payment model (value-based payment) from at least one payer during their participation period. As shown in the following graph (Figure 83), the vast majority of practice sites surpassed this goal, with over three quarters of sites having support from multiple payers.

**Figure 83. Payment Support for APMs**

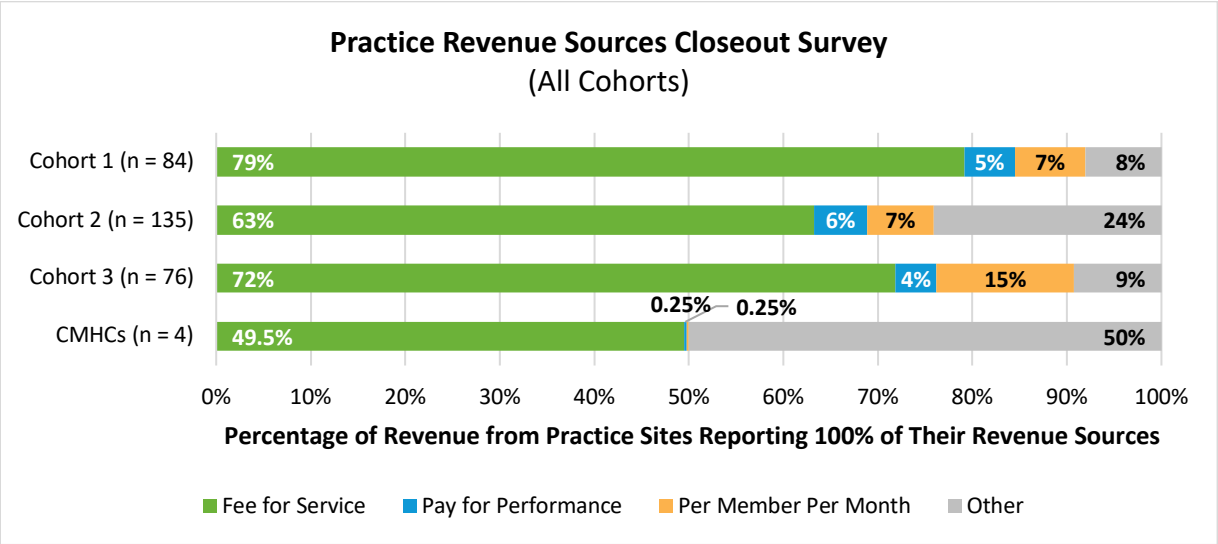



As indicated in Figure 83 above, fewer than 1% of practice sites that completed SIM were not supported with a value-based payment by a SIM-participating health plan. During the recruitment of cohort 3 practice sites, SIM sought to expand the opportunity to participate in the initiative to sites that provided primary care services but were not supported at the time with a VBP by a SIM-participating health plan. By eliminating this requirement, SIM hoped that these practice sites would be successful in their practice transformation efforts, highlighting the

value of integration, and, in turn, potentially serving as catalysts to those practice sites supported in a VBP. There were five practice sites without SIM payer support accepted into cohort 3. Although these five sites were not supported by a payer participating in SIM, they were being supported by health plan(s) outside of the SIM initiative.

Alternative payment model support provided a foundation for participating practice sites to establish business approaches that accommodate transformation to more integrated care. And though many practice sites were moving toward VBPs in the future, there was no evidence that practice site revenues yet reflected this diversification. On the self-reported closeout survey, all cohorts indicated that revenues predominately came from traditional fee-for-service payments as reported at the end of SIM participation (Figure 84 below). In primary care practice sites, FFS made up 79% of self-reported cohort 1 revenue, 63% of self-reported cohort 2 revenue, and 72% of self-reported cohort 3 revenue. Although previously mentioned, it bears repeating that additional data to verify these breakouts were not available. And, given the confusion around APMs, it is possible that respondents were not fully aware of their practice sites' full APM activity. This points to the need for continued outreach and education regarding APMS.

**Figure 84. Practice Revenue Sources**[82,83,84]




Although FFS remains the primary source of practice site revenue, some sites did report that non-fee-for-service payments increased (see Figure 85 below). These findings are in response to a question in the SIM practice close out survey that specifically addressed SIM's role in this change: "Did the percentage of site revenue from sources other than fee for service increase

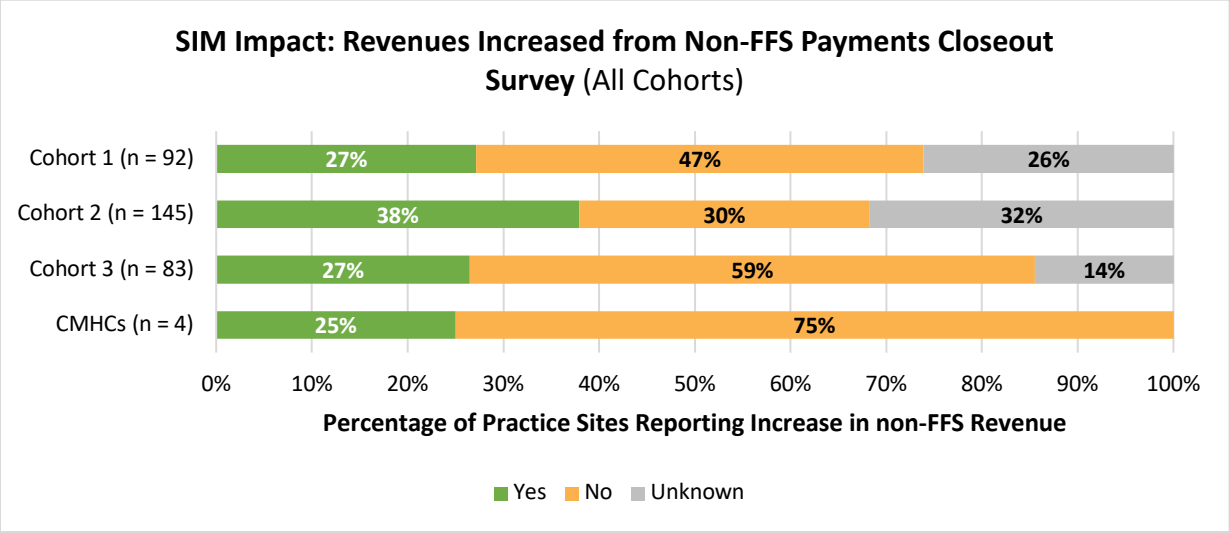
[82] Percentages may not always total 100 because of rounding.

[83] Only includes data from practice sites reporting 100% of their revenue. N may vary from cohort totals.

[84] Pay for Performance and Per Member Per Month (PMPM) are considered VBPs under SIM.

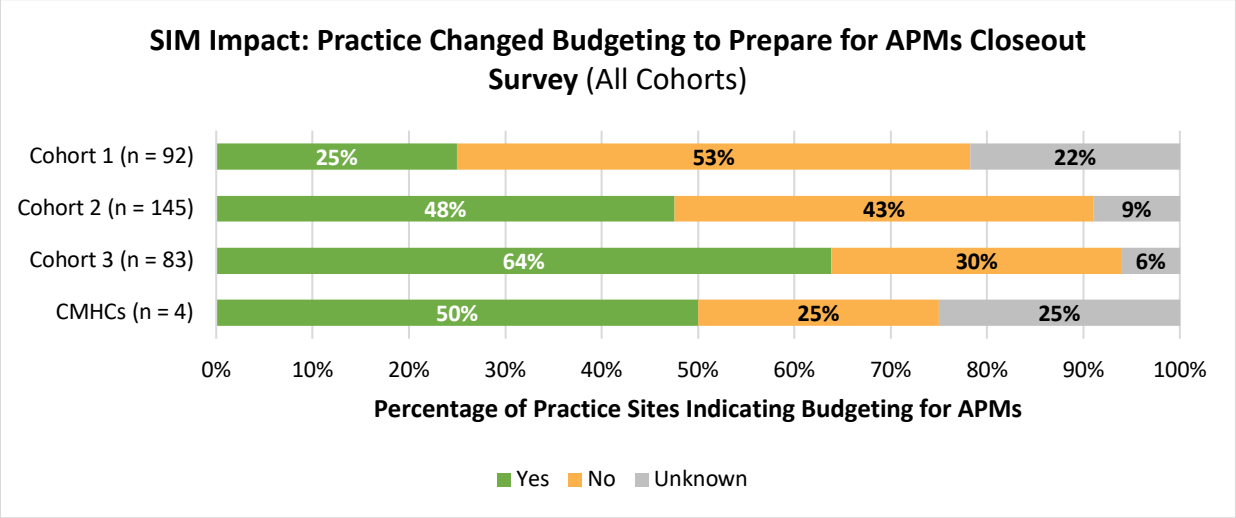
because of participation in SIM?" Although these practices were in the minority—27% of both cohorts 1 and 3, 38% of cohort 2, and 25% of CMHCs reported "Yes"— these increases offer indications of the early impacts of SIM participation.

**Figure 85. Increased Revenues from Non-FFS Payments**



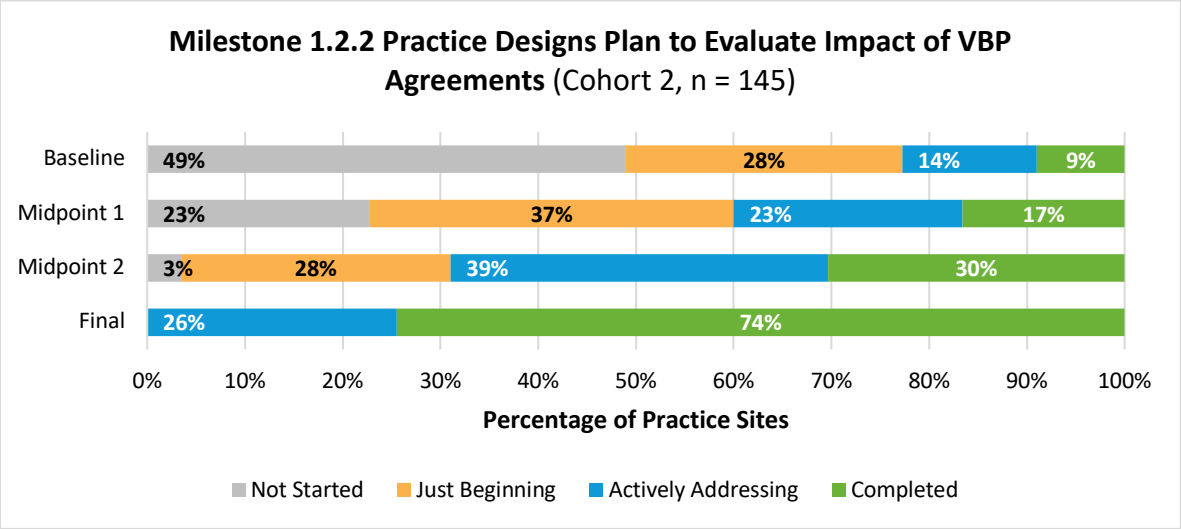

In addition to sites reporting revenue shifts, several primary care practices, in an optional open-ended assessment question, reported changing their budgeting or business models to prepare for APMs as a result of SIM, specifically addressing the following question: "[H]as this practice site changed its budgeting or business practices in preparation for alternative payment models as a result of the SIM initiative?" Twenty-five percent of cohort 1 practice sites, 48% of cohort 2 sites, 64% of cohort 3 sites, and 50% of CMHCs responded positively (see Figure 86 below).

**Figure 86. Budgeting Changed to Prepare for APMs**



Milestone 1.2.2 ("Practice Designs Plan to Evaluate Impact of VBP Agreements")[85] progress is another indicator that practice sites have moved towards preparation for VBPs. Figure 87, Figure 88, and Figure 89 below show that practice sites from cohorts 2 and 3 and from the CMHCs continued to improve their capacity to evaluate the impact of VBP agreements (cohort 1 sites were not asked this question on their milestone assessments). By the final assessment period, 74% of cohort 2 practice sites reported they had completed this milestone, and 24% were actively addressing it. Likewise, by the final assessment period, no cohort 2 practice site reported it had not started or was just beginning this activity. For cohort 3, 67% of sites reported this activity was complete, 27% reported they were actively addressing it, and only 6% were just beginning. And, as with cohort 2, no cohort 3 practice sites reported they had not started this activity. Cohort 3 sites were not required to work on this activity to be "in good standing," so it is encouraging that so many practice sites chose to make change in this area.

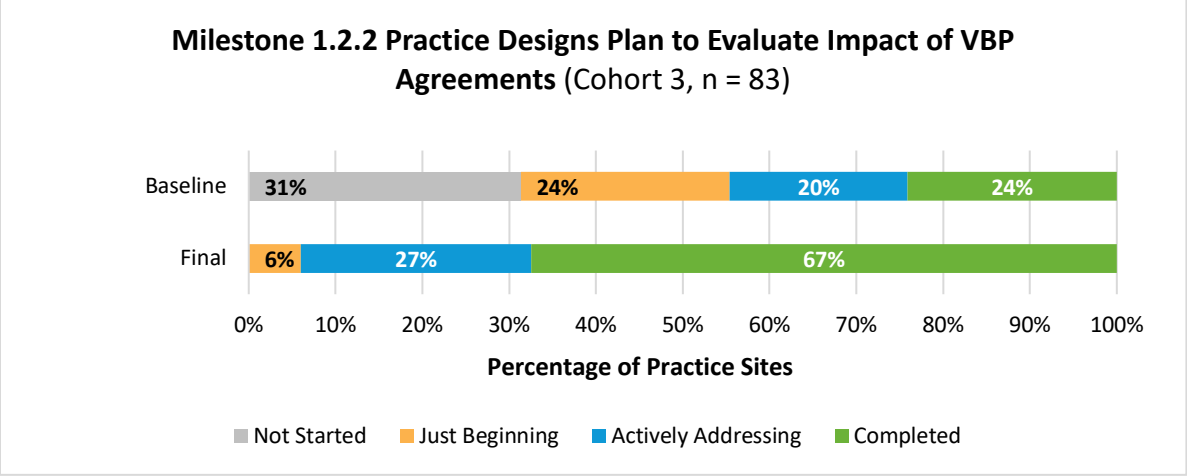
**Figure 87. Plans to Evaluate Impact of VBP Agreements (Cohort 2)[86]**




[85] A full description of practice milestones can be found in the Methodology chapter of this report.

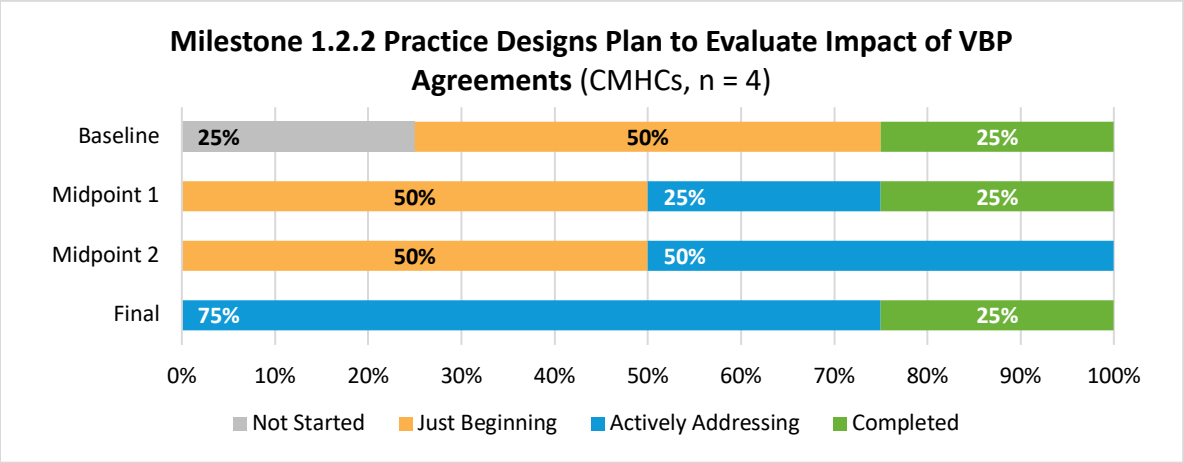
[86] While a total of 144 practices officially "completed" SIM participation, one additional practice did complete its final assessments after withdrawing.

**Figure 88. Plans to Evaluate Impact of VBP Agreements (Cohort 3)**




CMHCs saw similar progress in working to address this milestone. By the final assessment, three of the four CMHCs reported that they were actively working on plans to evaluate the impact of VBP agreements.

**Figure 89. Plans to Evaluate Impact of VBP Agreements (CMHCs)**



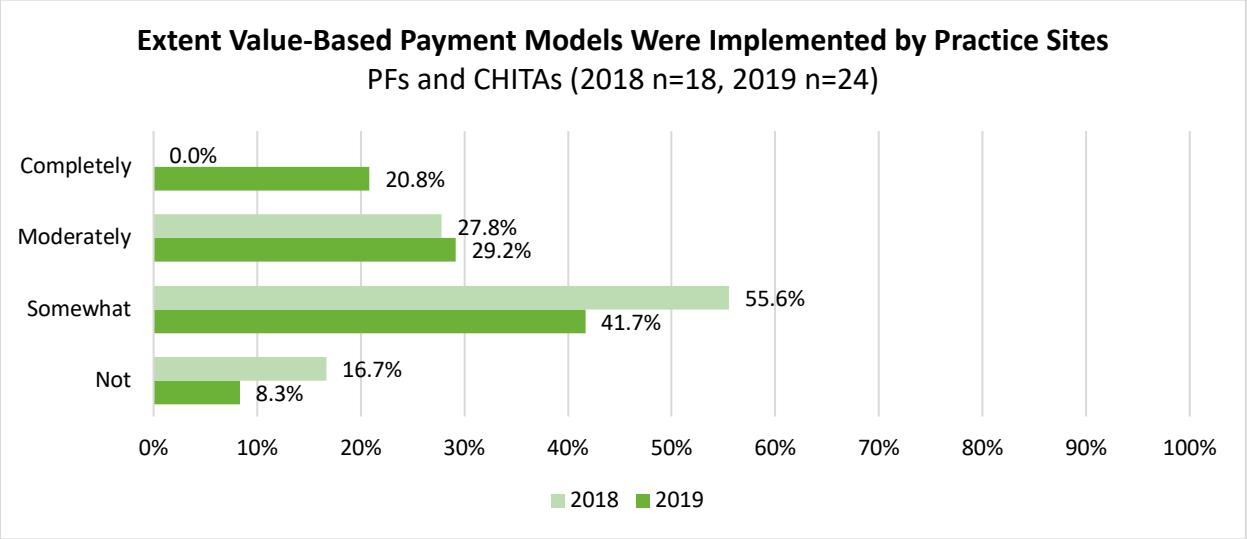

## Key Informant Perspectives on Payment Reform and the Relationship Between Value-Based Payments and Improved Quality of Care

As discussed in the Introduction to this chapter, the original SIM evaluation plan hoped to assess correlations between the implementation of specific APMs and outcomes. Given the limitations in collecting these data, as discussed in the "payer data" section of this chapter, this question could not be answered with the methodology as it was originally proposed. However, in order to gain some perspective on this question, we asked key informants about their perceptions of payment reform efforts and utilized interviews to identify emerging themes as they relate to barriers to implementation, complexities within the current healthcare financing system, success factors, and financial sustainability. These views are anecdotal but do help to

provide some insight into issues around education and buy in needed for this kind of payment reform.

The graph below (Figure 90) shows interviewed PFs' and CHITAs' perspectives regarding the extent that the primary care practice sites they work with implemented value-based payment models.

**Figure 90. Extent to Which Value-Based Payment Models Were Implemented by Practice Sites**




Between 2018 and 2019, the views of interviewed PFs and CHITAs regarding implementation of VBPs increased. By 2019, very few reported that they believed VBPs had not been implemented in SIM practice sites. More than 90% of those PFs and CHITAs interviewed saw VBPs implemented to at least some degree.

Some of the important work being done within the SIM initiative involved the need for extensive education efforts around VBPs at multiple levels (practice, payers, third parties and other stakeholders). It is unclear if increased reports of VBP implementation that are described in the graph above may be reflective of actual greater implementation versus a greater understanding of how VPBs are being approached and communicated by SIM.

## Barriers to Implementation

When asked about general, high-level, and not necessarily individual practice-site-specific barriers to implementing VBPs, 34 of the 36 (94%) key informants provided observations (source of informants included the following: SIM office, other Governor's office staff, workgroup members, and vendor partners; across these groups at least three individuals were associated with a payer). These observations fell into three broad categories:

- The current complex system of financing and the distinctive aspects of the Colorado healthcare market
- Readily accessible shared tools and agreed-upon definitions that support and define reform
- A needed pathway for open and ongoing communication between providers and payers, with opportunities for learning, listening, and negotiating

### Complexities of the Current System

These key stakeholders (e.g., SIM staff, SIM workgroup members, vendor partners) described complexities in healthcare financing as creating barriers through communication silos, pre-established networks, and difficulty in reimbursement procedures. In particular, some respondents noted that these procedures limited both primary care and behavioral healthcare providers from being compensated for an integrated care visit. One concern mentioned was the lack of federal guidance influencing or providing support and standardization for all payers.[87] As such, the diversity in Colorado's healthcare market—coupled with the lack of a single influential majority-share payer—can be a barrier to reform. One key informant in this group provided a specific example, citing a concern that because Colorado contains local-level and national-level payers with competing priorities and perspectives, insurers may not share a similar Colorado-centric perspective.

### Payer Perspective from Level 1 KIIs

In contrast to most of the key informants who were affiliated with either the PTOs or workgroups, there were several stakeholders who identified as representatives from the payer arena. Although there was some diversity in their responses, three themes emerged.

- **Theme 1.** Progress was made in payment reform efforts; however, this type of system-wide change takes time.

Payers, practice sites, and providers must be committed to the long-term success of these approaches, which requires patience, consistent efforts, communication, and guidance. As one of the key informants said, "[P]ractices need to be willing to put in the time and be patient to see the outcomes. To some degree you need to believe and you need to have faith."

[87] As discussed in the introduction to this report, many key informants, many who played key roles in implementing SIM efforts, may not have fully understood what private payers can actually do around payment reform, within state and federal regulations. These kinds of disparities underscore that the most significant challenge to implementing payment reform may be around building an understanding and consensus around what is even possible given current laws and regulations.

The previous comment reflects the view that payers needed to see proof of success over time with measurable outcomes before further committing to new or expanded payment models. Although relationships can be built on good-faith efforts, these models work best when involved parties have a clear understanding the conditions for success. Some KIIs questioned the amount of time payers can be asked to "put in" and whether all parties were in agreement as to what should be "seen in the outcomes." Without defined time and outcomes, expectations may have been unclear.

- **Theme 2.** This long game of patience and faith may feel like a burden to practice sites because the building of infrastructure and foundational processes falls on the sites more than it falls on the payers.

One key informant showed concern in this aspect, stating that providers cannot take on the initial costs alone, remarking that the MPC could have been more "creative in shifting money" in order to incentivize whole-person care.[88] This type of brainstorming, guidance, and collaboration could have added value and may reinforce a committed relationship to integrated care, even if no additional money were available at this time. The message could have been, hypothetically, "*show us how you can perform better under the current payment model with improved outcomes, then we can talk about finding more funding*."

- **Theme 3.** Outcomes are critical, and demonstrating how sites are improving care is important. Clinical quality measure (CQM) work must continue.

In short, key informants emphasized the need for continued work with local and national payers on developing a standardized set of CQMs. This view coincided with a general sense that sites needed clear definitions of success—and that rewarding sites based on how they performed by these standards, in an immediate and efficient method, would be helpful. Informants sought feedback that reinforced progress, information that would help the sites know whether they were progressing and what threshold-based incentives were in place that could help them recognize that the return on their investment was forthcoming.

### Successful Shared Tools and Definitions

For practice sites, stakeholders, and payers to be invested in VBPs, they required data that show cost savings, monitor patient satisfaction, and improve health outcomes (the Triple Aim).

[88] As discussed in the introduction to this report, many key informants, many who played key roles in implementing SIM efforts, may not have fully understood what private payers can actually do around payment reform, within state and federal regulations. These kinds of disparities underscore that the most significant challenge to implementing payment reform may be around building an understanding and consensus around what is even possible given current laws and regulations.

Respondents noted that practice sites needed accessible and standardized tools for accessing, aggregating, and managing data that both public and private carriers recognized and accepted as valid and that providers trusted to utilize in order to make decisions in a clinical setting. Such tools could help support benchmarking standards and common definitions of measures. However, most insurance carriers have proprietary portal access and aggregation tools they encourage practice sites to use. As such, sites with multiple payer support (which is typical in Colorado) would find accessing, interfacing with, and reporting data to multiple health plan portal sites administratively burdensome.

Throughout the initiative, the SIM office steadily worked toward its goal of integrating clinical and claims data and deploying tools to help practices use aggregated data in actionable ways. The SIM office partnered with the MPC to provide SIM practices access to Stratus™, a multi-payer data aggregation tool, with the expectation that by providing a single source of claims data across multiple payers, providers would be able to save time and resources, while getting the data needed to make informed decisions. As indicated below, aggregating data across payers was an ongoing challenge for the SIM office and utilization of Stratus™ by practice sites remained low throughout the initiative.

## Data Aggregation Tool (Stratus™)

In partnership with the MPC, SIM implemented a data aggregation tool called Stratus™. This tool—designed to provide physicians, care teams, and administrators with patient-centered, population health data—allows for sites to make informed decisions. It helps assess cost and utilization data and risk-stratify patients in ways that improve delivery of care and reduce costs. SIM promoted access to the tool by investing in licensing fees and hosting trainings and by providing a technical resource for practice sites to access with questions or needs when using the tool. In reviewing responses from Level 2 key informants (PFs and CHITAs) and comments made in practice closeout surveys, we found mixed opinions on the value of this particular tool.

Twenty-two (60%) of the 37 PFs and CHITAs interviewed in 2019 (some of which had their own licenses through their PTOs) mentioned the Stratus™ tool during informant interviews. One PF said two sites used Stratus™ to conduct change management by running reports used to guide discussion during quality improvement (QI) meetings. Another PF said his or her site found the tool lacking Medicaid data but that “some data is better than no data.” The majority of PFs and CHITAs who responded said the tool is either not used or is frustrating to their practice sites, who see little value in it. Some of the concerns respondents identified were as follows: expense of licenses post-SIM, difficulty in seeing a return on investment, data unavailability for some payers or even the majority of payers, risk scores that are not specific to a pediatric population, lack of timely data (thus making it less relevant for population management needs and tracking), inaccuracies in patient data and provider assignments, the requirement of a separate log in from the practice site EHR, and the sense of being overwhelming and frustrating to use.

There was limited information from practice sites in the closeout survey because no question specifically targets Stratus™ access or use. Only three sites, one from each cohort, referenced the Status™ tool in an open-ended response. One cited that Stratus™ helped in reviewing cost and utilization data; the other two reported struggles with access and use.

The practice SPLIT assessments and Milestone Attestation Checklist made no specific reference to the Stratus™ tool.[89] The Milestone Attestation Checklist does not specify this tool, but there is an expectation that practice sites will use some kind of data aggregation tool. But because Stratus™ is not specified in the assessment, we are unable to use these data to speak directly to it.

## Communication Between Providers and Payers

Eight of the 34 (24%) key stakeholders (workgroup members, SIM staff, other Governor's Office staff or vendor partners) reported in an open-ended comment on payment reform that a need for continued communication—specifically, a pathway for payers and practice sites to engage and share stories—was an important aspect of the SIM work. Two stakeholders recognized that the Multi-Stakeholder Symposium served as a first step toward assisting communication and removing obstacles. One stakeholder noted the following:

> "*One of the things [that] was amplified by SIM is communication, understanding communication between payers and practices. It wasn't given enough weight. SIM tried to retool and revamp business models to help practices showcase their data and tell their stories. I think the barriers for success is [sic]… this need for communication, [the] need for establishing a relationship with health plans, [and]… how to negotiate… [a] mutually beneficial relationship with health plans.*"

Ultimately, respondents recognized that communication needs to begin before APM contracts are negotiated or written. Expectations and preparations, likewise, need to be transparent for practice sites to understand what is required to successfully implement APMs. To extend reform, practice sites should recognize that payers are interested in data. Also, practice sites must become adept at using data to tell the story of how they care for and increase the health and well-being of their patient population.

## Other Views on Barriers to Implementing Value-Based Payments

Other barriers perceived by PFs and CHITAs included a lack of communication and coordination with payers regarding expectations and education, a lack of practice-level leadership's

[89] Please see the Methodology chapter of this report for a description of the SPLIT assessments.

understanding of APMs and how this translates into retooling business practices, and a perception that there are no available APMs from commercial payers.

> "*I understand that what happens with the payers is like the black box, and I get why we can't be involved, but that's one of the areas that's been so frustrating—the lack of transparency and the lack of involvement of the payers. I'm only speaking from the practice's perspective, but this is a milestone we have to talk to them about. This one practice I have is small and totally on their own navigating this landscape. And I've pushed, and we've worked together, and they never hear back*."
> [Practice Facilitator]

These comments underscore ongoing disparities in perspectives around VBPs. This respondent is describing his or her view of a concrete, addressable barrier to implementing VBPs. The degree to which this might be feasible is unclear. This statement is a good illustration of how much disparity in perspectives persists even near to the end of SIM implementation.

In spite of these perceived barriers, it appears that PFs and CHITAs continue to work with practice sites to increase success as they prepare for APMs. As one Practice Facilitator stated, "A lot of people are doing the work of APMs with the hope that this is what the future holds, but they are not getting a lot of ROI right now."

### Closeout Survey Descriptions of Barriers to Implementing VBPs

Views from key informants, PFs, and CHITAs are somewhat removed from the actual experiences of payers and providers with regard to payment reform and APMs. Closeout surveys, however, do allow us to analyze perspectives and information reported from SIM-participating providers. In these surveys, sites in each cohort identified difficulty and lack of communication with commercial payers as a primary barrier to implementation of, and success with, APMs. One cohort 2 practice site specifically mentioned a feeling of being unguided in conversations around empanelment, which hindered its progress toward APMs. A separate cohort 2 practice site and a cohort 3 site reported difficulty with complicated coding requirements for billing around APMs, and three practice sites in cohort 1 reported that the limited support from commercial payers is not sustainable.

### Sustainability

Thirty-one key stakeholders (PFs and CHITAs) responded concerning whether continued integration of primary and behavioral healthcare and the corresponding APMs are financially sustainable. Twelve (39%) replied "yes," that these are sustainable. Two informants (6%) said "no," they are not sustainable. In addition, six (19%) said "don't know," and the remaining 11 (34%) were uncertain or undecided, citing both "yes and no" with caveats.

The advancement of payment reform efforts by increasing the availability of, and access to, alternative payment methodologies has been recognized by many as the lynchpin to sustaining healthcare reform efforts. Key informants had several ideas for how this progress could happen. For example, some noted that current contracts need to continue to evolve and improve in order to be sustainable. Key informants stated views that ideas such as telemedicine visits, per-member-per-month negotiations, and building new risk-sharing models will be necessary for better quality. Sustainability will require payers and practice sites to be fully invested in change and have some opportunity for dialogue as is occurring with the Multi-Stakeholder Symposium. In addition, the state's political environment and new Governor's health policy agenda could have a significant influence on sustainability.

Responses from the closeout survey on the sustainability of integrated care suggest primary care sites were cautiously optimistic. Figure 91 below shows responses from only practice sites that had an onsite behavioral health provider and offered integrated care at the time. Of these, 27% of cohort 1, 27% of cohort 2, and 37% of cohort 3 practice sites reported that integrated care was sustainable with existing revenue streams and structures. A further 28% of cohort 1, 43% of cohort 2, and 24% of cohort 3 sites reported that integrated care was sustainable, but not strictly with their existing revenue streams. Additional clarification of these sources was not required, but when an open-ended question asked for additional feedback immediately after answering revenue questions, 32 cohort 2 sites reported that outside grant funding supported their integrated services.

**Figure 91. Financial Sustainability of BHP and Integrated Care**

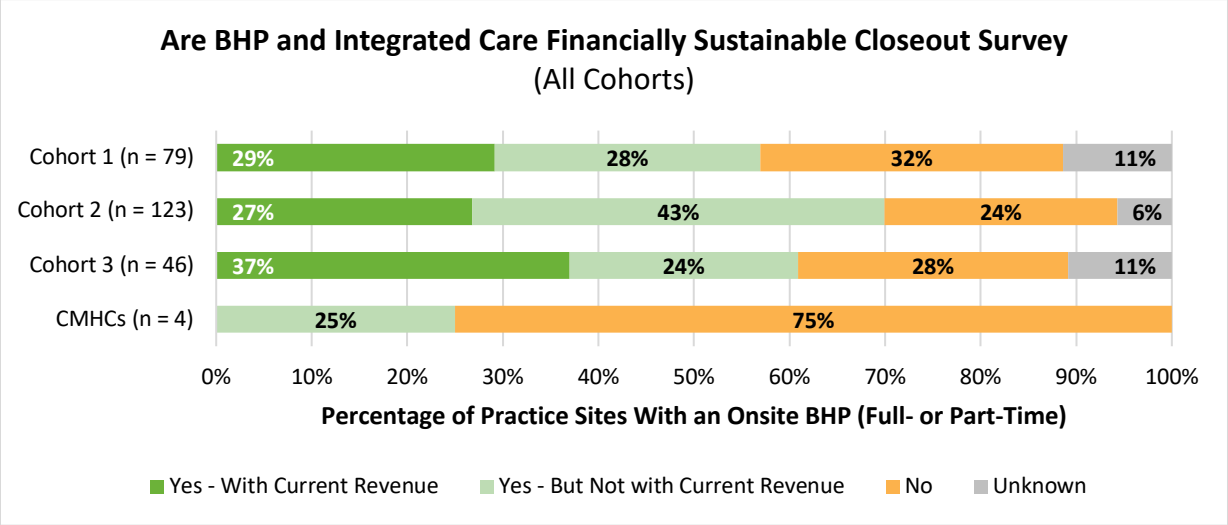
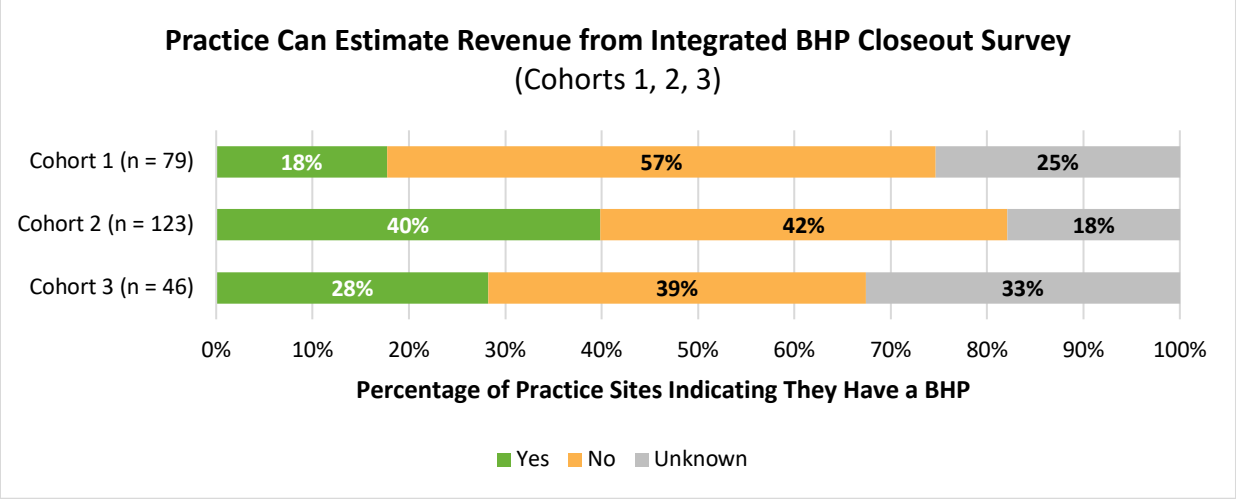
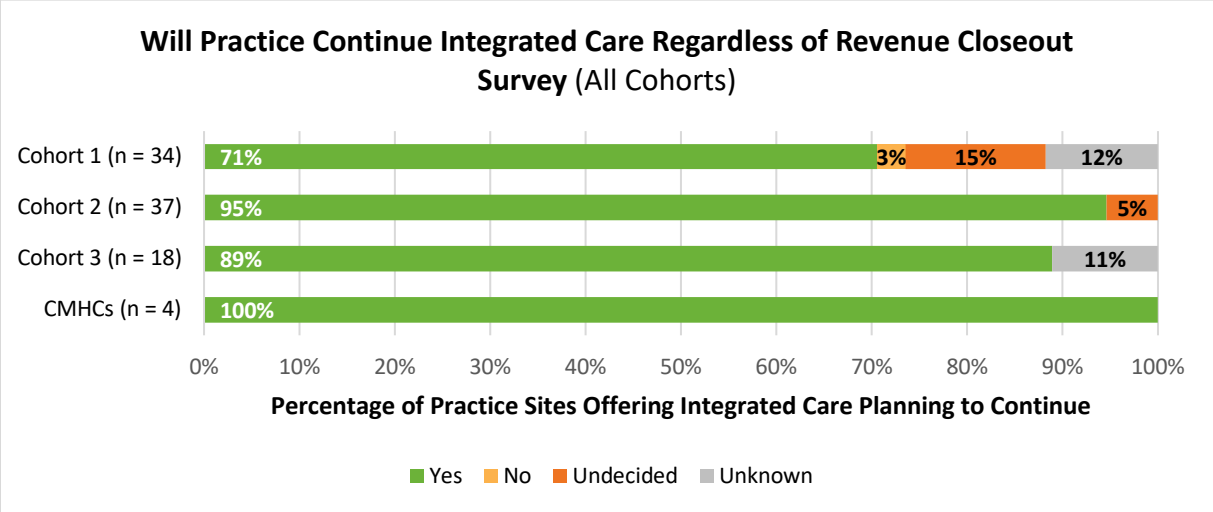


**Figure 92. Practice Site Ability to Estimate Revenue from Integrated BHP**




Responses to whether these practice sites could estimate revenue from their integrated BHP were mixed, with approximately 18% of cohort 1, 40% of cohort 2, and 28% of cohort 3 sites reporting they were able to estimate revenue (see Figure 92). A subset of these practice sites that already offered integrated care and planned to continue largely indicated that they were willing to offer it regardless of revenue (Figure 93 below). There were too few practice sites reporting to draw generalizable conclusions, but these responses suggest that once practice sites have worked through the challenges to practice transformation towards integration, they were reluctant to discontinue this care.

**Figure 93. Practice Site Plans to Continue Integrated Care**



## Payer Data

Table 31 below provides an overview of APM categories based on the Health Care Payment Learning and Action Network (HCPLAN) framework. Although some practice sites expressed frustration or surprise that there was not a single or automatic "SIM specific APM" available upon enrollment, this approach would not have been feasible given competition and antitrust laws governing the multiple health plans supporting the SIM initiative. Even though this strategy initially proved challenging, each practice received a different mix of payment support from participating MPC payers, an approach which promoted a degree of flexibility that was crucial to assuring payer buy-in and retention. The SIM office also offered practices business support training, which strengthened contract negotiation skills with payers, with the objective that these competencies would prove to be of greater long-term value to practices after SIM's support ended.

**Table 31. Alternate Payment Model (APM) Categories**

| Alternate Payment Model | Description |
|---|---|
| **APM 1: Fee-for-Service – No Link to Quality** | ▪ Traditional FFS with no link to quality |
| **APM 2: Fee-for-Service – Link to Quality** | ▪ Based on traditional FFS payments but subsequently adjusted based on infrastructure investments, quality data, or based on performance on cost and quality metrics |
| **APM 3: Fee-for-Service Architecture** | ▪ Based on FFS architecture<br>▪ Payments are based on quality considerations, including cost performance against a target, shared savings payments, shared risk payments, and bundled payments |
| **APM 4: Population-Based Payment** | ▪ Payments based on care within a defined or overall budget or for meeting care goals for a population of patients/members |

Although most SIM practice sites received payer support for APMs, interviews and assessments consistently identified challenges in working with payers, broadly, and commercial payers, specifically. As part of the evaluation effort, SIM collaborated with health plans to obtain payment support data, with the objective of being able to obtain a more comprehensive understanding of the landscape of value-based payment in Colorado,[90] and to track the

[90] It was never assumed that it would be possible to get a fully comprehensive picture of the extent of VBPs in Colorado. The data presented in this report are reflective of payers that supported practice sites in the SIM initiative.

progress of APM adoption statewide and for SIM practices. The original evaluation plan also intended to use these data to answer an evaluation question relating to whether the implementation/increase of payments within certain APM/VBP categories influenced outcomes.

Consistently collecting these data from all payers participating in SIM has been challenging. Among these challenges were communication gaps among payer representatives, a lack of standardization of reportable payer data, system limitations, competing priorities, and the inability of some payers to share data around amounts they were paying to each practice. After thoroughly discussing this work with other SIM states and other entities, we recognize that the issues that have been identified by the SIM office are not unique to Colorado.

The challenges noted above are illustrative of the overall challenges of both implementing and evaluating impacts of value-based payments. The challenges also impacted the quality of the provided data and their use to answer the second (outcome-oriented) part of the evaluation question, "Did implementation result in improved integration and quality of care?" We discuss this further in the Payment Reform chapter of the SIM Outcome Evaluation Report.

We do, however, provide here the payer data as an illustration of what has been available to describe the support payers have provided to SIM practice sites and their patients and, additionally, to increase the Colorado-specific payment reform body of knowledge.

Medicaid provided the most complete payer data. Table 32 contains the number of patients served in SIM sites whose care Medicaid supported by each APM level and year, with total dollar amounts paid to Medicaid-supported practice sites. Aggregated but incomplete commercial payer data are included in Table 32 below. Asterisks denote data that payers stated they were unable to provide.

**Table 32. APM Support for SIM Practice Sites - HCPF**

| HCPF/Medicaid APM Support for SIM Practice Sites – All Cohorts, All Years[91] | | | | | |
|---|---|---|---|---|---|
| | **APM Category** | **2015** | **2016** | **2017** | **2018** |
| **Number of Attributed Beneficiaries** | APM 1 | - | - | - | - |
| | APM 2 | 114,257 | 145,079 | 307,379 | 433,995 |
| | APM 3 | - | - | - | - |
| | APM 4 | - | 2,208 | 2,208 | - |
| | **Total** | **114,257** | **147,287** | **309,587** | **433,995** |

[91] HCPF reported fiscal year data.

| HCPF/Medicaid APM Support for SIM Practice Sites – All Cohorts, All Years[91] | | | | | |
|---|---|---|---|---|---|
| | **APM Category** | **2015** | **2016** | **2017** | **2018** |
| **Total Payments Per APM** | APM 1 | **-** | **-** | **-** | **-** |
| | APM 2 | - | $2,575,507.20 | $5,767,311.47 | $5,175,447.30 |
| | APM 3 | - | - | - | - |
| | APM 4 | - | $37,094.40 | $35,504.64 | - |
| | **Total** | **-** | **$2,612,601.60** | **$5,802,816.11** | **$5,175,447.30** |

**Table 33. APM Support for SIM Practice Sites – Private Payers**

| Private Payers APM Support – All Cohorts, All Years | | | | | |
|---|---|---|---|---|---|
| | **APM Category** | **2015** | **2016** | **2017** | **2018** |
| **Number of Attributed Beneficiaries** | APM 1 | 6,156 | - | 24,492 | - |
| | APM 2 | - | - | - | - |
| | APM 3 | 108,265 | 11,875 | 219,500 | 683 |
| | APM 4 | 16,822 | 7,500 | 26,089 | 19,647 |
| | **Total** | **131,243** | **19,375** | **270,081** | **20,330** |
| **Total Payments Per APM** | APM 1 | * | * | * | * |
| | APM 2 | * | * | * | * |
| | APM 3 | * | * | * | * |
| | APM 4 | * | * | * | * |
| | **Total** | * | * | * | * |

Payer data provide limited insight into the actual status of APMs from SIM's pre-implantation period (2015). Four (of six) payers provided baseline (2015) information of the payment model(s) used with each of the SIM cohort 1 primary care practice sites using the APM categorization developed by the Health Care Payment Learning and Action Network (HCPLAN).[92] Two commercial payers provided information on 2016, and three commercial payers provided information for 2017 and 2018.

## Summary and Conclusions

The Payment Reform pillar was a crucial component of the SIM initiative, yet the challenges in implementing and adopting payment models based on quality as opposed to quantity revealed

[92] Alternative Payment Model Framework and Progress Tracking Work Group. (2016).

a number of challenges for both payers and providers. SIM leveraged an existing Colorado Multi-Payer Collaborative to support efforts to move SIM practice sites and the state as a whole towards a greater use of value-based payments. This collaborative was somewhat unique relative to other national SIM collaboratives because most SIM-participating private payers attended. Despite strict anti-trust laws and regulations that limit the degree to which information can be shared, leveraging this group proved instrumental to the SIM initiative's payment reform efforts with regards to alignment around metrics and reporting, payment, data aggregation supports, and communication with practice sites.

An important lesson learned during SIM's work to move towards value-based payment models in the state is the need for education and communication. In particular, increasing provider knowledge around various aspects of VBPs was a significant need at the start of SIM. One particular success of the SIM initiative was the Multi-Stakeholder Symposium (MSS), which brought payers and providers (along with a few other invited stakeholders) together to discuss the implementation of value-based payments. This led to increased opportunities for dialogue on the issue, and the SIM office reported that payers agreed to sustain the MSS, holding the symposium twice a year, after the SIM award period.

Several key informants interviewed in 2016 and 2017 noted that some of the first practice sites (cohort 1) expressed disappointment that their participation in SIM did not necessarily open them up to a new payment model and/or did not automatically increase their non-fee-for-service payments. As noted, a requirement for participation in SIM was that a practice be supported by at least one payer with an APM. That support could include arrangements made that pre-dated SIM. For those payers that did provide the SIM office with information about which practices they were supporting with APMs, across the three SIM primary care practice cohorts, many practice sites either continued or slightly expanded on existing payment agreements with payers. Based on later interviews, conducted in 2019, additional explanation and communication between payers and providers through the MSS helped to resolve this issue for cohorts 2 and 3.

SIM did not negotiate any new payment models for participating practice sites, but the SIM office did work with HealthFirst Colorado to create a path for SIM and CPC+ practices to participate in the Medicaid APM introduced in ACC 2.0. Planning and operationalization of the APM prioritized measure alignment across initiatives. Practice sites that participated in SIM are on a glide path for the first year of the Medicaid APM. Practices will continue participation in this APM beyond the end of SIM.[93]

[93] Specific agreements around value-based payments in practice sites were negotiated independently between providers and payers.

Payers worked in concert to align expectations and to respond in a cohesive manner to changes in the healthcare landscape. Payers also selected and approved a common set of practice transformation milestones, reflecting a commitment to support integration. By voluntarily selecting a measure set that aligned with expectations for the Quality Payment Program, Transforming Clinical Practice Initiative (TCPi), Comprehensive Primary Care Plus, and the Medicaid APM, health plans sought to reduce the reporting burden on providers. Furthermore, payers supported practice connections to Stratus™, a multi-payer data aggregation tool designed to build provider capacity to make informed decisions, assess cost and utilization data, and risk-stratify patients in ways that improve care outcomes and reduce costs.

The work of the Multi-Payer Collaborative around building trust and aligning expectations also provides an important foundation for the future of VPBs in Colorado. SIM worked with the University of Colorado Department of Family Medicine, SIM practice sites, and the MPC to align the clinical quality measures (CQMs) reported by sites and to create greater clarity over which specific building blocks practice sites should complete in order to participate fully in APMs. These two foundational elements will help to increase practice-level capacity and knowledge regarding VBPs.

# 8 Population Health

## Introduction

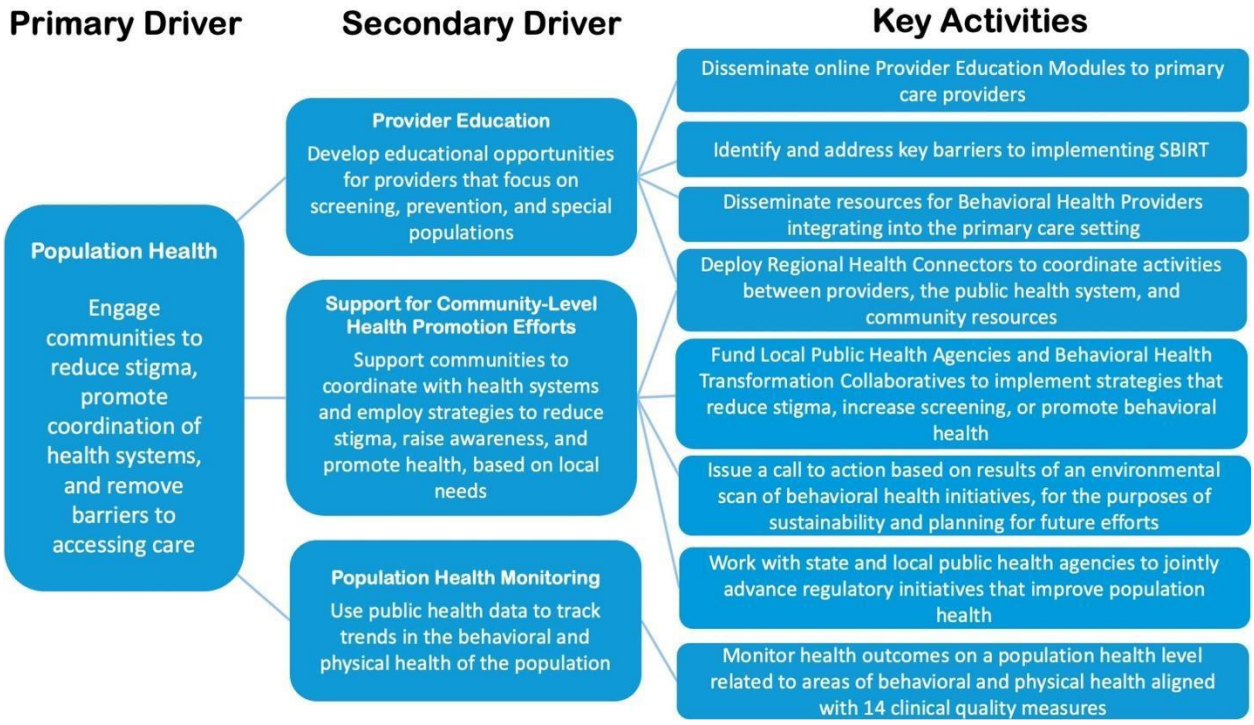
SIM aimed to address Colorado's unique healthcare challenges and to improve population health through two primary vehicles: an improved public health system and a transformed healthcare delivery system that integrates physical and behavioral health services. These approaches attempted to create an effective and sustainable community-based system. The SIM plan for improving population health, which was based on the social determinants of health model, leveraged the work of public health to reinforce improvements in the clinical health delivery system. The two systems sought to build a collaborative and outcomes-oriented model of healthcare and public health integration that helped reach the SIM goal: to improve the health of Coloradans by increasing access to integrated physical and behavioral healthcare services in coordinated community systems, with value-based payment structures, for 80% of Colorado residents by 2019.

The population health driver aimed to engage communities to reduce stigma, promote coordination of health systems, and remove barriers to accessing care. These efforts, in turn, were designed to promote the Quadruple Aim[94] of (1) better experience of care, (2) lower costs, (3) improved population health, and (4) provider satisfaction/burnout.

This driver connected Colorado's public health system and the behavioral health and primary care sectors in order to address factors outside the clinical setting—including social, economic, and environmental influences—that have influenced patient health. SIM activities designed to move the population health driver forward included provider education, community-level health promotion efforts, and population health data monitoring. The driver diagram below (Figure 94) depicts the population health primary and secondary drivers and the related key activities.

[94] The Driver Diagram uses the term "Triple Aim," but "Quadruple Aim" is used here to include SIM's workforce improvement efforts. The IHI Triple Aim framework was developed by the Institute for Healthcare Improvement in Cambridge, Massachusetts (www.ihi.org).

**Figure 94. Population Health Driver Diagram**




The term "population health" is defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group.[95,96] The group can be defined by geography, income, ethnicity, or other characteristic (e.g., groups of employees, prisoners, patients in a particular health system). For the purposes of SIM, the Population Health Workgroup defined two populations: a larger population ("P," or "large P") and a smaller population subset of "P" termed "p" (or "small p").

- **Small p** comprised patients who were part of a SIM practice site in Colorado. These "SIM lives" were patients SIM could have directly impacted (through SIM cohort practice transformation efforts, etc.). The population size included several hundred thousand patients.
- **Large P** comprised all people who lived in Colorado: approximately 5.6 million people, according to 2017 U.S. Census estimates.[97] The population of SIM patients (*small p*) were a subset of this larger population.

Interventions that occur in *small p* (e.g., increased depression or substance use disorder screening) may have eventually impacted long-term outcomes in *large P* (e.g., statewide decrease in suicide rates or substance abuse deaths), if the *small p* interventions had been

[95] Kindig, D., & Stoddart, G. (2003). What is population health? *American Journal of Public Health, 93*(3), 380–383.
[96] Kindig, D. A. (2007). Understanding population health terminology. *Milbank Quarterly, 85*(1), 139–161.
[97] United States Census Bureau. Quick Facts, Colorado. www.census.gov/quickfacts/fact/table/CO/PST045216

effective, sustained, and/or expanded to include more people across the state. In addition, some SIM efforts specifically targeted specific regions and the state as a whole. Thus, efforts to evaluate SIM interventions, as well as efforts to identify specific interventions for sustainability planning or expansion, should consider potential impacts on both *small p* and *large P* populations.

## Population Health Activities

This section of the final process report includes a description of activities supported and/or conducted by SIM to advance the population health goals. We have organized this information around each of the process-related population health evaluation questions. We address additional population-health-related evaluation questions in the final outcome report.

**PH2. What SIM resources were provided to communities to employ strategies to reduce stigma, raise awareness, and promote health, based on local need? What activities were undertaken using these resources?**

SIM deployed resources to the two population levels described above: patients directly served by primary care practice sites and CMHCs participating in SIM (*little p*) and the broader Colorado population (*large P*). SIM intended to affect this second group through funding several efforts.

### Saturation Model

We (TriWest) worked closely with the SIM office and workgroup members to create a method of measuring the "saturation" of SIM resources throughout geographic regions of the state. We termed this effort as the "Saturation Model," and it was designed to describe how financial resources were deployed across the state. More detail regarding the specific model is contained elsewhere in this report (see Chapter 2: Methodology). The Saturation Model shows investments across the state in three distinct ways: resources directed to primary care practice sites and CMHCs for practice transformation, resources direct to primary care practice sites and CMHCs for population health, and population health (non-practice-site specific) spending.

**Resources directed to primary care practice sites and CMHCs for practice transformation**
These resources included investments for achievement-based payments, small grants available to primary care sites, practice transformation support, broadband expansion for SIM-funded sites, and full funding provided to the four CMHCs (see Chapter 2 for more details). These investments include the following:

- CMHC funding

- Small grants to practice sites[98]
- Achievement payments
- PTO support (PFs and CHITAs), includes primary care and CMHCs
- Stratus investment
- Broadband investment[99]

**Resources directed to primary care practice sites and CMHCS for population health**
All other investments in the Saturation Model were classified as "non-practice expenditures." These were funds that did not go exclusively to SIM-participating primary care practice sites or CMHCs. Rather, these were deployed across the state to support the broader Colorado population.

SIM provided resources to support population health efforts in two main areas (see the first two secondary drivers in Figure 94):

- Provider education efforts aimed to advance integration of physical and behavioral healthcare at practice sites through workforce development activities
- Support for community-level health promotion efforts to address stigma and improve access to care. Community-level health promotion efforts included grants to local public health agencies and collaboratives and development of a new statewide workforce, the regional health connectors (RHCs).

Because this chapter focuses on SIM population health efforts, we are presenting data here regarding spending on the efforts listed above only.

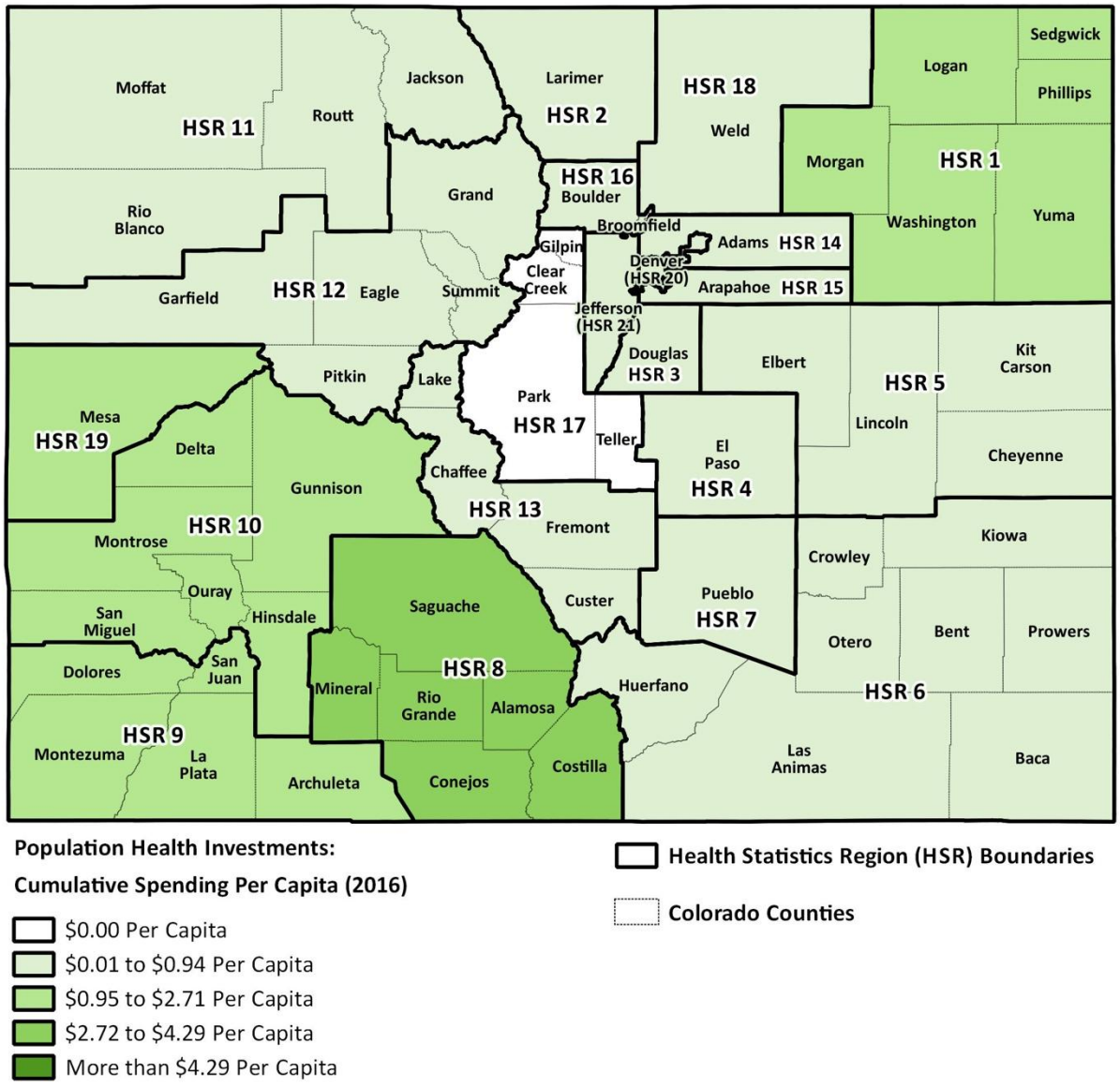
**Population health (non-practice specific) spending**
This spending included all funding provided to the RHCs, VHC, LPHAs/BHTCs, and provider eLearning modules. Essentially, these investments were inclusive of only the funding associated with the population health driver described above.

The following map of population health spending (Figure 95) uses shading to indicate spending per capita. This shading is broken into five levels, based on the total spending divided by the population in each region. Unshaded sections indicate areas with no funding or "0" dollar investment. Darker-shaded sections indicate areas with greater spending per capita.

[98] All SIM primary care and CMHC sites received technical assistance support. Not all practice sites received or were eligible for small grants; this was a competitive application process.

[99] Not all practice sites received or were eligible for broadband investments. To be eligible, a practice site had to meet the criteria for the USAC RHC federal funding program.

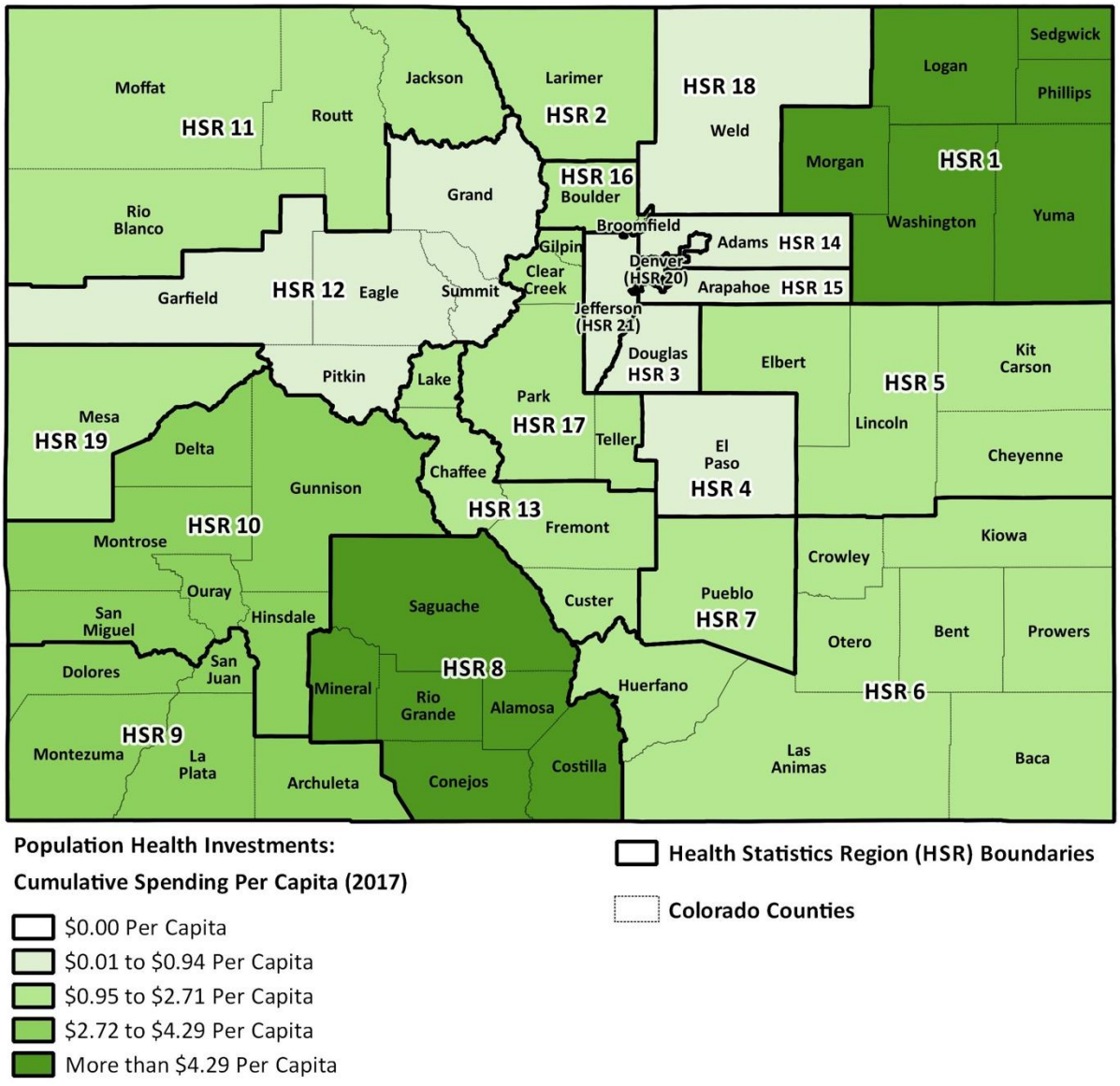
**Figure 95. Population Health Investments: Spending Per Capita (2016)**




SIM investments dedicated to the broader Colorado population touched nearly all areas of the state, even during the first year, and all areas over the life of the project. Spending tended to be more diffuse in some urban areas with large population. Conversely, spending was more concentrated (based on population) in areas of the state that often have high resource needs and high access-to-care barriers in the form of transportation and provider availability. These areas traditionally do not have access to the same level and types of resources that more populous areas of the state have. We include a full description of all SIM spending, including changes across each model year, in the Introduction chapter of the SIM final Outcome Evaluation report.

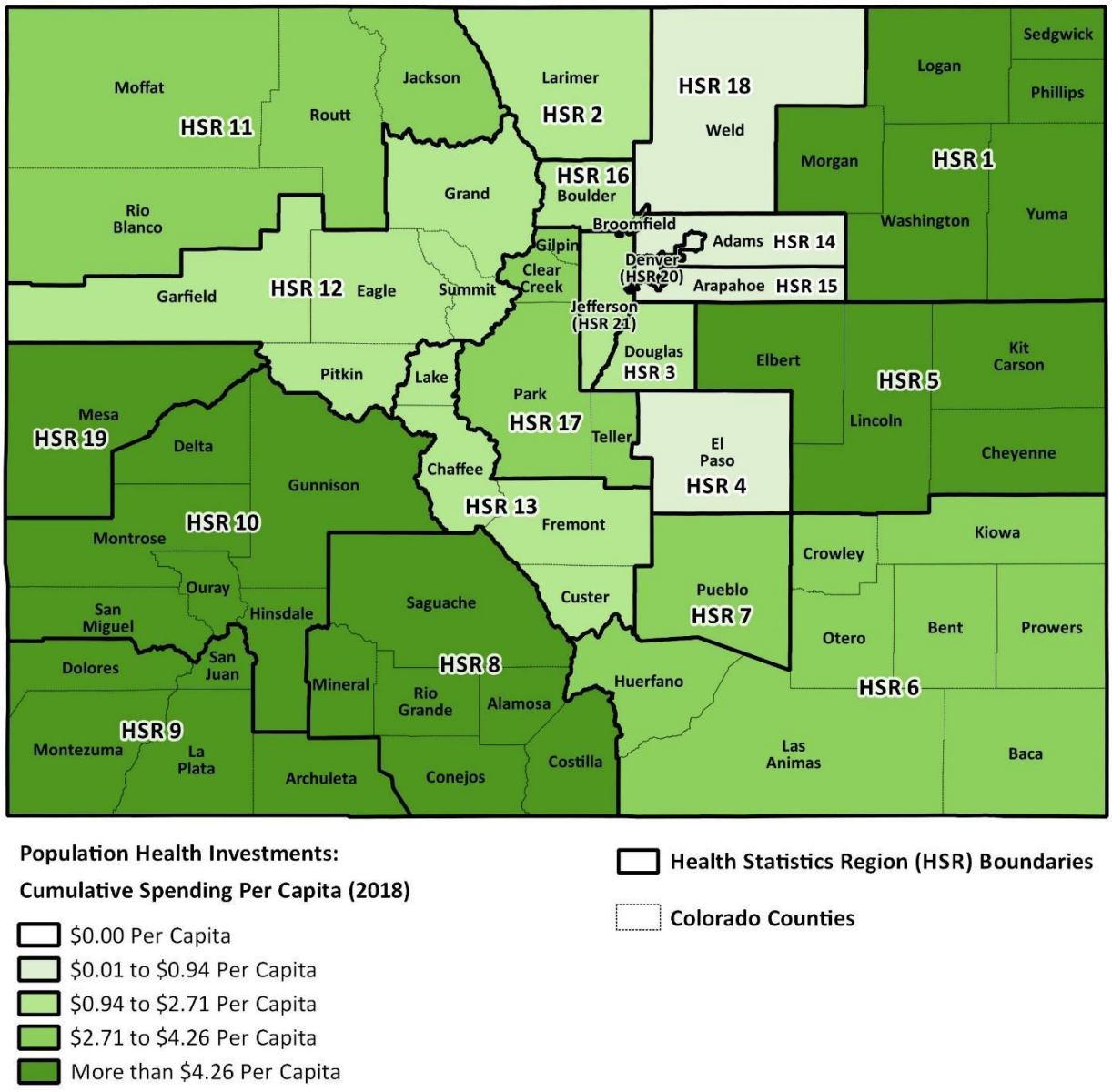
SIM funds were not evenly distributed across Colorado regions or years. The variation of spending over time resulted from a planned staggered rollout of SIM investments and, in part, from some contract delays. Also, while RHC funding was fairly evenly distributed, LPHA/BHTC grants were specifically awarded based on a competitive application process. Although these funds covered a large portion of the state, they were unevenly distributed because of this competitive application process.

**Figure 96. Population Health Investments: Spending Per Capita (2017)**




In the second year of investments, the entire state received some level of funding. Again, the darker shading reflective of lower density population areas (see Figure 96).

**Figure 97. Population Health Investments: Spending Per Capita (2018)**




By the third-year (2018), investment had deeper saturation and in more HSRs (see Figure 97). This penetration reflects SIM's effort at statewide investments and a commitment to reach the *large P* of public health.

We describe each of the efforts supported by these investments in this chapter, using the data available to us as of July 2019.

## Provider Education Efforts

### eLearning Modules

SIM worked closely with several partners to create 18 provider education modules related to integrated care. These modules helped advance integrated care delivery across the state, and some modules were approved for continuing medical education credit. Examples of topics include the following:

- Depression, distress, and anxiety
- Integrated workflow
- Adverse childhood experiences
- Substance use disorders
- Psychotropic medication

Having a workforce trained in providing integrated physical and behavioral healthcare not only supported the efforts of practice sites participating in SIM; it also supported the wider population health efforts to engage communities to reduce stigma, promote coordination of health systems, and remove barriers to accessing care. From a logistical and planning perspective, we have included activities related to provider education and eLearning modules as activities within the population health pillar. However, the Workforce Workgroup guided much of the work. For this reason, we include details on these efforts in the Workforce chapter of this report.

## Community-Level Health Promotion Efforts

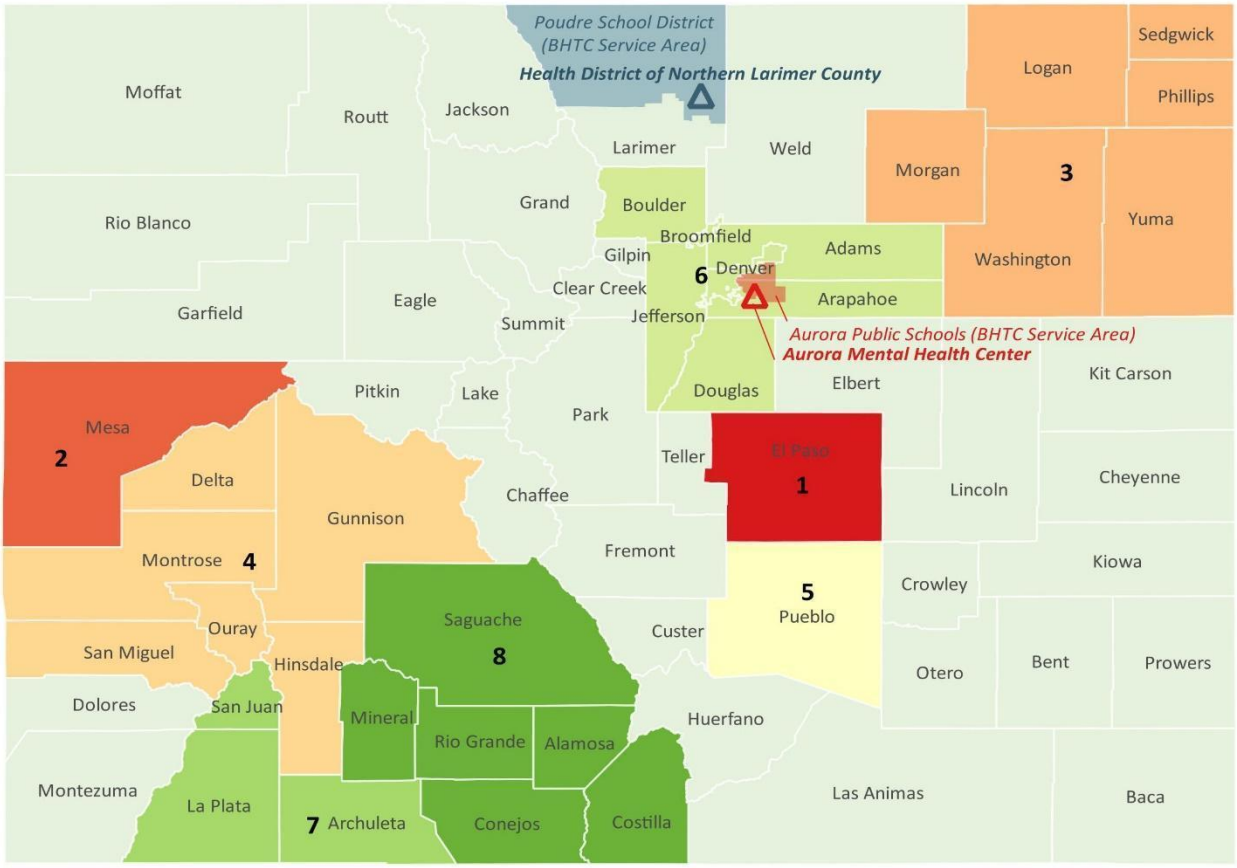
### Local Public Health Agencies (LPHAs) and Behavioral Health Transformation Collaboratives (BHTCs)

The SIM-participating LPHA and BHTC grantees (along with RHCs) supported one of the secondary drivers under the population health pillar: "Support for Community-Level Health Promotion Efforts—Support communities to coordinate with health systems and employ strategies to reduce stigma, raise awareness, and promote health, based on local needs." We gathered information for this section from the SIM office, Colorado Department of Public Health and Environment (CDPHE), quarterly reports submitted by each of the grantees, and key informant interviews with LPHA and BHTC grantees.

SIM contracted with (CDPHE) to manage the work of the eight LPHAs and two BHTCs funded by SIM. All grantees were selected using a competitive application process, and CDPHE provided oversight and coordination for these grantees. Areas of support encompassed both single counties and multiple counties. In the case of multiple counties, an identified lead LPHA

partnered with other LPHAs in the region to complete the work. The BHTC grants were provided to existing collaboratives in two counties. Together, the eight LPHAs and two BHTCs worked in 31 of Colorado's 64 counties. Figure 98, below, shows the LPHAs, the BHTCs, and their service areas.

**Figure 98. Colorado State Innovation Model LPHAs and BHTCs**



The LPHA Request for Proposals states the specific purpose of these grants as "to fund LPHAs, or the agency contracted to do public health work on behalf of a county/counties, [and] to implement programs and activities that promote behavioral health and improve community-based awareness, prevention, and screening of behavioral health disorders." Similarly, the purpose of the BHTC grants, as stated in the Request for Proposals, was to work with existing collaboratives of organizations to "increase prevention of behavioral health issues, decrease stigma, and increase access to behavioral health screening and referral in their community."

The following tables (Table 34, Table 35) list the LPHAs and BHTCs with their areas of focus and brief descriptions of their primary activities.

**Table 34. LPHA Areas of Focus and Activities**

| Local Public Health Agencies (LPHAs) | | |
|---|---|---|
| **Grantee** | **Area(s) of Focus** | **Primary Efforts** |
| El Paso County Public Health | Teen suicide prevention | Provided Mental Health First Aid and Sources of Strength curricula, encouraged more depression screening at primary care visits, created multi-agency workgroup to improve coordination of care for youth at risk for suicide |
| Mesa County Health Department | Suicide prevention | Provided community education, improved data collection and sharing, encouraged more depression screening at primary care visits |
| Northeast Colorado Health Department | Increased awareness of depression | Created pregnancy-related depression toolkit for primary care providers; promoted Man Therapy in unique locations (e.g., automotive and farm equipment stores and farm co-ops); provided training using several curricula, including Mental Health First Aid, Question Persuade, and Refer (QPR), More than Sad, Ride the Wave, and ASIST |
| Ouray County Public Health | Behavioral health stigma reduction and integration of behavioral and primary healthcare | Provided Mental Health First Aid and QPR, promoted Man Therapy, encouraged and supported local primary care clinics in applying for SIM funding |
| Pueblo City-County Health Department | Youth mental health promotion and suicide prevention | Created and provided a presentation ("Stand up to Stigma") for grades 6–12, provided several community education events including two with national speaker Kevin Hines |
| Rio Grande County Public Health Agency | Behavioral health stigma reduction and improved coordination across behavioral and primary care providers | Adapted and promoted "Let's Talk Colorado," created a behavioral health resource list for primary care providers |

| Local Public Health Agencies (LPHAs) | | |
|---|---|---|
| **Grantee** | **Area(s) of Focus** | **Primary Efforts** |
| San Juan Basin Public Health | Youth suicide prevention | Created an on-going, cross agency coalition to address youth suicide prevention across the region; conducted a community needs assessment |
| Tri-County Health Department | Behavioral health stigma reduction, improved integration of behavioral and physical health | Created and promoted a public awareness campaign "Let's Talk Colorado," created a tool to assess the level of integration in primary care clinics |

**Table 35. BHTC Areas of Focus and Activities**

| Behavioral Health Transformation Collaboratives (BHTCs) | | |
|---|---|---|
| **Grantee** | **Area(s) of Focus** | **Primary Efforts** |
| Aurora Mental Health Center | Substance use prevention | Provided Botvin[100] LifeSkills curriculum for students grades 6–12 |
| Health District of Northern Larimer County | Access to behavioral healthcare for children, youth, and young adults | Created a multi-agency behavioral health team to assess and connect youth and families to behavioral health resources, provided short-term counseling and medication assessments |

## Impact of the LPHAs and BHTCs

Efforts of the LPHAs and BHTCs were widespread across their regions and affected thousands of Coloradans. Each quarter, grantees were required to submit written reports that included any metrics the grantee was tracking. Given the variety of activities across grantees, the metrics and how they were calculated or reported varied. Some grantees consistently reported reliable counts whereas others reported more sporadically. In addition, the numbers reported were not deduplicated (i.e., one person could be counted multiple times).

In a final report to the SIM office, CDPHE complied all metrics submitted by grantees. These metrics are provided in the table below (Table 36). For the reasons mentioned above, these numbers should be interpreted with caution. However, we can conclude from the available data that the LPHA and BHTC efforts were widespread.

[100] For information regarding the Botvin LifeSkills curriculum, please see https://www.lifeskillstraining.com/.

**Table 36. LPHA and BHTC Impacts on Community Members and Participant Referrals**

| Impact of LPHAs and BHTCs | | | |
|---|---|---|---|
| **Grantee** | **Total numbers participating in SIM-supported trainings or assisted by SIM-supported LPHAs or BHTCs[101]** | | |
| | Community members, including providers, participating in trainings each quarter | Community members participating in behavioral health and wellness education activities by LPHAs | Participant referrals to behavioral health community resources by BHTCs |
| Aurora MHC | 871 | 1,677 | 217 |
| El Paso[102] | - | - | - |
| N. Larimer | 432 | - | 6,140 |
| Mesa | 1,736 | - | - |
| NCHD | 863 | 882 | - |
| Ouray | 310 | - | - |
| Pueblo | 284 | 3663 | - |
| Rio Grande | 564 | 123,969 | 235[103] |
| San Juan | 18 | - | - |
| TCHD | - | 18,704,921 | - |
| **Totals** | **5,078**[104] | **18,835,112** | **6,592** |

## LPHA and BHTC Sustainability

Sustainability efforts for LPHA and BHTC grantees are underway and will be included in a report from Health Management Associates (HMA) late summer 2019. This HMA report was not available to TriWest in time for review and inclusion in this evaluation report. However, in the final report to the SIM office, CDPHE included sustainability plans at the department level and grantee sustainability plans in cases where the plans are already known.

[101] Data come from CDPHE SIM contract progress reports and, as noted, include providers as well as other community members. Provider-only counts or counts based on other data may vary (e.g., according to AY4 provider-only counts, about 3,000 providers were impacted by the SIM initiative—a lower number than the 5,078 in the table's second column, which also includes other community members).

[102] Numbers not available for El Paso County.

[103] Rio Grande County Public Health Agency is an LPHA, not a BHTC. However, it opted to report on referrals made between behavioral health and primary care providers.

[104] An aggregate total of 56 total training participants were reported during Q2 of 2016–2017. Since that time, the numbers were provided by grantee. These 56 participants are not included in this total.

At the department level, the Office of Suicide Prevention has strengthened its ties with LPHAs through the SIM population health grant program and is offering technical assistance on securing sustainable funding to grantees.

Several LPHAs have secured funding from their local governments to continue SIM efforts after July 2019. El Paso County Public Health, Tri-County Health Department, and Northeast Colorado Health Department obtained funding or commitments of support from local governments to continue staff roles started as part of their SIM grants. Both BHTCs, Aurora Mental Health Center and the Health District of Northern Larimer County, also secured ongoing support for their training and referral programs focused on serving youth. Other grantees are actively working on sustainability plans. As mentioned above, additional details on sustainability of LPHAs and BHTCs will be included in a forthcoming report from HMA.

## Call-to-Action

The SIM office, working closely with the Population Health Workgroup, engaged Health Management Associates to conduct a statewide environmental scan and needs assessment to identify gaps in behavioral health promotion and prevention initiatives. The Population Health Workgroup used findings from this assessment to select a focus for and to create a statewide call-to-action for stakeholders. The initial audience of the call-to-action included policy makers, LPHAs, and schools. The SIM office and the Population Health Workgroup expect the audience to widen over time.

The environmental scan identified gaps in behavioral health promotion and prevention initiatives for working-age men, school-age boys, and older adults. CDPHE reported that these findings aligned with state-level data showing disproportionate levels of suicide and substance-use-related deaths among males in Colorado. The workgroup opted to focus the call-to-action on boys and men and to target a long-term outcome of a reduction in deaths from suicide and substance use-related causes among men. However, they intentionally included broad recommendations to address behavioral health for all Coloradans. Dissemination and implementation of the call-to-action was designed to extend beyond the life of SIM. CDPHE reports that their Office of Suicide Prevention will continue working with members of the Population Health Workgroup to advance the call-to-action priorities and will presumably lead the dissemination effort.

The call-to-action was finalized in April 2018 and includes 12 recommendations presented in

Table 37. Since finalizing the document, the workgroup has focused efforts on developing a series of briefs for targeted audiences, including LPHAs, K–12 educators, and legislators.

**Table 37. Call-to-Action Recommendations**

| Call-to-Action Recommendations | |
|---|---|
| **1** | Increase understanding of the social determinants of mental health across state agencies and partners by creating and disseminating information. Translate this increased understanding into actions that shape policies and program development. |
| **2** | Increase integration of behavioral health promotion and prevention in planning and communication around other public health priorities such as obesity, tobacco, chronic disease. |
| **3** | Increase coordination of behavioral health promotion and prevention across state agencies and between agencies and funding partners. |
| **4** | Establish a clearer and more consistent expectation in requests for proposals (RFPs) and the provision of technical assistance for the use of research-informed or evidence-based approaches and for evaluation. |
| **5** | Standardize the expectation and support of sustainability planning in RFPs and the provision of technical assistance for behavioral health promotion and prevention initiatives. |
| **6** | Increase the focus on taking innovative and promising initiatives to scale. |
| **7** | Improve the collection of population-based measures of behavioral health. |
| **8** | Increase the number of people interacting with boys and men who are trained to recognize symptoms of poor mental health and promote social emotional skill building, coping, and resilience. |
| **9** | Create, coordinate, and disseminate messaging aimed at reducing the stigma of mental health and substance use disorders as well as the stigma for boys and men related to help seeking. |
| **10** | Increase accessibility to screening and early intervention services (mental health and substance use screening for women at prenatal and postpartum, boys, men, and older adults) and increase the competence of providers to assess and respond to suicidality within integrated healthcare systems. |
| **11** | Expand promising programs and strategies focused on boys and men. |
| **12** | Expand and support environmental policy changes. |

These call-to-action recommendations were designed specifically to ensure continued work throughout the state to further the SIM primary population health driver of engaging communities across the state. They specifically include recommendations around reducing stigma, increasing coordination, and addressing barriers to access to care. These specific activities are described as an important foundation in the SIM driver diagrams to build on SIM efforts to improve the overall health (both behavioral and physical) of Coloradans.

Follow these links to the call-to-action and related briefs:

- SIM Call to Action: Boy's and Men's Mental Health
- SIM Call to Action: School Edition
- SIM Call to Action: Local Public Health
- SIM Call to Action: Policymaker Briefing

## Regional Health Connectors (RHCs)

SIM partnered with EvidenceNOW Southwest (ENSW), a practice transformation effort focused on cardiovascular health, to support the development of RHCs across the state. The stated mission of the RHC program is that "Regional Health Connectors improve health in Colorado by connecting the systems that keep us healthy—including primary care, public health, social services, and other community resources."[105] The Colorado Health Institute (CHI) implemented the RHC program for SIM. CHI collaborates closely with Trailhead Institute, which implemented the ENSW portion of the RHC program, and the two agencies have well-articulated governance strategies and clear roles for all partners.

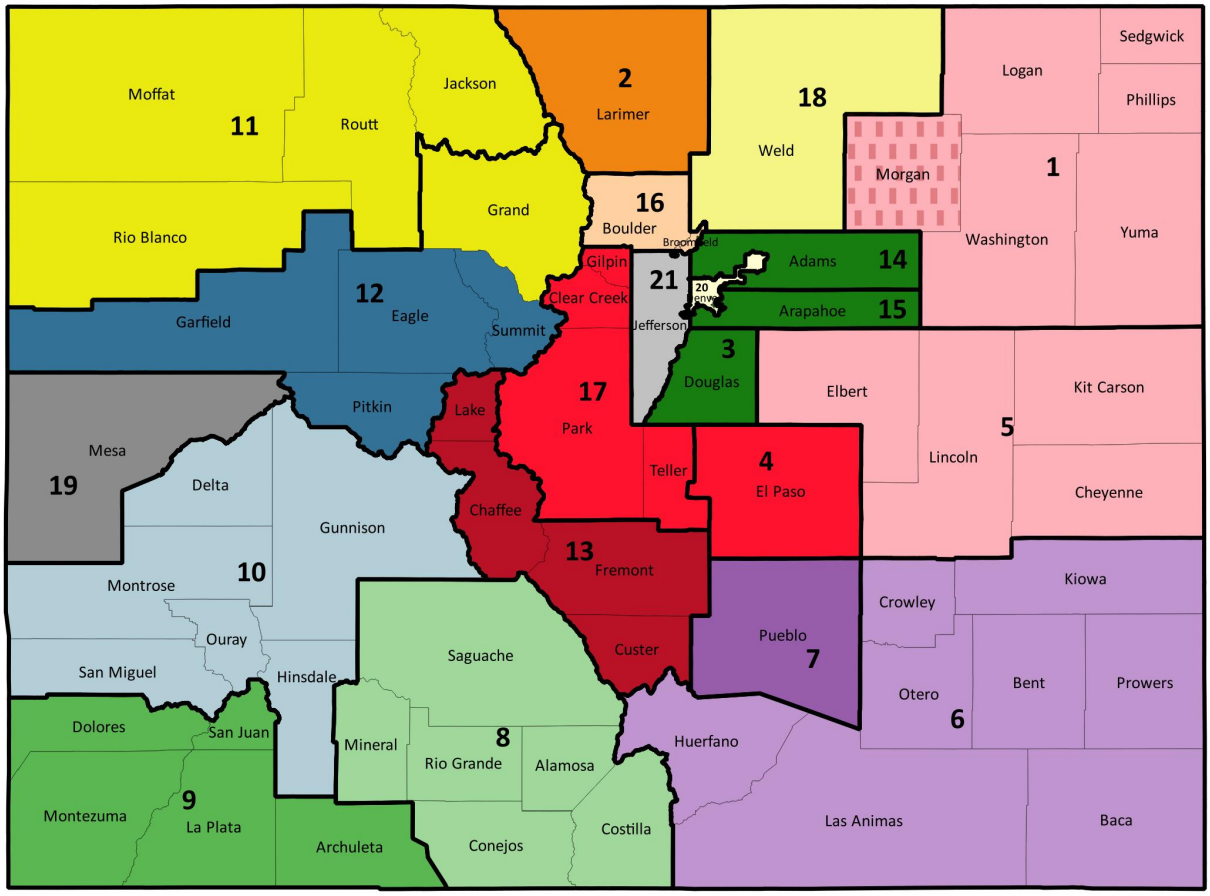
By July 2017, all 21 Regional Health Connector host organizations were selected, and each host organization hired an RHC. One RHC was assigned to each of the 21 RHC regions based on but not identical to the Colorado Health Statistics Regions (HSRs).

SIM and CHI partnered with Together With Veterans to create a new Veteran Health Connector (VHC) position, which launched in December 2018. The goal of this position was to help create a strong and connected system that can support veterans in northeastern Colorado. The focus of this effort is suicide prevention among veterans living in Morgan County and the surrounding area.

The map below (Figure 99) shows regions for each of 21 RHCs, the Colorado Health Statistics Regions, and the single Veteran Health Connector Region.

[105] The RHC mission was taken from the RHC website: regionalhealthconnectors.org SIM Year 2 RHC Annual Report.

**Figure 99. Comparison Map: Health Statistics Regions, VHCs, and RHCs**




**Health Statistics Regions (HSR)**

**Veteran Health Connector (VHC)**

**Regional Health Connectors- Host Organizations**

- Centennial Area Health Education Center
- Central Colorado Area Health Education Center
- Chaffee County Health Coalition
- City and County of Broomfield Health and Human Services
- Health District of Northern Larimer County
- Jefferson County Public Health
- Mesa County Health Department
- Mile High Health Alliance
- North Colorado Health Alliance
- Northwest Colorado Community Health Partnership
- Otero County Health Department
- Pueblo City-County Health Department
- San Luis Valley Behavioral Health Group
- Southwest Colorado Area Health Education Center
- Tri-County Health Department
- Tri-County Health Network
- West Mountain Regional Health Alliance

## Impact of the RHCs

The original evaluation plan did not include an independent evaluation of the RHC effort (the same is true for LPHAs and BHTCs). CHI, supported with funds from the SIM office, developed

and implemented an RHC program evaluation and quality improvement plan. CHI and the SIM office shared data with TriWest to include in this report.

CHI collected and reported regularly to the SIM office on two types of metrics related to the work of the RHCs. The first was the percentage of all meaningful contacts that were with providers in the RHC region or veterans in the VHC region each quarter. Each RHC defined "meaningful contact" based on its relationship with a particular partner and on other contextual factors. For example, an email exchange could be considered meaningful contact for a particular practice site whereas a phone call or in-person meeting would be considered meaningful for another. The second type of metric was the percentage of SIM participating practice sites engaged by the RHC during a given quarter. "Engaged" was defined as contact with a SIM practice site or the site's designated practice transformation organization. Data for Table 38 were provided by CHI.

**Table 38. RHC Quarterly Metrics**

| RHC Quarterly Metrics | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Metric Title** | **Baseline** | **2018** | | | **2019** | | |
| | | **Q1** | **Q2** | **Q3** | **Q4** | **Q1** | **Q2** |
| Provider engagement[106,107] percentage of all meaningful contacts | 0% | 24.9% | 25.6% | 22.9% | 26.4% | 25.0% | 17.9% |
| Percentage of SIM cohort 1 practice sites engaged | 0% | 85.7% | 89.0% | 89.0% | 89.0% | 89.0% | 90.1% |
| Percentage of SIM cohort 2 practice sites engaged | 0% | 73.1% | 76.9% | 80.8% | 82.1% | 82.1% | 82.1% |
| Percentage of SIM cohort 3 practice sites engaged | 0% | | | 21.4% | 81.9% | 84.3% | 84.3% |
| Percentage of VHC contacts who are veterans | 0% | | | | | 65.6% | 29.7% |

## RHC Sustainability Plan

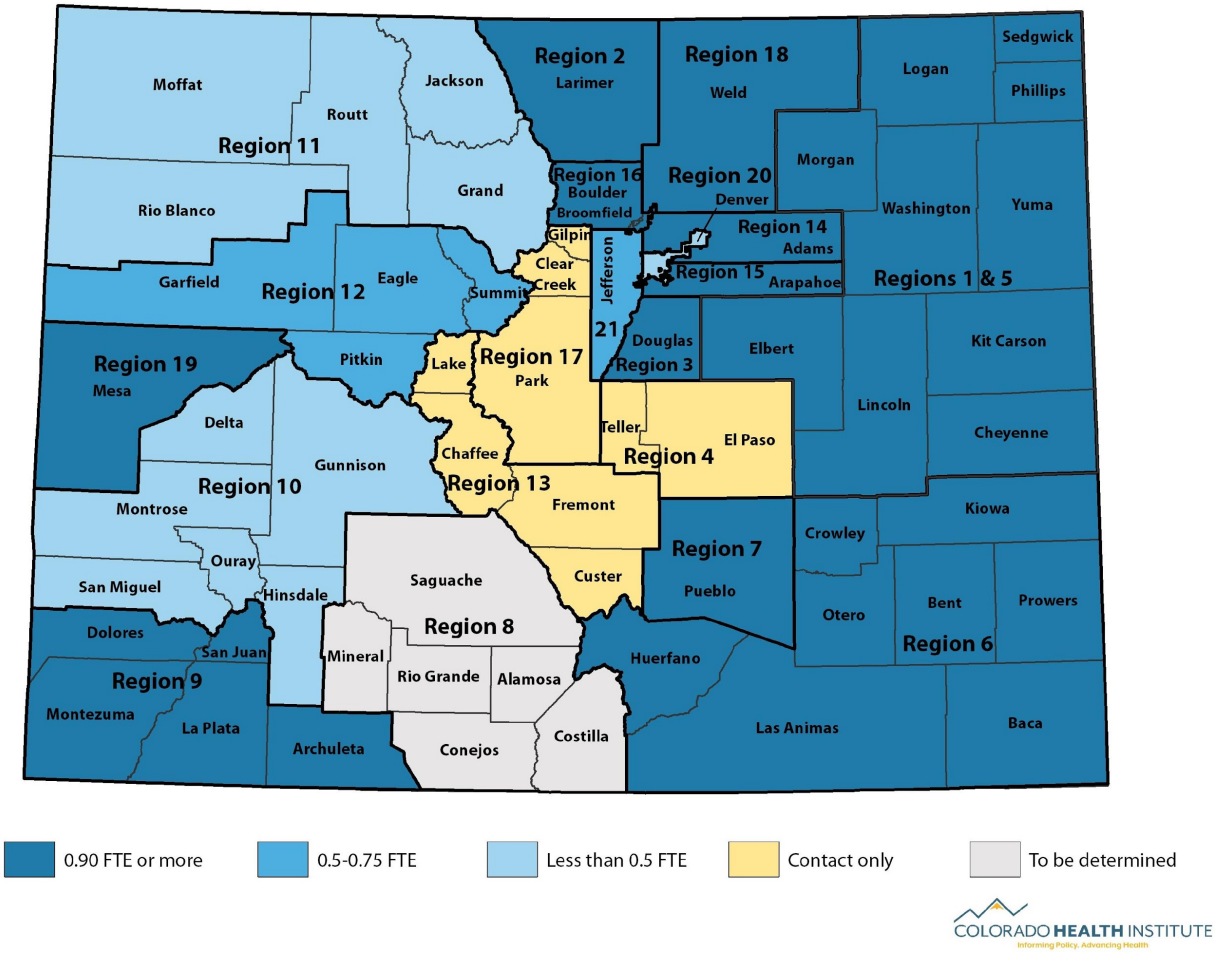
CHI and Trailhead Institute led an RHC sustainability planning effort, beginning in March 2018. The RHC Sustainability Group included five representatives from RHCs and RHC host organizations, one from SIM, one from ENSW, and two clinical partners. As of October 2018, the group had created a framework and a plan to sustain the RHC workforce.

[106] Provider engagement includes contact with medical providers, practice transformation organizations, and behavioral health providers.

[107] The quarterly provider engagement and the quarterly veteran engagement metrics are calculated based on the total number meaningful contacts over the entire quarter.

The sustainability plan split the responsibility of on-going funding between statewide program staff and local RHC host organizations. Statewide program staff were responsible for seeking funding for coordination, evaluation, operations, and 30% of local implementation costs. Local RHC host organizations were responsible for seeking funding for 70% of local implementation costs, including RHC salary, support staff, travel, and supplies. Figure 100, created by CHI, shows the progress on efforts to secure local RHC implementation costs as of July 2019.

**Figure 100. Sustainability Plan Funding Model**




As of July 2019, a small fraction of the needed $1.5 million for the statewide program office has been secured. Only six of the 21 RHC regions have secured funding for the coming year, and an additional eight have secured a portion of the necessary funding. The remaining seven regions will either transition the roles and responsibilities of the RHC to other positions at the organization or discontinue providing RHC support to their local communities. Hosts report that these decisions to reduce capacity or merge positions are being driven by the availability of funding rather than the need for this role in their regions.

## Alignment with SIM Goals

**PH3. How much did SIM funding contribute to community coordination efforts?**

**PH3.1. How much did SIM-funded activities (specifically RHC, LPHA/BHTC efforts) align with one another and with the SIM objectives to coordinate within existing systems, support implementation of prevention/education strategies, and build community capacity to sustain these efforts?**

To this point, the report describes SIM population health efforts. However, the remainder of this section considers alignment of these efforts with other SIM goals. To consider the degree of alignment, we have used data from key informant interviews with 35 LPHAs, BHTCs, and RHCs; quarterly grantee reports submitted by LPHAs and BHTCs; and quarterly RHC summary reports prepared by CHI and CHI's social network analyses. We defined "alignment" as having activities, goals, and desired outcomes that match the aims outlined in the SIM population health driver. Alignment does not mean "the same," but includes complementary work that forms a common set of community efforts that, on their face, seem likely to help further specific SIM Population Health goals.

### Alignment of LPHA/BHTC Efforts with SIM Goals

Each LPHA and BHTC worked in its respective communities on specific projects, all related to behavioral health. Table 39 was prepared by CDPHE and includes the focus areas for each of the grantees. Each of the focus areas listed in the table align closely with SIM goals as stated in the population health driver.

**Table 39. LPHA and BHTC Activities Supported by SIM**

| Local Public Health Agencies and Behavioral Health Transformation Collaboratives | |
|---|---|
| **Grantee** | **Area(s) of Focus** |
| **Local Public Health Agencies (LPHAs)** | |
| El Paso County Public Health | Youth depression |
| Mesa County Health Department | Suicide prevention and stigma reduction |
| Northeast Colorado Health Department | Access to integrated behavioral health treatment for children |
| Ouray County Public Health | Behavioral health stigma reduction |
| Pueblo City-County Health Department | Access to integrated behavioral health treatment for local residents |

| Local Public Health Agencies and Behavioral Health Transformation Collaboratives | |
|---|---|
| **Grantee** | **Area(s) of Focus** |
| Rio Grande County Public Health Agency | Behavioral health stigma reduction and access to integrated behavioral health treatment[108] |
| San Juan Basin Public Health | Access to integrated behavioral health treatment for people in vulnerable populations |
| Tri-County Health Department | Access to integrated behavioral health treatment for people with low income |
| **Behavioral Health Transformation Collaboratives (BHTCs)** | |
| Aurora Mental Health Center | Education (i.e., Mental Health First Aid) and screening, referral, and coordination of behavioral health services for public school students and their families |
| Health District of Northern Larimer County | Education (i.e., Mental Health First Aid) and screening, referral, and coordination of behavioral health services for public school students and their families |

The LPHA and BHTC grantees submitted quarterly reports detailing the specific activities and strategies they employed. We reviewed these reports and matched the activities of all LPHA and BHTC grantees to the above stated focus areas (Table 39) and, therefore, determined that they appear to have been well aligned with the SIM goals outlined on this driver.

## LPHA/BHTC Project Examples, Successes, and Challenges

Notably, during the first year of funding, one LPHA reported overlap between its community-level efforts and the work of its region's RHC. Both were working to improve rates of depression screenings for youth. The LPHA reported that the RHC had already successfully engaged several SIM primary care practice sites and that, to avoid duplication, the LPHA opted to drop its youth depression screening goal. This LPHA elected instead to focus on an effort that helped improve communication and coordination across multiple youth-serving agencies.

The need to pull these particular agencies together grew out of concerns that surfaced following the death by suicide of a young resident. Each of the involved agencies had contact with this person. Following this death, the agencies recognized the need for improved communication with one another. This development exemplifies how one SIM-funded grantee avoided duplication of efforts with another SIM-funded effort in its community, remained aligned with SIM goals, and was nimble enough to respond to an immediate community need.

[108] This table was provided by CDPHE. In the version provided, "preventive services" was listed as the area of focus for the Rio Grande Public Health Agency. TriWest reviewed the approved Scope of Work for this grantee and changed the language to be more descriptive and to more closely match the language of other areas of focus in this table. No other changes were made to the language in this table.

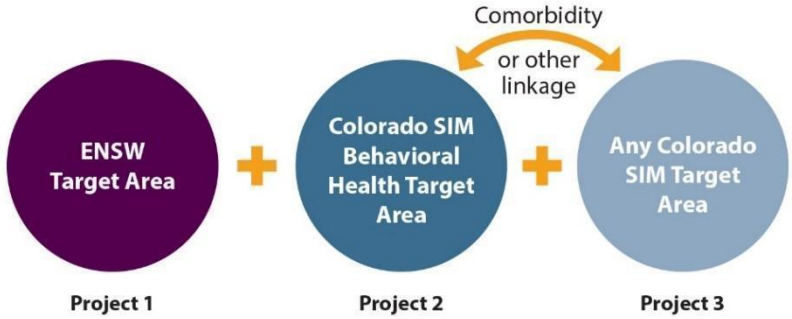
The SIM office contracted with Health Management Associates to produce a report with detailed examples of LPHA and BHTC successes, challenges, and lessons learned. This report was scheduled for submission to the SIM office in June 2019, too late for inclusion in this evaluation report. The following brief examples of success were shared in a recent quarterly report from CDPHE to the SIM office.

- One of the LPHAs implementing Let's Talk Colorado (a mental health awareness and anti-stigma campaign) created messaging specific to men as a way to align its efforts with the SIM Population Health Workgroup's Call-to-Action.
- An LPHA partnered with Colorado Respite Coalition/Easter Seals Colorado to promote mental health conversations with caregivers for older adults.
- One LPHA in a rural part of the state boosted online outreach activities, reaching over 13,400 individuals via social media posts designed to promote awareness and decrease stigma around mental health. The LPHA also created a mental health public service announcement that plays before every movie showing in the local theater.
- In a different rural community, the LPHA partnered with the city government to educate all city employees about pregnancy-related depression.

## Alignment of RHC Efforts with SIM Goals

Each RHC used a collaborative process within its community to identify three priority projects. Of these, two must be related to SIM clinical quality measures (CQMs that practice sites participating in SIM also focus on); one of these two CQMs were required to be related to behavioral health. The third priority project had to relate to cardiovascular health, the focus of ENSW. SIM's intent for RHCs was "to coordinate activities between providers, the public health system, and community resources," specifically around existing strategies in the local region, based on local needs.

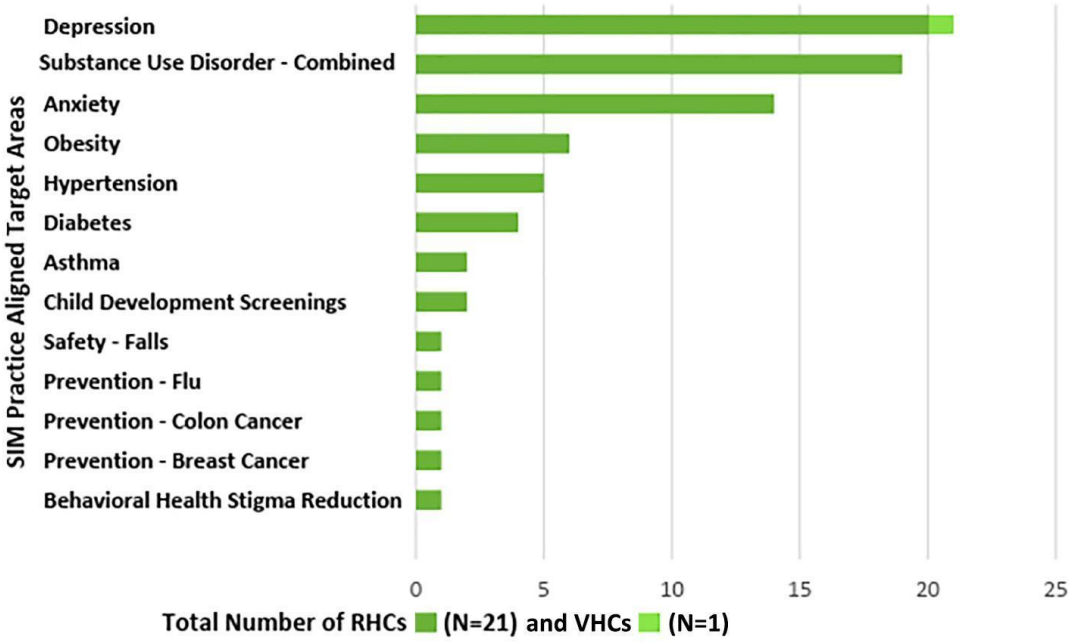
**Figure 101. RHC Priority Selection**



Each priority was described in detail in a "Roadmap" for each region. Roadmaps included an overview of each of the three priority projects, the problems they were designed to address, concrete plans, and anticipated impacts. The roadmaps also described each RHC's plans to engage primary care providers, lists key stakeholders, and offer plans for making changes if needed.

The following chart (Figure 102) shows the count of how many of the 42 SIM-related RHC projects address each of the SIM target areas. Note that each RHC has chosen two SIM-related projects and that one single project may address more than one SIM target area. These target areas parallel the CQMs selected by SIM to be reported by primary care practice sites and CMHCs as a measure of health outcomes.

**Figure 102. Number of RHCs and VHCs by SIM Target Area Selected**[109]




As shown in Figure 102, all but one of the RHCs (20 of 21) listed "Depression" as a SIM priority addressed by at least one of their two chosen priorities for SIM-related projects. The newly developed VHC also addressed depression. Nearly all also listed one of the three substance use disorder targets (identified in the figure as "Substance Use Disorder - Combined") as a priority area to be addressed. More than half of RHCs, likewise, identified "anxiety" as a priority area.[110]

[109] Anxiety and Flu were SIM targets during the early implementation (during the first year of cohort 1) and were therefore target areas when many RHCs were beginning to work with communities to start priorities. These remain important focus areas for some communities, however.

[110] SIM CQMs stopped including an anxiety measure, but at the time RHC projects were selected, anxiety was one of the CQMs and therefore these projects are considered to be in alignment with SIM goals.

The types of projects being implemented by RHCs fell into five broad categories:

- Efforts to increase access to care by improving referral systems and coordination between physical and behavioral health providers and community services
- Providing education for healthcare providers and consumers
- Facilitating a community coalition
- Stigma reduction efforts and general public awareness campaigns
- Creating or piloting a new service

Ten of the 42 SIM-related projects were in some way addressing referral systems and coordination among providers. A different set of 10 was providing education for healthcare providers or consumers (three of these provided Mental Health First Aid trainings, as did several of the LPHAs). Seven of the 42 projects involved forming, facilitating, or joining existing community coalitions to address specific problems such as opioid misuse.[111]

As mentioned, all SIM-funded RHC/VHC projects related to CQMs chosen by and monitored within the broader SIM efforts. This approach is evidence of alignment between the RHC/VHC efforts and SIM goals. In addition, we explored the activities and strategies of RHC/VHC as reported quarterly by RHCs and CHI. These reports provide further evidence of alignment with SIM goals.

Additionally, CHI conducted two social network analyses using the PARTNER[112] tool to examine the success of the newly developed RHC workforce. A social network analysis explores relationships between and among organizations and agencies. TriWest received raw data from these surveys. Because of time and resource constraints, we did not complete an analysis of these data. Instead, we relied on a report of findings from CHI. This report, "A Social Network Analysis of the Regional Health Connectors," is available at the RHC website, regionalhealthconnectors.org.

CHI received 607 survey responses in 2017 and 470 responses in 2018. Given that the role of the RHC was to connect primary care providers and local partners, that respondents reported 2,986 new or strengthen relationships as a result of efforts by RHCs is significant. In addition, findings indicate high levels of trust between partners from different sectors (e.g., medical, community-based, government) and RHCs were ranked as the partners with whom

[111] For more information on the RHC list of projects, please see the RHC website: https://www.coloradohealthinstitute.org/research/colorado-regional-health-connectors.

[112] Additional information on the PARTNER tool is available at https://partnertool.net/.

respondents had the highest levels of trust. Findings such as these point to the potential long-term value of this new workforce created by SIM.

CHI highlighted three findings in their report to SIM. The following (Table 40) is an excerpt from this report that summarizes these findings.

**Table 40. CHI Findings (Excerpt from CHI Report)**

| |
|---|
| Survey responses from nearly 500 organizational partners provide insights into the complexity of networks across the state, the role played by RHCs in developing these networks, and what has changed since 2017. The survey found that:<br><br>Partner organizations valued the contributions of other organizations within their RHC networks more in 2018 than they did in 2017. As the RHC program has matured, organizations report finding greater value in their partners' power and influence, level of involvement, and resource contribution. As in 2017, partners reported higher levels of trust and value in relationships that the RHCs had helped to create or strengthen.<br><br>The work of RHCs and partner organizations within their networks is becoming more intertwined. In 2018, 97 percent of partner organizations reported that they were involved in RHC work, and 88 percent reported that RHCs were involved in the work of their organization or department. This is up from the 2017 rates of 93 percent and 82 percent, respectively.<br><br>Most partner organizations strongly value the presence of an RHC in their region. More than 300 partner organizations (75 percent) said their region needs an RHC. When asked specifically about the value of RHCs in their region, partner organizations emphasized the increased knowledge and access to resources that RHCs provide. They also cited improvements in cross-sector communication—of the nearly 3,000 connections that partner organizations say were created or deepened by the RHCs, most (65 percent) crossed sectors.<br><br>The survey suggests that RHCs play a valued role in the work of partner organizations within their networks and have facilitated cross-sector relationships in their regions. This report offers a deeper dive into these and other findings that are key to understanding the RHC networks. |

## RHC Project Examples, Successes, and Challenges

CHI produced and submitted a summary report on the RHC program each year for the SIM office. The most recent annual report covered activities between August 2017 and July 2018. This report included success stories from each of the 21 RHC regions. All examples

demonstrated alignment with SIM goals. Five of these stories are reproduced below. Please refer to the final RHC report for more the most recent examples of RHC successes.[113]

- In Region 1 (Eastern Plains), the RHC hosted mental health First Aid trainings for small businesses, the Chamber of Commerce, and a barber shop.
- In Region 6 (Eastern Plains), the RHC convened the area's first-ever chronic disease coalition, which included primary care providers. They are building a referral system from clinics to behavioral health and community services.
- In Region 8 (San Luis Valley), the RHC coordinated monthly interviews and public service announcements with local radio stations and movie theaters to reduce stigma around mental health.
- In Region 14 (Front Range), the RHC hosted a series of workshops teaching public health practitioners how to align their programs with payment reform and clinical quality measures to better meet the needs of practice sites.
- In Region 16 (Front Range), the RHC helped a practice site find a behavioral health provider to co-locate so they could offer behavioral health services at the site one day each week.

## Key Informant Interview Findings Related to RHC or LPHA/BHTC Coordination

TriWest conducted key informant interviews each year of SIM. Key informants for the first round of interviews included SIM office staff, workgroup chairs, and state-level stakeholders. Practice Facilitators and CHITAs were added for the second round. We conducted the final round of interviews in Spring 2018 and included for the first time LPHAs, BHTCs, and RHCs. Data from these interviews provide another approach to exploring evaluation question PH3.1.

**PH3.1. How much did SIM-funded activities (specifically RHC, LPHA/BHTC efforts) align with one another and with the SIM objectives to coordinate within existing systems, support implementation of prevention/education strategies, and build community capacity to sustain these efforts?**

Whereas the previous section was dedicated to the alignment of funded activities with goals, as outlined in the population health driver diagram, this coordination section focuses more on improving community coordination, a component of the overarching SIM goal "to improve the health of Coloradans by increasing access to integrated physical and behavioral healthcare services **in coordinated community systems**, with value-based payment structures, for 80% of

[113] The final RHC report is due to be released by SIM after the due date for this evaluation report.

state residents by 2019." In this case, "coordination" refers to the degree to which various community entities and organizations worked together to further their common goals.

One key finding from interviews related to coordination is the gradual change in answers to the prompt, "Describe the degree of partnership or coordination between components of the community system you're working with." We presented this topic to two groups of key informants: (1) Practice Facilitators and CHITAs (Level 2, asked in 2018 and 2019) and (2) RHCs and LPHA/BHTC staff (Level 3, asked in 2019 only). Table 41 presents the definitions of each degree of partnership or coordination key informants could choose.

**Table 41. Definitions of the Degree of Partnership or Coordination**

| Awareness | Cooperating | Coordinating | Integrating |
|---|---|---|---|
| Community SIM components either compete or co-exist. Potential community SIM partners are aware of each other, but they are not working together. | Information is being exchanged between SIM components, they attend meetings together, and offer resources to each other. Example: Working in parallel on the same project. | SIM components have cooperative activities and intentionally work to enhance each other's capacity for the mutual benefit of programs. Example: Intentionally working together on the same project. | In addition to cooperating and coordinating activities, SIM components share knowledge, resources, and programming that support work in related content areas. Example: Combining resources and efforts to work towards the same goal. |

Figure 103 shows the percentages of responses in 2018 (PFs and CHITAs only) and 2019 among PFs, CHITAs, RHCs, and LPHA/BHTC staff. This comparison reveals a decrease in responses as "Don't Know or Not Applicable (DK/NA)"[114] or "not coordinated" for the PF and CHITA group. Additionally, we noticed a marked increase in the percentage of "coordinating" responses for this group. These changes indicate an increased understanding and awareness of SIM efforts over time as well as an increase is the perceived level of coordination at the community level. In other words, at a high, statewide implementation level, stakeholders generally reported increases in coordination.

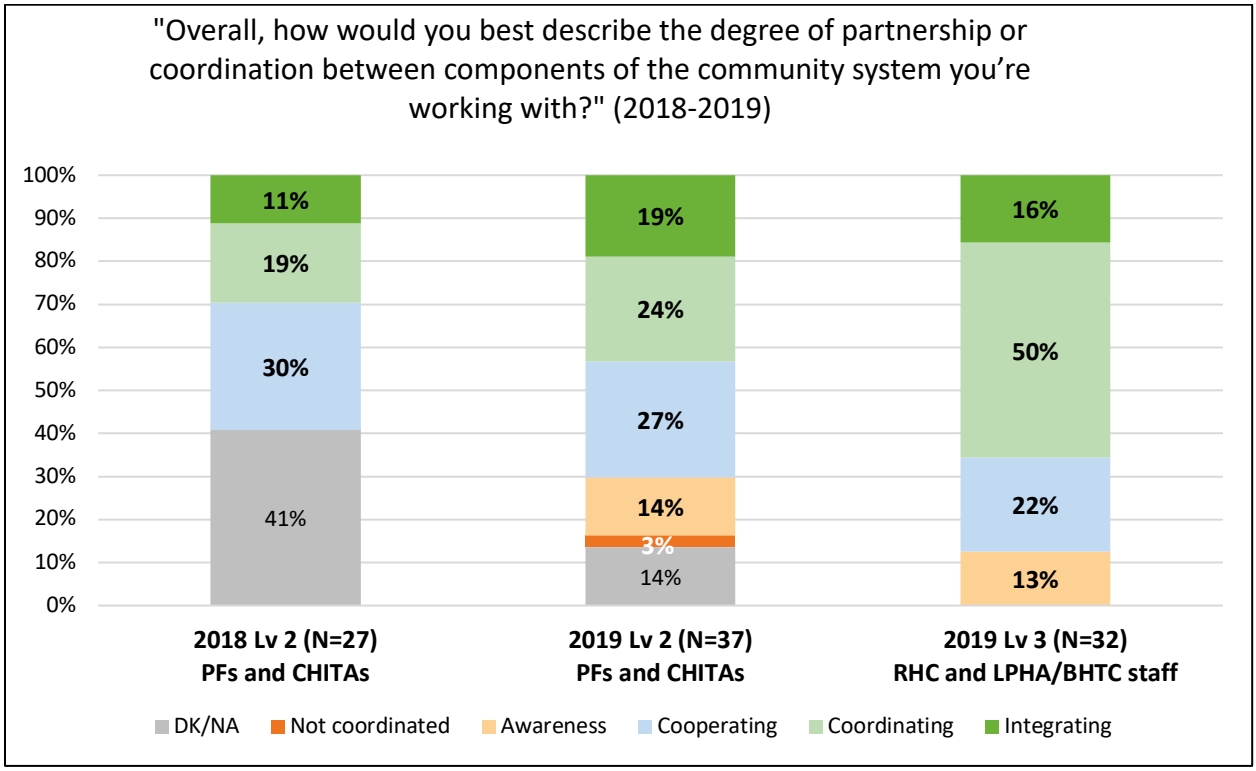
LPHA/BHTCs and RHCs, who were added to the KIIs in 2019 and are reported separately in the chart below, were in the best position to understand and comment on levels of partnership and coordination at local levels. The RHCs in particular were familiar this rating scale as they use it as part of the PARTNER[115] Tool to rate their partnership with community agencies and providers in their communities.

[114] "DK/NA" refers to I don't know or not applicable.

[115] PARTNER, Technical Manual – PARTNER 2.0, September 2015, University of Colorado Denver. The Colorado Health Institute provided initial anchor descriptions for the scale and those were modified slightly to better fit SIM activities.

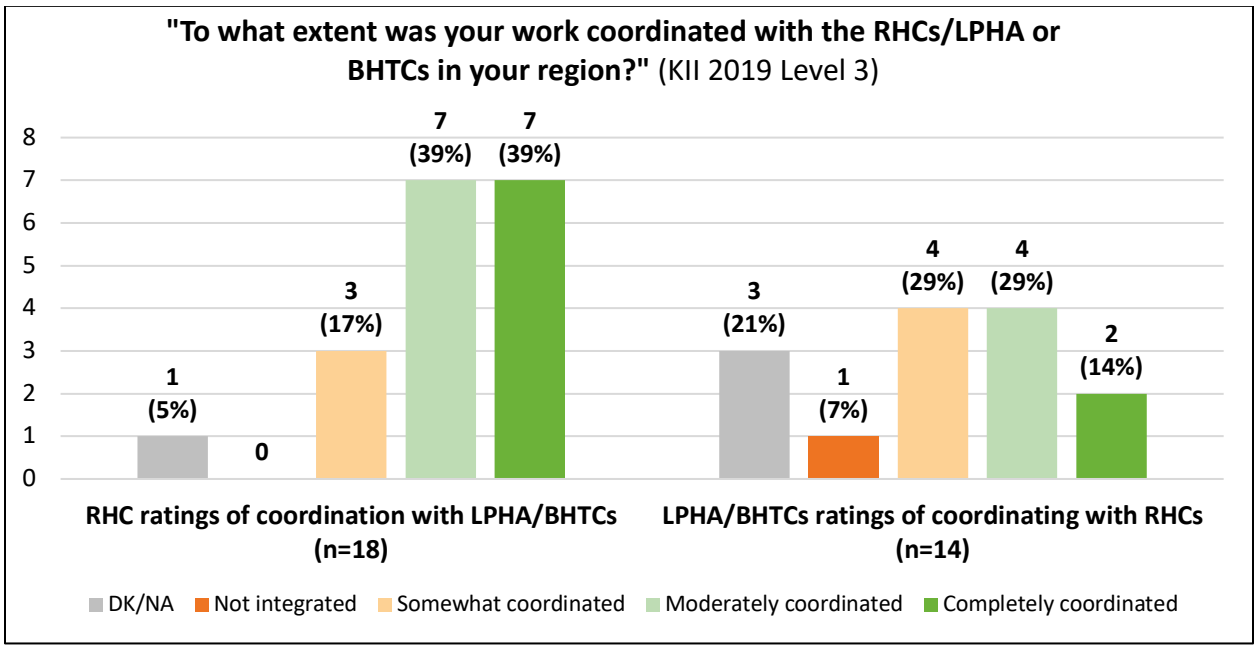
Of the 32 Level 3 interviewees (RHCs and LPHA/BHTC staff), RHCs were more likely to rank their level of partnerships as “coordinating” than LPHA/BHTC staff were in 2019, but they were similar in the percentage of respondents ranking their level of partnership as “integrating.”

**Figure 103. Interview Responses to Degree of Partnership or Coordination**




We asked RHCs the extent they worked with the LPHAs/BHTCs in their region, and we asked LPHAs/BHTCs the extent they worked with their RHCs. As shown in Figure 104 below, 78% of the 18 RHCs interviewed rated coordination with their LPHA or BHTC as “completely” or “moderately” coordinated, with another 17% rating the coordination as “somewhat coordinated.” Of the 14 LPHA/BHTC staff interviewed, 58% rated coordination with their RHC as “somewhat” or “moderately” coordinated, with another 14% rating as “completely coordinated.” 2019 marks the first time we asked this question. We suspect knowledge of and coordination with the LPHA/BHTCs and RHCs that are successfully sustained beyond SIM will increase over time. Additionally, several of the LPHA and BHTC efforts are likely to end when SIM ends. Figure 104 shows all responses about coordination with LPHAs/BHTCs and RHCs.

**Figure 104. Interview Responses to Extent of Work Coordination**

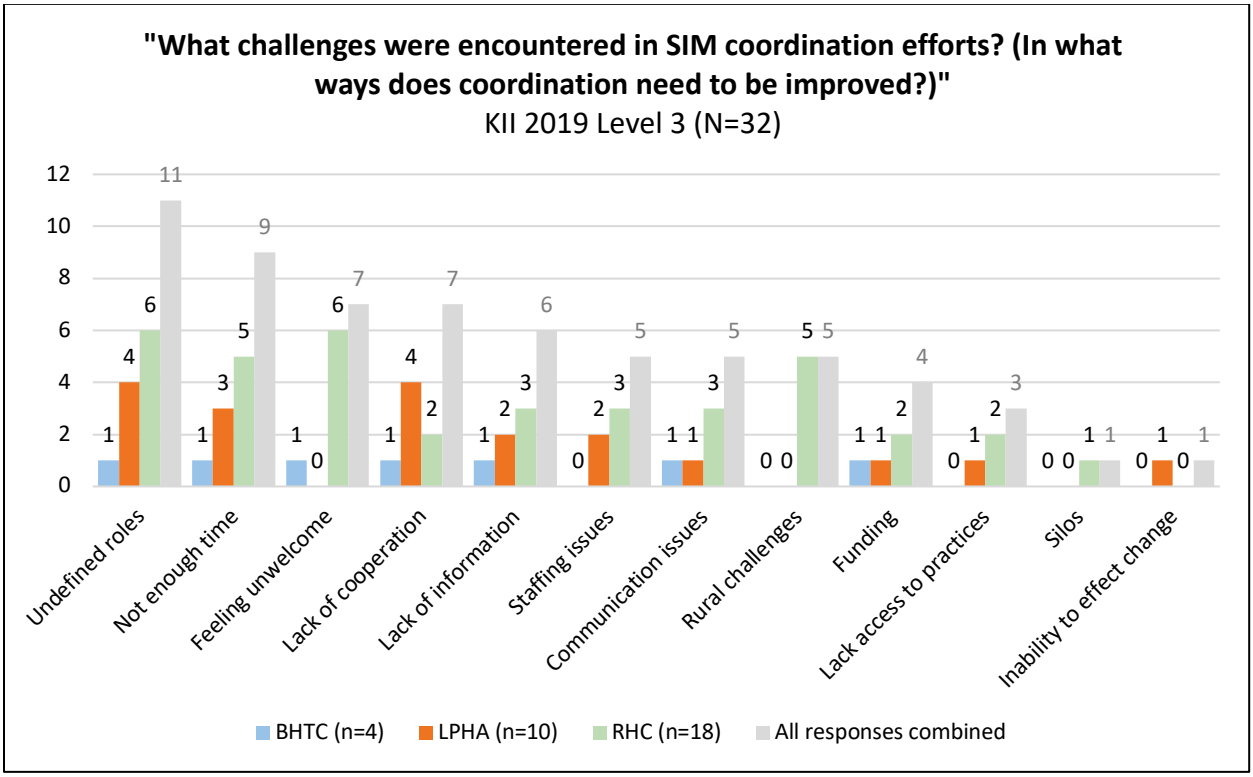



RHCs and LPHA/BHTC staff were asked what challenges they encountered in SIM coordination efforts. These responses were coded and analyzed for recurring themes and summed to create the aggregate results shown below (Figure 105). As shown by the graph, issues of "undefined roles" were cited most often as a challenge across LPHAs/BHTCs and RHCs, followed by reports of time constraints and "feeling unwelcome" when seeking partnerships. Only RHCs reported challenges in rural areas.

Undefined roles and time constraints were somewhat related. Respondents commented that early on, there was confusion between the roles of PF, CHITA, RHC, and SIM-funded LPHA. By the end of the first year of the RHC effort, roles were more clearly defined and better understood; coordination increased as a result. However, by that point, there was not enough time left in the grant period to make the level of changes many RHCs and LPHAs were aiming for. Respondents commented that system changes of this magnitude and at a population health level require more than 3–5 years, which is often the typical length of many federal grants.

The third most often mentioned challenge of "feeling unwelcome" also improved over time and likely would not have been cited as a challenge if PFs, CHITAs, RHCs, and LPHAs had more than two years to learn how to work effectively together. RHCs commented that PFs and CHITAs more readily welcomed them into shared practice sites as the RHCs were better able to differentiate their role and to identify their potential value to the practice sites.

**Figure 105. Interview Responses to Challenges Encountered**




The table below (Table 42) provides responses from interviewees as examples of these themes. Some excerpts touch on multiple themes and reflect both positive and negative evaluations. These responses reflect the complexity of these efforts and perhaps of human services work in general.

**Table 42. Interview Themes Among Partners**

| Partner Role | Themes |
|---|---|
| | **Perceptions of Undefined Roles** |
| BHTC | "The RHC program just wasn't as well defined. They cast their net too broad." |
| LPHA | "There was a lot of time [lost] between getting the RHC trained and then [there was] turnover…. I ended up doing a lot of RHC connector stuff, which wasn't my job. The roles between LPHAs and RHC were not as clear as they needed to be." |
| RHC | "I think as we learned what our roles were, it was kind of a double-edged sword. Once we were functioning at a coordinated level, clinics became more comfortable and pushed [us] out, only used us as consultants. Part of this could have been fixed by bringing us all together more as the clinics were [beginning] practice transformation so clinics could understand what each role was. I think there was a feeling of 'who are [all] these people coming into my clinic?' With all of these titles (CHITAS, LPHAS, RHCs), there was a lot of confusion." |
| | **Feeling Unwelcome** |

| Partner Role | Themes |
|---|---|
| BHTC | "Specifically, for the RHC program, there was a timing issue. Some clinics were already fully engaged in practice improvement before RHCs began. Clinics didn't want to take on anything else when the RHC came to try and help." |
| RHC | "[One challenge was] getting in touch and communicating what the RHC could bring to the relationship; the range of things and resources. Sometimes practices were only focused on budget, for example, and I couldn't talk with them [about that topic] so I felt forced out." |
| RHC | "[For] practices that were well [along] on the journey of integrated care, there was very little I could add. [I was] not very needed or welcomed. If the Practice Facilitator used us and welcomed us with their work [we were welcomed] but if the PF had their own agenda, then RHC wasn't welcomed. With smaller practice sites I had more bang for my buck and was able to have a role." |
| | **Rural Challenges** |
| RHC | "My region is rural and frontier, so they're very thinly staffed. So to come in and try to work with practices for implementing change is challenging because of the time factor, they don't have extra staff to set aside time." |
| RHC | "In my region, I'm the only local person. Our CHITAs and PTOs are not local. They pop in town, and leave. There is no space in the practice sites QI meetings, there is not space to pause and say let's bring in LPHA and see what they are doing. SIM pays for practice staff to go to CLS but can they fund provider time to do capacity building in the community?" |

## Consumer Engagement Outreach

One of the three secondary drivers within population health is to provide support for "community-level health promotion efforts." While the driver diagram did not specifically list a consumer outreach activity, the Consumer Engagement Workgroup indicated that this kind of activity was needed and would support SIM population activity efforts.

After planning by the Consumer Engagement Workgroup, the SIM office contracted with Arrow Performance Group (APG) to facilitate consumer engagement surveys in two medically underserved regions of the state. This was an effort separate from work in SIM practice sites and was designed to engage a larger group of healthcare consumers in areas where access may be more challenging. This scope of work included recruiting and training community liaisons, identifying 25 community leaders, and receiving input (via surveys) from at least 500 patients. The project included identifying two or three medically underserved Colorado regions in which to develop a community engagement structure. APG considered three criteria when selecting regions: (1) a medically-underserved designation, (2) social and economic determinants of health, and (3) the ability of the region to meet project requirements. The goals of the survey were to understand access to integrated care and barriers to access and to ask about potential solutions. The surveys were distributed to a convenience sample group; therefore, the results

are not generalizable and can only describe the population surveyed. The barrier identified most frequently was cost, at 71% for Metro Denver and 65% for Southeast Colorado.[116]

A particular success of this effort is that outreach occurred with 1,175 consumers while the target number of responses was only 500. Of the 1,175 consumers who took the survey, nearly one third (311) indicated a desire for continued engagement in ongoing discussions about improving healthcare in Colorado. Of these, 68% indicated they wanted to see the survey results, 63% indicated they wanted to work with their local community to understand healthcare needs, 44% indicated they wanted to represent their communities in healthcare needs at the state level, and 30% indicated they wanted to share their stories. The SIM office was able to connect over 100 of the respondents to various patient engagement efforts in their communities or to Medicaid's Member Experience Advisory Council.

Views of these consumers' reports regarding access to integrated care (as described in the survey tool) are presented in the table below.

Table 43 below presents whether consumers recruited in these two Colorado communities reported access to integrated care (as defined below). The results do not allow for an interpretation around some larger questions, including whether patients truly understand the definition of "integrated care," whether they have received it, or if they know where to find it. The table describes responses to the following description of access to integrated care:[117]

> *"We would like to know about the kind of healthcare services you get. Some places have 'integrated' health services where physical and mental or behavioral health service providers including doctors, nurses, dentists, and/or vision care work together to create a treatment plan to serve you. Care can be given in the same office or you may have to go to a separate office. They can help with both your physical and mental or behavioral health needs. We define physical and mental or behavioral health needs as the following:*
>
> *a. Physical health needs are things like you get the flu or you see your health provider for a yearly check-up.*
>
> *b. Mental or behavioral health needs are things like depression; panic attacks; suicide; and smoking, drug, or alcohol problems.*

[116] All available SIM reports are posted on the SIM data hub at https://www.colorado.gov/pacific/healthinnovation/sim-data-hub.

[117] The wording of this item was developed jointly by the SIM office, Consumer Engagement Workgroup, and APG.

**Table 43. Consumer-Reported Access to Integrated Care**

| Do You Have Access to Physical and Mental or Behavioral Health Service Providers Who Work Together to Create a Treatment Plan to Serve You? | | |
|---|---|---|
| Yes | 589 | 51.6% |
| No | 287 | 25.2% |
| Unknown | 265 | 23.2% |
| **Total** | **1,141** | |

The bulk of APG's discussion and descriptive statistics center around differences between respondents reporting access to integrated care and those reporting no access to integrated care (based on the definition above). Respondents who reported they did not know if they could access integrated care were grouped with respondents who answered "no" to this question.

Other efforts occurred within SIM practice sites to survey patients directly impacted by SIM efforts and to engage their patients in practice transformation efforts. Results from these surveys and a discussion of the work that SIM practice sites did to engage their patients can be found in the Practice Transformation – Integration Efforts chapter of the Final SIM Outcome Evaluation .

# 9 Conclusion

## Summary and Conclusions

The SIM implementation was a large scale and wide-ranging effort, with activities that touched multiple facets of healthcare in Colorado: individual providers and practices and—through them—their patients, community mental health centers, and local public health agencies. It supported the development of a new workforce in the form of the Regional Health Connector (RHC) program and supported the existing workforce by partnering with other systems and agencies to promote provider education. It also worked at the systems and policy levels, providing opportunities for conversation and collaboration on payment reform as well as other healthcare reform policy endeavors.

This chapter summarizes findings from the final process evaluation of the SIM implementation and focuses on activities undertaken over the life of the 4.5-year-long project. Because this report is an evaluation of the SIM initiative, which is not continuing in Colorado, and is not meant to contain generalizable findings, we focus here on SIM lessons learned and the potential for sustainability of these activities in the state, not on generalized recommendations.

An implementation effort of this magnitude required a similarly large evaluation effort. Yet, the evaluation does not necessarily cover every activity. Furthermore, not all activities are covered with the same level of comprehensiveness. Instead, we have structured the process evaluation around answering specific evaluation questions developed in partnership with SIM stakeholders. The Executive Summary of this report presents each of these questions and provides a brief summary for each. For this chapter, we have organized findings by each of the subject chapters presented in this report. These chapters correspond to the SIM primary drivers: practice transformation (including workforce), health information technology (HIT), payment reform, and population health. We conclude the chapter with evaluation lessons learned and recommendations for future evaluation efforts.

Finally, this chapter encompasses SIM processes and implementation. We provide our analysis of the SIM initiative's outcomes in the Final SIM Outcome Evaluation Report.

### Practice Transformation

A total of 319 primary care practice sites completed participation in SIM in three separate cohorts. Cohort 1 began participation in 2016 and completed two full years. Cohorts 2 and 3 began in 2017 and 2018, respectively, with cohort 2 having approximately 18 months of participation and cohort 3 having approximately 9 months. In addition, four community mental health centers (CMHCs) worked to bi-directionally integrate physical and behavioral health care over the full SIM implementation period.

Key purposes of physical and behavioral integration are to ensure that fewer people are lost in external referrals, difficulties are identified earlier, interventions are initiated sooner, and overall care is better coordinated. The SIM initiative aimed to assist practices in their efforts to move along the continuum to higher levels of integration. In addition to the four CMHCS that participated in SIM, 488 primary care practices across Colorado applied to participate. Of these, 375 were offered participation, 344 accepted participation, and 319 practices across three cohorts completed their participation.

SIM's integration model was based on Thomas Bodenheimer's "10 Building Blocks of High-Performing Primary Care,"[118] a recognized framework for high-quality care. The SIM office added an eleventh building block of behavioral health integration to gauge practice integration efforts. SIM recognized that practice sites are unique in both their resources and goals, so participation was designed to include abundant flexibility and relatively few prescriptive mandates: practice sites were encouraged to set and pursue their own priorities. Periodic assessments around milestone achievement allowed sites to continually review and improve upon their identified priorities.

Both primary care practice sites and CMHCs reported considerable improvements across all building blocks as measured by milestone assessments and the Practice Monitor instrument, which evaluated practice progress in each of the 11 building blocks. Significant increases were seen in items measuring data-driven improvement and overall implementation of integrated care.

Barriers to sustaining SIM efforts were identified as a lack of funding, staff and time resources required to provide care, the loss of PF and CHITA support, and finding/funding behavioral health providers. Even with these challenges, though, practice sites were optimistic about continuing to offer integrated physical and behavioral healthcare. Nearly all practice sites that had an onsite behavioral health provider reported they would continue their integration efforts regardless of whether their current revenue streams will cover the costs. This indicates that SIM practice sites see the value of integrated care and suggests that at least some of practice transformation accomplished throughout SIM will continue.

University of Colorado Department of Family Medicine (UCDFM) conducted a technical assistance satisfaction survey with cohort 2 and 3 practice sites as part of ongoing SIM quality improvement efforts. In this survey, 95% of all respondents reported they would recommend SIM participation to other practices. Over 85% of all practice sites (cohorts 1–3) indicated that

[118] Bodenheimer, T., Ghorob, A., Willard-Grace, R., & Grumbach, K. (2014). The 10 building blocks of high-performing primary care. *Annals of Family Medicine 12*(2), 166–71.

participating in the SIM Initiative had assisted the site in its work to improve integration of behavioral and physical health. Over 95% of cohort 2 and 3 practice sites indicated interest in participating in future practice transformation initiatives similar to SIM, with approximately 60% of practice sites specifying they would be "extremely interested."

The SIM office created competitive grants of up to $40,000 and established a small grants program, which originally had approximately $3 million in federal funds from CMMI and approximately $3 million in funds from the Colorado Health Foundation (CHF). These grants were available for sites in all three cohorts. The purpose of the program was to provide SIM primary care practice sites with competitive small grants to advance behavioral health integration goals as outlined in practice improvement plans. Based on feedback from stakeholders after the cohort 1 awards, the federal funding stream was reinvested in larger achievement-based payments for cohorts 2 and 3, which helped them achieve their transformation goals. Small grant funding for these cohorts was limited to the CHF dollars only. The SIM office made awards to 107 practice sites among all three cohorts. Reports from individual grantees provide evidence of success stories and challenges in specific practice sites ranging from the hiring and onboarding of behavioral health providers, to making needed modifications to electronic health records for improving patient management and clinical quality reporting, to supporting activities aimed at increasing patient and family engagement in integrated care.

Practice satisfaction with the SIM approach to practice transformation, as well as documented progress across the milestones, suggest it as a promising approach. Of course, some of the challenges and continued struggles noted in this report reveal some areas for potential improvement. It is encouraging for the future of physical-behavioral health integration in Colorado that many SIM practice sites, at least at the conclusion of their SIM participation, report an intention to continue their integration efforts. Future efforts in the state could build upon the current level of enthusiasm for this work.

## Workforce

SIM efforts to improve training and education for providers in integrated care settings have been multi-pronged and collaborative with multiple agencies and organizations. Many of those are summarized in a paper from the 2018 Integrated Behavioral Health (IBH) Consortium[119] that involved an extensive group of attendees from a broad array of groups, including SIM-funded practice sites, SIM office staff, community mental health centers (CMHCs), the Colorado

[119] University of Denver (2018). *Thinking Beyond 2019: Sustaining Integrated Behavioral Health in Colorado, A Briefing Report on the 2018 Integrated Behavioral Health Consortium*. Denver, CO. University of Denver Graduate School of Social Work.

Workforce Development Council, Colorado state agencies, health and behavioral health agencies, and foundations.

Beginning with the start of SIM-funded practice transformation work, the University of Colorado Department of Family Medicine (UCDFM) developed and hosted 14 Collaborative Learning Sessions (CLS) over the course of the initiative. Seven of these sessions were held on the Western Slope and seven were held in the Denver Metro and Front Range areas. They provided opportunities to network, share ideas and experiences, gain different perspectives on similar SIM efforts that help practice sites and CMHCs integrate care, and gain the skills needed to succeed with alternative payment models.

Attendees consistently reported finding the CLS one of the most valuable components of their SIM participation, and they expressed appreciation for the connection to peers, other practice sites, and key community members engaged in working to improve healthcare and the lives of their patients. Continuing these opportunities across the state would likely further practice transformation and integration efforts statewide.

Stakeholder interviews indicated some important accomplishments regarding the healthcare workforce:

- SIM has raised awareness of the benefits of integrated care
- Access to behavioral health providers (BHPs) has improved for SIM-participating practice sites

Additional comments from stakeholder, Practice Facilitator (PF), and Clinical Health Information Technology Advisor (CHITA) key informant respondents clarified that behavioral health integration into primary care practice sites is valued and that some efforts are addressing workforce gaps.

At the SIM-practice-site level, providers were surveyed to assess their level of satisfaction and burnout.

- Overall, workplace satisfaction was generally high, with a large majority of respondents (85%) agreeing or strongly agreeing that they are satisfied with the work they do at their practice sites.
- Most respondents reported no burnout or occasional stress in the workplace (76%), but 7% reported high levels of burnout. The other 17% reported that they were gradually burning out.

These measures did not change over time between the beginning and end of SIM participation. So, although over the course of SIM providers did not report any improvements in job

satisfaction, neither did they report increased burnout after undergoing this transformation effort.

## Practice Level HIT

Practices across all SIM cohorts reported continuing, often considerable, improvement in their data quality, literacy, and use to support and expand their ability to offer integrated physical and behavioral healthcare. Practices additionally indicated seeing the value of these data and understand how their utilization—though not without its own challenges—allows them to offer higher-quality care. These data will also be foundational for further practice preparation in the proliferating field of value-based payments.

Data quality of both the data elements and CQMs improved considerably in aggregate, but changes were more uneven across individual items. Data around physical health, for instance, was generally more captured and trusted than were data for behavioral health. This was unsurprising: it was expected that primary care practices that had not previously offered integrated care would already have workflows in place to support care for these physical conditions. Data around behavioral health, in addition to the challenges that may arise while adopting any new operations or workflows, contended with stigma and privacy concerns.

Beyond the immediate challenges of provider and patient buy-in, though, were more systemic barriers to HIT improvement and optimization. An issue that came up repeatedly in assessments and interviews was the difficulties around external data quality and use, particularly regarding EHR vendors. Practice sites noted that regardless of their own processes and adherence to data collection, these data were not always available to them in meaningful or useful forms such as reports, dashboards, and development and validation of CQMs. Vendors are known to frequently change the availability of certain data or remove certain functionality, telling practice sites they must purchase additional modules or features to access their data. Practice site frustration around this is immense.

This dynamic illustrates perhaps the largest issue facing expanding integrated care: since the primary driver of health information technology is to promote the secure and efficient use of technology in order to advance SIM goals, it is impossible for practices alone to drive this improvement when they must rely so heavily on third-party platforms and systems to collect and aggregate clinical, behavioral health, and claims data (a secondary driver). Practice sites identified PFs and CHITAs to be of exceptional value in communicating with vendors to advocate for site needs, and their ability to liaise as representatives of individual practice sites with larger systemic players was material in practice improvements. Future practice transformation efforts may wish to incorporate similar supports that can center and advocate for practice site needs within the larger HIT landscape.

## Statewide HIT

SIM Statewide Health Information Technology (HIT) initiatives were broad and encompassed several successful activities to support change and promote secure and efficient use of technology to share secure, accurate, and complete data. These efforts focused on supporting practice site and bi-directional homes (i.e., community mental health centers) connection to statewide Health Information Exchanges (HIEs). They also aided in developing and implementing an automated electronic clinical quality measure (eCQM) reporting process to integrate clinical data with claims data and worked to clarify state and federal regulations around data sharing, privacy, confidentiality, and patient consent. In addition, these HIT efforts facilitated ways to share information between primary care providers and behavioral health providers, developed and implemented a telehealth strategy by building on expanded broadband access, and developed and implemented a SIM HIT Roadmap.

As a result of this work, there were several improvements and expansion of health technology which helped promote access to BHPs, improve and expand on current electronic health records (EHRs), and improved access to technology platforms used for exchanging data. Practice sites saw an increase in the number of users having access to HIE logins and fielded more requests from external agencies for continuity of care documents. Significant progress was made on creating and implementing an automated eCQM reporting process. SIM funded and led the oversight and planning of the eCQM solution by providing facilitation of the governance charter, assisting in visioning the architecture, and developing a data validation framework. This work has led to a commitment for transition and continuation of the solution under OeHI's statewide HIT roadmap.

Primary care providers and behavioral health providers also made significant progress in sharing information between one another. Several examples of this occurred as part of quality improvement initiatives with BHPs who were either embedded, co-located, or bi-directional seeing progress when sharing information. Whether through a shared EHR, developing a care compact with a community BHP, or building a more structured referral process supported with care coordination follow up, many sites increased information sharing. CHITA support in particular helped practice-level coordination of communication and technologies for data sharing.

The Office of eHealth Innovation (OeHI) and the eHealth Commission engaged stakeholders in the healthcare community to collaboratively develop a guide for statewide HIT efforts. This framework, known as the "HIT Roadmap," provides direction and guidance on how Colorado's HIT infrastructure and environment will be built to support ongoing reform efforts. Activities include developing governance and policy, establishing program management structure, securing funding, and identifying technology and technical assistance needs.

The statewide roadmap gave some of SIM's HIT initiatives a viable platform for sustainability and a clear "home." The roadmap aligns with several of SIM's HIT priorities: eCQM solutions, behavioral health data sharing, and broadband initiatives. The telehealth strategy expanded broadband to over 300 sites, surpassing SIM's original goals.

Many SIM practice sites were already connected to HIE prior to Year 1, and more joined as a result of SIM. Because of their participation in Accountable Care Organizations, many SIM practice sites were already connected to an HIE before SIM. If a site had prior connection to an HIE, it had the option to either focus on enhanced features of the HIE or to work on incorporating HIE use into more of its clinic workflows to realize greater value from the information available.

An automated eCQM reporting process was developed and implemented. A three-phase process was established for the statewide eCQM solution: implementation, validation, and central storage of the numerators and denominators (making them available for any reporting requests). Further progress was made in sustaining this initiative as part of the HIT roadmap.

Payers should continue to be part of the conversation, as their input and support for eCQM efforts will be critical to sustainability and future value-based payment models.

## Payment Reform

The payment reform pillar was a crucial component of the SIM initiative, yet the challenges in implementing and adopting payment models based on quality as opposed to quantity revealed a number of challenges for both payers and providers. SIM leveraged an existing Colorado Multi-Payer Collaborative to support efforts to move SIM practice sites and the state as a whole towards a greater use of value-based payments. This collaborative is somewhat unique, relative to other SIM efforts nationally, because most SIM-participating private payers attended. Despite strict anti-trust laws and regulations that limit the degree to which information can be shared, leveraging this group proved instrumental to the SIM initiative's payment reform efforts with regards to alignment around metrics and reporting, payment, data aggregation supports, and communication with practice sites.

An important lesson learned during SIM's work to move towards value-based payment models in the state is the need for education and communication. In particular, increasing provider knowledge around various aspects of VBPs was a significant need at the start of SIM. One particular success of the SIM initiative was the Multi-Stakeholder Symposium (MSS), which brought payers and providers (along with a few other invited stakeholders) together to discuss the implementation of value-based payments. This led to increased opportunities for dialogue on the issue, and the SIM office reports that payers have agreed to sustain the MSS, holding the symposium twice a year, beyond the SIM award period.

Several key informants who were interviewed in 2016 and 2017 noted that some of the first practice sites (cohort 1) expressed disappointment that their participation in SIM did not necessarily open them up to a new payment model and/or did not automatically increase their non-fee-for-service payments. As was previously noted, a requirement for participation in SIM was that a practice be supported by at least one payer with an APM. That support could include arrangements made between providers and payers that pre-dated SIM. For those payers that did provide the SIM office with information about which practice sites across the three SIM cohorts they were supporting with APMs, many practice sites either continued or slightly expanded on existing payment agreements with payers. Based on later interviews, conducted in 2019, additional explanation and communication between payers and providers through the MSS helped to resolve this issue for cohorts 2 and 3.

## Population Health

SIM resources were deployed broadly across Colorado to impact two population levels: patients of SIM-supported primary care practices and CMHCs and the broader population of all Coloradans. SIM resources reached most areas of the state during the first year and all parts of Colorado by the end of the implementation period. On a per-person basis, spending was more concentrated in rural parts of the state.

SIM supported community-based efforts to reduce stigma, raise awareness, and promote health through competitive grants to eight LPHAs and two BHTCs. The activities implemented by each of these 10 grantees were closely aligned with SIM goals. All grantees successfully implemented their intended plans and made positive impacts in their communities.

SIM and the Colorado Health Institute (CHI) developed and implemented a new work force: Regional Health Connectors (RHCs). Twenty-one RHCs were hired and deployed by local agencies in each of the 21 health statistics regions. In addition, one Veteran Health Connector was hired and deployed in Northeastern Colorado.

CHI conducted a social network analysis to explore the success of RHCs/VHC at building or expanding relationships among community partners and primary care providers. Results of this analysis showed 2,986 new or strengthened relationships as a result of efforts by RHCs. During the final year of SIM implementation, CHI led a focused sustainability planning effort. At the time of this report, 14 of the 21 RHCs had some or all of the necessary funding to continue for the next year.

Stakeholders perceived an increase in coordination and partnerships at the local level over the course of the SIM implementation. Primary challenges to coordination and partnerships were

lack of role clarification among PFs, CHITAs, and RHCs; time constraints; and "feeling unwelcomed" when trying to establish new connections.

SIM contracted with Arrow Performance Group (APG) to design and facilitate a consumer engagement effort in two medically underserved regions. Outreach occurred with more than double the number of consumers originally targeted (1,175 participated, 500 target). The primary barrier to accessing integrated care was cost. This finding was consistent across both regions. One third (311) of participants indicated a desire to continue their engagement, and SIM connected over 100 of them to various patient engagement efforts in their communities or to Medicaid's Member Experience Advisory Council.

## Evaluation Summary, Lessons Learned, and Recommendations

The SIM initiative was an ambitious and comprehensive effort, touching virtually every aspect of healthcare in Colorado. Major activities took place in four areas: practice transformation, payment reform, health information technology, and population health. Each of these was supported by a series of stakeholder engagement workgroups, which were guided by a SIM Steering Committee, with an Advisory Board providing oversight.

In addition to the key process evaluation findings highlighted above, the following discusses our assessment of the sustainability of these processes and reports lessons learned about the evaluation process itself.

### Evidence suggests many activities will be sustained.

The data presented in this report provide evidence that many SIM activities are likely to be sustained. Some examples of these include:

- Practice sites report a strong interest and desire to continue their integration efforts.
- The Population Health Workgroup call-to-action provides a framework for ongoing efforts for community health activities, including the work of LPHAs and the RHCs.
- CHI has secured funding commitments for at least some regions to continue the RHC workforce, and these efforts are ongoing.
- Workforce activities in the form of provider education opportunities seem likely to be continued by SIM partners.
- The state Office of eHealth Innovation is continuing work on improving HIT across Colorado.

Although impossible to state definitively, the sustainability and continuity of so many diverse activities across so many sectors would have likely been impossible without SIM's leadership and strong commitment to high levels of stakeholder engagement.

### Diverse stakeholders provided valuable perspectives, but they also created challenges.

The Colorado State Innovation Model (SIM) was created from a large, statewide stakeholder engagement effort. Overall implementation retained this engagement piece, forming eight subject matter workgroups, a SIM Steering Committee (made up of workgroup chairs), and an Advisory Board. This provided valuable perspectives and helped to sustain interest and enthusiasm for SIM throughout the 4.5 years of implementation.

However, these diverse perspectives also created some challenges. Each person participating in SIM brought unique ideas and insights—and specific priorities and agendas. Trying to navigate a large number of these competing goals occasionally resulted in less focus in the evaluation effort and sometimes pulled attention away from the most important metrics and outcomes. We would recommend future evaluation efforts of this nature do more to balance stakeholder input with a narrower focus on the most important aspects of the implementation to be measured.

### Good practice-level data provide details on practice efforts and progress.

The UCDFM SPLIT set of assessments provided considerable amounts of data to help examine implementation of SIM at the individual primary care practice and CMHC levels. For the process evaluation report, these data provided useful information on practice successes and challenges that could be used during the implementation for mid-course corrections and for annual/final process evaluation reports.

Overall timing of these assessments changed over time and made evaluation adjustments necessary. Cohort 1 practice sites found that the frequency of assessments was a burden and, therefore, assessments were done less frequently, and sites had greater reporting flexibility (e.g., in choosing which CQMs to report). This flexibility was important and necessary for the implementation effort, but it created evaluation challenges. Original plans for quarterly Rapid Cycle Feedback reports had to be changed as data availability changed.

The timing of the assessments for the final process evaluation was very challenging. We recommend for any similar future efforts that the evaluation timeframe have a six-month lag between end of all project activities and data gathering and final evaluation report completion.

### Qualitative, descriptive data support the promise of population health efforts.

Anecdotal information gathered from participants in the community, Practice Facilitators, and key stakeholders speaks to the importance and value of the work of Regional Health Connectors, Local Public Health Agencies, and Behavioral Health Transformation Collaboratives as well as provider education, consumer engagement, and workforce efforts. This report includes multiple examples of successes in implementation and qualitative data that support the impact of these efforts and the importance of their continuity.

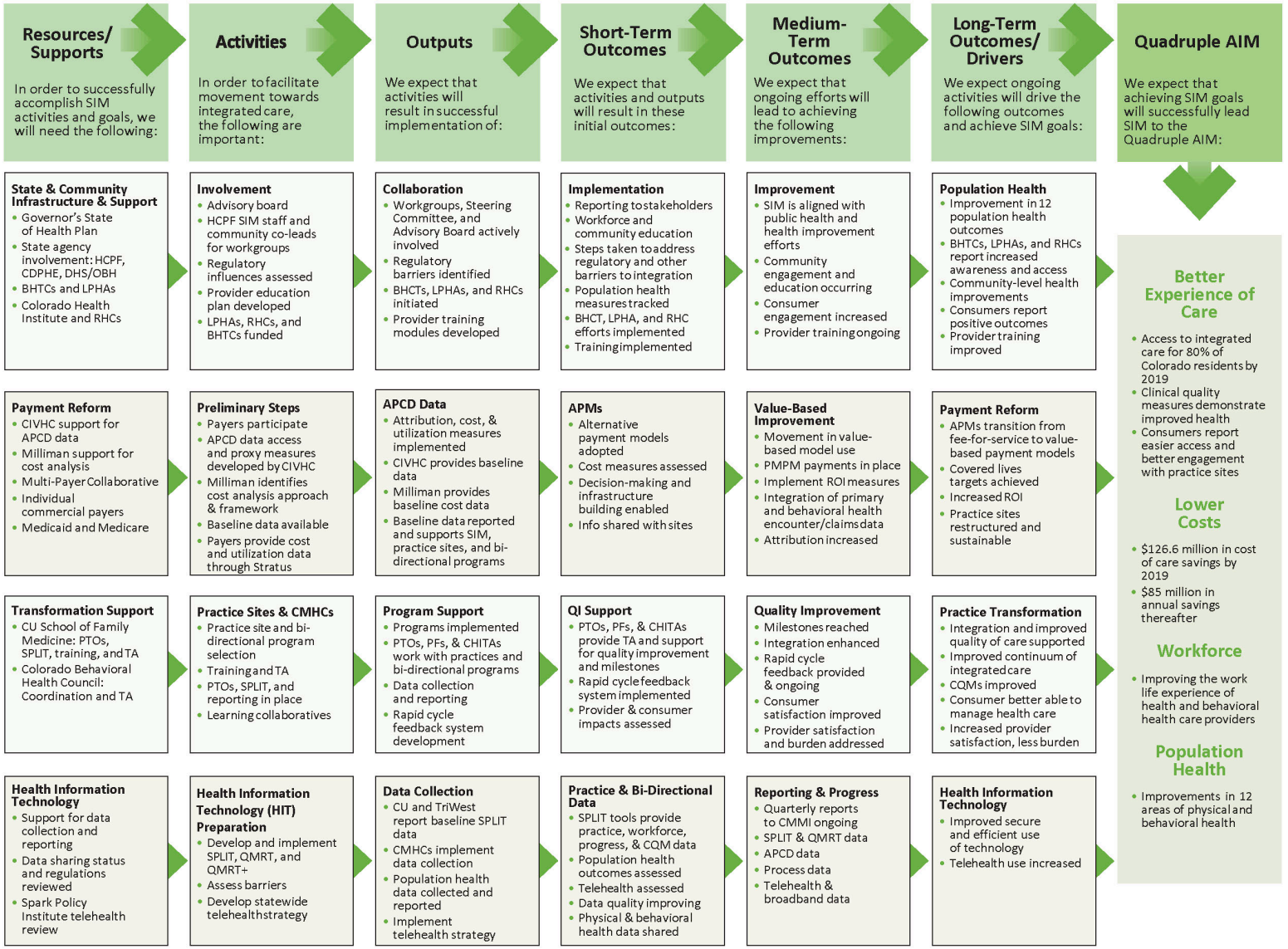
### Data availability for addressing evaluation questions was a challenge and SIM staff turnover provided both new opportunities and new challenges.

Between the project planning phase and completion of SIM, the office experienced nearly complete turnover in staff. This created implementation interruptions and changes as new leadership and program managers brought new perspectives to the project. To some degree, continuity within the workgroups helped to mitigate any loss of institutional memory or perspective. However, workgroup focus and direction was somewhat lost during these periods of transition. These adjustments were particularly difficult because of the fairly short timeframe for such a large initiative.

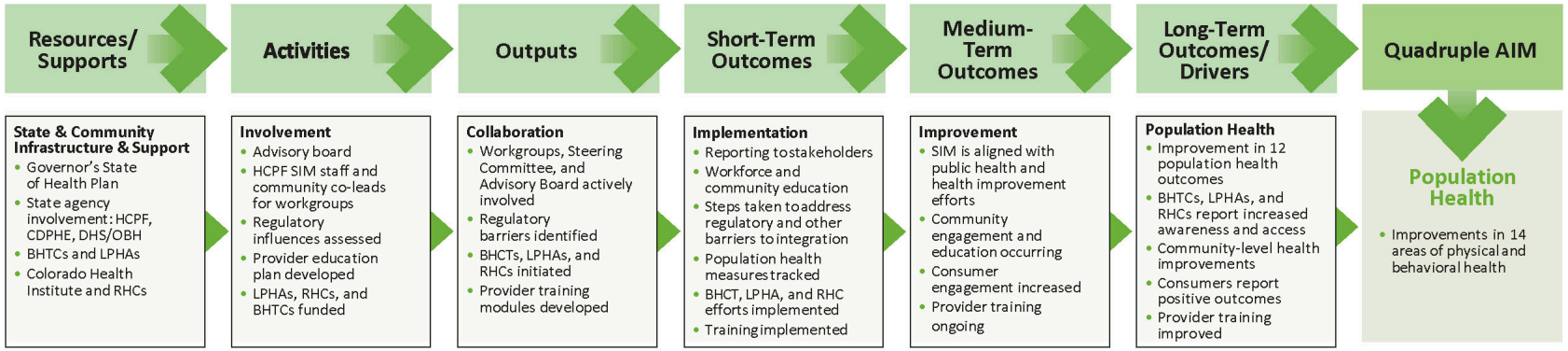
As mentioned in the Process Evaluation report, when planning the initiative, stakeholders worked with TriWest and SIM office staff created evaluation questions for which there were no readily available data sources. This problem was compounded by turnover in workgroup members and, more importantly, SIM office staff. By the end of the evaluation, all original SIM office staff had left the project, and there was a loss of some institutional memory on why some evaluation questions were developed despite not having available data sources.

As a result, some of the original and revised evaluation questions could not be addressed in this report. Further, some evaluation resources were expended trying to locate, develop, or modify an existing set of data to answer a question. This could have been avoided by (1) a set of program objectives developed with data availability as a requirement and (2) earlier involvement and stronger direction on the part of TriWest in limiting evaluation questions to those with known data sources rather than making attempt to identify or create new sources.

# 10 Appendix A: SIM Logic Model



## SIM Logic Model: Population Health




## Population Health Questions

**Workgroup Short-Term Goal 7.** Improved health outcomes (physical and behavioral) demonstrated for the "little 'p'" SIM population through CQM reporting by practice sites and CMHCs.

**PT6.** What specific transformation factors (level of integration, milestone targets, data quality, practice improvement, SMART goals, etc.) most influence outcomes (CQMs, costs, population health measures)? SPLIT Assessments, APCD, CDPHE Data, CQM Reporting

### SIM Sustainability

**SIM1.** To what extent did SIM create new partnerships or strengthen existing relationships?

- SIM1.1. Which partnerships should be sustained? To what extent are these (or other) SIM-related partnerships sustainable? What is being done to sustain partnerships?
- SIM1.2. Will try to measure at the statewide, practice site, provider, and consumer levels (Workforce Workgroup recommendation). KIIs, Closeout Survey

**SIM2.** To what extent did SIM support recommendations in Colorado to create specific changes to established public policies or support new public policies regarding the delivery of integrated services?

**Workgroup Long-Term Goal 5.** There are demonstrated outcomes showing improved health (physical and behavioral) for all Coloradans.

**PH1.** To what extent did the 14 behavioral- and physical health-related population health measures change over time? Did more resources and improved coordination/alignment result in improved population health measures? CDPHE Data Sets, CHI/RHC Survey, LPHA/BHTC Survey, SIM Saturation Data

**PH2.** What SIM resources were provided to communities to employ strategies to reduce stigma, raise awareness, and promote health based on local need? What activities were undertaken using these resources? CHI/RHC Survey, LPHA/BHTC Survey, SIM Saturation Data

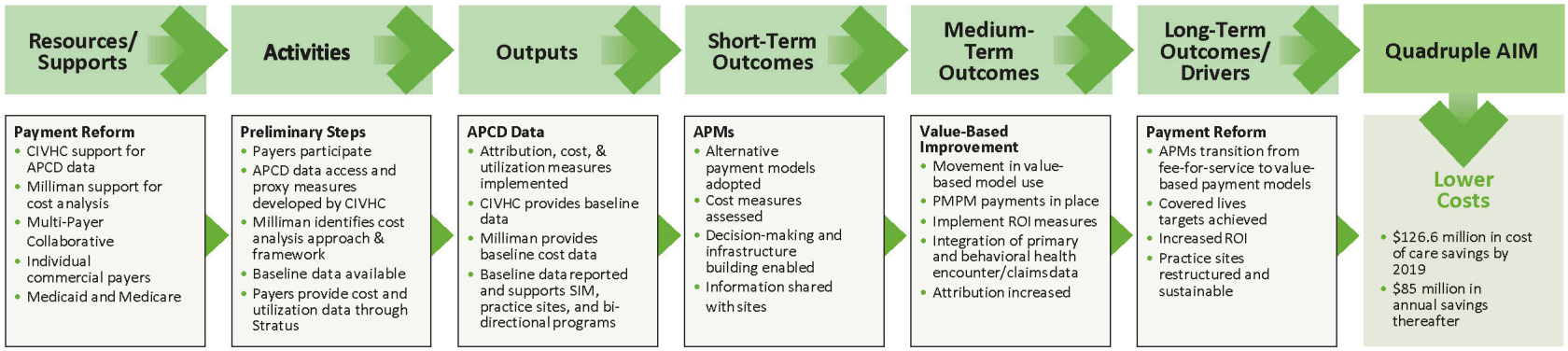
**PH3.** How much did SIM funding contribute to community coordination efforts?

- PH3.1. How much did SIM-funded activities (specifically RHC, LPHA/BHTC efforts) align with one another and with the SIM objectives to coordinate within existing systems, support implementation of prevention/education strategies, and build community capacity to sustain these efforts?
- PH3.2. Did communities with better coordination and alignment to SIM goals experience improved access to care and/or improved health outcomes (compared to those with less coordination and alignment)? CDPHE Data Sets, CHI/RHC Survey, LPHA/BHTC Survey, SIM Saturation Data

**PH4.** Did communities with greater SIM resource intensity experience improved access to care and/or improved health outcomes (compared to those with less resource intensity)? APCD, CQM reporting, CHI/RHC Survey, LPHA/BHTC Survey, SIM Saturation Data

**PT9.** To what extent are consumers in SIM practice sites and bi-directional programs satisfied with the experience of primary and behavioral health care? (Report better access to care, feeling more valued and respected, getting better or more effective care, and express privacy or data security concerns as a result of more data sharing through integration?) CAHPS Survey, Practice Site Surveys

## SIM Logic Model: Payment Reform




## Payment Reform Questions

**Workgroup Short-Term Goal 3.** Payment models support integrated SIM practice sites that share information and coordinate care across disciplines and across systems.

**PR1.** To what extent were value-based payment models implemented? What were the barriers to this transition? Did implementation result in improved integration and quality of care? Payer Data, APCD, KIIs

**PR2.** What challenges were encountered by SIM practice sites in their adoption of APMs? SPLIT Field Notes, KIIs, Closeout Survey

**Workgroup Long-Term Goal 1.** There are shifts in payment models that allow practice sites to sustain integration and support continuum of care.

**PR3.** What is the cost of integration transformation efforts to SIM practice sites and CMHCs? (Reporting will be separate for primary care and CMHC sites.) APCD, Closeout Survey, Case Studies?

- PR3.1. Is this cost sustainable through revenue generated by the APMs?
- PR3.2. Are practice sites willing to absorb some unreimbursed costs as a result of increased satisfaction?
- PR3.3. How do costs differ based on specific integration strategies (co-location or not, practice site size, geographic area, population served characteristics, etc.)? Costs also include "soft" costs (e.g., staff meeting time, training).

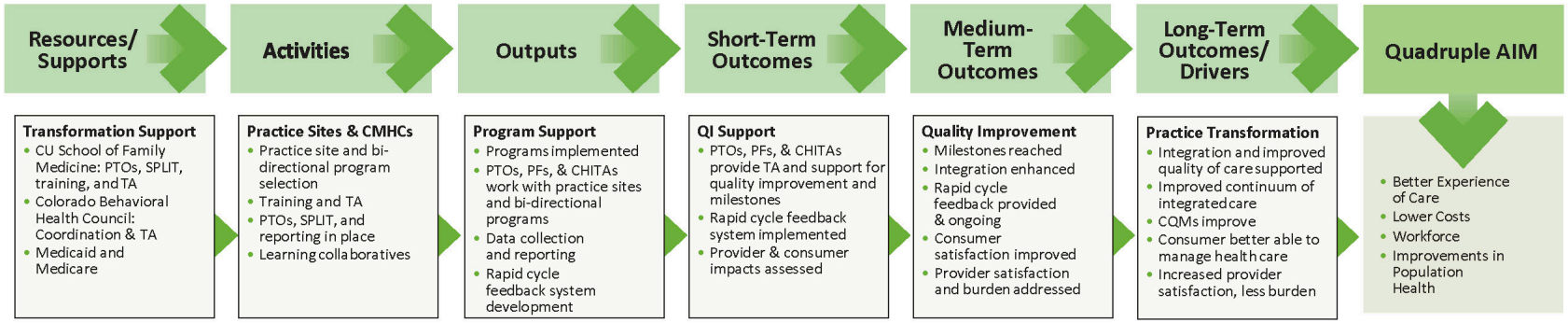
**PR4.** To what extent did the utilization of services and total cost of care differ over time for consumers attributed to SIM participating practice sites? Was this different compared to consumers in comparison practice sites? APCD, Provider Directory, Milliman's Cost and Utilization Reports

**Workgroup Long-Term Goal 2.** There is a solid body of evidence demonstrating positive financial outcomes of integrated care.

**PR5.** What alternative payment models result in the best outcomes for different populations served (children, adults, type of payer, urban vs. rural vs. frontier areas)? APCD, Provider Directory

**PR6.** What was the total cost of care for consumers attributed to SIM participating practice sites? Establish baseline and evaluate change over time. Was this different compared to consumers in comparison practice sites? APCD, Provider Directory

## SIM Logic Model: Transformation




## Practice Transformation Questions

**Workgroup Short-Term Goal 1.** There will be an increase in embedded, co-located, or tele-behavioral health providers in SIM-participating primary care practice sites.

**PT1.** To what extent did practice sites and bi-directional programs move along the continuum of integration? How do they change over time?

- Do practice sites report an ability to sustain any changes made during SIM?

**(CMHC data reported as subgroup; other subgroups = urban/rural, size, adult/pediatric, % Medicaid + uninsured, and "type" (e.g., FQHC, system) SPLIT Assessments

**PT2.** What challenges were encountered by SIM practice sites in their integration/ transformation efforts? Field Notes, KIIs

**PT3.** Was access to integrated care improved for 80% of Coloradans? (The original source of this question is the goal of 80% access to integrated care, supported by value-based payments, in coordinated community systems.) APCD, SIM Saturation Data

**PT4.** Do patients attributed to SIM participating practice sites have better access to primary care relative to patients attributed to comparison practice sites? Better access to behavioral health care relative to patients attributed to comparison practice sites? APCD

**Workgroup Short-Term Goal 6.** SIM practice sites expand connections with community partners through shared care planning.

**PT5.** What steps did practice sites take to assess and continually improve delivery of integrated care via process redesign, culture change, and HIT [for this goal specifically, focus on building blocks]? SPLIT, KIIs

**Workgroup Short-Term Goal 8.** Core competencies and expectations are put into place to enhance the capacity of the behavioral health workforce working in integrated care settings.

**PT7.** To what extent have gaps in the SIM integrated care workforce been identified and addressed? Consider resources needed for primary care and behavioral health staffing, treatment, practice transformation, HIT, consumer engagement, and financial support. Workforce Workgroup, KIIs

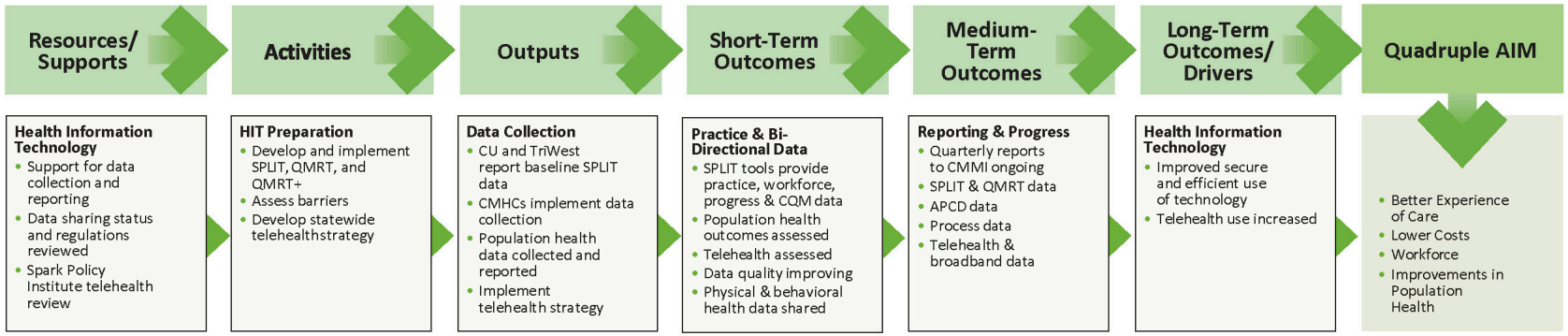
**PT8.** To what extent are primary care and behavioral health providers satisfied with the experience of integrating primary and behavioral health care? Report burden? Does satisfaction increase and burden decrease over time? SPLIT Clinician and Staff Survey

**Workgroup Long-Term Goal 4.** Providers are able to track and coordinate their patients' care outside of their own practice sites or systems.

**HT4.** To what extent did the addition of a technical suppor person (CHITA) result in better quality and better use of data in practice sites?

- HT4.1. To what extent did better data quality improve tracking of health outcomes?
- HT4.2. To what extent did practice sites increase or improve use of electronic health records (EHRs) or healt information exchanges (HIEs) for population management and/or to track and coordinate patient care?
- HT4.3.To what extent did practice sites increase or improve use of data to coordinate care (map this to Milestones)
- HT4.4. Do practice sites believe that support for these data improvements will lead to better health outcomes? SPLIT (HIT Assessment), HIT Workgroup, Closeout Survey SPLIT Field Notes, KIIs

## SIM Logic Model: Health Information Technology




## Health Information Technology Questions

**Workgroup Short-Term Goal 2.** eCQM data is improved through validation and alignment processes across payers, programs, and providers.

HT1. Are primary care practice sites and CMHCs using valid, reliable data (in the form of Clinical Quality Measures—CQMs) to drive change?

- HT1.1. To what extent were SPLIT and SIM (short-term) CQM reporting mechanisms developed as planned? Implemented?
- HT1.2. What challenges (if any) were encountered?
- HT1.3. To what extent is data quality improving (data capture and CQM reporting)? SPLIT Assessment, CQM Reporting

HT2. What progress was made in developing and implementing the statewide HIT roadmap?

- HT2.1. To what extent was a telehealth strategy developed? Implemented? (primary care and CMHCs)
- HT2.2. To what extent did connectivity to HIEs improve across the state? For SIM practice sites? For CMHCs?
- HT2.3. What progress was made on creating an automated eCQM reporting process? HIT Workgroup, SIM Staff, KIIs, Document Reviews

**Workgroup Short-Term Goal 4.** SIM practice sites understand and are capable of sharing behavioral health information.

HT3. What progress was made on facilitating ways to share information between primary care providers and behavioral healthcare providers? (This includes CHITA support, practice site level coordination of communication, and technologies for data sharing.) SPLIT Assessment, KIIs, HIT/Policy Workgroups

**Workgroup Short-Term Goal 5.** SIM practice sites understand how to utilize health information from their EHR and HIE for population management of their patients.

PT11. Do/did practice sites and bi-directional programs see value in various elements of technical assistance they received (PFs, CHTAs, SPLIT tool, etc.)? SPLIT Assessments, SPLIT Field Notes, KIIs, Case Studies? **PT10 was deleted due to duplication

**Workgroup Long-Term Goal 3.** Effective clinical, behavioral, and claims data sharing processes are in place to improve population health and care management.

PT12. What steps did practice sites take to assess and continually improve delivery of integrated care via process redesign, culture change, and HIT? SPLIT Assessments, SPLIT Field Notes, KIIs **This question also appears in the Practice Transformation section.