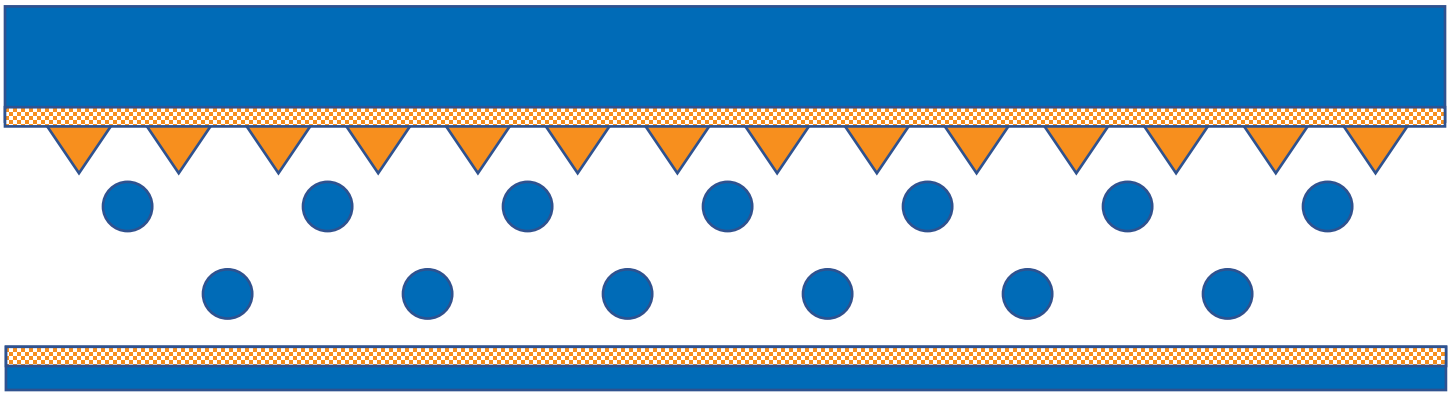
2020

Connecticut State Innovation Model

FINAL EVALUATION REPORT



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SIM connecticut state innovation model

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Center for Population Health

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Introduction

In 2014, the Center for Medicare & Medicaid Innovation awarded Connecticut a four-year, $45 million State Innovation Model (SIM) Test Grant. Managed by the Connecticut Office of Health Strategy (OHS), the SIM project began in February 2015 and was extended to 5 years, ending in January 2020. In the last five years, CT SIM has worked to improve Connecticut's healthcare system for the majority of residents by establishing a whole-person-centered healthcare system that aimed to: 1) Improve community health and eliminate health inequities; 2) Ensure superior access, quality and care experience; 3) Empower individuals to actively participate in their health and healthcare; and 4) Improve affordability by reducing healthcare costs.

During the SIM grant period, The State of Connecticut contracted with Drs. Robert Aseltine of UConn Health and Paul Cleary of Yale University as co-directors of the CT SIM evaluation to determine its impact on Connecticut's healthcare consumers, providers, and organizations. Using data from several Connecticut State agencies, this evaluation focused on tracking progress towards the SIM aims, reporting to SIM stakeholders on project activities and outcomes, and providing opportunities for continuous quality improvement.

The SIM Operational Plan identified key measures, as well as accountability targets, that were used to track progress and identify trends, best practices, gaps, and barriers to implementation. These are summarized in the SIM Driver Diagram, located in Appendix A, which identifies the following: project aims, primary drivers, secondary drivers, performance measures, and accountability targets.

This Final Report summarizes the SIM achievements during the Test Grant period, challenges encountered during implementation, lessons learned, and recommendations to enable achievement of the SIM goals beyond January 2020. The Report is broken down into four main sections, with a summary of lessons-learned and recommendations for future work following each section:

- ***Implementation****:* The Implementation section describes the implementation strategies and status of each SIM initiative, including relevant *accountability metrics,* which are process measures that have been tracked by program staff since early in the test grant. These metrics, referred to as "Pace Measures" represent measures that are process oriented and track milestones, such as the percentage of members impacted by value-based payment. They were tracked via the Accountability Metrics set within the Driver Diagram and are described in the Implementation section of this report.
- ***Statewide Impact:*** As a fundamental component of the SIM initiative, the Statewide Impact section describes *key measures of population health, healthcare quality, consumer experience/feedback, and cost*. These "Performance Measures" examined SIM outcomes with respect to all Connecticut residents with commercial, Medicare or Medicaid coverage.
- ***Model Specific Impact:*** The Model Specific Impact section compares *the health care outcomes and experiences of provider organizations* that participated in SIM payment and care delivery reforms with providers that are not participating, and with statewide performance in aggregate. This section summarizes the impact of SIM initiatives on overall statewide progress.
- ***Conclusion:*** This Final Report ends with high-level conclusions and recommended next steps to ensure the sustainability and successful leverage of SIM initiatives following the test grant. It is the hope of the program management team that this Report will serve as a tool for the SIM governing bodies and key stakeholders to determine the needed strategy, resources, and direction to support healthcare innovation upon the conclusion of the SIM test grant.

State Innovation Model: Multiple Aligned Initiatives

One of the challenges of CT SIM has been to align a set of initiatives to advance the project's overall goals of healthier people and communities, better healthcare outcomes, reduced health disparities, and a reduction in the trend of Connecticut's healthcare spending. SIM initiatives focused on four streams of work summarized in Figure 1: Value-Based Payment, Care Delivery, Consumer Engagement, and Health Information Technology.

Figure 1
State Innovation Model Work Streams

VALUE-BASED PAYMENT REFORM	**Expanded the use of shared savings program** payment models amongst all payers so that more providers were rewarded for providing better quality care at a lower cost
CARE DELIVERY REFORM	**Helped providers succeed** in shared savings program models by helping them provide more effective primary care, better manage patients with complex health, identify disparities, and identify behavioral health disorders.
CONSUMER ENGAGEMENT	• **Engaged consumers** by creating Value-Based Insurance Designs in preventive health, care, and choice of providers. • Measured and rewarded **care experience** with a **public provider scorecard**.
HEALTH INFORMATION TECHNOLOGY	• **Enabled health information exchange** so that providers could deliver better coordinated and higher quality care • Created tools for **measuring quality outcomes** and analyzing data for use in value-based payment

The above work streams, and the initiatives that comprised them, were interdependent in the SIM project, and created an environment that incentivized better care and smarter spending. The providers of focus for the SIM initiatives included Advanced Networks (ANs) and Federally Qualified Health Centers (FQHCs). ANs were defined as networks of primary care providers that have organized to participate in shared savings arrangements. The initiatives from each are summarized below:

Work Stream One: Value Based Payment

- *PCMH+:* SIM funded the design and implementation of the PCMH+ shared savings program in Medicaid. This program added Medicaid to the list of payers that offered shared savings arrangements to promote better care and smarter spending. PCMH+, like other shared savings programs, rewarded providers for achieving better quality and care experience and reducing avoidable use of hospital and ED services. PCMH+ complemented SIM's broader all-payer strategy to promote the use of value-based payment. Providers that were in value-based contacts with multiple payers had a stronger incentive to systematically improve quality and outcomes.
- *Quality Measure Alignment:* Each payer that administered a shared savings program used a quality scorecard to determine whether providers were improving quality. In the past, providers have struggle to

track and monitor their performance on these measures because there is so much variability among payers as to which measures they include on their scorecards. SIM established a Quality Council to propose and maintain a recommended Core Quality Measure Set for use in shared savings arrangements. OHS encouraged payers to align with this measure set.

- *Consumer Assessment of Healthcare Providers and Systems (CAHPS):* Since 2017, we have conducted an annual survey of consumer experience using the Consumer Assessment of Healthcare Payers and Systems (CAHPS). The primary purpose of the CAHPS survey was to provide commercial payers and Medicaid with data that they could use in their shared savings arrangements to reward ANs and FQHCs that improve care experience. The annual survey will also provide data for use in the public scorecard.

Work Stream Two: Care Delivery

- *Advanced Medical Home (AMH):* The Advanced Medical Home (AMH) program enabled primary care practices to achieve Patient Centered Medical Home (PCMH) recognition, improving patient care, and enabling those practices to receive higher Medicaid reimbursement rates. AMH directly supported eligibility for PCMH+. AN practices and FQHCs that were PCMH-recognized were eligible to participate in Person Centered Medical Home Plus (PCMH+).
- *Community and Clinical Integration Program (CCIP):* The Community and Clinical Integration Program built on AMH by improving care delivery models across ANs participating in PCMH+. Specifically, CCIP focused on improving complex care management, behavioral health integration, and healthy equity. The promotion of Community Health Workers (CHWs), another SIM initiative, complemented AMH and was a critical component of both PCMH+ and CCIP. CHWs improved care by supporting patients with complex needs and addressing social determinant risks.
- *Prevention Service Initiative (PSI):* The Prevention Service Initiative (PSI) helped extend the primary care team outside the walls of the AN or FQHC. PSI established formal connections between ANs or FQHCs that were participating in PCMH+ and community-based organizations that provided CHW-led interventions to improve outcomes.

Work Stream Three: Consumer Engagement

- *Value Based Insurance Design (VBID):* The above initiatives all aimed to improve the way patient care was delivered by providing payment incentives and direct support for advancing care. In contrast, the Value Based Insurance Design (VBID) initiative promoted the employer adoption of health insurance plans that incentivized consumers to get the right care, at the right time, from the right provider. Such plans adjusted cost sharing to positively influence consumer behavior to drive better health outcomes and lower costs. VBID plans aligned the interests of consumers and the ANs and FQHCs that provided their primary care.
- *Public Scorecard:* To improve transparency, the SIM launched HealthQualityCT, a Public Scorecard that was developed by UConn Health to allow consumers to view the quality of care provided by ANs and FQHCs. HealthQualityCT was the first public reporting initiatives that makes use of Connecticut's All Payer Claims Database.

Work Stream Four: Health Information Technology

- *Information Exchange Services:* To support all care delivery and payment reform efforts, the plan for the state's Health Information Exchange (HIE) was developed, supported by substantial SIM funding. The goal of the HIE was to offer tools and services to increase secure and authorized information exchange between disparate healthcare systems. Exchange of data across systems continued to be a challenge for ANs and FQHCs who struggled to share updates on patients for whom they were accountable. Through

data exchange, the aim of the HIE was to improve patient-centered care and outcomes, and reduce costs.

- *Using Data to Drive Improvement:* To drive improvement in healthcare outcomes, the goal of the Central Data Analytic Solution (CDAS) was to enable advanced analytics and quality and utilization measures production. The CDAS aimed to increase the use of electronic Clinical Quality Measures (eCQMs) among ANs and FQHCs. The use of eCQMs had potential to enhance the quality of the data, reduce reporting burden, and ultimately improve healthcare outcomes and quality, while also demonstrating success for value-based payment arrangements.

Across all SIM initiatives, consumer experience, transparency, and engagement were central priorities. The Consumer Advisory Board (CAB) led much of this work that included activities such as listening sessions, community forums, a video project, and the inclusion of consumers on all of the SIM advisory bodies, including the Healthcare Innovation Steering Committee (HISC).

Section One: Implementation

This final summary of the SIM Implementation process is based on the Accountability Targets defined within the SIM project Driver Diagram (Appendix A). This Driver Diagram reflected the principles and strategies identified in Connecticut's State Healthcare Innovation Plan, as well as the refinements and new plans developed over the course of the project, in collaboration with key partners. The diagram provided a shared vision of the scope of work to: 1) map SIM project initiatives and activities on metrics for accountability, 2) illustrate connections between and among the SIM initiatives or "work streams" as described above, and 3) monitor the pace of activities and progress towards program goals. Accountability Targets based on this Diagram were set and reported on quarterly by work stream groups to inform SIM project leadership, program participants, and key stakeholders of SIM progress and the potential need for adjustments in strategy.

Methods

The SIM Driver Diagram consisted of primary and secondary drivers (See Figure 2, below):

- Five *primary drivers***,** which were those high-level activities that contribute directly to achieving SIM aims
- *Secondary drivers*, which were lower-level actions or interventions necessary to achieve the primary drivers. Many of these activities overlapped and were not meant to be implemented in silos. For example, the Community & Clinical Integration Program (CCIP) targets the same healthcare entities that participate in the Medicaid PCMH+ program. Similarly, some of the work streams may have a targeted population focus, but many were statewide.

Each primary and secondary driver had associated annual accountability targets, total targets, cumulative metrics achieved to date, and metrics achieved for the latest quarter until the end of the project period. Accountability targets, as defined by CT SIM, were milestones that each measure was expected to reach within a given timeframe.

Leadership from each CT SIM work stream submitted data quarterly to the evaluation team, and the Driver Diagram was updated and reported to the SIM project leadership, program participants, and key stakeholders of SIM progress and the potential need for adjustments in strategy.

Results

The final Driver Diagram (Appendices A and B) consisted of 5 primary drivers, 14 secondary drivers and 66 measures. On average, each primary driver had three secondary drivers (range: 2 to 4) and each secondary driver had an average of 4.7 measures (range: 1 to 9). Of the 66 measures, work streams reported data for 44 (67%) of the measures. Data for the other 22 (33%) measures were not reported because the activities were not implemented.

SIM Accountability Measures: Process and Outcome

To evaluate SIM's effectiveness, both pace and performance measures were tracked and reported. Process measures determined whether SIM program activities were implemented as intended, reaching the appropriate recipients, and resulting in certain outputs. Outcome measures assessed the degree to which SIM initiatives produced intended changes in the appropriate recipients. Of the 64 active measures, 19 (30%) were pace measures and 45 (70%) were performance measures (Table 1). Two secondary drivers consisted of only pace measures and four secondary drivers consist of only performance measures.

Table 1

SIM Accountability Measures by Primary Driver, Status, and Type

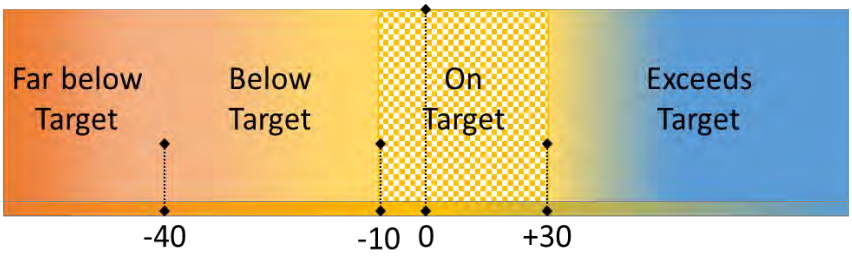
Primary Driver	Pace Measures N	Performance Measures N	All Measures N
Promote Policy, Systems and Environmental Change	8	4	12
Engage Consumers	4	13	17
Strengthen capabilities of ANs and FQHCs	4	10	14
Promote Payment Models	0	9	9
Enable HIE, Analytics and HIT	3	9	12
Total	19	45	64

SIM Accountability Measure Targets

To assess CT SIM final Accountability Targets, the CT SIM evaluation team calculated the expected accountability target for the 64 measures. In most cases, the expected accountability target was based on the cumulative yearly targets compared with the Cumulative Achieved to Date (CATD) to determine whether the target was met. CATD metrics were categorized into one of four groups (Figure 2). Targets were considered to be met if they were within 10% below or 30% above the target number, and were coded by color, with those in blue exceeding the target, those in yellow meeting the target, and those in orange not meeting the target. Appendix B contains a summary of pace and performance measures that were met or not met according to these metrics.

Figure 2

Cumulative Target Metrics



Appendix C presents the measures for each primary and secondary driver, with the measure's expected accountability target, CATD, and the percent of the target achieved over the project period. Measures for initiatives that were not implemented are indicated

Of the 64 measures for all primary and secondary drivers, 18 (28%) have reported CATD metrics that met or exceed their accountability target (summarized in Table 2). Of these 18 measures, 13 (20% of all measures) have exceeded their accountability target by more than 30 percent. The CATD metric for 46 (72%) measures is more than 10 percent below the accountability target. Of these 49 measures, 39 (61% of all measures) are more than 40 percent below the accountability target. Eighteen (35%) of the measures categorized as very low have not reported any metric. For three (6%) of these measures, the date specified in the Driver Diagram for implementation of the activity has passed. Data for two measures is not yet complete, and measures for 12 were not implemented.

Table 2
SIM Accountability Targets Status

Primary Driver	Far Below Target (More than 40% below target) N	Low (Between 10% **&** 40% below target) N	On Target (Between 10% below target **&** 30% above target) N	Very High (30% or more above target) N	Total N (%)
Promote Policy, Systems and Environmental Change	2 (16.7%)	3 (25%)	1 (8.3%)	6 (50%)	12 (19%)
Engage Consumers	11 (64.7%)	1 (5.9%)	2 (11.8%)	3 (17.6%)	17 (27%)
Strengthen capabilities of ANs and FQHCs	8 (57.1%)	2 (14.3%)	1 (7.1%)	3 (21.4%)	14 (22%)
Promote Payment Models	6 (66.7%)	1 (11.1%)	1 (11.1%)	1 (11.1%)	9 (14%)
Enable HIE, Analytics and HIT	12 (100%)	0	0	0	12 (19%)
Total n (%)	39 (61%)	7 (11%)	5 (8%)	13 (20%)	64 (100%)

Table 3 presents the degree to which accountability targets were met by measure type. A higher percentage of pace measures were met (67%) than performance measures (11%), while 50% of pace measures and 89% of performance measures fell below targets.

Table 3
Active Measure Type and Category

Measure Type	Very Low (40% or more below target) N	Low (Between 10% and 40% below target) N	On Target (Between 10% below and 30% above target) N	Very High (30% or more above target) N	Total N (%)
Pace	6	0	2	11	19 (30%)
Performance	33	7	3	2	45 (70%)
Total	39 (61%)	7 (11%)	5 (8%)	13 (20%)	64 (100%)

Discussion

The Driver Diagram created by CT SIM was a useful tool to engage work streams and monitor progress towards program aims on a quarterly basis. CT SIM met or exceeded accountability targets on 18, or 28%, of the measures, while 46 measures, or 72%, did not meet targets. Overall, performance on measure targets was poor, and stakeholders should carefully review why that is the case within each work stream, as the barriers to success are likely to differ greatly among them.

It is worth noting that five of the performance measures achieved or exceeded their targets, while the remaining 40 did not meet targets. Since performance measures focus on the degree to which a program is producing the intended changes in the appropriate recipients, it would be beneficial to explore what types of support may be needed for future work on these measures. The SIM project was most successful in meeting its targets in terms of the first Primary Driver, which promoted policy and environmental change, in recruiting and involving healthcare consumers in the reform efforts, and in promoting the use of Community Health Workers. In contrast, performance on the Health Information Technology accountability measures was halted, which was important not only for this key work stream, but hampered other SIM activities and reduced the effectiveness of the SIM project overall, due to the importance of access to data and interoperability in achieving other program objectives.

For those measures that met or exceeded targets, it is important to review to what those successes could be attributed, and how those strategies could be applied to the measures and activities that were not successful in meeting targets. Interviews with work stream leadership and participants on lessons learned (presented in the Work stream Feedback section of this report) reveal some of the barriers to success, including a lack of coordination between state agencies, and the complexity and administrative burden of activities. Work stream feedback also illuminates the enthusiasm of participants in collaboration with colleagues and enthusiasm around opportunities to address healthcare delivery challenges.

Section Two: Statewide Impact

The SIM Evaluation Team worked with OHS and the Connecticut Department of Public Health (DPH) to collect or compile data that illustrates SIM's statewide performance with respect to patient experience, provider experience, health outcomes, and cost.

Whenever possible, we report on statewide performance that is based on the entire Connecticut population. However, depending on the data sources (e.g., APCD), we are at times limited to data that only includes individuals who have commercial, Medicare, or Medicaid coverage. When data permits, we present measures that allow us to compare performance across these payer categories and across race/ethnic groups.

This section presents evaluation data from the following domains:

- *Patient Experience:* These data were collected via the Consumer Assessment of Health Plans Survey (CAHPS) for the commercial and Medicaid populations.
- *Health Outcomes*: The SIM plan for improving population health utilized and built upon the DPH's recent State Health Assessment, State Health Improvement Plan (Healthy Connecticut 2020) and the state Chronic Disease Prevention Plan. To evaluate the SIM's effectiveness, the evaluation tracked a diverse set of health outcomes relevant to population health and health care delivery.
- *Affordability and Cost: The* SIM project focused on transitioning away from paying for healthcare services based on volume towards Alternate Payment Models and paying based on whether people receive high quality care with lower growth in costs.
- *Work Stream Feedback:* Work stream leads and team members completed quantitative surveys and were qualitatively interviewed as part of the summative evaluation to describe success, barriers, and directions for future work related to the SIM primary and secondary drivers.

Patient Experience

The SIM evaluation team conducted surveys of probability samples of commercially insured and Medicaid patients in Connecticut to assess their care experiences. The team used a modified version of the Clinician and Group Consumer Assessment of Healthcare Providers and Systems (CG-CAHPS) survey. At the recommendation of the Quality Council, the CG-CAHPS 3.0 instrument was modified to include several questions that the Evaluation Team developed to assess access to behavioral health services.

Methods

CG-CAHPS is a standardized, validated instrument widely used throughout the country. It is being administered by experienced CAHPS vendors who have more than 20 years of experience conducting patient experience surveys. Three waves of CG-CAHPS surveys were completed in 2017, 2018, and 2019 for both Medicaid recipients and commercially insured individuals.

To develop the sample of individuals to be surveyed, the evaluation team first identified all the Advanced Networks and FQHCs in CT that were participating in shared savings programs and providing care to Medicaid recipients or to individuals insured by the participating commercial health plans. Two of the major commercial payers in CT participated in 2017 and three in 2018 and 2019. Medicaid participated all three waves.

Medicaid and the participating insurance plans provided a list to the survey vendor of all adult (18 or older) patients in CT who had made a visit to a primary care provider in the six months prior to when the data were accessed. The survey vendors then selected a probability sample of patients who had used each Advanced Network or FQHC in the state. To provide a comparison, the evaluation also selected a sample of patients who did not receive care in one of the identified advanced networks. Medicaid also included a comparison group of PCMH program participants that are not in the Medicaid shared savings program (PCMH+).

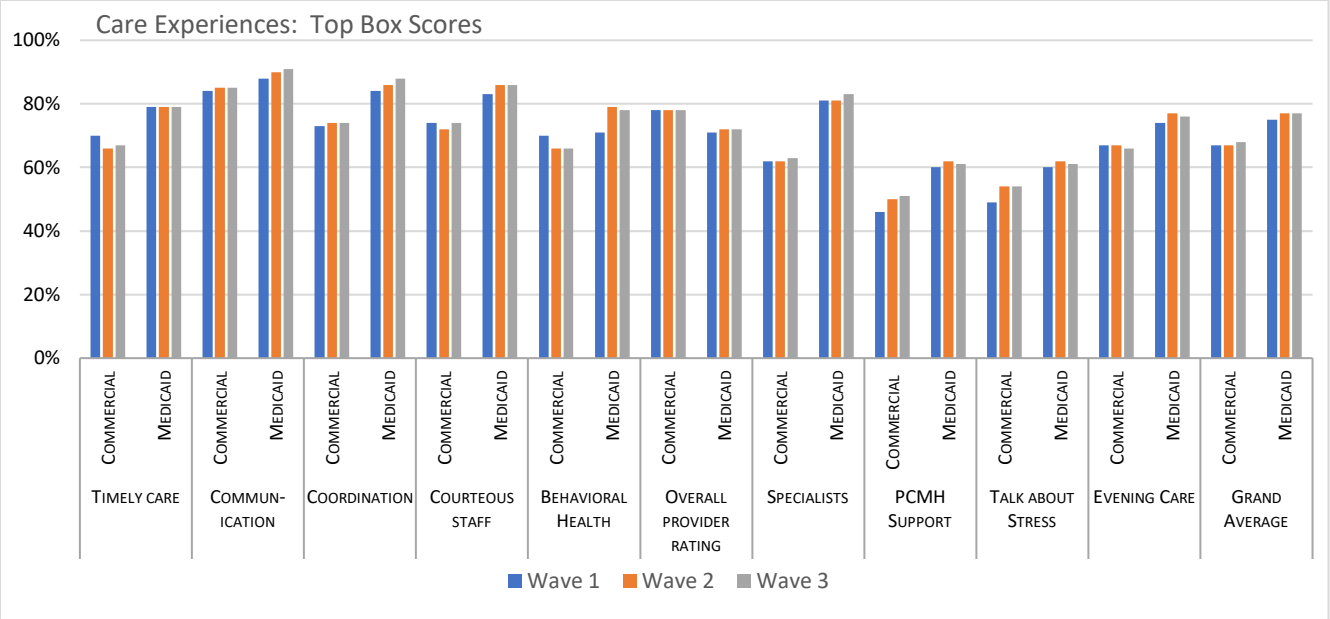
The data were used to help evaluate the impact of care delivery and payment reforms (e.g. whether an advanced network is participating in a shared savings program) on patient experience. We also examined patient experiences across racial/ethnic groups, comparing changes across time periods, and comparing patient experience based on type of health coverage (commercial or Medicaid). To simplify the presentation of data, herein we report 'Top box scores" or the percent of respondents who had the highest rating of care (9 or 10) for the provider rating).

Results

One notable finding is that Medicaid recipients tended to report better care experiences than did commercially insured patients (See Figure 3). However, in all three years, 78% of commercially insured individuals rated their provider a "9" or "10" on a 0 to 10. Among Medicaid recipients, 71% gave a rating of 9 or 10 in the first wave, and 72% gave such a rating in the second and third wave. Analyses, not reported here, indicate that differences in patient characteristics account for differences in CAHPS scores by source of coverage and year. Medicaid and commercial surveys were conducted by different vendors, however. We do not think the differences in protocols are large enough to account for the observed differences, but that is a possible explanation for at least some of the Medicaid-commercial differences.

Figure 3

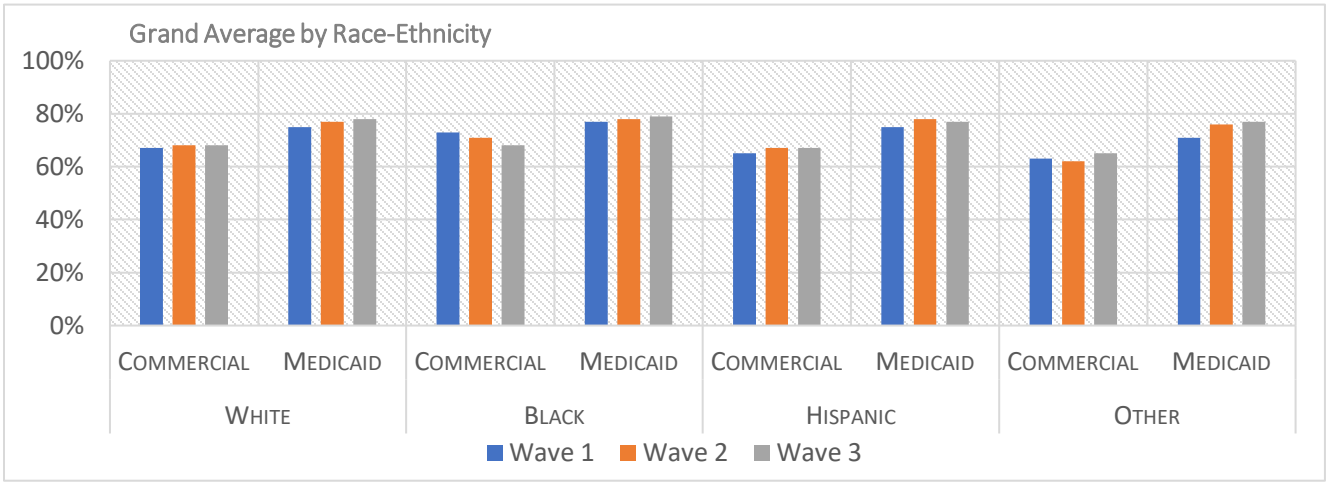
Care Experiences among CT Commercially Insured and Medicaid Patients



To assess differences by race and ethnicity, we compared the CAHPS Grand Average of self-identified white respondents to the responses of non-Hispanic Blacks, Hispanics, and those classified in other categories for Medicaid and commercially insured respondents in the two survey years (See Figure 4). The differences were small and inconsistent. Of the 36 statistical comparisons (e.g., Black vs. White, Medicaid, Black vs White commercial, each year), only four were significant ($p < 0.01$).

Figure 4

Care Experiences among CT commercially insured and Medicaid patients by Race/Ethnicity



Data from CMS that are not publicly available (personal communication; Paul Cleary) indicate that when ambulatory, hospital, and home health care CAHPS scores from 2014 were considered, Connecticut was 42nd among states and the District of Columbia. In 2017, the only other year analyzed, Connecticut had dropped slightly to 43rd.

Health Outcomes

SIM goals for health outcomes included 1) improving health system performance and 2) increasing the quality of care, and 3) measuring changes in population health. The SIM plan for improving population health utilized and built upon the DPH's recent State Health Assessment, State Health Improvement Plan (Healthy Connecticut 2020) and the state Chronic Disease Prevention Plan. To evaluate SIM's effectiveness toward reaching these goals, the SIM evaluation tracked a diverse set of health outcomes relevant to population health and health care delivery. These outcomes were chosen for both their widespread prevalence and burden on current national health, and their potential for improvement by impacting relevant behaviors.

The population health measures include:

- *Obesity in children and adults.* Obesity is a serious medical condition that can cause complications such as metabolic syndrome, high blood pressure, atherosclerosis, heart disease, diabetes, high blood cholesterol, cancers, and sleep disorders*. The percent of U.S. adults who are considered obese has increased significantly over the past few decades and is currently around 40 percent. Childhood obesity can have many harmful effects on the body and puts children at greater risk for high blood pressure, high cholesterol, type 2 diabetes, asthma, joint and musculoskeletal issues among others. Children with obesity tend to become obese as adults and their risk for weight related diseases tends to be more severe
- *Cigarette smoking in adults and high school youth.* Cigarette smoking is the leading cause of preventable disease, disability and death in the United States. Tracking statewide smoking rates is one of the population health measures required as part of the SIM Test grant.
- *Diabetes in adults.* Diabetes is the seventh leading cause of death in the United States. It is a disease that results in too much sugar (glucose) remaining in the bloodstream, and can lead to serious health problems, such as heart disease, stroke, blindness, kidney failure and amputation of toes, feet or legs.
- *Premature Death Due to Cardiovascular Disease Definition:* Cardiovascular disease is any health problem that involves the heart or blood vessels, and it is the leading cause of death in the U.S. The other population health outcomes in the SIM evaluation--obesity, diabetes, and smoking--are all risk factors for developing cardiovascular disease. It is a population health measure that might be favorably impacted as a result of value-based payment, particularly the incentives in the Medicare Shared Savings Program for improving hypertension control.

The health care delivery measures include:

- *Adults with regular source of care.* Regular preventative visits to primary care providers are important for maintaining optimal health. They enable patients to be assessed and treated for early-stage conditions, and to be monitored for previously diagnosed chronic conditions. In addition, they provide the opportunity for education regarding health-promoting behaviors (e.g., diet, exercise, and smoking). https://www.ncqa.org/hedis/measures/adults-access-to-preventive-ambulatory-health-services/
- *Preventable Hospital Admissions and re-admissions.* For the CT SIM dashboard, hospital admissions and re-admissions focus on "ambulatory care sensitive conditions" (ACSCs). ACSCs are conditions for which good outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or more severe disease. Acute and chronic ACSCs were considered.
- *Optimal diabetes care.* Blood sugar control is an important component of the optimal management of type 1 and type 2 diabetes in order to minimize co-morbidity. Regular measurement of blood sugars determines

whether current interventions are adequately maintaining acceptable blood sugar levels. Thus, the first step in blood sugar control is annual Hemoglobin A1c (HbA1c) tests among diabetic patients.

- *Mammograms.* Breast cancer is the most common non-skin cancer among women and the fourth leading cause of cancer deaths in the United States. Regular mammograms enable early diagnosis of breast cancer before symptoms occur. This enables treatment while the cancer is in its early stages and thus maximize cure rates.
  https://seer.cancer.gov/statfacts/html/breast.html
- *Antidepressant Medication Management (AMM).* Major depression is a serious condition that can interfere with a patient's daily functioning and, in the most serious cases, lead to suicide. In addition, the high prevalence of depression results in a significant economic cost nationally. Anti-depressant medication is an important pharmacological intervention for the treatment of major depression and prevention of recurrence. Regular visits to the prescribing provider to monitor adherence, treatment effectiveness, and side effects, are necessary for proper care.
  https://www.ncqa.org/hedis/measures/antidepressant-medication-management/
- *Initiation and/or engagement for Alcohol or Other Drug Dependence.* Substance use disorders, including alcohol/drug abuse and dependence, are serious medical conditions. They have wide-ranging personal and societal consequences including medical co-morbidity, employment interruption, economic loss, relationship conflict, and injuries to self (including suicide and unintentional injury) and to others (e.g., from accidents, physical fights). Treatment is effective in preventing and ameliorating such negative outcomes, and reducing health care costs, but only a small minority of persons with substance use disorders obtain treatment.
  https://www.ncqa.org/hedis/measures/initiation-and-engagement-of-alcohol-and-other-drug-abuse-or-dependence-treatment/
- *Follow-up after ED visit for Mental Illness.* Mental illness affects approximately one in five children and adults. Follow-up care following an ED visit for mental illness predicts better physical and mental functioning, better adherence to care plans, and lower likelihood of repeat visits to the emergency department.
  https://www.ncqa.org/hedis/measures/follow-up-after-emergency-department-visit-for-mental-illness/
- *Follow-up after Hospitalization for Mental Illness.* Each year, there are more than two million hospitalizations for mental illness in the United States. Follow-up care by trained mental health professionals is important for optimal outcomes following discharge.
  https://www.ncqa.org/hedis/measures/follow-up-after-hospitalization-for-mental-illness/

Methods

In order to evaluate the effectiveness of SIM in meeting SIM's goals, the UConn Evaluation Team monitored and reported the impact of SIM on 13 measures relevant to population health measures, health care quality, and health disparities. This involved identifying relevant metrics that met CMMI evaluation requirements, and data sets that enabled calculation of these measures periodically throughout the length of the grant in order to promote and support continuous quality improvement. The datasets used to evaluate population health were 1) data from Connecticut's Behavioral Risk Factor Surveillance System (BRFSS), 2) the Youth Tobacco Survey (YTS), and 3) detailed data from CT DPH on deaths in the state. The datasets used to evaluate health care quality were Connecticut's All Payers Claim Data (APCD) and Connecticut's Hospital Inpatient Discharge Data (HIDD). Data collection updates for BRFSS, APCD, and HIDD data were obtained yearly throughout the grant; YTS data were obtained biannually. Secure servers to store the data were maintained.

The Connecticut All-Payers Claims Database (APCD) contains eligibility and claims data (medical, pharmacy and dental) used to report cost, use and quality information for payers, including commercial health payers, Medicaid,

children's health insurance, state employee health benefit programs, prescription drug plans, dental payers, self-insured employer plans, and Medicare. The APCD does not include claims from self-insured plans with the exception of the State of Connecticut. The APCD data extract provided for this project included commercial and Medicare claims through 12/31/2017. However, Medicare pharmacy claims were subject to delay and were only provided through 12/31/2015. Medicaid data were not delivered until mid-Q4 AY4 and permission was not granted to use these data for the evaluation. Thus, the data supported an assessment of performance for commercial and Medicare patients only, with Medicare measures being limited.

For measures that used APCD data, we utilized 2018 HEDIS measure specifications. Measures were calculated for federal fiscal year (October 1 to September 30). Commercial calculations included patients with commercial insurance and followed the age guidelines of each measure, except that age was capped at 64 years of age. Medicare calculations included patients with Medicare or Medicare Advantage and followed the age guidelines of each measure. In some cases data limitations required minor modifications to the specifications. Modifications specific to each measure are listed in Appendix D. Two additional modifications that applied to all measures were also necessary:

1) Since all the dates of service were subject to masking (random, symmetric increment), not all dates of service for a measurement year actually occurred during the measurement year. The time between services for any specific person was not affected by this masking.
2) Only patients' year of birth was received (not full date of birth) for each calendar year. This age was regarded as valid for the entire measurement (fiscal) year.

Measures were coded in SAS or R and a multi-step validation process was utilized. Once measures were coded, they were reviewed for adherence to measure specifications (accuracy of code logic) and data files used. Results were checked against NCQA results (https://www.ncqa.org/hedis/) for year and payer type. Lastly, results were released (blinded) to the SIM Quality Council for review. Results and profiles of providers and patients were released to each organization for a two-week review and discussion period. Once all of this validation was complete, the measure results were finalized. All results can be found in Appendices E and F.

For all measures, baselines were established for the overall population and by demographic characteristics of interest: age, race/ethnicity, gender, income, and insurance type. Targets for the overall population were calculated for all measures. The data were presented in tables and graphs on the dashboard (https://health.uconn.edu/population-health/activities/healthcare-transformation/sim-data-dashboard/) and updated annually. Our analytic approach included the use of advanced statistical methods to make sense of complex data and to account for the non-random selection of patients into various SIM innovations. In addition, because the APCD does not include race and ethnicity data, additional analytic work involved implementing a strategy to add probabilistic race and ethnicity information to the APCD.

Calculation of SIM Targets. Overall results for most SIM measures were compared to targets to show progress towards meeting the planned CT SIM goals. For most measures, a 5% improvement over the duration of the SIM was expected. These targets were calculated after taking into account specific pre-existing upward or downward trends that were found in many of the performance measures. For example, deaths due to cardiovascular disease have been falling, while rates of adult and childhood obesity have been rising. The targets established for the SIM considered these historical trends.

Once these trends were estimated using pre-SIM historical data, predicted values were determined under the assumption that the historical trends would continue. Targets were then calculated as a percentage of the yearly-predicted values in a manner that resulted in the final target, after 5 years of SIM programming, being 95% of the

final predicted value (which had been calculated under the assumption that historical trends continued). Thus, the final target represented a 5% improvement over the historical trend.

Featured Results

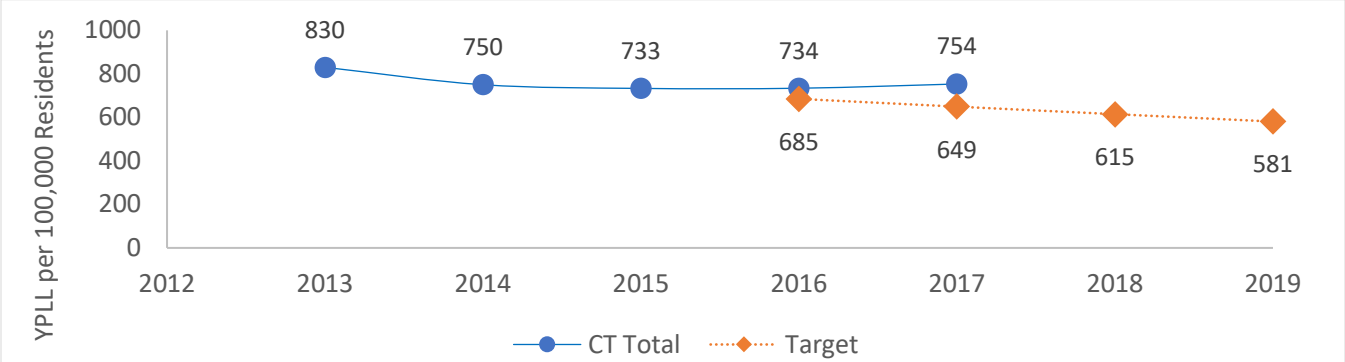
Appendix E presents an overview of the population health and health care delivery measures calculated to evaluate the SIM.

Overall results for all measures are described in the next section. In this section, results from three measures that illustrate the potential impact of SIM on health outcomes among CT residents are discussed. These measures are *preventable hospital admissions for chronic conditions, 30-day readmissions following a preventable admission, and optimal diabetes care.* Optimal diabetes care, defined as annual hemoglobin A1c (HbA1c) screening among diabetics, is a measure endorsed by the National Quality Forum. Data to calculate this measure were derived from the CT All Payer Claims Database (APCD) maintained by the Office of Health Strategy.

Figure 5 presents population level results for premature death from cardiovascular disease from years 2013 through 2017 relative to targets. In 2013-2015, the CT rate of years of potential lives lost (YPLL) per 100,000 was on a downward trend, resulting in target values that declined by approximately 2% per year through 2020. In 2016, the first year of SIM implementation, the observed rate of 734 YPLL was comparable to the 2015 rate but significantly higher than the target of 685. In 2017, the observed rate increased, for the first time since 2013, to 754; his rate was significantly higher than both the 2017 and 2016 targets. The targets continued to decrease to 581 YPLL by the end of the CT SIM award period in 2019. Because of the lag time in obtaining mortality data, observed rates beyond 2017 were not available for the final report.

Figure 5

Death from Cardiovascular Disease



Presented per 100,000 population using the 2000 U.S. standard million

Figure 6 presents trends in CVD mortality by race and ethnicity. Race and ethnic disparities in CVD mortality were pronounced: YPLL rates due to CVD were roughly twice as high among Blacks compared to Whites and Hispanics, and Asians had approximately half the YPLL rate of Whites and Hispanics. In addition, CVD mortality rates for Whites and Hispanics demonstrated a slight downward trend from 2013 to 2016, with a slight uptick in 2017. Rates for Asians and Blacks were less stable. Because of these year-to-year fluctuations in rates among Blacks and Asians, it will take additional years of data to ascertain robust trends in CVD mortality in these groups. In addition, because reduced CVD mortality associated with improved management of cardiovascular disease may take 5-10 years to observe, this measure will be important to monitor in future years to gauge the impact of SIM initiatives in improving health equity.

Figure 6

Cardiovascular Death by Race/Ethnicity

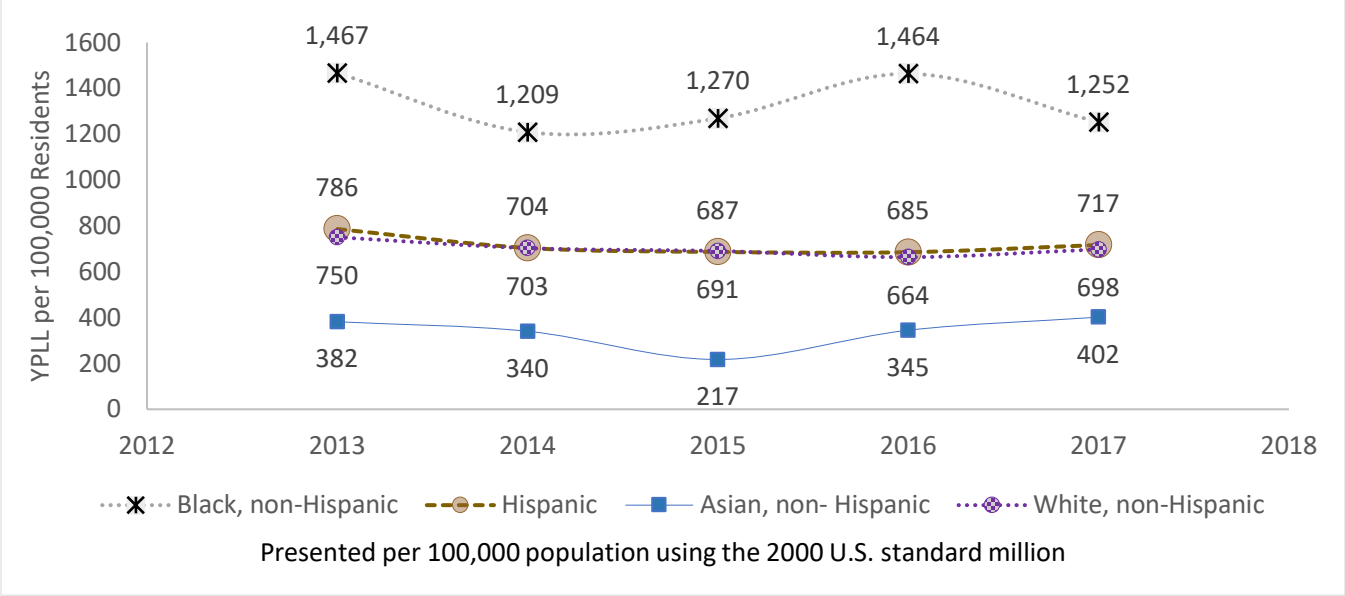


Figure 7 below presents rates of preventable admissions for chronic health conditions per 100,000 population from 2012 through 2018 relative to targets, overall and by insurance type. Total population rates fluctuated within a narrow range but increased slightly from 2012-2018. Medicare beneficiaries had the highest rates of preventable admissions. From 2012-2018, Medicaid beneficiaries, while declining from the 2013-2014 period, remained approximately 8 to 9 times more likely to have a preventable hospital admission as the commercially insured. Rates of those without insurance were comparable to those of patients with commercial insurance through 2015, but increased sharply in 2016-2018.

Figure 7

Hospital Admissions for Chronic Ambulatory Care Sensitive Conditions

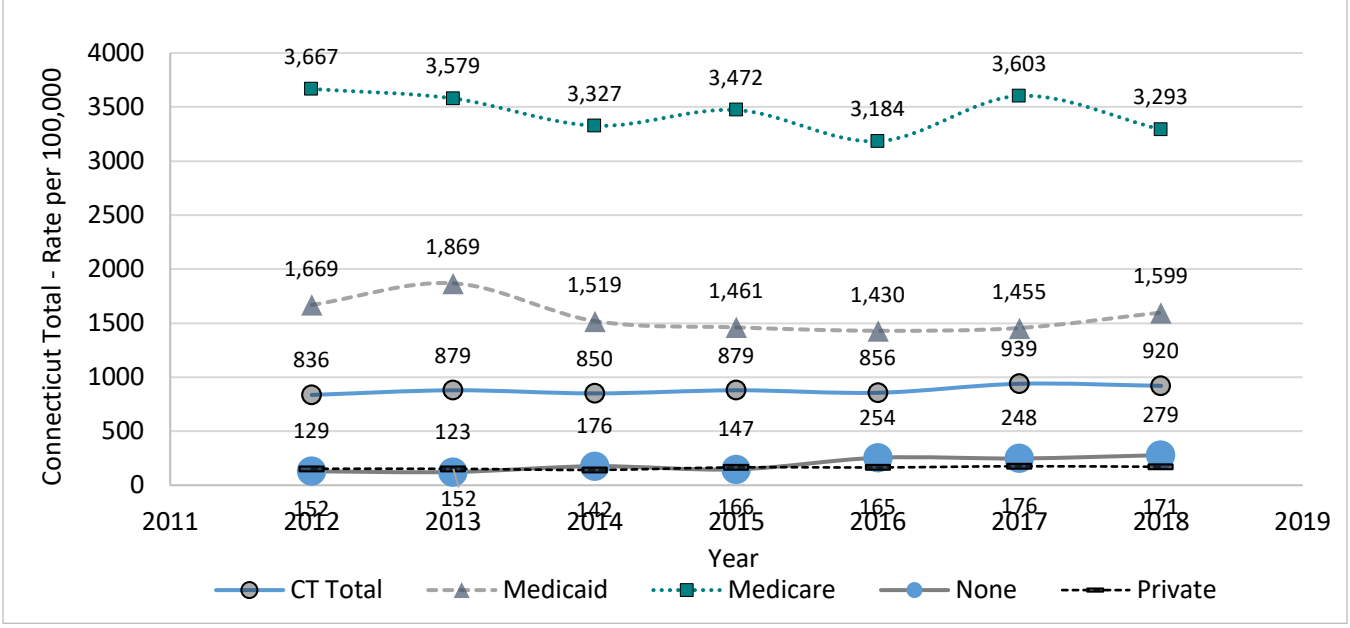


Figure 8 presents trends in rates of preventable hospital admissions for chronic conditions by race and ethnicity. Race and ethnic disparities were pronounced and consistent from 2012-2018, with rates for people who were Black almost twice as high as rates for people who were White and/or Hispanic. The slight increases in preventable admissions over time were observed across race and ethnic groups, although the "Other" races category demonstrated a sharp drop in 2018.

Figure 8

Hospital Admissions for Chronic Ambulatory Care Sensitive Conditions by Race/Ethnicity

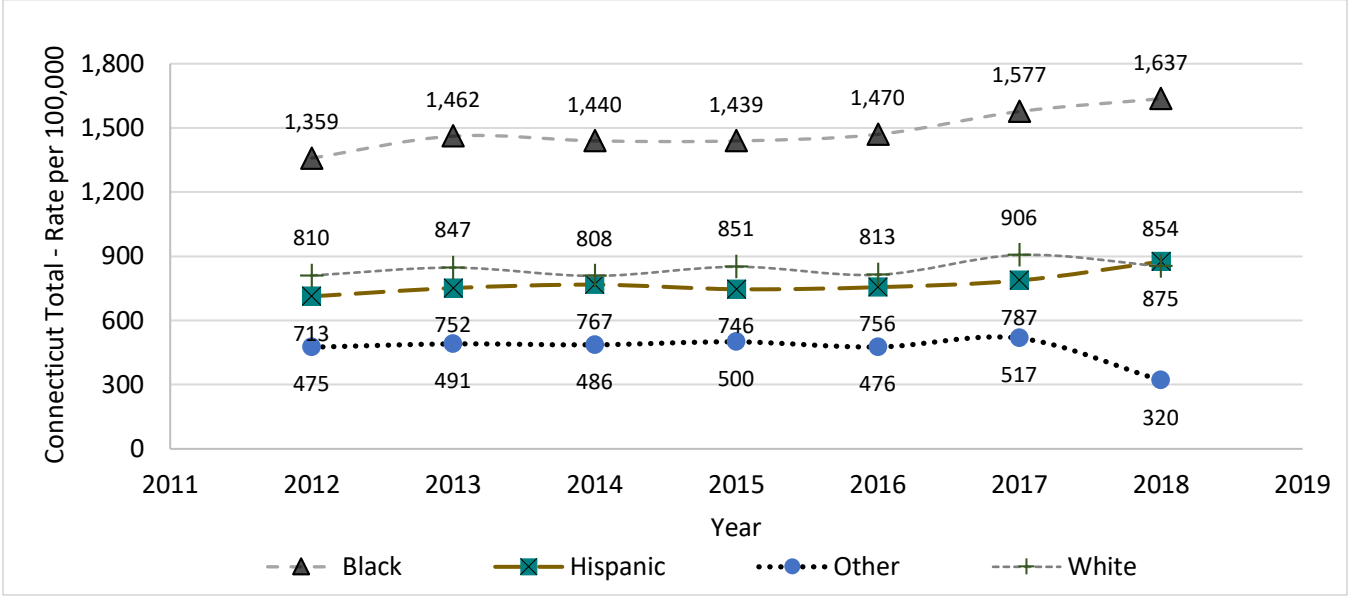


Figure 9 presents the percent of patients re-hospitalized within 30 days after discharge for one or more chronic ambulatory care sensitive conditions (PQI 92). Re-hospitalization rates have fluctuated within a narrow range between 16.9-18.6% since 2012 and the most recent observed rate (2017) was under the 2017 SIM target established using 2012 to 2015 data.

Figure 9

30-Day Readmissions after Discharge for Chronic Ambulatory Care Sensitive Conditions (PQI 92)

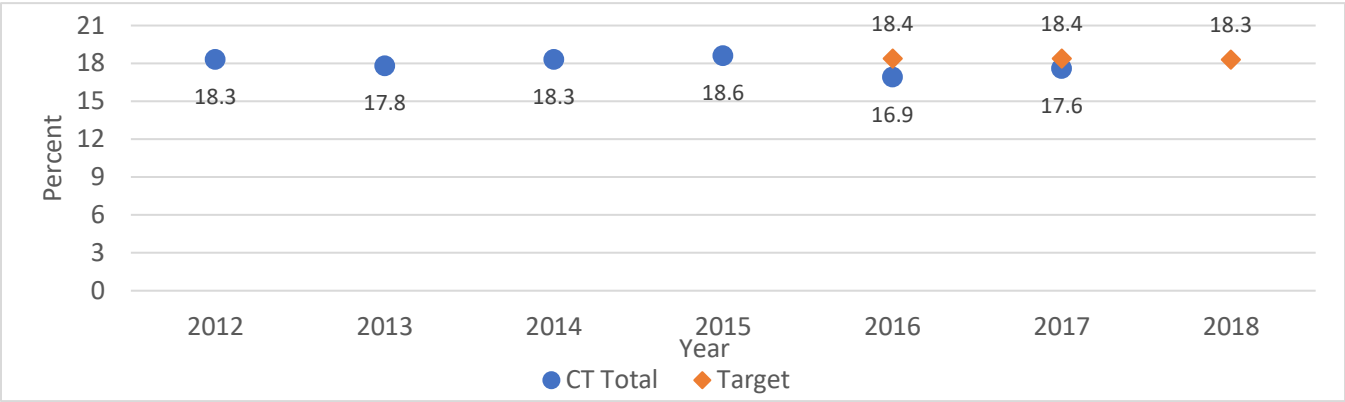
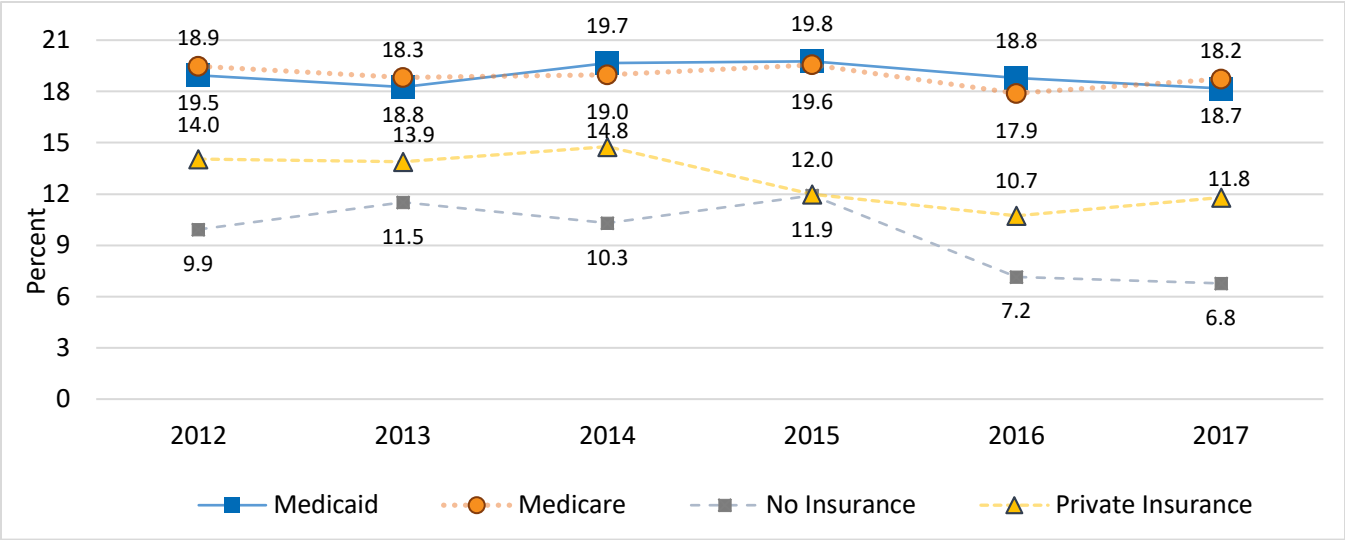


Figure 10 presents re-hospitalization rates by insurance type. Similar to the data presented above on preventable hospitalizations, rates were highest among Medicare and Medicaid beneficiaries from 2012-2017. Additional years of

data are needed to determine whether the declining rates observed among both the commercially insured and uninsured since 2014 constitute a significant trend.

Figure 10

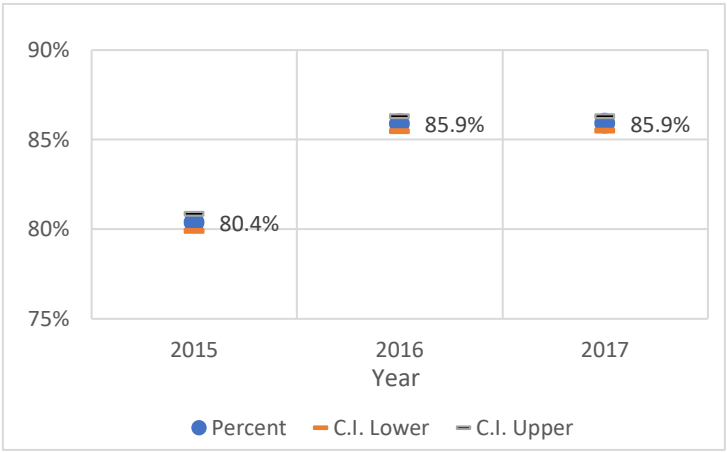
30-Day Readmissions after Discharge for Chronic Ambulatory Care Sensitive Conditions (PQI 92) by Insurance Type



Optimal diabetes care was defined as the percent of diabetic patients who receive annual HbA1c tests, was calculated using APCD data. Figure 11 presents results among commercially insured patients from 2012–2017 (blue dots). Approximately 85% of diabetic patients annually receive HbA1c tests, with the number higher by over 5 percentage points in 2017 relative to 2015. However, patients who had a qualifying outpatient visit with a primary care provider in 2017 had a much higher rate of annual HbA1c testing (87.96) than did patients who did not see a primary care provider (12.85). These results highlight the importance of connection to primary care among commercially insured patients for optimal diabetes care. Rates for Medicare and Medicaid patients could not be calculated because the complete data necessary to calculate the measure for any measurement year was not obtained.

Figure 11

HbA1c Testing by Commercial Insurance



Population Health Measure Results

The SIM evaluation tracked six measures of population health. The previous section highlighted selected results to illustrate SIM's potential impact. This section presents the results from all six measures of population health: adult diabetes, adult obesity, child obesity, adult smoking, youth cigarette smoking, and premature death due to cardiovascular disease. Prevalence estimates of adult diabetes, adult obesity, child obesity, and adult smoking were obtained from Connecticut's Behavioral Risk Factor Surveillance System (BRFSS) (http://www.ct.gov/dph/BRFSS). Prevalence estimates of youth cigarette smoking were obtained from the Connecticut Youth Tobacco Survey (YTS) which is administered biannually; and 3) Premature death due to Cardiovascular Disease was derived from mortality statistics maintained by the Connecticut Department of Public Health (CTDPH), Health Statistics Surveillance Section (http://www.ct.gov/dph/cwp/view.asp?a=3132&q=388104&dphNav_GID=1832%20). Complete results for all population health measures are presented in Appendix F.

Adult Diabetes

Tracking statewide diabetes rates was a population health measure required by the SIM Test grant. The plan for improving population health utilizes and builds upon CT DPH's recent State Health Assessment, State Health Improvement Plan (Healthy Connecticut 2020), and the state's Chronic Disease Prevention Plan. The general goal of CT SIM was to reverse the upward trend in population diabetes rates; the specific goal was to reduce the prevalence of diabetes among Connecticut residents from 9.3 percent in 2015 to 8.9 percent by 2020.

Adults with diabetes were defined as respondents who gave an affirmative answer to the BRFSS question "Has a doctor, nurse, or other health professional EVER told you that you have diabetes?" (The result excludes responses from females who reported that they had diabetes only during pregnancy.) Prior to the CT SIM implementation (2013-2015), the percentage of surveyed CT residents who answered this question affirmatively increased steadily. In 2013, 8.3 percent of adults reported that they had been told they had diabetes and by 2015, the percentage had increased to 9.3. After the first year of SIM implementation in 2016, the observed rate had increased to 9.8 percent. However, diabetes rates leveled off after 2016, with 9.8 and 9.7 percent of adult Connecticut residents reporting diabetes in 2017 and 2018, respectively. Although the observed rates for 2016-2018 did not meet the targets of 9.4, 9.2 and 9.1 percent, the targets are not significantly different from the observed rates, and the recent rates suggest a cessation of the pre-SIM upward trend in diabetes.

Adult Obesity

Obesity is defined as a body mass index (BMI) of at least 30 kg/m² (kilograms per meter squared). Obesity rates were derived from self-reported weight and height among BRFSS respondents. Figure 18 presents the adult obesity rates and targets from 2013 to 2018. Prior to the CT SIM implementation (2013-2015), approximately one-quarter of BRFSS respondents reported BMIs in the obese range, with an upward trend from 24.9 percent (2013) to 25.3 percent (2015). The CT SIM goal was to reduce the prevalence of adult obesity to 24.6 percent by 2020.

Since the implementation of CT SIM in 2016, obesity rates have continued to increase. The percent of adult Connecticut residents considered obese rose each year after 2015 to 27.4% in 2018, which is significantly higher than the SIM target for 2018 of 24.9 percent. CT SIM is not currently on track to reach its goal for 2020.

Adult Smoking

Tracking statewide smoking rates for adults was required as part of the SIM Test grant. The plan for improving population health utilized and built upon CT DPH's recent State Health Assessment, State Health Improvement Plan (Healthy Connecticut 2020) and the state Chronic Disease Prevention Plan. The goal of CT SIM was to reduce the prevalence of smoking among adult Connecticut residents to 12.2 percent by 2020.

Adult smokers were defined in the BRFSS as respondents (18+) who reported that they currently smoke cigarettes every day or some days. Prior to the CT SIM implementation (2013 – 2015), there was a steady decline in the percentage of adults who smoked. In 2013, the percentage of adults who smoked was 15.5 percent and, by 2015, the prevalence had decreased to 13.5 percent. Since the implementation of CT SIM in 2016, the downward trend intensified somewhat so that, by 2018, the prevalence of adult smoking in Connecticut was 12.2 percent, significantly lower than the target of 13.2 percent.

Child Obesity

Obesity is determined by Body Mass Index (BMI), which is calculated as a person's weight (in kilograms) divided by height (in meters squared). Childhood obesity is defined as a BMI at or above the 95th percentile for children of the same age and gender. BRFSS data were used to calculate childhood obesity based on respondent reports of their children's heights and weights. Children under five years-old were excluded because parent recall error for children younger than 5 rendered data unreliable. The goal of CT SIM was to reduce the prevalence of childhood obesity to 13.2 percent by 2020.

In 2014/2015, prior to the CT SIM implementation, the prevalence of childhood obesity was 13.5 percent. (BRFSS 2014 and 2015 data were combined to increase sample size). Following the CT SIM implementation, the prevalence increased in 2016 to 16.0 (a 2.5 percent increase) and then to 18.9 percent in 2017 (another 2.9 percent increase). However, the prevalence decreased slightly in 2018, to 18.4%. All targets for 2016-2018 were lower than the observed values, but not significantly lower.

High School Youth Cigarette Smoking

Youth smokers are defined as students who smoked cigarettes once or more in the past 30 days. Data is collected every other year. Tracking statewide smoking rates for high school students was required as part of the SIM Test grant. The plan for improving population health utilized and built upon CT DPH's recent State Health Assessment, State Health Improvement Plan (Healthy Connecticut 2020) and the state Chronic Disease Prevention Plan. The goal of CT SIM was to reduce the prevalence of Connecticut high school students who smoke to 9.7 percent by 2019.

The prevalence of smoking among high school students was estimated by data from the Connecticut Youth Tobacco Survey (YTS). High school students were considered to be smokers if they reported that they smoked cigarettes once or more in the past 30 days.

In the years prior to the CT SIM implementation, the prevalence of high school students who smoked had steadily declined from 8.9 percent in 2013 to 5.6 percent in 2015. Since the CT SIM implementation, the percentage of high school students who smoke has continued to decrease. In 2017, 3.5 percent of high school students reported smoking, significantly lower than the target goal of 10.4 percent. However, the current grant does not assess the prevalence of vaping or its influence on smoking rates. This is an urgent focus for research.

Premature Death due to Cardiovascular Disease

This measure was derived from mortality statistics maintained by the Connecticut Department of Public Health (CTDPH), Health Statistics Surveillance Section. Cardiovascular disease is defined as any health problem that includes the heart or blood vessels. This measure estimates the number of years of potential life lost (YPLL) for persons dying before age 75 due to cardiovascular disease (ICD-10 codes 100 to 178). Values were age adjusted to allow for comparisons over time.

In 2013-2015, the CT rate of YPLL per 100,000 was on a downward trend, resulting in target values that declined by approximately 2% per year through 2020. In 2016, the first year of SIM implementation, the observed rate of 734 YPLL was comparable to the 2015 rate but significantly higher than the target of 685. In 2017, the observed rate

increased, for the first time since 2013, to 754; this observed rate was significantly higher than both the 2017 and 2016 targets. However, there were race differences in this trend change. The rate for blacks significantly decreased from 2016 to 2017 whereas rates for other races (whites, Asians, and Hispanics) all increased (although not significantly).

Healthcare Delivery Measure Results

The SIM evaluation tracked 11 measures of healthcare delivery: Adults with a regular source of care, preventable hospital admissions (overall, acute, and chronic), preventable hospital re-admissions (overall, acute, and chronic), optimal diabetes care (HbA1c testing), breast cancer screening (mammograms), antidepressant medication management (12 week and 6 month course of medication), initiation and/or engagement for alcohol or other drug dependence, follow-up after ED visit for mental illness (7 and 30 day follow-ups), and follow-up after hospitalization for mental illness (7 and 30 day follow-ups). Complete results for these measures are presented in Appendix G.

Adults with Regular Source of Care

Adults with a regular source of care is defined as the percentage of adults who had a preventive or ambulatory visit during a defined period. This measure was calculated separately for commercial and Medicare patients. For Medicare patients, the defined period is the measurement year and ages include all adults at least 20 years of age. For commercial patients, it is the measurement year and two years prior to the measurement year. Because overall Connecticut rates were not calculated, statewide targets were not applicable. Rates of preventive/ambulatory visits for both payers for all three years were above 97%. However, the trends for commercial and Medicare payers from 2015 to 2017 were in opposite directions. The commercial trend decreased slightly but significantly from 2015 to 2017. The 2016 rate of 97.6% was significantly lower than the 2015 rate of 97.9% and the 2017 rate of 97.4% was significantly lower than the 2016 rate. This commercial trend was significant within age categories (20-44, 45-64) and within gender. In contrast, Medicare rates increased slightly but significantly from 2015 to 2017. The 2016 rate of 97.9% was significantly higher than the 2015 rate of 97.8%, and the 2017 rate of 98.1% was significantly higher than the 2016 rate. This Medicare trend was significant within two age categories (45-53, 65+) and within gender.

Hospital Admissions for Ambulatory Sensitive Conditions, Rate per 100,000

Preventable hospital admissions focuses on admissions for "ambulatory care sensitive conditions" (ACSCs). ACSCs are conditions for which good outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or more severe disease. Preventable hospital admissions were measured using the Agency for Healthcare Research Quality's (AHRQ's) Prevention Quality Indicators: PQI 90 (Prevention Quality Overall Composite), PQI 91 (Prevention Quality Acute Composite), and PQI 92 (Prevention Quality Chronic Composite). Data to calculate the measures were derived from the CT Hospital Inpatient Discharge Database (HIDD), maintained by the CTDPH Office of Healthcare Access.

Hospital Admissions for Acute Conditions

The PQI 91 composite score of acute conditions includes dehydration, bacterial pneumonia, and urinary tract infections. In the years prior to SIM (2012 to 2015), the rate of hospital admissions per 100,000 was on a downward trend resulting in a 19.9% reduction from 2012 (643) to 2015 (515). In 2016, the first year of SIM implementation, the observed rate of 496 was a decrease of 3.7% from 2015 (515) which was 7.8% greater than the target rate. However, 2017 the observed rate was 414, which was a 16.5% reduction and only 1.2% greater than the target rate (409). This rate remained steady in 2018 (415). Although the observed acute admissions rate decreased from 2015 to 2018 by almost 20%, the final rate in 2018 of 415 was 14.6% higher than the 2018 target (362).

Hospital Admissions for Chronic Conditions

The PQI 92 composite score for chronic conditions includes diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, and heart failure without a cardiac procedure. In the four years prior to SIM, from 2012 to 2015, the rate of hospital admissions per 100,000 increased by 5.1%. Calculation of the target values considered this increasing trend, resulting in targets that reflect a bending of the curve (878 in 2016 to 878 in 2018, a slower increase than predicted). In 2016, the first year of the SIM implementation, the observed rate of 856 was 2.7% lower than the 2015 observed rate of 879, and 2.5% lower than the 2016 target. However, in 2017 and 2018, the observed rates were both higher than the 2016 rate (939 and 920, respectively). In both years, the corresponding targets were 6.5% and 4.6% lower than the observed rates.

Overall Hospital Admissions

The PQI 90 overall composite score for hospital admissions is a rate per 100,000 population that includes individuals ages 18 years and older with one or more of the following ACSCs: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, heart failure, dehydration, bacterial pneumonia, and urinary tract infection. In the years prior to SIM (2012 to 2015), the rate of hospital admissions per 100,000 was on a downward trend resulting in a 5.7% reduction from 2012 (1,479) to 2015 (1,394). Although the observed rates decreased from 1,394 in 2015 to 1,335 in 2018, the targets decreased faster. In 2016, the first year of SIM implementation, the observed rate of 1,351 was 2.5% lower than the target (1,394), but by 2018, the observed rate was 7.1% higher than the target.

Hospital Readmissions for Ambulatory Sensitive Conditions, Rate per 100,000

Hospital 30-day readmissions consisted of re-hospitalizations for all chronic disease conditions included in PQI 92 (diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, and heart failure without a cardiac procedure). Data to calculate these measures were derived from the CT Hospital Inpatient Discharge Database (HIDD), maintained by the CTDPH Office of Healthcare Access.

Hospital Readmissions for Acute Conditions

The composite score of hospital readmissions for acute conditions includes one or more of the following ACSCs: dehydration, bacterial pneumonia, and urinary tract infection. In the years prior to SIM (2012-2015), the rate of hospital readmissions for acute ACSCs remained fairly stable from 13.9% in 2012 to 13.5% in 2015. In 2016 and 2017, following SIM implementation, the observed rate decreased to 13.2 and 12.5, respectively. Both of these rates were lower than the targets by 0.1 and 0.6.

Hospital Readmissions for Chronic Conditions

The composite score of hospital readmissions for chronic ACSC conditions includes one or more of the following ACSCs: diabetes with short-term complications, diabetes with long-term complications, uncontrolled diabetes without complications, diabetes with lower-extremity amputation, chronic obstructive pulmonary disease, asthma, hypertension, and heart failure without a cardiac procedure. In the years prior to SIM (2012-2015), the rate of hospital readmissions for chronic ACSCs remained fairly stable (18.3% to 18.6%). In 2016 and 2017, following the SIM implementation, the observed rates were 16.9 and 17.6, respectively. Although the 2017 rate was higher than the 2016 rate, both rates were lower than the 2015 rate. In addition, both of these rates were lower than the targets (by 1.5 and .8, respectively).

Overall Composite Score of Hospital Readmissions

The overall composite score of hospital readmissions includes one or more of the acute and chronic ASCSs. In the years prior to SIM (2012 to 2015), the overall rate of hospital readmissions for ACSCs remained fairly stable from 16.4% in 2012 to 16.7% in 2015. In 2016 and 2017, following the SIM implementation, the observed rates of 15.6 and 16.0 were lower than the 2015 rate, and lower than the targets by 1.0 and 0.5, respectively.

Diabetes Care

Best practices for care of diabetic patients includes regular testing of blood sugar, here defined as the percent of diabetic patients receiving annual Hemoglobin A1C (HbA1c) tests. Data from the CT APCD was used to calculate this measure. This measure was calculated for patients aged 18-64 with commercial insurance for fiscal years 2015 to 2017. In 2015, 80.4% of diabetic patients had an HBA1c test. This rate increased significantly to 85.9% in 2016, and remained at 85.9% in 2017. This trend was significant within age categories (18-34, 35-44, 45-54, 55-64) and within gender. Because overall Connecticut rates were not calculated, statewide targets were not applicable.

Mammograms

Best practice for breast cancer prevention includes regular screening, defined as the percentage of women 50–74 years of age who had a mammogram during the measurement year or two years prior to the measurement year. This measure was calculated separately for patients with commercial insurance and patients with Medicare for fiscal years 2015 to 2017. Rates increased significantly from 2015 to 2017 among patients with both types of insurance. Among commercial patients, the rate increased from 62.6% in 2015 to 64.2% in 2017. Among Medicare patients, the rate increased from 61.4% in 2015 to 64.8% in 2017. Because overall Connecticut rates were not calculated, statewide targets were not applicable.

Antidepressant Medication Management

Two rates were calculated for AMM using the APCD data. They were defined as the percentage of adults aged 18-64 who, following a diagnosis of major depression, were treated with an antidepressant and remained on the antidepressant for 1) at least 84 days (12 weeks), and 2) at least 180 days (6 months). The percentage of depressed persons with commercial insurance who remained on an antidepressant for 12 weeks increased significantly each year from fiscal years 2015 to 2017 (68.4%, 71.4%, and 72.8%, respectively). This 12-week trend was significant within gender from 2015 to 2017. Those who remained on an antidepressant for 6 months increased significantly from 48.9% in 2015 to 53.2% in 2017. Both 6-week and 12-week trends were evident within gender and age categories, significantly for gender and for ages 18-34 and 45-54. Because overall Connecticut rates were not calculated, statewide targets were not applicable.

Initiation and/or Engagement for Alcohol or Other Drug Dependence

Two IET rates for fiscal years 2015 to 2017 were calculated for patients with commercial insurance. The first rate, Initiation of Treatment, is defined as the percentage of commercial beneficiaries aged 18-64 who had a newly diagnosed episode of alcohol or other drug (AOD) abuse or dependence and initiated treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth or medication assisted treatment (MAT) within 14 days of the diagnosis. For the overall population of commercially insured patients, this rate decreased slightly, but not significantly, from 2015 (40.8%) to 2017 (39.3%). The second rate, Engagement of Treatment, is defined as the percentage of commercial beneficiaries aged 18-64 who had two or more additional AOD services or medication treatment within 34 days of the initiation visit. This rate remained steady from 2015 (15.7%) to 2017 (15.8%). Because overall Connecticut rates were not calculated, statewide targets were not applicable.

Follow-up after ED Visit for Alcohol and Other Drug Abuse or Dependence

Follow-up after ED Visit for Alcohol and Other Drug Abuse or Dependence is defined as the percentage of emergency department (ED) visits for members 13 years of age and older, with a principal diagnosis of alcohol or other drug (AOD) abuse or dependence, who had a follow-up visit for AOD. Two rates for fiscal years 2015 to 2017 were calculated separately for commercial and Medicare patients. The first rate is defined as the percentage of ED visits for which the member received a follow-up visit within 30 days of the ED visit (31 total days). Among patients with commercial insurance, the 30-day rate increased from 2015 (14.2%) to 2017 (17.1%), but not significantly. Among Medicare patients, the 30-day rate increased significantly from 2015 (17.5%) to 2017 (21.8%). For commercially insured patients, the 30-day rate increased for adults 18-64 and within gender, but not significantly. For Medicare patients, rates increased for adults 18-64 (significantly) and 65+ (not significantly), and significantly for both genders.

The second rate is defined as the percentage of ED visits for which the member received a follow-up within 7 days of the ED visit (8 total days). Among patients with commercial insurance, the 7-day rate increased from 2015 (10.2%) to 2017 (13.0%). This upward trend was consistent, but not significant, among adults 18-64, and with gender. There was a non-significant increasing trend of the 7-day rate among Medicare patients from 2015 (13.7%) to 2017 (16.2%). This upward 7-day trend was present among adults 18-64 and 65+ and within gender; however, it was only significant among adults 18-64.

Follow-up after ED Visit for Mental Illness

Follow-up after ED Visit for mental illness is defined as the percentage of emergency department (ED) visits for members 6 years of age and older with a principal diagnosis of mental illness, who had a follow-up visit for mental illness. Two rates for fiscal years 2015 to 2017 were calculated separately for commercial and Medicare patients. The first rate is defined as the percentage of ED visits for which the member received a follow-up within 30 days of the ED visit (31 total days). Among patients with commercial insurance, the 30-day rate increased significantly from 2015 (65.2%) to 2017 (70.8%). Among Medicare patients, the 30-day rate increased significantly from 2015 (51.3%) to 2017 (64.2%). For commercially insured patients, the 30-day rate increase was significant for children (0-17) but not adults (18-64) and was not significant within gender. For Medicare patients, this upward trend was significant for patients aged 18-64 and 65+, and for both genders.

The second rate is defined as the percentage of ED visits for which the member received follow-up within 7 days of the ED visit (8 total days). Among patients with commercial insurance, the 7-day rate increased significantly from 2015 (50.1%) to 2017 (57.3%). Among Medicare patients, the 7-day rate increased significantly from 2015 (40.6%) to 2017 (52.6%). This 7-day upward trend was significant for 18-64 for both types of insurance and for 65+ for Medicare, and for females with commercial insurance and both genders with Medicare.

Follow-up after Hospitalization for Mental Illness

Follow-up after hospitalization for mental illness is defined as the percentage of discharges for members 6 years of age and older who were hospitalized for treatment of selected mental illness diagnoses and who had a follow-up visit with a mental health practitioner. Two rates first fiscal years 2015 to 2017 were calculated separately for commercial and Medicare patients. The first rate is defined as the percentage of discharges for which the member received follow-up within 30 days after discharge. Among patients with commercial insurance, the 30-day rate decreased significantly from 2015 (75.3%) to 2017 (71.9%), both overall and within gender. This decrease among commercially insured patients was driven by younger patients aged 6–44; among older patients (45 -54 and 55-64), the 7–day rate significantly increased from 2015-2017. Among Medicare patients, the 30-day rate increased significantly from 2015 (76.9%) to 2017 (78.0%), both overall and within gender. As with commercial patients, the increase was driven by

older Medicare patients (55-64, and 65-74); 30-day rates for younger Medicare patients significantly decreased from 2015-2017.

The second rate is defined as the percentage of discharges for which the member received follow-up within 7 days after discharge. Among patients with commercial insurance, the 7-day rate decreased significantly from 2015 (57.9%) to 2017 (55.4%), both overall and within gender. Consistent with the 30-day rate, the decrease in the 7-day rate among commercially insured patients was driven by younger patients aged 6–44; among older patients (45 -54 and 55-64), the 7–day rate significantly increased from 2015-2017. Among Medicare patients, the 7-day rate increased significantly from 2015 (52.7%) to 2017 (55.0%), both overall and within gender. Significant increases were evident in all adult age categories except 6-17. In addition, in each year, the 7-day rate increased monotonically as age increased, so that patients 75+ had rates that averaged about 63% which were approximately 15% higher than patients 18-34 (average of approximately 47%).

Discussion

The CT SIM established goals for improving the overall health of Connecticut residents. Performance targets for each measure (expectations for health outcomes in 2020 after 5 years of SIM intervention) reflected a 5% improvement in the pre-SIM trend for that measure. Thus, for measures with deteriorating pre-SIM trends, the target reflected a 5% mitigation in the deteriorating trend. Available data enabled observed rates to be calculated for 2015 to 2018 for BRFSS population measures, and 2015 to 2017 for high school cigarette smoking and premature death due to cardiovascular disease.

The SIM evaluation documented significant changes in the health of Connecticut residents from 2015 to 2017. The prevalence of smoking in adults and high school youth were tracked using the BRFSS and YTS, respectively. For both populations, smoking rates decreased more than predicted from pre-SIM trends. Although good news, the SIM implementation coincided with increases in vaping among adults and youth. Because vaping rates were not assessed as part of the SIM grant, it is not clear how the overall use of products containing nicotine have changed from 2015 to 2017. Going forward, rates of vaping need to be assessed, along with cigarette smoking, to better assess the health impacts of changes in smoking behavior among Connecticut residents.

Changes in the chronic health conditions of diabetes and obesity (in adults and children), were tracked using the CT BRFSS. In addition, the prevalence of premature death from cardiovascular disease, impacted by both obesity and diabetes, was tracked using mortality records. The prevalence of obesity in both children and adults increased from 2015 to 2017, and observed rates were higher than targets for both of these outcomes, significantly so for adults. Rates for diabetes leveled off following SIM implementation, but observed rates did not decrease to target levels, although they were not significantly different from the targets. Finally, prior to SIM implementation in 2016, premature death from cardiovascular disease was trending downward from 2013 to 2015. However, beginning in 2016, rates leveled off and then increased slightly in 2017 for the first time since 2013, with observed rates diverging from targets. However, there were race differences in this change. The rate for blacks significantly decreased from 2016 to 2017 whereas rates for other races (whites, Asians, and Hispanics) all increased (although not significantly). Continued monitoring of these rates for diabetes, obesity, and premature death from cardiovascular disease, overall and by demographic characteristics, will be important for further efforts to understand and impact these trends.

As part of the effort to improve population health in Connecticut, the CT SIM assessed rates associated with best healthcare delivery practices that would be expected to positively impact patient health. These included: Adults with a regular source of care, optimal diabetes care (HbA1c testing), breast cancer screening (mammograms), antidepressant medication management (12 week and 6 month course of medication), initiation and/or engagement

for alcohol or other drug dependence, follow-up after ED visit for mental illness (7 and 30 day follow-ups), and follow-up after hospitalization for mental illness (7 and 30 day follow-ups). The CT APCD was utilized to calculate these measures. Rates for fiscal years 2015 to 2017 were calculated for most measures. Rates for fiscal years 2018-2020 could not be calculated because insufficient data were available. Targets were not calculated for these measures because overall Connecticut rates could not be calculated.

Rates for two measures which were calculated for commercially insured patients only, diabetes care (HbA1c testing) and antidepressant medication management (Both 6-week and 12-week), significantly improved. Consistent trends were evident within gender and age categories. For measures calculated for commercially insured and Medicare patients, rates for breast cancer screening and follow-up after ED visit for mental illness increased for both types of insurance.

Differences were observed in trends from 2015 to 2017 by insurance type. For 2 measures (adults with a regular source of care (ARC), and follow-up after hospitalization for mental illness (FUM)), overall rates from 2015 to 2017 for commercial patients significantly decreased while those for Medicare patients significantly increased. The opposing ARC trends among insurance types were consistent within gender and age categories. Although the overall FUM trends differed in direction for commercial patients and Medicare patients, the 30-day trends significantly improved among older patients (over 45) and significantly worsened for younger patients (under 35). Although the overall 7-day trend for Medicare patients was consistent in all age categories and within gender, the same age pattern seen in the 30-day rates was evident for the 7-day rates among commercial patients. Given that this age pattern was documented separately for 3 groups of patients, further investigation into the reasons for improving follow-up care among older patients and deteriorating follow-up care among younger patients is warranted.

In addition to best practices, two metrics assessed the management of both acute and chronic ambulatory sensitive conditions by measuring preventable hospital admissions and readmissions for these conditions. Because these measures were calculated with HIDD data, rates were able to be calculated by race/ethnicity and across insurance type (commercial, Medicare and Medicaid), as well as age and gender. SIM's goal was to lower rates of these metrics and reduce ethnic disparities. Hospital admission and readmission rates decreased following SIM implementation; however, target decreases were met only for readmissions, not for admissions. For chronic admissions, race and ethnic disparities were pronounced and consistent from 2012-2018, with Black rates almost twice as high as rates for Whites and Hispanics. Rates among Medicaid beneficiaries, while declining from the 2013-2014 period, remained approximately 8 to 9 times more likely to have a preventable hospital admission for a chronic condition as the commercially insured. Additional years of data are needed to determine whether the declining rates of readmissions for chronic ambulatory sensitive conditions observed among both the commercially insured and uninsured since 2014 constitute a significant trend.

In conclusion, the SIM evaluation successfully tracked a series of population health and healthcare delivery measures using the BRFSS, YTS, CT DPH death statistics, APCD, and HIDD. A few limitations are notable, however. Although tracking health disparities was an important SIM objective, the BRFSS was not sensitive enough to detect race and ethnic differences in population health. The BRFSS demonstrated increases in obesity and a leveling off of diabetes, but did not have the necessary sample sizes to detect demographic differences. This was especially true for diabetes which had a lower baseline prevalence rate. Although the HIDD measures were able to detect differences in healthcare delivery related to insurance type and race/ethnicity, the APCD did not include information on race and ethnicity and did not include Medicaid and Medicare data for the duration of the SIM grant. Thus, differences in healthcare delivery rates related to insurance type and race could not be investigated with the APCD.

Affordability and Cost

Connecticut's SIM project focused on transitioning away from paying for healthcare services based on volume towards Alternate Payment Models and paying based on whether people receive high quality care with lower growth in costs. This included funding the design and launch of the state's first Medicaid Shared Savings Program ("PCMH+"), which rewarded healthcare providers who built on Person Centered Medical Home (PCMH) standards by implementing enhanced care coordination activities, and connect with community-based organizations to address social determinants of health, for improved quality outcomes and reduced costs.

Methods

Inpatient and outpatient healthcare claims were identified using published HEDIS code sets. The primary care measure was aligned with the CT Healthcare Quality Scorecard methodology to identify the primary care provider taxonomies (Appendix H) and Current Procedural Terminology (CPT) codes were utilized to identify procedure codes related to primary care services. These measures excluded orphan and duplicate claims. Costs are bundled by healthcare event or episode; the inpatient, outpatient and primary care events may have overlap in event ID, resulting in overlap in the bundled costs. The disaggregated costs are presented in Appendix I. The measure definitions and descriptions of the numerator and denominator specifications are as follows:

- *The total healthcare expenditures per member per month* includes the summation of the total medical expenditures and the total pharmacy expenditures per member per month.
- *The total medical expenditures per member per month* include the total amount paid by payer/s as well as member for all medical services per member per month during the measurement year. For the SIM dashboard, fiscal year (October 1 to September 30) is the measurement year. The denominator includes all members who had medical coverage during the measurement year * number of months these members had commercial medical coverage. This denominator is also used to calculate inpatient, outpatient, primary and other healthcare costs. The numerator for this measure includes the total amount paid by payer/s and members during the measurement year for the claims associated with the medical services.
- *The inpatient expenditures per member per month* include the total amount paid by payer/s as well as members for inpatient services per member per month during a fiscal year. The numerator for this measure includes total amount paid by payer/s and members during the measurement year for the claims associated with the inpatient medical services.
- *The outpatient expenditures per member per month* include total amount paid by payers as well as members for outpatient care per member per month of eligibility during a fiscal year (October 1 to September 30). The numerator includes total amount paid by payers and members during the measurement year for the claims associated with the outpatient services excluding primary care services.
- *The primary care expenditures per member per month* include the total amount paid by payers as well as members for primary care per patient per month during a fiscal year (October 1 to September 30). The numerator includes total amount paid by payers and members during the measurement year for the medical claims for primary care services. For this measure, we identified medical claims for primary care services by screening the procedure code variable in the APCD data for the primary care CPT/HCPCS codes. We identified the taxonomies of the providers by linking the NPI in the APCD data with National Plan and Provider Enumeration System (NPPES) data. Primary care service claims provided by primary care providers using taxonomies in Appendix H.
- *The pharmacy costs per member per month* include the total amount paid by payers as well as members for pharmacy claims per patient per month during a fiscal year. The denominator includes all members with

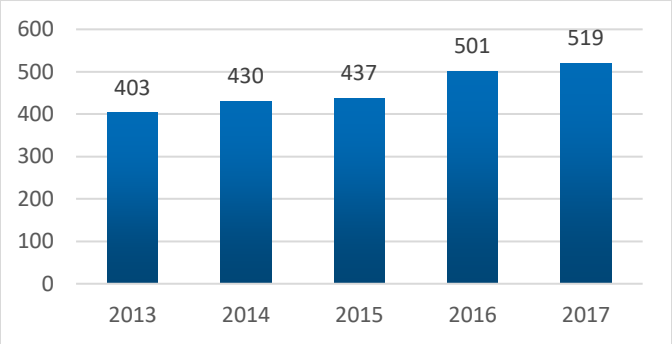
pharmacy coverage during the measurement year * number of months these members had pharmacy coverage. The numerator includes the total amount paid by payers and members during the measurement year for the claims associated with the pharmacy.

Results from Commercial Claims

Total Healthcare Expenditures

For commercially insured population in Connecticut, the total reported healthcare expenditures including medical and pharmacy claims decreased from 5.23 billion USD in 2013 to 5.15 billion USD in 2015 and increased again to 5.66 billion USD in 2017. Per member per month healthcare expenditures in Connecticut increased from $403 in 2013 to $519 in 2017. Figure 12 below illustrates the trend in healthcare expenditures PMPM from 2013 to 2017.

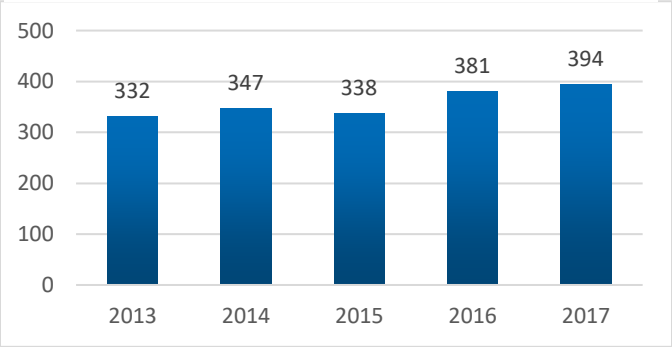
Figure 12
Trend in Commercial Total Healthcare Expenditure PMPM for Commercial Population



Health Expenditures for Medical Services

The total reported expenditures for medical claims (excluding pharmacy expenditures) for commercially insured population decreased from 4.18 billion USD in 2013 to 3.8 billion USD in 2015 and increased to 4.13 billion USD in 2017. Medical claims account for a large proportion of the total healthcare expenditures. The total annual per member per month medical expenditures increased from $332 in 2013 to $347 in 2014, decreased to $338 in 2015 subsequently increasing to $394 in 2017. Figure 18 illustrates the total PMPM medical expenditures in CT.

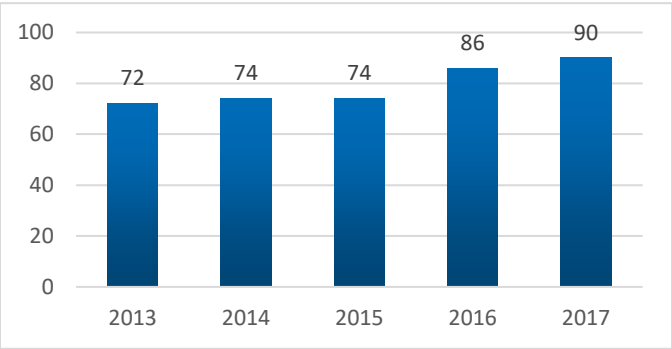
Figure 13
Trend in Commercial Medical Expenditure PMPM



Health Expenditures for Inpatient Services

The total expenditures on inpatient events, calculated using the procedure codes from HEDIS acute and non-acute stay value sets, decreased from 904 million USD in 2013 to 832 million USD in 2015 increasing again to 949 million USD in 2017. There was a net increase in commercial inpatient PMPM expenditures from $72 in 2013 to $90 in 2017 (Figure 14). Overall, there was a 26% increase in inpatient PMPM expenditures during this period.

Figure 14
Trend in Inpatient Expenditure PMPM

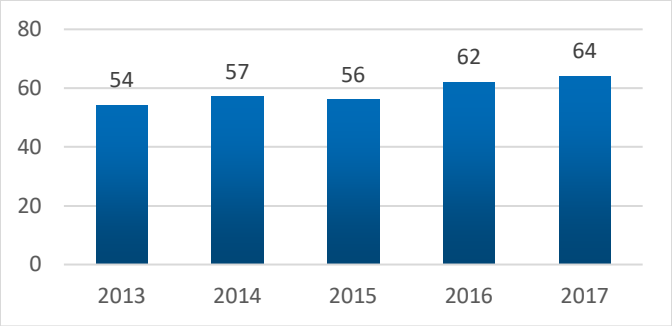


Health Expenditures for Outpatient Services

There was a net decrease in the total expenditures on outpatient events. These were calculated using the procedure codes from HEDIS outpatient value sets, from 682 million USD in 2013 to 668 million USD in 2017. However, there was a net increase in commercial outpatient PMPM expenditures from $54 in 2013 to $64 in 2017 (Figure 15). Overall, there was an 18% increase in outpatient PMPM expenditures.

Figure 15

Trend in Outpatient Expenditure PMPM

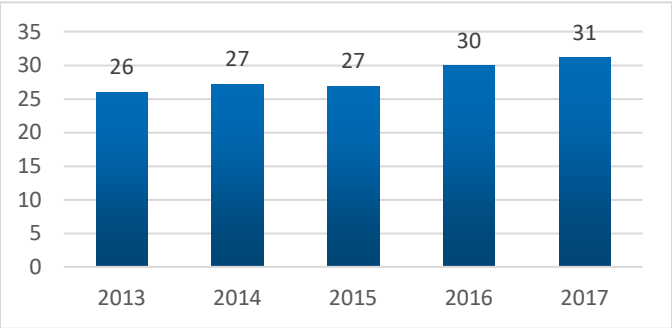


Healthcare Expenditures for Primary Care Services

The total expenditures on primary care events remained fairly constant (328 million USD in 2013 to 326 million USD in 2017). For the primary care PMPM cost, calculated using the procedure codes from a combination of Millbank methodology and HEDIS primary care value set, there was a net increase from $26 in 2013 to $31 in 2017 (Figure 16).

Figure 16

Total Commercial Primary Care Expenditure PMPM

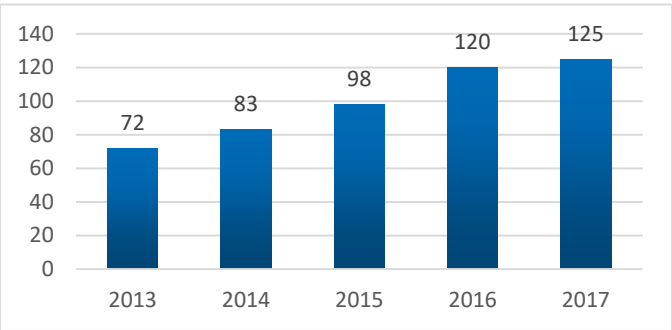


Healthcare Expenditures for Pharmacy

While there is a net decrease in total medical expenditures, the increase in expenditures on pharmacy claims resulted in the net increase in total health expenditures for commercial population. The total pharmacy expenditures increased from 1.04 billion USD in 2013 to 1.52 billion USD in 2017. Similarly, the cost per member per month went from $72 in 2013 to $125 in 2017 (Figure 17).

Figure 17

Total Pharmacy Expenditure PMPM



Age-Stratified Healthcare Expenditures

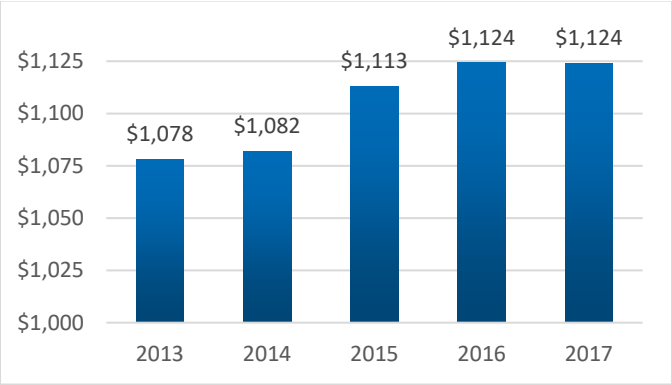
Upon age stratification, the PMPM total healthcare expenditures for members <18 years of age was about half that of members 18-64 years old. For Medical expenditures, the ratio was similar to that of total healthcare expenditures. However, for expenditures on pharmacy claims, PMPM ratio for members <18 years versus members 18-64 years was ~0.3. Within medical claims, 2013-2017 PMPM costs for events with inpatient services cost for members <18 years were about 0.6 times that for members 18-64 years old. For events involving outpatient services, the two age groups have comparable PMPM. However, for events with primary care services, the ratio is reversed with PMPM among minors 1.5 times those 18-64 years old. Table 4 illustrates the proportions of the age-stratified cost metrics for medical, inpatient, outpatient, primary care and pharmacy PMPM.

Results from Medicare and Medicare Advantage Claims

Medical Claims

The total reported expenditures for medical claims (excluding pharmacy expenditures) for Medicare and Medicare Advantage population increased from 7.08 billion USD in 2013 to 7.88 billion USD in 2017. The total annual per member per month medical expenditures remained fairly constant at $1078 in 2013 to $1,124 in 2017. Figure 18 illustrates the total PMPM medical expenditures in CT.

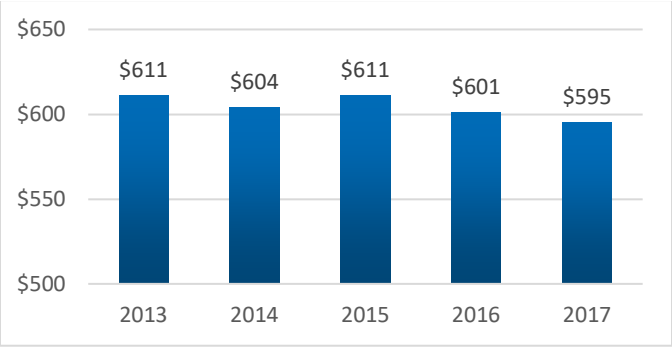
Figure 18
Total Medicare and Medicare Advantage Medical Expenditure PMPM



Health Expenditures for Inpatient Services

The total expenditures on events with inpatient procedure codes, calculated using the procedure codes from HEDIS acute and non-acute stay value sets, increased from 4.01 billion USD in 2013 to 4.17 billion USD in 2017. Despite the increase in the total expenditures on events with inpatient services, there was a decrease in inpatient PMPM for Medicare and Medicare Advantage population from $611 in 2013 to $604 in 2014 which further decreased to $595 in 2017 (Figure 19). The decrease in the PMPM may be the result of increase in the total number of person months of enrollments in this population.

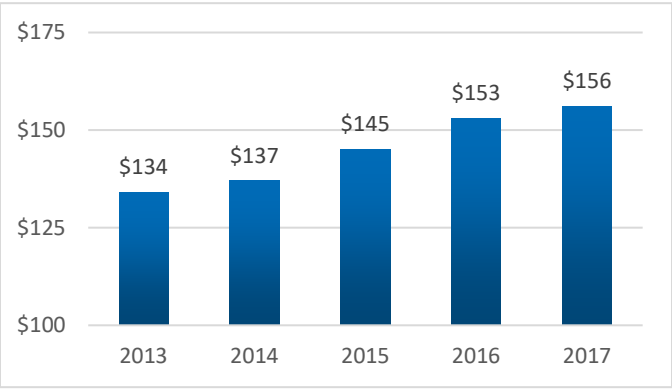
Figure 19
Total Medicare and Medicare Advantage Inpatient Expenditure PMPM



Health Expenditures for Outpatient Services

There was a net increase in the total expenditures on medical events with outpatient codes that were calculated using the procedure codes from HEDIS outpatient value sets, from 881 million USD in 2013 to 1.09 billion USD in 2017. Alongside, there was a 16.4% increase in PMPM expenditures on outpatient services in this population with an increase in the outpatient PMPM expenditures from $134 in 2013 to $156 in 2017 (Figure 20).

Figure 20
Total Medicare and Medicare Advantage Outpatient Expenditure PMPM

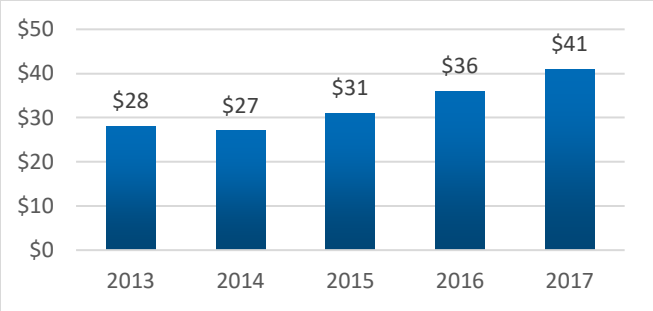


Health Expenditures for Primary Care Services

The total expenditures on events including primary care service codes increased by 55.9% from 186 million USD in 2013 to 290 million USD in 2017. Similarly, there was a net increase of 46.2% in the PMPM costs from $28 in 2013 to $41 in 2017 (Figure 21).

Figure 21

Total Medicare and Medicare Advantage Primary Care Expenditures PMPM

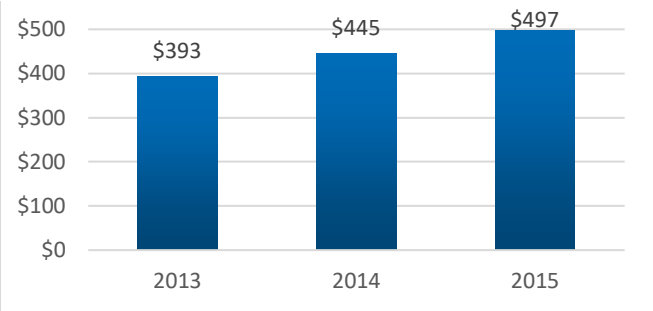


Health Expenditures for Pharmacy claims

For Medicare and Medicare Advantage population, there was large increase in the total expenditures on pharmacy claims. The total pharmacy expenditures increased by 36.7% from 2.15 billion USD in 2013 to 2.94 billion USD in 2015. Similarly, the PMPM expenditures for pharmacy claims in this population increased from $393 in 2013 to $497 in 2015 (Figure 22).

Figure 22

Total Medicare and Medicare Advantage Pharmacy Expenditures PMPM



Discussion

The commercial and Medicare healthcare spend have some remarkable features. Overall, the commercial total health expenditures throughout the SIM project period increased, predominantly driven by the increase in expenditures on pharmacy even though the medical expenditures decreased. Alongside there was a decrease in the enrollment numbers leading to an increase in the per member per month costs. In terms of inpatient expenditures, while there was a net increase in both commercial and Medicare inpatient spends, the Medicare PMPM decreased during the SIM project period. In keeping with the SIM strategy, we observed an increase in the outpatient and primary care expenditures in both Commercial as well as Medicare claims data. The percentage increase in outpatient and primary care expenditures was higher among Medicare population compared to Commercial population. That trend is aligned with SIM goals for decreased hospitalizations and more outpatient preventive care available for CT's population. For commercially insured patients, overall healthcare costs increased, with trends towards increased costs related to inpatient, outpatient, and pharmacy costs. Primary care costs for commercial patients stayed steady. Costs for children under 18 were generally lower than for other age groups in terms of inpatient care and pharmacy costs but were significantly higher for primary care services. For Medicare services, overall medical costs remained stable, with inpatient costs decreasing, and outpatient costs, including primary care services, increasing significantly.

Since, the APCD provided us with total costs bundled by event for both Medicare and Commercial populations rather than segregated by claims, tables --- and --- illustrate the distribution and overlap of inpatient, outpatient and primary care expenditures during the SIM period.

Alternative Payment Models

One of the primary SIM drivers was that alternative payment models would be adopted to incentivize improved delivery of healthcare services, improved outcomes and lower healthcare spending. Payers in the state who developed these value-based payment programs, including the Medicaid PCMH+ and commercial payers' shared savings programs (SSPs), needed access to better clinical data to establish more meaningful and accurate incentive-based systems. Better data from various data sources would lead to more valid attribution models, better risk stratification, better quality indicators, more accurate program evaluation, and tools that are more robust offered to providers.

Methods

Connecticut SIM launched two programs to provide technical assistance, on-site support, and direct funding to assist healthcare providers in mastering these capabilities:

Advanced Medical Home (AMH): The Advanced Medical Home (AMH) program enabled primary care practices to achieve Patient Centered Medical Home (PCMH) recognition, improving patient care, and enabling those practices to receive higher Medicaid reimbursement rates. *AMH directly supported eligibility for PCMH+* via a guided program with webinars and on-site support. AN practices and FQHCs that were PCMH recognized were eligible to participate in Person Centered Medical Home Plus (PCMH+).

Community and Clinical Integration Program (CCIP): The Community and Clinical Integration Program built on AMH by improving care delivery models across ANs participating in PCMH+. Specifically, CCIP focused on improving complex care management, behavioral health integration, and healthy equity. The promotion of Community Health Workers (CHWs), another SIM initiative, complemented AMH and was a critical component of both PCMH+ and CCIP. CHWs improved care by supporting patients with complex needs and addressing social determinant risks. The CCIP program provided technical assistance, peer learning opportunities, and CCIP Transformation Awards so that Advanced Networks and FQHCs could achieve SIM- developed care delivery standards. These standards focused on comprehensive care management, health equity, and behavioral health integration.

SIM recognized the barriers that historic provider reimbursement models placed on the ability of healthcare providers and organizations to invest in and sustain these care delivery model capabilities. Consequently, Connecticut adopted as a core strategy of promoting a shift from paying for volume ("fee for service") to paying for value. Value-based payment rewards provision of care that is higher quality and lower cost. CT SIM sought to align its care delivery support programs with these alternative payment models by targeting supports to "Advanced Networks," which are independent practice associations, large medical groups, clinically integrated networks, and integrated delivery system organizations that have entered into Shared Savings Program (SSP) arrangements with at least one payer. These providers have strong incentives to perform well on quality measures and improve the overall efficiency and effectiveness of patient care processes.

Connecticut had approximately 15 Advanced Networks that participated in "Category 3" SSP arrangements with Medicare, Medicaid and/or commercial payer(s). In the past several years, considerable market consolidation has resulted in an estimated 85% of CT's PCPs employed by or affiliated with a provider organization that is participating in at least one SSP contract, and this percentage is growing. This is up from an estimated 60- 65% during SIM's Year One.

As part of SIM, the Department of Social Services (DSS) launched the Medicaid PCMH+ SSP initiative. This model built on the department's pay-for-performance PCMH initiative, which accelerated the advancement of primary care in Connecticut and contributed to gains in quality performance and reductions in total cost of care.

This aligned strategy was implemented in three waves, two of which occurred during the test grant. The first wave of PCMH+, CCIP technical assistance and transformation awards launched on 1/1/2017. Over the course of five years, the goal was that 89% of Medicaid members received their care from PCMH+ providers. An additional goal was to have more than 1,300 providers across Connecticut's Advanced Networks and FQHCs; and 151 primary care practices (AMH) undergo a transformation program to improve care delivery.

Approximately 180,000 Connecticut Medicaid beneficiaries were being served in a Category 3A Alternative Payment Model (APM) under PCMH+. Additionally, Connecticut Medicaid served 146,510 (19%) of Connecticut Medicaid members in a Category 2C APM through non-FQHC primary care practices under the PCMH program. As a result, a total of 283,547 (37%) of Connecticut Medicaid members were being served in an APM.

Results

Advanced Medical Home: AMH

Designation as an Advanced Medical Home offers primary care practices additional tools to achieve success in PCMH+ and similar accountable payment arrangements. Recognition also enables success in Medicare and commercial shared savings arrangements. Table 4 presents the number of practices that participated in the SIM's AMH program, which enrolled up to 65 practices, and 308 providers per year, and resulted in 25 practices that achieved AMH designation, which did not meet the target number of 185 practices.

Table 4

Advanced Medical Home SIM Program Cumulative Participation

Date	Enrolled Practices	Enrolled Providers	Completed Practices	Completed Providers	Practices That Achieved AMH Designation	Target number of Practices to Achieve AMH Designation
3/1/2017	6	11	0	0	0	0
6/1/2017	27	103	0	0	0	0
9/1/2017	55	169	0	0	0	0
12/1/2017	58	194	0	0	0	0
3/1/2018	65	308	0	0	0	185
6/1/2018	64	307	0	0	0	185
9/1/2018	63	306	38	106	25	185
12/1/2018	62	305	38	106	25	185

Person-Centered Medical Home: PCMH+

Wave 1 of both PCMH+ and CCIP launched on 1/1/2017 and is ongoing. Wave 2 launched on 4/1/2018. In total, five Advanced Networks and nine FQHCs participated in PCMH+ (Table 5)

Table 5

Person Centered Medical Home Plus (PCMH+) Cumulative Participation

Date	Number of Providers Participating	Target Number of Providers Participating	Number of Beneficiaries Participating	Target Number of Beneficiaries Participating	Percent of Beneficiaries Participating	Target Percent of Beneficiaries Participating
1/1/2017	580	516	137,037	210,000	17.8%	30.0%
12/1/2018	1,106	1,624	170,813	429,000	21.0%	60.0%
12/1/2019		1,624		439,000		61.0%

Community and Clinical Integration Program - CCIP

Five Advanced Networks and one FQHC fully participated in CCIP (see Table 6). The additional eight FQHCs participated in TCPI and have committed to achieve the CCIP Health Equity Improvement Standard. CCIP participants include Community Health Center Inc. which has 14 locations across the state; Northeast Medical Group which represents over 40 primary care locations across Southern CT; Value Care Alliance made up of the Norwalk, Danbury, New Milford, Middlesex, and Griffin Hospitals, and St. Vincent's Medical Center; Hartford Healthcare Medical Group which includes Integrated Care Partners; Prospect Medical Holdings; and Wheeler Clinic, which has partnered with Community Health and Wellness Center of Greater Torrington.

Table 6

Community and Clinical Integration Program (CCIP)

Group	Primary Care Physicians Enrolled	Provider Target	Target Percent
Wave 1 (2017)	632	356	183%
Wave 2 (2018)	818	1,364	60%

Based on the experience during Wave 1, the CCIP Core Standards were streamlined to focus on the most critical elements. Additionally, Wave 1 participants were offered the opportunity to receive supplemental transformation awards to support additional care delivery improvements. Lastly, the technical assistance strategy was redesigned to be more targeted in order to better support both Wave 1 and Wave 2 participating entities. CCIP participants reported widespread implementation of Community Health Workers, expansion of a technology platform to inform providers of patient hospital utilization, expanded behavioral health integration and expanded data collection on race, ethnicity, sexual orientation and gender identity.

Shared Savings Plans

SIM promoted multi-payer alignment around a common framework for value-based payment. That framework is the Medicare Shared Savings Program (MSSP), which had a goal of 73% beneficiary participation by 2019 (Table 7).

Table 7

Beneficiary Participation in Shared Savings Plans

Year	Number of Individuals in a SSP	Number of Individuals with a PCP	Percent Individuals in a SSP	Target Percent
2016	496,055	1,296,728	38.3%	32.0%
2017	828,692	1,838,604	45.1%	50.0%
2018	834,545	1,817,472	45.9%	64.0%
2019				73.0%

CT's five largest health plans, Medicaid, and the state employee health plan implemented value- based payment arrangements through shared savings programs (SSP) for providers with sufficient scale and capabilities that are broadly aligned with Medicare SSP. SIM's goal was to engage over 5,000 primary care providers in SSP participation (Table 8). Neither of these targets were met by the end of the project (Payers were unable to report on 2019 values by the end of the grant).

Table 8

Primary Care Physician Participation in Shared Savings Plans

Year	Number of PCPs with patients in a shared savings plan	Target
2017	3,100	4,693
2018	6,537	5,072
2019		5,450

Discussion

The initial interest in the AMH program was high, but enrollment diminished over time, despite extensive efforts to recruit additional practices including a large enrollment event in December 2017. Recruitment was discontinued in AY3. PCMH recognition was achieved by the majority of participating practices; however, completion of the AMH components was more challenging. Practices struggled the most with two components: standardized depression screening and implementation of targeted interventions to improve health equity. Race and ethnic performance stratification would have required dedicated network resources, and this was not viewed as a priority by practices. In addition, it was not possible to impose financial penalties for failing to meet the special AMH standards because participating practices did not receive SIM funding and AMH recognition was not a requirement for participation in PCMH+. We anticipate that the Primary Care Modernization initiative (see Section E) will include the same or similar requirements, which will be a condition for receiving supplemental payments. Connecticut physicians no longer view NCQA PCMH recognition as an essential means to achieving primary care transformation. Commercial payers seem to agree, as most have migrated away from paying incentives for the credential and instead rely on value-based payment incentives. Free TA was not enough of an incentive to drive achievement of the most challenging AMH capabilities. Practices might have been willing to overcome these challenges if we had provided more persuasive evidence for why these capabilities are essential. Financial incentives or penalties tied to achievement would also have likely improved our results.

Connecticut's Medicaid PCMH model created a strong foundation for PCMH+. PCMH practices have adopted practices and procedures designed to enable access to care; developed limited, embedded care coordination capacity; become attuned to use of data to inform responses to their panel members; and also have become attentive to working within a quality framework. Further, they have demonstrated year over year improvement on a range of quality measures and have received high scores on such elements as overall member satisfaction, access to care, and courtesy and respect. Notwithstanding, there remain a number of areas in the quality results that illustrate ongoing opportunities for improvement. These have informed both the care coordination approach and quality measure framework for PCMH+.

PCMH+ has also enabled DSS to begin migrating its federated, Administrative Services Organization-based ICM interventions to more locally based care coordination. While the ASO ICM will continue to wrap around PCMH+ efforts in support of individuals with highly specialized needs (e.g. transplant, transgender supports), PCMH+ underscores DSS' commitment to provide practice coaching and funding supports to local entities that have the experience and trust basis to effectively serve their communities. PCMH+ has also been aligned with the SIM CCIP, and the CMMI TCPI in which the Community Health Center Association of Connecticut is participating as a PTN. DSS, OHS SIM and CHCACT have collaborated to create materials that define, relate and distinguish these complementary strands of work. Finally, PCMH+ represents the first ever Connecticut Medicaid use of an upside-only shared savings approach. This has brought DSS along the curve of value-based payment approaches.

In the CCIP, the program was designed to provide technical assistance and subject matter expertise to participating networks. Identifying appropriate expertise proved challenging. The participating organizations are already experienced in managing care delivery transformation and they are large organizations with distinct delivery models, systems and change processes. A wide variety of problems emerged with respect to capabilities that require changes to the EHR. Such barriers were often unique to each organization, varying based on the number and type of EHR(s) and associated software, and the nature and scale of the EHR deployment. This made the relatively standardized state-funded TA less efficient and less useful. In addition, it was difficult to find providers of TA with a high level of expertise in social determinants assessment, CHW deployment, race/ethnic data collection and health equity analytics. OHS changed its strategy during the program, providing an increased level of funding to the CCIP networks to make investments that would better enable them to purchase needed TA support and undertake self-directed changes.

CCIP also faced challenges in participation. CCIP was limited to organizations participating in PCMH+. As a result, CCIP participation was impacted by lower than projected participation in PCMH+ among ANs and the fact that several FQHCs failed to qualify. In addition, due to the CMMI-funded Transforming Clinical Practices (TCPI) initiative, the number of FQHCs eligible to participate in the full CCIP was lower than originally projected. This prevented eight additional entities from receiving SIM- funded TA awards.

The promise of shared savings alone will not be sufficient to enable the widespread adoption of non- reimbursable activities and team-based care models as promoted under the Community & Clinical Integration Program. This is in part because such activities may reduce the revenue or increase the cost of doing business for an Advanced Network or FQHC without realizing near term savings (such as through reduced hospital and ED use) sufficient to offset the investment. The State, through SIM, undertook a Primary Care Modernization effort in order to expand and sustain the CCIP related changes and to move the State's healthcare system towards more mature alternative payment models and more advanced care delivery capabilities.

Value Based Insurance Design (VBID)

The Value Based Insurance Design (VBID) initiative promoted the employer adoption of health insurance plans that incentivize consumers to get the right care, at the right time, from the right provider. Such plans adjust cost sharing to positively influence consumer behavior in order to drive better health outcomes and lower costs. VBID plans *align the interests* of consumers and the ANs and FQHCs that provide their primary care. Consumers with VBID plans have lower cost sharing for preventive services, chronic illness self-management services and prescriptions, and visits to high value providers. VBID plans are tailored to the enrolled population and have been shown to improve patient outcomes and reduce costs for consumers, employers, and health care payers.

Within the SIM project, VBID was a means to empower consumers to make healthier lifestyle decisions and engage in effective illness self-management through insurance design. The VBID initiative aimed to increase the adoption of VBID plans among Connecticut employers as part of SIM's goals to improve residents' health outcomes while reducing unnecessary and potentially harmful healthcare utilization and spending.

Methods

The VBID work was comprised of the following activities:

SIM VBID Consortium: During Award Year 1, a Consortium was established, bringing together health plans, consumers, employers, employer associations, providers, and state agencies to advise on all aspects of the VBID initiative, including recommended benefit plans, the effectiveness and feasibility of implementing various VBID principles and mechanisms, aligning consumer incentives with payment side reforms, and how their products may align with this initiative. The Consortium advised on the development of VBID templates and manuals which are currently available for employers' use on the SIM website.

VBID Templates: The Consortium advised on the development of two prototype VBID templates: one targeting fully-insured employers and another targeting self-insured employers. These templates were available to be used and adapted by employers who wish to implement VBID plans. They will continue to be reviewed and updated annually.

VBID Implementation Guide: During Award Year 1, a VBID Implementation Guide for employers was developed. The Implementation Guide includes the VBID Prototype templates, as well as advice, guidance, and considerations for implementation. The Implementation guides will be reviewed and updated annually.

Employer Engagement Activities: To promote VBID, the Consortium partnered with employer organizations, Chambers of Commerce, brokers, and Human Resources professional organizations through organized events and webinars. These employer engagements yielded a key list of contacts throughout the state and more widespread understanding and interest in VBID.

Employer Targeted Technical Assistance: A targeted technical assistance initiative to support self-insured employers interested in developing and adopting VBID plans. This technical assistance was provided by the consultant, Freedman Healthcare (FHC), and was strategically delivered to support the needs of each organization. FHC recruited 11 employers, developed a data dashboard with all pertinent employer health benefits information, worked closely with each employer to select benefits for inclusion in their health plan, and assisted in the development of a communications and evaluation strategy. The technical assistance was delivered through in-person meetings and calls, and included peer-to-peer learning opportunities for employers to share best practices.

Results

SIM set a goal that 84% of the total commercially insured population in Connecticut would be in a value-based insurance design plan by 2020. The VBID prototype templates developed during the pre-implementation period were

used to establish a benchmark for what defines a VBID plan, which allowed the evaluation team to identify a baseline and measure VBID uptake annually. Over the SIM project period, VBID rates increased from 40% to 70% (Table 9) but did not achieve the 84% target.

Table 9

Number and Percentage of Insured with VBID by year

Year	Number Commercially Insured Lives with VBID	Target Number of Insured Lives	Percent of Commercially Insured Lives with VBID	Target Percent
2016	221,468	1,199,776	18.5%	40.0%
2017	468,377	1,799,279	26.0%	47.0%
2018	484,969	1,692,430	28.7%	59.0%

Some barriers to accelerated uptake of VBIDs include the capacity for employers to quantify clinical and economic return on investment, measure outcomes, accurately determine the value of specific services through comparative effectiveness research and perform actuarial analysis to set copayments. Additionally, employers that offer their employees enrollment choice across multiple health plans may not be able to implement one standard VBID, as each health plan may have unique VBID products and administrative capabilities. This creates an additional layer of employee education and administrative burden on the employer.

One of the primary challenges for the VBID initiative within SIM was measuring VBID uptake, which was largely due to barriers within the self-insured market, where most VBID plans currently reside. The VBID work stream provided guidance to payers to report on fully insured plans that contain VBID elements, but health plans did not have a standard mechanism to identify whether self-insured employers include VBID components within their plans. Additionally, employers often offered incentives outside of the plan itself, making it even more difficult to track the array of incentives that might be in use.

Work Stream Feedback

As part of the SIM summative evaluation, work stream leads and team members completed qualitative interviews and/or quantitative surveys to:

- Identify facilitators or strengths to achieving CT SIM program goals from the perspective of the work stream leads.
- Identify barriers or challenges to achieving CT SIM program goals from the perspective of the work stream leads.
- Identify recommendations to improve future state level health care reform programs from the perspective of the work stream leads.

Methods

Quantitative Survey

The Evaluation team distributed an online survey to approximately 104 current and former CT SIM work stream leads and team members. The work stream team members were identified by OHS, who assisted in the recruitment of survey respondents primarily by emailing them to introduce the evaluators and the survey. The Evaluators distributed the survey link by directly emailing each potential respondent. The survey was structured so that only one IP address could respond, which prevented the email being forward to potential respondents not on the email list. Emails to the potential respondents included a cover letter that described the survey, its purpose, and estimated time requirement. Evaluators recorded the dates of the initial survey distribution and reminders. Two reminders were sent: one week and two weeks after the initial survey distribution. The final response rate accounted for incorrect emails that "bounced-back", and survey responses were securely stored and encrypted.

Qualitative Interviews

A semi-structured interview script was designed to characterize work stream leads' perceived: 1) facilitators to achieving CT SIM program goals, 2) barriers to achieving CT SIM program goals, and 3) recommendations to improve future state level health care reform programs. The interview script was developed by evaluation team members experienced in qualitative research.

The CT SIM evaluation team conducted 14 interviews in December 2019, one interview for each of the 14 work streams. Each interview consisted of one interviewer and two interviewees from the same work stream. The interviewees were individuals who worked closest to implementing the work stream. The interviews were held in person during work hours or at a time that was mutually convenient for the respondent and evaluation team interviewer.

The interviewer took notes of the interview responses. Interview responses were digitally recorded for possible later verification or clarification as needed. Transcribed data was analyzed using the constant comparative method of qualitative data analysis to identify recurrent themes until "theoretical saturation" is achieved; that is, no new themes

emerge through subsequent data analysis.[1] Coding used the integrated approach[2] where a provisional "start list" of codes based on existing scientific literature and the experience of the team was refined during analysis from subsequent interviews.[3] The final version of the code structure was based on a review by two members of the evaluation team. Two evaluation team members independently re-coded the transcripts based on the final codes and where discrepancies occurred, data were re-coded to consensus. Coding was performed on each interview, and then reviewed as a combined dataset. Responses were reviewed for salient themes related to the implementation of CT SIM. The results of the interviews will provide additional information that may contribute to program improvement.

Quantitative Survey Results

The online survey was distributed to 104 work stream leaders and participants. Of those that were sent the survey, only 7 declined to complete it, leaving 97 responses, 88 of which were valid. Of those responses, the majority of the respondents were part of the Practice Transformation Task Force, with no responses from participants from Health Information Technology or the Primary Care Modernization work streams. Respondents' work streams are summarized in Table 10.

Table 10

CT SIM Work Streams on which Survey Respondents Primarily Worked

	N	Valid Percent
Healthcare Innovation Steering Committee	13	14.8
Practice Transformation Task Force (AMH, CCIP, PCM)	21	23.9
Quality Council (Core quality measures, public scorecard)	10	11.4
Equity and Access Council	5	5.7
Health Information Technology Council	7	8.0
Value-based Insurance Design Consortium	2	2.3
Population Health Council (PSI and HEC)	9	10.2
Payment Reform Council	4	4.5
Community Health Worker Advisory Committee	14	15.9
MAPOC Care Management Committee	3	3.4
Total number of responses to this question	88	100.0
Number that did not respond to this survey question	16	
Total number of survey respondents	104	

Survey respondents were asked to assess how well the SIM leadership and other State leaders supported the work of the work stream groups, summarized in Table 11. A majority of respondents indicated that they felt that the support of their work streams was "Excellent" or "Good", with highest ratings given to the preparation and organization of the meetings and the quality of the work produced, and the lowest ratings given to the support the groups received from other state agencies.

[1]Glaser, B. and A. Strauss (1980). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. New Brunswick, NJ, Aldine Publishing Company.

Strauss, A. and J. Corbin (1998). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques.* London, Sage Publications.

[2] Bradley, E., et al. (2007). "Qualitative data analysis for health services research: developing taxonomy, themes, and theory." *Health services research* 42(4): 1758-1772.

[3] Miles, M. B. and A. M. Huberman (1994). *Qualitative Data Analysis: An Expanded Sourcebook.* Thousand Oaks, CA, Sage Publications.

Table 10

Work Stream Participants' Assessment of SIM Leadership Support

Survey Item	Excellent	Good	Fair	Poor	NA	Total
The clarity of work group's charter or objectives	32.3% 20	45.2% 28	14.5% 9	3.2% 2	4.8% 3	62
The alignment of work group's activities with CT SIM's purpose and objectives	37.7% 23	44.3% 27	9.8% 6	3.3% 2	4.9% 3	61
The preparation and organization of meetings, materials, and timely communications.	40.6% 26	37.5% 24	15.6% 10	3.1% 2	3.1% 2	64
Work group's success in overcoming challenges to achieve objectives	29.0% 18	40.3% 25	19.4% 12	8.1% 5	3.2% 2	62
The support work group received from other state agencies to meet objectives	19.4% 12	35.5% 22	24.2% 15	8.1% 5	12.9% 8	62
The consistency of participation by work group members	17.5% 11	54.0% 34	20.6% 13	1.6% 1	6.4% 4	63
The leadership that the state provided to support work group's activities	33.3% 22	39.4% 26	15.2% 10	6.1% 4	6.1% 4	66
The overall quality of work produced by work group	39.1% 27	43.5% 30	11.6% 8	2.9% 2	2.9% 2	69

Appendix J contains the open-ended responses to the final question of the quantitative survey, which asked respondents to provide feedback to other states who might want to initiate a state-wide health care reform program like SIM. Respondents identified important aspects of implementation, such as getting "providers to see beyond fear of not "making as much money"…(to)do work better, not do more work" And "spend(ing) so much time planning at the detriment of executing." Several emphasized the need to establish clear goals and objectives in order to stay focused and reduce "competing agendas."

Qualitative Interview Results

Highlights of implementing CT SIM.

The participants were asked to describe what they felt were the highlights of their participation in CT SIM. Since each of the work streams was different, there was a fair amount of variation in the responses. The following are quotes from interviewees:

- *CT SIM gave participants the opportunity to prioritize and/or launch important activities to improve health outcomes particularly around the Community Health Worker program.*
- *. . . it really encouraged us to make certain things a priority . . . (there are) always competing priorities, it's challenging to decide what to do and when to do it… This gave us the leverage and the funding that was needed to pilot a Community Health Worker program and hopefully to sustain one. . .initially we used some of those funds to further some of the work we were doing around e-consults, and later on, to get that pilot for the community health worker program going, and additionally we are starting to collect the granular level race and ethnicity information to have more specific data on our patient population in order for us to create more targeted interventions . . . to improve health outcomes.*

- *I think what we are most proud of is the opportunity to work on a new program that was successful. It was pretty much a start-up that we were trying to figure out together with the state contractually, operationally, financially.*
- *I really think that as an organization that we are really proud of the community health worker program that was launched. I mean that didn't exist, so really putting together the workflows, the procedures, the policies, you know all of those pieces to really have a successful CHW program in which they were out in the community, they were meeting patients where they were, helping them address barriers to care, helping them access housing, connecting them with resources that may have otherwise been missed…having this "boots on the ground" approach and being able to serve our populations.*
- *I think that PCMH+ was a great foray into trying to improve access and healthcare for the Medicaid population. I think it gave our group a much greater sense of what we need to do at a population health level to really reach out and manage our populations better, especially within the underserved. Similarly, to that, in the CCIP area, the project on trying to define our patients better and actually embed in our electronic record various aspects of ethnic and gender identity was something that is a real challenge and a push from a health information technology standpoint but it's something that we need to do. I think the CCIP initiative pushed us to do stuff that would have taken a lot longer without that push. So both of those were a pain at the time, but in looking back were the right thing to do and it was good that we had the pushing from the state agencies to do it.*
- *. . . the social determinants of health, the Connections That Matter, the community resources platform and all of the work flow that went into … connecting those pieces to our care team model, really strengthened and enhanced our approach and there was just so much learning there, as well as some of our diabetic pilots that have really brought to the forefront ways we can kind of shape or design some those care teams and their engagement in looking at those specific needs in a community…race/ethnicity was also a component that really helped to define for us more clearly how we want to approach certain populations of the patient panels that we have.*

One participant noted that they were able to make great progress towards their CT SIM objectives without adding additional personnel.

> *. . . we've done all of this without adding a dozen other new staff. We've kept the hiring very limited to specific tasks and workflows that needed to be built . . . we were able to modify workflows, and certainly there was some hiring but in strategic ways that allows us to better build our infrastructure, you know have patient ping, use the resources to have that application, use the resources to build our business intelligence systems…so I guess I would point that out as well.*

One of the participants noted that CT SIM provided an opportunity to interact with other professionals internally and externally who were also working on health care reform.

> *. . . we partner directly with our employed physician group for the programs, so it gave us an opportunity to partner in a different way and really be more focused and intentional about the way we partner and I think it demonstrated for us the opportunity we have when we collaborate effectively on targeted things…we can get a lot done in a short period of time. I think from a programmatic view, the highlights were that we had the opportunity to engage with other participants which was immensely helpful for us. We got to talk a lot about the work we do but we also got to hear from others who were participating about their best practices and really learn from each other and I thought that was invaluable. We don't get enough time to do that in our regular work.*

Barriers or Challenges Encountered

The participants were asked what barriers they may have encountered during their participation in CT SIM. Five themes emerged from their responses.

Complexity. Several of the participants stated that the program was much more complex and time demanding than they originally anticipated.

- *. . the breadth of the overall range of standards and being able to digest and execute on it. I think the team felt …we had many balls in the air at one time…so that was a little bit challenging. . .which isn't to say that all the pieces weren't valuable, it was just that it took us a little bit of time to figure out how to navigate all of that.*
- *It's a shame that it wasn't a two-year project. The first year was needed to figure it out, because we were talking about workflows in such a nebulous way, because you don't know what you don't know. So you can plan it out, and then once you start doing it, it's like oh, these are all the changes we need to make now that we're actually putting into practice…and that relationship building piece takes a long time……knowing there was this timeline that the money stops at the end of January was so much pressure. . . The time period kept getting shorter and shorter because of different delays with the state and for payment models for the contracts changing, it was not great at all. It was just so frustrating because it feels like we could do so much more and we were just scratching the surface. . .*
- *But the lack of time, and offering such a complex demonstration project so close to the end of SIM was not ideal.*

Contracting. The strain of the timelines was exacerbated by delays in contracting, especially with the State of Connecticut.

- *Usually in contract negotiations with other payers working through contracts you have conversations and you work through them, but everything had to be via email and back and forth and I think that prolonged things. Our contract was hopefully going to be done in December that first year, and it didn't get finished until April.*
- *There were huge delays with contracting with the state, which I'm sure you'll continue to hear, if you haven't heard it already. So, we were not set up for success at all, and it's such a shame because this was more complex than I think that anyone had imagined.*

Lack of Clarity. The participants stated that CT SIM lacked clarity in program expectations and metrics used to measure progress towards achieving the program objectives.

- *There was a lack of clarity around what was expected, like we didn't get a lot of feedback necessarily on what the state wanted us to move forward even more. So we submitted quarterly reports, and maybe they got what they needed from that, and maybe that's what that feedback wasn't there. Maybe they were wanting the entities to have more autonomy about what to do. I think that it's a barrier if you don't know what success looks like.*
- *We started out with being told that each entity was going to create their own metrics, and then it got turned around, and they said okay, we're going to hand you the metrics . . .and those metrics did not really make sense.*

Administrative Burden. Several of the participants mentioned that the administrative burden of the project was challenging.

- *. . . the way it was administered through the state, which I can completely understand, was documentation and administrative heavy. There were a number of the administrative folks that spent far too much time filling out reams of paperwork, documenting stuff.*
- *. . . the expectations around invoicing were not clear . . . for example, monthly, for all of the people we have written in that grant, it's almost like billing for an attorney, I have to give dates , time spent, what was spent for each employee, and that takes me hours to do. We're not set up as system to be able to say, okay, we spent 15 minutes on this for PSI, an hour for this…so that's a huge lift . . .and that was not made clear until the first round of invoicing.*

Lack of Data Sharing. Several of the participants reported that the lack of data sharing was a barrier. As such, they were unable to conduct their own analyses. They spent several years working with the IT department from the state but still didn't have any raw claims data. As a result, they felt as if they were "running blind" since they did not know if they were hitting their utilization targets.

- *So three years into the program and we still don't have raw claims (data).*
- *The Department of Social Services did not play well in the sand box for the first year or two as I understand it, in terms of data sharing and what level of consent was needed for patients for data to be shared, even though this is healthcare data and these are their doctors. I mean, there's certain barriers that were put up that seemed excessive in the healthcare setting.*
- *I think there was too much resistance internally that slowed things down and made a lot of the data not available when it should have been which made things not work well and slow and then people got frustrated.*

Lessons Learned. Participants were asked what advice they would offer another state that was initiating SIM or a similar health care reform program. Several of the participants stated they would inform another state that although health care reform programs are complex and demanding it is well worth the efforts.

- *Just assume that everything is going to take more time, be more expensive and be more complex and leave some wiggle room for that.*
- *Really try to understand the details and what the expectation is going to be and what the lift is going to be ….and making sure you understand the resources you need to get it off the ground. Until you're in it and doing it, I think it's hard to understand really what it's going to take.*
- *I would tell them it would probably take longer than they thought to get through some of the administrative work. I think it was longer. I think it was a good effort and they should try it. There's a lot of good learning. They will have to be operationally and administratively in the weeds all the time, and that it's the right thing to do.*
- *I think one aspect to consider is just the scope of the work entailed to kind of execute on the standards. I think that becomes a challenge for organizations to digest so it could possibly be maybe a multi-phase type of program versus one big chunk. It felt a little bit like one big chunk sometimes. I think organizations may be able to navigate it and execute more effectively if it's maybe broken down into some components or phases.*

Needs assessment. Participants mentioned the importance of conducting a needs assessment or, at least, identifying what site or community needs may be prior to implementing the initiative.

- *What I think is always important is that those who are likely going to be involved in terms of the vectors, be involved in the planning process.*
- *Ask your potential participant group what the problems they need to solve are in their health system and collate those and see if you have a trend across the state before you set the standards or the requirements for the program.*

Having the right people. Participants recommended having the right people involved especially at the development stage was very important for the success of the program.

- *I think it's hiring the right people to build the right processes and test them as you go…having a quality improvement mindset to the work…there are a number of areas that really need to be addressed in tackling this important and challenging work.*
- *. . . you need to bring the right people to the table publicly early, but . . . you have to realize that some of those people at the table are there for looks and not for action . . . figure out who's going to give you action and give them a lot of energy and ability to make things happen. Otherwise, you spend too much time worrying about the public perception.*

Feedback. At least one participant stated that it would be helpful to have someone available to provide feedback to ensure high quality implementation: "… having access to perhaps somebody who can work side-by-side with you on a regular basis, again so that both validation and in the moment in time course correction might be helpful as well."

Overall Positive Experiences with OHS and CT SIM. The participants had many positive things to say about OHS highlighting their support, guidance and responsiveness. They also noted the value of CT SIM.

- *I felt like the state was very, very responsive. I was very communicative with them in terms of sharing the struggles and they were always there to listen …recognizing what a large undertaking the initiatives were.*
- *. . . it's extremely valuable, it's kind of the gas in the engine…change is faster with appropriate funding… I think it definitely serves a need and helped to drive us as an organization.*

Discussion

Work stream leaders and participants were asked about their experiences working on SIM initiatives throughout the project period via semi-structured interviews. Overall, participants described the benefits of having the time and resources to implement innovative programs, particularly via the Community Health Workers and PCMH+ initiatives. In an often-overburdened system, participants felt SIM gave them the opportunity to prioritize important activities, often for the first time, to improve the health of their patient populations, often without adding additional staff, or spending limited funds. This was especially important and valuable for those initiatives that were focused on racial or ethnic health disparities, the social determinants of health or historically marginalized people, such as those accessing care via Medicaid. Collaboration with other professional and patient groups was also a highlight of work stream activities.

Given the scope and duration of the SIM project, participants also highlighted five areas of challenge in their work stream activities: complexity, contracting, lack of clarity, administrative burden, and lack of data-sharing. The requirements of the project, and the objectives of work groups and the work stream as a whole were perceived to profoundly complex, and often confusing, and participants didn't always feel they had enough time to understand the standards, process with their groups, and implement relevant activities in the time frame. Participants sometimes found that they did not have clarity in the expectations for their groups and did not always receive timely and relevant feedback on their progress. They noted a tension between the autonomy of the groups and the necessity of reporting processes according to pre-set metrics. Complications and delays in contracting requirements and negotiations also affected the timelines and hampered the resources and project completion in several work streams. Many participants perceived that the Department of Social Services was resistance to sharing healthcare data and, combined with the lack of shared-data from other sources, hampered the ability of the work streams to design and implement activities, delaying required work, and creating confusion. These challenges all contributed to a frustration with the administrative burden of the SIM work.

Participants were asked for feedback about the advice they would give to other states interested in enacting large-scale healthcare reforms. Most participants highlighted the importance of having clear expectations at the beginning of the project about the amount of time and expense of this type of project, making sure to build in extra time and money to accomplish project goals. Completing a needs assessment at the beginning of the project to clearly understand the needs and resources of the health care landscape, hiring the right people at the development phase of the project, and having more real-time feedback and consultation would be significant strategies for success.

Overall, participants recognized the complexity and challenges in implementing the SIM project, and appreciated the guidance and support of state leaders, as well as the opportunity to create lasting change in CT's healthcare delivery.

Section Three: Model Specific Outcomes

Major features of Connecticut's SIM award included engaging physicians, hospitals, other healthcare organizations, and health payers in innovations related to how healthcare is delivered and paid for. SIM initiatives encouraged alternative payment models, where physicians and hospitals had the opportunity to share in savings if they provided care that was both high quality and cost effective. These changes in the way healthcare was delivered and paid was hypothesized to be related not only to measures of patient's access to, outcomes of, and costs associated with healthcare, but also to physicians' experiences and career satisfaction. To assess some of these factors, the evaluation team collected annual data from Connecticut's commercial payers, the state's Medicaid authority, and the All Payer Claims Database to track changes in the way healthcare was delivered and paid for and to assess and compare the performance of Connecticut's ANs and FQHCs, focusing in particular, on how the degree of exposure to value-based payments influenced network or health center performance. In addition, the SIM team developed the *2019 Survey of Primary Care Networks* to evaluate and describe the characteristics of primary care networks in Connecticut at the conclusion of the SIM grant in 2019.

Entity Experience

The SIM team developed the *2019 Survey of Primary Care Networks* to evaluate and describe the characteristics of primary care networks in Connecticut at the conclusion of the SIM grant in 2019. The survey was sponsored by the Connecticut Office of Health Strategy and administered by the Yale School of Public Health.

The data are being used to evaluate the impact of payment and delivery reform on organizational characteristics, healthcare information technology (HIT) infrastructure, quality improvement programs, and clinical care delivery decisions. It was also intended to enable primary care organizations to compare their organizations to others in the state.

Methods

The SIM team developed a 40-question survey instrument that asked about four main issues: 1) organizational characteristics and governance; 2) health information technology; 3) quality improvement; and 4) clinical care delivery.

The team developed a list of primary care organizations to be surveyed. A total of 37 Federally Qualified Health Centers (FQHCs) and primary care networks / providers with one or more shared savings contracts (Advanced Networks or "AN") in Connecticut were invited to participate.

Organizations received an email inviting them to take the survey electronically on the survey platform, Qualtrics. The survey was open from October 2019 until January 2020. Respondents were typically executive-level administrators within their organizations (e.g., CEO, COO, or Chief Quality Officer).

Results

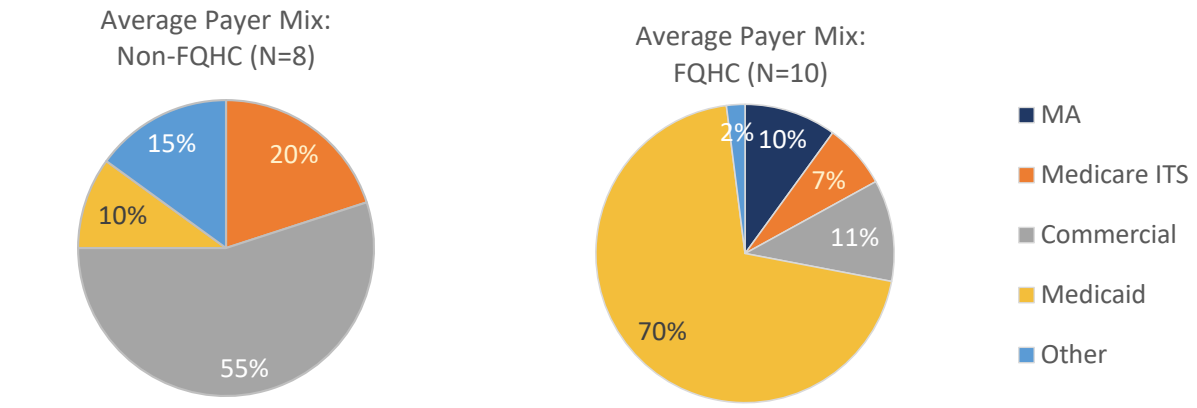
Twenty-three organizations (11 ANs and 12 FQHCs) responded to the survey. Organizations were not required to answer every survey question to participate and certain sections were only relevant for a subset of organizations, so the number of respondents varied by question.

Organizational Characteristics & Payment Design

Among the ANs, physician-led organizational structures were most common (N=5), followed closely by structures that featured joint leadership by physicians and hospitals (N=4).

Payer mix differences were observed between ANs and FQHCs (See Figure 23).

Figure 23
Average Payer Mix by Organizational Type

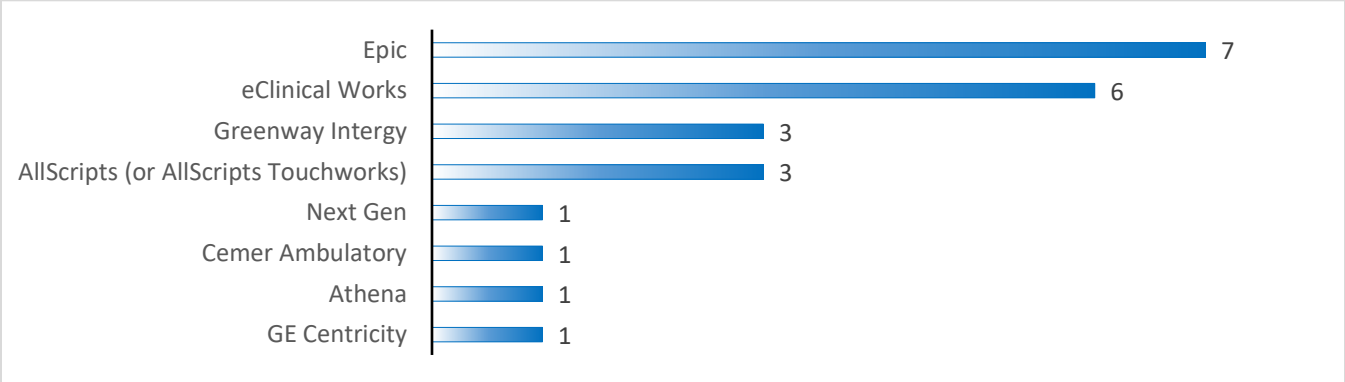


Anthem was most frequently reported as the first shared savings program (SSP) partner, and 2017 was the most frequently reported year for first SSP. Organizations reported an average of 4 payer partners for current SSP participation; the maximum reported was 7 payer partners. Anthem was the most frequently listed, current, SSP partner, and was identified as a partner by 15 organizations. Among both FQHCs and ANs, just under 50% of patients were reported to be attributed to an upside only SSP.

Health Information Technology

Respondents reported that, on average, 98% of PCPs are supported by Electronic Health Record (EHR) systems. Organizations reported using a variety of EHR platforms (See Figure 24). The majority of organizations (N=19) reported using one EHR system to support PCPs; 4 organizations reported using more than one system. On average, 99% of primary care practices have access to e-prescribing capabilities.

Figure 24
Electronic Health Record (EHR) Platforms Used by Primary Care Organizations



Only one organization reported secure, bidirectional support with community organizations, and software to manage and track linkage to community services is uncommon. Similarly, only two organizations reported operating their own health information exchange (HIE), though a larger number (N=8) reported that their physicians are connected to an external HIE. A majority of organizations (N=19) reported that they use data to support health risk stratification and predictive modeling.

Quality Improvement

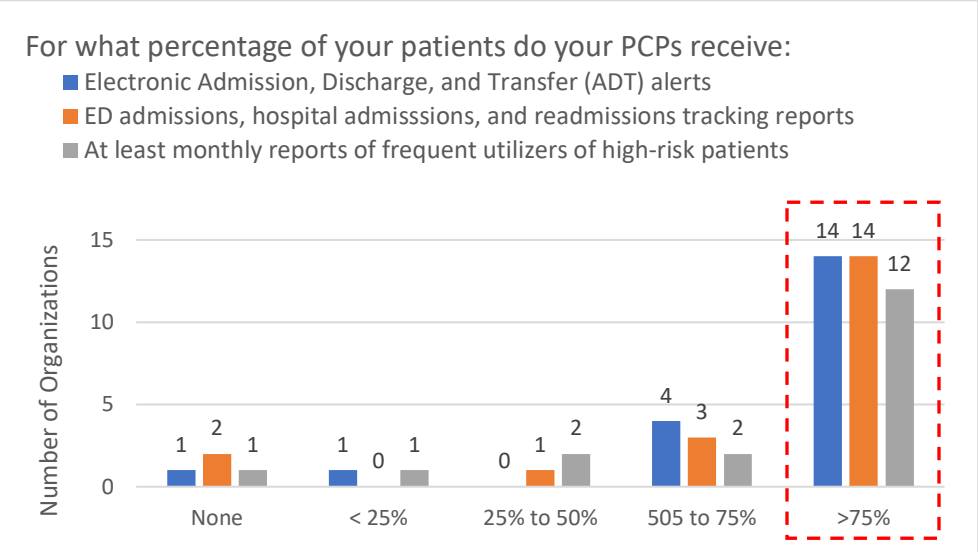
Organizations reported providing a large amount of quality data to their primary care providers (PCPs). Fifteen of 21 organizations reported that they provide more than 75% of their PCPs with performance reports on claims-based quality measures (e.g., A1C testing). Fourteen of 20 organizations report that they provide more than 75% of their PCPs with performance reports on eCQMs, and 21 organizations reported that their PCPs received patient experience performance results in the last year.

Fourteen organizations reported that their PCPs received financial incentives based on performance (e.g., claims based quality measures, patient experience, eCQMs, cost of care, and utilization) last year. Claims based quality measures were the most frequently reported quality measure reported (N=12).

High-risk patient tracking was commonly reported (See Figure 25).

Figure 25

High-Risk Patient Tracking



Many organizations are actively evaluating health disparities. Most organizations (N=16) reported collecting race/ethnic information from more than 75% of their patients. A much smaller proportion (N=3) reported collected social determinants of health needs from more than 75% of their patients.

However, a larger number of organizations (N=16) reported analyses aimed at identifying social determinants of health needs compared to race/ethnic health disparities (N=13). Organizations most frequently reported 1-2 improvement initiatives in the past year for both racial/ethnic disparities and social determinants of health needs.

Clinical Care Delivery

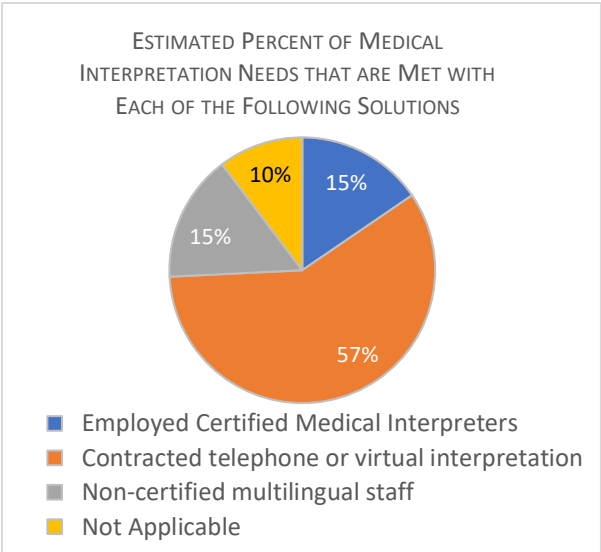
Staffing levels were collected for a range of clinical positions. These are reported in Appendix K.

To meet medical interpretation needs, organizations reported using contracted support most frequently (See Figure 26).

Organizations reported an average of 6.33 behavioral staff full time employee equivalents (FTEs). With respect to behavioral staff integration, organizations reported that an average of 70% are physically co-located and an average of 92% are using the same EHR.

Figure 26

Meeting Medical Interpretation Needs



Organizations reported having an average of 1.1 pharmacist FTEs (N=19) who they employed or with whom they had a contractual relationship. Employment by the primary care organization was the most common type of employment or contract relationship used for pharmacists (N=7). Organizations reported that provider / staff education and direct patient care services were the most common pharmacist activities (See Table 12). Unmet needs for pharmacist services are shown in Appendix K.

Table 12

Pharmacist Activities in Primary Care Groups

Pharmacist Activities in Primary Care Groups	Number of Organizations Reporting Activity N=14
Provider / staff education	14
Direct patient care (i.e. visits or telephone meetings with patients to discuss medication-related issues)	11
Population health (i.e., no direct patient care, work with care management teams to close care gaps)	9
Participation in clinical leadership meetings	8
Development on enterprise strategies to contain drug budget costs	7
Pre-visit reviews of patient medication regimens with recommendations to optimize therapies	6
Collaborative practice (i.e. formal engagements with prescribers to adjust patient medication regimens as needed)	4

Discussion

In summary, the *2019 Survey of Primary Care Networks* evaluated the characteristics of primary care networks in Connecticut at the conclusion of the SIM grant in 2019 across four core areas: 1) organizational characteristics; 2) healthcare information technology (HIT) infrastructure; 3) quality improvement programs; 4) and clinical care delivery. The results highlighted both successes and opportunities for future efforts in Connecticut.

Successes include:

- Upside SSP participation is common
- EHR utilization is high; nearly all PCPs are supported by an EHR
- Organizations provide their PCPs with large amounts of quality data
- Health risk stratification and predictive modeling based on data are common
- Organizations are committed to addressing health disparities (e.g., race/ethnic, social determinants of health)

Opportunities for the future include:

- Downside SSP participation is uncommon
- Ties to community organizations remain weak
- The types of performance-based financial incentives offered to PCPs vary by organization; slightly more than half of organizations report offering incentives
- Organizations are not routinely collecting information on social determinants of health needs despite commitment to addressing those needs

Methods

To increase transparency around healthcare quality in Connecticut, the UConn Evaluation Team, in partnership with the Office of Health Strategy, the SIM Quality Council and Yale University, calculated healthcare organization level performance on a set of healthcare quality measures. Methods were discussed with multiple partners including the SIM Quality Council, The Healthcare Innovation Steering Committee, Yale University and other provider and consumer groups. The Methods for attribution, measure calculation and scoring were released for public comment and review. To ensure the accuracy of results, the healthcare organization leadership was invited to review provider profiles and results for their organizations prior to finalization. Performance was calculated by payer type (Commercial, Medicare, and Medicaid) but results were limited for Medicare and Medicaid due to data availability.

Entities

Healthcare organizations included Advanced Networks and Federally Qualified Health Centers (FQHC). Due to low number of patients FQHC performance was only evaluated for the Medicare population. A list of included organizations can be found in Appendix L.

Measures

We utilized measures calculated for the CT healthcare scorecard which were identified by the CT SIM Quality Council and approved by the Healthcare Innovation Steering Committee. These measures encompass a wide range of health care quality domains such as prevention, chronic disease management and behavioral health management. Analyses presented here include the 24 measures from the recommended set that are feasible given available data. The measures for the initial scorecard are listed in Appendix M. Also listed are the NQF or measure steward specification numbers as well as any modifications that have been required.

Data

Two sources of data were utilized 1) Care Experience data collected by Yale University (see Patient Experience section of this report) and health insurance claims from the Connecticut All Payer Claims Database (APCD). The Connecticut All-Payers Claims Database (APCD) contains eligibility and claims data (medical, pharmacy and dental) used to report cost, use and quality information for payers, including commercial health payers, Medicaid, children's health insurance, state employee health benefit programs, prescription drug plans, dental payers, self-insured employer plans, and Medicare. The APCD does not include claims from self-insured plans except for the State of Connecticut. The data extract provided for this project included commercial and Medicare claims through 12/31/2017. However, Medicare pharmacy claims are subject to delay and were only provided through 12/31/2015. Medicaid data were not delivered until mid-Q4 AY4 and permission was not granted to use these data for the evaluation. Thus, the data supported an assessment of performance for commercial and Medicare patients only, with Medicare measures being limited.

Measure Calculation

For CAHPS measurement calculation please see the Care Experience section of this report. For other measures, which used APCD data, we utilized 2018 National Committee for Quality Assurance (NCQAs) HEDIS® measure specifications, with one exception. The long acting reversible contraception (LARC) measure followed specifications provided by HHS.gov (https://www.hhs.gov/opa/performance-measures/long-acting-reversible-contraceptive-methods/index.html). Measures were calculated for the federal fiscal year (October 1 to September 30). Commercial calculations included patients with commercial insurance and followed the age guidelines of each measure, except that age was capped at 64 years of age. Medicare calculations included patients with Medicare or Medicare Advantage and followed the age guidelines of each measure.

In some cases, data limitations required minor modifications to the specifications. Modifications specific to each measure are listed in Appendix M. Two additional modifications that applied to all measures were also necessary:

1) Since all the dates of service were subject to masking (random, symmetric increment) not all dates of service for a measurement year actually occurred during the measurement year. The time between services for any specific person was not affected by this masking.
2) Only year of birth was received as a single age for each calendar year. We have only received patients' year of birth (not full date of birth) for each calendar year. This age was regarded as valid for the entire measurement (fiscal) year.

Measures were coded in SAS or R and a multi-step validation process was utilized. Once coded, measures were reviewed for adherence to measure specifications, accuracy of code logic, and data source accuracy. Results were checked against NCQA results (https://www.ncqa.org/hedis/) for year and payer type. Lastly, results were released (blinded) to the SIM Quality Council for review. Results and profiles of providers and patients were released to each organization for a two-week review and discussion period. Once this validation process was complete, the measure results were finalized. All results can be found in Appendix N.

Attribution

Attribution, the process of determining which organizations, if any, are responsible for the care of which patients, was a two-step process. For CAHPS attribution, see the Patient Experience section of this report. For all other measures, patients were first attributed to individual health care providers providing primary care (physicians, advanced practice registered nurses, and physician assistants). Then primary care providers were attributed to healthcare organizations.

Step1: Attributing patients to primary care providers

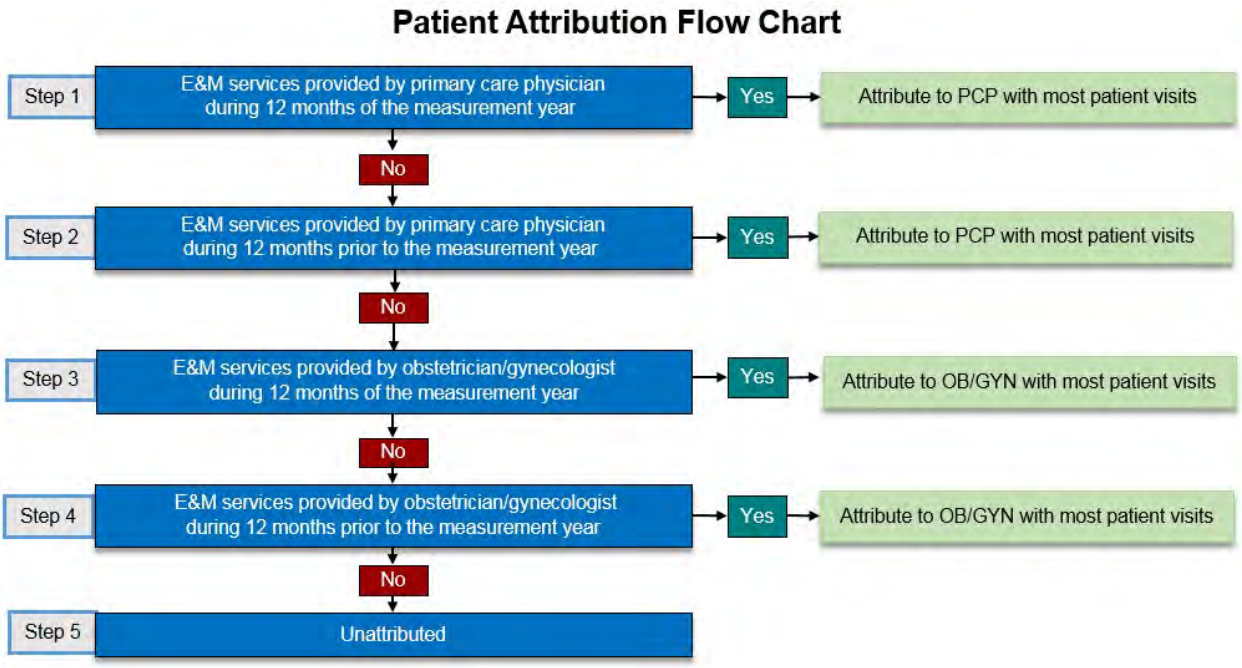
Generally, patients were attributed to the primary care provider (see included provider taxonomies in Appendix H) from whom they had received the most primary care services within the measurement year. If a patient had not received any primary care from a primary care provider in the measurement year, attribution was based on the most primary care received in the prior year. These two years are referred to as the "attribution period." If a patient had not received primary care from a primary care provider during the attribution period, but had received primary care from a provider specializing in obstetrics-gynecology within the attribution period, then the patient was attributed to that provider in the same manner as if the provider were a primary care provider. Patients who had not received primary care services from a primary care or obstetrics-gynecology provider during the attribution period were not attributed and, thus, were not included in any health care quality measures. (See Figure 27).

We used three "tiebreaker" methods to attribute patients who had received the same amount of primary care during the attribution year from multiple primary care providers. These are, in order: 1) the patient was attributed to the provider who rendered the highest number of non-primary care services, 2) to the provider with whom the patient had the most visits in the attribution year, and 3) to the provider the patient most recently visited. In cases where a tie remained after these three tiebreakers, the patient was attributed to both providers.

Primary care services were defined as claims coded with the Current Procedural Terminology (CPT) codes of 99201-99215 (office of other outpatient visits), 99381-99429 (preventive medicine services), and 99241-99255 (consultation services). Only office-based visits were considered for attribution. Telehealth, messaging, and other forms of care delivery that did not involve an in-person meeting between the health care provider and the patient were not included for attribution purposes.

Figure 27

Patient Attribution



Step 2: Attributing primary care providers to organizations

After patients were attributed to primary care providers, we then connected primary care providers to the Organizations with which they were affiliated, if any. All patients attributed to the individual provider were attributed to the organizations to which the provider was attributed. Providers who were affiliated with more than one organization were connected to all the organizations with which they were affiliated.
List of providers affiliated with which organizations were built in the following manner:

Advanced Networks

- *Commercial Providers:* Initial lists were built based on the Advanced Networks' (ANs) websites. The lists were then sent to the ANs for verification. ANs were instructed to include primary care providers whose performance would impact their value based contracts for 2017. For ANs that did not return updated lists (n=7) the initial provider list was used.
- *Medicare Providers:* Lists were requested from organizations. For those who did not return lists, the commercial list of providers was used.

Federally Qualified Health Centers

Medicare Providers: Leadership of FQHCs provided the UConn Health Evaluation Team with lists of providers for 2016 and 2017. Individual FQHCs were given the opportunity to edit these lists with instructions to include only primary care providers. For those who did not respond (n=5) the initial list was used.
Once lists were received, provider taxonomies were reviewed to ensure that they met primary care provider criteria. Provider NPI was used to obtain taxonomy code from the National Plan & Provider Enumeration System Registry (https://npiregistry.cms.hhs.gov/registry/). The Providers with taxonomies that did not meet primary care criteria were removed, after discussion with the organization if warranted.

Commercial Entity-Level Results

Commercial Consumer Engagement Measures

Timely Care

Patients with Connecticut commercial insurance carriers rated how timely they received care on the CAHPS Survey in 2017. For each of the three items below, the percentage of patients who rated the item "Always" was calculated.

- Patient got appointment for urgent care as soon as needed
- Patient got appointment for non-urgent care as soon as needed
- Patient got answer to medical question the same day he/she contacted provider's office

The overall score, the average of the three items, for commercial insurance in CT was 67%. The scores ranged from 57% to 74%. National benchmarks are not available for comparison purposes.

Provider Communication

Patients with Connecticut commercial insurance carriers rated provider communication on the CAHPS Survey in 2017. For each of the four items below, the percentage of patients who rated the item "Always" was calculated.

- Provider explained things in a way that was easy to understand
- Provider listened carefully to patient
- Provider showed respect for what patient had to say
- Provider spent enough time with patient

The overall score, the average of the four items, for commercial insurance in CT was 85%. The scores ranged from 78% to 89%. National benchmarks are not available for comparison purposes.

Courteous Staff

Patients with Connecticut commercial insurance carriers rated the courtesy of provider staff on the CAHPS Survey in 2017. For each of the two items below, the percentage of patients who rated the item "Always" was calculated.

- Clerks and receptionists were helpful
- Clerks and receptionists were courteous and respectful

The overall score, the average of the two items, for commercial insurance in CT was 74%. The scores ranged from 61% to 78%. National benchmarks are not available for comparison purposes.

Overall Provider Rating

In 2017, patients with Connecticut commercial insurance carriers rated their provider on the following item in the CAHPS survey: "Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider?" The score, the percentage of patients who rated their providers with a 9 or a 10, was 78%. The scores ranged from 69% to 83%. National benchmarks are not available for comparison purposes.

Care Coordination Measures

Plan All-Cause Readmissions

Among Connecticut commercial insurance carriers in 2017, the O/E ratio (observed readmissions/expected readmissions) for members 18-64 was calculated for unplanned acute readmissions for any diagnosis within 30 days that followed an acute inpatient stay during 2017. This rate was risk adjusted for health covariates (surgeries, discharge condition, comorbidities) in addition to age and gender. Lower O/E ratios indicate greater prevention of unplanned readmissions. The overall O/E ratio for CT was 0.61 which differed between attributed (.62) and unattributed (.45) providers. Among patients of attributed providers, those with providers in an advanced network were less likely to have a readmission (.58) than those with providers not in an advanced network (.67). Although the O/E ratios ranged from to 0.25 to 0.91, all entities achieved O/E ratios less than 1. This indicates that, given the profiles of their patient populations, fewer patients than expected were readmitted for unplanned diagnoses within 30 days following an inpatient stay.

Annual Monitoring for Patients on Persistent Medications

Among Connecticut commercial insurance carriers, 79.5 percent of members aged 18-64, who received at least 180 treatment days of ambulatory medication therapy for a select therapeutic agent during 2017, had at least one therapeutic monitoring event for the therapeutic agent in 2017. The overall CT rate of 79.5% differed widely between attributed (82.2%) and unattributed (42.4%) providers. Among patients of attributed providers, those with providers in an advanced network had at least one monitoring event somewhat more often (84.2%) than those with providers not in an advanced network (78.2%). The rates ranged from 76.4% to 89.7%. NCQA benchmarks were not available for this measure.

Prevention Measures

Breast Cancer Screening

Among Connecticut commercial insurance carriers in 2017, 64.2 percent of women 50–64 years of age had a mammogram to screen for breast cancer. This rate was lower than the NCQA HMO and PPO benchmarks of 72.7% and 70.2%, respectively. The overall CT rate of 64.2% differed between attributed (81.6%) and unattributed (11.0%) providers. Among patients of attributed providers, those with providers in an advanced network had mammograms somewhat more often (83.3%) than those with providers not in an advanced network (78.4%). The rates ranged from 76.9% to 88.4%. All nineteen entities had rates above the benchmarks.

Cervical Cancer Screening

Among Connecticut commercial insurance carriers in 2017, 66.0 percent of women 21–64 years of age were screened for cervical cancer using either of the following criteria: 1) women 21–64 years of age who had cervical cytology performed every 3 years, or 2) women 30–64 years of age who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years. This rate was lower than the NCQA HMO and PPO benchmarks of 74.3% and 73.2%, respectively. The overall CT rate of 66.0% differed greatly between attributed (80.3%) and unattributed (17.7%) providers. Among patients of attributed providers, those with providers in an advanced network were screened at similar rates (80.8%) to those with providers not in an advanced network (79.6%). The rates ranged from 70.5% to 86.0%. Eighteen entities had rates above the benchmarks, and one entity had a rate below the benchmark.

Non-Recommended Cervical Cancer Screening in Adolescent Females

Among Connecticut commercial insurance carriers in 2017, 0.9 percent of adolescent females 16–20 years of age were screened unnecessarily for cervical cancer (a lower rate indicates better performance). This rate was lower than

the NCQA HMO and PPO benchmarks of 1.5% and 1.5%, respectively. The overall CT rate of 0.9% differed between attributed (1.1%) and unattributed (0.1%) providers. Among patients of attributed providers, those with providers in an advanced network were unnecessarily screened less often (0.9%) than those with providers not in an advanced network (1.5%). The rates ranged from 0% to 3.4%. Eleven entities had rates below the benchmark, four entities had rates above the benchmark, and two entities had rates at benchmark.

Chlamydia Screening in Women

Among Connecticut commercial insurance carriers in 2017, 54.9 percent of women 16–24 years of age who were identified as sexually active had at least one test for chlamydia during the measurement year. This rate was lower than the NCQA HMO and PPO benchmarks of 48.9% and 46.9%, respectively. The overall CT rate of 54.9% differed widely between attributed (58.3%) and unattributed (18.0%) providers. Among patients of attributed providers, those with providers in an advanced network were tested at similar rates (57.8%) to those with providers not in an advanced network (59.0%). The rates ranged from 42.2% to 69.4%. Two entities had rates below the benchmark, sixteen entities had rates above the benchmark, and two entities had rates below the benchmarks.

Immunizations for Adolescents

Among Connecticut commercial insurance carriers in 2017, 16.9 percent of adolescents had one dose of meningococcal conjugate vaccine, one tetanus, diphtheria toxoids and acellular pertussis (Tdap) vaccine, and had completed the human papillomavirus (HPV) vaccine series by December 31 in the year of their 13th birthday. This rate was lower than the NCQA HMO and PPO benchmarks of 24.0% and 19.9%, respectively. The overall CT rate of 16.9% differed between attributed (18.7%) and unattributed (4.6%) providers. Among patients of attributed providers, those with providers in an advanced network were vaccinated at similar rates (19.3%) to those with providers not in an advanced network (17.2%). The rates ranged from 5.1% to 29.6%. Seven entities had rates below the benchmark, three entities had rates above the benchmark, and three entities had rates in the range of the benchmarks.

Adolescent Well Care

Among Connecticut commercial insurance carriers in 2017, 61.1 percent of enrolled members 12–21 years of age had at least one comprehensive well-care visit with a PCP or an OB/GYN practitioner during the measurement year. This rate was lower than the NCQA HMO and PPO benchmarks of 78.2% and 78.4%, respectively. The overall CT rate of 61.1% differed between attributed (77.2%) and unattributed (0.4%) providers. Among patients of attributed providers, those with providers in an advanced network had well-care visits at a higher rate (80.6%) than those with providers not in an advanced network (70.9%). The rates ranged from 61.7% to 84.1%. Eight entities had rates below the benchmark, nine entities had rates above the benchmark, and one entity had rates in the range of the benchmarks.

Acute and Chronic Care Measures

Diabetes Care: HbA1c Testing

Among Connecticut commercial insurance carriers in 2017, 85.8 percent of diabetic patients aged 18-64 received annual Hemoglobin A1C (HbA1c) tests. This rate was somewhat below the NCQA HMO and PPO benchmarks of 91.2 and 89.8, respectively. The overall CT rate of 85.8% differed between attributed (89.1%) and unattributed (41.2%) providers. Among attributed providers, advanced network providers performed HbA1c tests somewhat more often (90.6%) than providers not in an advanced network (86.4%). The rates ranged from 86.0% to 94.7%. Although all entities achieved rates near the benchmark, nine entities had rates below the benchmarks and five entities had rates above the benchmarks; five entities achieved rates within the range of the benchmarks.

Diabetes Care: Eye Exam

Among Connecticut commercial insurance carriers in 2017, 50.3 percent of diabetic patients aged 18-64 received a retinal eye exam. This rate was in the range of the NCQA HMO and PPO benchmarks of 55.0 and 49.0, respectively. The overall CT rate of 50.3% differed between attributed (52.3%) and unattributed (23.9%) providers. Among attributed providers, advanced network providers performed the eye exam somewhat more often (54.0%) than providers not in an advanced network (49.1%). The rates varied ranged from 33.2% to 60.9%. Five entities had rates below the benchmarks and seven entities had rates above the benchmarks; six entities achieved rates within the range of the benchmarks.

Diabetes Care: Nephropathy

Among Connecticut commercial insurance carriers in 2017, 87.1 percent of diabetic patients aged 18-64 received medical attention for nephropathy. This rate was in the range of the NCQA HMO and PPO benchmarks of 90.4% and 88.2%, respectively. The overall CT rate of 87.1% differed between attributed (88.9%) and unattributed (64.6%) providers. Among attributed providers, advanced network providers provided medical care for nephropathy slightly more often (89.9%) than providers not in an advanced network (86.8%). The rates ranged from 83.3% to 94.0%. Seven entities had rates below the benchmarks and six entities had rates above the benchmarks; six entities achieved rates within the range of the benchmarks.

Medication Monitoring for People with Asthma (50%)

Among Connecticut commercial insurance carriers in 2017, 72.0 percent of members, 5–64 years of age who were identified as having persistent asthma, remained on asthma controller medications for half of the treatment period. The treatment period was defined as the time between the earliest dispensing date for any asthma controller medication in 2017 through the end of 2017. This rate was close to the NCQA HMO and PPO benchmarks of 73.6% and 74.6%, respectively. The overall CT rate of 72.0% differed slightly between attributed (72.5%) and unattributed (70.6%) providers. Among attributed providers, patients with providers in an advanced network remained on asthma controller medications 50% of the time at about the same rate (72.8%) as providers not in an advanced network (72.0%). The rates ranged from 63.7% to 85.3%. Seven entities had rates below the benchmarks and nine entities had rates above the benchmarks; three entities achieved rates within the range of the benchmarks.

Medication Monitoring for People with Asthma (75%)

Among Connecticut commercial insurance carriers in 2017, 47.9 percent of members, 5–64 years of age who were identified as having persistent asthma, remained on asthma controller medications for three-quarters of the treatment period. The treatment period was defined as the time between the earliest dispensing date for any asthma controller medication in 2017 through the end of 2017. This rate was slightly below the NCQA HMO and PPO benchmarks of 50.3% and 52.6%, respectively. The overall CT rate of 47.9% differed somewhat between attributed (49.6%) and unattributed (43.7%) providers. Among attributed providers, patients with providers in an advanced network remained on asthma controller medications 75% of the time at the same rate (49.6%) as providers not in an advanced network (49.6%). The rates ranged from 33.6% to 65.2%. Nine entities had rates below the benchmarks and eight entities had rates above the benchmarks; two entities achieved rates within the range of the benchmarks.

Use of Imaging Studies for Low Back Pain

Among Connecticut commercial insurance carriers in 2017, 74.0 percent of members with a primary diagnosis of low back pain did not have an imaging study (plain X-ray, MRI, CT scan) within 28 days of the diagnosis. This rate was slightly below the NCQA HMO and PPO benchmarks of 76.1% and 75.7%, respectively. The overall CT rate of 74.0% differed slightly between attributed (73.9%) and unattributed (75.2%) providers. Among attributed providers, patients

with a provider in an advanced network did not have an unnecessary imaging study at a similar rate (74.7%) as providers not in an advanced network (72.6%). The rates ranged from 65.3% to 85.1%. Seven entities had rates below the benchmarks, seven entities achieved rates above the benchmarks, and four achieved rates within the range of the benchmarks.

Avoidance of Antibiotic Treatment in Adults with Acute Bronchitis

Among Connecticut commercial insurance carriers in 2017, 31.1 percent of adults 18–64 years of age with a diagnosis of acute bronchitis who were not dispensed an antibiotic prescription. This rate was slightly below the NCQA HMO and PPO benchmarks of 32.0% and 32.5%, respectively. The overall CT rate of 31.1% differed between attributed (31.2%) and unattributed (30.7%) providers. Among attributed providers, advanced network providers prescribed antibiotics for acute bronchitis (30.8%) slightly less often than providers not in an advanced network (31.9%). The rates ranged from 9.7% to 44.1%. Eleven entities had rates below the benchmarks and seven entities had rates above the benchmarks; one entity achieved rates within the range of the benchmarks.

Behavioral Health Measures

Follow-up Care for Children Prescribed ADHD Medication (30 days)

Among Connecticut commercial insurance carriers in 2017, 55.4 percent of children aged 6-12 with newly prescribed ADHD medication had a follow-up visit with a practitioner who had prescribing authority within 30 days of the initial prescription. This rate exceeded the NCQA HMO and PPO benchmarks of 41.6% and 39.9%, respectively. The overall CT rate of 55.4% differed between attributed (56.6%) and unattributed (36.8%) providers. Among attributed providers, advanced network providers performed 30-day follow-up visits somewhat more often (58.1%) than providers not in an advanced network (53.4%). The rates ranged from 25.0% to 67.9%. Two entities had rates below the benchmarks, and thirteen entities had rates above the benchmarks.

Follow-up Care for Children Prescribed ADHD Medication (10 month)

Among Connecticut commercial insurance carriers in 2017, 61.2 percent of children aged 6-12 with newly prescribed ADHD medication had at least three follow-up visits with a practitioner who had prescribing authority within ten months of the initial prescription. The first visit occurred within one month of the initial prescription, and the additional visits occurred within 270 days after the initial visit. In addition, the child remained on the medication at least 210 days. The overall rate of 61.2 percent exceeded the NCQA HMO and PPO benchmarks of 48.2 and 46.5, respectively. The overall CT rate differed between attributed (62.2%) and unattributed (26.8%) providers. Among attributed providers, advanced network providers performed 30-day follow-up visits somewhat more often (64.4%) than providers not in an advanced network (56.5%). The rates ranged from 33.3% to 100%. Five entities had rates below the NCQA benchmarks and ten entities had rates above the NCQA benchmarks.

Antidepressant Medication Management—Effective Acute Phase Treatment

Among Connecticut commercial insurance carriers in 2017, 72.3 percent of adults 18-64 diagnosed with major depression and treated with antidepressant medication remained on antidepressant medication for 84 days (12 weeks). The overall rate of 72.3 percent exceeded the NCQA HMO and PPO benchmarks of 67.8 and 68.1, respectively. The overall CT rate differed between attributed (72.9%) and unattributed (64.3%) providers. Among attributed providers, 74.4% of qualifying members with providers in advanced networks remained on antidepressant medication for 12 weeks compared to 70.5% of qualifying members with providers who were not in an advanced network. The rates ranged from 59.6% to 80.6%. Four entities had rates below the NCQA benchmarks and fourteen entities had rates above the NCQA benchmarks.

Initiation of Treatment for Alcohol or Other Drug Dependence

Among Connecticut commercial insurance carriers in 2017, 37.1 percent of adults 18-64 who had a newly diagnosed episode of alcohol or other drug (AOD) abuse or dependence initiated treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization, telehealth or medication assisted treatment (MAT) within 14 days of the diagnosis. The overall rate of 37.1 percent was in line with the NCQA HMO and PPO benchmarks of 37.1 and 38.4, respectively. The overall CT rate was similar for attributed (36.9%) and unattributed (38.5%) providers. Among patients of attributed providers in an advanced network, 36.0% of members with a newly diagnosed episode of AOD abuse or dependence initiated treatment compared to 38.1% of patients with providers who were not in an advanced network. The rates ranged from 24.8% to 48.2 %. Six entities had rates below the NCQA benchmarks, eight entities had rates above the NCQA benchmarks, and one provider had a rate within the range of the benchmarks.

Engagement of Treatment for Alcohol or Other Drug Dependence

Among Connecticut commercial insurance carriers in 2017, 13.4 percent of adults 18-64 had two or more additional AOD services or medication treatment within 34 days of the initiation visit. The overall rate of 13.4 percent was lower than the NCQA HMO and PPO benchmarks of 36.6 and 36.7, respectively. The overall CT rate was lower for attributed (12.7%) than for unattributed (17.8%) providers. Among patients with an initiated episode of AOD abuse or dependence who had a provider in an advanced network, 11.9% had at least two more AOD services within 34 days of the initiation visit compared to 13.8% of such members with providers who were not in an advanced network. The rates ranged from 3.2% to 17.9%. All fifteen entities had rates below the NCQA benchmarks.

Follow-up after Hospitalization for Mental Illness (30 day)

Among Connecticut commercial insurance carriers in 2017, 70.4 percent of members 6 years of age and older, who were hospitalized for treatment of selected mental illness diagnoses, had a follow-up visit with a mental health practitioner within 30 days after discharge. The overall rate of 70.4% met the NCQA HMO and PPO benchmarks of 69.7% and 67.3%, respectively. The overall CT rate differed between attributed (71.2%) and unattributed (62.8%) providers. Among attributed providers, 74.1% of qualifying members with providers in an advanced network had a follow-up visit within 30 days after discharge compared to 67.2% of qualifying members with providers who were not in an advanced network. The rates ranged from 58.7% to 89.7%. Two entities had rates below the NCQA benchmarks and seven entities had rates above the NCQA benchmarks.

Follow-up after Hospitalization for Mental Illness (7 Day)

Among Connecticut commercial insurance carriers in 2017, 55.9 percent of members 6 years of age and older, who were hospitalized for treatment of selected mental illness diagnoses, had a follow-up visit with a mental health practitioner within 7 days after discharge. The overall rate of 55.9% exceeded the NCQA HMO and PPO benchmarks of 48.2% and 44.9%, respectively. The overall CT rate differed between attributed (56.4%) and unattributed (51.7%) providers. Among attributed providers, 58.7% of qualifying members with providers in an advanced network had a follow-up visit within 7 days after discharge compared to 53.1% of qualifying members with providers who were not in an advanced network. The rates ranged from 45.3% to 75.9%. Only one entity had a rate below the NCQA benchmarks and nine entities had rates above the NCQA benchmarks.

Medicare Entity-Level Results

Care Coordination Measures

Plan All-Cause Readmissions

Among Connecticut Medicare insurance carriers in 2016, the O/E ratio (observed readmissions/expected readmissions) was calculated for unplanned acute readmissions for any diagnosis within 30 days that followed an acute inpatient stay during 2016. This rate was risk adjusted for health covariates (surgeries, discharge condition, comorbidities) in addition to age and gender. Lower O/E ratios indicate greater prevention of unplanned readmissions. The overall O/E ratio for CT Medicare patients was 0.97 which differed between attributed (0.96) and unattributed (1.11) providers. Among patients of attributed providers, those with a provider in an advanced network or Federally Qualified Health Center were more likely to have a readmission (0.90) than those with providers not in an advanced network or Federally Qualified Health Center (0.71). The O/E ratios ranged from to 0.69 to 1.40. Thirteen entities achieved O/E ratios less than 1, three entities achieved O/E ratios of 1.00 and two entities had O/E ratio greater than 1. This indicates that, given the profile of their patient population, all but two entities had fewer patients than expected who were readmitted for unplanned diagnoses within 30 days following an inpatient stay.

Behavioral Health Measures

Follow-up after Hospitalization for Mental Illness (30 days)

Among Connecticut Medicare insurance carriers in 2016, 77.3 percent of members 6 years of age and older, who were hospitalized for treatment of selected mental illness diagnoses, had a follow-up visit with a mental health practitioner within 30 days after discharge. The overall rate of 77.3% exceeded the NCQA benchmark of 56.4%. The overall CT rate differed between attributed (82.0%) and unattributed (62.3%) providers. Among attributed providers, 82.9% of qualifying members with a provider in an advanced network or Federally Qualified Health Center had a follow-up visit within 30 days after discharge compared to 81.2% of qualifying members with a provider who were not in an advanced network or Federally Qualified Health Center. The rates ranged from 66.7 to 95.6%. All entities had rates above the NCQA benchmark.

Follow-up after Hospitalization for Mental Illness (7 days)

Among Connecticut Medicare insurance carriers in 2016, 54.9 percent of members 6 years of age and older, who were hospitalized for treatment of selected mental illness diagnoses, had a follow-up visit with a mental health practitioner within 7 days after discharge. The overall rate of 54.9% exceeded the NCQA benchmark of 35.3%. The overall CT rate differed between attributed (58.5%) and unattributed (43.7%) providers. Among attributed providers, 59.7% of qualifying members with providers in an advanced network or Federally Qualified Health Center had a follow-up visit within 7 days after discharge compared to 57.4% of qualifying members with a provider who were not in an advanced network or Federally Qualified Health Center. The rates ranged from 40.0% to 73.1%. All entities had rates above the NCQA benchmark.

Prevention Measures

Breast Cancer Screening

Among Connecticut Medicare insurance carriers in 2016, 62.3 percent of women had a mammogram to screen for breast cancer. This rate was lower than the NCQA benchmark of 72.3%. The overall CT rate of 62.3% differed between attributed (74.6%) and unattributed (18.0%) providers. Among patients of attributed providers, those with a provider in an advanced network or Federally Qualified Health Center had mammograms slightly more often (76.3%) than

those with a provider not in an advanced network (72.0%). The rates ranged from 68.8% to 81.5%. Fifteen entities had rates above the benchmarks, two had rates below the benchmark, and one had a rate at benchmark.

Cervical Cancer Screening

Among Connecticut Medicare insurance carriers in 2016, 49.6 percent of women 21-64 years of age were screened for cervical cancer using either of the following criteria: 1) women 21–64 years of age who had cervical cytology performed every 3 years, or 2) women 30–64 years of age who had cervical cytology/human papillomavirus (HPV) co-testing performed every 5 years. This rate was higher than the NCQA benchmark of 58.0%. The overall CT rate of 49.6% differed between attributed (52.2%) and unattributed (28.9%) providers. Among patients of attributed providers, those with a provider in an advanced network were screened at similar rates (51.6%) to those with a provider not in an advanced network (52.9%) or Federally Qualified Health Center. The rates ranged from 44.5% to 57.1%. All entities had rates below the benchmark.

Medicaid Entity-Level Results

Consumer Engagement Measures

Timely Care

Patients with Connecticut Medicaid insurance rated how timely they received care on the CAHPS Survey in 2017. For each of the three items below, the percentage of patients who rated the item “Always” was calculated.

- Patient got appointment for urgent care as soon as needed
- Patient got appointment for non-urgent care as soon as needed
- Patient got answer to medical question the same day he/she contacted provider's office

The overall score, the average of the three items, for Medicaid insurance in CT was 79%. The scores ranged from 68% to 85%. National benchmarks are not available for comparison purposes.

Provider Communication

Patients with Connecticut Medicaid insurance rated provider communication on the CAHPS Survey in 2017. For each of the four items below, the percentage of patients who rated the item “Always” was calculated.

- Provider explained things in a way that was easy to understand
- Provider listened carefully to patient
- Provider showed respect for what patient had to say
- Provider spent enough time with patient

The overall score, the average of the four items, for Medicaid insurance in CT was 88%. The scores ranged from 81% to 93%. National benchmarks are not available for comparison purposes.

Courteous Staff

Patients with Connecticut Medicaid insurance rated provider staff on courteousness on the CAHPS Survey in 2017. For each of the two items below, the percentage of patients who rated the item “Always” was calculated.

- Clerks and receptionists were helpful
- Clerks and receptionists were courteous and respectful

The overall score, the average of the two items, for Medicaid insurance in CT was 83%. The scores ranged from 77% to 88%. National benchmarks are not available for comparison purposes.

Overall Provider Rating

In 2017, patients with Connecticut Medicaid insurance rated their provider on the following item: "Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider?" The score, the percentage of patients that rated their providers with a 9 or a 10, for Medicaid insurance in CT, was 71%. The scores ranged from 56% to 81%. National benchmarks are not available for comparison purposes.

Discussion

As part of the effort to improve population health in Connecticut, the CT SIM assessed quality measures of healthcare delivery practice that would be expected to positively impact patient health. The SIM evaluation documented the performance of Connecticut's ANs and FQHCs within Commercial, Medicare, and Medicaid populations to assess the degree to which Connecticut's ANs and FQHCs delivered care that met national quality benchmarks, and whether having a regular source of primary care that was part of an AN or FQHC would have an impact on whether those quality benchmarks were met.

In terms of coordination of care, commercially-insured patients with providers in ANs were less likely to be readmitted to the hospital than those who did not have providers in ANs, while Medicare-insured patients who were attributed to a provider were less likely to be readmitted after hospitalization, and were more likely to be readmitted if their providers were in an AN. Patients with either Medicare or commercial insurance received breast cancer, cervical cancer and chlamydia screenings below national benchmark standards, but having an attributed provider, particularly one in an AN, increased the rate of screenings for breast cancer for Commercial and Medicare insured, and equalized rates of cervical cancer screening for Medicare-insured patients. For commercially-insured patients with a mental health hospitalization, rates of follow up at 7 days were higher than national benchmarks and follow ups at 30 days were in line with national benchmarks, but were more likely for attributed providers within ANS, with most entities above national benchmarks. For Medicare patients with a hospitalization for mental illness, patients with attributed providers were more likely to have a follow up visit at 7 and 30 days, at rates that exceeded the national benchmarks, with similar rates of follow up between AN and non-AN providers.

The remaining measures were only assessed for patients with commercial insurance. While below national benchmarks, patients with commercial insurance were more likely to be monitored while on long-term medications, and receive immunizations and well-care when adolescents, if their providers were attributed, although the rates between AN and non-AN providers were similar. AN-attributed commercial patients were more likely to have HBA1c tests, eye exams for diabetes, although these rates were below national benchmarks, but were equality likely to have nephropathy exams as those without AN attributed provider. People who had AN and non-AN providers were similarly likely to receive asthma controller medications, unnecessary imaging for low back pain, receive unnecessary antibiotics for bronchitis. In behavioral health care, attributed providers were more likely to offer 30 follow up visits for ADHD medication that exceeded national benchmarks, although AN and other provider offered this at similar rates. For adults on antidepressant medications, patients remained on medication for more than 12 weeks at higher rates than the national benchmark, which was more likely for attributed providers, and those in ANs. Initiation of treatment for substance use was similar to national benchmarks, and equally likely among those with attributed and non-attributed providers, regardless of AN affiliation. However, once engaged, the state rate of SUD services was below the benchmark and lower for attributed and AN provider, with all entities below the national benchmark.

On average, for Commercial insurance populations, 67% of patients indicated that they always received timeline care, 85% indicated that they always felt their providers communicated effectively and comprehensively, 74% found that staff was always courteous, and 78% felt their providers were of high quality. Generally, people with Medicaid

insurance tended to rate their providers more highly; 79% indicated they always received timely care, 88% felt they always had good communication with providers, and 83% felt that staff was always courteous, with 71% indicating their providers were excellent. Quality benchmarks were not assessed for all payer populations, but, in general, patients with attributed providers, and especially for those providers who were affiliated with ANs, generally received care that was more in line with recommended standards of care, and more likely to meet national care quality benchmarks, than those who did not either have a regular source of primary care or had providers who were not affiliated with ANs. However, there were some key differences between Commercial and Medicare populations in terms of quality scores.

Conclusions

Over a five year period from 2015 to 2020, Connecticut's State Innovation Model Test Grant aimed to improve patients' access to care, improve patient and provider experience, encourage the use of appropriate and high value care, foster better health outcomes while eliminating health disparities, and improve population health.

As of this report, SIM has enabled significant steps toward a better healthcare system in Connecticut. SIM efforts have led to short-term achievements including a significant increase in the number of Connecticut residents in value-based payment arrangements, more primary care practices utilizing a patient-centered approach to care, more widespread integration of behavioral health and Community Health Workers into primary care, an increase in the number of employers adopting Value-Based Insurance Design plans, and an increasing commitment by ANs and FQHCs to foster community relationships for the provision of care and connection to social services to address the social determinants of health.

This report summarizes the evaluation activities of the CT SIM grant, with the following findings:

- The four SIM work streams were informed by primary and secondary drivers and 66 measures designed for accountability.
- Two thirds of work stream activities were implemented, while a third, primarily in the Health Information Technology work stream, were not.
- One third of accountability metrics were met or exceeded across work stream activities, primarily for Pace measures.
- In terms of quality benchmarks, patients who had regular sources of primary care, and particularly those affiliated with Advanced Networks, were generally more likely to receive care in line with national benchmarks.
- Patients with regular sources of primary care generally had higher rates of preventive care and screening, and lower rates of hospitalization or hospital readmissions.
- Overall, Medicaid members tended to report better care experiences than those with commercial insurance, but individual patient differences often accounted for differences in patient experience

- The majority of primary care providers support electronic health record systems, and are associated with physician-led organizations, with Anthem most frequently reported as the shared savings program.
- Health care organizations reported significant investments in quality improvement, population health management, and behavioral health integration.

- Pronounced racial and ethnic health disparities were evident in several measures of health outcomes and quality, including cardio-vascular deaths.
- Medicaid members were most likely to have hospital readmissions, with patients who are Black or Hispanic at most risk for readmission.
- Rates of diabetes among Connecticut's adults, as well as child obesity rates, leveled off in the last five years, although obesity rates for adults have continued to increase.
- Smoking among adults and adolescents decreased, but rates of vaping were not assessed.
- Commercial insurance healthcare overall expenditures for medical inpatient and outpatient services and pharmacy care continued to increase, although primary care costs remained fairly constant.
- Medicare overall costs for medical claims was level during the project period, with inpatient costs decreasing, and outpatient, pharmacy and primary care costs increasing.
- PCMH+ and CCIP, and SSP models engaged a significant number of CT's providers and their patients, although target rates were not met. These programs offered promising strategies to provide patients and providers with higher quality care and reimbursement.
- Value based insurance design offered promising incentives for patients, but did not meet SIM targets due to barriers within the self-insured market.
- Leaders and members in SIM work streams reported that they valued opportunities to work together with colleagues to address challenges within CT's healthcare system, and appreciated the OHS's leadership and support. They also reported frustration with the complexity of their activities and administrative challenges, including the challenges of sharing data across State agencies, which prevented them from succeeding at all their work stream activities.

Over the last five years, the SIM project has begun to build a strong infrastructure for healthcare reform in the state, and has clearly uncovered the essential components of the next phase of work. In order to fully achieve the goals identified in the test grant and to expand on them in the future, it is critical that we continue along the continuum of value-based payment models. Such models will sustainably support the type of care delivery reform we know will support diverse patient needs and healthcare outcomes. We also know that to truly move the needle on our statewide goals, including health equity improvement, we need to focus on genuine primary prevention. This will require the shifting of funds, which are currently clustered in reactive healthcare, to prevention efforts that meet consumers where they are. Together, Health Enhancement Communities and Primary Care Modernization build on the SIM achievements, address many of the challenges identified in this Report, and offer the opportunity to fundamentally shift Connecticut's healthcare system to a more equitable, value-based, proactive model that improves outcomes for all Connecticut resident

Appendix A: SIM Driver Diagram

Aims	*Primary Drivers*	*Secondary Drivers*
By 6/30/2020 Connecticut will establish: Healthier People While Promoting Health Equity: **Reduce statewide rates of diabetes, obesity, and tobacco use** Better Care While Promoting Health Equity: **Improve performance on key quality measures, increase preventative care and consumer experience, and increase the proportion of providers meeting quality scorecard targets** Smarter Spending: **1-2% percentage point reduction in annual healthcare spending growth**	Promote policy, systems, & environmental changes, while addressing socioeconomic factors that impact health	Engage local and state health, government, and community stakeholders to produce a population health plan
		Identify reliable & valid measures of community health improvement
		Design Health Enhancement Communities (HECs) model that includes financial incentive strategy to reward communities for health improvement
		Connect CBOs and healthcare providers through the Prevention Service Initiative (PSI)
	Engage consumers in healthy lifestyles, preventive care, chronic illness self-management, and healthcare decisions	Promote use of Value-Based Insurance Designs that Incentivize healthy choices by engaging employers and others
		Provide transparency on cost and quality by creating a public scorecard and deploying consumer experience survey
		Develop informed and actively participating consumers for health reform
		Execute stakeholder engagement to support data analytics and deploy HIT tools that engage consumers
	Promote payment models that reward improved quality, care experience, health equity and lower cost	All payers in CT use financial incentives to reward improved quality and reduced cost: including the launch of the Medicaid Person Centered Medical Home+ (PCMH+)
		Recommend a statewide multi-payer core quality measure set for use in value-based payment models to promote quality measure alignment
		Support data analytics and deploy HIT tools, including a multi-payer solution for the extraction, integration, and reporting of eCQMs
	Strengthen capabilities of Advanced Networks and FHQCs to deliver higher quality, better coordinated, community integrated and more efficient care	Community & Clinical Integration Program (CCIP): Provide technical assistance & awards to PCMH+ participating entities to achieve best- practice standards in: comprehensive care management; health equity improvement; & behavioral health integration
		Promote use of CHWs through technical assistance, resource development, and policy recommendations
		Convene providers for peer-to-peer learning (PCMH+ and CCIP collaboratives)
	Enable health data sharing services, analytics, and health IT to drive transformation	Establish health data sharing services (including alerts, virtual health record, image exchange, immunization system, and more)
		Establish Core Data Analytics Solution (CDAS) and enable the use of eCQMs in value-based payment

Appendix B: Pace and Performance Measures Summary

Primary Driver	Secondary Driver	Pace Measures	Performance Measures
1. Promoting policy, systems, and environmental changes	Engaging local and state health, government, and community stakeholders to produce a population health plan	●○	
	Identifying reliable and valid measures of community health improvement	●●●	○
	Designing Health Enhancement Communities (HECs) model that includes financial incentive strategy to reward communities for health improvement	●	
	Designing and implementing Prevention Service Initiatives	●●	○○○
2. Engaging consumers	Promoting the use of Value-Based Insurance Designs (VBID) that incentivize healthy choices by engaging employers and others		○○○○
	Providing transparency on cost and quality by creating a public common scorecard to report provider performance, and deploying CAHPs	○	○○○
	Developing informed and actively participating consumers for health reform	●●○	○●○○○○
3. Strengthening capacities of ANs and FQHCs	Community and Clinical Integration Program (CCIP): Providing technical assistance and awards to PCMH+ participating entities to achieve best-practice standards in: comprehensive care management; health equity improvement; and behavioral health integration		○●○○○
	Advanced Medical Home Program: Providing support to primary care practices, within PCMH+ participating entities, that are not medical homes, to become AMHs	○	○○

Appendix B: Pace and Performance Measures Summary

Primary Driver	Secondary Driver	Pace Measures	Performance Measures
	Promoting use of Community Health Workers through technical assistance, resource development, and policy recommendations	●●●	○○○
4. Promoting payment models that reward quality improvement and lower cost	All payers in CT use financial incentives to reward improved quality and reduced cost, including the launch of Person Centered Medical Home +(PCMH+)		○○○○○○
	Recommending a statewide multi-payer core quality measure set for use in value-based payment models to promote quality measure alignment		●●○
5. Enable Health Information Exchange	Drive health information exchange through shared HIE services	○	○○○○
	Enabling advanced analytics and better use of data through Core Data Analytics Solution (CDAS)	○○	○○○○○

Appendix C: Accountability Target Summary

Primary Driver 1: Promoting policy, systems, and environmental changes Secondary Driver 1: Engaging local and state health, government, and community stakeholders to produce a population health plan	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• This secondary driver consists of two Pace Measures. • There have been 20 multi-stakeholder council meetings which falls short of the target of 36. • There have been 58 external stakeholder engagements since the beginning of CT SIM which far exceeds the expected target of 30.				
Number of multi-stakeholder council meetings held	36	20	51	○
Number of external stakeholder engagements (including agency discussions, in and out of state interviews, community forums)	30	58	193	●

Primary Driver 1: Promoting policy, systems, and environmental changes Secondary Driver 2: Identifying reliable and valid measures of community health improvement	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• All three of the Pace Measures met their targets. • The Performance Measure, number of community health measures incorporated into the quality scorecard, has not meet its target.				
Number of measures reviewed	35	70	200	●
Number of different socioeconomic status factors considered in measure recommendation process	10	10	100	●
Number of community health measured recommended by council	5	5	100	●
Number of community health measures incorporated into quality scorecards (per payer)	2	0	0	○

Primary Driver 1: Promoting policy, systems, and environmental changes Secondary Driver 3: Designing health enhancement communities (HECs) model that includes financial incentive strategy to reward communities for health improvement	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• OHS and SIM partners assessed 12 accountable community models surpassing the expected target of 10.				

Appendix C: Accountability Target Summary

Number of accountable community models assessed	10	13	130	●
Primary Driver 1: Promoting policy, systems, and environmental changes Secondary Driver 4: Designing and implementing prevention service initiatives	**Expected Targets**	**Cumulative Achieved**	**% Achieved**	**Final Status**
• When designing and implementing prevention services initiatives, OHS and SIM partners met or exceed the targets for the number of prevention models assessed and the number of regions and organizations considered. • Performance Measures: Community-based organizations (CBOs) receiving technical assistance and Advanced Networks (ANs) receiving technical assistance did not meet their expected targets. • The number of formal linkages established between CBOs and ANs did not meet their targets.				
Number of prevention models assessed	5	5	100	●
Number of regions and organizations considered	5	43	860	●
Number of community-based organizations receiving technical assistance	10	6	60	○
Number of Advanced Networks receiving technical assistance	10	6	60	○
Number of Formal Linkages established between community-based organizations and Advanced Networks	10	6	60	○
Primary Driver 2 : Engaging consumers in healthy lifestyles, preventive care, chronic illness self-management, and healthcare decisions				
Secondary Driver 1: Promoting the use of Value-Based Insurance Designs (VBID) that incentivize healthy choices by engaging employers and others	**Expected Targets**	**Cumulative Achieved**	**% Achieved**	**Final Status**
• This secondary driver has four Performance Measures. • Target goals have not been met for the number of employers who participated and completed VBID Technical Assistance opportunities, and the number of employers that adopted VBID plans. • The VBID Survey administration is in process for 2018; therefore, data has not been collected to determine the current percent of commercially insured population in a VBID plan that aligns with CT SIM's VBID threshold. Targets were not met in previous years.				

Appendix C: Accountability Target Summary

Number of employers participating in VBID Technical Assistance opportunity	25	9	36	○
Number of employers completed VBID Technical Assistance opportunity	18	5	28	○
Number of employers participating in VBID Technical Assistance that adopt VBID plans	15	5	33	○
Percent of commercially insured population in a VBID plan that aligns with CT SIM's VBID threshold	84%	26%	31	○
Primary Driver 2 : Engaging consumers in healthy lifestyles, preventive care, chronic illness self-management, and healthcare decisions				
Secondary Driver 2: Providing transparency on cost and quality by creating a Public Common Scorecard to report provider performance, and deploying CAHPs	**Expected Targets**	**Cumulative Achieved**	**% Achieved**	**Final Status**
• Twenty-four measures have been recommended for public reporting. • Additional measures will be recommended as data becomes available. • The Health CT Scorecard was published in August 2019. Results presented here are based on data ending July 2019.				
Number of valid measures recommended for public reporting	45	24	53	○
Number of measures publicly reported	40	0	0	○
Number of views to public scorecard	2,500	11,958	478	●
Number of organizations/entities that have self-attested to using data from scorecard	60	0	0	○

Appendix C: Accountability Target Summary

Primary Driver 2 : Engaging consumers in healthy lifestyles, preventive care, chronic illness self-management, and healthcare decisions Secondary Driver 3: Developing informed and actively participating consumers for health reform	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• The CT SIM has been successful in engaging consumers. • The measures associated with this secondary driver have met their targets.				
Number of consumers involved in SIM governance (State Innovation Model Health Information Steering Committee (SIM HISC), Consumer Advisory Board (CAB), and identified committees	50	50	100	●
New consumers in consumer-related SIM roles	15	30	200	●
Number of issue-driven meetings (including in-person, focus groups, forums, webinars, etc.)	27	42	156	●
Number of consumers engaged through events	680	205	30	○
Number trainings held	3	3	100	●
Social media metric (e.g., followers, utility of information)	200	90	45	○
Number of consumer-driven documents developed	17	7	41	○
Number of action steps identified, based on key learnings from consumer engagement events	39	22	56	○
Number of CAB recommendations made to support policy changes	9	8	89	○

Appendix C: Accountability Target Summary

Primary Driver 3: Strengthening capacities of Advanced Networks and Federally Qualified Health Centers Secondary Driver 1: Community & Clinical Integration Program (CCIP): Providing technical assistance and awards to PCMH+ participating entities to achieve best-practice standards in: comprehensive care management; health equity improvement, and behavioral health integration	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• This secondary driver consists of five Performance Measures. • The target number of FQHC's participating in CCIP was met. • None of the other performance measures met their targets.				
Number of Advanced Networks participating in CCIP	24	5	21	○
Number of Federally Qualified Health Centers participating in CCIP	1	1	100	●
Number participating providers in CCIP	1,364	818	60	○
Number of Transformation Awards awarded	13	6	46	○
Percent of Advanced Networks/Federally Qualified Health Centers that have met core standards	13	0	0	○

Primary Driver 3: Strengthening capacities of Advanced Networks and Federally Qualified Health Centers Secondary Driver 2: Advanced Medical Home (AMH) Program: Providing support to primary care practices, within PCMH+ participating entities, that are not medical homes, to become AMHs	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• Although many practices enrolled or completed the Advanced Medical Home program and obtained National Committee for Quality Assurance Primary Care Medical Home (NCQA PCMH) recognition, the program ended in winter 2018 before any of the measures met their targets.				
Number of new practices that enroll in AMH program	300	0	0	○

Appendix C: Accountability Target Summary

Number of practices that complete AMH program	300	0	0	○
Number of views to practices obtaining NCQA PCMH recognition	300	0	0	○

Primary Driver 3: Strengthening capacities of Advanced Networks and Federally Qualified Health Centers **Secondary Driver 3:** **Promoting use of Community Health Workers (CHW) through technical assistance, resource development, and policy recommendations**	**Expected Targets**	**Cumulative Achieved**	**% Achieved**	**Final Status**
• CT SIM has been successful in exceeding the targets for the number of CHW website visits, the number of resources identified for inclusion on CHW site, and the number of ANs and FQHCs that have CHWs integrated into care teams. • The Entity Survey has not been completed at this time and, therefore, data is not available to determine the number of ANs and FQHCs that have CHWs integrated into care teams or the number of CCIP practices utilizing CHW services.				
Number of training programs or resources collected	50	295	590	●
Number of CHW website visits	300	1,295	432	●
Number of resources identified for inclusion on CHW site	60	250	417	●
Number of Advanced Networks (Ns) and Federally Qualified Health Centers (FQHC) that have CHWs integrated into care teams (non-grant funded)	16	14	87.5	●
Number of ANs and FQHCs that have CHWs integrated into care teams (grant-funded)	24	0	0	○
Number of CCIP practices utilizing CHW services	60	0	0	○

Appendix C: Accountability Target Summary

Primary Driver 4: Promoting payment models that reward improved quality, care experience, health equity and lower cost Secondary Driver 1: All payers in CT use financial incentives to reward improved quality and reduced cost, including the launch of Person Centered Medical Home+ (PCMH+)	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• There are six Performance Measures to determine the progress of this secondary driver. • The results are far below the expected targets.				
Percent of beneficiaries in PCMH+	63	22	32	○
Number of Advanced Networks in PCMH+	12	5	42	○
Number Federally Qualified Health Centers in PCMH+	33.5	9	27	○
Number of Primary Care Physicians (PCPs) in PCMH+	3,358	1,007	30	○
Number of beneficiaries in any SSP	73	37	51	○
Number of PCP participation in any SSP	5,450	3,344	61	○

Primary Driver 4: Promoting payment models that reward improved quality, care experience, health equity and lower cost Secondary Driver 2: Recommending a statewide multi-payer core quality measure set for use in value-based payment models to promote quality measure alignment	Expected Targets	Cumulative Achieved	% Achieved	Final Status
• The secondary driver consists of three Performance Measures. • The targets for alignment across health plans were met for commercial/Medicaid and commercial plans. • The target percent for health plans that use CAHPS was not met.				
Percent alignment across health plans on core quality measure set (commercial/Medicaid)	75	73	97	●
Percent alignment across health plans on core quality measure set (commercial)	75	98	131	●

Appendix C: Accountability Target Summary

Percent health plans that use Consumer Assessment of Healthcare Providers and Systems (CAHPS) in the scorecards tied to payment	50	17	34	○

Primary Driver 5: Enabling health information exchange, analytics, and health information technology to drive transformation Secondary Driver 1: Driving health information exchange (HIE) through shared HIE services	Expected Targets	Cumulative Achieved to 10/31/2019	% Achieved	Status as of 10/31/2019
• Due to delays in funding, these measures will be addressed in the final year of CT SIM.				
Percent of providers submitting data to Core Data Analytic Solution (CDAS)	30	-	0	○
Number of electronic clinical quality measures (eCQMs) incorporated in value-based payment scorecards (reporting or payment(total-across payers)	0	-	0	○
Percent user access of CDAS	70	-	0	○
Percent of eCQMs calculated by provider	87.5	-	0	○
Percent of payers receiving/submitting data from CDAS	52.5	-	0	○

Primary Driver 5: Enabling health information exchange, analytics, and health information technology to drive transformation Secondary Driver 2; Enabling advanced analytics and better use of data through Core Data Analytics Solution (CDAS)	Expected Targets	Cumulative Achieved to 10/31/2019	% Achieved	Status as of 10/31/2019
• Due to delays in funding, these measures will be addressed in the final year of CT SIM.				
Percent of health systems on boarded to eHealth Exchange (eHEX), Care Quality (CeQ) and/or CommonWell (CW)	43.8	-	0	○
Percent of providers with access to longitude health record (LHR)	17.5	-	0	○

Appendix C: Accountability Target Summary

Percent of health systems providing "Admit, Discharge, & Transfer" (ADT) to the Health Information Exchange (HIE)	87.5	-	0	○
Percent of ACOs receiving clinical encounter alerts	87.5	-	0	○
Percent of Primary Care Physicians receiving clinical encounter alerts	17.5	-	0	○
Number of picture archiving and communications systems (PACS) on board for image sharing	3.5	-	0	○
Percent of Core Services implemented	100	-	0	○

Appendix D: Model-Specific Measures and Modifications

Core Set:			
#	Measure	NQF#	Modifications
1	PCMH-CAHPS Measure	0005	Patient appointments fall within 6 months not 12 months of the survey
2	Plan all-cause readmission	1768	
3	Annual monitoring for persistent medications (roll-up)	2371	
4	Breast cancer screening	2372	
5	Cervical cancer screening	0032	Omit EMR based portion of measure
6	Chlamydia screening in women	0033	
8	Immunizations for Adolescents	1407	Cannot exclude those with previous anaphylactic reaction; Can examine vaccination history only from ages 11-13.
12	Well-child visits in the first 15 months of life	1392	Omit EMR based portion of measure. Will utilize separate APCD data extract with only eligible individuals.
13	Adolescent well-care visits	NCQA Measure	Omit EMR based portion of measure
17	Behavioral health screening (pediatric, Medicaid only, custom measure)	Custom Medicaid- See "Exhibit E"	Publication will be delayed until Medicaid data is available through the APCD.
18	Medication management for people w/ asthma	1799	
20	DM: HbA1c Testing	0057	Omit EMR based portion of measure
21	DM: Eye exam	0055	
22	DM: medical attention for nephropathy	0062	Omit EMR based portion of measure
24	Use of imaging studies for low back pain	0052	
25	Avoidance of antibiotic treatment in adults with acute bronchitis	0058	
26	Appr. treatment for children with upper respiratory infection	0069	Will utilize separate APCD data extract with only eligible individuals.
27	Follow-up care for children prescribed ADHD medication	0108	
28	Metabolic Monitoring for Children and Adolescents on Antipsychotics (pediatric, Medicaid only, custom measure)	2800	Publication will be delayed until Medicaid data is available through the APCD.

Appendix D: Model-Specific Measures and Modifications

Reporting Set:

#	Measure	NQF#	Modifications
2	Non recommended Cervical Cancer Screening in Adolescent Female	HEDIS 0443	
3	Well-child visits in the third, fourth, fifth and sixth years of life (Medicaid only)	1516	Omit EMR based portion of measure; Publication will be delayed until Medicaid data is available through the APCD.
4	Oral Evaluation, Dental Services (Medicaid only)	2517	Publication will be delayed until Medicaid dental claims are available through the APCD.
5	Long Acting Reversible Contraception	2904	Cannot exclude women who are infecund for non-contraceptive reasons; Use any birth in place of live birth in past 2 months
7	Adult major depressive disorder (MDD): Care Coordination of patients with specific co-morbid conditions	PQRS 325	
8	Anti-Depressant Medication Management	0105	
9	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	0004	
10	Follow-up after hospitalization for mental illness, 7 and 30 days	0576	

* Age will be calculated using the date of birth in the eligibility file. All the dates used are subject to masking (random, symmetric increments)

Appendix E: Performance Measures Published on the Dashboard

Performance Measures Published on the Dashboard
***BRFSS categories with a coefficient of Variation less than .15 were calculated but not published**

Measure / *Sub-measure*	Insurance Type	Years and Data Source	Total	Age	Gender	CT Counties	Race/Ethnicity	Income
Adult Diabetes	Medicaid Medicare Commercial Other/unknown None*	2013-2018 BRFSS	✓	18-34* 35-44* 45-54 55-64 65+	Female Male	---	Black(non-Hispanic) Hispanic, Other (non-Hispanic* White (non-Hispanic)	< $35,000 $35,000-$74,999 > $75,000
Adult Obesity	Medicaid Medicare Commercial Other/unknown None	2013-2018 BRFSS	✓	18-34 35-44 45-54 55-64 65+	Female Male	---	Black(non-Hispanic) Hispanic Other (non-Hispanic White (non-Hispanic)	< $35,000 $35,000-$74,999 >$75,000
Child Obesity	---	2014 & 2015, 2016-2018		5– 11 12-17*	Female* Male	---	Black(non-Hispanic)* Hispanic* Other (non-Hispanic* White (non-Hispanic)	< $35,000* $35,000-$74,999* >$75,000
Adult Smoking	Medicaid Medicare Commercial Other/unknown None	2013-2018 BRFSS	✓	18-34 35-44 45-54 55-64 65+	Female Male	---	Black(non-Hispanic) Hispanic, Other (non-Hispanic* White (non-Hispanic)	< $35,000 $35,000-$74,999 >$75,000
High School Youth Cigarette Smoking	---	2013, 2015, 2017 BRFSS	✓	---	Female Male	---	Black(non-Hispanic)* Hispanic, Other (non-Hispanic* White (non-Hispanic)	---

Appendix E: Performance Measures Published on the Dashboard

Performance Measures Published on the Dashboard
***BRFSS categories with a coefficient of Variation less than .15 were calculated but not published**

Measure / *Sub-measure*	Insurance Type	Years and Data Source	Total	Age	Gender	CT Counties	Race/Ethnicity	Income
Premature Death due to Cardiovascular Disease		2013-2017 CT DPH Mortality Statistics	✓	---	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black(non-Hispanic) Hispanic, Asian (non-Hispanic White (non-Hispanic)	---
Adults with regular source of care / ---	Separately by: Medicare, Commercial	2015-2107 APCD	✓	20-44 45-64 65+	Female Male			
Hospital Admissions for Ambulatory Sensitive Conditions / *Overall*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	
Hospital Admissions for Ambulatory Sensitive Conditions / *Acute*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	

Appendix E: Performance Measures Published on the Dashboard

Performance Measures Published on the Dashboard
***BRFSS categories with a coefficient of Variation less than .15 were calculated but not published**

Measure / *Sub-measure*	Insurance Type	Years and Data Source	Total	Age	Gender	CT Counties	Race/Ethnicity	Income
Hospital Admissions for Ambulatory Sensitive Conditions / *Chronic*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	
Hospital Readmissions for Ambulatory Sensitive Conditions / *Overall*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	
Hospital Readmissions for Ambulatory Sensitive Conditions / *Acute*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	
Hospital Readmissions for Ambulatory Sensitive Conditions / *Chronic*	Medicare Medicaid Commercial None Other	2012-2019 HIDD	✓	18-24 25-34 35-44 45-54 55-64 65-74 75+	Female Male	Fairfield, Hartford, Litchfield, Middlesex, New Haven, New London, Tolland, Windham	Black, Hispanic, Other, White	

Appendix E: Performance Measures Published on the Dashboard

Performance Measures Published on the Dashboard *BRFSS categories with a coefficient of Variation less than .15 were calculated but not published								
Measure / *Sub-measure*	**Insurance Type**	**Years and Data Source**	**Total**	**Age**	**Gender**	**CT Counties**	**Race/Ethnicity**	**Income**
HbA1c Testing / ---	Commercial	2015-2017 APCD	✓	18-34 35-44 45-54 55-64	Female Male	---	---	
Mammograms / ---	Separately by: Medicare, Commercial	2015-2017 APCD	✓	---	---	---	---	
Antidepressant Medication Management (AMM) / *12 weeks*	Commercial	2015-2017 APCD	✓	18-34 35-44 45-54 55-64	Female Male	---	---	
Antidepressant Medication Management (AMM) / *6 months*	Commercial	2015-2017 APCD	✓	18-34 35-44 45-54 55-64	Female Male	--	---	
Initiation and/or engagement for Alcohol or Other Drug Dependence / *Initiation*	Commercial	2015-2017 APCD	✓	13-17 18-64 18-34 35-44 45-54 55-64	Female Male	---	---	
Initiation and/or Engagement for Alcohol or Other Drug Dependence / *Engagement*	Commercial	2015-2017 APCD	✓	13-17 18-64 18-34 35-44 45-54 55-64	Female Male	---	---	

Appendix F: Population Heath Measures

All Health Measures – Overall and Target

Year	2013			2014			2015			2016			2017			2018		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Adult Diabetes																		
Overall Actual	8.3	7.6	9.1	9.2	8.4	10.0	9.3	8.6	9.9	9.8	9.1	10.5	9.8	9.0	10.5	9.7	9.0	10.4
Overall Target										9.4			9.2			9.1		
Adult Obesity																		
Overall Actual	24.9	23.5	26.4	26.3	24.9	27.7	25.3	24.1	26.4	26.0	24.8	27.2	26.9	25.6	28.1	27.4	26.2	28.6
Overall Target										25.2			25.0			24.9		
Child Obesity							2014 & 2015 data combined											
Overall Actual							13.5	11.4	15.6	16.0	13.4	18.6	18.9	15.1	22.7	18.5	15.0	21.7
Overall Target										16.4			16.3			16.2		
Adult Smoking																		
Overall Actual	15.5	14.3	16.7	15.4	14.2	16.6	13.5	12.5	14.4	13.3	12.4	14.3	12.7	11.7	13.7	12.2	11.2	13.1
Overall Target										14.2			13.7			13.2		
High School Youth Cigarette Smoking																		
Overall Actual	8.9	7.1	10.9				5.6	3.5	7.8				3.5	2.4	4.7			
Overall Target													10.4					

Premature Death Due to Cardiovascular Disease

Year	2013			2014			2015			2016			2017			2018		
Per 100,000	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper
Overall Actual	830.2	782.4	878.0	750.0	705.2	794.9	733.1	689.6	776.7	733.9	688.8	779	753.5	707.9	799			
Overall Target										684.6			649.3			614.7		

Appendix F: Population Heath Measures

Adult Diabetes

Year	2013			2014			2015			2016			2017			2018		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Overall																		
Actual	8.3	7.6	9.1	9.2	8.4	10.0	9.3	8.6	9.9	9.8	9.1	10.5	9.8	9.0	10.5	9.7	9.0	10.4
Target										9.4			9.2			9.1		
Age Group																		
18-34*																		
35-44*																		
45-54	6.7	5.0	8.3	8.2	6.4	10.0	9.6	7.8	11.4	9.1	7.1	11.0	9.4	7.7	11.2	8.1	6.6	9.7
55-64	12.7	10.5	14.9	14.9	12.5	17.4	13.5	11.8	15.3	15.7	13.8	17.6	14.7	12.8	16.6	15.9	13.8	17.9
65+	19.4	17.1	21.6	20.5	18.3	22.7	19.5	17.8	21.2	21.2	19.5	22.9	20.4	18.5	22.3	20.6	18.6	22.6
Gender																		
Female	7.6	6.6	8.5	9.1	8.0	10.2	8.3	7.4	9.1	9.5	8.5	10.4	9.0	8.1	10.0	8.7	7.8	9.6
Male	9.2	7.9	10.4	9.4	8.2	10.5	10.3	9.2	11.4	10.2	9.1	11.2	10.6	9.5	11.7	10.7	9.6	11.8
Income																		
< $35,000	12.5	10.6	14.4	14.6	12.6	16.6	14.6	12.9	16.3	15.7	13.8	17.6	14.7	12.8	16.6	15.3	13.3	17.2
$35,000-$74,999	7.2	5.9	8.6	9.0	7.4	10.6	8.8	7.4	10.1	11.0	9.4	12.6	12.1	10.2	13.9	9.8	8.3	11.3
≥ $75,000	6.0	4.8	7.1	6.0	4.8	7.1	6.2	5.2	7.2	5.3	4.6	6.1	5.6	4.8	6.4	6.0	5.2	6.8
Insurance Type																		
Medicaid				11.3	8.2	14.3	12.0	9.0	14.9	10.7	8.2	13.3	11.8	9.0	14.6	10.4	8.0	12.9
Medicare				19.2	17.1	21.3	17.8	16.1	19.6	20.5	18.6	22.4	19.4	17.4	21.4	19.5	17.5	21.5
Commercial				5.0	4.2	5.9	6.0	5.2	6.7	6.4	5.6	7.1	6.0	5.2	6.8	6.0	5.3	6.7
None																		
Other							9.8	7.2	12.4	8.5	6.2	10.7	9.9	7.4	12.4	10.7	8.0	13.5
Race/Ethnicity																		
Black	14.0	10.4	17.6	17.6	13.6	21.7	14.3	11.1	17.5	15.4	12.2	18.7	15.0	11.8	18.1	15.3	12.0	18.7
Hispanic				10.7	8.2	13.3	11.5	9.2	13.9	10.8	8.4	13.1	12.5	9.9	15.1	9.1	6.9	11.2
Other																		
White	7.7	6.9	8.6	8.2	7.3	9.1	8.2	7.5	8.9	9.1	8.4	9.8	8.6	7.8	9.3	9.1	8.4	9.9

Appendix F: Population Heath Measures

Adult Obesity

Year	2013			2014			2015			2016			2017			2018		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Overall																		
Actual	24.9	23.5	26.4	26.3	24.9	27.7	25.3	24.1	26.4	26.0	24.8	27.2	26.9	25.6	28.1	27.4	26.2	28.6
Target										25.2			25.0			24.9		
Age Group																		
18-34*	18.7	15.4	21.9	18.6	15.7	21.5	19.5	16.9	22.1	19.2	16.4	21.9	22.1	19.3	25.0	20.3	17.6	22.9
35-44*	28.7	24.8	32.6	26.6	22.7	30.4	26.0	22.8	29.2	29.7	26.1	33.2	27.2	23.7	30.7	31.0	27.4	34.5
45-54	26.3	23.1	29.5	31.0	27.9	34.2	29.2	26.5	31.9	30.4	27.6	33.2	31.8	29.0	34.6	33.9	30.9	36.9
55-64	28.8	25.7	31.8	32.0	28.8	35.1	29.6	27.3	32.0	30.9	28.5	33.3	30.4	27.9	32.8	31.3	28.8	33.8
65+	26.4	23.8	29.0	27.2	24.7	29.6	25.5	23.6	27.4	25.0	23.2	26.7	26.4	24.4	28.5	26.6	24.5	28.7
Gender																		
Female	24.4	22.4	26.4	26.0	24.0	27.9	23.9	22.4	25.4	25.0	23.4	26.6	24.4	22.8	26.0	26.4	24.7	28.1
Male	25.5	23.4	27.6	26.5	24.5	28.5	26.6	24.9	28.4	26.9	25.2	28.7	29.3	27.4	31.2	28.4	26.6	30.2
Income																		
< $35,000	31.0	27.8	34.2	30.9	28.0	33.8	32.7	30.1	35.3	31.4	28.7	34.1	27.3	24.6	30.1	31.7	28.9	34.4
$35,000-$74,999	25.0	22.2	27.9	29.0	26.1	32.0	26.2	23.8	28.7	30.0	27.2	32.7	24.4	22.6	26.2	30.5	27.8	33.2
≥ $75,000	21.2	19.0	23.3	23.9	21.6	26.2	22.6	20.8	24.5	21.4	19.7	23.2	19.9	17.4	22.3	24.9	23.1	26.7
Insurance Type																		
Medicaid				31.4	26.0	36.8	36.3	31.7	41.0	34.2	29.5	38.9	37.9	33.0	42.8	34.0	29.4	38.5
Medicare				28.7	26.3	31.2	29.1	26.8	31.4	28.0	25.9	30.2	27.3	25.0	29.5	27.8	25.6	30.1
Commercial				24.4	22.4	26.3	21.9	20.4	23.3	24.0	22.4	25.6	24.4	22.8	26.1	26.3	24.6	27.9
None				25.0	19.4	30.5	26.4	21.4	31.4	25.0	19.1	30.9	34.0	28.2	39.7	26.2	21.1	31.3
Other				25.2	19.1	31.2	25.8	21.1	30.6	25.5	21.0	30.1	22.1	18.0	26.2	27.0	22.8	31.2
Race/Ethnicity																		
Black	32.5	27.2	37.9	37.3	31.9	42.8	36.8	31.8	41.7	39.1	34.0	44.3	35.5	30.6	40.4	36.5	31.9	41.1
Hispanic	32.8	27.3	38.4	27.5	23.0	31.9	30.3	26.4	34.2	33.0	28.8	37.1	32.0	27.8	36.1	31.1	27.0	35.1
Other				20.4	15.0	25.8	16.2	12.2	20.2	15.1	11.2	19.0	17.5	12.7	22.3	18.0	13.5	22.5
White	23.3	21.7	24.8	25.1	23.6	26.7	23.7	22.4	25.0	24.1	22.8	25.4	25.6	24.2	26.9	26.1	24.7	27.5

Appendix F: Population Heath Measures

Child Obesity

Year	2014 &2015ǂ			2016ǂǂ			2017			2018		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Overall												
Actual	16.8	14.6	19	19.2	16.5	21.9	23.9	19.7	27.9	18.4	15.0	21.7
Target				16.4			16.3			16.2		
Age Group												
5 to 11				23.4	18.8	28	28.2	22.2	34.2	27.7	21.6	33.7
12 to 17				9.4	6.7	12	*	*	*	10.1	6.9	13.3
Gender												
Female	11.1	8.2	14	12.9	9.4	16.4	16.6	10.6	22.4	18.6	13.5	23.6
Male	15.9	12.9	19	19.1	15.2	23	21.4	16.4	26.3	18.2	13.5	22.8
Income												
< $35,000	25.9	19.1	32.7	30.8	22.1	39.6	34.1	22.1	46.1	24.8	17.0	32.6
$35,000-$74,999	16.3	11.1	21.6	19.7	12.7	26.6	*	*	*	*	*	*
≥ $75,000	9.1	6.9	11.3	10.6	7.9	13.4	16	11.6	20.4	15.2	10.9	19.6
Race/Ethnicity												
Black	*	*	*	*	*	*	*	*	*	*	*	*
Hispanic	26	18.6	33.4	24.3	16.6	32	34.7	23.6	45.8	31.4	21.8	41.0
Other	*	*	*	*	*	*	*	*	*	*	*	*
White	9.3	7.4	11.2	12.2	9.6	14.8	11.1	8	14.3	12.8	9.5	16.1

Appendix F: Population Heath Measures

Adult Smoking

Year	2013			2014			2015			2016			2017			2018		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Overall																		
Actual	15.5	14.3	16.7	15.4	14.2	16.6	13.5	12.5	14.4	13.3	12.4	14.3	12.7	11.7	13.7	12.2	11.2	13.1
Target										14.2			13.7			13.2		
Age Group																		
18-34*	18.5	15.4	21.5	19.3	16.2	22.3	15.8	13.4	18.1	15.3	12.8	17.8	15.1	12.7	17.6	14.1	11.7	16.5
35-44*	17.8	14.6	21.0	18.1	14.6	21.6	14.3	11.8	16.8	14.0	11.4	16.7	16.1	12.9	19.2	14.6	12.0	17.2
45-54	18.4	15.6	21.2	18.8	16.0	21.5	16.0	13.8	18.3	16.2	13.9	18.4	13.5	11.5	15.5	12.9	10.8	14.9
55-64	15.2	12.8	17.5	14.0	11.6	16.5	14.3	12.4	16.1	13.8	12.0	15.6	12.4	10.6	14.2	14.6	12.6	16.6
65+	7.4	5.9	8.9	7.0	5.5	8.4	7.3	6.1	8.6	7.8	6.6	8.9	7.2	5.9	8.5	6.1	5.2	7.1
Gender																		
Female	14.3	12.7	15.9	13.5	11.9	15.0	10.9	9.8	12.0	12.0	10.7	13.2	11.5	10.2	12.8	10.8	9.6	12.0
Male	16.8	14.9	18.6	17.5	15.5	19.4	16.3	14.7	17.8	14.8	13.3	16.4	14.1	12.6	16.5	13.6	12.1	15.1
Income																		
< $35,000	24.4	21.5	27.3	24.1	21.4	26.9	22.5	20.2	24.8	23.3	20.8	25.8	19.9	17.4	22.3	21.2	18.7	23.6
$35,000-$74,999	17.6	15.0	20.1	16.2	13.4	18.9	14.3	12.2	16.4	15.3	13.1	17.5	14.2	12.0	16.4	12.2	10.1	14.2
≥ $75,000	9.3	7.6	10.9	9.4	7.6	11.1	8.1	6.7	9.4	6.7	5.6	7.9	7.6	6.3	9.0	7.4	6.3	8.5
Insurance Type																		
Medicaid				35.1	28.9	41.2	26.9	22.9	30.8	33.0	28.4	37.6	26.9	22.6	31.2	26.2	21.8	30.5
Medicare				11.6	9.8	13.3	12.0	10.1	13.9	10.5	8.9	12.2	10.4	8.8	12.0	11.0	9.4	12.6
Commercial				12.0	10.5	13.6	10.3	9.1	11.4	10.1	9.0	11.3	9.8	8.5	11.0	8.9	7.8	9.9
None				26.9	21.3	32.4	22.7	17.5	27.9	20.1	14.8	25.3	21.0	16.1	26.0	19.7	14.6	24.8
Other							15.2	11.3	19.1	12.5	9.1	15.8	12.7	9.1	16.4	13.3	10.0	16.5
Race/Ethnicity																		
Black	19.9	15.0	24.8	18.5	14.0	22.9	16.9	12.9	20.9	16.8	13.2	20.4	15.0	11.2	18.9	18.2	14.6	21.9
Hispanic	20.5	16.0	25.0	20.6	16.4	24.8	15.4	12.5	18.3	15.2	12.2	18.2	16.3	13.0	19.6	16.5	13.2	19.9
Other																		
White	14.3	13.0	15.6	14.1	12.7	15.5	12.9	11.8	14.0	12.6	11.5	13.7	12.0	10.9	13.1	10.8	9.8	11.8

Appendix F: Population Heath Measures

High School Youth Cigarette Smoking

Year	2013			2015			2017		
Percent	%	CI lower	CI upper	%	CI lower	CI upper	%	CI lower	CI upper
Overall									
Actual	8.9	7.1	10.9	5.6	3.5	7.8	3.5	2.4	4.7
Target							10.4		
Gender									
Female	7.3	5.3	9.2	5.6	2.8	8.4	2.7	1.4	4
Male	10.4	8.2	12.6	5.6	3.3	7.8	4.2	2.5	6
Race/Ethnicity									
Black (non-Hispanic)	*	*	*	*	*	*	*	*	*
Hispanic	11.4	6.9	15.9	5.6	2.7	8.5	*	*	*
Other (non-Hispanic)	*	*	*	*	*	*	*	*	*
White (non-Hispanic)	9.3	7.1	11.6	6	3.2	8.8	4.5	2.9	6.1

Appendix F: Population Heath Measures

Premature Death Due to Cardiovascular Disease

Year	2013			2014			2015			2016			2017		
Per 100,000	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper	YPLL	CI lower	CI upper
Overall															
Actual	830.2	782.4	878.0	750.0	705.2	794.9	733.1	689.6	776.7	733.9	688.8	779	753.5	707.9	799
Target										684.6			649.3		
CT County															
Fairfield	665.9	578.8	753.0	621.3	545.0	697.7	620.2	540.9	699.5	653.1	570.7	735.6	606.1	525.4	686.9
Hartford	859.4	764.8	954.0	855.6	756.7	954.4	767.8	679.4	856.2	781.6	689.0	874.3	817.6	724.2	910.9
Litchfield	850.1	651.2	1,049.0	854.0	639.1	1,068.9	687.5	483.2	891.9	640.9	478.5	803.4	782.1	595.6	968.6
Middlesex	700.4	501.9	898.8	543.9	343.4	744.5	526.0	370.4	681.5	740.7	516.9	964.4	510.9	365.4	656.4
New Haven	852.0	752.8	951.3	818.9	721.9	915.9	866.8	770.0	963.5	810.7	713.1	908.3	820.4	721.4	919.5
New London	992.8	805.1	1,180.6	683.2	549.4	817.0	804.4	632.1	976.6	596.8	457.1	736.5	997.0	792.6	1,201.5
Tolland	757.6	518.2	996.9	758.5	482.5	1,034.6	658.6	448.1	869.1	694.5	486.8	902.3	571.8	384.5	759.1
Windham	1,192.0	876.9	1,507.2	806.5	574.5	1,038.5	717.0	497.7	936.3	937.8	618.3	1,257.3	896.6	612.9	1,180.4
Gender															
Female	506.9	452.5	561.3	433.1	387.9	478.3	395.2	353.2	437.1	433.8	382.9	484.6	526.2	467.2	585.2
Male	1,176.2	1,096.4	1,255.9	1,085.0	1,006.8	1,163.2	1,090.5	1,013.4	1,167.6	1,054.3	978.6	1,130.0	1,000.0	929.4	1,070.5
Race/Ethnicity															
Black	1,467.1	1,262.7	1,671.6	1,209.3	1,028.9	1,389.6	1,269.6	1,087.1	1,452.0	1,463.8	1,263.3	1,664.3	1,252.3	1,069.0	1,435.6
Hispanic	786.4	658.5	914.2	703.8	584.7	822.9	686.5	573.0	800.1	685.5	576.5	794.4	716.9	601.8	832.1
Other	382.0	237.0	527.0	340.3	183.6	497.0	217.2	103.2	331.2	345.0	191.6	498.3	402.0	260.3	543.7
White	750.5	697.0	804.0	703.3	652.1	754.5	690.6	640.1	741.1	663.8	612.0	715.6	697.7	644.6	750.7

Appendix G: Healthcare Delivery Measures

Adults' Access to Preventive/Ambulatory Health Services (AAP) by Insurance Type

		2015			2016			2017		
Description	Insurance Type	Percent	CI Lower	CI Upper	Percent	CI Lower	CI Upper	Percent	CI Lower	CI Upper
Overall										
Total	Medicare	97.8%	97.7%	97.8%	97.9%	97.9%	97.9%	98.1%	98.0%	98.1%
	Commercial	97.9%	97.8%	97.9%	97.6%	97.6%	97.6%	97.4%	97.4%	97.5%
Age Group										
20 to 44	Medicare	93.4%	93.0%	93.8%	93.5%	93.1%	93.9%	94.0%	93.6%	94.4%
	Commercial	96.9%	96.9%	97.0%	96.6%	96.6%	96.7%	96.5%	96.4%	96.5%
45 to 64	Medicare	96.2%	96.1%	96.4%	96.5%	96.4%	96.7%	96.9%	96.8%	97.1%
	Commercial	98.7%	98.7%	98.7%	98.4%	98.4%	98.5%	98.3%	98.2%	98.3%
65+	Medicare	98.1%	98.0%	98.1%	98.2%	98.2%	98.2%	98.3%	98.3%	98.3%
	Commercial	*	*	*	*	*	*	*	*	*
Gender										
Female	Medicare	98.3%	98.3%	98.4%	98.5%	98.4%	98.5%	98.6%	98.6%	98.7%
	Commercial	98.8%	98.8%	98.8%	98.5%	98.5%	98.5%	98.3%	98.2%	98.3%
Male	Medicare	97.0%	96.9%	97.0%	97.1%	97.1%	97.2%	97.3%	97.3%	97.4%
	Commercial	96.8%	96.8%	96.9%	96.6%	96.5%	96.6%	96.4%	96.4%	96.5%

Appendix G: Healthcare Delivery Measures

Care Experience Assessment by Race/Ethnicity

Insurance Type	Medicaid				Commercial			
Year	2017		2018		2017		2018	
Overall provider Rating	N	Percent	N	Percent	N	Percent	N	Percent
All	6,483	71.1%	5,883	72.3%	2,675	77.6%	6,242	78.1%
Hispanic	1,809	71.4%	1,956	70.7%	158	75.7%	354	75.9%
Non-Hispanic Black	1,449	73.9%	1,211	73.6%	109	84.8%	303	81.3%
Non-Hispanic Other	605	61.8%	540	70.1%	188	67.8%	298	75.6%
Non-Hispanic White	2,562	71.3%	2,117	73.4%	2,126	78.1%	5,082	78.1%
Communication								
All	6,483	88.3%	5,883	90.1%	2,679	84.0%	6,268	85.4%
Hispanic	1,809	87.6%	1,956	90.5%	158	82.2%	355	86.9%
Non-Hispanic Black	1,449	90.5%	1,211	91.4%	109	88.8%	305	85.9%
Non-Hispanic Other	605	86.9%	540	89.2%	189	75.8%	299	83.0%
Non-Hispanic White	2,562	88.1%	2,117	89.4%	2,128	84.5%	5,096	85.4%
Courteous Staff								
All	6,483	83.0%	5,883	85.6%	2,673	74.5%	6,240	71.7%
Hispanic	1,809	83.2%	1,956	86.0%	157	73.4%	355	75.1%
Non-Hispanic Black	1,449	84.9%	1,211	88.0%	109	84.8%	305	75.1%
Non-Hispanic Other	605	80.1%	540	84.3%	189	68.7%	296	61.5%
Non-Hispanic White	2,562	82.3%	2,117	84.7%	2,125	74.6%	5,082	71.9%
Timely Care								
All	6,216	79.1%	5,623	79.3%	2,461	69.7%	5,682	66.3%
Hispanic	1,733	77.6%	1,866	78.4%	148	69.1%	325	66.5%
Non-Hispanic Black	1,385	81.5%	1,157	82.1%	95	78.5%	277	73.6%
Non-Hispanic Other	584	74.5%	522	78.2%	168	64.3%	263	56.2%
Non-Hispanic White	2,457	79.8%	2,023	78.9%	1,971	70.0%	4,622	67.1%

Appendix G: Healthcare Delivery Measures

PQI Hospital Admissions (Rate per 100,000)

Year	2012			2013			2014			2015		
PQI	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic
CT Total												
Actual	1,479.3	643.1	836.2	1,475.2	596.6	878.6	1,387.7	537.5	850.3	1,393.6	514.7	878.9
Target												
Age Range												
18-34	241.5	98.1	143.4	228.8	71.9	156.8	194.7	71.7	123.0	202.6	76.1	126.5
25-34	307.2	133.0	174.2	296.6	116.5	180.2	281.4	97.7	183.8	299.6	100.1	199.5
35-44	428.4	169.3	259.1	457.3	148.3	309.0	431.9	143.4	288.5	387.6	121.0	266.6
45-54	778.1	257.4	520.7	792.1	246.6	545.5	767.5	227.1	540.3	739.5	216.2	523.3
55-64	1,266.6	447.7	818.9	1,293.9	433.0	860.9	1,241.8	391.6	850.3	1,231.1	376.9	854.2
65-74	2,524.7	991.1	1,533.6	2,472.2	918.6	1,553.6	2,293.1	790.7	1,502.4	2,274.6	758.1	1,516.5
75+	7,864.8	3,953.9	3,910.9	7,724.0	3,653.7	4,070.3	7,179.9	3,292.7	3,888.0	7,286.7	3,123.3	4,163.4
CT County												
Fairfield	1,309.2	571.0	738.2	1,279.9	516.7	763.2	1,187.3	465.2	123.0	1,179.2	439.4	739.8
Hartford	1,559.9	679.9	880.0	1,554.8	630.5	924.3	1,484.6	563.3	183.8	1,469.4	538.0	931.4
Litchfield	1,257.9	560.2	697.7	1,307.1	579.2	727.9	1,256.0	516.3	288.5	1,345.8	572.6	773.1
Middlesex	1,413.3	613.5	799.8	1,565.3	679.8	885.5	1,385.3	602.7	540.3	1,295.0	542.2	752.8
New Haven	1,738.1	745.8	992.3	1,701.7	661.1	1,040.7	1,641.1	628.0	850.3	1,644.7	585.7	1,059.0
New London	1,507.6	653.4	854.2	1,563.3	640.0	923.4	1,401.4	514.1	1,502.4	1,478.0	524.5	953.5
Tolland	985.3	479.7	505.6	1,039.8	452.9	586.8	904.1	391.3	3,888.0	941.3	389.6	551.7
Windham	1,313.6	533.3	780.3	1,227.8	479.6	748.2	1,174.6	429.1	123.0	1,274.4	417.6	856.8
Gender												
Female	1,601.6	751.2	850.4	1,600.3	698.4	901.9	1,498.2	633.9	864.4	1,504.7	606.8	897.9
Male	1,347.1	526.3	820.8	1,340.4	486.9	853.5	1,268.6	433.7	835.1	1,274.1	415.6	858.4
Insurance Type												
Medicaid	2,484.4	815.8	1,668.6	2,660.1	791.0	1,869.1	2,148.1	628.7	1,519.4	2,031.4	570.5	1,460.9
Medicare	6,717.9	3,050.5	3,667.4	6,235.2	2,655.8	3,579.3	5,633.0	2,306.3	3,327.2	5,653.1	2,180.9	3,472.2
None	201.9	73.0	128.9	180.3	57.6	122.7	261.4	85.3	176.1	208.0	61.0	147.0
Other	145.1	54.0	91.1	151.2	58.5	92.7	144.9	50.1	94.8	159.0	47.8	111.2
Private	279.1	126.8	152.3	265.3	113.2	152.1	233.9	92.0	141.8	277.3	111.6	165.7
Race / Ethnicity												
Black	1,975.0	616.2	1,358.8	2,066.0	604.4	1,461.6	1,980.3	540.8	1,439.5	1,934.6	495.4	1,439.2
Hispanic	1,057.3	344.5	712.8	1,075.9	324.3	751.6	1,092.6	325.2	767.4	1,034.9	288.8	746.1
Other	1,256.6	556.1	475.3	1,308.1	542.2	490.6	1,401.4	567.1	486.4	1,487.8	566.1	500.2
White	1,522.5	712.1	810.4	1,505.0	658.0	846.9	1,397.0	588.7	808.4	1,424.7	573.6	851.1

Appendix G: Healthcare Delivery Measures

…continued: PQI – Hospital | Admissions (Rate per 100,000)

Year	2016			2017			2018		
PQI	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic
CT Total									
Actual	1,351.1	495.7	855.5	1,352.8	414.3	938.5	1,335.0	415.3	919.8
Target	1,334.1	457.2	878.4	1,286.7	409.0	877.7	1,240.1	361.7	878.4
Age Range									
18-34	175.3	58.8	116.5	163.5	53.7	109.8	172.4	50.9	121.5
25-34	288.9	100.0	188.9	266.5	81.3	185.3	256.9	72.3	184.6
35-44	392.9	125.1	267.8	387.5	105.3	282.2	395.2	102.8	292.4
45-54	721.7	199.2	522.6	667.6	164.5	503.0	714.6	152.9	561.7
55-64	1,252.8	375.6	877.2	1,225.2	275.6	949.6	1,266.5	307.3	959.2
65-74	2,219.4	736.2	1,483.5	2,201.8	575.3	1,626.5	2,077.3	601.9	1,475.7
75+	6,799.4	2,947.1	3,852.3	6,771.2	2,487.3	4,284.0	6,344.7	2,366.8	3,977.9
CT County									
Fairfield	1,182.0	446.0	736.1	1,174.1	369.2	804.8	1,198.8	404.2	794.7
Hartford	1,441.6	523.1	918.5	1,445.0	437.3	1,007.8	1,404.0	404.6	999.4
Litchfield	1,265.0	564.7	700.3	1,306.3	550.8	755.5	1,154.0	480.4	673.5
Middlesex	1,282.0	512.1	770.0	1,384.1	502.0	882.1	1,328.7	484.5	844.2
New Haven	1,541.2	522.2	1,019.0	1,517.0	420.9	1,096.1	1,521.1	423.7	1,097.3
New London	1,413.3	527.1	886.1	1,331.1	398.2	932.9	1,279.8	453.3	826.5
Tolland	959.5	409.9	549.6	1,038.0	344.1	693.9	1,015.6	319.3	696.3
Windham	1,205.5	387.4	818.1	1,350.9	330.5	1,020.4	1,364.6	356.7	1,007.9
Gender									
Female	1,455.0	585.6	869.4	1,439.3	491.2	948.1	1,383.3	484.5	898.8
Male	1,239.4	398.9	840.5	1,259.9	331.6	928.3	1,283.2	341.0	942.3
Insurance Type									
Medicaid	1,978.7	549.0	1,429.7	1,908.1	452.7	1,455.4	2,046.7	448.1	1,598.6
Medicare	5,212.1	2,028.5	3,183.8	5,297.4	1,694.2	3,603.2	4,931.3	1,638.6	3,292.7
None	355.7	101.5	254.3	348.7	100.7	247.9	363.3	84.7	278.6
Other	153.5	41.0	112.5	143.8	31.5	112.3	147.8	39.5	108.9
Private	264.1	99.3	164.9	260.3	84.5	175.8	255.5	84.8	170.7
Race/Ethnicity									
Black	1,971.3	501.5	1,469.8	1,973.6	396.7	1,576.9	2,034.3	397.8	1,636.5
Hispanic	1,045.9	290.2	755.7	1,037.3	250.1	787.2	1,133.6	258.4	875.2
Other	1,453.6	552.8	476.3	1,584.9	523.0	517.1	707.3	131.2	320.1
White	1,361.6	548.2	813.4	1,367.3	460.9	906.4	1,319.0	465.3	853.7

Appendix G: Healthcare Delivery Measures

PQI – Hospital Readmissions (Percent)

Year	2012			2013			2014			2015			2016			2017		
PQI	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic	Overall	Acute	Chronic
CT Total																		
Actual Percent	16.4	13.9	18.3	13.2	9.1	15.1	16.5	13.8	18.3	16.7	13.5	18.6	15.6	13.2	16.9	16.0	12.5	17.6
Target													16.6	13.3	18.4	16.5	13.1	18.4
Age Range																		
18-34	12.5	7.1	16.2	16.1	10.9	19.4	11.8	6.1	15.1	14.9	8.3	18.9	12.8	7.8	15.3	12.5	5.4	16.1
25-34	16.8	11.8	20.6	16.6	11.9	18.9	17.2	13.9	19.0	14.8	10.9	16.8	13.8	7.5	17.1	13.3	5.8	16.5
35-44	14.1	9.9	16.8	15.7	12.7	17.1	16.3	9.2	19.9	15.5	8.6	18.6	15.5	10.8	17.7	14.6	9.4	16.5
45-54	15.5	11.8	17.4	16.4	14.4	17.4	17.1	13.6	18.6	17.2	12.1	19.3	15.2	11.4	16.6	14.8	12.2	15.6
55-64	17.7	14.9	19.3	16.2	13.6	17.8	17.6	15.0	18.8	17.5	13.7	19.2	15.9	13.0	17.2	18.3	12.6	20.0
65-74	17.8	15.5	19.3	16.1	13.7	18.1	17.8	14.9	19.3	18.2	15.2	19.7	16.6	14.0	17.9	17.2	13.6	18.5
75+	16.1	14.2	18.0	15.6	13.0	17.4	15.7	13.8	17.3	16.2	13.8	17.9	15.3	13.9	16.4	15.4	13.0	16.8
CT County																		
Fairfield	17.3	14.6	19.3	16.3	13.6	18.1	16.8	13.3	19.1	17.0	13.7	19.0	16.1	12.8	18.0	16.1	12.6	17.8
Hartford	15.6	12.8	17.7	13.5	11.3	15.2	16.5	13.8	18.1	15.8	13.1	17.4	14.8	13.2	15.7	16.1	12.7	17.6
Litchfield	14.8	11.8	17.1	15.6	11.9	18.6	14.2	13.1	14.9	16.4	13.7	18.5	14.6	14.1	15.1	14.1	12.2	15.5
Middlesex	16.0	14.8	17.0	17.7	14.9	19.4	15.5	13.4	17.1	15.3	12.5	17.3	13.9	11.6	15.4	15.0	12.1	16.7
New Haven	17.7	14.9	19.9	15.3	14.0	16.2	18.4	15.4	20.2	18.4	14.2	20.6	17.2	14.4	18.6	17.4	13.2	19.0
New London	15.2	13.1	16.9	12.8	11.5	13.8	14.3	12.0	15.6	16.1	14.1	17.1	14.5	12.7	15.6	14.4	11.5	15.7
Tolland	13.1	14.1	12.1	12.7	9.9	14.5	11.9	12.6	11.4	14.3	11.7	16.2	14.3	11.7	16.2	13.6	10.5	15.1
Windham	13.9	11.8	15.3	16.1	13.5	17.8	13.6	10.6	15.3	14.2	10.1	16.2	11.5	8.9	12.7	14.1	10.7	15.2
Gender																		
Female	15.9	13.8	17.8	15.5	13.0	17.4	15.9	13.3	17.8	16.1	13.3	18.1	14.6	12.6	15.9	15.0	11.6	16.7
Male	17.1	14.1	19.0	16.9	14.3	18.3	17.3	14.6	18.8	17.5	13.9	19.3	16.8	14.1	18.1	17.3	13.9	18.5
Insurance Type																		
Medicaid	17.0	13.1	18.9	16.9	13.8	18.3	17.9	13.6	19.7	17.7	12.3	19.8	16.8	11.6	18.8	16.5	11.1	18.2
Medicare	17.3	14.7	19.5	16.9	14.3	18.8	17.2	14.7	19.0	17.6	14.4	19.6	16.4	14.1	17.9	17.1	13.5	18.7
None	9.2	7.8	9.9	8.8	2.9	11.5	9.5	8.0	10.3	12.2	13.0	11.9	7.9	9.6	7.2	6.3	5.1	6.8
Other	11.7	18.2	7.8	12.3	10.9	13.1	9.6	8.4	10.2	14.3	8.8	16.7	11.7	4.2	14.4	10.4	7.3	11.2
Commercial	12.6	10.9	14.0	12.5	10.5	13.9	13.1	10.4	14.8	11.3	10.3	12.0	10.5	10.1	10.7	11.0	9.3	11.8
Race/Ethnicity																		
Black	19.2	15.6	20.8	19.0	16.2	20.2	20.4	17.0	21.6	19.5	14.4	21.2	17.6	15.3	18.4	18.6	12.3	20.2
Hispanic	17.4	12.7	19.7	16.8	12.4	18.7	18.2	12.6	20.6	17.7	13.4	19.3	16.8	12.2	18.5	17.1	11.3	18.9
Other	12.9	14.0	12.1	14.2	12.7	15.3	13.5	10.4	15.5	14.1	10.1	16.6	13.6	8.2	16.9	12.1	6.0	15.1
White	15.9	13.8	17.8	15.5	13.3	17.3	15.7	13.7	17.1	16.2	13.5	18.0	15.0	13.2	16.3	15.5	12.9	16.8

Appendix G: Healthcare Delivery Measures

Optimal Diabetes Care: HbA1c Testing by Commercial Insurance

	Overall		
Year	Percent	CI Lower	CI Upper
2015	80.4%	79.9%	80.9%
2016	85.9%	85.5%	86.3%
2017	85.9%	85.5%	86.3%

Mammograms

		Overall		
Insurance Type	Year	Percent	CI Lower	CI Upper
Medicare	2015	61.4%	61.2%	61.7%
	2016	62.3%	62.1%	62.5%
	2017	64.8%	64.6%	65.1%
Commercial Payer	2015	62.6%	62.4%	62.9%
	2016	62.1%	61.9%	62.4%
	2017	64.0%	63.7%	64.3%

Appendix G: Healthcare Delivery Measures

Follow-Up After Emergency Department Visit for Mental Illness, Overall by Year (FUM-AD)

	Year	2015			2016			2017		
	Percent	Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper
7-Day Commercial Payer										
Overall	Total	50.1%	47.8%	52.5%	52.4%	49.8%	55.0%	57.3%	54.9%	59.6%
Age Group	13 to 17	62.2%	57.9%	66.4%	63.3%	58.8%	67.8%	68.7%	64.5%	72.8%
	18 to 64	45.0%	42.2%	47.9%	47.7%	44.6%	50.7%	52.6%	49.8%	55.5%
	65+									
Gender	Female	54.5%	51.2%	57.8%	55.0%	51.6%	58.4%	62.2%	59.0%	65.3%
	Male	45.4%	41.9%	48.8%	49.1%	45.3%	53.0%	51.4%	47.8%	55.0%
7-Day Medicare										
Overall	Total	40.6%	39.4%	41.8%	47.0%	45.6%	48.3%	52.6%	51.3%	54.0%
Age Group	13 to 17									
	18 to 64	46.3%	44.7%	47.9%	51.3%	49.7%	53.0%	57.2%	55.6%	58.9%
	65+	32.2%	30.4%	34.1%	38.1%	35.7%	40.4%	43.0%	40.7%	45.4%
Gender	Female	43.7%	42.0%	45.4%	49.7%	47.9%	51.6%	55.1%	53.2%	57.0%
	Male	37.1%	35.3%	38.8%	43.8%	41.8%	45.8%	49.9%	47.9%	51.9%
30-Day Commercial Payer										
Overall	Total	65.2%	62.9%	67.4%	67.2%	64.8%	69.6%	70.8%	68.6%	73.0%
Age Group	13 to 17	74.5%	70.7%	78.3%	75.9%	71.9%	79.9%	81.1%	77.6%	84.6%
	18 to 64	61.2%	58.4%	64.0%	63.4%	60.4%	66.4%	66.6%	63.9%	69.3%
	65+									
Gender	Female	69.3%	66.3%	72.4%	69.1%	65.9%	72.3%	74.9%	72.1%	77.7%
	Male	60.6%	57.2%	64.0%	64.7%	61.0%	68.4%	65.8%	62.4%	69.2%
30-Day Medicare										
Overall	Total	51.3%	50.1%	52.6%	59.1%	57.8%	60.5%	64.2%	62.9%	65.5%
Age Group	13 to 17									
	18 to 64	59.7%	58.1%	61.3%	65.6%	64.0%	67.2%	70.1%	68.6%	71.7%
	65+	39.1%	37.2%	41.0%	45.9%	43.5%	48.3%	51.6%	49.2%	54.0%
Gender	Female	54.7%	53.0%	56.4%	62.6%	60.7%	64.4%	66.4%	64.7%	68.2%
	Male	47.5%	45.7%	49.3%	55.2%	53.2%	57.2%	61.7%	59.7%	63.6%

Appendix G: Healthcare Delivery Measures

Follow-Up After Emergency Department Visit for Alcohol and Other Drug Abuse or Dependence, Overall by Year (FUA- NQF#2605)

		2015			2016			2017		
		Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper
7-Day Commercial Payer										
Overall	Total	10.2%	8.3%	12.1%	10.7%	8.4%	13.0%	13.0%	10.6%	15.5%
Age Group	13 to 17	8.0%	0.5%	15.5%	8.0%	-2.6%	18.6%	0.0%	0.0%	0.0%
	18 to 64	10.3%	8.4%	12.3%	10.8%	8.4%	13.1%	13.7%	11.1%	16.3%
	65+									
Gender	Female	8.3%	5.6%	11.0%	6.6%	3.8%	9.5%	12.7%	8.9%	16.4%
	Male	11.6%	8.9%	14.2%	13.5%	10.2%	16.7%	13.3%	10.1%	16.5%
7-Day Medicare										
Overall	Total	13.7%	12.4%	14.9%	14.2%	12.9%	15.5%	16.2%	14.9%	17.6%
Age Group	13 to 17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	18 to 64	14.1%	12.6%	15.7%	15.7%	14.0%	17.4%	18.0%	16.2%	19.8%
	65+	12.6%	10.5%	14.8%	11.2%	9.1%	13.3%	13.0%	10.9%	15.1%
Gender	Female	14.4%	12.2%	16.6%	17.6%	15.1%	20.1%	18.5%	16.1%	21.0%
	Male	13.3%	11.7%	14.8%	12.4%	10.9%	14.0%	15.0%	13.3%	16.7%
30-Day Commercial Payer										
Overall	Total	14.2%	12.0%	16.4%	14.1%	11.5%	16.7%	17.1%	14.3%	19.8%
Age Group	13 to 17	8.0%	0.5%	15.5%	8.0%	-2.6%	18.6%	0.0%	0.0%	0.0%
	18 to 64	14.5%	12.2%	16.8%	14.3%	11.7%	17.0%	17.9%	15.1%	20.8%
	65+									
Gender	Female	11.5%	8.4%	14.5%	9.8%	6.3%	13.2%	16.7%	12.4%	20.9%
	Male	16.1%	13.1%	19.1%	17.1%	13.5%	20.7%	17.3%	13.7%	21.0%
30-Day Medicare										
Overall	Total	17.5%	16.1%	18.9%	19.2%	17.7%	20.7%	21.8%	20.2%	23.3%
Age Group	13 to 17	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	18 to 64	18.7%	17.0%	20.5%	21.7%	19.8%	23.6%	25.0%	23.0%	27.0%
	65+	14.8%	12.5%	17.2%	14.3%	12.0%	16.6%	15.9%	13.5%	18.2%
Gender	Female	19.0%	16.6%	21.5%	23.4%	20.7%	26.2%	24.5%	21.8%	27.3%
	Male	16.7%	15.0%	18.4%	17.0%	15.3%	18.8%	20.3%	18.5%	22.2%

Appendix G: Healthcare Delivery Measures

Follow-Up After Hospitalization for Mental Illness, Overall by Year (FUH NQF#0576)

		2015			2016			2017		
		Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper	Percent	C.I. Lower	C.I. Upper
7-Day Commercial Payer										
Overall	Total	50.1%	47.8%	52.5%	52.4%	49.8%	55.0%	57.3%	54.9%	59.6%
Age Group	13 to 17	62.2%	57.9%	66.4%	63.3%	58.8%	67.8%	68.7%	64.5%	72.8%
	18 to 64	45.0%	42.2%	47.9%	47.7%	44.6%	50.7%	52.6%	49.8%	55.5%
	65+									
Gender	Female	54.5%	51.2%	57.8%	55.0%	51.6%	58.4%	62.2%	59.0%	65.3%
	Male	45.4%	41.9%	48.8%	49.1%	45.3%	53.0%	51.4%	47.8%	55.0%
7-Day Medicare										
Overall	Total	40.6%	39.4%	41.8%	47.0%	45.6%	48.3%	52.6%	51.3%	54.0%
Age Group	13 to 17									
	18 to 64	46.3%	44.7%	47.9%	51.3%	49.7%	53.0%	57.2%	55.6%	58.9%
	65+	32.2%	30.4%	34.1%	38.1%	35.7%	40.4%	43.0%	40.7%	45.4%
Gender	Female	43.7%	42.0%	45.4%	49.7%	47.9%	51.6%	55.1%	53.2%	57.0%
	Male	37.1%	35.3%	38.8%	43.8%	41.8%	45.8%	49.9%	47.9%	51.9%
30-Day Commercial Payer										
Overall	Total	65.2%	62.9%	67.4%	67.2%	64.8%	69.6%	70.8%	68.6%	73.0%
Age Group	13 to 17	74.5%	70.7%	78.3%	75.9%	71.9%	79.9%	81.1%	77.6%	84.6%
	18 to 64	61.2%	58.4%	64.0%	63.4%	60.4%	66.4%	66.6%	63.9%	69.3%
	65+									
Gender	Female	69.3%	66.3%	72.4%	69.1%	65.9%	72.3%	74.9%	72.1%	77.7%
	Male	60.6%	57.2%	64.0%	64.7%	61.0%	68.4%	65.8%	62.4%	69.2%
30-Day Medicare										
Overall	Total	51.3%	50.1%	52.6%	59.1%	57.8%	60.5%	64.2%	62.9%	65.5%
Age Group	13 to 17									
	18 to 64	59.7%	58.1%	61.3%	65.6%	64.0%	67.2%	70.1%	68.6%	71.7%
	65+	39.1%	37.2%	41.0%	45.9%	43.5%	48.3%	51.6%	49.2%	54.0%
Gender	Female	54.7%	53.0%	56.4%	62.6%	60.7%	64.4%	66.4%	64.7%	68.2%
	Male	47.5%	45.7%	49.3%	55.2%	53.2%	57.2%	61.7%	59.7%	63.6%

Appendix G: Healthcare Delivery Measures

Antidepressant Medication Management (AMM)

		2015			2016			2017		
		Percent	CI Lower	CI Upper	Percent	CI Lower	CI Upper	Percent	CI Lower	CI Upper
12-Week Acute Phase Treatment										
Overall	Total	68.4%	67.4%	69.4%	71.4%	70.4%	72.4%	72.8%	71.9%	73.8%
Age Group	18 to 34	63.7%	61.8%	65.5%	66.3%	64.4%	68.1%	68.9%	67.2%	70.7%
	35 to 44	67.8%	65.4%	70.3%	70.8%	68.3%	73.4%	72.3%	70.0%	74.6%
	45 to 54	68.8%	66.8%	70.9%	73.0%	71.0%	74.9%	74.6%	72.7%	76.4%
	55 to 64	74.1%	72.2%	76.0%	76.2%	74.4%	78.0%	76.6%	74.8%	78.3%
Gender	Female	69.4%	68.2%	70.7%	72.1%	70.9%	73.3%	72.9%	71.7%	74.0%
	Male	66.5%	64.7%	68.2%	69.9%	68.1%	71.6%	72.8%	71.2%	74.5%
6-Month Continuation Phase Treatment										
Overall	Total	48.9%	47.8%	50.0%	53.8%	52.7%	54.9%	53.2%	52.1%	54.2%
Age Group	18 to 34	42.2%	40.3%	44.1%	45.8%	43.9%	47.8%	46.2%	44.3%	48.0%
	35 to 44	47.8%	45.2%	50.5%	54.7%	51.9%	57.5%	51.6%	49.0%	54.2%
	45 to 54	51.0%	48.7%	53.2%	56.8%	54.6%	59.0%	57.3%	55.2%	59.5%
	55 to 64	55.9%	53.7%	58.0%	60.1%	58.1%	62.2%	59.3%	57.3%	61.4%
Gender	Female	50.0%	48.6%	51.3%	55.0%	53.6%	56.3%	53.8%	52.5%	55.1%
	Male	46.8%	44.9%	48.7%	51.5%	49.6%	53.5%	51.9%	50.1%	53.8%

Appendix G: Healthcare Delivery Measures

Initiation/Engagement of Alcohol and Other Drug Abuse or Dependence Treatment (IET-AD)

IET-Initiation, Private Payer		2015			2016			2017		
		Percent	Lower CI	Upper CI	Percent	Lower CI	Upper CI	Percent	Lower CI	Upper CI
Overall	Total	15.7%	14.7%	16.7%	16.4%	15.2%	17.5%	15.8%	14.6%	17.0%
Gender	Female	12.3%	10.8%	13.8%	13.3%	11.6%	15.0%	13.7%	11.9%	15.5%
	Male	17.9%	16.5%	19.2%	18.1%	16.7%	19.6%	17.1%	15.5%	18.6%
Age	13 to 17	16.0%	8.6%	23.4%	19.7%	10.8%	28.7%	12.1%	4.2%	20.0%
	18 to 34	20.8%	18.8%	22.8%	20.3%	18.1%	22.4%	19.2%	16.9%	21.5%
	35 to 44	16.6%	13.6%	19.5%	20.7%	17.4%	24.1%	19.3%	15.7%	23.0%
	45 to 54	15.8%	13.8%	17.8%	13.8%	11.6%	15.9%	15.6%	13.1%	18.1%
	55 to 64	9.3%	7.8%	10.9%	12.2%	10.4%	14.0%	11.5%	9.7%	13.3%
IET-Engagement, Private Payer		2015			2016			2017		
		Percent	Lower CI	Upper CI	Percent	Lower CI	Upper CI	Percent	Lower CI	Upper CI
Overall	Total	40.8%	39.4%	42.2%	41.0%	39.5%	42.5%	39.3%	37.7%	40.9%
Gender	Female	36.1%	34.0%	38.3%	36.6%	34.2%	39.0%	36.2%	33.6%	38.7%
	Male	43.7%	41.9%	45.4%	43.6%	41.7%	45.5%	41.2%	39.1%	43.2%
Age	13 to 17	29.8%	20.5%	39.0%	31.6%	21.1%	42.0%	27.3%	16.5%	38.0%
	18 to 34	40.9%	38.5%	43.3%	39.0%	36.4%	41.6%	35.3%	32.5%	38.1%
	35 to 44	39.7%	35.9%	43.6%	43.6%	39.5%	47.7%	41.1%	36.6%	45.6%
	45 to 54	44.2%	41.4%	46.9%	43.1%	40.0%	46.2%	41.8%	38.4%	45.1%
	55 to 64	38.7%	36.2%	41.3%	41.0%	38.3%	43.7%	41.2%	38.3%	44.0%

Appendix H: Primary Care Provider Taxonomies

Taxonomy	Provider Specialty Includes:
207Q00000X	Family Medicine
207QA0000X	Family Medicine, Adolescent Medicine
207QA0505X	Family Medicine, Adult Medicine
207QG0300X	Family Medicine, Geriatric Medicine
208D00000X	General Practice
207R00000X	Internal Medicine
207RA0000X	Internal Medicine, Adolescent Medicine
207RG0300X	Internal Medicine, Geriatric Medicine
208000000X	Pediatrics
2080A0000X	Pediatrics, Adolescent Medicine
207V00000X	Obstetrics and Gynecology
207VG0400X	Obstetrics and Gynecology, Gynecology
207VX0000X	Obstetrics and Gynecology, Obstetrics
363L00000X	Nurse Practitioner
363LA2200X	Nurse Practitioner, Adult Health
363LC1500X	Nurse Practitioner, Community Health
363LF0000X	Nurse Practitioner, Family
363LG0600X	Nurse Practitioner, Gerontology
363LX0001X	Nurse Practitioner, Obstetrics & Gynecology
363LP0200X	Nurse Practitioner, Pediatrics
363LP2300X	Nurse Practitioner, Primary Care
363LP0808X	Nurse Practitioner, Women's Health
363A00000X	Physician Assistant,
363AM0700X	Physician Assistant, Medical
364S00000X	Certified Clinical Nurse Specialist (CCNS)
364SA2200X	CCNS, Adult health
364SC1501X	CCNS, Community health
364SF0000X	CCNS, Family health
364SG0600X	CCNS, Gerontology
364SP0200X	CCNS, Pediatrics
364SW0102X	CCNS, Women’s health

Appendix I: Affordability and Cost Metrics

Cost Metrics for Stratified Commercial Payers

Fiscal Year	Care Component	PMPM Baseline	PMPM for Ages 0-17	% Difference from Baseline Ages 0-17	PMPM for Ages 18-64	% Difference from Baseline Ages 18-64
2013	Inpatient	$72	$40	-34.5	$80	7.3
	Total medical	$332	$177	-36.8	$373	7.6
	Pharmacy	$72	$29	-49.2	$84	10.0
	Outpatient	$54	$49	-6.0	$55	1.5
	Primary Care	$26	$36	23.5	$23	-7.4
2014	Inpatient	$74	$43	-32.7	$82	6.8
	Total medical	$347	$186	-36.7	$389	7.3
	Pharmacy	$83	$33	-50.1	$96	9.7
	Outpatient	$57	$51	-8.1	$59	1.9
	Primary Care	$27	$36	19.5	$25	-6.0
2015	Inpatient	$74	$45	-29.7	$81	6.1
	Total medical	$338	$188	-34.6	$376	6.9
	Pharmacy	$98	$39	-50.6	$114	9.7
	Outpatient	$56	$51	-6.2	$58	1.5
	Primary Care	$27	$36	21.3	$25	-6.1
2016	Inpatient	$86	$58	-24.5	$93	5.1
	Total medical	$381	$221	-32.7	$421	6.4
	Pharmacy	$120	$47	-51.2	$139	9.7
	Outpatient	$62	$58	-4.8	$63	1.2
	Primary Care	$30	$40	20.6	$27	-5.9
2017	Inpatient	$90	$57	-28.6	$99	5.7
	Total medical	$394	$227	-32.9	$434	6.3
	Pharmacy	$125	$48	-51.4	$144	9.5
	Outpatient	$64	$59	-4.9	$65	1.3
	Primary Care	$31	$42	21.3	$29	-5.9

Appendix I: Affordability and Cost Metrics

Cost Metrics for Medicare

	PMPM Total				
Fiscal Year	2013	2014	2015	2016	2017
Care Component					
Inpatient	$611	$604	$611	$601	$595
Total Medical	$1,078	$1,082	$1,113	$1,124	$1,124
Total Pharmacy	$393	$445	$497	*	*
Outpatient	$134	$137	$145	$153	$156
Primary Care	$28	$27	$31	$36	$41

***Pharmacy data were unavailable for 2016 and 2017**

Percentage of Cost by Care Components- Commercial

Fiscal Year	2013	2014	2015	2016	2017
Inpatient Only	99.02	98.71	98.80	98.65	98.17
Inpatient and Outpatient Only	0.94	1.27	1.17	1.33	1.81
Inpatient and Primary Care Only	0.00	0.00	0.01	0.00	0.01
Inpatient Outpatient and Primary Care	0.04	0.02	0.02	0.02	0.02
Inpatient Total	100.00	100.00	100.00	100.00	100.00
Outpatient Only	52.19	52.15	51.98	51.30	49.93
Inpatient and Outpatient Only	1.25	1.64	1.53	1.85	2.57
Outpatient and Primary Care Only	46.51	46.18	46.46	46.83	47.48
Inpatient Outpatient and Primary Care	0.05	0.03	0.03	0.02	0.02
Outpatient Total	100.00	100.00	100.00	100.00	100.00
Primary Care Only	3.22	2.67	2.62	2.77	2.89
Inpatient and Primary Care Only	0.01	0.00	0.03	0.01	0.02
Outpatient and Primary Care Only	96.68	97.28	97.30	97.18	97.04
Inpatient Outpatient and Primary Care	0.10	0.05	0.05	0.05	0.05
Primary Care Total	100.00	100.00	100.00	100.00	100.00

Appendix I: Affordability and Cost Metrics

Percentage of Cost by Care Components- Medicare

Fiscal Year	2013	2014	2015	2016	2017
Inpatient Only	98.57	98.32	98.17	98.04	97.96
Inpatient and Outpatient Only	1.33	1.56	1.65	1.69	1.65
Inpatient and Primary Care Only	0.00	0.01	0.01	0.01	0.02
Inpatient Outpatient and Primary Care	0.10	0.11	0.17	0.26	0.36
Inpatient Total	100.00	100.00	100.00	100.00	100.00
Outpatient Only	73.29	74.09	72.39	70.92	68.10
Inpatient and Outpatient Only	6.03	6.88	6.92	6.60	6.29
Outpatient and Primary Care Only	20.20	18.55	19.98	21.45	24.23
Inpatient Outpatient and Primary Care	0.47	0.48	0.71	1.03	38.00
Outpatient Total	100.00	100.00	100.00	100.00	100.00
Primary Care Only	2.04	2.24	2.62	2.83	3.00
Inpatient and Primary Care Only	0.09	0.15	0.18	0.22	0.31
Outpatient and Primary Care Only	95.63	95.16	93.85	92.51	91.47
Inpatient Outpatient and Primary Care	2.24	2.44	3.36	4.44	5.22
Primary Care Total	100.00	100.00	100.00	100.00	100.00

Appendix J: Open Ended Responses to Quantitative Work Stream Survey

Question 4. Based on your experience with CT SIM, if another state were to initiate SIM or a similar health care reform program, what advice would you give them? (Responses Reported as Written)

1. Have representation from a broad range of stakeholders. Need good steering leadership from the state as we had with OHS.
2. To develop partnerships with community clinics and technical schools.
3. The overall process had a long timeline.
4. Figure out a way to use the expertise in the room and have rich discussions -- far too often information was merely presented. Also, figure out a way for the committee to get to know each other better.
5. The SIM leadership, staff and the supporting consultants ran into what is a major roadblock in our state. We must get providers to see beyond fear of not "making as much money" and know that there is do work better, not do more work, and most importantly improve the quality of care delivered.
6. Try to encourage in person meetings!
7. They should speak with members of the HISC - in addition to the SIM office and state actors.
8. Planning, preparation, and transparency in all operations
9. To be more flexible, more responsive to people in community (patients, consumers, activists), etc. Less dominated by one person who imposed ideas on group.
10. Make use of the hard work and work product of SIM. Coordinate with legislature and keep legislature involved all the way.
11. Pick clear objectives, set clear and relevant measures of success and only change course when absolutely necessary. Note: My responses are a split between my two major SIM projects- one went considerably better than the other.
12. Smaller groups- shorter meetings
13. Not be so predetermined on process outcomes. Be more inclusive to smaller entities trying to expand their Medicaid services, promote creativity designed to expand access to primary and specialty care outside of major health networks
14. Important to get lessons learned from other states that have initiated a similar program every early on.
15. Tie into federal Interoperability and API work
16. You need clarity of goals and measurable objectives and adequate staffing. Much more attention to securing the expert outside consulting for specific work. Engage a real-time evaluator to not only monitor but give feedback for improvement. Don't spend so much time planning at the detriment of executing. Build logic model that clearly demonstrates cause and effect not hopes and dreams, and report on progress along the way. Truly get commitments from commercial payers if you really hope to do a multi-payer reform, and leadership both Executive and Legislative need to be clearly behind it. All materials need to get to participants ahead of time not the day or two before, and a crisp agenda that spells out the questions we need to address and/or what we need to know. Relevant state agencies need to be onboard and collaborate versus be passive aggressive or sabotage the effort. If acting out occurs, Governor must intervene.
17. I think that the more ways to maintain engagement/excitement, the better. Maybe use online collaboration platforms, like Slack or Basecamp, to organize material.
18. Definitely participate, be aware though that there are unseen factors that are beyond a workgroups control, e.g. political
19. 1. The State commits / guarantees the resources needed. 2. Consumers involved should be guaranteed a voice. 3. An independent verification process be put in place to insure consultant deliverables be met 4. That interim reports outlining if expectations are being met be made available to the work groups and the public to

include costs. 5. Although this survey is appreciated it falls short given the fact that you are surveying a multi-year $45,000,000 project. 6. If a straw poll were done of people involved with the SIM I would guess a very high # would be unsatisfied with the process and outcomes. Why were key participants not interviewed? Why was there not plan to closing SIM down with respect to people who participated? One of the outcomes of SIM that is not being discussed/reported is the SIM process left the advocacy community in a worse place than Sustinet did if that is even possible.

20. Communication is the key for success and work stream integration. Identify evidence-based best practices for communication and working together.
21. Make sure that your core team is frequently meeting to discuss vision, goals, and process.
22. Learn from the state of Washington
23. Outline a charter in detail and stay within its scope. As well as be careful about member agendas and pay close attention to conflicts of interest
24. Be crystal clear of your goals, objectives and authorities to move forward to achieve objectives. Where appropriate, there should be cross over and communication between relevant workgroups.
25. Be sure all parties are serious their commitments. DSS, for examples, was a major problem throughout the process even though they signed on at the beginning.
26. Consider a more detailed action plan for implementation at program outset, in order to avoid as best possible timeline crunch.
27. Make sure your volunteers/appointees are committed from the get go
28. Being an ObGyn at the table, most of the areas being discussed and included were unrelated to my area of expertise. Except for the few discussions we had on women's health issues, I feel I did not contribute much to this effort. Advice to other states would be to engage women's health providers to the extent possible.
29. Engage every voice, listen and faithfully reflect all input, not just the voices that agree with leaders and their pre-determined goals, Don't have a pre-determined outcome/ model to implement and definitely don't use that as a qualifier for participating in SIM activities
30. Ensure that stakeholder's experience and ideas are truly valued and incorporated into the plan and the initiatives, without any foregone conclusions. In addition, I would recommend that the initial activities focus on the low-hanging fruit, and as successes are achieved and stabilized, progress to more difficult or newer concepts.
31. Include more sectors of the community e.g. business owners, healthcare advocates, community organizers etc.
32. More internal support; less reliance on consultants to schedule and conduct the meetings; heighten expectations for work group members; level set challenges at the outset and address them systematically.
33. The focus from the beginning must be on ‘prevention’, primary and tertiary. Nothing is more important for effectiveness and ‘sustainability’.
34. Go into this with flexibility recognizing the unpredictability of state government decision-making
35. Make sure that the consultants you hire know what they are supposed to do. We had a lot of mixed messages.
36. I was very impressed by Mark Schaefer and team’s leadership. They were organized, clear and goal directed. Highly knowledgeable. My advice would be to hire someone like him to lead this initiative.
37. I would keep the same structure as the CHW committee. We were well managed by several people, our communication was very clear, we accomplished a lot, and we had very good external support.
38. I cannot get my answers to stay highlighted. Only 2 remain highlighted even though I have answered all the

questions. Please feel free to contact me directly –

39. Engage ALL voices, accurately reflect and incorporate ALL input, and don't start with the final outcome already decided and then make square pegs fit into round holes
40. Having a broad and diverse spectrum of participants in our state, and community engagement is helpful.
41. One of the biggest challenges I saw was competing agendas by constituent groups. Some groups carried a "larger" stick because of financial resources that could be provided to the process. The goals and directives from the leadership for SIM often were impacted by changes required by CMMI and/or constituent partners. This created challenges in maintaining a coherent process and goals. The CHW Workforce initiative hit all deliverables despite the challenges of constituents with differing agendas. The resulting work (CHW certification process) and the adoption of CHW standards and definition will truly benefit progress in the state with the goal of payment for CHW services, training, etc.

Appendix K: Entity Experience

Primary Care Medical Provider Staffing Levels

	MD/DO*	PA*	APRN*
Average	58.9	5.61	22.5
Range	2-360	0-30	4-121
Staff per 10,000 Patients (average)	10-52	0.79	7.24
N=**	20	18	20

Nursing Staffing Levels

	Care Management / Coordination - Registered Nurses (RNs) & Licensed Practical Nurses (LPNs)	Care Management / Coordination - Social Workers or similar	Licensed Practical Nurses (Clinical	Registered Nurses (Clinical)	Medical Assistants
Average	5.5	4.4	21.3	17.8	52.7
Range	0-17	0-24	0-129	0-79	0-281
Staff per 10,000 Patients (average)	1.5	1.3	5.9	3.8	9.3
N=**	17	15	16	16	15

Allied Health and Non-Professional Staffing Levels

	Community Healthcare Worker (CHW)	Patient Navigators	Health Coaches	Nutritionists	Dietitians	Chronic Disease Educator (e.g. Asthma, Diabetes)
Average	27.6	2.9	0.3	0.5	1.3	1.5
Range	0-415	0-14	0-4	0-2	0-6	0-5
Staff per 10,000 Patients (average)	2.9	<1	<1	<1	<1	<1
N=**	16	14	14	14	13	12

**All staffing levels reported are for employed staff only; affiliated staff were not reported due to low response rates*

***Number of respondent organizations varied by clinical staffing category*

Appendix K: Entity Experience

Unmet Needs for Pharmacist Services

Technical Needs for Pharmacist Integration	Number of Organizations Reporting Activity (n=13)
Medication-related workflow mapping	8
Medication-related services to reduce prescriber clinical workload burden	8
Improving quality and performance measures	7
Closing care gaps and improving patient outcomes	5
Implementing pharmacist practice models (e.g. patient visits, e-consults, telephone)	5
Pharmacist services to optimize value-based contracts	5
Pharmacist service ROI and value impact	5
Pharmacist staffing capacity	3
Pharmacist credentialing and onboarding processes	3
High-value and high-impact patient segmentation	3
Use of collaborative practice agreements	3

Appendix L: List of Entities in Model Specific Analysis

Federally Qualified Health Centers
Charter Oak Health Center.
Community Health & Wellness Center of Greater Torrington
Community Health Center, Inc.
Community Health Services
Connecticut Institute For Communities, Inc.
Cornell Scott Hill Health Center
Fair Haven Community Health Care
Family Centers
First Choice Health Centers
Generations Family Health Centers
Norwalk Community Health Center
Optimus Health Care
Southwest Community Health Center
Staywell Health Center
United Community And Family Services
Wheeler

Advanced Networks
Community Medical Group
Day Kimball Healthcare
Eastern Connecticut Health Network
Griffin Health
Hartford HealthCare
Medical Professional Services
Middlesex Hospital
Pediatric Healthcare Associates
ProHealth Physicians
Saint Francis Hospital and Medical Center
Saint Mary's Hospital
Soundview Medical Associates
ST. Vincent Medical Center
Stamford Health
Starling Physicians
Waterbury Health / Alliance
Western Connecticut Health Network
Westmed Medical Group
Yale Medicine
Yale New Haven Health

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Avoidance of antibiotic treatment for adults in adults with acute bronchitis

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	1,707	5,544	30.8	31.2	8.74	32.0	32.5	-1.21	-1.71
Overall Other Providers	1,105	3,465	31.9	31.2	8.74	32.0	32.5	-0.11	-0.61
Overall Attributed	2,812	9,009	31.2	31.2	8.74	32.0	32.5	-0.79	-1.29
Overall Unattributed	685	2,231	30.7	31.2	8.74	32.0	32.5	-1.30	-1.80
Overall All	3,497	11,240	31.1	31.2	8.74	32.0	32.5	-0.89	-1.39
Alliance Medical Group/Waterbury Health	154	349	**44.1**	31.2	8.74	32.0	32.5	12.13	11.63
Community Medical Group	173	690	25.1	31.2	8.74	32.0	32.5	-6.93	-7.43
Day Kimball Healthcare	24	92	26.1	31.2	8.74	32.0	32.5	-5.91	-6.41
Eastern Connecticut Health Network	114	316	36.1	31.2	8.74	32.0	32.5	4.08	3.58
Griffin Health	25	92	27.2	31.2	8.74	32.0	32.5	-4.83	-5.33
Integrated Care Partners/Hartford Healthcare	236	817	28.9	31.2	8.74	32.0	32.5	-3.11	-3.61
Middlesex Hospital	31	75	41.3	31.2	8.74	32.0	32.5	9.33	8.83
Northeast Medical Group	121	450	26.9	31.2	8.74	32.0	32.5	-5.11	-5.61
ProHealth	355	1,179	30.1	31.2	8.74	32.0	32.5	-1.89	-2.39
Soundview Medical Associates	60	137	43.8	31.2	8.74	32.0	32.5	11.80	11.30
St. Francis Hospital & Medical Center	137	424	32.3	31.2	8.74	32.0	32.5	0.31	-0.19
St. Mary's Hospital	91	215	42.3	31.2	8.74	32.0	32.5	10.33	9.83
St. Vincent's Medical Center	56	149	37.6	31.2	8.74	32.0	32.5	5.58	5.08
Stamford Health	55	159	34.6	31.2	8.74	32.0	32.5	2.59	2.09
Starling Physicians	83	271	30.6	31.2	8.74	32.0	32.5	-1.37	-1.87
Western Connecticut Health Network	88	345	25.5	31.2	8.74	32.0	32.5	-6.49	-6.99
WestMed Medical Group	9	47	19.2	31.2	8.74	32.0	32.5	-12.85	-13.35
Yale Medicine	3	31	9.7	31.2	8.74	32.0	32.5	-22.32	-22.82

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Comprehensive Diabetes Care: Eye Exams

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	9,437	17,483	53.98	52.31	7.19	55.0	49.0	-1.02	4.98
Overall Other Providers	4,468	9,099	49.10	52.31	7.19	55.0	49.0	-5.90	0.10
Overall Attributed	13,905	26,582	52.31	52.31	7.19	55.0	49.0	-2.69	3.31
Overall Unattributed	481	2,009	23.94	52.31	7.19	55.0	49.0	-31.06	-25.06
Overall All	14,386	28,591	50.32	52.31	7.19	55.0	49.0	-4.68	1.32
Alliance Medical Group/Waterbury Health	485	923	52.55	52.31	7.19	55.0	49.0	-2.45	3.55
Community Medical Group	981	1,952	50.26	52.31	7.19	55.0	49.0	-4.74	1.26
Day Kimball Healthcare	166	299	55.52	52.31	7.19	55.0	49.0	0.52	6.52
Eastern Connecticut Health Network	538	884	60.86	52.31	7.19	55.0	49.0	5.86	11.86
Griffin Health	152	301	50.50	52.31	7.19	55.0	49.0	-4.50	1.50
Integrated Care Partners/Hartford Healthcare	1,775	3,099	57.28	52.31	7.19	55.0	49.0	2.28	8.28
Middlesex Hospital	238	399	59.65	52.31	7.19	55.0	49.0	4.65	10.65
Northeast Medical Group	1,034	2,092	49.43	52.31	7.19	55.0	49.0	-5.57	0.43
ProHealth	1,679	2,842	59.08	52.31	7.19	55.0	49.0	4.08	10.08
Soundview Medical Associates	105	246	42.68	52.31	7.19	55.0	49.0	-12.32	-6.32
St. Francis Hospital & Medical Center	998	1,639	**60.89**	52.31	7.19	55.0	49.0	5.89	11.89
St. Mary's Hospital	422	765	55.16	52.31	7.19	55.0	49.0	0.16	6.16
St. Vincent's Medical Center	175	374	46.79	52.31	7.19	55.0	49.0	-8.21	-2.21
Stamford Health	160	482	33.20	52.31	7.19	55.0	49.0	-21.80	-15.80
Starling Physicians	448	840	53.33	52.31	7.19	55.0	49.0	-1.67	4.33
Western Connecticut Health Network	441	876	50.34	52.31	7.19	55.0	49.0	-4.66	1.34
WestMed Medical Group	58	136	42.65	52.31	7.19	55.0	49.0	-12.35	-6.35
Yale Medicine	105	231	45.45	52.31	7.19	55.0	49.0	-9.55	-3.55

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Comprehensive Diabetes Care: HbA1C Testing

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	15,839	17,483	90.60	89.14	2.65	91.2	89.8	-0.60	0.80
Overall Other Providers	7,857	9,099	86.35	89.14	2.65	91.2	89.8	-4.85	-3.45
Overall Attributed	23,696	26,582	89.14	89.14	2.65	91.2	89.8	-2.06	-0.66
Overall Unattributed	828	2,009	41.21	89.14	2.65	91.2	89.8	-49.99	-48.59
Overall All	24,524	28,591	85.78	89.14	2.65	91.2	89.8	-5.42	-4.02
Alliance Medical Group/Waterbury Health	805	923	87.22	89.14	2.65	91.2	89.8	-3.98	-2.58
Community Medical Group	1,736	1,952	88.93	89.14	2.65	91.2	89.8	-2.27	-0.87
Day Kimball Healthcare	264	299	88.29	89.14	2.65	91.2	89.8	-2.91	-1.51
Eastern Connecticut Health Network	806	884	91.18	89.14	2.65	91.2	89.8	-0.02	1.38
Griffin Health	283	301	94.02	89.14	2.65	91.2	89.8	2.82	4.22
Integrated Care Partners/Hartford Healthcare	2,760	3,099	89.06	89.14	2.65	91.2	89.8	-2.14	-0.74
Middlesex Hospital	363	399	90.98	89.14	2.65	91.2	89.8	-0.22	1.18
Northeast Medical Group	1,889	2,092	90.30	89.14	2.65	91.2	89.8	-0.90	0.50
ProHealth	2,672	2,842	94.02	89.14	2.65	91.2	89.8	2.82	4.22
Soundview Medical Associates	233	246	**94.72**	89.14	2.65	91.2	89.8	3.52	4.92
St. Francis Hospital & Medical Center	1,533	1,639	93.53	89.14	2.65	91.2	89.8	2.33	3.73
St. Mary's Hospital	680	765	88.89	89.14	2.65	91.2	89.8	-2.31	-0.91
St. Vincent's Medical Center	343	374	91.71	89.14	2.65	91.2	89.8	0.51	1.91
Stamford Health	419	482	86.93	89.14	2.65	91.2	89.8	-4.27	-2.87
Starling Physicians	766	840	91.19	89.14	2.65	91.2	89.8	-0.01	1.39
Western Connecticut Health Network	783	876	89.38	89.14	2.65	91.2	89.8	-1.82	-0.42
WestMed Medical Group	117	136	86.03	89.14	2.65	91.2	89.8	-5.17	-3.77
Yale Medicine	210	231	90.91	89.14	2.65	91.2	89.8	-0.29	1.11

Appendix M: Model-Specific Measures

Commercial FY2017 - Acute/Chronic Disease Management

Comprehensive Diabetes Care: Monitoring Nephropathy

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	15,724	17,483	89.94	88.87	2.74	90.4	88.2	-0.46	1.74
Overall Other Providers	7,899	9,099	86.81	88.87	2.74	90.4	88.2	-3.59	-1.39
Overall Attributed	23,623	26,582	88.87	88.87	2.74	90.4	88.2	-1.53	0.67
Overall Unattributed	1,297	2,009	64.56	88.87	2.74	90.4	88.2	-25.84	-23.64
Overall All	24,920	28,591	87.16	88.87	2.74	90.4	88.2	-3.24	-1.04
Alliance Medical Group/Waterbury Health	769	923	83.32	88.87	2.74	90.4	88.2	-7.08	-4.88
Community Medical Group	1,758	1,952	90.06	88.87	2.74	90.4	88.2	-0.34	1.86
Day Kimball Healthcare	253	299	84.62	88.87	2.74	90.4	88.2	-5.78	-3.58
Eastern Connecticut Health Network	788	884	89.14	88.87	2.74	90.4	88.2	-1.26	0.94
Griffin Health	264	301	87.71	88.87	2.74	90.4	88.2	-2.69	-0.49
Integrated Care Partners/Hartford Healthcare	2,732	3,099	88.16	88.87	2.74	90.4	88.2	-2.24	-0.04
Middlesex Hospital	351	399	87.97	88.87	2.74	90.4	88.2	-2.43	-0.23
Northeast Medical Group	1,897	2,092	90.68	88.87	2.74	90.4	88.2	0.28	2.48
ProHealth	2,671	2,842	**93.98**	88.87	2.74	90.4	88.2	3.58	5.78
Soundview Medical Associates	221	246	89.84	88.87	2.74	90.4	88.2	-0.56	1.64
St. Francis Hospital & Medical Center	1,496	1,639	91.28	88.87	2.74	90.4	88.2	0.88	3.08
St. Mary's Hospital	694	765	90.72	88.87	2.74	90.4	88.2	0.32	2.52
St. Vincent's Medical Center	332	374	88.77	88.87	2.74	90.4	88.2	-1.63	0.57
Stamford Health	431	482	89.42	88.87	2.74	90.4	88.2	-0.98	1.22
Starling Physicians	787	840	93.69	88.87	2.74	90.4	88.2	3.29	5.49
Western Connecticut Health Network	765	876	87.33	88.87	2.74	90.4	88.2	-3.07	-0.87
WestMed Medical Group	124	136	91.18	88.87	2.74	90.4	88.2	0.78	2.98
Yale Medicine	199	231	86.15	88.87	2.74	90.4	88.2	-4.25	-2.05

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Medication management for people with asthma (compliance rate 50%)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	4,666	6,409	72.8	72.5	5.96	73.6	74.6	-0.80	-1.80
Overall Other Providers	2,594	3,604	72.0	72.5	5.96	73.6	74.6	-1.62	-2.62
Overall Attributed	7,260	10,013	72.5	72.5	5.96	73.6	74.6	-1.09	-2.09
Overall Unattributed	2,791	3,952	70.6	72.5	5.96	73.6	74.6	-2.98	-3.98
Overall All	10,051	13,965	72.0	72.5	5.96	73.6	74.6	-1.63	-2.63
Alliance Medical Group/Waterbury Health	271	343	79.0	72.5	5.96	73.6	74.6	5.41	4.41
Community Medical Group	742	1,128	65.8	72.5	5.96	73.6	74.6	-7.82	-8.82
Day Kimball Healthcare	115	141	81.6	72.5	5.96	73.6	74.6	7.96	6.96
Eastern Connecticut Health Network	249	309	80.6	72.5	5.96	73.6	74.6	6.98	5.98
Griffin Health	62	83	74.7	72.5	5.96	73.6	74.6	1.10	0.10
Integrated Care Partners/Hartford Healthcare	830	1,101	75.4	72.5	5.96	73.6	74.6	1.79	0.79
Middlesex Hospital	132	177	74.6	72.5	5.96	73.6	74.6	0.98	-0.02
Northeast Medical Group	459	617	74.4	72.5	5.96	73.6	74.6	0.79	-0.21
ProHealth	812	1,154	70.4	72.5	5.96	73.6	74.6	-3.24	-4.24
Soundview Medical Associates	36	49	73.5	72.5	5.96	73.6	74.6	-0.13	-1.13
St. Francis Hospital & Medical Center	375	474	79.1	72.5	5.96	73.6	74.6	5.51	4.51
St. Mary's Hospital	197	231	**85.3**	72.5	5.96	73.6	74.6	11.68	10.68
St. Vincent's Medical Center	48	75	64.0	72.5	5.96	73.6	74.6	-9.60	-10.60
Stamford Health	94	149	63.1	72.5	5.96	73.6	74.6	-10.51	-11.51
Starling Physicians	177	232	76.3	72.5	5.96	73.6	74.6	2.69	1.69
Western Connecticut Health Network	277	412	67.2	72.5	5.96	73.6	74.6	-6.37	-7.37
WestMed Medical Group	31	41	75.6	72.5	5.96	73.6	74.6	2.01	1.01
Yale Medicine	49	66	74.2	72.5	5.96	73.6	74.6	0.64	-0.36

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Medication management for people with asthma (compliance rate 75%)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	3,178	6,409	49.6	49.6	8.89	50.3	52.6	-0.71	-3.01
Overall Other Providers	1,787	3,604	49.6	49.6	8.89	50.3	52.6	-0.72	-3.02
Overall Attributed	4,965	10,013	49.6	49.6	8.89	50.3	52.6	-0.71	-3.01
Overall Unattributed	1,727	3,952	43.7	49.6	8.89	50.3	52.6	-6.60	-8.90
Overall All	6,692	13,965	47.9	49.6	8.89	50.3	52.6	-2.38	-4.68
Alliance Medical Group/Waterbury Health	207	343	60.4	49.6	8.89	50.3	52.6	10.05	7.75
Community Medical Group	464	1,128	41.1	49.6	8.89	50.3	52.6	-9.17	-11.47
Day Kimball Healthcare	92	141	**65.3**	49.6	8.89	50.3	52.6	14.95	12.65
Eastern Connecticut Health Network	185	309	59.9	49.6	8.89	50.3	52.6	9.57	7.27
Griffin Health	39	83	47.0	49.6	8.89	50.3	52.6	-3.31	-5.61
Integrated Care Partners/Hartford Healthcare	574	1,101	52.1	49.6	8.89	50.3	52.6	1.83	-0.47
Middlesex Hospital	100	177	56.5	49.6	8.89	50.3	52.6	6.20	3.90
Northeast Medical Group	313	617	50.7	49.6	8.89	50.3	52.6	0.43	-1.87
ProHealth	564	1,154	48.9	49.6	8.89	50.3	52.6	-1.43	-3.73
Soundview Medical Associates	18	49	36.7	49.6	8.89	50.3	52.6	-13.57	-15.87
St. Francis Hospital & Medical Center	262	474	55.3	49.6	8.89	50.3	52.6	4.97	2.67
St. Mary's Hospital	148	231	64.1	49.6	8.89	50.3	52.6	13.77	11.47
St. Vincent's Medical Center	35	75	46.7	49.6	8.89	50.3	52.6	-3.63	-5.93
Stamford Health	50	149	33.6	49.6	8.89	50.3	52.6	-16.74	-19.04
Starling Physicians	116	232	50.0	49.6	8.89	50.3	52.6	-0.30	-2.60
Western Connecticut Health Network	162	412	39.3	49.6	8.89	50.3	52.6	-10.98	-13.28
WestMed Medical Group	22	41	53.7	49.6	8.89	50.3	52.6	3.36	1.06
Yale Medicine	38	66	57.6	49.6	8.89	50.3	52.6	7.28	4.98

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - ACUTE/CHRONIC DISEASE MANAGEMENT

Use of imaging studies for low back pain

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	1,602	6,324	74.67	75.72	4.85	76.1	75.7	-1.43	-1.03
Overall Other Providers	1,177	4,302	72.64	75.72	4.85	76.1	75.7	-3.46	-3.06
Overall Attributed	2,779	10,626	73.85	75.72	4.85	76.1	75.7	-2.25	-1.85
Overall Unattributed	300	1,211	75.23	75.72	4.85	76.1	75.7	-0.87	-0.47
Overall All	3,079	11,837	73.99	75.72	4.85	76.1	75.7	-2.11	-1.71
Alliance Medical Group/Waterbury Health	87	339	74.34	75.72	4.85	76.1	75.7	-1.76	-1.36
Community Medical Group	242	866	72.06	75.72	4.85	76.1	75.7	-4.04	-3.64
Day Kimball Healthcare	30	135	77.78	75.72	4.85	76.1	75.7	1.68	2.08
Eastern Connecticut Health Network	83	346	76.01	75.72	4.85	76.1	75.7	-0.09	0.31
Griffin Health	19	87	78.16	75.72	4.85	76.1	75.7	2.06	2.46
Integrated Care Partners/Hartford Healthcare	273	1,122	75.67	75.72	4.85	76.1	75.7	-0.43	-0.03
Middlesex Hospital	29	145	80.00	75.72	4.85	76.1	75.7	3.90	4.30
Northeast Medical Group	145	603	75.95	75.72	4.85	76.1	75.7	-0.15	0.25
ProHealth	281	1,164	75.86	75.72	4.85	76.1	75.7	-0.24	0.16
Soundview Medical Associates	22	77	71.43	75.72	4.85	76.1	75.7	-4.67	-4.27
St. Francis Hospital & Medical Center	109	501	78.24	75.72	4.85	76.1	75.7	2.14	2.54
St. Mary's Hospital	56	229	75.55	75.72	4.85	76.1	75.7	-0.55	-0.15
St. Vincent's Medical Center	30	126	76.19	75.72	4.85	76.1	75.7	0.09	0.49
Stamford Health	65	216	69.91	75.72	4.85	76.1	75.7	-6.19	-5.79
Starling Physicians	90	259	65.25	75.72	4.85	76.1	75.7	-10.85	-10.45
Western Connecticut Health Network	106	366	71.04	75.72	4.85	76.1	75.7	-5.06	-4.66
WestMed Medical Group	7	47	**85.11**	75.72	4.85	76.1	75.7	9.01	9.41
Yale Medicine	9	58	84.48	75.72	4.85	76.1	75.7	8.38	8.78

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Antidepressant Medication Management (12 weeks)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	3,985	5,356	74.40	72.9	6.44	67.8	68.1	6.60	6.30
Overall Other Providers	2,358	3,343	70.54	72.9	6.44	67.8	68.1	2.74	2.44
Overall Attributed	6,343	8,699	72.92	72.9	6.44	67.8	68.1	5.12	4.82
Overall Unattributed	402	625	64.32	72.9	6.44	67.8	68.1	-3.48	-3.78
Overall All	6,745	9,324	72.34	72.9	6.44	67.8	68.1	4.54	4.24
Alliance Medical Group/Waterbury Health	155	204	75.98	72.9	6.44	67.8	68.1	8.18	7.88
Community Medical Group	394	566	69.61	72.9	6.44	67.8	68.1	1.81	1.51
Day Kimball Healthcare	86	112	76.79	72.9	6.44	67.8	68.1	8.99	8.69
Eastern Connecticut Health Network	183	234	78.21	72.9	6.44	67.8	68.1	10.41	10.11
Griffin Health	58	78	74.36	72.9	6.44	67.8	68.1	6.56	6.26
Integrated Care Partners/Hartford Healthcare	757	1,006	75.25	72.9	6.44	67.8	68.1	7.45	7.15
Middlesex Hospital	145	180	80.56	72.9	6.44	67.8	68.1	12.76	12.46
Northeast Medical Group	378	542	69.74	72.9	6.44	67.8	68.1	1.94	1.64
ProHealth	933	1,157	**80.64**	72.9	6.44	67.8	68.1	12.84	12.54
Soundview Medical Associates	31	52	59.62	72.9	6.44	67.8	68.1	-8.18	-8.48
St. Francis Hospital & Medical Center	306	422	72.51	72.9	6.44	67.8	68.1	4.71	4.41
St. Mary's Hospital	126	169	74.56	72.9	6.44	67.8	68.1	6.76	6.46
St. Vincent's Medical Center	70	105	66.67	72.9	6.44	67.8	68.1	-1.13	-1.43
Stamford Health	87	139	62.59	72.9	6.44	67.8	68.1	-5.21	-5.51
Starling Physicians	172	219	78.54	72.9	6.44	67.8	68.1	10.74	10.44
Western Connecticut Health Network	241	338	71.30	72.9	6.44	67.8	68.1	3.50	3.20
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	38	57	66.67	72.9	6.44	67.8	68.1	-1.13	-1.43

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Antidepressant Medication Management (6 months)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	2,932	5,356	54.7	53.7	7.32	51.8	52.9	2.94	1.84
Overall Other Providers	1,742	3,343	52.1	53.7	7.32	51.8	52.9	0.31	-0.79
Overall Attributed	4,674	8,699	53.7	53.7	7.32	51.8	52.9	1.93	0.83
Overall Unattributed	262	625	41.9	53.7	7.32	51.8	52.9	-9.88	-10.98
Overall All	4,936	9,324	52.9	53.7	7.32	51.8	52.9	1.14	0.04
Alliance Medical Group/Waterbury Health	112	204	54.9	53.7	7.32	51.8	52.9	3.10	2.00
Community Medical Group	290	566	51.2	53.7	7.32	51.8	52.9	-0.56	-1.66
Day Kimball Healthcare	58	112	51.8	53.7	7.32	51.8	52.9	-0.01	-1.11
Eastern Connecticut Health Network	135	234	57.7	53.7	7.32	51.8	52.9	5.89	4.79
Griffin Health	46	78	59.0	53.7	7.32	51.8	52.9	7.17	6.07
Integrated Care Partners/Hartford Healthcare	543	1,006	54.0	53.7	7.32	51.8	52.9	2.18	1.08
Middlesex Hospital	113	180	**62.8**	53.7	7.32	51.8	52.9	10.98	9.88
Northeast Medical Group	281	542	51.9	53.7	7.32	51.8	52.9	0.05	-1.05
ProHealth	699	1,157	60.4	53.7	7.32	51.8	52.9	8.61	7.51
Soundview Medical Associates	19	52	36.5	53.7	7.32	51.8	52.9	-15.26	-16.36
St. Francis Hospital & Medical Center	221	422	52.4	53.7	7.32	51.8	52.9	0.57	-0.53
St. Mary's Hospital	92	169	54.4	53.7	7.32	51.8	52.9	2.64	1.54
St. Vincent's Medical Center	46	105	43.8	53.7	7.32	51.8	52.9	-7.99	-9.09
Stamford Health	65	139	46.8	53.7	7.32	51.8	52.9	-5.04	-6.14
Starling Physicians	123	219	56.2	53.7	7.32	51.8	52.9	4.36	3.26
Western Connecticut Health Network	190	338	56.2	53.7	7.32	51.8	52.9	4.41	3.31
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	27	57	47.4	53.7	7.32	51.8	52.9	-4.43	-5.53

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Follow up after hospitalization for mental illness (7 Days)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	571	973	58.68	56.37	11.28	48.2	44.9	10.48	13.78
Overall Other Providers	367	691	53.11	56.37	11.28	48.2	44.9	4.91	8.21
Overall Attributed	938	1,664	56.37	56.37	11.28	48.2	44.9	8.17	11.47
Overall Unattributed	93	180	51.67	56.37	11.28	48.2	44.9	3.47	6.77
Overall All	1,031	1,844	55.91	56.37	11.28	48.2	44.9	7.71	11.01
Alliance Medical Group/Waterbury Health	20	36	55.56	56.37	11.28	48.2	44.9	7.36	10.66
Community Medical Group	112	247	45.34	56.37	11.28	48.2	44.9	-2.86	0.44
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	34	53	64.15	56.37	11.28	48.2	44.9	15.95	19.25
Griffin Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Integrated Care Partners/Hartford Healthcare	82	112	73.21	56.37	11.28	48.2	44.9	25.01	28.31
Middlesex Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Northeast Medical Group	37	69	53.62	56.37	11.28	48.2	44.9	5.42	8.72
ProHealth	117	193	60.62	56.37	11.28	48.2	44.9	12.42	15.72
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	44	58	**75.86**	56.37	11.28	48.2	44.9	27.66	30.96
St. Mary's Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Vincent's Medical Center	NR	NR	NR	NR	NR	NR	NR	NR	NR
Stamford Health	23	36	63.89	56.37	11.28	48.2	44.9	15.69	18.99
Starling Physicians	NR	NR	NR	NR	NR	NR	NR	NR	NR
Western Connecticut Health Network	42	80	52.50	56.37	11.28	48.2	44.9	4.30	7.60
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Follow up after hospitalization for mental illness (30 Days)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	721	973	74.10			69.7	67.3	4.40	6.8
Overall Other Providers	464	691	67.15	71.21	10.08	69.7	67.3	-2.55	-0.15
Overall Attributed	1,185	1,664	71.21	71.21	10.08	69.7	67.3	1.51	3.91
Overall Unattributed	113	180	62.78	71.21	10.08	69.7	67.3	-6.92	-4.52
Overall All	1,298	1,844	70.39	71.21	10.08	69.7	67.3	.69	3.09
Alliance Medical Group/Waterbury Health	30	36	83.33	71.21	10.08	69.7	67.3	13.63	16.03
Community Medical Group	145	247	58.7	71.21	10.08	69.7	67.3	-11.00	-8.60
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	42	53	79.25	71.21	10.08	69.7	67.3	9.55	11.95
Griffin Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Integrated Care Partners/Hartford Healthcare	98	112	87.5	71.21	10.08	69.7	67.3	17.80	20.20
Middlesex Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Northeast Medical Group	51	69	73.91	71.21	10.08	69.7	67.3	4.21	6.61
ProHealth	149	193	77.2	71.21	10.08	69.7	67.3	7.50	9.90
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	52	58	**89.66**	71.21	10.08	69.7	67.3	19.96	22.36
St. Mary's Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Vincent's Medical Center	NR	NR	NR	NR	NR	NR	NR	NR	NR
Stamford Health	28	36	77.78	71.21	10.08	69.7	67.3	8.08	10.48
Starling Physicians	NR	NR	NR	NR	NR	NR	NR	NR	NR
Western Connecticut Health Network	53	80	66.25	71.21	10.08	69.7	67.3	-3.45	-1.05
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Follow-up care for children prescribed ADHD medication (30 Days)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	443	763	58.06	56.64	13.36	41.6	**39.9**	16.46	18.16
Overall Other Providers	180	337	53.41	56.64	13.36	41.6	**39.9**	11.81	13.51
Overall Attributed	623	1,100	56.64	56.64	13.36	41.6	**39.9**	15.04	16.74
Overall Unattributed	28	76	36.84	56.64	13.36	41.6	**39.9**	-4.76	-3.06
Overall All	651	1,176	55.36	56.64	13.36	41.6	**39.9**	13.76	15.46
Alliance Medical Group/Waterbury Health	32	53	60.38	56.64	13.36	41.6	**39.9**	18.78	20.48
Community Medical Group	143	261	54.79	56.64	13.36	41.6	**39.9**	13.19	14.89
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	NR	NR	NR	NR	NR	NR	NR	NR	NR
Griffin Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Integrated Care Partners/Hartford Healthcare	64	123	52.03	56.64	13.36	41.6	**39.9**	10.43	12.13
Middlesex Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Northeast Medical Group	16	31	51.61	56.64	13.36	41.6	**39.9**	10.01	11.71
ProHealth Physicians	117	178	**65.73**	56.64	13.36	41.6	**39.9**	24.13	25.83
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St Vincent's Medical Center	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Mary's Hospital's Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Stamford Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Starling Physicians	NR	NR	NR	NR	NR	NR	NR	NR	NR
Western Connecticut Health Network	45	69	65.22	56.64	13.36	41.6	**39.9**	23.62	25.32
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Follow up care for children prescribed ADHD medication (10 M)

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	230	357	64.43	62.22	27.4	48.2	46.5	16.23	17.93
Overall Other Providers	78	138	56.52	62.22	27.4	48.2	46.5	8.32	10.02
Overall Attributed	308	495	62.22	62.22	27.4	48.2	46.5	14.02	15.72
Overall Unattributed	4	15	26.67	62.22	27.4	48.2	46.5	-21.53	-19.83
Overall All	312	510	61.18	62.22	27.4	48.2	46.5	12.98	14.68
Alliance Medical Group/Waterbury Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Community Medical Group	62	101	61.39	62.22	27.4	48.2	46.5	13.19	14.89
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	NR	NR	NR	NR	NR	NR	NR	NR	NR
Griffin Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Integrated Care Partners/Hartford Healthcare	35	59	59.32	62.22	27.4	48.2	46.5	11.12	12.82
Middlesex Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Northeast Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
ProHealth	68	99	68.69	62.22	27.4	48.2	46.5	20.49	22.19
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Mary's Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Vincent's Medical Center	NR	NR	NR	NR	NR	NR	NR	NR	NR
Stamford Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Starling Physicians	NR	NR	NR	NR	NR	NR	NR	NR	NR
Western Connecticut Health Network	24	33	**72.73**	62.22	27.4	48.2	46.5	24.53	26.23
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Initiation and engagement of alcohol and other drug abuse or dependence treatment: Initiation

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	603	1,673	36.0	36.9	8.59	36.6	36.7	-0.56	-0.66
Overall Other Providers	476	1,251	38.1	36.9	8.59	36.6	36.7	1.45	1.35
Overall Attributed	1,079	2,924	36.9	36.9	8.59	36.6	36.7	0.30	0.20
Overall Unattributed	177	460	38.5	36.9	8.59	36.6	36.7	1.88	1.78
Overall All	1,256	3,384	37.1	36.9	8.59	36.6	36.7	0.52	0.42
Alliance Medical Group/Waterbury Health	23	55	41.8	36.9	8.59	36.6	36.7	5.22	5.12
Community Medical Group	76	246	30.9	36.9	8.59	36.6	36.7	-5.71	-5.81
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	20	46	43.5	36.9	8.59	36.6	36.7	6.88	6.78
Griffin Health	19	52	36.5	36.9	8.59	36.6	36.7	-0.06	-0.16
Integrated Care Partners/Hartford Healthcare	92	260	35.4	36.9	8.59	36.6	36.7	-1.22	-1.32
Middlesex Hospital	17	66	25.8	36.9	8.59	36.6	36.7	-10.84	-10.94
Northeast Medical Group	66	161	41.0	36.9	8.59	36.6	36.7	4.39	4.29
ProHealth	93	304	30.6	36.9	8.59	36.6	36.7	-6.01	-6.11
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	58	139	41.7	36.9	8.59	36.6	36.7	5.13	5.03
St. Mary's Hospital	27	56	48.2	36.9	8.59	36.6	36.7	11.61	11.51
St. Vincent's Medical Center	8	31	25.8	36.9	8.59	36.6	36.7	-10.79	-10.89
Stamford Health	20	49	40.8	36.9	8.59	36.6	36.7	4.22	4.12
Starling Physicians	19	48	39.6	36.9	8.59	36.6	36.7	2.98	2.88
Western Connecticut Health Network	45	117	38.5	36.9	8.59	36.6	36.7	1.86	1.76
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	15	30	**50.0**	36.9	8.59	36.6	36.7	13.40	13.30

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measures

COMMERCIAL FY2017 - BEHAVIORAL HEALTH

Initiation and engagement of alcohol and other drug abuse or dependence treatment: Engagement

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	199	1,673	11.9	12.7	5.11	12.3	14.3	-0.41	-2.41
Overall Other Providers	173	1,251	13.8	12.7	5.11	12.3	14.3	1.53	-0.47
Overall Attributed	372	2,924	12.7	12.7	5.11	12.3	14.3	0.42	-1.58
Overall Unattributed	82	460	17.8	12.7	5.11	12.3	14.3	5.53	3.53
Overall All	454	3,384	13.4	12.7	5.11	12.3	14.3	1.12	-0.88
Alliance Medical Group/Waterbury Health	5	55	9.1	12.7	5.11	12.3	14.3	-3.21	-5.21
Community Medical Group	22	246	8.9	12.7	5.11	12.3	14.3	-3.36	-5.36
Day Kimball Healthcare	NR	NR	NR	NR	NR	NR	NR	NR	NR
Eastern Connecticut Health Network	4	46	8.7	12.7	5.11	12.3	14.3	-3.60	-5.60
Griffin Health	9	52	17.3	12.7	5.11	12.3	14.3	5.01	3.01
Integrated Care Partners/Hartford Healthcare	32	260	12.3	12.7	5.11	12.3	14.3	0.01	-1.99
Middlesex Hospital	5	66	7.6	12.7	5.11	12.3	14.3	-4.72	-6.72
Northeast Medical Group	23	161	14.3	12.7	5.11	12.3	14.3	1.99	-0.01
ProHealth	39	304	12.8	12.7	5.11	12.3	14.3	0.53	-1.47
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	17	139	12.2	12.7	5.11	12.3	14.3	-0.07	-2.07
St. Mary's Hospital	10	56	**17.9**	12.7	5.11	12.3	14.3	5.56	3.56
St. Vincent's Medical Center	1	31	3.2	12.7	5.11	12.3	14.3	-9.07	-11.07
Stamford Health	6	49	12.2	12.7	5.11	12.3	14.3	-0.06	-2.06
Starling Physicians	7	48	14.6	12.7	5.11	12.3	14.3	2.28	0.28
Western Connecticut Health Network	15	117	12.8	12.7	5.11	12.3	14.3	0.52	-1.48
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	4	30	13.3	12.7	5.11	12.3	14.3	1.03	-0.97

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Breast cancer screening

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	Benchmark-HMO	Benchmark-PPO	Δ Rate HMO	Δ Rate PPO
Overall Advanced Network	43,869	52,638	83.3	81.6	2.97	72.7	70.2	10.64	13.14
Overall Other Providers	23,050	29,409	78.4	81.6	2.97	72.7	70.2	5.68	8.18
Overall Attributed	66,919	82,047	81.6	81.6	2.97	72.7	70.2	8.86	11.36
Overall Unattributed	2,954	26,853	11.0	81.6	2.97	72.7	70.2	-61.70	-59.20
Overall All	69,873	108,900	64.2	81.6	2.97	72.7	70.2	-8.54	-6.04
Alliance Medical Group/Waterbury Health	2,083	2,553	81.6	81.6	2.97	72.7	70.2	8.89	11.39
Community Medical Group	3,779	4,824	78.3	81.6	2.97	72.7	70.2	5.64	8.14
Day Kimball Healthcare	772	912	84.7	81.6	2.97	72.7	70.2	11.95	14.45
Eastern Connecticut Health Network	2,036	2,521	80.8	81.6	2.97	72.7	70.2	8.06	10.56
Griffin Health	768	940	81.7	81.6	2.97	72.7	70.2	9.00	11.50
Integrated Care Partners/Hartford Healthcare	7,642	9,207	83.0	81.6	2.97	72.7	70.2	10.30	12.80
Middlesex Hospital	1,261	1,464	86.1	81.6	2.97	72.7	70.2	13.43	15.93
Northeast Medical Group	5,010	6,002	83.5	81.6	2.97	72.7	70.2	10.77	13.27
ProHealth	7,608	8,878	85.7	81.6	2.97	72.7	70.2	12.99	15.49
Soundview Medical Associates	660	797	82.8	81.6	2.97	72.7	70.2	10.11	12.61
St. Francis Hospital & Medical Center	3,803	4,572	83.2	81.6	2.97	72.7	70.2	10.48	12.98
St. Mary's Hospital	1,932	2,266	85.3	81.6	2.97	72.7	70.2	12.56	15.06
St. Vincent's Medical Center	880	1,051	83.7	81.6	2.97	72.7	70.2	11.03	13.53
Stamford Health	1,896	2,228	85.1	81.6	2.97	72.7	70.2	12.40	14.90
Starling Physicians	2,438	2,758	**88.4**	81.6	2.97	72.7	70.2	15.70	18.20
Western Connecticut Health Network	2,498	3,030	82.4	81.6	2.97	72.7	70.2	9.74	12.24
WestMed Medical Group	401	504	79.6	81.6	2.97	72.7	70.2	6.86	9.36
Yale Medicine	512	666	76.9	81.6	2.97	72.7	70.2	4.18	6.68

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Non-recommended cervical cancer screening in adolescent females

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	121	14,206	0.9	1.1	1.61	1.5	1.5	-0.65	-0.65
Overall Other Providers	129	8,742	1.5	1.1	1.61	1.5	1.5	-0.02	-0.02
Overall Attributed	250	22,948	1.1	1.1	1.61	1.5	1.5	-0.41	-0.41
Overall Unattributed	3	5,358	0.1	1.1	1.61	1.5	1.5	-1.44	-1.44
Overall All	253	28,306	0.9	1.1	1.61	1.5	1.5	-0.61	-0.61
Alliance Medical Group/Waterbury Health	7	965	0.7	1.1	1.61	1.5	1.5	-0.77	-0.77
Community Medical Group	34	4,825	0.7	1.1	1.61	1.5	1.5	-0.80	-0.80
Day Kimball Healthcare	4	240	1.7	1.1	1.61	1.5	1.5	0.17	0.17
Eastern Connecticut Health Network	2	539	0.4	1.1	1.61	1.5	1.5	-1.13	-1.13
Griffin Health	2	59	3.4	1.1	1.61	1.5	1.5	1.89	1.89
Integrated Care Partners/Hartford Healthcare	14	2,149	0.7	1.1	1.61	1.5	1.5	-0.85	-0.85
Middlesex Hospital	2	117	1.7	1.1	1.61	1.5	1.5	0.21	0.21
Northeast Medical Group	12	565	2.1	1.1	1.61	1.5	1.5	0.62	0.62
ProHealth	34	2,875	1.2	1.1	1.61	1.5	1.5	-0.32	-0.32
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	4	516	0.8	1.1	1.61	1.5	1.5	-0.72	-0.72
St. Mary's Hospital	3	617	0.5	1.1	1.61	1.5	1.5	-1.01	-1.01
St. Vincent's Medical Center	5	328	1.5	1.1	1.61	1.5	1.5	0.02	0.02
Stamford Health	1	99	1.0	1.1	1.61	1.5	1.5	-0.49	-0.49
Starling Physicians	5	334	1.5	1.1	1.61	1.5	1.5	0.00	0.00
Western Connecticut Health Network	5	1,317	0.4	1.1	1.61	1.5	1.5	-1.12	-1.12
WestMed Medical Group	0	94	**0.0**	1.1	1.61	1.5	1.5	-1.50	-1.50
Yale Medicine	0	101	**0.0**	1.1	1.61	1.5	1.5	-1.50	-1.50

Note: Lower rate is better

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Cervical cancer screening

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	84,142	104,100	80.8	80.3	3.36	74.3	73.2	6.53	7.63
Overall Other Providers	52,300	65,746	79.6	80.3	3.36	74.3	73.2	5.25	6.35
Overall Attributed	136,442	169,846	80.3	80.3	3.36	74.3	73.2	6.03	7.13
Overall Unattributed	8,918	50,482	17.7	80.3	3.36	74.3	73.2	-56.63	-55.53
Overall All	145,360	220,328	66.0	80.3	3.36	74.3	73.2	-8.33	-7.23
Alliance Medical Group/Waterbury Health	3,932	4,986	78.9	80.3	3.36	74.3	73.2	4.56	5.66
Community Medical Group	8,415	10,389	81.0	80.3	3.36	74.3	73.2	6.70	7.80
Day Kimball Healthcare	1,229	1,743	70.5	80.3	3.36	74.3	73.2	-3.79	-2.69
Eastern Connecticut Health Network	3,807	4,832	78.8	80.3	3.36	74.3	73.2	4.49	5.59
Griffin Health	1,437	1,807	79.5	80.3	3.36	74.3	73.2	5.22	6.32
Integrated Care Partners/Hartford Healthcare	14,975	18,703	80.1	80.3	3.36	74.3	73.2	5.77	6.87
Middlesex Hospital	2,384	2,881	82.8	80.3	3.36	74.3	73.2	8.45	9.55
Northeast Medical Group	9,498	11,646	81.6	80.3	3.36	74.3	73.2	7.26	8.36
ProHealth	14,000	17,428	80.3	80.3	3.36	74.3	73.2	6.03	7.13
Soundview Medical Associates	1,301	1,546	84.2	80.3	3.36	74.3	73.2	9.85	10.95
St. Francis Hospital & Medical Center	6,771	8,490	79.8	80.3	3.36	74.3	73.2	5.45	6.55
St. Mary's Hospital	3,529	4,431	79.6	80.3	3.36	74.3	73.2	5.34	6.44
St. Vincent's Medical Center	1,631	2,036	80.1	80.3	3.36	74.3	73.2	5.81	6.91
Stamford Health	3,968	4,638	85.6	80.3	3.36	74.3	73.2	11.25	12.35
Starling Physicians	4,579	5,409	84.7	80.3	3.36	74.3	73.2	10.36	11.46
Western Connecticut Health Network	4,640	5,694	81.5	80.3	3.36	74.3	73.2	7.19	8.29
WestMed Medical Group	953	1,108	**86.0**	80.3	3.36	74.3	73.2	11.71	12.81
Yale Medicine	1,091	1,372	79.5	80.3	3.36	74.3	73.2	5.22	6.32

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Chlamydia screening in women

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	Benchmark-HMO	Benchmark-PPO	Δ Rate HMO	Δ Rate PPO
Overall Advanced Network	9,413	16,286	57.8	58.34	6.05	48.9	46.9	8.90	10.90
Overall Other Providers	7,842	13,291	59	58.34	6.05	48.9	46.9	10.10	12.10
Overall Attributed	17,255	29,577	58.34	58.34	6.05	48.9	46.9	9.44	11.44
Overall Unattributed	498	2,764	18.02	58.34	6.05	48.9	46.9	-30.88	-28.88
Overall All	17,753	32,341	54.89	58.34	6.05	48.9	46.9	5.99	7.99
Alliance Medical Group/Waterbury Health	544	905	60.11	58.34	6.05	48.9	46.9	11.21	13.21
Community Medical Group	2,459	4,293	57.28	58.34	6.05	48.9	46.9	8.38	10.38
Day Kimball Healthcare	124	294	42.18	58.34	6.05	48.9	46.9	-6.72	-4.72
Eastern Connecticut Health Network	385	674	57.12	58.34	6.05	48.9	46.9	8.22	10.22
Griffin Health	62	103	60.19	58.34	6.05	48.9	46.9	11.29	13.29
Integrated Care Partners/Hartford Healthcare	1,411	2,649	53.27	58.34	6.05	48.9	46.9	4.37	6.37
Middlesex Hospital	126	270	46.67	58.34	6.05	48.9	46.9	-2.23	-0.23
Northeast Medical Group	581	991	58.63	58.34	6.05	48.9	46.9	9.73	11.73
ProHealth	2,014	3,282	61.37	58.34	6.05	48.9	46.9	12.47	14.47
Soundview Medical Associates	62	99	62.63	58.34	6.05	48.9	46.9	13.73	15.73
St. Francis Hospital & Medical Center	471	797	59.10	58.34	6.05	48.9	46.9	10.20	12.20
St. Mary's Hospital	395	644	61.34	58.34	6.05	48.9	46.9	12.44	14.44
St. Vincent's Medical Center	176	314	56.05	58.34	6.05	48.9	46.9	7.15	9.15
Stamford Health	195	281	**69.40**	58.34	6.05	48.9	46.9	20.50	22.50
Starling Physicians	369	598	61.71	58.34	6.05	48.9	46.9	12.81	14.81
Western Connecticut Health Network	641	1,179	54.37	58.34	6.05	48.9	46.9	5.47	7.47
WestMed Medical Group	75	118	63.56	58.34	6.05	48.9	46.9	14.66	16.66
Yale Medicine	89	146	60.96	58.34	6.05	48.9	46.9	12.06	14.06

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Adolescent well care visits

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	47,112	58,434	80.62	77.16	6.60	48.4	45.3	32.22	35.32
Overall Other Providers	22,846	32,234	70.88	77.16	6.60	48.4	45.3	22.48	25.58
Overall Attributed	69,958	90,668	77.16	77.16	6.60	48.4	45.3	28.76	31.86
Overall Unattributed	106	23,931	0.44	77.16	6.60	48.4	45.3	-47.96	-44.86
Overall All	70,064	114,599	61.14	77.16	6.60	48.4	45.3	12.74	15.84
Alliance Medical Group/Waterbury Health	2,942	3,721	79.06	77.16	6.60	48.4	45.3	30.66	33.76
Community Medical Group	16,335	19,948	81.89	77.16	6.60	48.4	45.3	33.49	36.59
Day Kimball Healthcare	730	1,019	71.64	77.16	6.60	48.4	45.3	23.24	26.34
Eastern Connecticut Health Network	1,826	2,321	78.67	77.16	6.60	48.4	45.3	30.27	33.37
Griffin Health	58	94	61.70	77.16	6.60	48.4	45.3	13.30	16.40
Integrated Care Partners/Hartford Healthcare	6,983	8,932	78.18	77.16	6.60	48.4	45.3	29.78	32.88
Middlesex Hospital	354	467	75.80	77.16	6.60	48.4	45.3	27.40	30.50
Northeast Medical Group	1,837	2,298	79.94	77.16	6.60	48.4	45.3	31.54	34.64
ProHealth	10,227	12,163	**84.08**	77.16	6.60	48.4	45.3	35.68	38.78
Soundview Medical Associates	49	77	63.64	77.16	6.60	48.4	45.3	15.24	18.34
St. Francis Hospital & Medical Center	1,585	2,100	75.48	77.16	6.60	48.4	45.3	27.08	30.18
St. Mary's Hospital	1,866	2,238	83.38	77.16	6.60	48.4	45.3	34.98	38.08
St. Vincent's Medical Center	1,148	1,429	80.34	77.16	6.60	48.4	45.3	31.94	35.04
Stamford Health	181	244	74.18	77.16	6.60	48.4	45.3	25.78	28.88
Starling Physicians	1,024	1,276	80.25	77.16	6.60	48.4	45.3	31.85	34.95
Western Connecticut Health Network	4,687	5,660	82.81	77.16	6.60	48.4	45.3	34.41	37.51
WestMed Medical Group	241	295	81.69	77.16	6.60	48.4	45.3	33.29	36.39
Yale Medicine	267	396	67.42	77.16	6.60	48.4	45.3	19.02	22.12

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Immunizations for Adolescents

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**	**Δ Rate HMO**	**Δ Rate PPO**
Overall Advanced Network	997	5,162	19.31	18.65	9.09	24.0	19.9	-4.69	-0.59
Overall Other Providers	406	2,360	17.2	18.65	9.09	24.0	19.9	-6.80	-2.70
Overall Attributed	1,403	7,522	18.65	18.65	9.09	24.0	19.9	-5.35	-1.25
Overall Unattributed	51	1,102	4.63	18.65	9.09	24.0	19.9	-19.37	-15.27
Overall All	1,454	8,624	16.86	18.65	9.09	24.0	19.9	-7.14	-3.04
Alliance Medical Group/Waterbury Health	38	347	10.95	18.65	9.09	24.0	19.9	-13.05	-8.95
Community Medical Group	335	1,914	17.5	18.65	9.09	24.0	19.9	-6.50	-2.40
Day Kimball Healthcare	17	75	22.67	18.65	9.09	24.0	19.9	-1.33	2.77
Eastern Connecticut Health Network	57	205	27.8	18.65	9.09	24.0	19.9	3.80	7.90
Griffin Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Integrated Care Partners/Hartford Healthcare	187	810	23.09	18.65	9.09	24.0	19.9	-0.91	3.19
Middlesex Hospital	NR	NR	NR	NR	NR	NR	NR	NR	NR
Northeast Medical Group	34	166	20.48	18.65	9.09	24.0	19.9	-3.52	0.58
ProHealth	196	1,074	18.25	18.65	9.09	24.0	19.9	-5.75	-1.65
Soundview Medical Associates	NR	NR	NR	NR	NR	NR	NR	NR	NR
St. Francis Hospital & Medical Center	48	162	**29.63**	18.65	9.09	24.0	19.9	5.63	9.73
St. Mary's Hospital	15	210	7.14	18.65	9.09	24.0	19.9	-16.86	-12.76
St. Vincent's Medical Center	6	117	5.13	18.65	9.09	24.0	19.9	-18.87	-14.77
Stamford Health	NR	NR	NR	NR	NR	NR	NR	NR	NR
Starling Physicians	9	85	10.59	18.65	9.09	24.0	19.9	-13.41	-9.31
Western Connecticut Health Network	146	504	28.97	18.65	9.09	24.0	19.9	4.97	9.07
WestMed Medical Group	NR	NR	NR	NR	NR	NR	NR	NR	NR
Yale Medicine	NR	NR	NR	NR	NR	NR	NR	NR	NR

NR = Organization was not rated due to insufficient eligible patients

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Long acting reversible contraception

Entity	Numerator	Denominator	Rate	Overall Average	Std. Dev.	**Benchmark-HMO**	**Benchmark-PPO**
Overall Advanced Network	2,504	63,628	3.94	4.38	0.64	N/A	N/A
Overall Other Providers	2,376	47,790	4.97	4.38	0.64		
Overall Attributed	4,880	111,418	4.38	4.38	0.64		
Overall Unattributed	205	9,716	2.11	4.38	0.64		
Alliance Medical Group/Waterbury Health	109	3,192	3.41	4.38	0.64		
Community Medical Group	403	11,756	3.43	4.38	0.64		
Day Kimball Healthcare	53	1,083	4.89	4.38	0.64		
Eastern Connecticut Health Network	125	2,820	4.43	4.38	0.64		
Griffin Health	27	712	3.79	4.38	0.64		
Integrated Care Partners/Hartford Healthcare	471	11,121	4.24	4.38	0.64		
Middlesex Hospital	62	1,436	4.32	4.38	0.64		
Northeast Medical Group	246	5,542	4.44	4.38	0.64		
Overall All	5,085	121,134	4.2	4.38	0.64		
ProHealth	402	11,510	3.49	4.38	0.64		
Soundview Medical Associates	31	675	4.59	4.38	0.64		
St. Francis Hospital & Medical Center	154	3,831	4.02	4.38	0.64		
St. Mary's Hospital	85	2,499	3.4	4.38	0.64		
St. Vincent's Medical Center	52	1,338	3.89	4.38	0.64		
Stamford Health	99	2,137	4.63	4.38	0.64		
Starling Physicians	120	2,585	4.64	4.38	0.64		
Western Connecticut Health Network	133	4,195	3.17	4.38	0.64		
WestMed Medical Group	20	644	3.11	4.38	0.64		
Yale Medicine	34	667	**5.1**	4.38	0.64		

NOTE: A rate of 1-2% is considered good performance

Appendix M: Model-Specific Measure Results

COMMERCIAL FY2017 - PREVENTION

Plan all cause readmissions

Entity	Numerator	Denominator	OE Ratio	Std. Dev.
Overall Advanced Network	6,519	297	0.58	0.17
Overall Other Providers	4,060	235	0.67	0.17
Overall Attributed	10,579	532	0.62	0.17
Overall Unattributed	365	14	0.45	0.17
Overall All	10,944	546	0.61	0.17
Alliance Medical Group/Waterbury Health	361	22	0.77	0.17
Community Medical Group	718	27	0.50	0.17
Day Kimball Healthcare	120	4	0.44	0.17
Eastern Connecticut Health Network	296	11	0.52	0.17
Griffin Health	120	5	0.58	0.17
Integrated Care Partners/Hartford Healthcare	1,144	57	0.62	0.17
Middlesex Hospital	177	7	0.57	0.17
Northeast Medical Group	727	33	0.60	0.17
ProHealth	1,078	40	0.49	0.17
Soundview Medical Associates	100	2	0.25	0.17
St. Francis Hospital & Medical Center	527	31	0.76	0.17
St. Mary's Hospital	275	11	0.51	0.17
St. Vincent's Medical Center	117	9	0.91	0.17
Stamford Health	217	7	0.42	0.17
Starling Physicians	284	19	0.83	0.17
Western Connecticut Health Network	351	13	0.49	0.17
WestMed Medical Group	80	2	0.32	0.17
Yale Medicine	143	11	0.60	0.17

Note: Lower is better

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Breast Cancer Screening

Entity	Numerator	Denominator	Rate	Rate (%)	State Average	Std. Dev.
Overall FQHC	1,774	2,387	0.7432	74.3	74.6	7.79
Overall Attributed	86,735	116,262	0.7460	74.6	74.6	7.79
Overall Unattributed	5,822	32,302	0.1802	18.0	74.6	7.79
Overall All	92,557	148,564	0.6230	62.3	74.6	7.79
Charter Oak	101	144	0.7014	70.1	74.6	7.79
Community Health Center	229	295	0.7763	77.6	74.6	7.79
Community Health Services	18	35	0.5143	51.4	74.6	7.79
Community Health and Wellness Center of Greater Torrington	27	35	0.7714	77.1	74.6	7.79
Cornell Scott-Hill Health Center	122	165	0.7394	73.9	74.6	7.79
Fair Haven Community Health Care	124	161	0.7702	77.0	74.6	7.79
First Choice Health Centers	55	84	0.6548	65.5	74.6	7.79
CIFC/Greater Danbury Community Health Center	92	137	0.6715	67.2	74.6	7.79
Generations Family Health Center	76	114	0.6667	66.7	74.6	7.79
Intercommunity	180	230	0.7826	78.3	74.6	7.79
Norwalk Community Health Center	58	75	0.7733	77.3	74.6	7.79
Optimus Healthcare	355	443	0.8014	80.1	74.6	7.79
Southwest Community Health Center	155	242	0.6405	64.0	74.6	7.79
Staywell Health Center	132	172	0.7674	76.7	74.6	7.79
UCFS Healthcare	28	37	0.7568	75.7	74.6	7.79
Wheeler Clinic	91	109	0.8349	83.5	74.6	7.79

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Breast Cancer Screening

Entity	Numerator	Denominator	Rate	Rate (%)	State Average	Std. Dev.
Overall Advanced Network	52,998	69,410	0.7635	76.4	74.6	3.38
Overall Attributed	86,735	116,262	0.7460	74.6	74.6	3.38
Overall Unattributed	5822	32,302	0.1802	18.0	74.6	3.38
Overall All	92,557	148,564	0.6230	62.3	74.6	3.38
Alliance Medical Group/Waterbury Health	2,644	3,669	0.7206	72.1	74.6	3.38
Community Medical Group	4,882	6,719	0.7266	72.7	74.6	3.38
Day Kimball Healthcare	1,312	1,679	0.7814	78.1	74.6	3.38
Eastern Connecticut Health Network	2,677	3,594	0.7449	74.5	74.6	3.38
Griffin Health	950	1,301	0.7302	73.0	74.6	3.38
Integrated Care Partners/Hartford Healthcare	8,329	11,027	0.7553	75.5	74.6	3.38
Middlesex Hospital	1,835	2,251	0.8152	81.5	74.6	3.38
Northeast Medical Group	6,327	8,221	0.7696	77.0	74.6	3.38
ProHealth	8,474	10,617	0.7982	79.8	74.6	3.38
Soundview Medical Associates	733	1,014	0.7229	72.3	74.6	3.38
St. Francis Hospital & Medical Center	4,960	6,530	0.7596	76.0	74.6	3.38
St. Mary's Hospital	2,115	2,672	0.7915	79.2	74.6	3.38
St. Vincent's Medical Center	1,071	1,418	0.7553	75.5	74.6	3.38
Stamford Health	1,823	2,359	0.7728	77.3	74.6	3.38
Starling Physicians	2,910	3,591	0.8104	81.0	74.6	3.38
Western Connecticut Health Network	3,381	4,442	0.7611	76.1	74.6	3.38
WestMed Medical Group	536	700	0.7657	76.6	74.6	3.38
Yale Medicine	700	1,018	0.6876	68.8	74.6	3.38

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Plan all cause readmissions

Entity	Numerator	Denominator	Observed to Expected Ratio	State Average	Std. Dev.
Overall Advanced Network	1,799	19,688	0.90	0.91	0.16
Overall Other Providers	1,496	14,713	1.04	0.91	0.16
Overall Attributed	3,358	34,912	0.96	0.91	0.16
Overall Unattributed	254	2320	1.11	0.91	0.16
Overall All	3,612	37,232	0.97	0.91	0.16
Alliance Medical Group/Waterbury Health	110	1,191	0.91	0.91	0.16
Community Medical Group	164	1,827	0.89	0.91	0.16
Day Kimball Healthcare	55	504	1.07	0.91	0.16
Eastern Connecticut Health Network	99	1,101	0.93	0.91	0.16
Griffin Health	30	422	0.69	0.91	0.16
Integrated Care Partners/Hartford Healthcare	305	3,266	0.88	0.91	0.16
Middlesex Hospital	62	667	1.00	0.91	0.16
Northeast Medical Group	187	2,062	0.92	0.91	0.16
ProHealth	210	2,680	0.79	0.91	0.16
Soundview Medical Associates	21	297	0.76	0.91	0.16
St. Francis Hospital & Medical Center	200	2,016	0.91	0.91	0.16
St. Mary's Hospital	92	839	1.00	0.91	0.16
St. Vincent's Medical Center	33	384	0.85	0.91	0.16
Stamford Health	36	568	0.69	0.91	0.16
Starling Physicians	91	821	1.00	0.91	0.16
Western Connecticut Health Network	93	1,154	0.86	0.91	0.16
WestMed Medical Group	16	243	0.77	0.91	0.16
Yale Medicine	90	628	1.40	0.91	0.16

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Plan all cause readmissions

Entity	Numerator	Denominator	Observed to Expected Ratio	State Average	Std. Dev.
Overall FQHC	76	693	0.9555	0.96	0.39
Overall Other Providers	1,496	14,713	1.0352	0.96	0.39
Overall Attributed	3,358	34,912	0.9555	0.96	0.39
Overall Unattributed	254	2,320	1.1105	0.96	0.39
Overall All	3,612	37,232	0.965	0.96	0.39
Charter Oak	3	53	0.38	0.96	0.39
CHC	12	80	1.01	0.96	0.39
Community	1	11	0.79	0.96	0.39
Community Health	0	5	0.00	0.96	0.39
Cornell Scott	3	49	0.38	0.96	0.39
Fair Haven	2	34	0.48	0.96	0.39
First Choice Health Centers	3	18	1.19	0.96	0.39
GDCHC	9	59	1.61	0.96	0.39
Generations	4	39	0.60	0.96	0.39
Intercommunity	12	95	1.09	0.96	0.39
Norwalk	0	11	0.00	0.96	0.39
Optimus	15	88	1.11	0.96	0.39
Southwest	3	73	0.32	0.96	0.39
Staywell	5	43	0.63	0.96	0.39
UCFS	1	10	0.87	0.96	0.39
Wheeler	3	39	0.62	0.96	0.39

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Follow up after hospitalization for mental illness (7 Days)

Entity	Numerator	Denominator	Rate	State Average	Std. Dev.
Norwalk	1	1	100.0%	58.49	6.94
Overall Advanced Network	1,235	2,039	60.6%	58.49	6.94
Overall Other Providers	1,343	2,341	57.4%	58.49	6.94
Overall Attributed	2,624	4,486	58.5%	58.49	6.94
Overall Unattributed	621	1,420	43.7%	58.49	6.94
Overall All	3,245	5,906	54.9%	58.49	6.94
Alliance Medical Group/Waterbury Health	40	76	52.6%	58.49	6.94
Community Medical Group	116	198	58.6%	58.49	6.94
Day Kimball Healthcare	51	82	62.2%	58.49	6.94
Eastern Connecticut Health Network	76	129	58.9%	58.49	6.94
Griffin Health	26	39	66.7%	58.49	6.94
Integrated Care Partners/Hartford Healthcare	216	373	57.9%	58.49	6.94
Middlesex Hospital	60	86	69.8%	58.49	6.94
Northeast Medical Group	123	219	56.2%	58.49	6.94
ProHealth	189	307	61.6%	58.49	6.94
Soundview Medical Associates	28	39	71.8%	58.49	6.94
St. Francis Hospital & Medical Center	118	185	63.8%	58.49	6.94
St. Mary's Hospital	30	50	60.0%	58.49	6.94
St. Vincent's Medical Center	21	45	46.7%	58.49	6.94
Stamford Health	35	58	60.3%	58.49	6.94
Starling Physicians	54	77	70.1%	58.49	6.94
Western Connecticut Health Network	68	93	73.1%	58.49	6.94
WestMed Medical Group	6	15	40.0%	58.49	6.94
Yale Medicine	25	44	56.8%	58.49	6.94

Appendix M: Model-Specific Measure Results

MEDICARE FY2016

Follow up after hospitalization for mental illness (30 Days)

Entity	Numerator	Denominator	Rate	State Average	Std. Dev.
Norwalk	1	1	100.0%	81.99	5.40
Overall Advanced Network	1,703	2,039	83.5%	81.99	5.40
Overall Other Providers	1,900	2,341	81.2%	81.99	5.40
Overall Attributed	3,678	4,486	82.0%	81.99	5.40
Overall Unattributed	885	1,420	62.3%	81.99	5.40
Overall All	4,563	5,906	77.3%	81.99	5.40
Alliance Medical Group/Waterbury Health	60	76	78.9%	81.99	5.40
Community Medical Group	162	198	81.8%	81.99	0.05
Day Kimball Healthcare	69	82	84.1%	81.99	5.40
Eastern Connecticut Health Network	104	129	80.6%	81.99	5.40
Griffin Health	32	39	82.1%	81.99	5.40
Integrated Care Partners/Hartford Healthcare	303	373	81.2%	81.99	5.40
Middlesex Hospital	78	86	90.7%	81.99	5.40
Northeast Medical Group	179	219	81.7%	81.99	5.40
ProHealth	252	307	82.1%	81.99	5.40
Soundview Medical Associates	33	39	84.6%	81.99	5.40
St. Francis Hospital & Medical Center	160	185	86.5%	81.99	5.40
St. Mary's Hospital	41	50	82.0%	81.99	5.40
St. Vincent's Medical Center	43	45	95.6%	81.99	5.40
Stamford Health	52	58	89.7%	81.99	5.40
Starling Physicians	70	77	90.9%	81.99	5.40
Western Connecticut Health Network	83	93	89.2%	81.99	5.40
WestMed Medical Group	10	15	66.7%	81.99	5.40
Yale Medicine	32	44	72.7%	81.99	5.40

Glossary of Terms

Statewide Impact

Population Health

Adult Diabetes - Connecticut Behavioral Risk Factor Surveillance System (CT BRFSS): Adults with diabetes were defined as respondents who answered affirmatively to the question "Has a doctor, nurse, or other health professional EVER told you that you have diabetes?" (Does not include females who reported that they had diabetes only during pregnancy.)

Adult Obesity (CT BRFSS): Obesity was derived from self-reported weight and height and is defined as a body mass index (BMI) of at least 30 kg/m² (kilograms per square meter).

Adult Smoking (CT BRFSS): Adult (18+) smokers are defined as respondents who reported they currently smoke cigarettes every day or some days.

Child Obesity: CT BRFSS 2014 and 2015 data were combined to increase sample size. BRFSS 2016, 2017, and 2018 data were from a much larger sample sizes, allowing for yearly analyses. Children under five years-old were excluded. In an effort to provide reliable information, coefficients of variation (CV) were used to assess the validity of each estimate. Child obesity was derived from the respondent's report of the child's height and weight and is defined as a BMI at or above the 95th percentile for children of the same age and gender.

High School Youth Cigarette Smoking (Connecticut Youth Tobacco Survey) Youth smokers are defined as students who smoked cigarettes once or more in the past 30 days. Data is collected every other year.

***Years of Potential Life Lost (YPLL)** for persons dying before age 75. YPLL is a measure of the number of years lost due to premature mortality in a population. Presented per 100,000 population using the 2000 U.S. standard million. The presented value is age adjusted to allow for comparisons over time, between geographies and between population subgroups. Major cardiovascular diseases include ICD-10 codes I00 to I78. For more information see "Years of Potential Life Lost" at: http://www.cdc.gov/ophss/csels/dsepd/ss1978/lesson3/section3.html

Healthcare Delivery

The Connecticut All-Payers Claims Database (**APCD**) contains eligibility and claims data (medical, pharmacy and dental) used to report cost, use and quality information for CT's payers, including private health insurers, Medicaid, Medicare, children's health insurance, state employee health benefit programs, prescription drug plans. Public Act 13-247 (now Connecticut General Statute Section 19a-755a) established the All-Payer Claims Database (APCD), the primary source of data to enable the evaluation of SIM-related care delivery and payment reforms.

National Committee for Quality Assurance (NCQA): Sets standards and guidelines for healthcare organizations based on **measurement, transparency and accountability** to highlight top performers and drive improvement. The committee began in the early 1990's by measuring and then accrediting health plans.

Glossary of Terms

Consumer Assessment of Healthcare Providers and Systems Clinician and Group Survey 3.0 (CAHPS)

- **Provider Rating** is the percent CAHPS respondents who rated their healthcare provider a "9" or "10" on a scale from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible. Survey participants were asked, "Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider."
- **Provider communication** is the average percent of patients who responded "Always" to each of four items on the CG-CAHPS: 1) Provider explained things in a way that was easy to understand; 2) Provider listened carefully to patient; 3) Provider showed respect for what patient had to say; and 4) Provider spent enough time with patient.
- **Office Staff** is a proportional score based on patient responses to two items on the CG-CAHPS: 1) Clerks and receptionists were helpful, and 2) Clerks and receptionists were courteous and respectful.
- **Timely care** is the average percent of patients who responded "Always" to each of three items on the CG-CAHPS: 1) Patient always got appointment for urgent care as soon as needed; 2) Patient always got appointment for non-urgent care as soon as needed; and 3) Patient always got medical questions answered the same day he/she contacted provider's office.

Ambulatory Care Sensitive Conditions: Ambulatory Care Sensitive Conditions are "conditions for which good ambulatory outpatient care can potentially prevent the need for hospitalization, or for which early intervention can prevent complications or more severe disease." (http://www.ahrq.gov/downloads/pub/ahrqqi/pqiguide.pdf)

Ambulatory Care Sensitive Condition Admissions: Calculated as the number of admissions per 100,000 population ages 18 years and older. Denominators (excluding those for payer groups) are official annual population estimates from the US Census and provided by the CT DPH (http://www.ct.gov/dph/cwp/view.asp?a=3132&q=388152). Denominators for payers were obtained from the American Community Survey (https://www.census.gov/programs-surveys/acs/)

Prevention Quality Indicators (PQI) composites per 100,000 population, ages 18 years and older: https://www.qualityindicators.ahrq.gov/Modules/PQI_TechSpec_ICD10_v2018.aspx

Ambulatory Care Sensitive Condition Readmission Rate: Calculated as the percentage of admissions that follow an initial hospitalization for an ambulatory care sensitive admission in 30 day or less for patients aged 18 years and older.

Health Insurance Transformation

Advanced Medical Home (AMH): The AMH model is based on the National Committee for Quality Assurance's (NCQA) patient-centered medical home (PCMH) program, which has been shown to improve healthcare coordination and quality. In a medical home, a primary care provider works closely with a team to coordinate care for their patient panel. The approach also emphasizes the holistic assessment of patient treatment and support needs, shared decision-making, and continuous quality improvement.

Person Centered Medical Home (PCMH+) Person-Centered Medical Home (PCMH+) is a Connecticut Medicaid initiative whose aim is to build on the success of the current Medicaid PCMH program by enabling practice transformation, care coordination capacity, and further improved health and satisfaction outcomes for Medicaid members who are served by Federally Qualified Health Centers (FQHCs) and "advanced networks". PCMH+ was launched on January 1, 2017.

Glossary of Terms

Shared Savings Plan (SSP) Shared savings programs reward providers for primary care quality, care experience and total cost of care.

Community and Clinical Integration Program (CCIP) provides participating entities 15 months of technical assistance, guidance from subject matter experts, learning collaborative support and CCIP Transformation Awards so that Advanced Networks and FQHCs can succeed in SIM-developed care delivery standards. These standards focus on comprehensive care management, health equity, and behavioral health integration. Participants in CCIP are enrolled in two waves, the first in 2017 and the second in 2018.

Value-based Insurance Design (VBID) is a cost-effective employee benefit plan approach used by small and large, fully- and self-insured employers to lower or eliminate financial barriers to, or introduce rewards for preventive care, medication adherence, chronic disease management, and high-quality provider selection.

Model Specific Outcomes

Overall Attributed: All patients with a qualifying visit to a primary care provider or OB/GYN in the measurement year or year prior

Overall unattributed: All patients without a qualifying visit to a primary care provider or OB/GYN in the measurement year or year prior

Overall Advanced Network: All patients with a qualifying visit to a primary care provider or OB/GYN in an Advanced Network in the measurement year or year prior

Overall other providers: All patients with a qualifying visit to a primary care provider or OB/GYN not in an Advanced Network in the measurement year or year prior

Overall All: All patients with data in the CT APCD

PMPM: Per member per month

Total medical care costs PMPM: The total amount paid by insurer/s as well as member for all medical services per member per month during the measurement year (October 1 to September 30).

- **Denominator:** All members who had medical coverage during the measurement year multiplied by the number of months these members had commercial medical coverage.
- **Numerator:** The total amount paid by insurer/s and members during the measurement year for the claims associated with the medical services. The total amount paid by the insurer and member will be obtained from the 'allowed_amt' variable in the APCD data.

Inpatient healthcare costs PMPM: The total amount paid by insurer/s as well as members for inpatient services per member per month during a fiscal year (October 1 to September 30).

- **Denominator:** All members who had medical coverage during the measurement year multiplied by the number of months these members had medical coverage.
- **Numerator:** The total amount paid by insurer/s and members during the measurement year for the claims associated with the inpatient medical services.

Glossary of Terms

Outpatient care costs PMPM Definition: The total amount paid by insurers as well as members for outpatient care per member per month of eligibility during a fiscal year (October 1 to September 30).

- **Denominator:** All members with medical coverage multiplied by the number of months these members had medical coverage.
- **Numerator:** The total amount paid by insurers and members during the measurement year for the claims associated with the outpatient services excluding primary care services.

Pharmacy cost PMPM: The total amount paid by insurers as well as members for pharmacy claims per patient per month during a fiscal year (October 1 to September 30).

- **Denominator:** All members with pharmacy coverage during the measurement year multiplied by the number of months these members had pharmacy coverage.
- **Numerator:** The total amount paid by insurers and members during the measurement year for the claims associated with the pharmacy.

Primary care costs PMPM: The total amount paid by insurers as well as members for primary care per patient per month during a fiscal year (October 1 to September 30).

- **Denominator:** All members who had medical coverage during the measurement year multiplied by the total number of months these patients had medical coverage.
- **Numerator** (All cost): The total amount paid by insurers and members during the measurement year for the medical claims for primary care services.