Washington
STATE INNOVATION MODELS (SIM)

Evaluation Final Report

January 31st, 2019

UNIVERSITY of WASHINGTON
DEPARTMENT OF HEALTH SERVICES
School of Public Health

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Acknowledgements

We would like to thank the staff at the Health Care Authority, the Department of Health, the Department of Social and Health Services (DSHS), and other implementers of SIM without whom this evaluation would not have been possible.

We would also like to specifically thank the following contributors to this report from the University of Washington, Research and Data Analysis Division of DSHS, and the Center for Community Health and Evaluation.

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Disclosure and Disclaimers

Disclosure

All SIM evaluation research staff at the University of Washington research staff and the Department of Social and Health Services Research and Data Analysis (DSHS-RDA) went through the Washington State Institutional Review Board (WSIRB) process to participate in this evaluation. (Application D-071416-A – 2016). DSHS-RDA went through a separate WSIRB process to complete an additional evaluation component (Project E-091918-S, exempt determination). No potential conflicts of interest were reported. Staff at the Center for Community Health and Evaluation did not need to go through the IRB process, given the nature of information they would be handling

First Disclaimer

The project described was supported by Grant Number 1G1CMS331406 from the Department of Health and Human Services, Centers for Medicare & Medicaid Services. The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services, or any of its agencies. The research presented here was conducted by the awardee. Findings might or might not be consistent with or confirmed by the findings of the independent federal evaluation contractor.

Additional Disclaimer

Direct funding for this project came from a subcontract with the Washington State Health Care Authority (HCA). The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of HCA or other Washington state agencies.

Washington SIM Evaluation

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Highlights

These are the high-level lessons learned from the evaluation of the Washington State Innovation Model (SIM), developed through an interactive process by the three evaluation partners: the University of Washington (UW), Department of Social and Health Services Research and Data Analysis (DSHS-RDA), and the Center for Community Health and Evaluation (CCHE).

Leadership and Vision

Leadership. SIM worked best when leadership, vision and governance were clear and consistent at the outset and during transformation to ensure buy-in and sustainability. Throughout the four years of SIM planning and implementation, leadership was highly competent and well-aligned on the Triple Aim of SIM, but turnover in key leadership positions posed challenges.

Vision. The SIM initiative would have benefited from having more specific vision, goals, roles, and definitions of success clearly articulated for each program component at the outset, including a concept for how each component fit into the overall SIM initiative and related to other SIM components.

Implementation

Launch. SIM successfully launched all the components laid out in its State Health Care Innovation Plan: nine Accountable Communities of Health, four Payment Redesign models, the Practice Transformation Support Hub, and the Analytics Research and Measurement Team (formerly known as Analytics, Interoperability, and Measurement).

Siloed Implementation. Implementation of SIM components was structured generally in parallel programs that often operated in silos. To achieve statewide system change, implementation would have benefited from greater integration and partnership between components.

Communications. Clear on-going communication is needed across interventions and among all participants. SIM had a general vision and much detailed work going on in the field, but SIM was missing those specific blueprints proposing options for implementation paths, as well as a model that described how the components worked together as a system to achieve the Triple Aim.

Data Ambitions and Reality. Data interoperability is critical for health systems transformation. Health data systems are still in the early developmental stages. For certain SIM components, it was often difficult to secure accurate and complete data in a timely manner. Data issues were a major barrier to realizing the full potential of SIM.

Impact of SIM

Promising Early Results. SIM has built the infrastructure and foundation to launch future system transformation. Stakeholders support SIM goals and remain optimistic that SIM will eventually achieve the goals.

SIM experience indicates that some improvements in the quality of health care have been achieved within the 2016 – 2019 time frame. Provider engagement has been important in early successes. SIM met its goal that, by January 2019, at least 50% of commercial payments are in value-based arrangements.

Statewide Transformation Takes Time. Statewide system transformation is hard work and takes time to implement. SIM's experience suggests that achieving improved population health, better integration of care, and reduced health care cost growth statewide in three years is unlikely.

Significant improvements in population health are difficult to achieve because they require patient engagement and community partnerships (e.g., to address social determinants of health). Effective cost control is likely to take even longer.

Sustainability

Critical Preparation for System Transformation. SIM increased Washington's readiness for health system change in the next decade. It deepened understanding of how to do value-based payment and how to position the Accountable Communities of Health under the Medicaid Transformation Project.

Going beyond the State as First Mover. The state has been an effective "first mover" for value-based payment, but the time is ripe to broaden and accelerate the scope and scale of value-based payment efforts in the state. The public sector should consider using its "bully pulpit" to leverage value-based payment and population health management among commercial payers and self-insured purchasers, and to bring in the Medicare population.

Funding after 2022. The state, in collaboration with its multi-sector stakeholders, needs to develop options to sustain work on the Triple Aim, especially after Medicaid Transformation Project funding ends. At a minimum, the state should continue to convene stakeholders, refine its internal operations and contracts, and monitor and apply for funding from new opportunities, including funding support from the State Legislature. It would be fruitful to explore philanthropic, association, and private funding sources, and to research other models to support desired system change.

Washington SIM Evaluation

Executive Summary

This Executive Summary of the Washington State Innovation Model (SIM) Evaluation is intended to provide a high-level review of the context, evaluation methods, key findings, and implications for policy and practice of the implementation and impact of the SIM initiative funded by the Center for Medicare and Medicaid Innovation (CMMI). This summary is part of the SIM Evaluation Final Report, which offers more detailed background, results, and implications from the analyses led by the University of Washington (UW) SIM Evaluation Team, in collaboration with our evaluation partners at the Center for Community Health Evaluation (CCHE) of the Kaiser Permanente Washington Health Research Institute and the Research and Data Analysis (RDA) Division of the Washington State Department of Social and Health Services (DSHS).

In 2014, CMMI awarded Washington state a $65 million State Innovation Model (SIM) Round 2 Test Award to fund four years of health system transformation. Healthier Washington, the broader initiative within which the SIM program and SIM evaluation were funded, was designed with three overarching goals in mind: (1) improving population health outcomes; (2) improving quality of care, especially for persons with physical and behavioral health comorbidities; and (3) reducing the rate of growth in total health care costs per capita. A fourth goal was introduced as SIM implementation unfolded: improving provider satisfaction. While this fourth goal was beyond the scope of this SIM evaluation, the other three goals were considered in several components of the evaluation.

The SIM evaluation has the following components (with lead responsibility identified after each program component below), and will be discussed in the following order in this summary:

(1) Overall State-Level SIM Impact: UW, David Grembowski

(2) Practice Transformation Support Hub (The "Hub"): *UW*, Tao Sheng Kwan-Gett

(3) Encounter to Value: *UW*, Douglas Conrad

(4) Accountable Care Program: *UW*, Norma Coe

(5) Greater Washington Multi-Payer and Data Aggregation Solution: *UW*, Douglas Conrad

(6) Medicaid Integrated Purchasing for Behavioral and Physical Health: *DSHS/RDA*, David Mancuso and Beverly Court

(7) Accountable Communities of Health (ACHs): *Center for Community Health Evaluation (CCHE)*, Allen Cheadle and Erin Hertel

Key Findings and Implications of SIM Components

Overall State-Level SIM Impact Component. This component of the SIM evaluation addressed the progress of Washington State in its efforts to improve population health and quality of care and reduce cost growth by exercising the state's regulatory and policy levers to accelerate statewide health system transformation. Diffusion theory and broad-based evidence suggest that population-based interventions like SIM take 10-20 years to spread statewide and achieve their goals. Based on the SIM team's key informant interviews, Washington state stakeholders generally perceive that SIM will require more than 10 years to achieve its overall goals.

This component of the SIM Evaluation adopted the RE-AIM Evaluation Framework for its quantitative and qualitative analysis. The RE-AIM framework has five dimensions:

- Reach (extent of population affected by the SIM intervention)
- Effectiveness (realization of SIM goals for Washington residents)
- Adoption (participation in SIM programs by health-related organizations)
- Implementation (breadth, depth, and fidelity of the actual performance of SIM activities relative to design expectations)
- Maintenance (future sustainability of the systems, activities, and resources to achieve SIM goals)

Reach and Adoption. SIM was partially successful in geographic reach, in that all nine ACHs developed their infrastructures in all parts of the state. However, a very small percentage of Washington's health-related organizations and 7.3 million residents participated directly in SIM, which was mainly a state agency, public sector-sponsored intervention.

Implementation. The SIM components were implemented as planned, except the payment model for the Rural Health Centers and Critical Access Hospitals, which is scheduled for implementation after SIM ends.

Implementation of most SIM components was delayed. SIM was implemented through more than 90 contracts and purchases, which fragmented SIM work into silos and blurred accountability for achieving statewide SIM goals. A major turnover in SIM leadership occurred in 2017 and 2018, generating concern about SIM implementation among many stakeholders.

Effectiveness. Statistical analyses based on representative Washington state data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that SIM had little if any short-term effect on population health, health behaviors, access to care, and care coordination. Washington mortality rates increased and BRFSS adults' self-reported health status declined in the first and second years of SIM. This trend is consistent with U.S. life expectancy, which has declined over the past 3 years. Notably, time series data do not exist for 6 of the 19 SIM priority measures in the Washington State Common Measures Set.

Annual expenditure growth rates for Medicaid beneficiaries and state employees varied greatly in 2013-2017. Data do not exist for the annual growth in health care expenditures for all Washington residents. Therefore, it is unclear whether SIM met its goal of Washington's annual health care cost growth would be 2% less than the national health expenditure trend by 2019.

SIM, however, did meet its goal of having at least 50% of commercial payments are in value-based arrangements by 2019. However, it is unclear whether the achievement was due to SIM or market forces.

For the most part, annual measures of quality of care changed little from 2013 to 2017. Of note, the percentage of children 2 years of age with all vaccinations increased from 35% before SIM to 40% after SIM. In addition, the percentage of adults with diabetes and Medicaid coverage who had poor control (HbA1c >9.0%) declined from 44-52% before SIM to 39% after SIM. Whether the improvements were due to SIM or other factors is unknown.

Maintenance. SIM increased Washington State's readiness for change in the future. SIM components are continuing in 2019 in some form, except for the Hub. Several stakeholders think that the Medicaid Transformation Project (MTP) will keep SIM alive after the Test Award ends in January 2019.

Other stakeholders are concerned that by shifting the ACH focus to the Medicaid population, the State has abandoned SIM goals to improve statewide population health and quality of care, and to reduce cost growth. Many stakeholders think that the turnover in state agency leadership positions is a threat to achieving SIM's statewide goals.

SIM State-Level Impact Evaluation Implications and Key Take-Aways. Given that system transformation takes time, did SIM get off on the right foot? Yes, for the most part, but concerns do exist:

- For Washington State to succeed as "first mover," SIM must spread broadly to Medicare and private sectors and build partnerships to accelerate statewide system transformation in the future.
- Stable state agency leadership is important to reduce uncertainty and clarify "Who is steering the ship in the future?"
- SIM is one distal contributing cause to progress in achieving the state's goals for improving population health, quality of care, and reducing the rate of growth in total health care costs per capita. Thus, attribution of changes in these outcomes to SIM and related Healthier Washington programs will be difficult, and that will challenge the efforts of planners and policymakers to monitor and adjust innovative programs in response to evolving "facts on the ground."

Practice Transformation Support Hub Component. The Practice Transformation Support Hub (the "Hub") is a SIM program that aims to advance practices towards three key objectives: the integration of behavioral health and primary care, adoption of value-based payment (VBP) systems, and the connection of practices to community resources to promote whole person care. The main components of the Hub were a team of "Coach/Connectors" and a web-based "Resource Portal" that provided online resources. The Coach/Connectors were a group of eight to nine individuals who conducted practice facilitation and coaching to primary care and behavioral health organizations and connected them to community resources. The Hub also developed practice transformation resources, hosted webinars, conducted live conferences, and taught mini-courses.

Hub Evaluation Findings. The Hub evaluation sub-team is reporting positive results in the following domains:

- During the implementation phase, the Hub successfully recruited practices for coaching, held webinars and live events, and launched a web-based resource portal. Stakeholders said that implementation could have been strengthened by clearer communication about the Hub's role in transformation, the vision for practice transformation, the business case for pursuing transformation, and a roadmap for success.
- The Hub had a positive impact on practice transformation. Practice engagement with multiple components of the Hub correlated with progress in behavioral health/primary care integration objectives, and participation in Hub education sessions correlated with progress in community linkages. Practices saw Coach/Connectors as the face of transformation. Learning series and activities developed with the UW Advancing Integrated Mental Health Solutions (AIMS) Center were highly valued and associated with progress in care integration.

Balancing the above positives, certain external and funding factors limited the Hub's effectiveness:

- The number of different concurrent initiatives (such as ACH, MTP, and other practice transformation efforts) contributed to a sense of "initiative fatigue" and "information overload" among busy clinicians caring for their patients and clients.
- Some practices were reluctant to engage in change because of uncertainty about the future of initiatives such as VBP.
- Limitations in financial resources, human resources, and technology were a barrier to transformation, particularly in rural communities.

Overall, it is too early to assess fully the impact of the Hub. The Hub was in operation for a relatively short time,

and practice transformation is a slow, gradual process that involves organizational culture change. Improved data systems to monitor and evaluate practices' progress are needed to effectively assess the impact of interventions such as the Hub.

Hub Implications and Key Take-Aways. The Hub evaluation has several implications for future practice and policy:

- Transformation requires time, culture change, and – noting the important SIM and Healthier Washington goal of improving the quality of care for persons living with physical and behavioral health comorbidities – enhanced collaboration between behavioral health and primary care providers will be required.
- Interventions need clear definition, especially in terms of how implementation will affect individual practices.
- Improved data systems would facilitate practice transformation efforts and evaluation. A comprehensive database of primary care and behavioral health practices linked to a database of practice transformation activities and a standard instrument to measure progress would greatly facilitate future efforts to measure the impact of practice transformation.
- Transformation will take more than coaching. It also needs a clearly articulated vision, a compelling business case, and a practical roadmap for success with adequate resources.

Accountable Communities of Health (ACH) Component. At the center of the Healthier Washington health system transformation work is the set of nine regional collaboratives known as Accountable Communities of Health (ACHs). The ACHs are tasked with building the foundational infrastructure for regional, multi-sector collaboration, developing regional health improvement plans, jointly implementing or advancing local health projects, and advising state agencies on how to best address health needs within their geographic areas.

The ACH evaluation was conducted by the Center for Community Health and Evaluation (CCHE). Qualitative and quantitative data were collected from multiple sources to document ACH progress and impact from 2015 to 2019. These data included site visits, interviews with state and ACH stakeholders, surveys of ACH participants, ACH meeting observation, and extensive review of reports and other documents.

ACH Evaluation Findings. Several key findings have emerged from the ACH evaluation:

- ACHs built the infrastructure and capacity to implement both phases of Healthier WA: SIM and MTP; this included building multi-sector regional collaboratives that transitioned successfully to independent nonprofit organizations in preparation for MTP.
- During SIM, the ACHs worked to build trust among partners, helped break down silos and developed other crucial collaboration elements.
- The ACHs successfully completed MTP planning and are poised for implementation of collaborative system transformation, including: care coordination projects, behavioral health integration, VBP/ population health support, HIT investments, clinic/community linkage infrastructure.
- The ACHs integrated broader community into MTP – enhancing the focus on social determinants of health and building a dedicated community engagement infrastructure.

ACH Implications and Key Take-Aways.

- The ACH model is a promising way of integrating community into large-scale health transformation initiatives. It has the potential to raise impact from individual organization or sector level to region-

wide, multiple sector level – necessary for system transformation.

- There is a need to balance state guidance with being regionally-driven; the tension needs to be recognized and addressed with as much clarity as possible, in both formal (e.g., contracting) and informal ways.
- Working in partnership with community collaboratives such as the ACHs requires a different approach by healthcare agencies; agency leaders and staff must build trust with partners and support innovation.

Medicaid Integrated Purchasing for Physical and Behavioral Health Component. On April 1, 2016, Clark and Skamania counties became the first region to adopt an integrated managed care (IMC) model through which Medicaid beneficiaries receive physical and behavioral health services through a single integrated managed care plan.

This evaluation component examines the impact of the transition to IMC on the health and social outcomes of Medicaid beneficiaries in Clark and Skamania counties in Year 1 of implementation, compared to the balance of the state.

IMC Evaluation Findings. Of the twenty-nine health and social outcome metrics examined, two-thirds showed no significant relative change in Southwest Washington, compared to the balance of state. The outcome measures that had significant differences were mostly positive for the Southwest region, with few statistically significant negative results. Additional analyses conducted for subpopulations with serious mental illness and co-occurring mental illness and substance use disorder showed results generally similar to those experienced in the broader Medicaid population.

Improvements in access to needed services were most commonly observed, including positive relative change in mental health treatment penetration in the Southwest region, compared to the balance of the state. Indicators of improvement in beneficiary level of function and quality of life, as measured by social outcomes, were also found. Other measurement areas, including quality of care, coordination of care, and utilization metrics saw more modest improvements.

In general, the quantitative evidence found no evidence of harm. Health care cost and cost of implementation were not measured directly and examined in the above statistical analyses.

The qualitative part of the evaluation of this SIM program component revealed the following key findings:

- Managed care organizations (MCOs) in this new Medicaid payment model showed evidence of internal change, benchmarking, and organizational learning. Plans for sustainability by MCOs included advancing clinical integration, increasing provider flexibility, and incorporating the new business model and associated infrastructure.
- Behavioral health providers (BHPs) were focusing on care coordination and team-based care delivery under this integrated payment model. A parallel approach by some BHPs was to engage with community stakeholders to deliver the full continuum of behavioral health services by leveraging and sharing data to take a more epidemiological approach to population health at the community level. Plans for sustainability of integrated care delivery by BHPs included: identifying new funding sources, maintaining existing funding, and dealing with the possible loss of funding across multiple organizations.
- Major facilitators of model implementation were community support, adopting a holistic, whole-person vision of integrated behavioral and physical health care, and provider engagement.
- Major barriers were limited access to data, lack of infrastructure, challenges in addressing social determinants of health, gaps in leadership, ambiguity, and workforce shortages.

IMC Implications and Key Take-Aways. The evaluation sub team for this Integrated Managed Care (IMC) payment redesign model pointed to several steps that would be likely to advance integrated purchasing and delivery of physical and behavioral health care:

- Refine policy to address continuing financial and contractual challenges.
- Reach out to providers, listen to their concerns and find sustainable solutions for regional collaboration and holistic care delivery.
- Define key metrics and terminology and work cooperatively on innovative solutions; stable leadership is necessary to advance this kind of cooperation and innovation.
- Leverage deep, positive relationships with MCOs in communicating with providers and community stakeholders to address concerns and find solutions.

Encounter to Value Evaluation Component. At the inception of SIM, a new value-based payment (VBP) model was intended for implementation by federally qualified health centers (FQHCs), rural health clinics (RHCs), and critical access hospitals (CAHs). HCA's objectives for this "Encounter to Value" payment model were to provide new financial incentives that would encourage improved value (better health, better care, and reduced health care costs per capita) and simultaneously promote financial stability and sustainability of these provider organizations, which serve predominantly vulnerable populations- often in underserved areas. At present, a new payment model is still under development for the CAHs and RHCs. Only FQHCs participating in this new pilot are being paid for their Medicaid managed care populations under this payment model, termed "APM4" in the lexicon of CMMI, and payment model 2, or "PM2" within SIM.

Under PM2, participating FQHCs are paid a per member per month (pmpm) amount at the inception (baseline) of this new payment model. The baseline pmpm is set as the prevailing encounter rate at baseline under the former APM3 payment regime, multiplied by the number of the FQHC's encounters at baseline. The FQHC's pmpm payment is increased in future years by the rate of medical care price inflation (based on the Medicare Economic index). If the number of encounters per member per month are increased, PM2 pmpm payment is adjusted to what the FQHC would have received under the former encounter-based APM3 payment model. Thus, the FQHC is "held harmless" for unanticipated increases in utilization. The only downside risk under PM2 is that the provider organization is not directly reimbursed for any new investments in infrastructure or operations undertaken to deliver care within a fixed pmpm. Participating FQHCs have the potential for increased revenue and profitability if they can manage infrastructure costs effectively and increase the number of persons served (covered lives). In addition, the FQHC can earn additional payments for meeting quality targets.

PM2 Evaluation Qualitative Findings. Based on stakeholder feedback in key informant interviews, it is too early to judge the perceived effectiveness of PM2 for the participating FQHCs. Three to five years might be needed to detect scientifically credible progress on measures of health outcomes, quality (including patient experience), and cost. Nonetheless, executive interviewees remain optimistic regarding future results on these metrics.

FQHC implementation strategies for PM2 included:

- Change from a production orientation in organizational systems and infrastructure to one aligned with population health management, while simultaneously supporting a shift in the health care provider's perspective to whole-person care.
- Ongoing focus on quality metrics, encouraged by financial incentives
- Partnership with community organizations, which is viewed as a key to success under VBP

Several major facilitators of PM2 implementation were identified:

- Executive leadership
- Recruitment of specialized personnel (especially, quality and data analytics)
- Access to accurate data (clinical and financial, including claims and encounter data)
- Connections with ACHs and other state and federal resources

Major barriers were:

- Reluctance to change (inertia)
- Resource cost of change (especially, finance and personnel)
- Recruitment and retention of providers
- Challenges in consistently aligning external & internal data

PM2 Quantitative Evaluation Findings. The Encounter to Value payment evaluation sub-team performed two sets of quantitative analyses:

(1) Difference-in-difference (DID) regressions to estimate the effect of the new payment model on utilization, cost (spending), and quality among the 16 intervention FQHCs, relative to the comparison group of eight non-participating FQHCs, in the 12 months after PM2 implementation started in January 2017.

The DID regression results are consistent with the qualitative findings based on key informant interviews of administrative and clinical leaders:

- Only one utilization measure changed significantly relative to the comparison group: hospital outpatient department (OPD) utilization rose slightly (an increase of one-tenth of 1 percent per person-month in the probability of use of the OPD). The probability of utilization of the ER, physician or other clinical and professional services, and pharmacy prescriptions did not change significantly.
- Similarly, spending per person-month changed only for one service modality: controlling for demographic and environmental variables, pharmacy prescription spending declined by roughly $4.29. Other spending categories (ER, hospital OPD, and physician or other clinical and professional services) had no significant changes, nor did total spending change significantly.
- Only one of eight annual quality metrics – vision exam as part of comprehensive diabetes care – showed significant improvement relative to the comparison group in the first performance period (2017) when measured against the pre-intervention period (2014 – 2016). The other measures (four screening measures: breast cancer, cervical cancer, colorectal cancer, and chlamydia) did not improve significantly (in fact, cervical cancer screening actually declined), nor did other measures of comprehensive diabetes care (medical attention for nephropathy; HbA1c blood glucose testing). Similarly, neither the measure of statin therapy received, nor the measure of patient adherence to statin therapy for patients with cardiovascular disease, changed significantly.

(2) The UW team also conducted a secondary pretest-posttest analysis of changes between the pre-intervention year (2016) and the post-intervention year (2017) for eight quality measures selected by HCA as the basis for financial quality incentives under PM2. Because these measures were not available for the comparison group of non-participating FQHCs, and other factors were not included in this analysis, these results are descriptive only and thus do not imply causal effects of PM2 on quality.

Results are limited to eight quality of care measures constructed from claims and encounter records because electronic health record data were not available to RDA. We used parametric student t-tests and

non-parametric tests (Wilcoxon signed rank) to evaluate the statistical significance of those measures. Four of the eight measures showed significant differences on both the t-tests and Wilcoxon tests:

- Effective antidepressant medication management in the acute treatment phase
- Effective antidepressant medication management in the continuous treatment phase
- Well child visits for children ages 3 – 6 years
- Effective medication management for people with asthma

The measures for comprehensive diabetes care (blood pressure control and blood glucose, HbA1c control) did not improve, nor did blood pressure control for patients with hypertension or childhood immunization status.

PM2 Implications. The impressions from the key informant interviews point to some encouraging signs for effectiveness of PM2, e.g., limited, but measurable quality improvement. Quality metrics and patient experience appear to be the most likely domains for PM2-driven improved performance in the near term. The significant improvement in four of eight quality metrics is consistent with these perceptions, but does not show causation. Only one of the quality measures in the regression analyses improved significantly, which suggests caution in expecting near term quality improvement.

Other common themes emerged:

- Sustained, dedicated executive leadership of HCA and of the FQHCs (consistently at the internal and external decision-making levels) will be crucial for PM2 sustainability.
- Timely, accurate, and actionable data for providers and their organizations will be crucial in achieving improved performance. In particular, alignment between MCO patient roster and claims-based data, financial reconciliation data, and quality measures with the FQHC's internal clinical and utilization data will be an important success factor for PM2.
- Strong connections and partnerships with community partners in health, human, and social services will be very important in achieving whole-person care and in enabling significantly improved clinical and financial performance under Encounter to Value.

Accountable Care Program (ACP) Component. HCA has engaged two health systems to implement accountable care networks (ACNs) in Washington state. The lead systems contracted with affiliated provider organizations to deliver comprehensive care under a shared savings payment arrangement with the Uniform Health Plan (UMP) serving public employees in the state. Each network provides integrated physical, mental health, and substance use disorder services, and assumes financial and clinical accountability for a defined population of members. Health plan benefits for patients choosing either of these two ACNs (termed "UMP-Plus") have been redesigned to offer lower patient cost-sharing and to encourage increased use of primary care within the network. UMP Plus, the ACP was initially rolled out in 2016 in five Puget Sound counties and expanded in 2017 to an additional four counties. This evaluation component covers both years. The ACP evaluation sub team conducted qualitative key informant interviews with leaders of the two networks, as well as quantitative regression analyses to distinguish changes in utilization, cost (spending), and quality between intervention and comparison group patients.

ACP Qualitative Evaluation Findings. The key informant interviews revealed several themes regarding the ACP:

- Provider organizations prioritized four objectives for their participation in the ACP: cost control, quality improvement, partnership development, and business growth.

- Major factors expected to promote success under ACP were: a clear and consistent organizational vision, strong organizational leadership, creation of a culture of learning, formation of multi-organization networks, and development of data and information technology (IT). Respondents agreed that, in particular, data and IT infrastructure influence the effectiveness of ACP.
- ACP's strongest effects were expected in quality of care, and key informants anticipated moderate or mixed effects on cost, population health, and patient experience.
- Future goals of ACP provider organizations targeted health equity, population health improvement, stronger benefit design, and keeping patients within network to achieve their objectives.

ACP Quantitative Evaluation Findings. Results of the DID regression analyses for the first year of the program (2016) reveal several statistically significant differential impacts (between ACP participants and the comparison group):

- Primary care utilization increased.
- In contrast, utilization of ER, specialty care, and hospitalizations decreased.
- None of the cost (spending) measures changed significantly, however.
- None of the eight quality measures targeted for incentives changed significantly.

ACP Implications and Key Take-Aways. Key informant interviews with ACP stakeholders suggest several recommendations for state policymakers:

- Continue to monitor the external factors that promote or impede ACP implementation.
- Communicate clearly and broadly the state government's vision for ACP implementation and articulate its goals and objectives, as well as a consistent set of key performance metrics
- Coordinate with provider organizations to support patient engagement and communication initiatives, also emphasizing improved care coordination and care management
- Refine current policy and carefully consider impacts on providers and patients; for the former, ensuring data availability and writing clear sustainable contractual requirements are essential for program success.
- Ensure that all voices are at the table, innovative solutions are welcomed and tested, and health systems stakeholder can rely upon government leaders to stay the course, facilitate network expansion, and help market the product to employees.

Greater Washington Multi-Payer and Data Aggregation Solution Component. The purpose of this component of the SIM evaluation was to assess implementation of a data platform in two health care organizations that would integrate electronic health record (EHR) and claims/encounter data to facilitate population health management and the growth of value-based payment (VBP) contracting. This evaluation component is strictly qualitative and focuses on implementation of the data aggregation solution. By mutual agreement of HCA and the UW SIM Evaluation Team, no quantitative regression analyses were performed to estimate causal effects of this intervention on utilization, cost, or quality.

In 2017, the Washington State Health Care Authority (HCA) distributed requests for information from health care provider organizations and information technology (IT) vendors, and responding organizations replied with information on their characteristics, capacity, and specific interest. A series of informational meetings and contract discussions led to three contracts: one with a national IT vendor, and two with provider organizations: (1) a large, urban-based physician network of 1100-plus special and primary care providers; (2) a rural hospital

system with three rural health clinics. The ultimate purpose of these contracts was to build an integrated claims and EHR data platform to support population health management and to increase the spread of VBP contracting.

Data Aggregation Solution Qualitative Findings. Development of an integrated data platform has encountered several challenges:

Two of the organizations (the IT vendor and one provider organization) expressed disappointment in delays in receiving, and gaps in claims data needed for the integrated data solution. Both reported little progress in using such data to improve quality, cost, health outcomes, or patient experience, with the exception of data solution-related improvement in Medicare wellness visits. Both organizations noted the lack of clinical data in the data aggregation.

The third participating organization (physician network) has shifted from integrating data through the contract vendor to an in-house solution, with some promising results. It is concentrating on providing patient profiles and performance reports to member practices. They have managed to close some care gaps and to provide actionable data to member practices – enabling follow-up with patients and increasing their use of primary care. Disparate files are now within a single view-- available to population health management, risk adjustment, and internal reporting tools.

In the face of these challenges, major facilitators of implementation include:

- Internal executive support and prioritization of Model 4 objectives
- HCA policy leadership and the agency's security and privacy office
- Provider education encouraging utilization of support staff at the top of their license
- Increased market penetration of VBP

Major barriers to implementation are the following:

- Delays introduced by a difficult security and design review process
- Required changes by Medicaid managed care organizations about the security and transmission of member assignment files
- More than 50 organization-based, non-interoperable EHR record systems
- Lack of timely EHR data feeds

Data Aggregation Solution Implications. Based on experience of the first 18 months of PM4 implementation, considerable external resources will be required to build an ongoing data platform that will effectively integrate timely and actionable clinical and financial claims-based data from multiple payers.

Washington state should also consider funding explicit comparisons of "best practices" of the in-house approach and external vendor for creating interim data aggregation solutions, in order to support further efforts to create a formal integrated data platform on a larger scale for provider organizations.

To tap the potential of the integrated data platform for outreach and population health management, MCOs must communicate to individual providers and their provider organization which patients have selected or been assigned to them.

Continued spread and scaling of value-based payment will be necessary to achieve the full potential of an integrated data platform for population health management.

1. Project Summary

CHAPTER 1

Washington SIM Evaluation

Project Summary

In 2015 Washington State received a $64.8 million State Innovation Model (SIM) test award from the Center for Medicare and Medicaid Innovation (CMMI)[1]. The award funded four years of work to transform Washington's health system, focused on achieving the Triple Aim: reducing the per capita cost of health care, improving the experience of care, and improving population health[2]. Transformation would be accomplished by implementing the state's proposed Health Care Innovation Plan[3]. This initiative began February 1, 2015 under the brand "Healthier Washington." Over the next 4 years, Healthier Washington grew and evolved to incorporate a broad range of related transformation work, not all SIM funded. While the SIM initiative officially ended January 31, 2019, much of the work seeded under SIM will continue under the Healthier Washington umbrella.

The Washington State Health Care Authority (HCA), one of the largest health care purchasers in the state[4], was selected to oversee the SIM Initiative in partnership with the Washington State Department of Health (DOH) and the Department of Social and Health Services (DSHS). These agencies in turn collaborated with many other public, private, and nonprofit organizations to implement this large, complex, and ambitious initiative. The State's Health Care Innovation Plan, at its core, called for changing and aligning the way the state, counties, health plans, and providers organize to achieve the Triple Aim. This was not an easy task given the fragmented, often unorganized, and highly decentralized nature of health care in this state and country.

As part of the award agreement, the state/HCA was required to contract for an independent evaluation of their SIM efforts. HCA selected investigators in the Department of Health Services, School of Public Health, at the University of Washington, to oversee the state's SIM evaluation, as well as be the lead evaluator on five specific aspects of SIM. HCA also contracted with investigators at DSHS's Research and Data Analysis (RDA) division and the Center for Community Health and Evaluation (CCHE) for the evaluation of particular SIM components. This evaluation report includes the work of all three organizations- the UW, CCHE, and RDA- on seven aspects of SIM.

Specifically, this report assesses the **implementation and impact of SIM as a whole** in the entire state and evaluates **three key sets of SIM interventions**: the regional Accountable Communities of Health (ACHs), the Practice Transformation Support Hub (PTSH), and the "Pay for Value" payment redesign strategies (of which there are four.) These interventions accounted for 49% of SIM funding. The remaining 51% was used primarily for foundational supports including information technology and data analytics (36%), as well as for project management (15%). The other aspects of the SIM Initiative are briefly described in the Background/Context Chapter of this report.

The three key sets of SIM investments covered by this evaluation are briefly described on the next few pages.

1 CMMI is a program of the Centers for Medicare and Medicaid Services (CMS) which is in the US Department of Health and Human Services (HHS). The Innovation Center was established by section 1115A of the Social Security Act (as added by section 3021 of the Affordable Care Act). Congress created the Innovation Center for the purpose of testing "innovative payment and service delivery models to reduce program expenditures … while preserving or enhancing the quality of care" for those individuals who receive Medicare, Medicaid, or Children's Health Insurance Program (CHIP) benefits. https://innovation.cms.gov/About

2 CMS adopted the Triple Aim framework of the Institute for Health Improvement (IHI) to help optimize healthcare systems. http://www.ihi.org/engage/initiatives/TripleAim/Pages/default.aspx

3 Washington State's Health Care innovation Plan can be found at: https://www.hca.wa.gov/assets/program/SHCIP_InnovationPlan.pdf

4 The Washington State Health Care Authority (HCA) currently purchases health care for more than two million Washington residents through Apple Health (State's Medicaid program) and the Public Employees Benefits Board (PEBB) Program. Beginning in 2020, the HCA will also purchase care for an estimated 250,000 lives under the new School Employees Benefits Board (SEBB) Program." https://www.hca.wa.gov/about-hca/who-we-are

1. Establish regional Accountable Communities of Health (ACHs).

ACHs are regional coalitions composed of representatives from a variety of sectors, working together to engage in regional assessment, planning, and project implementation to ultimately improve population health and transform the health system in their region. SIM funding helped form nine ACHs across the state whose boundaries align with Medicaid's Beahvioral Health Organizations (BHOs) and Regional Services Areas (RSAs)[5] and cover the entire state. ACHs are intended to strengthen collaboration, develop and implement regional health improvement and health system transformation efforts, and provide feedback to state agencies about their regions' health needs and priorities. Under SIM, the state did not dictate the organizational structure of ACHs, but provided funding, technical support, and oversight to help communities determine structures and processes. The state also provided each ACH with $50K to implement a small project, which provided the ACHs with their first opportunity to work together to benefit residents in their region. Members in each ACH were expected to work collaboratively to gather and share information, determine regional community needs, propose a project to HCA, and once accepted, at least begin the process of implementation. The ACHs will continue in their current form at least through 2022, albeit in a vastly expanded role and scope, with funding from the state's Section 1115 Medicaid Transformation Project (MTP) Waiver effective January 2017. *(CCHE evaluated this component)*

2. Develop a Practice Transformation Support Hub (Hub).

With SIM funding, the state contracted for a centralized Hub to assist primarily small and medium-sized primary care and behavioral health practices with:

- Integrating physical and behavioral health services
- Expanding clinical community linkages, and
- Moving towards value-based payment.

The Hub offered a variety of services including facilitating connections, offering educational opportunities, providing technical assistance and coaching services, developing resources, and offering a web-based, curated, resource portal. The centralized Hub, with its full array of services, will not exist post-SIM. However, HCA, recognizing the importance of practice transformation support to help practices progress along the desired path, will continue to fund the web resource portal, some statewide coordination efforts, as well some educational training offered through partner agencies/ organizations. The HCA has also encouraged ACHs to use MTP funding to contract for practice support services through the contractor who executed the Hub or other vendors. Several ACHs are pursuing this approach. *(UW evaluated this component)*

3. Initiate new payment-redesign strategies.

Four payment redesign strategies, or "Payment Models," were launched under SIM. Each started as relatively small voluntary efforts referred to as "pilots" or "early adopters." All began with the intention of spreading to more partners, networks, and/or geographic areas over time. The purpose of the four strategies was to facilitate more payers and providers into value-based payment arrangements. To achieve the most value, providers need to integrate behavioral health and primary care, and practice population health management. The four SIM payment redesign strategies include:

5 Washington State Medicaid divides the state up into 10 regional service areas (RSAs). Eight of these RSAs match up exactly with the boundaries of eight ACHs, while two RSAs make up the ninth ACHs. Specifically Cascade Pacific Action Alliance ACH is made up of both Thurston/Mason and Great Rivers (formerly Timberlands) regional service areas. RSAs define new geographical boundaries for the state to purchase behavioral and physical health care through managed care contracts. They are not administrative authorities. In contrast, the Behavioral Health Organizations (BHOs) purchase and administer publicly-funded mental health and substance use treatment services under managed care. https://www.dshs.wa.gov/sites/default/files/BHSIA/dbh/BHO/BHO_Overview.pdf..

A. **Integrating Payment for Physical and Behavioral Health Services in Medicaid Managed *Care.*** This effort, known as Integrated Managed Care (IMC), began in April 2016 with financial integration of Medicaid services in two counties (Clark and Skamania) in the Southwest Washington ACH region. As part of this effort, the State of Washington had previously combined the separate Medicaid funding for physical and behavioral health services into a single stream for this region and contracted with two managed care organizations (MCOs) in to provide this care. In 2018, IMC spread to three more counties (Grant, Douglas, and Chelan) in the North Central ACH region. As of January 1, 2019, twenty-four counties in six ACH regions are implementing integrated managed care. The remaining regions will come on board by the legislative mandated[6] deadline of January 1, 2020[7]. Financial integration of these services is expected to provide a foundation for clinical integration (whole person care) and value-based payment arrangements. *(RDA was the primary evaluator of this component, with supplemental work in the form of Key Informant Interviews provided by the UW)*

B. **Offering an Accountable Care Program (ACP) option for public employees.** Launched January 1, 2016, this program was offered as a health insurance option for public employees[8] who are not on Medicare and who reside in one of five counties: King, Pierce, Snohomish, Kitsap, or Thurston. The ACP, known as the Uniform Medical Plan Plus ("UMP Plus") is a self-insured plan offered through the Public Employees Benefit Board (PEBB) program. The State's ACP is built on the experience of Boeing's Accountable Care Organization and includes one of the same networks.[9] The state's ACP seeks to improve health outcomes by holding the provider networks accountable for quality of care, as measured by select metrics, and using shared savings incentives and downside risk. Currently, PEBB members in eight counties[10] across the state have a choice of two ACP networks under UMP Plus. Enrollment in the ACP has grown considerably since its inception. Post SIM, the program is expected to continue expanding in terms of geographic availability, number of enrollees, and participating providers. In January 2020, the ACP is likely to be offered through the state's new School Employees Benefits (SEBB) Board[11], which is expected to bring in an additional estimated 250,000-300,000[12] covered lives. Because SEBB employees are geographically more spread out than employees covered under PEBB, and because new enrollees to state benefits have been more likely to select UMP Plus as their health plan than employees who are already enrolled, the HCA anticipates that if offered, SEBB participation will give a substantial boost to the state's Accountable Care Program. *(UW evaluated this component)*

C. **Moving from encounter-based payment to value-based payment.** This payment redesign strategy started out as a single effort, led by consultants working in close partnership with the HCA.[13] [14] However, due to the differing needs of the entities involved (i.e. the Federally Qualified

6 WA State Senate Bill 6312, 2014 http://apps2.leg.wa.gov/billsummary?BillNumber=6312&Year=2013&BillNumber=6312&Year=2013

7 For more information on the movement to integrated managed care, please see https://www.hca.wa.gov/assets/free-or-low-cost/19-0025.pdf

8 Washington State's Public Employee Benefits Board (PEBB) designs, contracts and administers a program of benefits (including medical) for the state as an employer and state employees. It is also serves some counties, municipalities, political subdivisions, and higher education employees. One of the medical plans offered under PEBB is a self-insured plan known as the Uniform Medical Plan (UMP). UMP comes in three forms: Classic, a consumer directed health plan (CDHP), and as an accountable care plan. All three are administered by Regence. The other set of plans offered through PEBB are operated by Kaiser Permanente of Washignton (formely known as Group Health Cooperative) and include a Classic, CDP, Sound Choice and Value plan.

9 Boeing's ACO launched a year before the state's ACP, in January 2015. UW Medicine was one of their accountable care networks before becoming one for UMP Plus. The other network offered under UMP Plus is Providence High Value Network.

10 Uniform Medical Plan Plus started in Kitsap, King, Pierce, Snohomish and Thurston in Jan 2016. On Jan. 1, 2017, it expanded to Grays Harbor, Skagit, Spokane and Yakima counties. On Jan 1 2019, the program will no longer be offered in Grays Harbor County, but will continue in all other counties.

11 SEBB – the School Employee Benefits Board, created by HB 2242 in 2017 to establish eligibility criteria and develop benefit plans for school employees. All Washington State school districts, educational service districts (ESDs), and charter schools will receive health and other insurance benefits for their eligible employees through the SEBB Program. The HCA administers this program.

12 https://www.hca.wa.gov/assets/PEBBb/SEBBb-general-fact-sheet.pdf

13 Harold D Miller, President and CEO of the Center for Healthcare Quality andPayment reform, based in Pittsburgh, PA, is a nationally recognized expert on health care payment and delivery reform. https://www.chqpr.org/staff.html, and Health Management Associates, an organization that consults on healthcare policy development, Medicare/Medicaid solutions, and complex business healthcare solutions. https://www.healthmanagement.com/

14 Health Management Associates, https://www.healthmanagement.com/

Health Centers (FQHCs), Rural Health Clinics (RHCs), and Critical Access Hospitals (CAHs), over time this effort evolved into two separate strategies. One became the **pilot of a new Alternative Payment Model (APM) for Federal Qualified Health Centers (FQHCs).** The other, known as the "Washington Rural Health Transformation" initiative or the "Washington Rural Multi-payer Model," became an effort to redesign the state's rural health care payment system. This model is still in the design phase. The Rural Health Transformation effort is not evaluated in this report but is briefly discussed in Chapter 5, Section 1. The Alternative Payment Model pilot with FQHCs, is evaluated in this report and included as Chapter 5 Section 4. After a lengthy stakeholdering process, 16 of the 24 eligible FQHCs volunteered to participate in the pilot. Agreements were signed in July 2017. Rather than being paid on a per-encounter basis with supplemental payment, participating FQHCs were paid on a per-member per-month (PMPM) capitated basis for their Medicaid beneficiaries (which typically constitute between 45%-65%[15] of their patient population.) These FQHCs also became eligible for annual incentive payments which rewarded individual FQHCs for meeting performance targets and/or making improvements along select (a set of eight[16]) quality metrics. This strategy provides FQHCs with financial flexibility for practice innovation and encourages population health management and whole person care. The APM model adopted, known as "PM2," is expected to continue beyond SIM with the participating FQHCs, and if successful, may expand to additional FQHCs. *(UW evaluated this component)*

D. **Developing a multi-payer data aggregation platform.** This SIM effort works with two provider networks (an independent physician association (IPA) network and rural hospital based network) to improve their data infrastructures. In each network, the goal is to build a data platform that combines electronic health record (EHR) (clinical) information with claims/encounter (economic) data beginning with Medicaid Managed Care plan enrollees who see network providers. HCA, as the administrator of Medicaid, provides the claims data to each network's data aggregator. For one of the participating networks, HCA is also providing claims data from its self-insured Uniform Medical Plan – Classic and Consumer Directed Health Plan versions. The data aggregators prepare datasets for their organization's network. At this point, the networks are still patching in clinical information and developing their own approach for how to use the integrated information (claims plus EHR) with their providers to encourage adoption of value-based payment, improve clinical care coordination and whole person care, and advance population health. The HCA hoped to be further along in this process and include other payers in this effort to increase network and provider access to this critical information for a broader swath of their patients. Post-SIM, the HCA will continue to provide Medicaid claims data to both networks through automated data sharing protocols. The provision of UMP data, however, is still in question, as additional funding would be required to cover the costs of pulling the data by the plan's third-party administrator or actuarial consultant. Either way, both participating provider organization networks are expected to continue along this path to incorporate other payers and eventually develop a real-time, actionable, dashboard available for their providers. In the long run, these networks are expected to use this new data infrastructure to improve management of patient care and ultimately increase their adoption of value-based payment arrangements. *(UW evaluated this component)*

Due to the delayed implementation of many SIM components (common to large ambitious complex projects like SIM), the time lag inherent in working with claims/encounter data, and the longer than anticipated time

15 https://bphc.hrsa.gov/uds/datacenter.aspx?q=d&state=WA#glist

16 Quality Metrics for the FQHC pilot include: 1) Comprehensive diabetes care- blood pressure control, 2)Comprehensive diabetes care- HbA1c control, 3) Controlling Blood Pressure (<140/90), 4) Antidepressant medication management - acute phase 5) Antidepressant medication management continuous phase treatment, 6) Medication management for people with asthma (ages 12-18), 7) Childhood immunizations, and 8) Well child visits in the 3rd, 4th,5th, and 6th years of life.

required to obtain accurate and complete datasets, UW investigators did not have as long an intervention period, nor as much time to evaluate final results and assemble the report as originally anticipated and warranted by the size and complexity of this evaluation. CCHE was challenged by the advent of the Medicaid Transformation Project (MTP) effective January 2017, and the subsequent need to navigate and adapt to the substantial changes and growing complexity of ACHs. RDA had the challenge of balancing evaluation work with the need to respond quickly to ad hoc governor, legislative, and agency requests regarding the move to integrated managed care.

Nonetheless, evaluators are confident that the material shared in this report can help the state learn from the SIM experience to improve the design and implementation future transformation efforts. The information might also aid other states considering adopting similar reforms and provide useful information for the independent federal evaluator[17] responsible for assessing SIM test awards across multiple states.

The following chapters are presented by organization, starting with the work of the University of Washington (UW), followed by that of DSHS's Research and Data Analysis division (RDA), and ending with the work of the Center for Community Health and Evaluation (CCHE). As will soon become apparent, these chapters are written by different investigators in their own style. All subsequent chapters, with exception of Chapter 6, include a "brief" report followed by a full evaluation. Next, Chapter 2 provides background and context to help readers better understand the whole SIM initiative (not just what is evaluated in this report) and the health care landscape in which SIM was implemented and set the stage for the subsequent component-specific evaluation chapters. Chapter 3 examines the implementation and impact of SIM in the state as a whole. Chapter 4 provides an evaluation of the Practice Transformation Support Hub. Chapter 5 consists of an overview of paying for value as well as evaluations of the four payment redesign strategies (the State's new Accountable Care Program for public employees, the FQHC Alternative Payment Model pilot, the data aggregation platform, and the integration of behavioral and physical health in Medicaid managed care). Last, but certainly not least, the report includes the assessment and learnings from the Accountable Communities of Health under SIM.

17 Research Triangle Institute (RTI) is responsible for conducting the federal evaluation for the CMMI/CMS of Round 2 SIM –Test grant awards in 11 states (CO,CT, DE, ID, IA, MI,NY, RI, OH, TN, & WA). They also led the evaluation for Round 1 SIM Test states (AK,ME,MA,MN, OR, & VT)

2. Background and Context

Chapter 2

Washington SIM Evaluation

Background & Context

This chapter briefly describes the health policy landscape in Washington State before receipt of the SIM-Test award, followed by a description of the SIM Initiative, including its aims, goals, primary drivers, and a description of other supportive or complementary SIM investment areas not evaluated by this report. The chapter ends with a description of other related health care initiatives occurring in the state during the SIM implementation that may have influenced the progress of SIM but cannot be measured or adjusted for in our analyses.

2.1 Before the SIM Test Award

Washington State has a history of innovation and pursuing health system reforms. In the late '80s the state initiated the Basic Health Plan to improve coverage for low income residents, and in 1993 it enacted universal health care, only to have its individual mandate repealed two years later. In the 2000s, the state focused on expanding managed care, better understanding health disparities, and ensuring that eligible residents enrolled in the existing state sponsored programs.

In 2010, the passage and execution of the Patient Protection and Affordable Care Act (ACA) provided the State with new opportunities to expand the spread, scope, and scale, and accelerate some of this work that was already underway. The state, with its population focus and existing infrastructure, was well positioned to take advantage of the new law. Washington successfully expanded its Medicaid program, set up the State Health Benefit Exchange, and applied for a CMMI State Innovation Model test-award.

When Washington State first applied for a SIM test-award in 2012, CMMI determined the state should be offered a SIM "pre-test" award, with funding beginning February 2013. This pre-test award provided Washington with $1 Million to support further development of the state's 2012 Health Care Innovation Plan, originally drafted for the Governor. The Health Care Authority led this effort in collaboration with other state agencies, the Governor's Office, an Executive Management Advisory Council and several consultants and partners (including the Washington Health Alliance and the Bree Collaborative, who each engaged their stakeholders as well). As a result of this effort, a revised and expanded version of the five-year Washington State Innovation Plan was submitted to CMMI in January 2014. The plan described the strategies, methods, tools, and policy levers, the state would use to transform the structure and performance of its entire health system. Essentially it served as a framework for transformation that leveraged the expertise, unique history, and innovative culture of the state.

The State's Innovation Plan received strong bipartisan support, as evidenced by passage of enabling legislation (E2SHB 2572, and 2SSB 6312) and the provision of funding in 2014 to further develop elements of the plan in anticipation of a second SIM grant opportunity.

2.2 About the SIM-Test Award

In May 2014, the second SIM grant opportunity became available. Washington State applied in July and was awarded a $64.8 Million SIM-Test Cooperative Agreement in December. CMS funded the state to implement its Health Care Innovation Plan, the broader and more refined version developed under the pre-test award.

With the SIM-Test Award, the State was expected to use its position in the marketplace to drive transformation as both a "first mover" and a convener. The State used SIM funding to build capacity and modest infrastructure to support broader collaboration. While overall SIM supports the Triple Aim, the initiative had its own foundational strategies articulated as aims and goals to guide this work.

SIM AIMs & Goals

The three primary aims of the Washington SIM Initiative were: 1) building healthier communities through a collaborative regional approach; 2) advancing whole person care by integrating medical and behavioral health services; and 3) improving how services are paid for by rewarding value over quantity. A brief description of these aims and their accompanying goals is presented in Figure 1.

Figure 1. SIM Aims & Goals

Aim 1: Build healthy communities and people through prevention and early mitigation of disease throughout the life course	***Goal:*** *By 2019, 90% of Washington residents and their communities will be healthier*
Aim 2: Integrate health care and social supports for individuals with physical and behavioral co-morbid- ities	***Goal:*** *By 2019, all persons with physical and behav-ior- al (mental health/substance abuse) comorbidi-ties will receive high quality care*
Aim 3: Pay for value, instead of volume, with the state leading by example as "first mover"	***Goal:*** *By 2019, Washington's annual health care cost growth will be 2% less than the national health expendi-ture trend*

Source: WA State's Healthier Washington SIM Grant Application, July 2014 – Narrative Section, page 2.

SIM Investments

Washington SIM is an initiative with multiple interacting components, as shown in Figure 2. The three key SIM interventions are:

(1) the ACHs

(2) the Hub, and

(3) Paying for value (specifically the four Payment Redesign Strategies)

This evaluation covers the above intervention investments, which are covered in more detail in the component specific chapters: The Hub in Chapter 4, Paying for Value in Chapter 5, and the ACHs in Chapter 6.

Figure 2. SIM Investments

Washington SIM Investments	
Key Intervention Investments 1. Accountable Communities of Health (ACHs) 2. Practice Transformation Support Hub (Hub) 3. Paying for Value - Payment Redesign Strategies	**Additional Investments** 7. Shared Decision-Making Program 8. Plan for Improving Population Health 9. Workforce Initiatives
Foundational Support Investments 4. Collaborative Governance Structure 5. Performance Measurement 6. Data Analytics & HIT/HIE Infrastructure	

Foundational Supports and Additional Investments

Washington SIM's foundational supports and additional investments in Figure 2 are briefly described below but are not evaluated in this report. Investments in foundational supports *(4) collaborative governance structure, (5) performance measurement, and (6) data analytics & HIT/HIE infrastructure)*, were expected to improve the State's development and implementation of the three key interventions. The additional investments *((7) shared decision making, (8) the Plan for Improving Population Health, and (9) workforce initiatives)*, complemented the work of the three key interventions. These investments, along with the key investments, formed the full SIM Initiative, encompassing a broader scope than the evaluation content of this report. Each SIM investment was initiated as a separate activity, typically through the aid of consultants and contracted partners. The vision has always been that these components would all work together to facilitate system change. There was no blue-print for how this was to happen, but over time some connections and synergies naturally arose or were deliberately made.

(4) **Maintaining a strong collaborative governance structure**

SIM/Healthier Washington is, by design, a collaborative effort that involves multiple partners at the state, regional, and community levels. HCA leads the effort, working closely with the Department of Health (DOH), Department of Social and Health Services (DSHS), and the Governor's office. SIM funds supported state personnel at multiple agencies, including the Governor's office. While only a very small portion of SIM funding was used for this purpose, having agency personnel positioned across state offices/departments facilitated HCA's attempts to pull together disparate and siloed programs and processes. The new governance structure and more collaborative approach established under SIM are expected to continue into the future.

Throughout the SIM period, HCA has engaged the Health Innovation Leadership Network (HILN)[1], comprised of key decision-makers representing providers, businesses, health plans, consumers, community entities, governments, tribal entities, and other partners, to support Healthier Washington and collaborate on mutual goals. This advisory group has met quarterly since 2015. Subcommittees, called "accelerator committees" focused on specific efforts at particular times, and were expanded or disbanded as needed. HILN was developed to help promote concepts, obtain commitments, and encourage adoption of Healthier Washington strategies in the broader community. Post SIM HILN will continue to meet and evolve based on the needs and desires of the group.

To facilitate and align the work of Healthier Washington and the ACHs, HCA convenes a weekly phone call with ACH staff, invites ACH members to join select committees, hosts statewide ACH convenings that bring ACH staff/members together with key stakeholders, and leverages the strategic learning feedback from CCHE to continuously improve the ACH initiative.

(5) **Ensuring appropriate performance measurement**

Washington is one of the few states with a common measure set[2]. In 2014, the Washington Health

1 https://www.hca.wa.gov/about-hca/healthier-washington/health-innovation-leadership-network

2 https://www.hca.wa.gov/assets/measures-fact-sheet.pdf. & https://www.hca.wa.gov/assets/Washington-State-Common-Measure-Set-2018.pdf As of 2018, the Washington State Common Measure Set for Health Care Quality and Cost consists of 66 measures grouped into nine categories, which can be further narrowed into access, prevention, acute care, chronic care, and Washington State health care spending. These measures are reported annually for at least one of the following groups of voluntary reporters: the State; Counties/ ACHs; Health Plans; Medical Groups/ Clinics; and/or Hos- pitals. No measures are reported across all groups. Over the SIM period, some notable measure additions occurred in the areas of behavioral health, avoiding overuse of services, and opioid prescribing. The majority of measures (51%) were adopted from National Committee for Quality Assurance Healthcare Effectiveness Data and Information Set (NCQA-HEDIS), 23% are home grown (from HCA,DOH, DSHS, the Washington Health Alliance, or the Bree Collab-

Alliance[3], in partnership with the HCA, facilitated development of a "starter set" of measures to help with measure alignment in value-based-payment (VBP) arrangements and other health system innovations.

The HCA uses a multi-agency stakeholder process to help identify appropriate performance measures to include from this set in its own purchasing contracts and pay-for performance arrangements.

The common measures set currently includes 66 measures, about a third of which are used in SIM/ Healthier Washington. Currently HCA uses a total of 25 performance measures tied to VBP, five[4] are common across all state contracts.[5] This includes contracts with Medicaid Managed Care Organizations (MCOs), Uniform Medical Plan Plus Accountable Care Networks (ACNs), and the FQHCs participating in the PM2 pilot. More information on these measures is available in the first section of Chapter 5, Paying for Value. Having common measures provides a foundation for provider performance measurement, health care accountability, and being able to measure progress on Healthier Washington goals.[6]

This process has benefited greatly from the oversight of the Performance Measures Coordinating Committee (PMCC), co-chaired and co-staffed by the Washington Health Alliance and the HCA.[7] Under SIM, the committee met quarterly to ensure measures evolve appropriately over time in response to changes in the science of measurement and state priorities. The state is working to allocate resources so this process can continue.

(6) **Investing in data analytics infrastructure.**

Under SIM, HCA developed new in-house analytical capacity through its Analytics, Interoperability and Measurement (AIM) Team, which was recently renamed Analytics, Research and Measurement (ARM), to more accurately reflect the team's broader role in transformation efforts. During the SIM years, ARM built the data infrastructure, analytic tools, and standardized measurement to support SIM planning, operational management, and evaluation. The team worked with other state agencies to break down data silos and leverage existing health data systems to create a linked data infrastructure. Building this capacity took time.

Some specific examples of SIM-related AIM work include:

- Modeling payment for the development of the FQHC APM pilot and the up and coming rural health transformation initiative.
- Calculating quality metrics for performance payments.
- Working with actuarial consultants and RDA to prepare the data sets for UW's evaluation of two payment redesign strategies (the FQHC pilot and the ACP for public

orative), 11% from Centers for Disease Control and prevention (CDC) , 6% from Agency for Health Care Research and Quality(AHRQ), and

a spattering from other entities including CMS, Physician Consortium for Performance Improvement (AMA-PCI), American Nurses Association (ANA), CMS, PQA = Pharmacy Quality Alliance (PQA), and The Joint Commission (TJC) – an independent non-profit that accreditates and certifies health care organizations.

3 State legislation ESHB 2572 established the Performance Measures Coordinating Committee (PCCM) –and tasked the committee with identifying and recommending statewide performance measures through a transparent process that includes opportunities for public comment.

4 5 or 6 measures in common depending upon how you count them. HCA contracts consider it 5, but from a measurement standpoint it's six. The measure in question is: Medication Management for Depression acute and continuous. More information on these measures is included in Chapter 5.

5 https://www.hca.wa.gov/assets/program/vbp-roadmap-2017.pdf

6 https://www.hca.wa.gov/about-hca/healthier-washington/performance-measures#what-is-statewide-common-measure-set

7 State legislation ESHB 2572 established the Performance Measures Coordinating Committee (PCCM) –and tasked the committee with identifying and recommending statewide performance measures through a transparent process that includes opportunities for public comment.

employees).

- Providing data to ACHs to help them identify regional needs, select community projects, monitor implementation, and track and report progress, as required for payment under MTP. Specifically, they developed the ARM data dashboard suite and the HW dashboard[8], both updated quarterly. These are also made available to local health jurisdictions.
- Producing quarterly metrics for CMS on provider and resident participation.

In the last year of SIM, the state has worked to align and integrate multiple health Information technology and health information exchange (HIT/HIE) activities into a single strategic roadmap and HIT operational plan[9]. The plan will be implemented in collaboration with ACHs, providers, payers, other state agencies, and community partners to ensure activities meet stakeholder needs and are sustainable. HCA intends to update the plan annually through 2020. HCA will continue to invest heavily in HIT, including continuing its support of the Clinical Data Repository (CDR)[10] and All Payer Claims Database (APCD)[11]. Note that data from these two systems were not available for use by implementers or evaluators during the SIM years.

(7) **Strengthening person and family engagement through Shared Decision Making (SDM).**

In August 2016, Washington became the first state in the nation to formally review and certify patient decision aids to help providers have conversations with patients about preference-sensitive procedures[12]. Under SIM, shared decision making (SDM) tools were certified for four topic areas: maternity care, end-of-life care, and joint replacement/spine care, and cardiac care. A team at the University of Washington conducted an evaluation of a pilot project using the maternity care SDM tool. This report is available on the Health Care Authority's website.[13] The two networks participating in the state's ACP are currently integrating SDM strategies into their standard operations.

(8) **Creating a Plan for Improving Population Health (P4IPH).**

The Washington State Department of Health took the lead responsibility for this component and prepared a population health planning guide with resources to help partners apply a population health approach to various health issues in their communities. The guide is based on the

8 ARM data Dashboard suite uses broader categories than the HW Dashboard and is not limited to the Medicaid population. It includes demo- graphics for Medicaid and Overall WA, identifies high volume providers of specific services in Medicaid, and shares select chronic disease and opioid prescribing statistics in the Medicaid population. In contrast the HW Dashboard just includes Medicaid enrollment and claims/encounter data – but it allows users to explore the data by HEDIS measure. https://www.hca.wa.gov/about-hca/healthier-washington/data-dashboards

9 https://www.hca.wa.gov/assets/program/vbp-roadmap-2017.pdf

10 The CDR builds off previous HIE work of OneHEalthPort and Health Care Authority initiated in 2009. The CDR currently contains data from providers/organizations serving Washington State Medicaid Managed Care clients who also have a certified EHR system and are eligible for federal meaningful use/EHR incentives. They submit claims/encounter data and clinical summaries which are aggregated to produce a longitudinal patient record available in real time to assist providers in their clinical decision making. Organizations pay an annual fee based on their net patient revenue to access the data. https://www.hca.wa.gov/about-hca/health-information-technology/clinical-data-repository-cdr

11 In 2015 the Washington State legislature called for the Office of Financial Management to contract for development and governance of the WA-APCD. OFM selected the Center for Health Systems Effectiveness (CHSE) at Oregon Health & Science University as the lead organization. CHSE subcontracted with Onpoint Health Data, who have designed numerous state APCDs, for vendor services. The APCD database is designed for research purposes and public use. It contains the data of over 4 million Washingtonians in an aggregated (unidentifiable) form. The database is the state's most complete source of health insurance data, collecting and containing claims from about 30 commercial health care payers; the Medicaid program, includ- ing its five managed care plans; and Medicare Advantage, the HMO plan options for Medicare members. It also includes patient eligibility and enrollment data, historical insurance claims data, and results from the Statewide Common Measure Set — a way to measure health care quality and performance. Data on dental services, workers' compensation and Medicare services claims will be added to HealthCareCompare later this year. https://medium.com/ wagovernor/washington-launches-new-online-tool-that-lets-patients-easily-compare-prices-for-medical-procedures-a54e78b74be9. The public face of APCD, launched June 2018, is called Washington HealthCare Compare can (WHCC) and be found at can be found at: https://www.wahealthcarecom- pare.com/ . This site allows residents to search for the health care costs of over 100 procedures and treatments and see quality ratings of providers and hospitals.

12 https://www.hca.wa.gov/assets/program/hw-timeline.pdf

13 Maternity SDM Pilot Evaluation report is available at: https://www.hca.wa.gov/about-hca/healthier-washington/shared-decision-making.

prevention framework developed through an 18-month, public-private, multi-sector partnership prior to SIM. The materials were developed to facilitate the work of partners interested in moving more upstream to addresses prevention, health equity, and social determinants of health. Guide materials are currently housed on the Hub Resource Portal.[14]

(9) **Exploring ways to strengthen workforce capacity.**

In 2015, Healthier Washington convened a Community Health Worker (CHW) Task Force to develop actionable policy recommendations for integrating CHWs into Washington's health care system. The Task Force released a report in 2016[15]. DOH furthered this work through its CHW Training and Education Project. The taskforce will reconvene in 2019 to develop guidelines for implementing their policy recommendations, which are due to the legislature by June 30, 2019.

Healthier Washington formed and funded the Health Workforce Sentinel Network[16] to collect data from human resource departments at health care organizations and reconcile it with data from health professional educational institutions, noting surpluses and gaps in skills/professions.

This work will help the state identify and respond to the changing demand for health care workers with an eye toward identifying newly emerging skills and roles. A summary of the Network's findings was included in the Washington's Health Workforce Council 2017 annual report[17]. The network will continue conducting its rapid periodic polling of workforce organizations post SIM.

Both the CHW Task Force and the Sentinel Network are assisting the State develop a meaningful workforce policy that supports providers in moving toward value-based-payment, integrating behavioral and physical health, and enhancing connections with social/community services.

SIM AIMs & Investments Driving Change

Figure 3 summarizes how the main SIM investments/interventions aims were designed to drive change towards its three key aims.

Figure 3. SIM Aims and Investments Driving Change

AIMs	Main SIM Investments Driving Change
Aim 1: Build healthy communities	Primarily through the ACHs. Also, through the Plan for Improving Population Health
Aim 2: Improve quality of care by integrating services	Primarily through the Integrated (Medicaid) Managed Care (IMC) payment redesign strategy and the Hub. ACHs became involved as their region ad- opted or began preparing for adoption of IMC. By 2018, all ACHs became involved through development of their required Medicaid Transformation Project behavioral and physical health integration project. The other three payment redesign strategies are expected to lead to more integration and whole person care as well. In addition, the workforce initiative is expected to help with integration and whole person care.
Aim 3: Paying for value	Primarily through contracts and expectations of the four payment redesign strategies: IMC for Medicaid Managed Care plans, the Uniform Medical Plan Plus's Accountable Care Program networks, the FQHCs participating in the Alternative Payment Model pilot, and through assisting the development of a data aggregation platform for the two participating provider organizations. HCA also furthered this aim through its Centers for Excellence program, Shared Decision-Making effort, measurement work, as well as through its HILN and purchaser stakeholder work.

14 https://waportal.org/population-health/about-population-health-planning-guide

15 https://www.hca.wa.gov/assets/program/chw_taskforce_report.pdf

16 "The Sentinel Network is an initiative of Washington's Health Workforce Council, conducted collaboratively by Washington's Workforce Board and the University of Washington's Center for Health Workforce Studies. Funding to initiate the Sentinel Network came from the Healthier Washington initiative in 2016, with ongoing support from Governor Inslee's office." http://wasentinelnetwork.org/about/

17 http://www.wtb.wa.gov/Documents/2017HWCReport-FINAL.pdf

2.3 An Overview of SIM Implementation

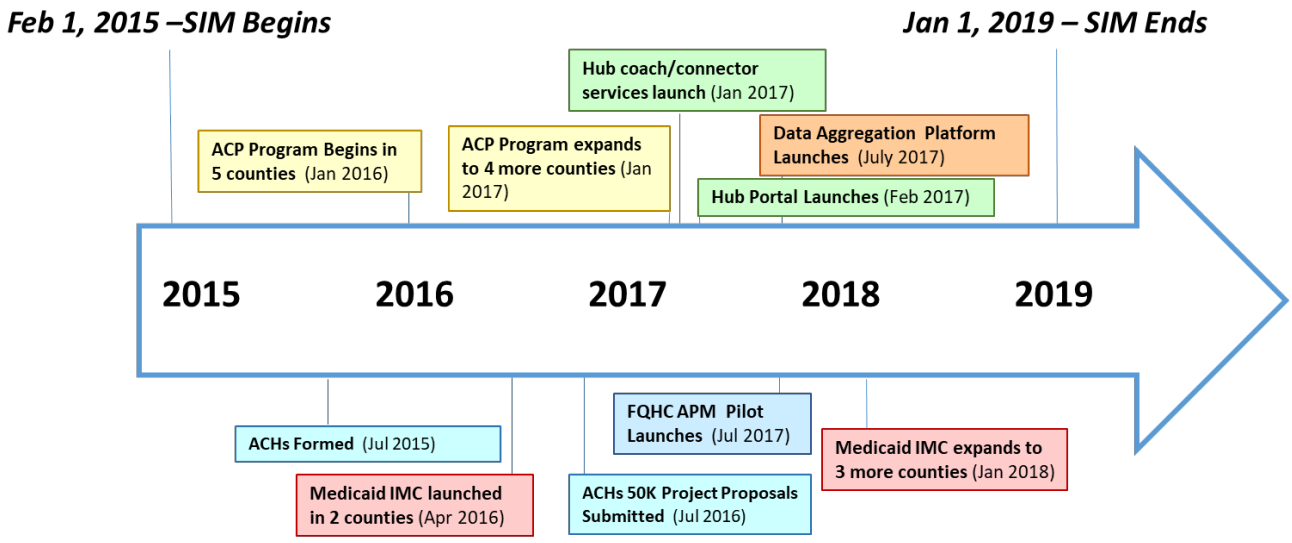
SIM is a very complex set of interventions implemented through a collaborative process involving many partners. The interventions were and are expected to lead to environmental and system changes that over time would bring about changes in individual behaviors (providers and patients) and ultimately accomplish the Triple Aim: better health, improved quality and lower cost. (See UW SIM Conceptual Model in Chapter 3.0 (Figure 3) for a fuller account of this expected change process). Much of the work of transformation requires forming new and trusted relationships and partnerships, developing new types of legal agreements/ arrangements, making investments in data infrastructure and reporting, and managing culture change. Such endeavors are often costly and slow.

Year 1 (February 2015-January 2016), the first year of the SIM-test award, was a pre-implementation year when the state worked with its multiple stakeholders to develop a SIM Operations Plan, which established accountability targets, quarterly milestones, and a timeline. In addition, during the first year, the nine ACHs were formed and the Accountable Care Program for public employees was developed.

Years 2-4 (February 2016-January 2019) were the program's main implementation and test years. The Hub was launched, the Integrated Managed Care for Medicaid strategy kicked off and expanded, the Accountable Care Program for public employees expanded, the FQHC pilot began, and the data aggregation platform was initiated. The final year of SIM (February 2018-January 2019), focused on sustainability while continuing with operations of most investments.

Figure 4 presents a graphic timeline of important SIM intervention dates for the ACHs, the Hub, and the Payment Reform Strategies (Integrated Medicaid Managed Care, Accountable Care Program for public employees, the FQHC Pilot, and the Data Aggregation Platform effort). A few of the SIM components were small and/or had late implementation dates. For example, integrated Medicaid Managed care began in just two counties, and the FQHC pilot and data aggregation platform strategies were not launched until July 2017, two and a half years after SIM began. This work is complicated and takes time to develop, implement, and bring to scale.

Figure 4. Timeline – Key SIM Interventions



2.4 Other Health Care Initiatives during the SIM Years

Many health care initiatives aside from SIM were active during the SIM-Test award years (February 2015-January 2019), also attempting to reduce health care costs, improve residents' health, and/or enhance the delivery of health care in the state. The ones most likely to have impacted SIM statewide are briefly described in this section of the report and include:

- Washington State's receipt of a Medicaid Transformation Project (MTP) waiver
- Washington State's continuation of its Medicaid Health Homes program, and
- United States Congress passing of MACRA[18]

Each of these initiatives is briefly discussed in this section of the report, followed by an overview of the multitude of other SIM-related reforms/initiatives simultaneously occurring throughout the state during this period.

Emergence of the Medicaid Transformation Project (MTP)

Early on, the state realized that in order to make significant progress towards the Triple Aim, additional federal funding and greater flexibility in the Medicaid program would be necessary. In 2014, 16%[19] of the state's population was enrolled in Medicaid, and that number was expected to grow with the continuation of Medicaid expansion and the advent of the Health Exchange.[20] Consequently, the State applied for a Section 1115 Medicaid Demonstration Waiver, called the Medicaid Transformation Project (MTP). The state worked in an iterative fashion with Centers for Medicare and Medicaid Services (CMS) to develop a mutually acceptable waiver. The final proposal was submitted in August 2016 and approved in September 2016, subject to agreement on Special Terms and Conditions. The waiver, a five-year agreement between Washington State and CMS, went into effect January 9, 2017, and it provides up to a $1.5 billion federal investment in the state for regional health system transformation projects that benefit Medicaid clients.

MTP seeks to: 1) use the ACHs to transform the Medicaid delivery system to support whole person care and use resources more wisely, 2) expand long-term services and support options to help people stay at home and delay or avoid institutional care, and 3) provide supportive housing and employment services to help the most vulnerable populations become and stay healthy[21].

MTP was designed to align with SIM and to further the initiative's ability to achieve desired outcomes. MTP was embraced under the Healthier Washington umbrella and did accelerate some SIM work. At the same time, the MTP may have diverted attention and altered the shape and direction of other Healthier Washington activities.

MTP brings in a substantial amount of funding into the state for reforms but focuses on a narrower population (Medicaid beneficiaries) and is more prescriptive in nature than SIM. With SIM, the HCA took a more hands-off, bottom-up approach, letting "a thousand flowers bloom[22]." While HCA may have desired standardization, the agency did not want to interfere with the unique processes and approaches of individual regions. The agency offered high level support and technical assistance, and otherwise left communities and markets alone. With MTP, HCA took on more of a top-down approach and developed more formal oversight channels.

18 Medicare Access and CHIP Reauthorization Act (MACRA), passed with bi-partisan support at the federal level in 2015
19 https://www.ofm.wa.gov/sites/default/files/public/legacy/researchbriefs/2016/brief076.pdf, pg 2
20 https://www.urban.org/sites/default/files/publication/25466/412581-The-ACA-Medicaid-Expansion-in-Washington.pdf
21 https://www.hca.wa.gov/about-hca/healthier-washington/medicaid-transformation
22 A common enhancement of a Chairman Mao quote from the late 50s. Essentially meaning "do not interfere with promising developments in their early stages https://en.wiktionary.org/wiki/let_a_thousand_flowers_bloom

MTP provided the opportunity for the state and ACHs to plunge towards population health.

The HCA intends to work closely with its partners to ensure that the state meets its MTP requirements but does not lose sight of the broader Healthier Washington/SIM goals. Simultaneously, the agency has embraced the MTP as a short-term sustainability strategy for SIM, with an evolving long-term vision. At this point, it is unclear what the future opportunities will be for continuing SIM/Healthier Washington work after the MTP.

Importance of the Health Homes Program

Taking advantage of the Affordable Care Act of 2010, Section 2703, optional state plan benefit[23], and building on experience with its Chronic Care Management program[24], Washington State established a health home program for Medicaid enrollees. The program started in July 2013 in 14 counties, expanded to 23 more counties in October 2013, and brought in the last two counties (King and Snohomish) in April 2017. Health Homes was an early state effort to provide high-risk Medicaid clients with care coordination for behavioral health, physical health, long term services and supports (LTSS), as well as social services. It served as both a precursor and a provider of on-going support for the Integrated Medicaid Managed Care payment redesign strategy launched under SIM. It also supports the work of FQHCs participating in the payment redesign pilot.

Under Health Homes, beneficiaries with a chronic condition who are at risk for a second chronic condition and receive a high score (≥1.5) on the Predictive Risk Intelligence System (PRISM) assessment, are automatically (passively) enrolled into one of the state's nine, regionally based, Health Home lead entities. These entities contract with community-based Care Coordination Organizations (CCOs) to provide services. Beneficiaries are assigned a Care Coordinator who works to reduce gaps in services and increase coordination among all the beneficiaries' service providers[25].· Care Coordinators also help beneficiaries set goals, develop action plans, and take on more responsibility for their health.

Medicare-Medicaid "dual-eligibles" enrolled in Health Homes are counted as part of a CMS Medicaid-Medicare Financial Alignment Initiative Demonstration program, which allows the state to share in Medicare savings attributed to Health Homes. Washington's Health Homes has saved Medicare more than $107 million over three years[26]. The CMS demonstration project in Washington State has been extended and will continue at least through 2020.

In 2016, there were 77,511 Medicaid beneficiaries enrolled in this program-- all high risk, high need residents. Preliminary evidence suggests that Health Home efforts, like Washington's, are highly effective. [27] [28] [29] [30] [31]

23 The Affordable Care Act of 2010, Section 2703 (1945 of the Social Security Act), created an optional Medicaid State Plan benefit for states to establish Health Homes to coordinate care for people with Medicaid who have chronic conditions. CMS expects states health home providers to operate under a "whole-person" philosophy. States apply for an amendment to their Medicaid/ CHIP state plan agreement with CMS. This process gives an assurance that a state will abide by Federal rules and may claim Federal matching funds for its program activities. https://www.medicaid.gov/medicaid/ ltss/health-homes/index.html https://www.medicaid.gov/state-resource-center/medicaid-state-plan-amendments/index.html https://www.hca.wa.gov/assets/program/13-08_Health_Homes_Approval_Pkt_(2).pdf

24 https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2014.0655

25 https://www.dshs.wa.gov/altsa/washington-health-home-program

26 https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Finan- cialAlignmentInitiative/Washington.html

27 https://www.cms.gov/Medicare-Medicaid-Coordination/Medicare-and-Medicaid-Coordination/Medicare-Medicaid-Coordination-Office/Finan- cialAlignmentInitiative/Washington.html

28 https://www.hca.wa.gov/assets/billers-and-providers/HH-duals-demonstration-summary.pdf https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/Merit-based-Incentive-Payment-System-MIPS-Overview-slides.pdf

29 https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/MACRA-MIPS-and-APMs/Merit- based-Incentive-Payment-System-MIPS-Overview-slides.pdf

30 https://innovation.cms.gov/Files/reports/fai-wa-prelimppone.pdf

31 http://www.chcs.org/media/Presentation_Feb_1_2012.pdf

Confusion and Uncertainty under MACRA

The Accountable Care Act of 2010 guided CMS to focus on new payment and delivery models that held strong promise for lowering expenditures while maintaining or improving quality. In 2015, after several years of development and stakeholdering, the Medicare Access and CHIP[32] Reauthorization Act ("MACRA")[33], passed with bipartisan support. MACRA is designed to move providers towards more cost-effective and outcomes-based care. The law commenced in January 2017 with the "Quality Payment Program" (QPP), which subsumes, streamlines, and builds off previous CMS initiatives and programs[34]. The law originally required that by January 1, 2019, any provider[35] who sees more than 100 Medicare patients a year, or bills Medicare for more than $30,000 a year, must participate in one of two QPP tracks, the Merit-Based Incentive Payment System (MIPS) or the Alternative Payment Model (APM) program.

While Medicare only covers 17%[36] of the US population, it is the largest single purchaser of health care[37] in the nation, and as such, its actions can bring about broad-based market place reforms. Most (93%) of non-pediatric primary care physicians in the US report accepting Medicare[38], and 9 out of 10 of those primary care physicians would be subject to MACRA and required to enroll in one of the two QPP tracks.

The first two years of the program were implemented gradually to reduce burden, provide flexible participation options, and allow clinicians to spend less time on regulatory requirements and more time with patients[39]. In 2018, the federal government recognized that many physicians, especially those in smaller, independent practices, were still not ready for full execution of the law. CMS realized that many practices would be penalized for not understanding or being able to comply with the data reporting requirements of QPP, regardless of their ability to provide high quality care and keep down costs[40]. With the Bipartisan Budget Act of 2018, the federal government allowed the program to continue with its gradual transition for an additional three years.

As it now stands, MACRA's QPP remains a work-in-progress, with many uncertainties remaining around exactly what will be implemented, for whom, and when. However, CMS remains committed to accelerating provider movement into value-based payment arrangements. The mandate remains on the horizon for January 2022, and HCA continues to align its efforts with this federal program[41].

At the very least, the length and complexity of MACRA brought confusion and uncertainty into the provider world[42].

Other SIM-Relevant Health Reform Initiatives

During the period of SIM, there were many other health care initiatives occurring throughout the state- too numerous and varied to account for in this report. Many were CMS-related, others stemmed from different

32 CHIP = Childrens' Health Insurance Program- a program that provides low-cost health coverage to children in families that earn too much money to qualify for Medicaid but not enough to buy private insurance. In some states, CHIP covers pregnant women. Each state offers CHIP coverage and works closely with its state Medicaid program. https://www.healthcare.gov/glossary/childrens-health-insurance-program-chip/

33 MACRA; P.L. 114-10 https://www.everycrsreport.com/reports/R43962.html

34 QPP consolidates existing Medicare pay for performance programs: Meaningful Use, the Physician Quality Reporting System, and Value-Based Modifier program. https://www.athenahealth.com/insight/macra-aca-confusion

35 Provider under MACRA refers to any physicians and other clinicians (physician assistants, nurse practitioners, clinical nurse specialists, and certi- fied and registered nurse anesthetists)

36 https://www.census.gov/library/publications/2018/demo/p60-264.html

37 http://medpac.gov/docs/default-source/data-book/jun17_databookentirereport_sec.pdf?sfvrsn=0

38 https://www.kff.org/medicare/issue-brief/primary-care-physicians-accepting-medicare-a-snapshot/

39 https://www.cms.gov/Medicare/Quality-Payment-Program/Resource-Library/2019-QPP-proposed-rule-fact-sheet.pdf

40 https://www.healthaffairs.org/do/10.1377/hblog20170421.059725/full/

41 https://www.hca.wa.gov/assets/program/schip_annual_statusReport_1.19.16_final_to_leg_compiled.pdf

42 http://www.medicaleconomics.com/medical-economics-blog/physicians-frustrated-confused-final-macra-rule

federal agencies, levels of government, and economic sectors. Several are worth mentioning.

Some important CMS Medicare specific initiatives operating in the state during SIM included various Accountable Care Organizations (ACO) programs[43] (started in 2012), Bundled Payments for Care Improvement (BPCI) Programs (2013-2016, 2018-2023), Community Based Care Transitions (CBCT) program (2011-2016), the Oncology Care Model (OCM) (2016-2021) and the Million Hearts® program (2012-2022).

Other health care reform initiatives in the state, not focused solely on Medicare beneficiaries/providers, worthy of mention include: Transforming Clinical Practice Initiatives[44], CMS Health Care Innovation Awards (HCIA)((2012-2015) (2014-2017)[45] [46] , private sector initiatives[47], work funded by nonprofit foundations or associations[48], and other federal Health and Human Services (HHS) agency initiatives/grants from the Substance Abuse, Mental Health and Services Administration (SAMHSA)[49], Centers for Disease Control and Prevention (CDC), the Office of the National Coordinator for Health Information Technology (ONC), the Health Resources and Services Administration (HRSA), and the Agency for Healthcare Research and Quality (AHRQ). One particularly topical area for federal investment in Washington State is opioid prevention and treatment. In fiscal year 2018, the state received $47.5 million to assist with this effort[50].

These efforts created a rich and complex environment for SIM implementation. Most of these initiatives broadly aligned with what SIM aimed to accomplish. Nonetheless, the volume and variety inevitably caused some confusion and a sense of being overwhelmed in the provider community and may have contributed to feelings of "initiative fatigue" reported elsewhere in this report.

2.5 Summary

Washington State has long been interested in expanding health insurance coverage, reducing health care costs, enhancing quality of health care, and improving population health. Over the years, the state, and numerous organizations in the state, have implemented health care reform initiatives in collaboration with other organizations or on their own. Due to limited resources for innovative work, private, public, and non-profit organizations have often sought federal funding to support and further their goals.

The SIM test award provided the state with an opportunity to expand, spread, and accelerate its transformation efforts. The state was able to invest in healthier communities through the ACHs, set up a central Practice Transformation Support Hub, and initiate several payment redesign strategies along with many other investments. Most significantly, the state is building a more supportive infrastructure for data analytics and collaborative work and developing important relationships and partnerships. These activities are moving more of the state's health care business into value-based care, encouraging whole-person care, and promoting a population health management approach to providing care.

43 In 2012 Medicare initiated three programs to promote ACOs: the Pioneer ACO program to support organizations already in the ACO space, the Medicare Shared Savings Program which provided incentives for ACO development, and the Advance Payment Program provided eligible Shared Savings Program participants with advances on anticipated shared savings. There is now even a Next Generation ACO model Several SIM partners were active in one or more of these programs.

44 CMS funded four Practice Transformation initiatives in Washington State (2015-2019). Populations affected including some FQHCs, pediatric practices and primary care practices associated with UW Medicine including their Accountable Care Network under UMP Plus. IN addition there were many other transformation efforts simultaneously occurring throughout the state by health plans, public health, the university, and practice associations.

45 HCIA- Tested a broad range of service delivery models https://downloads.cms.gov/files/cmmi/hcia-bhsa-thirdannualrpt.pdf#page=139

46 For the second round of awards CMS specifically sought innovations in four areas: rapidly reducing costs for patients in outpatient hospital and post-acute settings; improving care for populations with specialized needs; testing improved financial and clinical models for specific types of providers; linking clinical care delivery to preventive and population health.

47 Such as Walmart and Lowes Centers for Excellence programs and Boeings employee Preferred Partnership ACO initiated in 2015.

48 Example: RWJF and Commonwealth Fund or AMA & WSHA

49 In FY 2017 the state received a total of $88,573,115, in 2018 a total of $180,947,580. This was for Community Mental Health Services Block grants, Substance Abuse Prevention & Treatment Block Grants, and discretionary funding to 71 entities in the state – mostly for substance abuse treatment and prevention, but also for mental health.

50 FY 2018 https://nashp.org/federal-opioid-grants/

Through administering SIM and examining this evaluation report, the state can learn what worked well and what did not work so well, and what some of the main facilitators and barriers are to transformation. These are important lessons for state leaders to incorporate in the implementation of Medicaid Transformation Project and future reform efforts.

The following Chapter 3 presents an evaluation of SIM's implementation and short-run consequences for Washington state residents' health status, health access, health behaviors, mortality, and per capita health expenditures. Chapter 4 presents an evaluation of the Practice Transformation Support Hub. Chapter 5 presents an overview of paying for value, general HCA activities in this area, and evaluations for each of the four payment redesign strategies (specifically, the State's new Accountable Care Program for public employees, the FQHC Alternative Payment Model pilot, the data aggregation platform, and the integration of behavioral and physical health in Medicaid managed care). Finally, Chapter 6 presents the evaluation of the Accountable Communities of Health under SIM.

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3. State-Level Impact Evaluation

BRIEF 3.1

Washington SIM Evaluation

State-Level Impact Evaluation

The State of Washington received a State Innovation Models (SIM) $65 million award from the federal Center for Medicare & Medicaid Services to improve population health and quality of care and reduce the growth of health care costs in the entire state, which has over 7 million residents. *The SIM awards are testing whether state governments can improve population health and quality of care and reduce costs by exercising their regulatory and policy levers to accelerate statewide health system transformation.*

Our purpose is to summarize preliminary findings from the state-level evaluation of the SIM Project using the RE-AIM evaluation framework. To be effective, SIM interventions must reach their target populations and be adopted by health care organizations and community groups, implemented as intended, and maintained over time.

RE-AIM Evaluation Framework

	Level	Evaluation Questions
Reach	Population	What percentage of Washington's population participated in SIM?
Effectiveness	Population	Did SIM improve Washington's population health, quality of care and cost growth?
Adoption	System	What percentage of Washington's health care organizations participated in SIM?
Implementation	System	Did Washington deliver SIM as intended?
Maintenance	System	What is Washington's long-term plan for sustaining SIM?

Methods

We use multiple methods to study SIM performance in the RE-AIM components from a statewide, population-based perspective. We perform process evaluation to study SIM reach, adoption, implementation, and maintenance through quantitative tracking of SIM implementation, qualitative semi-structured interviews of stakeholders, and content analysis of SIM documents.

For effectiveness evaluation, we employ quasi-experimental study designs and individual-level or state-level secondary longitudinal data to evaluate pre-post SIM changes between Washington and comparison states for several outcomes: 1) health; 2) health behaviors; 3) quality of care; and 4) cost. The first comparison state, California, addresses selection threats to internal validity because California applied for but did not receive a Round 2 Test Award. However, California and Washington have Medicaid transformation waivers, yielding estimates of SIM effects in the presence of a waiver. The second comparison state, Hawaii, has neither a Test Award nor a Medicaid waiver, yielding estimates of SIM effects in the absence of a waiver. Washington, California and Hawaii are all Medicaid expansion states.

Findings

Preliminary findings from the state-level evaluation of SIM are as follows:

- Similar to national trends, Washington mortality rates increased and self-reported physical and mental health for adults declined in SIM Years 1-2. However, the Washington trend was likely not due to SIM because reach and adoption was low: only a small percentage of Washington residents and health-

related organizations participated in SIM interventions. Furthermore, while almost all SIM components were implemented, several components did not start in Year 1, reducing intervention exposure.

- Statistical analyses based on representative Washington state data from the Behavioral Risk Factor Surveillance System (BRFSS) indicate that SIM had little if any short-term effect on population health, health behaviors, access to care and care coordination in 2016-2017.
- SIM met its goal that, by January 2019, at least 50% of commercial payments are in value-based arrangements. However, it is unclear whether the achievement was due to SIM or market forces.
- In Year 3 stakeholders report that system transformation is hard and takes time but remain optimistic that SIM will eventually achieve its three goals.
- The lack of timely and representative statewide data creates challenges for monitoring statewide trends in Washington's health and social service system and 7.5 million residents.

Conclusions

Consistent with diffusion theory and evidence from other complex interventions, statewide system transformation is hard and takes time. SIM increased Washington's readiness for system transformation over the next 10 years.

Recommendations

The findings and conclusions lead to the following recommendations:

1) *Develop future vision and blueprint.* After SIM ends, Washington must develop a long-term strategic vision of statewide transformation to achieve SIM goals and a blueprint that articulates a broad plan for attaining the vision in the next decade.
2) *Leverage the Washington All-Payer Claims Data Base.* Created partly with SIM funds, the relatively new Washington All-Payer Claims Database has statewide health care records for a large majority of Washingtonians and, therefore, is a resource for transformation planning and monitoring progress toward SIM goals on a statewide level.
3) *Spread SIM beyond the state sector.* With the State of Washington as first mover, SIM must spread broadly to Medicare and private health care and build partnerships with social services to accelerate change broadly throughout the state's health system.
4) *Reverse Washington's declining population health.* A public health priority is to halt and reverse the recent decline in Washington's population health. The ACHs and PM1 are increasing collaboration and communication statewide among diverse health and social service agencies, which may improve the integration of services to meet the needs of people with mental health, substance abuse, and other social problems, particularly people with Medicaid coverage, and may lead to statewide improvements in population health.

CHAPTER 3.2

Washington SIM Evaluation

State-Level Impact Evaluation

3.2.1 RE-AIM Framework

Our purpose is to present findings from the state-level evaluation of Washington's $65 million SIM Test Award, a 3-year intervention (2016-2018), in the entire state. Washington is one of eleven states granted over $622 million in State Innovation Models (SIM) Round 2 Test Awards from the U.S. Center for Medicare and Medicaid Service Innovation Center (CMMI) within the Centers for Medicare and Medicaid Services (CMS) (CMS 2018a, 2018b; Henry J. Kaiser Family Foundation, 2018). The awards are testing whether state governments can improve population health and quality of care and reduce costs by exercising their regulatory and policy levers to accelerate statewide health system transformation.

We begin with an overview of Washington's SIM and the conceptual model of the intervention. Second, we apply the RE-AIM evaluation framework (Reach, Effectiveness, Adoption, Implementation, and Maintenance) to organize our evaluation questions and the methods for answering them (Glasgow et al., 1999; Jilcott et al., 2007; Gaglio et al., 2013). Next, we present findings and discuss the implications for health policy.

3.2.2 SIM Features

Aims and Interventions

The Washington SIM has the following three aims:

Aim 1: Build healthy communities and people through prevention and early mitigation of disease throughout the life course

Aim 2: Improve quality of care by integrating behavioral health, primary care and social supports for individuals with physical and behavioral comorbidities

Aim 3: Pay for value, instead of volume, with the state leading by example as "first mover," with 80% of state-financed (later amended with CMS approval to be 75% in 2019 and 90% in 2021) and 50% of commercial health care are in value-based payment arrangements and, by 2019, Washington's annual health care cost growth being 2% less than the national health expenditure trend

Intervention

SIM has four components to achieve the three aims:

1) Accountable Communities of Health (ACHs),
2) Practice Transformation Support Hub (Hub),
3) Four Value-Based Payment (VBP) Redesign models, and
4) A data and analytics component called "Analytics, Research, and Measurement (ARM)."

SIM divided Washington into nine regions, or Accountable Communities of Health, that are expected to facilitate population health improvement through capacity building, regional health planning, and strengthened regional collaboration. Key operational targets for building operational capacity include governance, organizational structure, ACH staffing, capabilities, financial plan, and a sustainability plan. The ACHs also must develop, maintain, strengthen and broaden regional health partnerships and state-level partnerships – the former to effectively support regional health planning, community health needs assessment, and regional health improvement plan development. Each ACH receives $50,000 in SIM funds to launch projects addressing regional health needs.

The Practice Transformation Support Hub connects primary care and behavioral health practices with tools (e.g., web portal), training, and hands-on technical assistance to support the integration of physical and behavioral health, to move from volume-based to value-based care, and to improve population health by connecting providers to community resources. Hub approaches include in-person practice coaching and facilitation, a health extension network of regional "health connectors," and a web clearinghouse of evidence based, culturally relevant tools and training.

The Hub focuses its community-clinical linkage strategies on securing primary care providers' active engagement in using those linkages, enhancing practice administrative and information systems, and connecting external stakeholders (e.g., community-based organizations, health systems, and public health) with practices.

The Hub supports physical/behavioral health integration through expert consultation, practice coaching and the aforementioned linkages. The move to value-based care is facilitated by Hub support for practice leadership and management, practice financial and administrative systems, and assisting provider organizations in implementation of new payment systems in collaboration with payers. In addition, Hub services can support other investment areas, including implementation of shared-decision making, education of providers on care coordination and patient engagement, and coordination with community health workers.

SIM payment redesign has four models:

- **Model 1 (Early Adopter of Medicaid Integration)** combines the previously separate Medicaid contracts for physical and behavioral health services into single contracts with participating managed care organizations (MCOs). Model 1 launched in southwest Washington in 2016. Other regions are scheduled to implement Model 1 in stages, with statewide implementation completed in 2020. The new contracts are expected to change the processes and structures of MCOs at two levels: (1) identifying patients with behavioral health needs and actively engaging them in their own care management; (2) health system-led changes to build more effective referral and/or integrated care coordination and to increase behavioral health capacity.
- **Model 2 (Encounter-based to Value–based)** introduces value-based payment-- a form of primary care per member per month payment with quality incentives and no downside financial risk-- in Medicaid for federally qualified health centers (FQHCs). The increased financial flexibility may expand care delivery options, such as email, telemedicine, group visits and expanded care teams, which may ultimately affect the cost and quality of care and patient outcomes.
- **Model 3 (Accountable Care Program and Multi-Purchaser, ACP)** is implemented by two health care organizations-- the University of Washington School of Medicine's Accountable Care Network and the Puget Sound High Value Network, LLC, led by the Virginia Mason Health System. Each ACP is expected to deliver integrated physical, mental health, and substance abuse services, and assume financial and clinical accountability for a defined population of state employees and their dependents. ACPs are reimbursed based on the quality of care and keeping employees healthy.
- **Model 4 (Greater Washington Multi-Payer Data Aggregation Solution)** tests whether increased provider access to linked patient claims and clinical data from multiple payers leads to increased adoption of value-based payment arrangements. Model 4 is implemented by two lead provider organizations, Northwest Physicians Network, an urban-based independent practice association, and Summit Pacific Medical Center, a rural-based critical access hospital with three rural primary care clinics and an urgent care clinic. The aggregation of clinical data from electronic medical records and payer-based claims form the integrated data platform that will support provider-level and population-level performance reports. Model 4 assumes that provider access to patient claims and clinical data

from multiple payers will increase the adoption of value-based payment, and those new payment arrangements, in turn, will improve population health management and thereby lead to better health outcomes, better quality of care, and lower costs.

In addition to the four payment models, the State of Washington is also increasing value-based payment statewide through its contracts for State-sponsored health insurance. Aim 3 of SIM is to pay for value, instead of volume, with the state leading by example as "first mover," with the target of moving 80% of state-financed care into value-based payment arrangements by 2019, which was amended, with CMS approval, to 75% by 2019 and 90% by 2021. To achieve the targets, the State has adopted a contractual approach: the State is inserting requirements for value-based payment (and performance targets for quality of care) into its legal contracts with health insurers covering Medicaid beneficiaries and state employees.

Analytics, Interoperability, and Measurement and Performance Reporting (AIM) is building the data infrastructure, analytic tools and standardized measurements to support SIM operations and evaluation. AIM works with state agencies to break down data silos and create a linked data infrastructure across them. The new interoperable systems, when combined with analytics, produce information for statewide planning, management, and evaluation – all to support system transformation, payment reform and population health improvement.

The Office of the Governor has delegated overall leadership of SIM implementation to the Health Care Authority (HCA), in partnership with the Governor's Office, Department of Social and Health Services, Department of Health, and Office of Financial Management. Working with local and tribal governments as well as other stakeholders, HCA's main strategy for implementing the ACH's, Hub, and payment redesigns is through over 90 contracts with external organizations, consultants, and purchase agreements for computer software licenses and other products.

Diffusion Theory and Conceptual Model

Diffusion theory posits that complex innovations, such as SIM, are not adopted all at once by health systems but rather spread over time through a social process with time-ordered stages of policy consideration/readiness, adoption, and scale-up, often with long latency periods before reaching "takeoff" and spreading throughout the system (Dearing and Cox, 2018; Horton et al., 2018; Conrad et al., 2016; Rogers 2003). Diffusion theory and the following examples suggest that SIM may take over 10 years to spread statewide and achieve aims (Dearing and Cox, 2018; Horton et al., 2018; Conrad et al., 2016):

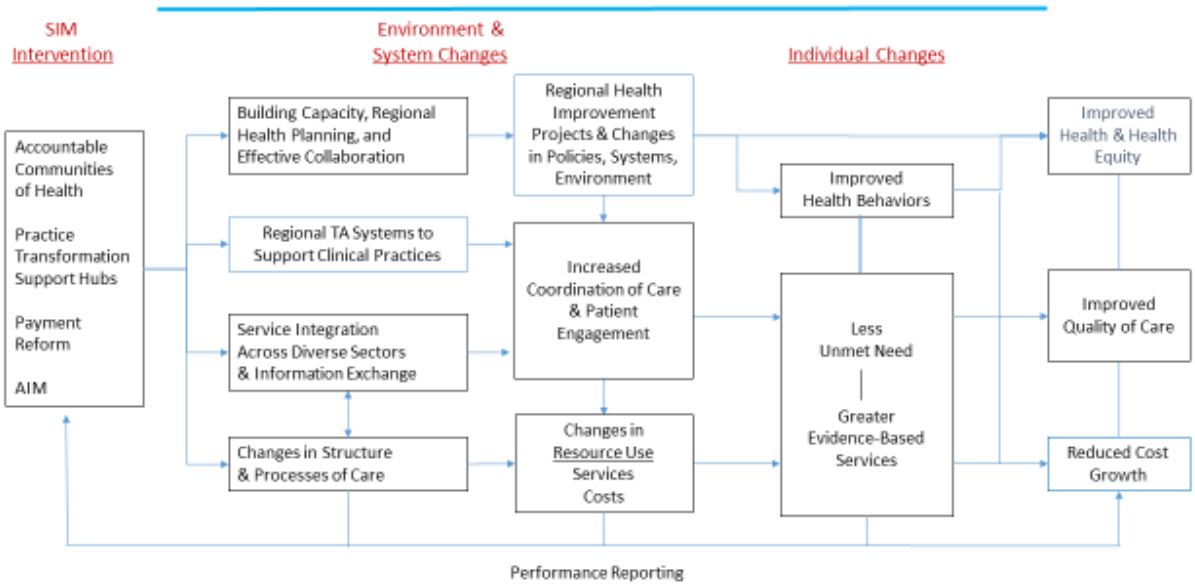
- After 10 years, the Missouri mental health system fully implemented an advanced payment model of services for people with serious mental health and comorbid chronic conditions (Clayton et al 2018).
- After 20 years, health care systems successfully integrated social needs of patients into clinical care (Onie et al 2018).
- After 14 years, a partnership between academic medical centers and rural primary care clinicians to extend specialty care has not yet spread (Dearing and Cox 2018).
- Through an 11-year policy-making process, Vermont is implementing a statewide multi-payer payment model by 2022 (Grembowski and Marcus-Smith 2017).
- An average of 17 years is the typical timeline in medicine for new research findings to become routine clinical practice (Balas and Boren 2000).

Based on their review of five CMS/CMMI alternative payment and care delivery models, Perla and colleagues (2018:220) conclude that "major change takes time, and voluntary programs will typically take longer." No guarantee exists that SIM will spread statewide and achieve its aims. With the public sector as first mover, SIM

may have limited statewide impacts if SIM interventions do not spread from the public sector to the private sector where the majority of Washingtonians receive care (Mangham and Hanson 2010). Diffusion is the exception rather than the norm; a majority of innovations fail to diffuse (Dearing and Cox, 2018).

Figure 1 presents the SIM conceptual model, which simplifies SIM's complexity by highlighting the intervention's "chain of causation" – that is, the pathways, or "mechanisms"-- through which SIM is expected to diffuse in the health system and eventually cause intended outcomes (Grembowski, 2016; Joffe and Mindell, 2006). Briefly, SIM's components may act independently and interdependently to cause changes in the health system and environment by building regional capacity, planning and collaboration to change systems and the environment in ways that address social determinants of health. A focus is the integration of physical, behavioral, substance use and social services to meet the needs of the whole person.

Figure 1. Conceptual Model of Washington's State Model (SIM)



These macro-level changes are expected to lead to changes in health and social services, such as better coordination, patient engagement, and quality of care. The service changes, in turn, are expected to lead to individual changes in health behaviors and in the utilization of health and social services and less unmet need.

As the SIM intervention reaches scale on a statewide level, individual changes are expected to improve health and health equity in Washington's population over several years. The improvements in health, along with changes in the service delivery system, are expected to reduce the growth of health care costs. Performance reporting transmits information throughout the change process, which may contribute to service refinements and better outcomes.

Evaluation Questions

Table 1 lists our evaluation questions in each section of the RE-AIM evaluation framework (Glasgow et al., 1999; Gaglio et al., 2013):

Table 1. RE-AIM Evaluation Questions for Washington's State Innovation Model (SIM)

Reach is the number, percentage and representativeness of the target population(s) that participate in SIM.

- What number and percentage of Washingtonians participated in the ACHs, Practice Transformation Support Hub and the Payment Models?
- What number and percentage of Washington residents with state-sponsored and commercial health insurance participated in SIM?

In three years, only a small percentage of Washington's 7 million residents likely will be exposed to SIM interventions, which may be a potential reason for modest short-term SIM effects.

Effectiveness is the short-term impacts of SIM in Washington's population.

- What is the effect of the Washington State Innovation Model on population health and health equity in Washington State?
- What is the effect of the SIM on quality of care in Washington State, particularly for those persons living with physical and behavioral health comorbidities?
- What is the effect of the Washington State Innovation Model (SIM) on the annual growth of health care costs per capita in Washington State?

Adoption is the number, percentage and representativeness of the health care organizations and providers that are willing to initiate the program.

- What number and percentage of Washington's health care organizations are participating in SIM?
- Is Washington moving toward value-based payment? What percentage of health care expenditures are from value-based payment?

Only a modest percentage of Washington's health care organizations and primary care providers are likely to adopt SIM by the end of 2018, which may dilute SIM's statewide impacts on individual-level health and quality of care and cost growth for all Washingtonians.

Implementation is the extent that intervention agents deliver the program as intended and fidelity to the elements of the program's protocol.

- How is SIM being implemented?
- Overall, are the three SIM components implemented as planned? Are the contract organizations working together or in silos to achieve SIM goals?
- What are stakeholder perceptions of SIM's implementation and performance in the entire state?
    - Is the federal, state or local context influencing SIM implementation?
    - What are the major facilitators and barriers to SIM implementation?
    - Is SIM working? What are expected benefits of SIM? How effective will SIM be in improving health and quality of care and reducing cost growth in Washington in the short-term and long-run?

Maintenance is the extent SIM is sustained after funding ends and becomes part of the organization's routine practices. Maintenance is not assessed because of the absence of a post-SIM follow-up after January 2019. Instead, we examine the state's plans for SIM maintenance.

- Qualitative interviews pose the following question to stakeholders: What plans do stakeholders have for sustaining SIM efforts after funding ends in January 2019?
- We also summarize the State of Washington's long-term plan for sustaining SIM.

We face several challenges in answering the questions (Rickles 2009); these include causal attribution, scale, time constraints, and limitations of secondary data. Causal attribution is hampered by a non-randomized study design and the overlapping Medicaid Transformation Project (MTP; Datta and Petticrew, 2013). SIM is one (distant) contributing cause among many in the long and complex causal chain linking SIM to outcomes (Belcher and Palenberg 2018). If statewide trends over 10-20 years show improvements in outcomes, those changes may be partially due to SIM and other policies, programs and secular trends in the external environment (Mangham and Hanson 2010). SIM may have played a role in contributing and accelerating but not solely causing observed outcomes (Belcher and Palenberg 2018). External forces include the:

- Medicaid Transformation Project,
- Washington's collaborative care model for behavioral health problems,
- provider payment reforms in the Medicare Access and CHIP Reauthorization Act of 2015 (MACRA),
- Congress' changes to the Affordable Care Act,
- the Medicare and Medicaid Health Home Program to coordinate care for people with one or more chronic conditions, and
- other initiatives in Washington sponsored by the Center for Medicare & Medicaid Innovation.

The effects of the external environment may be greater than SIM effects (Turner et al., 2016; Conrad et al., 2016).

The small scale of SIM components may not be powerful enough to cause statewide change. Over fifteen years ago Zwanziger and colleagues (2001) noted the challenges that time constraints have on evaluations of federal demonstrations. Our evaluation ends when SIM ends, with no funding for later follow-ups that could provide evidence about SIM's longer-term performance. Our reliance on secondary data also limits our quantitative evaluation questions and measures.

3.2.3 Methods

We answer the RE-AIM evaluation questions, tackle SIM's complexity, and develop a deep understanding of SIM through the following four-part approach (Dearing and Cox, 2018; Horton et al., 2018; Rychetnik et al., 2002):

1) Statewide policy evaluation: SIM is a package of reforms that operates jointly to achieve statewide goals. The policy evaluation's perspective is also statewide: Washington's health system and 7.5 million residents.
2) Component evaluation: Each SIM component is an intervention that targets different health systems and populations, and separate evaluations address the ACH, Hub and each payment model.
3) Multiple and mixed methods: The policy and component evaluations apply multiple quantitative and mixed (quantitative and qualitative) methods to answer their respective evaluation questions and deepen understanding of the complex interventions and contextual influences (Holtrop et al., 2018; Turner et al., 2016; Howarth et al., 2016; Creswell et al., 2011, 2018; Small, 2011; Greene, 2007).
4) Triangulation: The policy and component evaluations apply triangulation to cross-check the accuracy, or validity, of their findings. Evidence of validity exists when the results are congruent and/or complement each other (Brown et al., 2008; Caudle, 1994). Congruence exits when different sources of evidence yields similar, consistent results. Complementarity exists when one set of results expands on or clarifies the results from another source of information.

In the next sections we present methods for examining SIM at the health system level (adoption, implementation and maintenance) and the individual level (reach and effectiveness). The Washington State

Institutional Review Board approved this evaluation.

System-Level Adoption, Implementation, and Maintenance of SIM

Study Design. We employed a longitudinal descriptive study design to examine SIM's adoption and implementation from 2016 to 2018 (Grembowski, 2016). We applied concurrent-triangulation mixed methods to combine multiple sources of quantitative data with qualitative, semi-structured interviews of Washington stakeholders and content review of SIM documents (Creswell et al., 2011).

Adoption. For ACHs, adoption was measured by the absence or presence of a governance board recognized officially by the State of Washington. To measure reach of the Practice Transformation Hub, we collected information from Qualis, the Hub contractor, to count the number of:

- Primary care practices and providers that receive technical assistance and their geographic distribution in the state.
- Hub-sponsored webinars, conferences and cohort learning sessions and number of participants
- Hub portal contacts.

We also examined whether the Hub had consults with ACHs and provider organizations in the Payment models about their SIM-sponsored activities.

To measure adoption, in 2018 we conducted a survey of practices receiving Hub consults to measure the percentage of practices that begin integrating behavioral/physical health care and/or adopting value-based payment.

For the Payment Models' adoption, we collected records from the HCA to measure the number of health care organizations and providers participating in each Model.

SIM is expected to move 80 percent of State-financed health care and 50 percent of the commercial market from volume to value by 2019. To track progress, we used the following CMS-mandated metrics and HCA-reported results to measure the number of beneficiaries and percentage of payments to health care organizations in four payment categories, 1) fee-for-service (FFS) with no link to quality; 2) FFS linked to quality; 3) alternative payment models; and 4) population-based payment, where categories 2-4 of value-based payment are defined by the CMS-sponsored Health Care Payment Learning & Action Network.

Implementation and Maintenance. We assessed implementation by profiling SIM contracts from HCA records, including the total number of SIM contracts. Findings from the process evaluations of the ACH, Hub and models were used to assess whether each component was implemented as planned, and whether the components were working together or in silos.

We conducted semi-structured interviews of key Washington stakeholders to understand their perceptions of SIM's early implementation and performance throughout the state. The interview instrument was based on instruments used in prior payment reform studies (Conrad et al, 2014, 2016; Grembowski and Marcus-Smith 2017). Interview topics include organizational priority objectives, implementation context, expected benefits of SIM, why and how SIM might realize the "Triple Aim (Berwick et al., 2008), alignment of organizational priorities with the intervention, facilitators and barriers to implementation, and plans for sustaining SIM initiatives after SIM ends in January 2019 (see Appendix).

Annual interviews of 10-15 stakeholders were conducted in 2017 and 2018. The interviews were 45-90 minutes, and in general, the same respondents were interviewed by telephone or in-person in each year. Participants represented executive-level leaders in a variety of stakeholder organizations, having either clinical

or administrative perspectives: government actors, public-private partnerships, as well as non-governmental and support organizations. Some organizations were from SIM's Health Innovation Leadership Network and included a mix of professional groups, health plans, community entities, and businesses. SIM leaders were selected based on the likelihood that they had comprehensive knowledge of SIM development as well as implementation.

Analysis Plan. For quantitative measures, descriptive statistics and graphs were produced to monitor the progress in SIM adoption among health care organizations and providers, and to track the reach and adoption of SIM into Washington's health system.

Interviews in 2017 and 2018 were audio-recorded, de-identified and transcribed for analysis using Dedoose Qualitative Software Version 7.6.18 (2017). Transcripts were coded initially by interview question and then by the SIM conceptual model with a focus on uncovering themes by interview question and model segment. Two coders independently assessed thematic results, discussed areas of agreement or divergence, and reached consensus based on the purpose, context, and structured interview framework (Bradley et al., 2007). Multiple study team debriefings served to refine the themes in each year, to identify similarities and differences in respondents' opinions over time, and to assess whether findings support, contradict, or extend the conceptual model. Themes identifying surprises or unintended consequences of SIM were validated with the study team and compared with the evaluation results from each SIM component.

Individual-Level Reach and Effectiveness of SIM

Reach

We used a longitudinal descriptive study design to examine SIM's reach into Washington's population in 2016 to 2018 (Grembowski, 2016). Reach was measured by the percentage of an ACH population that was targeted in an ACH's SIM-sponsored intervention(s). For the Payment Models' reach, we collected records from the HCA to measure the percentage of the target population participating in each Model.

Effectiveness

Study Design. The data source for the individual-level SIM impact evaluation was the Behavioral Risk Factor Surveillance System (BRFSS), a national phone-interview survey of over 400,000 U.S. residents each year. BRFSS had adequate sample sizes for state-level estimates of several but not all concepts in the SIM conceptual model (Table 2).

Table 2. BRFSS Annual Sample Sizes in Washington and Control States (California and Hawaii) in Baseline Years (2013-2015): Unweighted Observations.

State	Sample Sizes, 2013-2015 (range)
Washington	10,092 – 16,116
California	8,832 – 12,601
Hawaii	7,163 – 7,858

We examined 2013-2017 BRFSS data in a pretest-posttest nonequivalent comparison group design with multiple pretests and posttests (Shadish et al., 2002; Winship and Morgan, 1999). The intervention group is BRFSS respondents aged 18 and over in Washington.

Two control groups were BRFSS respondents in California and Hawaii. California applied for the SIM Round 2 Test Award but was not funded, suggesting Washington and California policy makers had similar propensities to seek federal funding to spur system transformation. Like Washington, California has a $6.2 billion Medicaid transformation waiver ("Medi-Cal 2020 Demonstration") in 2016-2020, which targets $1.5 billion for "Whole

Person Care Pilots" that are similar to Washington's Medicaid Transformation Project that coordinates physical and behavioral health care and links with social services to promote patient-centered care. If outcomes are better in Washington than California, the difference may be due to SIM and the Medicaid demonstrations.

Hawaii was the second control group to potentially disentangle SIM and Medicaid waiver effects. Hawaii had a SIM Round 2 *Design* Award but not a SIM *Test* Award, and did not have a Medicaid transformation waiver. We compared Washington to Hawaii to estimate SIM effects in the absence of a Medicaid transformation waiver, and potentially tease out the independent effects of SIM from Washington's Medicaid Transformation Project. All three states are Medicaid expansion states.

The three states were ranked in the top ten for life expectancy: Hawaii had the nation's highest life expectancy at birth in 2016, California had the second highest, and Washington had the 9th highest (The Global Burden of Disease Collaborators 2018). Given the high ranks of Hawaii and California, the two states might regress toward the mean more than Washington over time, which would produce conservative estimates of SIM effects. Table 2 presents sample sizes in the BRFSS 2013-2015 baseline surveys for Washington, California, and Hawaii.

Measures. Based on the conceptual model, Table 3 lists individual-level BRFSS measures of health status, health behavior, health care access and coordination, and unmet health care need. BRFSS does not collect measures of the cost and quality of care, nor detailed measures of health care utilization.

Table 3. Individual-Level Intermediate and Ultimate Outcome Measures for Adults in the Behavioral Risk Factor Surveillance System Survey, 2013-2017

Concept	Measure
Health Status	Health status fair or poor Mental health status not good at least 1 day in past 30 days Mental health status not good at least 14 days in past 30 days Physical health not good at least 1 day in past 30 days Physical health not good at least 14 days in past 30 days
Health Behavior	No physical activity other than regular job Tobacco use Alcohol use – binge drinking Alcohol use – heavy drinking
Health Care Access and Coordination	Length of time since last physical examination Unmet health care need due to cost

Personal characteristics in BRFSS included age, gender, race/ethnicity, marital status, number of children under age 18 in a household, education (highest grade completed), health insurance, annual household income, home ownership, use of Internet in the past 30 days, and number of chronic conditions. For analysis of health outcomes, independent variables were based on Grossman's (1972) model of the demand for health. For analysis of health behaviors and health care access, independent variables were based on Andersen's (2008) behavioral model.

Table 4 presents state-level mortality, health care quality, and cost measures that were annual rates for Washington's population, along with their data sources. The mortality rates were chosen because the integration of physical and behavioral health care may potentially affect the cause-specific mortality rates.

Table 4. Annual Rates for Mortality and the Cost and Quality of Care in Washington.

Concept	Measure	Data Sources
Morality (age adjusted)	• All-cause • Suicide • Alcohol abuse • Drug-induced • Alcohol abuse and drug-induced	CDC Wonder Data Base
Quality of Care	• Pregnant women receiving 1st trimester prenatal care* • Children 2 years of age who had all vaccinations by their second birthday* • Children 3-6 years of age who had one or more well-child visits with a primary care provider** • Children and youth 12 months - 19 years of age who had a visit with a primary care provider in a year** • Adults 20 years of age and older who had an ambulatory or preventive care visit in a year** • Patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level in a year was greater than 9.0% (poor control) • Patients who reported primary care providers always had good communication** • Patients who reported primary care providers always used information to coordinate patient care** • Potentially avoidable emergency room (ER) visits	NCQA, WHA, DOH, DSHS
Cost	• Annual state-purchased health care spending growth relative to state gross domestic product (GDP) • Annual Medicaid spending per enrollee • Annual public employee and dependent spending per enrollee	WHA, HCA, DSHS, OFM

* Statewide rates
** Patients with commercial insurance

The quality and cost measures are part of Washington's Common Measure Set, which contains over 50 standard statewide measures of health system performance. State officials chose most of the Table 4 cost and quality measures based on the likelihood that SIM might influence those outcomes. However, cost and quality rates for all Washingtonians were limited; the clinical quality rates exist only for large medical groups. The following six quality outcome targets were not measured due to lack of statewide data, time lags in data availability, or other reasons: plan readmission rate (all causes); mental health treatment penetration in Medicaid; personal care provider; chronic care engagement with personal care provider; psychiatric hospitalization readmission rate; and patient communications about medications and discharge instructions.

Data Analysis. We computed descriptive statistics and trend graphs to compare the individual-level and state-level measures before versus after SIM began in February 2016, contingent on data availability. BRFSS descriptive statistics and graphs were computed using BRFSS sampling weights and were representative of Washington's population. We do not estimate SIM effects on state-level rates (Table 4) due to limited data availability, inadequate sample sizes, and problems with causal inference in ecologic study designs (Morgenstern 2008).

To reduce selection threats to internal validity, we used generalized linear models to estimate SIM effects on BRFSS outcomes (Gail et al., 1996). Calendar time was divided into two periods: 1) Pre-SIM baseline years (2013-2015); and 2) SIM Rollout years (2016- 2017). Calendar time was included in the models as a piece-wise linear term, parameterized to allow for a change in level during the two-year SIM intervention period. The model was estimated for each outcome if the trend in the baseline years was not statistically different in Washington and the control states. The general form of the regression model was:

$$Y_{it} = \beta_1 + \beta_2 Post_t + \beta_3 Treat_i + \beta_4 (Post_t * Treat_i) + \beta_5 Time_t + \beta_6 X_{it} + c_i + \varepsilon_{it} \quad (1)$$

where:

Y_{it} = outcome for individual *i* at time *t*
Post = indicator for the post-treatment time period
Treat = indicator that individual resides in Washington or a comparison state
Time = a continuous variable indicating time in years at time t from the start of the baseline period
X_{it} = vector of individual-level control variables
e_{it} = error terms
c_i = individual-level fixed effects

The coefficient of interest was β_4 which measured the effect of SIM in Washington. Because the Medicaid transformation began in SIM rollout in 2017, any SIM effect may be due partially to the Medicaid transformation. We attempted to address the potential impact of the Medicaid transformation using two control groups, California and Hawaii, in separate regression models. The Treat variable in each regression model was a binary (0,1) variable: 1) lives in Washington; and 0) lives in the control state.

We fit logistic regression models for binary outcomes and BRFSS sampling weights and report the marginal results. A separate model is fit for each outcome measure. Each model was estimated on 100 bootstrapped samples, and the mean and SE of the bootstrapped estimates were used to compute confidence intervals (Pande et al., 2011). The results were converted from the log odds to the average marginal effect, holding all other model covariates at the mean value. Sensitivity analyses examined whether effects were similar by income or age of Medicare eligibility. Income effects were tested as an interaction between the treatment group and low-income individuals (< $25,000 annual household income). A separate analysis included only respondents under the age of 65 to examine the impact of SIM on the non-Medicare population.

To aid the interpretation and understanding of the impact analyses, we triangulated the regression results with the results for the other components of the RE-AIM Framework for congruence and complementarity. We compared SIM's impacts with the results from the key informant interviews for consistency and complementarity, focusing on whether the findings for SIM reach, adoption and implementation were consistent with and explain the findings for SIM effectiveness.

We also triangulated these results with the findings from the evaluations of each SIM component. The goal was to identify findings for consistency or complementarity, which may improve the accuracy and interpretation of the findings and inform the conclusions of our evaluation of SIM's short-term consequences.

3.2.4 Results

System-Level Implementation, Adoption and Maintenance of SIM

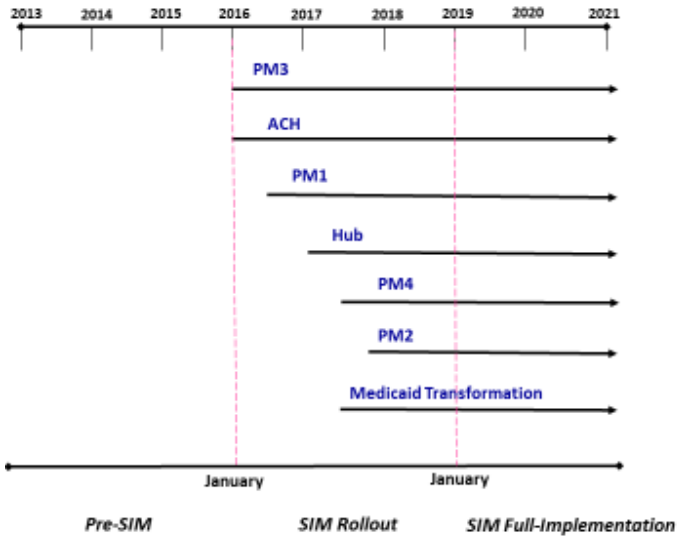
Implementation

How is SIM being implemented? Overall, are the three SIM components implemented as planned? Are the organizations working together or in silos to achieve SIM goals? Almost all of the SIM Award was expended to implement SIM projects. By the 3rd quarter of Year 4, 92% of the $64,797,973 SIM Award was expended in four areas: Project Management, AIM, Payment Redesign, Hub, and ACH. The Payment Redesign Models, Hub and ACHs were budgeted similar amounts, about $10 million each, while AIM was budgeted about $23 million. SIM investments were performed basically either by State agencies or external organizations paid through formal contracts. About 68% of SIM funds were expended through 91 contracts, excluding contract purchases of software licenses, servers, and other products. Contracts were a common approach for implementing the ACH, Hub and Payment Redesign Models. An advantage of contracts is legal accountability for performance of contract work, which increases the likelihood that SIM components are implemented.

SIM implementation had the following features:

- Fidelity: SIM components were implemented as planned, except the payment model for the Rural Health Centers and Critical Access Hospitals, which is scheduled for implementation after SIM ends.
- Siloes: The component contracts fragmented SIM work into silos, which diverted attention from statewide system transformation and blurred accountability for SIM goals.
- Delays: Several components did not start in February 2016 (Year 1), reducing intervention exposure. Figure 2 shows the start time of each SIM component in 2016-2018, with the ACHs and PM3 starting early in 2016. The timeline also includes the Medicaid Transformation Project; starting in 2017, ACHs receive $1.125 billion over 5 years to implement a Delivery System Reform Incentive Payment program, whose goals overlap those of SIM.

Figure 2. Implementation Timeline of the Washington State Innovation Model (SIM).



ACH = Accountable Communities of Health
Hub = Practice Transformation Support Hub
PM1 = Payment Model 1; Medicaid Fully Integrated Managed Care (behavioral & physical health)
PM2 = Payment Model 2; value-based Medicaid payment in FQHCs, Rural Health, Centers, and Critical Access Hospitals
PM3 = Payment Model 3; Uniform Medical Plan Plus Accountable Care Program
PM4 = Payment Model 4; Multi-Payer Data Aggregation Solution

What are stakeholder perceptions of SIM's implementation and performance in the entire state? Overall, stakeholders had positive attitudes about SIM goals and remained optimistic that SIM will eventually achieve its goals. In 2018 (Year 3 of SIM) stakeholders generally reported their organizational goals and priorities shifted in 2018 to focus on the Triple Aim and mental health, which align with SIM goals and interventions. Stakeholders frequently identified planning for and involvement with the Medicaid Transformation as a top priority.

> *"We really saw the SIM as a great opportunity to expand the conversation of a traditional primary care health delivery into the context of really talking about equity, well-being, wellness from a much more integrated and holistic perspective. Ideally from a perspective of truly human-centered design. So that's what brought us into the tent."*

> *"What I'm hopeful for is that the SIM gives us the opportunity to think differently and more creatively about the delivery of health care writ large."*

While several stakeholders believe that the MTP will keep SIM alive after SIM ends, some stakeholders are concerned that shifting ACH focus to the Medicaid population detracts attention from SIM goals of improving statewide population health and care quality and reduce cost growth.

> *"I do think, sort of unintended consequences, this Medicaid transformation opportunity really crowded out some of the broader change agenda. And so that's a little bit, not counter purpose, but I think that impacted the focus that people had on the broader picture."*

> *"Our region is definitely very interested in making sure that we do not get stuck in the Medicaid transformation business, that we do hit the population health (goal)."*

Is the federal, state or local context influencing SIM implementation? Stakeholders recognize that value and importance of federal and state initiatives because the impetus for change often starts at a high level. In 2017 stakeholders were concerned deeply that Congress would repeal the ACA, which would have serious negative consequences for Washington and SIM. In 2018 the ACA was still in place, and stakeholders had less concern about the federal context and its potential impact in Washington. Stakeholders still expressed some concern about whether the current administration might affect local-level implementation of health care transformation efforts, particularly the MTP.

Washington has myriad federal, state and local programs that are likely influencing SIM implementation and outcomes. For example, by expanding Medicaid in 2014, SIM components targeting Medicaid beneficiaries may be reaching a greater percentage of Washington's population. In this context, SIM is one (distant) contributing cause among many contextual/secular trends in the long and complex causal chain linking SIM to outcomes. If statewide trends show improvements in outcomes, those changes may be partially due to SIM and other contextual features of the U.S. and Washington health and social services systems. SIM may have played a role in accelerating but not necessarily causing secular/system-wide trends.

What are the major facilitators and barriers to SIM implementation?

Facilitators. Stakeholders maintain that effective leadership is an important component of whether a new initiative is implemented and implemented well. Washington State – and particularly the HCA – was viewed as a leader in shifting health care for the state. The State's leadership, as a convener, motivator and innovator, promoted sustained involvement across diverse sectors in the health and social service system. Open communication and collaboration among participating SIM entities also facilitated implementation, as well as human resources, particularly having volunteer staff and external experts to engage in SIM work.

Barriers. Most stakeholders reported that limited SIM funding and financial resources were a major barrier to SIM implementation. Also, many stakeholders think turnover in state-government leadership positions is unsettling, creates uncertainty about the future, and is a threat to achieving SIM's statewide goals.

> *"… at the state level, some of the (SIM) tailwinds have shifted to headwinds due to tremendous changes there at the top level with the health care director change, and the next in line or the policy officer there, Johnson, leaving, and many other positions just churning tremendously."*

> *"So that (turnover) is a real challenge because we need people to invest in some innovative strategies and they're a little hesitant to do that right now when they don't know, what is the financial strategy long-term."*

Is SIM working? What are expected benefits of SIM? How effective will SIM be in improving health and quality of care and reducing cost growth in Washington in the short-term and long-run? Stakeholders indicated consistently that implementation of SIM components and statewide system transformation is hard and takes time. Statewide improvements in population health, quality of care and cost growth are unlikely in the short run. Stakeholders believe SIM is setting the foundation for change in Washington's health system in future years.

> *"…change is hard, and every ecosystem is naturally designed to resist change, and you see that internally, externally, at the policy level. And so here we are, we're trying to implement multiple components of change all at once."*

> *"I would say -- it's going to sound a little trite, but you know -- change is hard. Deep change, system change is very hard to do. It takes time and it is not a linear process."*

> *"… And, even after the SIM is done, and the waiver is done, I don't think that change will be done."*

> *"I think we have to really know that what we are doing lays the foundation for future generations, and it will take definitely more than five years to achieve system change. If we really want to see a shift from acute care focused healthcare to more a wellness extension, wellness-focused, prevention, early intervention focused system, that can take 10, 20, maybe 30 years."*

Consequently, most stakeholders believe that "it's too soon to tell" what impact SIM will have on population health, quality of care and cost growth.

While stakeholders remain optimistic that SIM will eventually achieve its goals, stakeholders thought that SIM benefits would be unlikely if the health system remained siloed.

> *"I think that the SIM has the potential to be successful if our local systems and state and even federal systems are truly capable of integrating, or blending, multiple streams of resources. As long as our healthcare work remains siloed and all their other systems, education, housing, etc., transportation, as long as it all remains siloed, I don't think we're going to succeed with the goals of true health and wellness integration."*

> *"…it's sort of remarkable to me that many hospitals, executives, and emergency room physicians don't have any hard referral process for a patient with opioid use disorder that needs MAT treatment. They're just behind figuring out what the right more modern means of practice should be."*

One stakeholder thought that SIM would be more effective if Washington had universal health care. Some stakeholders expressed concerns that SIM implementation had wide variation across the state, which might reduce SIM's benefits. A related concern was whether rural areas are benefiting from SIM. Finally, one stakeholder perceived that SIM already was effective because SIM was a key stepping stone to the MTP, and without the MTP, SIM components would end.

Adoption

What number and percentage of Washington's health care organizations are participating in SIM? Only a small percentage of health-related organizations in Washington participated in SIM, which may dilute SIM's statewide impacts on individual-level health and quality of care and cost growth for all Washingtonians. About 60 health care organizations participated in the Payment Models. Hub activities were conducted in 175 primary care practices. Hub disseminated information through webinars and live events (about 1,300 attendees), and the Portal had almost 12,000 users. This result is consistent with diffusion theory and evidence that statewide interventions take time to spread. SIM, with Washington as first mover, is operating mainly in the public sector; SIM has not spread statewide.

Is Washington moving toward value-based payment? What percentage of health care expenditures are from value-based payment? The 2018 HCA Value-Based Purchasing Survey reveals that 55% of statewide payments are in value-based arrangements, defined as CMS Alternative Payment Model (APM) Categories 2C through 4B. The percentages by type of health plan are as follows: Medicaid, 50%; Medicare, 64%; and Commercial, 56%. In contrast, in the first year of SIM (2016) 30% of statewide payments were in value-based arrangements. SIM has met its goal that, by January 2019, 50% of commercial payments would be in value-based arrangements, but SIM has not met the goal of 75% of state-sponsored payments being in value-based arrangements.

Maintenance

Overall, SIM increased Washington's readiness for system change in the next decade. SIM's Sustainability Plan indicates that SIM components are continuing in 2019, except the Hub. The future of Payment Model 4 (Greater Washington Multi-payer) is unclear because the State is not funding PM4 when SIM ends. The State will continue sharing data with the PM4 networks and look for opportunities to integrate the Model into other state-sponsored projects.

Stakeholder views were generally consistent with the SIM's sustainability plan. Many stakeholders thought that the MTP funds would be part of what sustains SIM into the future. One stakeholder thought that without the MTP, SIM efforts would completely dissolve. Some stakeholders thought that sustainment of SIM-type goals and objectives were already in place before SIM and would continue independent of it, regardless of funds or other programmatic challenges. Maintaining open lines of communication with other SIM entities was expressed as important for sustaining SIM efforts.

> *"Without the waiver, a lot of the components would just sunset, frankly."*
>
> *"I'm sure there'll be some things that in SIM are funded that we no longer will fund because the waiver's not going to fund everything, but that's too bad. I think that either we find other ways. I don't think there's a clear plan forward there."*

Individual-Level Reach of SIM

What number and percentage of Washingtonians participated in the ACHs, Practice Transformation Support Hub and the Payment Models? What number and percentage of Washington residents with state-sponsored and commercial health insurance participated in SIM? Only a small percentage of Washington's health-related organizations and 7.5 million residents participated in SIM. In the nine ACHs, a very small percentage of

Washington's population participated in ACH projects. In Year 3 (2018), about 8% of Washington's population were participating in Payment Models. The number of Washingtonians participating in the 175 Hub practices is unknown. These results are consistent with diffusion theory and evidence that statewide interventions take time to spread.

Effectiveness of SIM - Annual State-Level Rates

Figures 3 to 7 compare trends in spending rates before versus after SIM began in February 2016, and the following patterns were observed:

- Annual state-purchased health care spending growth as a percentage of state gross domestic product (GDP) increased slightly but steadily from 2014 to 2017 (Figure 3).
- Annual Medicaid spending per beneficiary increased after SIM began (Figure 4)
- Medicaid annual growth rates were lowest before SIM (-6 in 2014) and highest after SIM (+7 in 2016). In 2017 the growth rate was 3%, which is lower than the 3.9% growth rate for national expenditures in health care but higher than the 2.9% national Medicaid growth rate in 2017 (Figure 5; Martin et al 2018).
- Public employee spending has increased steadily from 2012 – 2017 (Figure 6).
- Public employee annual growth rates declined sharply to 1 percent before SIM and increased to 3- 5 percent after SIM (Figure 7).

Figure 3. Annual state-purchased health care spending growth as a percentage of state gross domestic product (GDP) in Washington

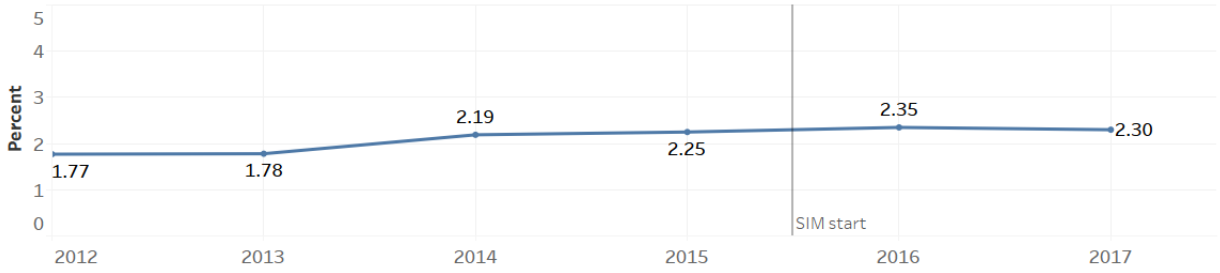
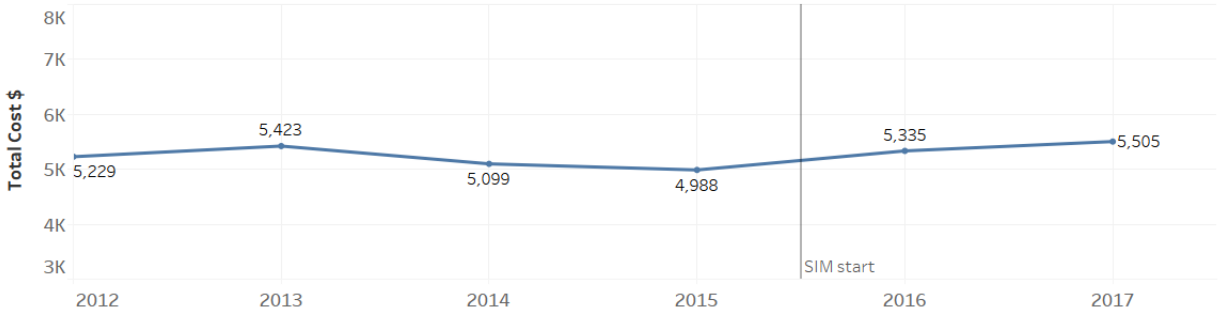


Figure 4. Annual Washington Medicaid spending per enrollee



Source: https://wacommunitycheckup.org/highlights/2018-health-care-spending-in-washington-state/

Figure 5. Washington Medicaid annual expenditure growth rates, 2013-2017

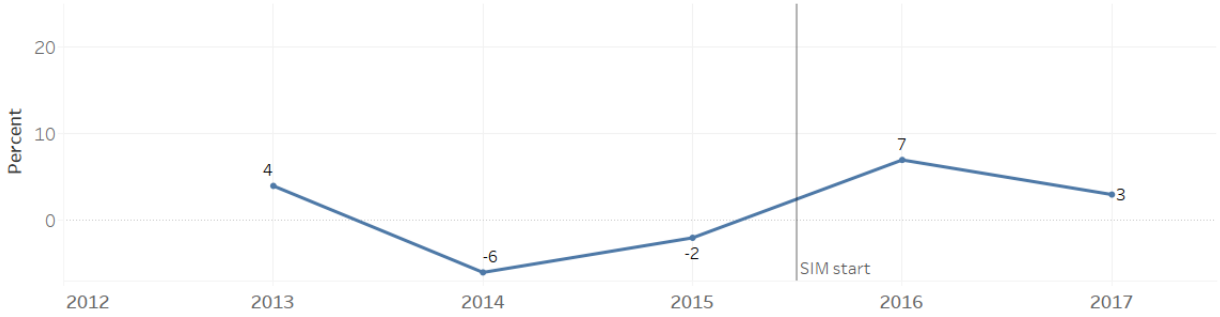


Figure 6. Annual Washington public employee spending per enrollee

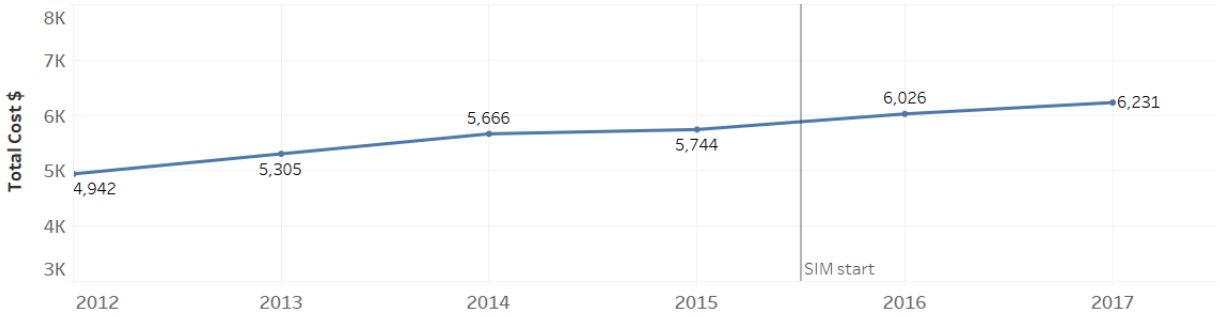
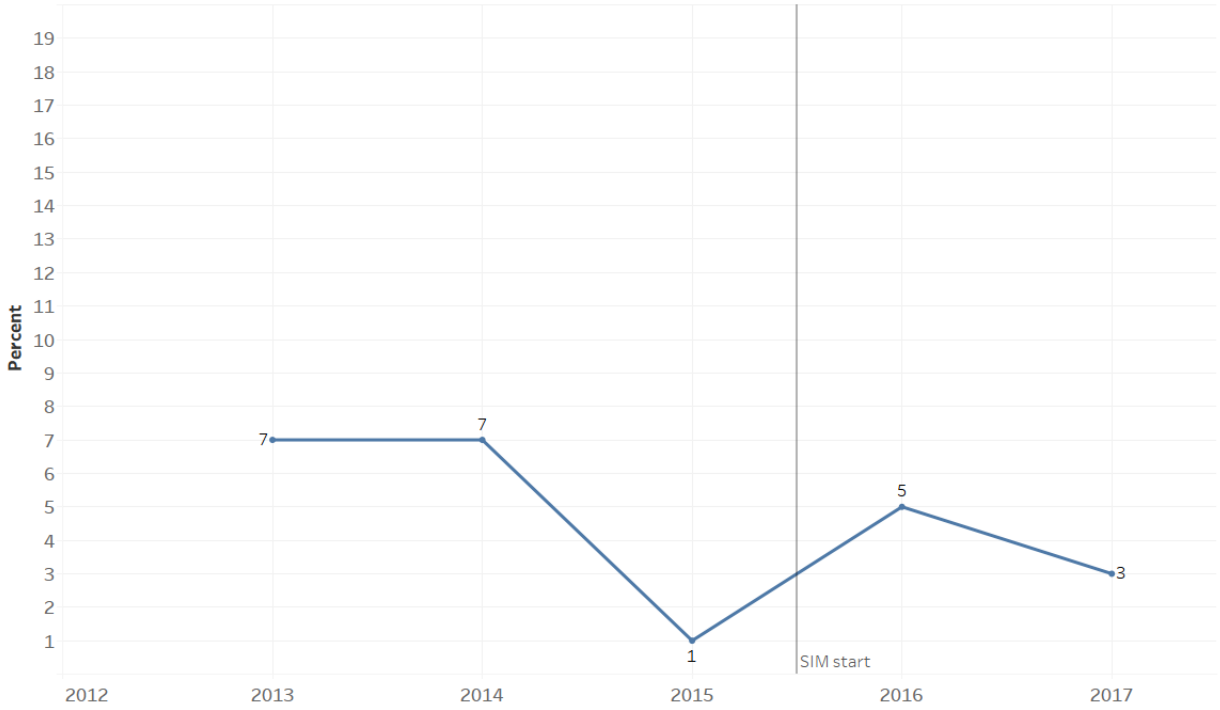


Figure 7. Washington PEBB annual expenditure growth rates, 2013-2017



Source: 2018 Community Check-up Report Website: https://wacommunitycheckup.org/highlights/2018-health-care-spending-in-washington-state/

Figures 8 to 15 compare trends in quality of care before versus after SIM began in February 2016, and the following patterns were observed:

- The percentage of pregnant women receiving 1st trimester prenatal care in Washington changed little from 2012 – 2017 (Figure 8).
- The percentage of children 2 years of age with all vaccinations in Washington increased from 35% before SIM to 40% after SIM (Figure 9).
- The percentage of children and adults with commercial insurance who had one or more health care visits changed little from 2015 before SIM began to after SIM began (Figures 10-12).
- The percentage of adults with diabetes and Medicaid coverage who had poor control (HbA1c >9.0%) declined from 44-52% before SIM to 39% after SIM (Figure 13). The percentage for commercial patients ranged 37-38% across years.
- The percentage of patients with commercial insurance reporting good communications with primary care providers changed little before vs after SIM (Figure 14).
- Potentially avoidable emergency room visits for patients remained steady before versus after SIM (Figure 15).

Figure 8. Percentage of pregnant women receiving 1st trimester prenatal care

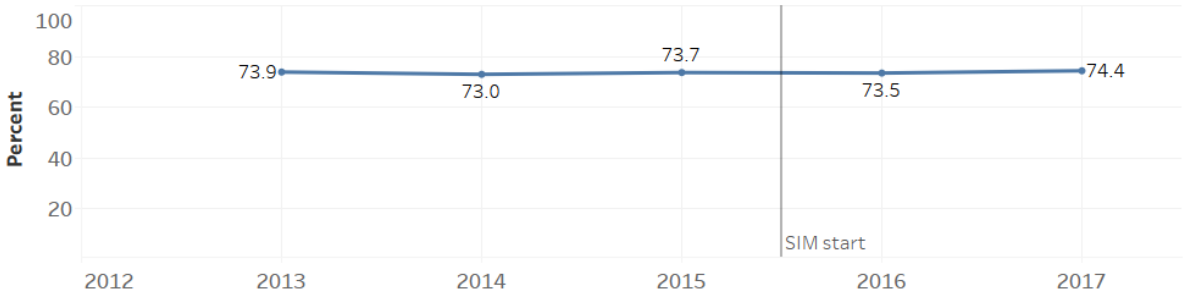
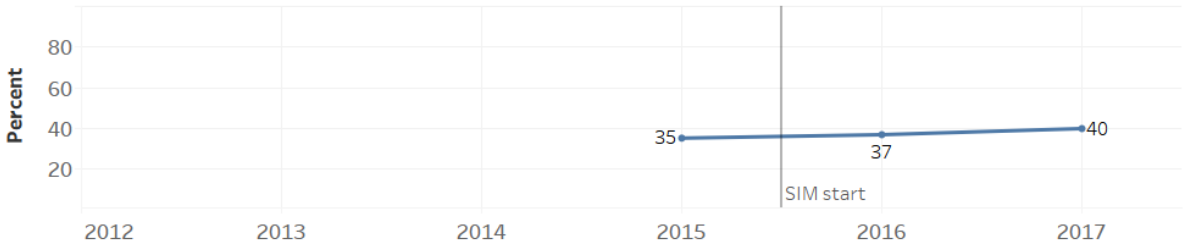


Figure 9. Percentage of children 2 years of age who had all vaccinations (DTap, IPV, MMR, HiB, HepB, VZV, PCV, HepA, RV and flu) by their second birthday



Source : Washington Department of Health

Figure 10. Percentage of children 3-6 years of age who had one or more well-child visits with a primary care provider in a year

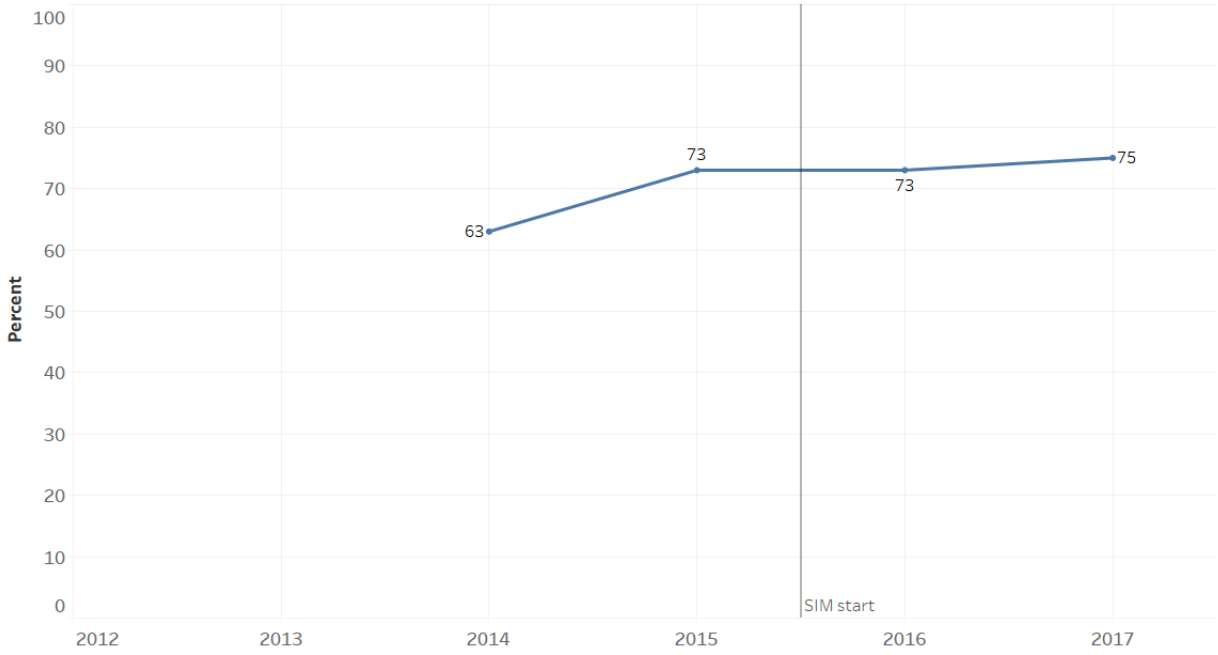
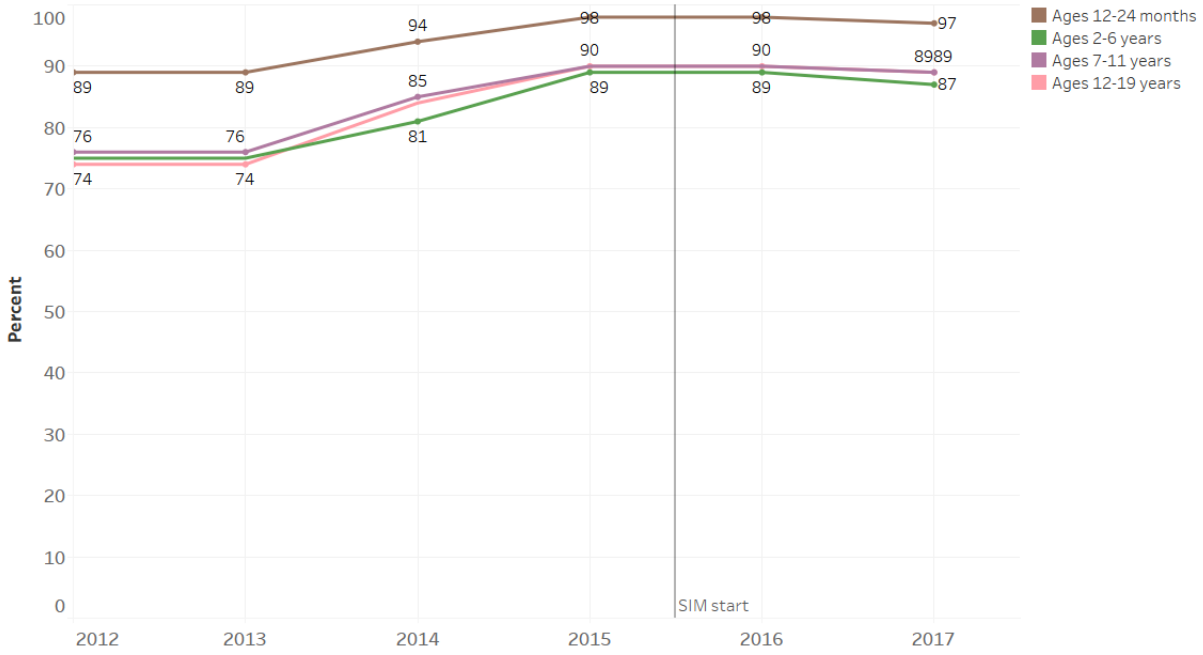


Figure 11. Percentage of children and youth 12 months - 19 years of age who had a visit with a primary care provider in a year, by four age groups



Source 2018: https://wacommunitycheckup.org/a-z-measure-list/

Figure 12. Percentage of adults 20 years of age and older who had an ambulatory or preventive care visit in a year, by three age groups

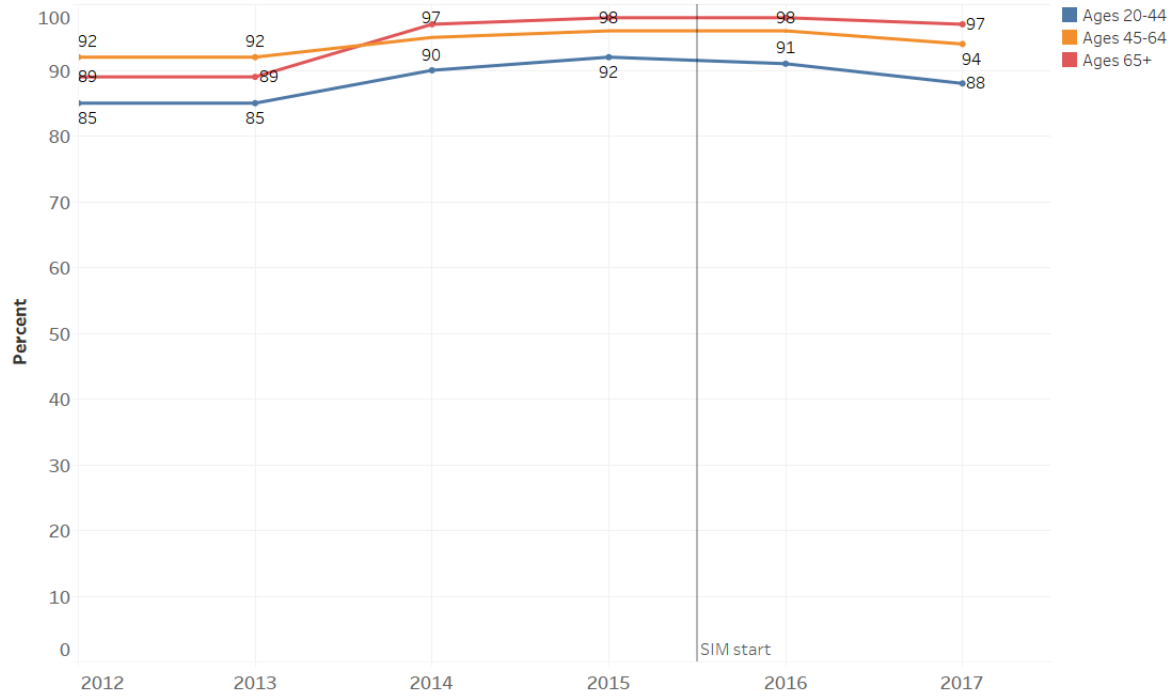


Figure 13. Percentage of patients 18-75 years of age with diabetes (type 1 and type 2) whose most recent HbA1c level in a year was greater than 9.0% (poor control - Medicaid)

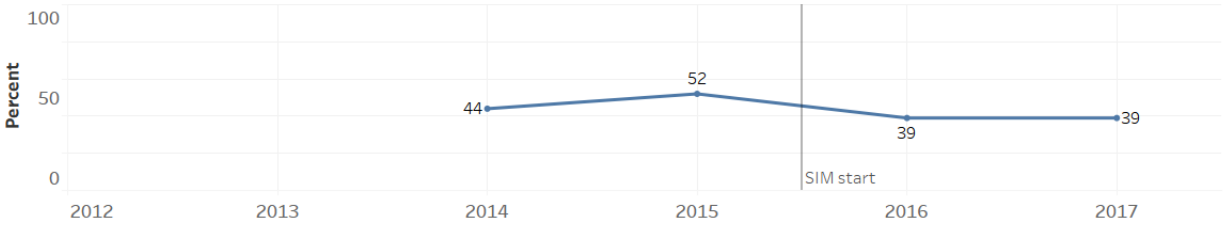
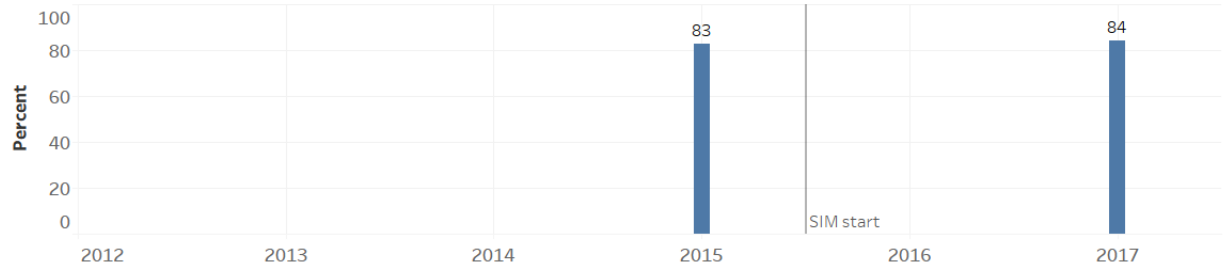
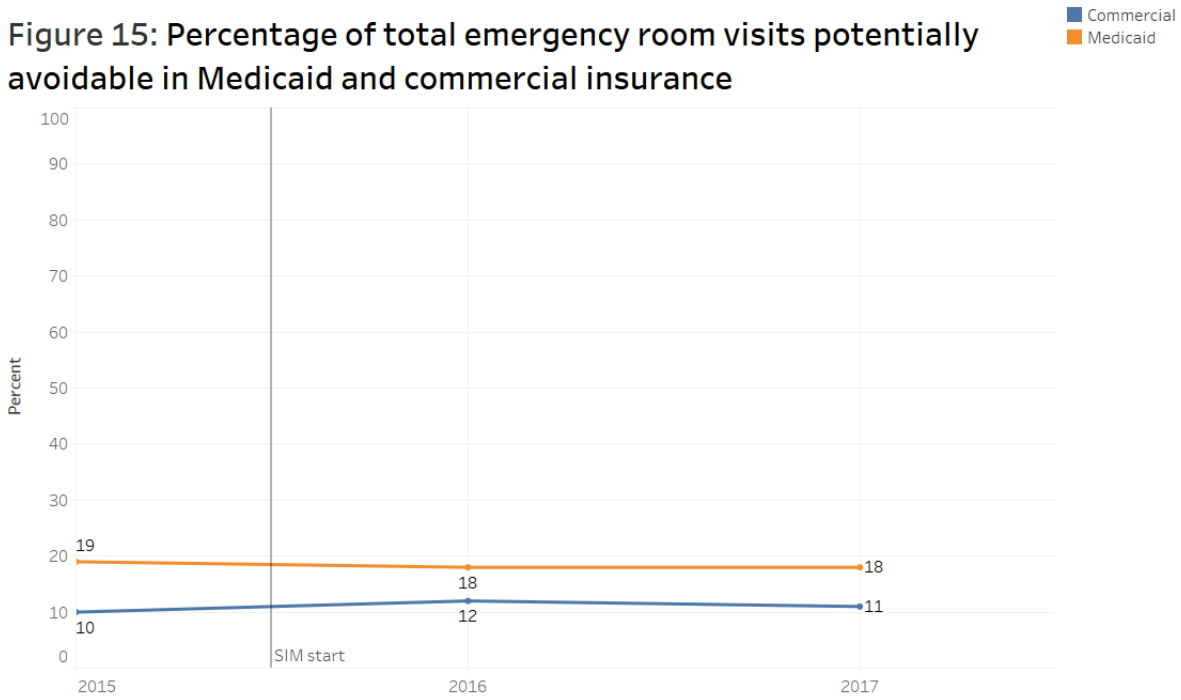


Figure 14. Percentage of patients who reported primary care providers always had good communication



Source 2018: https://wacommunitycheckup.org/a-z-measure-list/

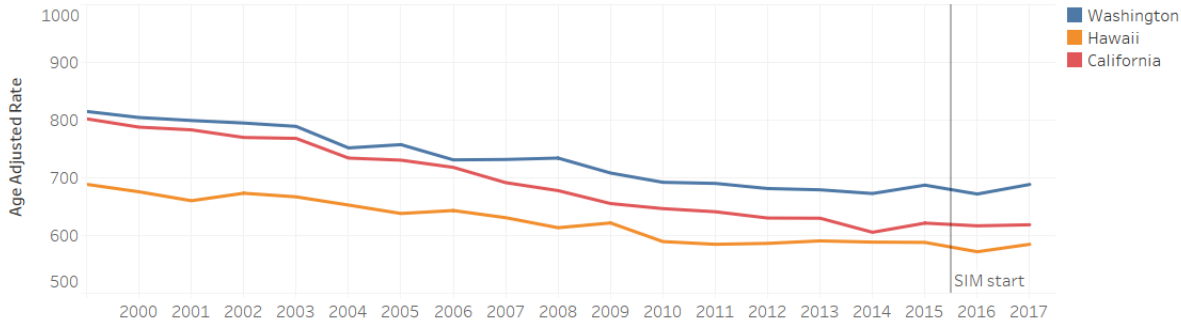
Figure 15: Percentage of total emergency room visits potentially avoidable in Medicaid and commercial insurance



Source: https://wacommunitycheckup.org/compare-scores/

Figures 16 to 20 describe trends in age-adjusted mortality rates for all-cause mortality, suicide, alcohol abuse and drug-induced mortality rates, and alcohol abuse and drug-induced mortality rates. We compared trends in mortality rates before versus after SIM in Washington, and also compared the pattern in Washington with the patterns in Hawaii and California. From 1999 to 2014 before SIM began, mortality rates were declining in the three states. After SIM began (2016-2017), most mortality rates increased slightly in Washington and Hawaii but leveled off in California. U.S. mortality rates also increased during this period (NCHS 2018).

Figure 16. Age-adjusted mortality rates for all causes, 1999-2017



Source: CDC https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=04AC1A22679116FC26C0BFADF069B1CA

Figure 17. Suicide mortality rates, age-adjusted, 1999-2017

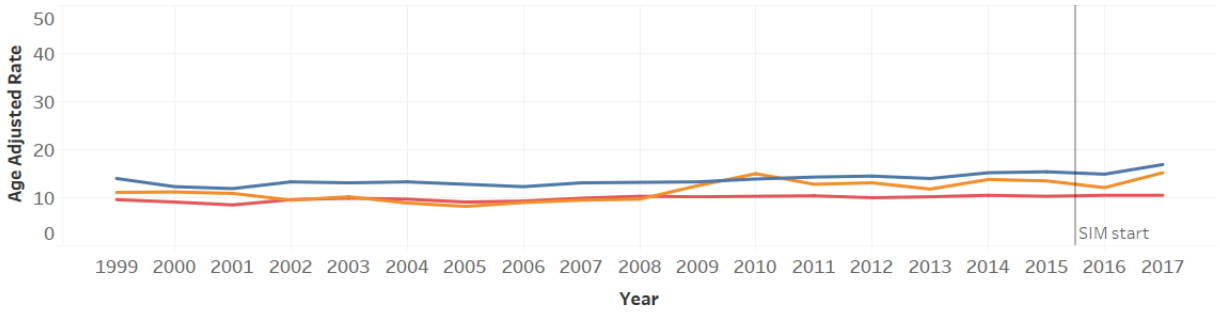


Figure 18. Alcohol abuse and drug-induced mortality rates, age-adjusted, 1999-2017

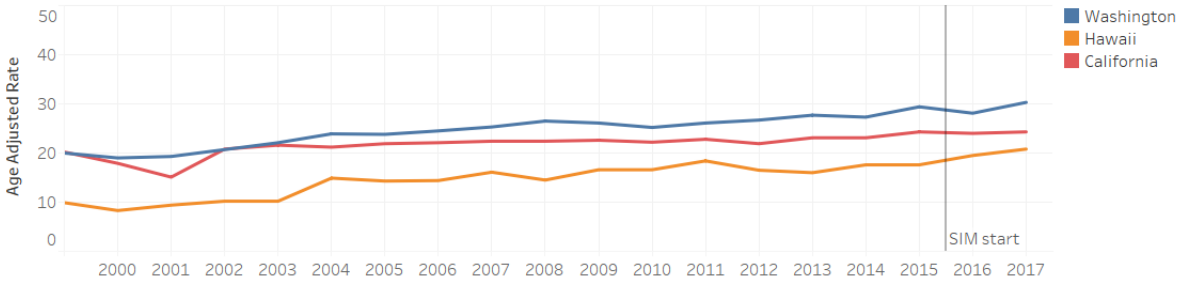
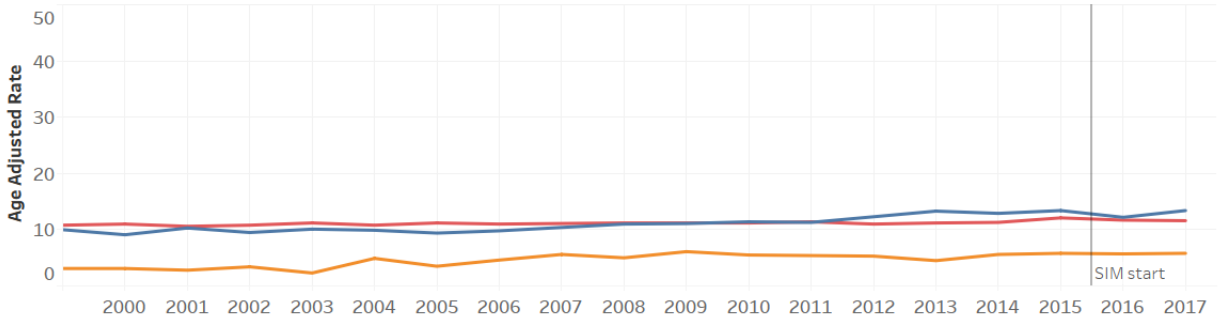
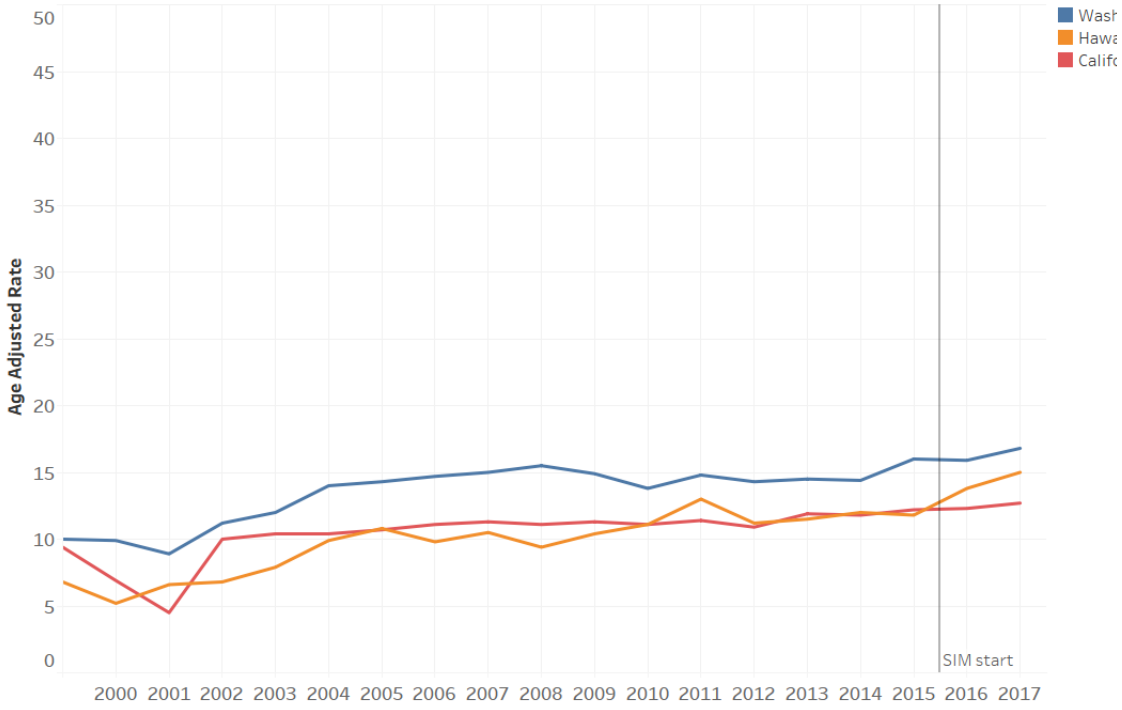


Figure 19. Alcohol abuse mortality rates, age-adjusted, 1999-2017



Source: CDC https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=04AC1A22679116FC26C0BFADF069B1CA

Figure 20. Drug-induced mortality rates, age-adjusted, 1999-2017



Source: CDC https://wonder.cdc.gov/controller/datarequest/D76;jsessionid=04AC1A22679116FC26C0BFADF069B1CA

In summary, Medicaid and PEBB annual expenditure rates and growth rates were higher after SIM was implemented. Annual mortality rates were declining steadily before SIM but increased slightly after SIM began. Four rates for quality of care did not change, while two rates improved after SIM began.

Effectiveness of SIM - Annual Individual-Level Surveys

Effectiveness

Table 5 compares the personal characteristics, health behaviors, health care, and health status of BRFSS respondents in Washington, California and Hawaii at baseline (2013). Compared to California and Hawaii, Washington adults had more chronic conditions, worse self-reported health, less access to health care, more cigarette smoking, less physical activity, and were less racial/ethnically diverse. Education and income were highest in Hawaii and lowest in California. In Washington, no significant differences in age, gender, race/ethnicity, marital status, number of children under age 18, and education existed across baseline years (2013-2015); however, household income, insurance coverage, and use of Internet increased, while home ownership declined slightly.

Table 5. Descriptive Statistics of Personal Characteristics, Health Behaviors, Health Care, and Health Status for Adults Aged 18 and Over in Washington, California and Hawaii: Behavioral Risk Factor Surveillance System (BRFSS) Survey, 2013

	Washington	California	Hawaii	Confidence Interval	
	Percent	Percent	Percent	p-value[1]	p-value[2]
PERSONAL CHARACTERISTICS					
Age					
18-44	47	50	46	0.0019	0.0072
45-64	35	34	34		
65+	18	17	20		
Gender					
Male	50	49	50	0.7838	0.7937
Female	51	51	50		
Race/Ethnicity					
White Only, Non-Hispanic	74	42	26	<.0001	<.0001
Black Only, Non-Hispanic	3	6	1		
Other Race Only, Non-Hispanic	11	15	43		
Multiracial, Non-Hispanic	2	2	20		
Hispanic	10	35	10		
Marital Status					
Married	54	50	53	<.0001	<.0001
Divorced	12	10	10		
Widowed	6	5	6		
Separated	2	3	1		
Never married	21	26	26		
A member of an unmarried couple	5	6	4		
Education					
Did Not Graduate High School	11	19	10	<.0001	<.0001
Graduated High School	25	22	30		
Attended College Or Technical School	36	32	33		
Graduated From College Or Technical School	28	27	27		
Health Insurance					
Yes	83	83	92	0.9473	<.0001
No	17	17	8		
Annual Household income					
Less than $10,000	5	11	5	<.0001	0.0239
Less than $15,000 ($10,000 to less than $15,000)	5	8	4		
Less than $20,000 ($15,000 to less than $20,000)	7	7	7		
Less than $25,000 ($20,000 to less than $25,000)	9	7	8		
Less than $35,000 ($25,000 to less than $35,000)	11	9	12		
Less than $50,000 ($35,000 to less than $50,000)	15	12	15		
Less than $75,000 ($50,000 to less than $75,000)	16	13	16		
$75,000 or more	33	32	32		

Home Ownership					
Own	67	59	63	<.0001	<.0001
Rent	29	37	26		
Other arrangement	4	4	11		
Use of Internet in past 30 days					
Yes	87	80	81	<.0001	<.0001
No	13	20	19		
HEALTH BEHAVIORS					
Smokes cigarettes every/some days					
No	84	88	87	<.0001	0.0004
Yes	16	13	13		
Binge drinking					
No	83	83	82	0.4129	0.0849
Yes	17	17	18		
Physical activity or exercise during the past 30 days					
Had physical activity or exercise	80	79	78	0.0851	0.028
No physical activity or exercise in last 30 days	20	21	22		
HEALTH CARE					
Length of time since last routine check-up					
Within past year (anytime less than 12 months ago)	62	63	68	0.0008	<.0001
Within past 2 years (1 year but less than 2 years ago)	17	17	15		
Within past 5 years (2 years but less than 5 years ago)	11	11	8		
5 or more years ago	9	8	9		
Never	1	2	1		
Unmet health care need due to cost					
Yes	16	16	9	0.8428	<.0001
No	85	84	91		
HEALTH STATUS					
Number of chronic conditions					
None	49	58	57	<.0001	<.0001
One	27	24	26		
Two or more	24	19	17		
Self-rated health as fair or poor					
No	84	81	86	<.0001	0.0087
Yes	16	19	14		
Physical health not good for 14 days out of the last 30 days					
No	88	88	90	0.9352	0.001
Yes	12	12	10		
Physical health not good for one or more days out of the last 30 days					

No	62	65	69	0.0028	<.0001
Yes	38	35	31		
Mental health not good for 14 days out of the last 30 days					
No	88	88	92	0.8098	<.0001
Yes	12	12	8		
Mental health not good for one or more days out of the last 30 days					
No	63	63	73	0.6316	<.0001
Yes	37	37	28		
Poor physical or mental health impaired usual activities for one or more days out of the last 30 days					
No	55	56	58	0.7581	0.0287
Yes	45	45	42		

p-value[1]: Compares Washington with California.
p-value[2]: Compares Washington with Hawaii.
Heavy drinking is omitted because it was not included in the 2013 BRFSS data.
Number of chronic conditions include the following: diabetes; kidney disease; depressive disorder; arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia; COPD, emphysema or chronic bronchitis; any other types of cancer; asthma, has now; stroke; angina or coronary heart disease; myocardial infarction

Figures 21 and 22 show trends in access to health care among adults in Washington, California and Hawaii. In all three states, the percentage of adults receiving an annual physical examination increased slightly after SIM started. In all states, the percentage of adults who needed to see a doctor but could not due to cost continued to decline slightly after SIM began in 2016 but increased slightly in 2017.

Figure 21. Percentage of adults who reported receiving a general physical examination during the preceding 12 months

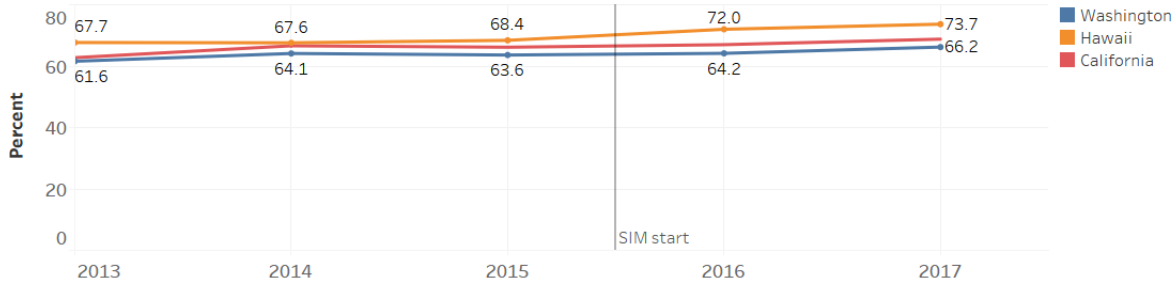
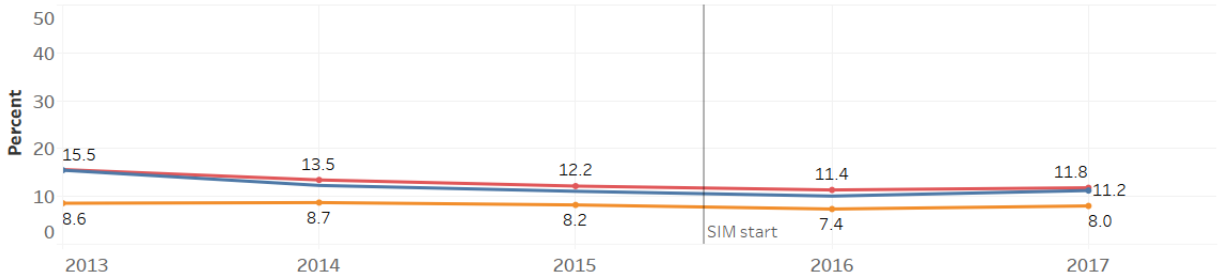


Figure 22. Percentage of adults aged 18 years and older who needed to see a doctor but could not because of cost during preceding 12 months



Source: Behavioral Risk Factor Surveillance System

Figures 23 to 26 show trends in health behaviors in the three states. The percentage of adults who smoked continued to decline slightly after SIM started in all three states. While binge drinking declined slightly after SIM began, binge drinking increased slightly in California and Hawaii. The percentage of adults who engaged in heavy drinking increased slightly in Washington but remained steady in California and Hawaii. The percentage of adults with no physical activity before versus after SIM remained steady in Washington and California but increased in Hawaii.

Figure 23. Percentage of adults who reported having smoked at least 100 cigarettes during their lifetime and reported smoking every or some days

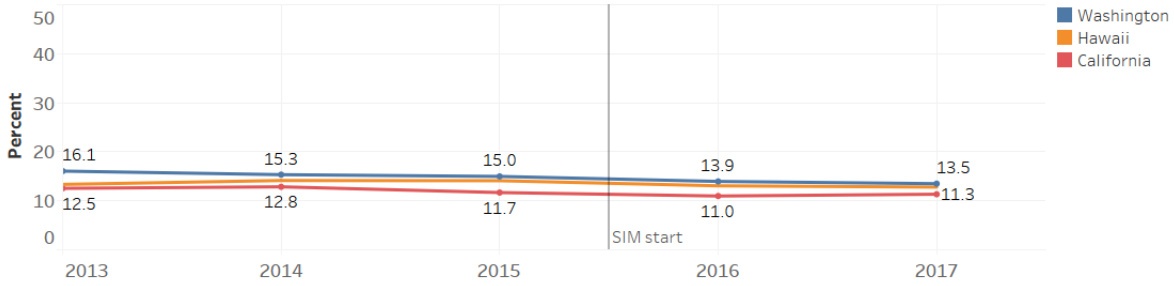
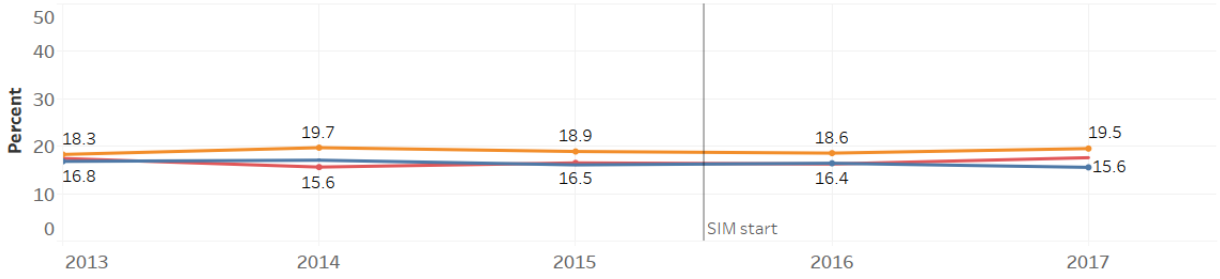


Figure 24. Percentage of adults reporting binge drinking on one occasion during the preceding month



Source: Behavioral Risk Factor Surveillance System

Figure 25. Percentage of adult men having more than 14 drinks per week and adult women having more than 7 drinks per week

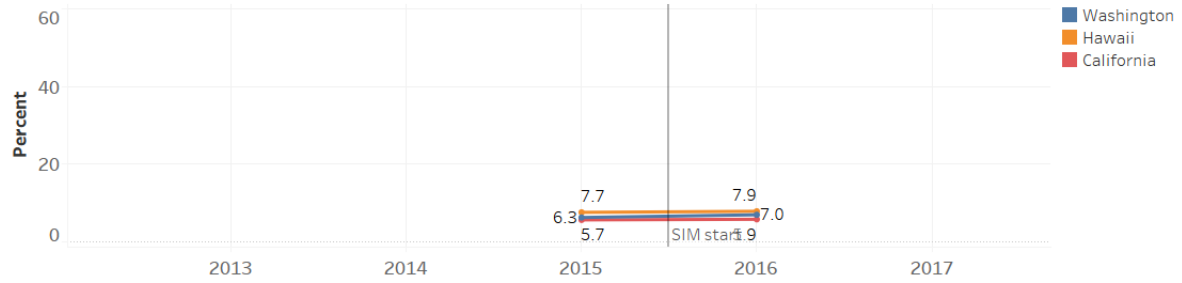
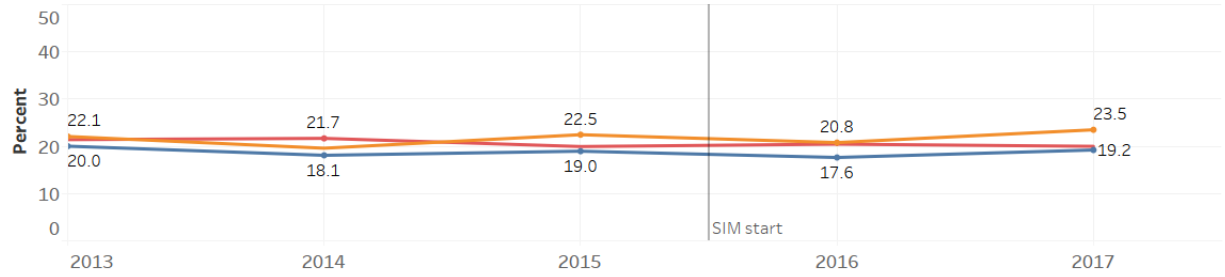


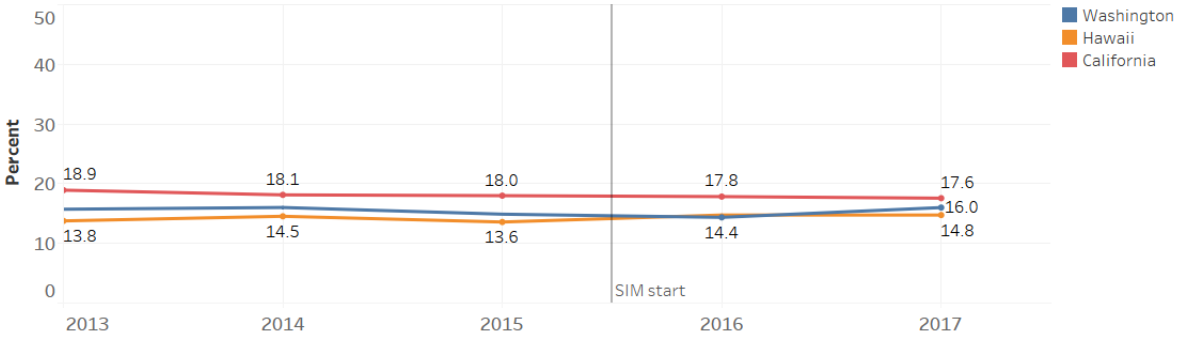
Figure 26. Percentage of adults who reported no physical activities other than their regular job during the preceding month



Source: Behavioral Risk Factor Surveillance System

Figures 27 to 31 show trends in self-reported health status before versus after SIM began in Washington, California and Hawaii. After SIM began, general health status, physical health status and mental health status declined slightly in Washington and Hawaii. In contrast, health status either remained steady or improved slightly in California.

Figure 27. Percentage of adults whose self-reported general health status was fair or poor



Source: Behavioral Risk Factor Surveillance System

Figure 28. Percentage of adults whose self-reported physical health was not good for one or more of past 30 days

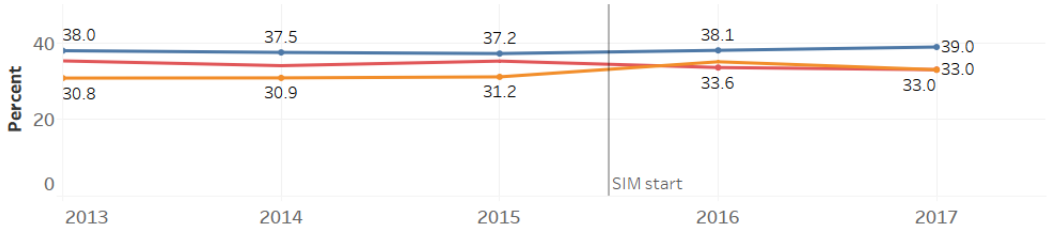


Figure 29. Percentage of adults who reported physical health not good for 14 or more days during the past 30 days

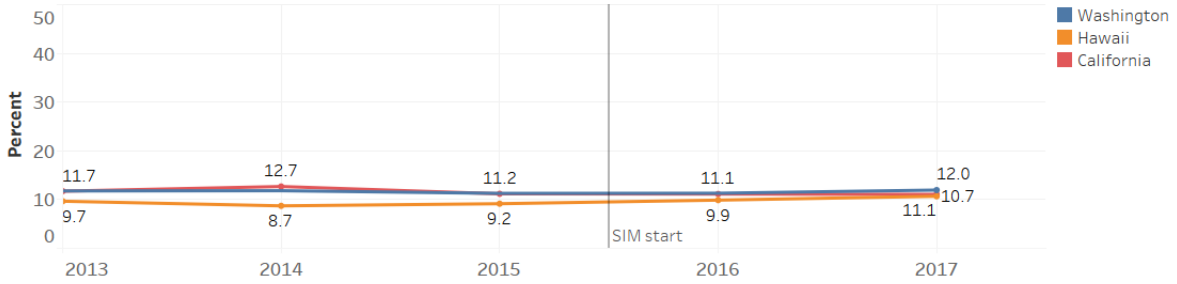
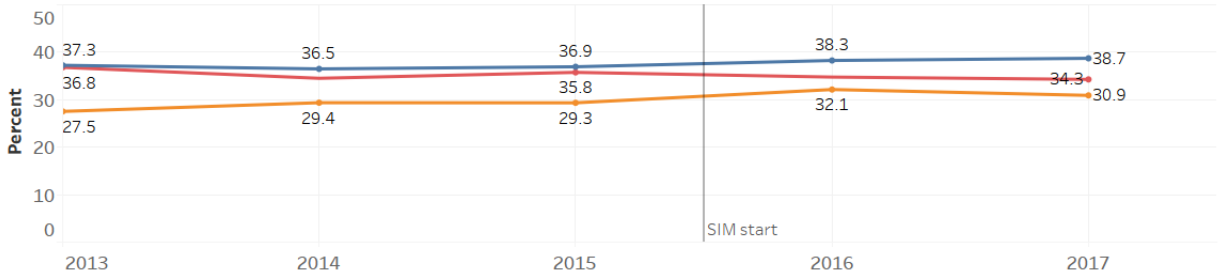
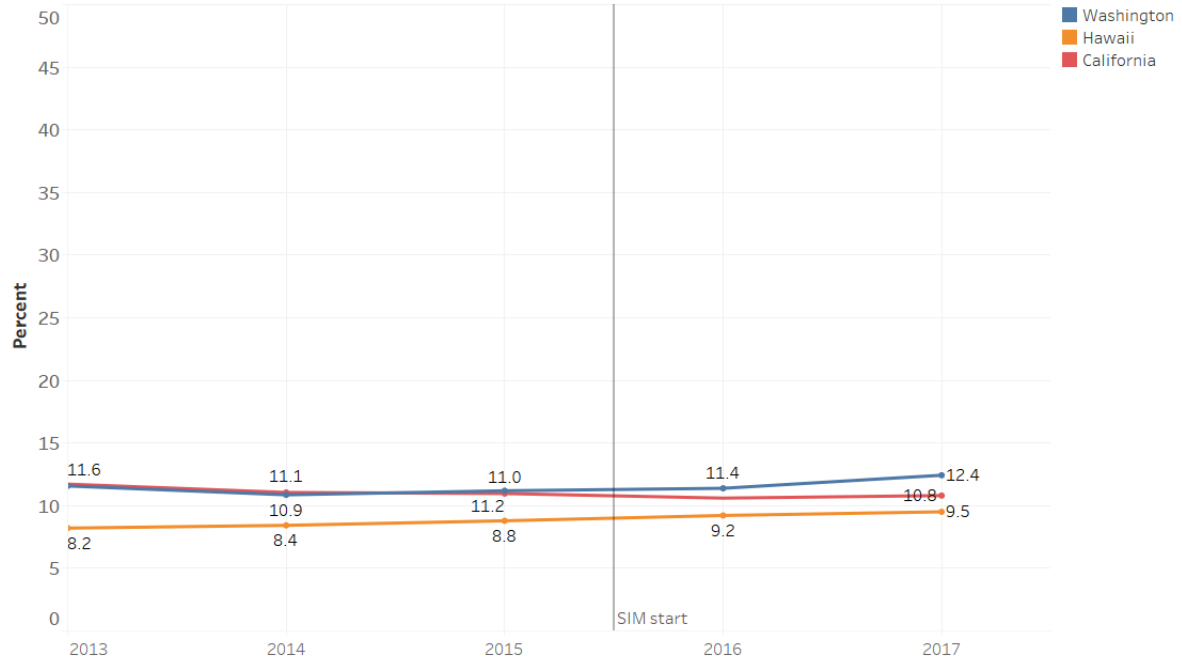


Figure 30. Percentage of adults whose self-reported mental health was not good for one or more of past 30 days



Source: Behavioral Risk Factor Surveillance System

Figure 31. Percentage of adults who reported mental health not good for 14 or more days during the past 30 days



Source: Behavioral Risk Factor Surveillance System

Access to Health Care. We tested whether the access outcomes had parallel trends in the 2013-2015 baseline years for Washington versus California and Washington versus Hawaii. The assumption of parallel trends was not met for having an unmet health care need due to cost in Washington versus California, and therefore, we excluded this outcome in the regression model comparing Washington to California.

The regression models reveal that, compared to California, SIM had no effects on having an annual physical examination in the past year. However, compared to Hawaii, living in Washington was associated with a 4 percentage point lower probability of having an annual physical examination (see Figure 32).

Health Behaviors. We tested whether the health behaviors had parallel trends in the 2013-2015 baseline years for Washington versus California and Washington versus Hawaii. The assumption of parallel trends was not met for binge drinking in Washington versus California and for physical activity in Washington versus Hawaii. Therefore, we excluded the two comparisons in regression analyses. In general, SIM had no effects on health behaviors, compared to California or Hawaii. However, compared to California, living in Washington was associated with 0.3 percentage point higher probability of heavy drinking (see Figure 32).

Health Status. We tested whether the health status outcomes had parallel trends in the 2013-2015 baseline years for Washington versus California and Washington versus Hawaii. The assumption of parallel trends was not met for poor mental health at least one day in Washington versus Hawaii, and therefore, we excluded this outcome in the regression model comparing Washington to Hawaii.

The relationship between SIM and health status was different in regression models with California as the comparison state versus Hawaii as the comparison state (see Figure 32). Compared to California, living in Washington was associated with a 3 percentage point increase in poor physical health at least 1 day in the

past 30 days; a 2.5 percentage point increase in poor mental health at least 1 day in the past 30 days; and a 1.4 percentage point increase in poor mental health for 14 or more days in the past 30 days. The unexpected positive associations were likely found because health status in Washington unexpectedly declined during the first and second year of SIM, while health status in California was steady or improving (see Figures 27-31). In contrast, compared to Hawaii, living in Washington was associated only with a 2.3 percentage point reduction in poor physical health for 1 or more days in the past month.

Population Sub-Groups. We examined whether our results were the same or different for adults who were low-income, under age 65, or both low-income and under age 65:

- In low-income adults, only one relationship was statistically significant, similar to the full population: compared to Hawaii, living in Washington was associated with a 2-percentage point lower probability of having an annual physical examination (see Figure 33).
- In adults aged under 65, the results were the same for Washington versus Hawaii in the full population (see Figure 34). For Washington versus California, SIM was associated with worse health for all health status measures, except fair/poor health status; SIM was no longer related to heavy drinking.
- In low-income adults under age 65, SIM was not associated with any outcomes (see Figure 35).

In summary, beneficial SIM effects were detected only for the reduction in poor physical health for 1 or more days in the past month.

Figure 32. Percentage-Point Differences in 2016-2017 Outcomes in Washington Compared to Each Control State, Logistic Regression Marginal Effects

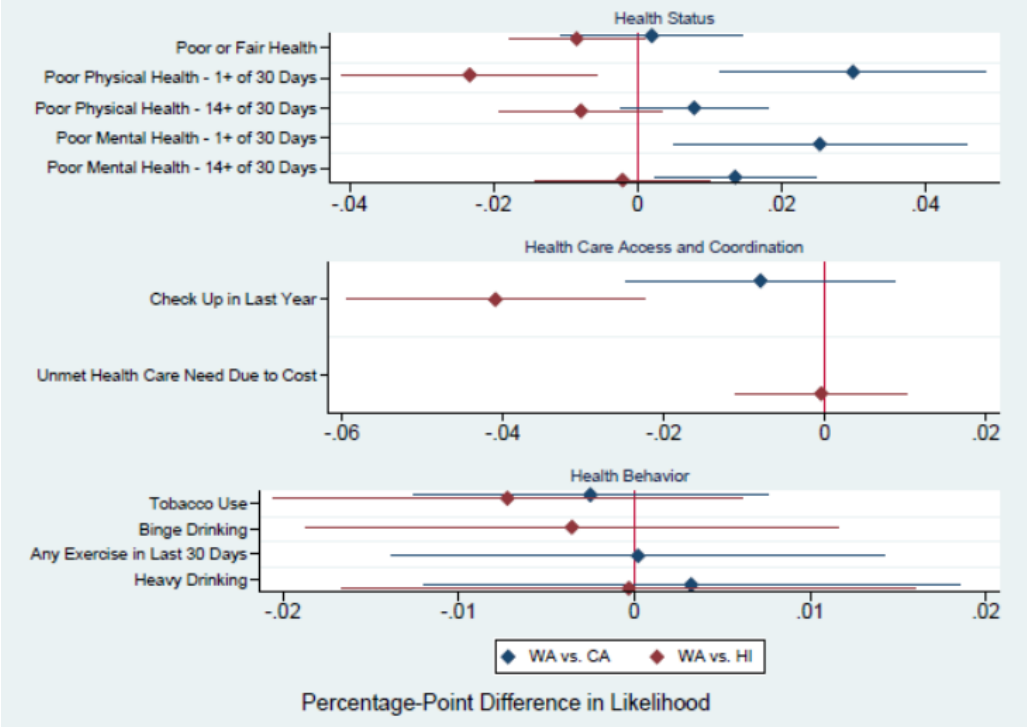


Figure 33. Percentage-Point Differences in 2016-2017 Outcomes in Washington Compared to Each Control State for Low-Income Adults, Logistic Regression Marginal Effects

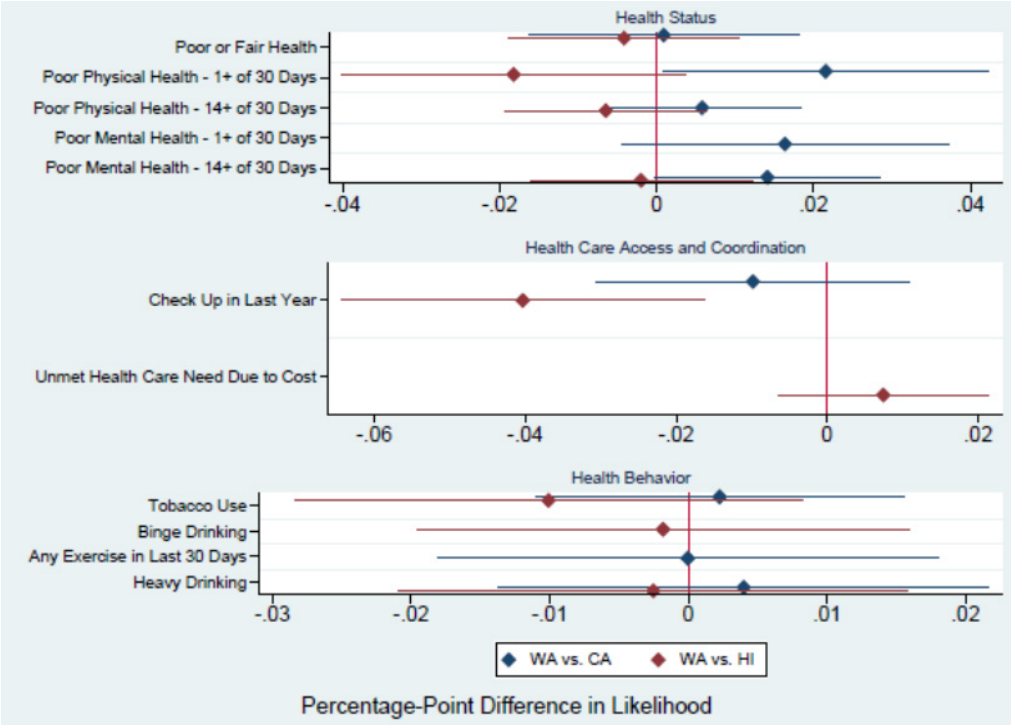


Figure 34. Percentage-Point Differences in 2016-2017 Outcomes in Washington Compared to Each Control State for Adults under Age 65, Logistic Regression Marginal Effects

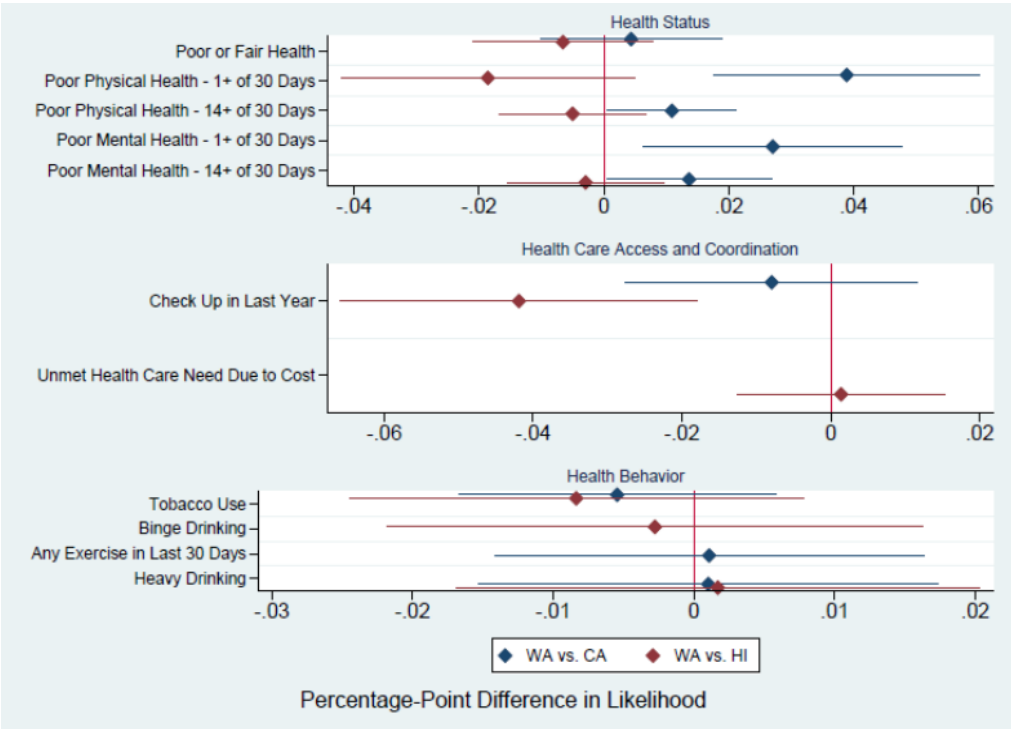
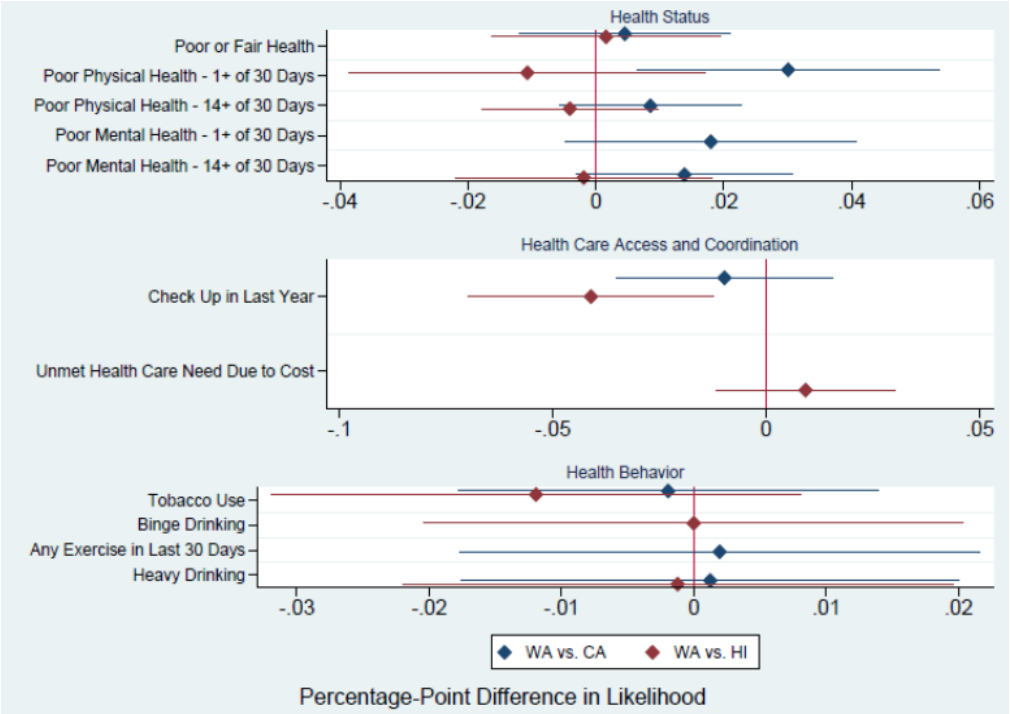


Figure 35. Percentage-Point Differences in 2016-2017 Outcomes in Washington Compared to Each Control State for Low-Income Adults under Age 65, Logistic Regression Marginal Effects



3.2.5 Discussion

The CMS/CMMI State Innovation Models Initiative is testing whether state governments can exercise their regulatory and policy levers to accelerate statewide health system transformation to improve the health and quality of care and reduce cost growth in the entire population. Diffusion theory posits that innovations are not adopted all at once but rather spread over time across health organizations. The evidence indicates that population-based interventions like SIM take 10-20 years to spread statewide. Diffusion is the exception rather than the norm; a majority of innovations fail to diffuse.

We applied the RE-AIM evaluation framework to examine the reach, effectiveness, adoption, implementation and future maintenance (sustainability) of SIM. Our main findings are as follows:

- The lack of timely and representative statewide data creates challenges for monitoring statewide trends in Washington's health and social service system and 7.5 million residents.
- SIM was implemented largely as planned, but implementation of SIM components was siloed, and several SIM components did not start in Year 1 (2016). Most SIM components will continue after SIM ends in January 2019. In Year 3 stakeholders report that system transformation is hard and takes time but remain optimistic that SIM will eventually achieve its three goals.
- Adoption and reach were low: only a small percentage of Washington's health-related organizations and 7.5 million residents participated in SIM. However, SIM met its goal that, by January 2019, 50% of commercial payments would be in value-based arrangements, but SIM's contribution to reaching this goal is unclear. SIM has not met the goal of 75% of state-sponsored payments being in value-based arrangements.
- Given low adoption and reach, SIM had not spread statewide and, therefore, had little impact on population health, quality of care and cost growth in the first and second years of SIM. In fact, population health in Washington declined in the first and second years of SIM, which is consistent with national trends.

In short, in three years SIM interventions have not spread statewide, which is consistent with diffusion theory and evidence. Statewide improvements in population health, quality of care and cost growth are unlikely in the short run. As stakeholder's noted, statewide system tranformation is hard, takes time, and "it's too early to tell" whether SIM is achieving the Triple Aim.

Overall, SIM has increased Washington's readiness for system change in the next decade. This accomplishment reflects the State of Washington's focus on infrastructure improvements, as noted in Washington's SIM application to CMS/CMMI: "(SIM) Investments are weighted on infrastructure improvements and start-up capital to ensure return on investment is realized over the short and long term." For instance, SIM investments built the ACH infrastructure, and ACHs are now poised to launch interventions in the Medicaid Transformation Project.

Based on the findings, our main recommendation is for the State of Washington to carry out SIM from a "statewide system perspective" rather than a siloed "component perspective," which diverted attention from system transformation and blurred accountability for SIM goals. The following strategies are recommended for implementing SIM with a statewide system perspective:

1) *Develop future vision and blueprint.* After SIM ends, Washington must develop a long-term strategic vision of statewide transformation to achieve SIM goals and a blueprint that articulates a broad plan for attaining the vision in the next decade.
2) *Leverage the Washington All-Payer Claims Data Base.* Created partly with SIM funds, the relatively new Washington All-Payer Claims Database has statewide health care records for a large majority of Washingtonians and, therefore, is a resource for transformation planning and monitoring progress toward SIM goals on a statewide level.
3) *Spread SIM beyond the state sector.* With Washington as first mover, SIM must spread broadly to Medicare and private health care and build partnerships with social services to accelerate change broadly throughout the state's health system.
4) *Reverse Washington's declining population health.* A public health priority is to halt and reverse the recent declines in Washington's population health.

In the U.S., life expectancy has declined over the past three years as more people died of drug overdose, suicide and chronic liver disease, the latter caused by hepatitis C or hepatitis B infection and excessive alcohol consumption (NCHS 2018). SIM is a mechanism for addressing this public health problem because a SIM goal is to integrate care and social supports for persons with physical and behavioral (mental health/substance abuse) comorbidities.

The ACHs and PM1 may play important roles in reversing the decline in Washington's health. In the U.S. health care system, patients with chronic conditions, disabilities and social problems (such as substance abuse) often receive fragmented, uncoordinated, and inefficient services that focus on siloed conditions rather than adopting a patient-centered approach addressing the diverse needs of the whole person, which can reduce quality of care and increase costs. Low connectivity across health care organizations promotes fragmented care in the system. The ACHs and PM1 are increasing collaboration and communication statewide among diverse health and social service agencies, which may reduce fragmentation and improve the integration of services to meet the needs of people with mental health, substance abuse, and other social problems, particularly people with Medicaid coverage, and may lead to statewide improvements in population health.

Our findings likely will have significance for health policy in Washington and the U.S. There is little evidence for whether state-driven reforms of statewide health systems lead to short-term or long-run improvements in health, quality of care, and cost. Our findings may inform SIM sustainability in Washington and dissemination of SIM to other states, recognizing that SIM results may be context-sensitive (Horton et al., 2018).

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4. Practice Transformation Support Hub (Hub)

BRIEF 4.1

Washington SIM Evaluation

Practice Transformation Support Hub (Hub)

Description

The Practice Transformation Support Hub (the "Hub") was a SIM program that aimed to advance primary care and behavioral health practices towards three key objectives: the integration of behavioral health and primary care, adoption of value-based payment (VBP) systems, and connection of practices to community resources. The main components of the Hub were a team of "Coach/Connectors" and a web based "Resource Portal" that provided online resources. The Coach/Connectors were a group of eight to nine individuals who conducted practice facilitation and coaching to primary care and behavioral health organizations and connected them to community resources. The Hub also developed toolkits and resources, hosted webinars, conducted live conferences, and taught mini-courses.

Key Evaluation Findings

- Practices had unique needs and were at varying levels of maturity and readiness for change. Practice needs varied but there was a common interest around the use of data.
- The Hub successfully achieved its implementation goals. Confusion arose among some stakeholders and practices around the definition of practice transformation, the role of the Hub, and the Hub's relationship with other initiatives.
- Practices spoke positively about Coach/Connectors in general and appreciated their onsite face-to-face contact. The practices especially valued Coach/Connectors who were good communicators, had the necessary technical knowledge, and were familiar with the local community.
- Practice engagement with multiple components of the Hub correlated with progress in behavioral health/primary care integration objectives, and participation in Hub education sessions correlated with progress in community linkages. Learning series and activities developed with the UW Advancing Integrated Mental Health Solutions (AIMS) Center were highly valued and associated with progress in care integration. No correlations were found between Hub activities and progress on VBP.
- The Hub's effectiveness needs to be assessed in the context of external and funding factors. The number of different concurrent initiatives contributed to a sense of "initiative fatigue" and "information overload" among busy clinicians. Some practices were reluctant to engage in change because of uncertainty about the future. Limitations in financial, human, and technology resources were barriers to transformation, particularly in rural communities.
- It is too early to fully assess the impact of the Hub. The Hub was in operation for a relatively short time, and practice transformation is a slow, gradual process that involves organizational culture change. Improved data systems to monitor and evaluate practices' progress are needed to effectively assess the impact of practice transformation interventions.

- Future practice transformation efforts in Washington may benefit from a clearly defined set of evidence based interventions based on an easy to understand framework; communication and marketing of the vision, business case, and roadmap for successful transformation; integration with other components of the state's health system; partnership with organizations with subject matter expertise; and financial and technical resources to incentivize and facilitate practices (particularly rural ones) to adopt the data collection and analysis systems required for care integration and VBP.

Hub Implementation

The Hub was launched in the first quarter of 2017, and by the third quarter of 2017 it had enrolled 175 practices, exceeding its target of 150 total practices. By the fourth quarter of 2018, the Hub had conducted assessments of 60 practices/organizations in addition to the ones enrolled in coaching, taken 1,912 help line calls/emails, held six webinars with more than 400 attendees, convened ten live events with a total of nearly 900 attendees, held six cohort learning academies with participants from 57 organizations, and had an email list with more than 1,400 subscribers. The Portal had 11,754 users and 286 resources available for download. Two hundred and fifty users registered for their own individual Portal accounts, a feature introduced in 2017 Q4.

Evaluation Methods

Qualitative and quantitative methods were used to evaluate the Hub. The primary qualitative method was key informant interviews with Hub leadership, staff, community stakeholders, and practices. Quantitative methods involved statistical analyses of the Coach/Connector activity log database linked to assessment survey data to determine which Hub activities were associated with self-reported progress in practice transformation.

Evaluation Questions and Findings

What are the practice transformation training and technical assistance needs of primary care and behavioral health practitioners? Key informant interviews revealed that health care and community organizations are at different levels of maturity and readiness related to the three key Hub objectives. Training and technical support needs are broad, with particular interest in data use and best practices. Each practice has its own unique set of needs; those of primary care differ from behavioral health, and those of rural settings differ from urban communities.

What lessons have been learned in the process of Hub implementation that can help improve Hub services and shape the future direction of the program? Clear communication to practices is a foundational component of successful Hub implementation. Multiple partnerships are needed for successful implementation of practice transformation initiatives. Practices and stakeholders sometimes feel overwhelmed by change and overloaded with information. Geography and limited resources in rural settings are key challenges to implementation. Coach/Connector subject matter expertise was highly valued. A strong facilitator of Hub implementation was hiring Coach/Connectors with past clinical experience as well as experience living or working in the same region as the practices they served.

What have been the success factors (facilitators) and barriers for achieving the PTSH objectives? Facilitators included stakeholder engagement, external communication about Hub services, use of data to monitor implementation and progress, ACH facilitation of practice assessments, alignment with other practice transformation initiatives, and alignment with MTP projects. Barriers included time constraints imposed by the short project period, budget cuts, and uncertainty about future reimbursement structures.

What PTSH activities advanced bi-directional behavioral health and primary care clinical integration? Assessment data showed that practices made more progress in care integration than in VBP or community linkages. Practices that participated in Hub education sessions or activities produced by UW Advancing Integrated Mental Health Solutions (AIMS) tended to report greater progress in care integration. Practices that reported greater progress in care integration were also more likely to have registered for a Resource Portal account, a feature the Resource Portal launched in 2017 Q4.

What PTSH activities advanced transition from volume-based to value-based payment systems? Hub activities did not have a measurable correlation with VBP progress. Practices that reported greater progress in VBP were more likely to have registered for an account with the Resource Portal.

What PTSH activities advanced clinical community linkages (i.e. connections between primary care and behavioral health practices with community resources)? Greater progress in community clinical linkages correlated with Hub engagement, particularly participation in educational sessions. Practices that reported greater progress in community clinical linkages were more likely to have registered for an account with the Resource Portal.

CHAPTER 4.2

Washington SIM Evaluation

Practice Transformation Support Hub (Hub)

4.2.1 Introduction

This chapter presents the UW's evaluation of the Practice Transformation Support Hub ("the Hub"). The goal of the Hub was to ensure that primary care and behavioral health practices had access to the training and technical assistance resources they needed to advance the goals of SIM and Healthier Washington (HW). The three key objectives of the Hub[1] were to advance:

- Care Integration: Accelerate the adoption of integrated behavioral health (including substance use disorder) and primary care
- Value Based Payment (VBP): Support progress towards value-based payment systems
- Community-Clinical Linkages: Strengthen clinical practice alignment with community-based services for whole-person care.

The design of the Hub was guided by a series of listening sessions and site visits held throughout the state in the first year of SIM funding. Initially the Hub was conceived as having three components, each of which had their own RFP issued by HCA:

- A network of practice "Coaches" who would provide face-to-face technical assistance to primary care and behavioral health practices
- A network of "Connectors" who would link practices with community resources and systems, and
- A web based "Portal" to provide online resources, disseminate best practices, and support the work of the Coaches and Connectors.

These three components of the Hub were designed to work together to provide technical support, develop resources and toolkits, conduct regional and statewide webinars and conferences, and facilitate regional and statewide learning collaboratives, all with the goal of advancing the three Hub objectives.

In this chapter we present contextual information on the Hub, summarize its implementation, describe the evaluation questions developed to assess the Hub, describe the methods used to answer these questions, summarize the findings for each question, and discuss the implications of these findings for future practice transformation efforts.

4.2.2 Context

From the start, the Hub was a dynamic program that evolved as national, state, and local conditions changed. The original concept of the Hub was to focus on small practices with 20 or fewer health care providers. Over time it opened its doors to all primary care and behavioral practices in the state, regardless of size, and became a resource to many ACHs as they engaged practices as part of their Medicaid Transformation Project (MTP) work.

1 Practice Transformation Support Hub. Washington State Health Care Authority. Available at: https://www.hca.wa.gov/about-hca/healthier-washington/practice-transformation-support-hub

Several important contextual factors influenced the evolution of the Hub. One was the geography of Washington's health care system. According to a 2016 report from the UW Center for Health Workforce Studies, Washington has 81.2 primary care physicians (PCP) per 100,000 population, which is higher than the national average of 73.1 per 100,000.[2] Eastern Washington has a lower density of PCPs than Western Washington, and rural areas have a lower concentration of PCPs compared to urban areas. Rural PCPs face significant challenges in Medicaid reimbursement, health information technology, emergency medical services and public transportation.[3] Rural areas of the state also face a shortage in behavioral health services.[4]

Another important factor was the presence of other practice transformation programs. These had the potential to both compete and complement the work of the Hub. A statewide directory of practice transformation efforts listed a dozen different programs including the Hub [5] of which six were funded by CMS. Two of the largest, both funded by CMS, were the *Washington, Wyoming, Alaska, Montana and Idaho (WWAMI) Practice Transformation Network*, led by UW (University of Washington) Physicians, and the *Pediatric - Transforming Clinical Practice Initiative* (TCPI), led by the Washington Department of Health in partnership with the Washington Chapter of the American Academy of Pediatrics. To help coordinate the work of the various initiatives, the Hub formed a Practice Transformation Consortium that met regularly to exchange information.

The evolution of the state's nine ACHs also powerfully influenced Hub evolution. These entities, which like the Hub were created by SIM, were designed to bring together representatives from different sectors to improve population health in their regions.[6] In the first two years of SIM, ACHs focused on establishing themselves as organizations. Then the MTP brought an infusion of resources to the ACHs. The MTP contract with CMS was for $1.5 billion of federal investment over five years, and ACHs were the primary mechanisms through which regional health projects were to be executed. Unlike SIM, which included all Washingtonians, the MTP resources were mainly intended to benefit Medicaid recipients. With those resources came new time-sensitive demands on ACHs such as reporting requirements and project planning.

4.2.3 Implementation

Contracts for the Hub were implemented by September 2016. Qualis Health was selected to be the vendor for the Coach and Connector networks. In their model, a staff of eight to nine "Coach/Connectors" fulfilled both the Coach and Connector roles. The UW Department of Family Medicine was selected as the vendor for the Portal. Practice recruitment began in January 2017 and by the third quarter of 2017 the Hub had recruited 175 practices, exceeding its recruitment target of 150 practices. The practices enrolled for coaching were located throughout the state with most in Western Washington as shown in the map in Figure 1.

2 Skillman SM, Dahal A. Washington State's Physician Workforce in 2016. Seattle, WA: Center for Health Workforce Studies, University of Washington, Feb 2017.

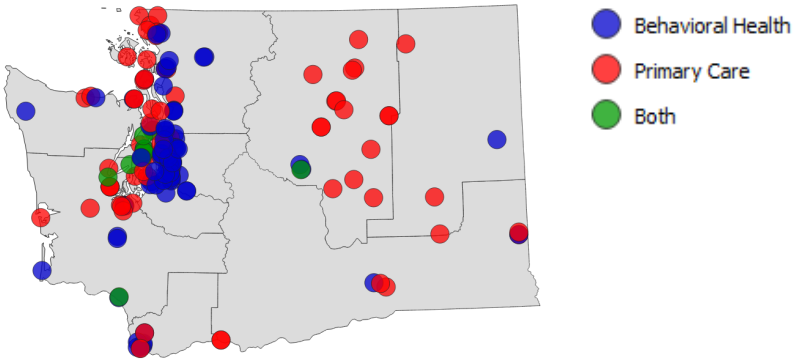
3 Friendberg MW, Martsolf GR, White C. et al. Evaluation of Policy Options for Increasing the Availability of Primary Care Services in Rural Washington State. Rand Corporation Research Report, 2016.

4 Baldwin LM, Patanian MM, Larson EH, Lishner DM, Mauksch LB, Katon WJ, WalkerE, Hart LG. Modeling the mental health workforce in Washington State: using state licensing data to examine provider supply in rural and urban areas. J Rural Health. 2006 Winter;22(1):50-8.

5 Practice Transformation Directory. Available at http://WAPortal.org

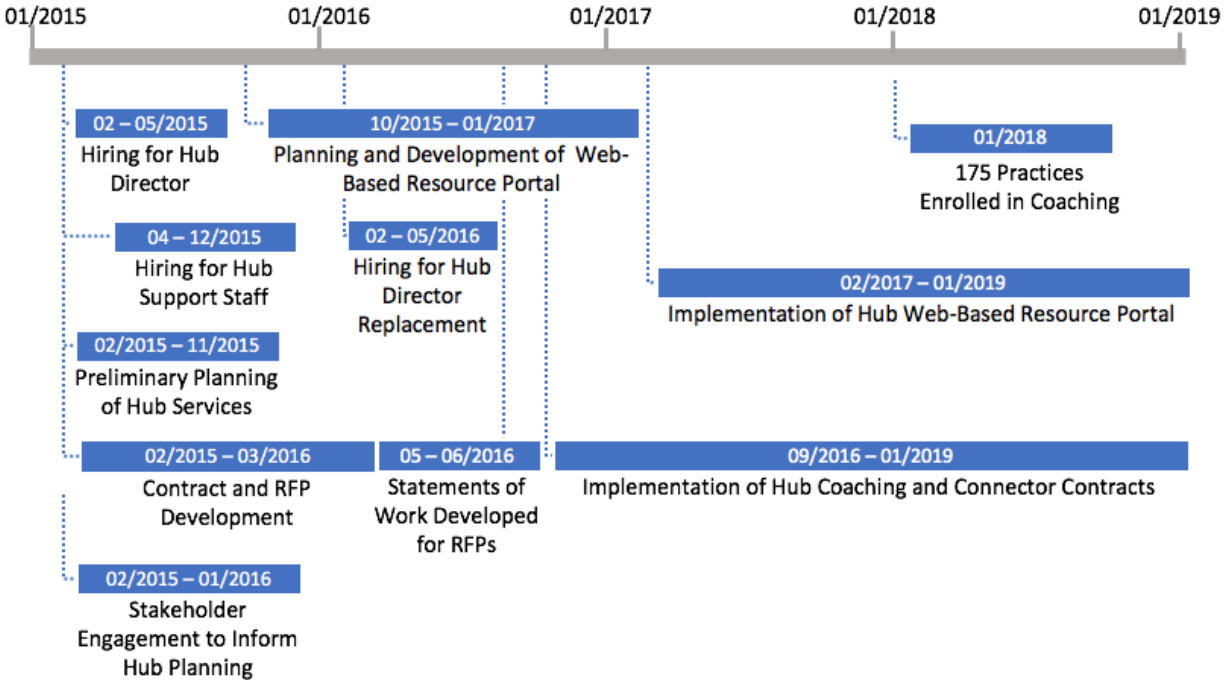
6 Washington State Health Care Authority, Accountable Communities of Health. Available at https://www.hca.wa.gov/about-hca/healthier-washington/accountable-communities-health-ach

Figure 1. Map of practices enrolled for Hub Coaching



By November 1, 2018, the Hub had performed assessments of 60 practices/organizations in addition to the ones enrolled in coaching, taken 1,912 help line calls/emails, held six webinars with more than 400 attendees, convened ten live events with a total of nearly 900 attendees, conducted six cohort learning academies with participants from 57 organizations, and developed an email list with more than 1,400 subscribers. The Portal had 11,754 users and 286 resources available for download. Two hundred and fifty users registered for their own individual Portal accounts, a feature introduced in 2017 Q4. Figure 2 summarizes the key Hub implementation dates in the form of a timeline.

Figure 2. Hub implementation timeline



Of 175 recruited practices, a little more than a third were in rural settings. Approximately half had fewer than 10 health care providers. Almost three quarters of practices served a patient population that was majority Medicaid. A little more than half were behavioral health-only practices; 42% were primary care-only and 7% offered both primary care and behavioral health. Eighty-three of the 175 practices (47.4%) had pre-Hub and post-Hub data from at least one of the assessment instruments. Table 1 summarizes the characteristics of all enrolled practices as well as those with pre- and post- data. Table 2 shows the number of enrolled practices in each ACH.

Table 1. Characteristics of 175 practices enrolled for Hub Coaching

Characteristic	% of All Enrolled Practices	% of Practices with Pre- & Post- Data
Practice Setting	(n=175)	(n=83)
Rural	36.0%	42.2%
Urban	64.0%	57.8%
FQHC Designation	(n=175)	(n=83)
Yes	12.6%	15.7%
No	87.4%	84.3%
Number of Providers	(n=87)	(n=57)
<10	50.6%	49.1%
>=10	49.4%	50.9%
Avg. Medicaid % of lives (n=134)	(n=134)	(n=75)
Less than 10%	7.5%	4.0%
10% to 50%	23.9%	24.0%
More than 50%	70.5%	72.0%
Provider Type (n=175)	(n=175)	
Behavioral Health	51.4%	
Primary Care	41.7%	
Both	6.9%	
Affiliated with Tribes	2.87%	

Table 2. Count of Recruited Practices by ACH

	Behavioral Health Practices	Primary Care Practices	Both	Total
Better Health Together	1	3	0	**4**
Cascade Pacific Action Alliance	8	10	3	**21**
Greater Columbia	2	4	0	**6**
King County	45	4	2	**51**
North Central	2	15	1	**18**
North Sound	15	18	0	**33**
Olympic Community of Health	6	12	6	**24**
Pierce County	4	3	0	**7**
Southwest Washington	7	4	0	**11**

4.2.4 Evaluation Questions

The UW evaluation of the Hub had three components: a formative evaluation component to help inform the design of the Hub, a process evaluation component to provide feedback on Hub implementation, and an outcome evaluation component to assess the Hub's impact. For each component the UW evaluation team developed the following evaluation questions:

Formative evaluation

- What are the practice transformation training and technical assistance needs of primary care and behavioral health practitioners?

Process evaluation

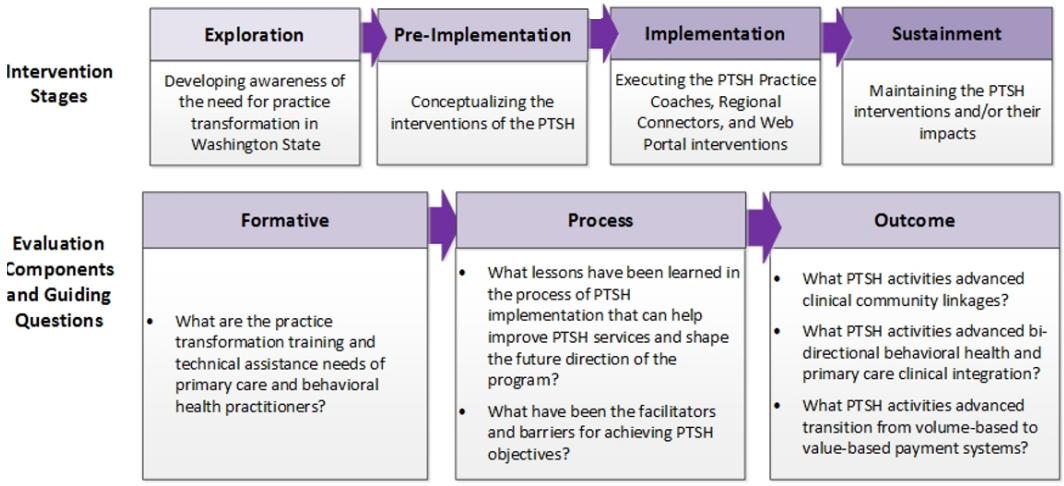
- What lessons have been learned in the process of Hub implementation that can help improve Hub services and shape the future direction of the program?
- What have been the success factors (facilitators) and barriers for achieving the HUB objectives?

Outcome evaluation

- What HUB activities advanced bi-directional behavioral health and primary care clinical integration?
- What HUB activities advanced transition from volume-based to value-based payment systems?
- What HUB activities advanced clinical community linkages (i.e. connections between primary care and behavioral health practices with community resources)?

Figure 3 illustrates how the evaluation components and questions related to the stages of the Hub intervention. The intervention stages were adapted from the work of Aarons.[7]

Figure 3. Hub intervention stages and evaluation components and questions



4.2.5 Methods

The Hub evaluation was a mixed-methods evaluation that included both qualitative and quantitative methods.

Qualitative

Qualitative data collection for the Hub evaluation included the following:

Listening sessions and site visits: Hub staff conducted 11 events in the third and fourth quarters of 2015 to engage stakeholder groups to inform the development of Hub activities. The events had representatives from 141 community health organizations, physical and behavioral health practice organizations, and others with a vested interest in the Hub. Participant comments were recorded by Hub staff with handwritten notes which

7 Aarons GA, Hurlbut M, Horwitz SM. Advancing a Conceptual Model of Evidence-Based Practice Implementation in Public Service Sectors. Adm Policy Ment Health (2011) 38:4–23

were then transcribed into electronic word processing documents and analyzed by the UW evaluation team.

Document review: We compiled a set of candidate documents for review and assessed them for bias. Documents were then mapped to the evaluation questions and prioritized for detailed review. A final sample of documents were then reviewed and coded for themes.

Key informant interviews (KIIs): We conducted KIIs with Hub staff and implementation stakeholders and summarized them in quarterly "rapid process improvement reports" from 2016 Q3 through 2017 Q4. The purpose of these reports was to provide information to Hub leadership that would be useful during Hub implementation. Quarterly one-on-one telephone interviews with Hub leads were also conducted.

KIIs focusing on practices were done in 2018 Q2 through 2018 Q4. A recruitment pool of 40 candidate practices out of 150 enrolled practices was generated based on diversity in size, type, geography (Rurality designation, East/West, ACH, County), Medicaid population served, data completeness, and involvement in other SIM components. Recruitment was conducted by email. Gift card incentives were offered to practices for participation.

For all KII's, we developed separate structured interview guides for each round of interviews. Prior to being interviewed, key informants were sent a reminder email with a copy of the interview guide and consent form. Interviews were conducted over the telephone. They lasted approximately 30 minutes and were audio-recorded and transcribed. The transcription was then imported into Atlas.Ti qualitative data analysis software, coded for themes by two analysts experienced with qualitative research. Codes were synthesized into sub-themes to qualitatively summarize the respective experiences of coaches and practices with regards to advancing transformations to Hub objectives.

Quantitative

There were several sources of quantitative data used for this evaluation. The primary data sources used for the evaluation included:

- *TruServe* - A web-based activity tracking system developed by the University of North Dakota Center for Rural Health and customized specifically for use by the Hub. It was designed to be used by the Hub Coach/Connectors to log their activities with practices, community based organizations, and other stakeholders.

- *Patient Centered Medical Home Assessment* (PCMH-A) – An assessment developed jointly by Qualis Health and the MacColl Center for Healthcare Innovation as part of the Safety Net Medical Home Initiative to support medical home transformation among primary care practices serving vulnerable and underserved populations.[8] It consists of 36 items scored on a 1-12 point scale, intended to be administered to representatives from a practice in a meeting facilitated by a Hub coach at enrollment and every 6 months thereafter. It was administered mostly to primary care practices. Only selected items that mapped to each of the Hub objectives were used for the evaluation.

- *Maine Health Access Foundation Site Self-Assessment* (MeHAF)[9] – An assessment focusing on bidirectional primary care and behavioral health integration adapted from tools developed by the RWJF Diabetes Initiative and the Assessment of Chronic Illness Care survey developed by the MacColl Center for Healthcare Innovation. It consists of 21 items scored on a 1-10 point scale, intended to be

8 Patient-Centered Medical Home Assessment. Available at http://www.safetynetmedicalhome.org/sites/default/files/PCMH-A.pdf

9 MeHAF Integrated Care Initiative Site Self Assessment Survey. Available at http://www.mehaf.org/content/uploaded/images/tools-materials/SSA%20SurveyJanuary2016.doc

administered to representatives from a practice in a meeting facilitated by a Hub coach at enrollment and every 6 months thereafter. It was administered mostly to behavioral health practices. Only selected items that mapped to each of the Hub objectives were used for the evaluation.

- *Washington Practice Transformation Assessment* (WAPTA)- A brief self-administered 10 minute online survey that UW developed for this evaluation. It included questions about practice characteristics and progress towards specific activities aligned with the three key Hub objectives. It was administered to practices in two rounds: the first at the time of recruitment into coaching, and the second near the end of the project period. Gift card incentives were offered to increase response rates. It was administered to both primary care and behavioral health practices.

All data management and analyses were done in Microsoft Excel and R Studio statistical software. Descriptive statistics of practice characteristics and Hub use were calculated for the 175 practices included in the Hub practice dataset. The same analysis was repeated for the 83 practices that completed at least one assessment both pre- and post- Hub use.

Non-parametric tests of association were used to detect significant correlation between practice characteristics and Hub use with progress in each of the three Hub objectives. For each practice, we calculated a progress index for care integration, a progress index for value based payment, and a progress index for community clinical linkages. The value of each progress index was the mean percent change in responses to all the assessment questions that mapped to each of the three key Hub objectives. For example, for each assessment question that mapped to community clinical linkages, we subtracted the pre-Hub intervention value from the post-Hub value; the mean difference was the community clinical linkages progress index. Associations between the progress indices and Hub activity were tested with the Kendall rank correlation coefficient and Mann-Whitney U tests. A sub-analysis on practices completing the pre and post WAPTA assessment (n=31) used the Kruskal-Wallis test for associations between progress in Hub objectives and Hub services use.

Additional binary indicators of progress in each of the three Hub objectives were calculated for each practice. For example, if a practice's community clinical linkages progress index was >0%, the indicator of community clinical linkage progress was given the value of 1; if the progress index was ≤0% it was given the value of 0. To identify practices that made relatively "high progress" in community clinical linkages, if a practice's community clinical linkage index was in the top 25th percentile of all practices, the high progress indicator was given the value of 1; if the index was in the bottom 75th percentile the high progress indicator was given the value of 0. This was repeated for value based payment and care integration. The Chi-squared association test was used to examine correlations between these binary indicators and Hub activity. Associations were considered significant at a p=.05 significance level.

4.2.6 Results

Formative Evaluation

What are the practice transformation training and technical assistance needs of primary care and behavioral health providers? A theme that emerged in both the Hub listening sessions and the KII was that training and technical assistance needs varied widely among practices. Each practice has its own unique set of needs- those of primary care differ from behavioral health, and those of rural settings differ from urban communities. Key informant interviews also revealed that practices and community organizations are at different levels of maturity and readiness related to the three key Hub objectives. To help practices make progress towards Hub objectives, participants said that the Hub needs to meet practices and organizations "where they are" in practice transformation. "Cookie-cutter" approaches were thought unlikely to lead to success.

Practices voiced a need for easily accessible and up-to-date information. Primary care providers reported spending considerable time locating current mental and behavioral health providers, while mental and behavioral health providers reported difficulty finding primary care doctors, psychiatrists, and dentists who are actively accepting patients with Medicare and Medicaid insurance. A need for a comprehensive "clearinghouse" of agencies and resources was a recurring theme in the listening sessions.

There was particular interest in data issues including analytics, metrics, and confidentiality. Behavioral health providers specifically articulated a need for support with information technology and value based payment.

Some participants voiced that the Hub needs to be more than a source of reference information; it can provide value by promoting best practices and by providing the leadership and guidance. During the planning stages of the Hub, some stakeholders said that the Hub will be looked to for "strategic leadership" in physical and behavioral health integration as well as in payment reform.

Process Evaluation

What lessons have been learned in the process of Hub implementation that can help improve Hub services and shape the future direction of the program? Document review and KIIs performed for the development of quarterly rapid process improvement reports identified several key lessons learned.

- Clear communication to practices is a foundational component of successful Hub implementation. Participants appreciated the outreach about Hub services at conferences and meetings, and development of a cross-organizational communications team to help the multiple components of the Hub communicate with one voice. However, participants also expressed confusion about the role of Hub Coach/Connectors. There was also a lack of understanding about the vision of the Hub and what successful practice transformation looks like. Stakeholders recommended that more communication be done to explain Hub services, as well as the context and the business case for practice transformation.
- Multiple partnerships are needed for successful implementation of practice transformation initiatives. Stakeholders appreciated efforts to align the Hub with various Healthier Washington initiatives. Partnership with consultants and groups such as the UW AIMS Center to deliver targeted trainings for specific settings was also seen as an asset. The AIMs Center was particularly helpful in supplying subject matter experts on bi-directional physical and behavioral health integration. They helped train Hub coach/connectors, offered ongoing guidance to the coach/connectors, and provided training and technical assistance to Hub practices who registered for the behavioral health learning series or other AIM Center educational activities. Some stakeholders felt that more partnership could have been done between the Hub and ACHs.
- Practices and stakeholders sometimes feel overwhelmed by change and overloaded with information. Many physical and behavioral health care providers are so busy with patient care that they have little time to devote to practice transformation. Some ACH stakeholders also communicated a sense of having to deal with too much change all at the same time. As a result some Hub staff and leads found it difficult to connect and collaborate with ACHs. The demands of the MTP on ACHs further exacerbated the sense of overload.
- Geography and limited resources in rural settings are key challenges to implementation. With at most one Coach/Connector in each ACH, those individuals serving rural areas were faced with more logistical tasks and time demands for travel. Rural practices also face limited finances, information technology, and quality improvement infrastructure. Health care workforce shortage in rural regions was also recognized as a barrier. Making more resources available online was mentioned as an opportunity for improving program delivery, particularly resources that can direct providers to resources that are tailored to their needs.

- Coach/Connector subject matter expertise is highly valued. This was reflected in KIIs with stakeholders, practices, and coaches. A strong facilitator of Hub implementation was hiring Coach/Connectors with past clinical experience as well as experience living or working in the same region as the practices they served. Conversely, mismatches between Coach/Connector skillsets and the needs of practices and ACHs were identified as barriers. Greater training of coaches was recommended, particularly those serving rural settings, where personal relationships are key to transformation and expertise with practices' existing priorities such as behavioral health telemedicine is highly valued.

What have been the success factors (facilitators) and barriers for achieving the HUB objectives? Document review and KIIs identified the following facilitators and barriers.

Facilitators

- Stakeholder engagement was useful in pursuing Hub objectives. This included large convenings and conferences of groups of Hub stakeholders, as well as small meetings with specific stakeholders. The Portal used a participatory design approach including an advisory committee of stakeholders and workgroups of on-the-ground users. Stakeholders recommended that the Hub pursue more partnership with ACHs and other components of Healthier Washington, more engagement with primary care providers to address social determinants of health, and greater leveraging with the MTP to support the goals of both the MTP and the Hub.
- Communication, both internal and external, facilitated Hub work. The Qualis Monthly Highlights Reports and the UW rapid process improvement reports were viewed as valuable internal communication tools. Communication by the Hub to practices and stakeholders was strengthened by the Hub's electronic newsletter, Hub sub-committees and task forces focused on communication, and the development of communications plans to guide messaging around Hub services and implementation challenges such as budget cuts.
- The use of data to monitor implementation and progress was helpful towards achieving Hub objectives. Examples include internal dashboards and data management systems, the TruServe database, and Google Analytics for the portal.
- Accountable Communities of Health (ACHs) and the Medicaid Transformation Project (MTP) were important to Hub implementation, particularly when there was alignment between Hub activities, ACH goals, and MTP projects. ACH facilitation of practice assessments is a good example. Some ACHs promoted the use of Hub assessments in their regions, and the Hub provided summary reports on assessment data to several ACHs.
- Alignment and collaboration in the public policy sphere and with initiatives outside of the SIM grant were important facilitators. An important example is Washington State House Bill 2572, which was stimulated by the State's receipt of the SIM Round 2 award and helped establish the Hub. Another example is the Hub's Practice Transformation Consortium which facilitated alignment with other practice transformation initiatives such as TCPI.

Barriers

- Time constraints were a key barrier to achieving Hub objectives. It was challenging to achieve the Hub's scope of work within the project period. The time required to develop RFPs and select vendors resulted in a period of only two years for Hub operations. The ensuing time pressure to recruit practices required the Hub to focus on recruiting early- and mid-adopters rather than obtain representative sampling across regions. As another example, the time required to develop features of the web-based Resource Portal such as the "MyPortal accounts" meant that there was little time for practices to show benefit from those features.

- Budget cuts during the final year of implementation posed a barrier to achieving Hub objectives. The limited budget meant that it was not possible for the Hub to offer financial incentives to participating practices or providers, unlike the WA DOH/AAP TCPI which provided some reimbursement for providers who participated in practice transformation work. During the final award year the Hub was forced to decrease the number of Coach/Connectors and move away from the model of one Coach/Connecter per ACH. Another impact was that core funding for the Portal ended approximately one year earlier than originally planned; the subsequent search for a way to sustain Portal services diverted attention away from Portal development.
- Uncertainty about future reimbursement structures was an important barrier to achieving Hub objectives. Practices were asked to make changes towards VBP before it became relevant to their business model. Some providers were hesitant to begin integration work due to uncertainty about future reimbursement structures. Practices wanted to reduce the number of times changes are made, and coaches reported a lag in enrollment and engagement as some providers said they wanted to wait and see what would happen with MTP before engaging with the Hub. Uncertainty about the sustainability of the Hub also negatively impacted practice recruitment.

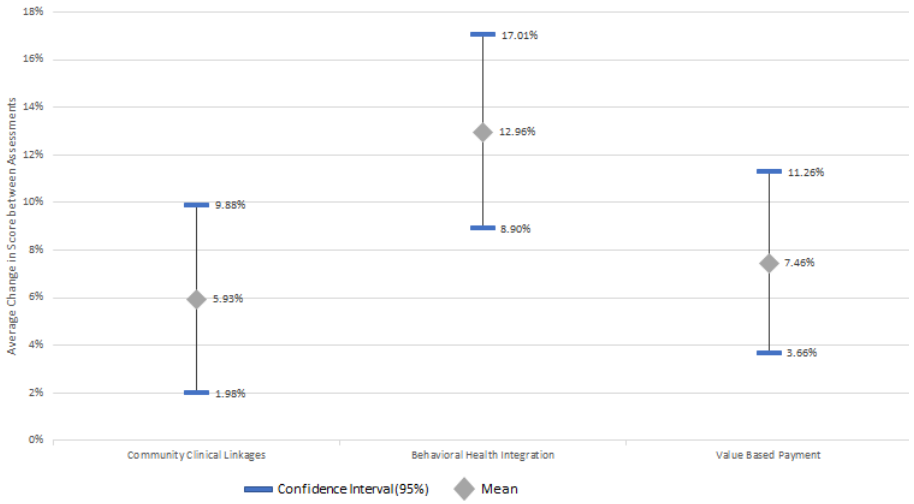
Outcome Evaluation

What HUB activities advanced bi-directional behavioral health and primary care clinical integration? Assessment data showed that practices made more progress in care integration than in VBP or community linkages (Figure 4), though there was overlap in the 95% confidence intervals, suggesting that this progress was not statistically significant. Among all practices that completed a pre and post assessment (i.e., MeHAF, PCMH-A, or WAPTA), there were statistically significant associations between participation in UW AIMS activities and self-reported advancement in bi-directional behavioral health and primary care clinical integration. The UW AIMS learning series was associated with the reported magnitude of improvement in clinical integration (p=.028), whereas the "non-learning series" AIMs trainings were associated with an indicator of any reported improvement in clinical integration (p=.001). Additionally, the association between attendance in the education sessions and an indicator of any reported clinical integration approached statistical significance (p=.085). A sub-analysis of the WAPTA assessment revealed that reported improvement in all bi-directional behavioral health and primary care clinical integration was associated with MyPortal registration (p=<.001). The late deployment of the MyPortal feature suggests that for at least some practices portal registration was not a driver of transformation activities but rather a result of those activities.

What HUB activities advanced transition from volume-based to value-based payment systems? No HUB activities were significantly associated with improvement in VBP as measured by any of the practice assessments. In the sub-analysis of the WAPTA assessment, self-reported improvement in VBP was associated with MyPortal registration (p=<.001).

What HUB activities advanced clinical community linkages (i.e. connections between primary care and behavioral health practices with community resources)? Education sessions were the only HUB activity with a statistically significant association with self-reported advancement in clinical community linkages. Such sessions were associated with practices that reported the top quartile of improvement in progress scales to measure clinical community linkages (p=.028). In the sub-analysis of the WAPTA assessment, the reported improvement in clinical linkages was associated with MyPortal registration (p=<.001).

Figure 4. Mean percent assessment score change in progress towards key Hub objectives



Cross-Cutting Themes

KII analysis revealed some important themes that cut across evaluation domains.

- The majority of practices expressed finding value in engagement with the Hub, particularly with Coach/Connectors. In general, practices viewed Coach/Connectors as a primary driver of practice transformation activities, and placed high value on face-to-face engagement with Coach/Connectors. "On site" interactions and suggestions from Coach/Connectors were seen as tailored and relevant to practices' specific needs. Action plans and status updates generated from assessments and developed with Coach/Connectors were highly valued and helped practices focus on their transformation achievements, goals and overcoming obstacles. For practices reporting low engagement, Hub staffing changes were sometimes a factor. Practices did not report high Resource Portal use, though some acknowledged that specific resources pointed to by coaches were useful. Lack of engagement with the Portal was often attributed to limited time to search for meaningful and relevant materials.
- Practice transformation is a cultural and paradigm shift. Care integration in particular impacts an organization's culture and "usual practice." As with any change that involves a shift in culture, practice transformation generates concern, anxiety and resistance, as well as ardent championship. For behavioral health practices there is concern they are being absorbed into primary care, as opposed to being integrated with primary care. Another shift was in community clinical linkages, which was a greater change for primary care providers than for behavioral health providers. Engaging with community-based organizations and resources has always been a norm for behavioral health providers as they address or respond to their clients' social service needs.
- Rural practices face unique transformation challenges due to geography, resource limitations and cultural climate. Some practices found Coach/Connector Electronic Health Record (EHR) and Quality Improvement (QI) recommendations impractical given their limited financial and community resources. In particular, mental health services are limited in rural areas and both primary care and behavioral health practices are frequently in flux as practitioners leave rural areas that already do not have enough trained workforce to meet the community's needs. To overcome these issues, some rural practices have used telemedicine to access behavioral health expertise and overcome transportation barriers. In some rural communities, government initiatives

like Healthier Washington are viewed with skepticism. Having coaches that are themselves living in rural areas has been helpful for some rural practices in maintaining their pulse on community attitudes towards care integration as well as helping network with scarce community services.

- The practice transformation process and vision lacks clarity and there is concern that current advances will not be sustained over time due to lack of funding, resource limitations and shifting transformation objectives at the state level. Lack of confidence in sustaining gains may undermine the initiative to make change. Practices feel positive about long-term gains but are less positive about the transformation vision and its sustainability. A few mentioned lack of perceived leadership for the SIM transformation and lack of clarity in the initiative's vision. Some practices reported that undertaking this transformation can feel solitary and burdensome. Practices expressed interest in participating in forums that support cross-collaboration and sharing of best practices to support and sustain transformation gains that have been achieved. However, attending more meetings to get questions answered or to add to the numerous voices working on the initiative is not practical for busy, already overworked practices.

4.2.7 Discussion

Key Lessons Learned

In synthesizing the qualitative and quantitative findings, we found the following key lessons learned:

- Practices had unique needs and were at varying levels of maturity and readiness for change in terms of advancing clinical community linkages, behavioral health integration and progress towards VBP. Practice needs varied broadly, but there was a common interest around the use of data. Practice transformation was the most successful when the Hub "met practices where they're at" by providing assistance and resources specific for each practice's stage of development.
- The Hub successfully achieved its implementation goals by recruiting its target number of practices for coaching, holding webinars and live events, and launching a web-based resource portal. However, confusion among some stakeholders and practices arose due to lack of clarity around the definition of practice transformation, the role of the Hub in practice transformation, and the Hub's relationship with other initiatives both within and outside of SIM.
- Practices spoke positively about Coach/Connectors in general and appreciated their onsite face-to-face contact. The practices especially valued coach/connectors who were good communicators, had the necessary technical knowledge, and were familiar with the local community in which they served.
- Practice engagement with multiple components of the Hub correlated with progress in behavioral health/primary care integration objectives, and participation in Hub education sessions correlated with progress in community linkages. Learning series and activities developed with the UW Advancing Integrated Mental Health Solutions (AIMS) Center were highly valued and associated with progress in care integration. Practices that were involved with Hub coaching or participated in educational sessions showed the most progress, particularly in physical and behavioral health integration. Data also showed a positive correlation between practices participating in Hub education sessions and progress on clinical community linkages. No correlations were found between involvement in Hub activities and progress on VBP.
- The Hub's effectiveness needs to be assessed in the context of external and funding factors beyond its control. The number of different concurrent initiatives (such as ACH, MTP, and other practice transformation efforts) contributed to a sense of "initiative fatigue" and "information overload" among busy clinicians caring for their patients and clients. Some practices were reluctant to engage in change

because of uncertainty about the future of initiatives such as VBP. Limitations in financial resources, human resources, and technology were a barrier to transformation, particularly in rural communities.

- It is too early to fully assess the impact of the Hub. The Hub was in operation for a relatively short time, and practice transformation is a slow, gradual process that involves organizational culture change. Improved data systems to monitor and evaluate practices' progress are needed to effectively assess the impact of practice transformation interventions.
- Future practice transformation efforts in Washington may benefit from a clearly defined set of evidence based interventions based on an easy to understand framework for practice transformation; broad communication and marketing of the vision, business case, and roadmap for successful practice transformation; integration with other components of the State's health system; partnership with organizations with subject matter expertise; and financial and technical resources to incentivize and facilitate practices (particularly in rural communities) to adopt the data collection and analysis systems required for care integration and VBP.

Limitations

Our study has several limitations:

- The short study period is a key limitation. Some enrolled practices had around a year or less with the Hub. There may have been simply not enough time for practices to benefit from the Hub interventions and implement measurable change.
- There was a diversity of instruments used to assess progress in transformation, and no single instrument was used to assess a majority of practices. The only instrument that included both primary care and behavioral health practices was the brief WAPTA survey which had a low response rate: pre- and post- Hub WAPTA data was available for only 18% of the 175 practices recruited by the Hub. This resulted in a small sample size that decreased the statistical power to detect the impact of the Hub on practice transformation.
- Selection bias limits the ability to generalize findings. Practices that participated in interviews and assessments may not be representative of all practices using the Hub, and this Hub cohort of 175 practices may not be representative of practices in the state.
- Reliance on self-report may also bias the evaluation findings. Practices may over- or under- report their participation in Hub activities, and progress in practice transformation.
- Finding statistical association between Hub activities and progress in the Hub's key objectives does not necessarily mean that progress was the result of Hub activities. For example, practice enrollment in the MyPortal feature was associated with progress in Hub objectives, but because MyPortal was a relatively late feature of the Hub's Resource Portal, it is unlikely to have played a causal role in progress.

4.2.8 Conclusion

We believe that this evaluation of the Hub has the following implications for future practice transformation activities:

- Practice transformation takes time. It is a slow, gradual process that involves organizational cultural change. As Wagner et al put it, "To be successful, organizations need to have the will or motivation to change, explicit ideas or models on which to base change, and a culture and infrastructure that enables the execution of system changes."[10] Neither the Hub intervention nor its evaluation were in place long enough to properly assess effectiveness. Future practice transformation efforts would benefit from sufficient time to implement interventions and evaluate their impact.

10 Wagner EH, Gupta R, Coleman K. Medical Home Initiative, A Qualitative Look. Medical Care. Volume 52, Number 11 Suppl 4: 18-22.

- Practice transformation is facilitated by well-defined evidence-based interventions that are clearly communicated and include a communications plan and a roadmap for success. The PCMH approach that "emphasizes team-based care, communication, and coordination" is an example of a model that has been shown to lead to better care.[11] Change can be further facilitated by knowledge of change management principles[12] and a stepwise sequential change process such as the Qualis Health's "Pathway to Practice Transformation,"[13] which was occasionally mentioned in some Hub documents but was not prominently integrated into Hub communications or the Resource Portal. As the Hub experience with UW AIMS demonstrated, partnerships with external organizations can be a valuable way of incorporating needed subject matter expertise.
- Practice coaching alone may not be sufficient to help practices progress in transformation, particularly in VBP. A recent qualitative study in Michigan found six strategies that differentiated primary care practices that improved their care for chronic disease patients: participating in learning collaboratives, accessing payer tools to monitor quality performance, framing VBP as a practice transformation opportunity, reinvesting earned incentive money in practice improvement, employing a care manager, and using technical support from local hospitals and provider organizations.[14] VBP may in the future be a way to incentivize practices to further integrate physical and behavioral health care and develop more community linkages.[15] However, until it is clear to what degree VBP will be tied to future reimbursement, practices will be reluctant to divert time and resources from their current fee for service operations. Adoption of VBP would be facilitated by a compelling business case for change, combined with funding and expertise to implement the clinical and financial data systems required for VBP. Practices and organizations in rural communities would likely require greater resources than those in urban areas.
- Improved data systems would facilitate practice transformation efforts and evaluation. A central component of a data system to monitor practice transformation statewide could be a comprehensive database of primary care and behavioral health practices in Washington, which currently does not exist. Linking such a database to practice transformation activities and using a standard instrument to measure progress would greatly facilitate future efforts to measure the impact of practice transformation.

11 NCQA. Overview – Why PCMH? Available at https://www.ncqa.org/programs/health-care-providers-practices/patient-centered-medical-home-pcmh/.

12 Safety Net Medical Home Initiative. Change Concepts for Practice Transformation. 4th ed. Seattle, WA: Qualis Health and the MacColl Center for Health Care Innovation; May 2013.

13 Qualis Health. Elements of Practice Transformation. Available at http://practicetransformation.qualishealth.org/our-framework/elements-practice-transformation

14 Cross DA, Nong P, Harris-Lemak C, Cohen GR, Linden A, Adler-Milstein J. Practice strategies to improve primary care for chronic disease patients under a pay-for-value program. Healthc (Amst). 2018 Sep 6.

15 Soper MH, Matulis R, Menschner C. Moving Toward Value-Based Payment for Medicaid Behavioral Health Services. Center for Health Care Strategies, Inc. Available at https://www.chcs.org/media/VBP-BH-Brief-061917.pdf

5. Paying for Value

CHAPTER 5.1

Washington SIM Evaluation

Overview: Paying for Value

Paying for value, instead of volume, changes how healthcare outputs are assessed and purchased. Rather than structuring financial incentives based on the number of services delivered, a pay for value approach creates financial incentives that focus on performance on select quality and utilization metrics. Progress on these metrics is expected to lead to improved health outcomes, albeit requiring sustained efforts beyond the short term to attain improved health outcomes. Paying for value aims to align financial incentives more closely with desired changes in the way health care is practiced/delivered – i.e., taking on a more whole person, population-based approach.

To further the aim of paying for value, the state used its purchasing power to lead by example and be a "first mover" into the value-based purchasing space. The state also functioned as a "convener," sharing and spreading awareness, knowledge, and experience with value-based payment, and encouraging adoption of such arrangements across the state.

The primary SIM interventions undertaken to further this aim were the four "payment models," later renamed "payment redesign strategies." Each of these is described and evaluated individually in Sections 5.2 through 5.5 of this chapter.

5.2 Accountable Care Program for public employees
5.3 Integrated data platform for participating provider networks
5.4 Alternative payment model pilot with FQHCs
5.5 Integrated purchasing of behavioral and physical health services for Medicaid Managed Care

Each strategy required intensive partnering and a willingness to move beyond "business as usual" and presented both unique and cross-cutting challenges in development, launch, and implementation. The State worked in close partnership with plans, networks and/or provider organizations participating in these strategies to develop, implement, monitor, and make practical adjustments as these strategies evolved.

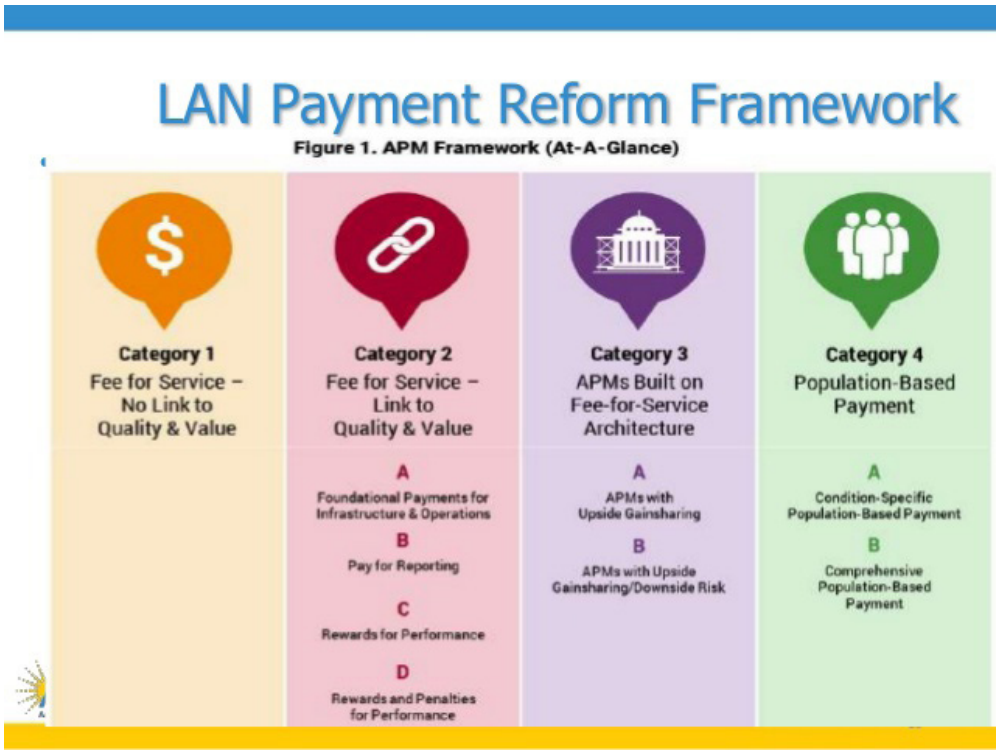
In addition to the four payment strategies, the HCA engaged in some other activities to further this aim. These are discussed in Section 5.1, along with an overview of value-based payment.

This section presents some background information on value-based payment and describes some SIM/ Healthier Washington activities beyond the four payment redesign strategies that helped further this aim.

Value-Based Payment - Concept and Reality

To guide movement away from volume-based payment, HCA adopted CMS' Alternative Payment Model (APM) framework created by the Health Care Payment & Learning Action Network (HCP-LAN).
The framework presents a continuum with four major stages of development, starting with fee-for-service with no link to quality and value and ending with population-based payment. The continuum was developed to provide a common nomenclature and help providers, payers, purchasers, and governments track progress on payment reforms that support person-centered care.

Figure 1. Learning Action Network (LAN) Payment Reform Framework



Source: http://hcp-lan.org/workproducts/apm-whitepaper.pdf

Washington State defines value-based payment as anything in Categories 2C through 4B. CMS focuses on moving providers payments into Categories 3 and above. Category 2C payments are not emphasized because such arrangements "do not incentivize providers to either efficiently distribute resources to the patients for whom improved care can lead to significant cost savings or to adopt measures to reduce the use of low-value care". The state is slightly more flexible in its definition of VBP, in comparison to CMS.

Movement along the payment reform continuum relies on the use of financial incentives to reward and penalize providers for certain behaviors and outcomes. Payment arrangements in the early stages rely on positive incentives, while those in later stages include downside risk and financial penalties. Incentives (positive and negative) are activated based on providers' performance or "score," along a set of predetermined measures captured for their attributed patients over a set duration, typically a year. The incentives are intended to influence provider behavior to improve cost, quality, and health outcomes.

For providers, successfully moving along this continuum requires them to: develop robust data and reporting systems to track metrics, incentive payments, and patients; add analytical and administrative capabilities; form new relationships and partnerships; and adopt fundamental practice changes-- which can be costly and challenging to implement. Because of the tremendous variation in the structure and processes of health care organizations, there is no single route for moving from one category to another. This is something organizations need to figure out for themselves, borrowing upon the experience of others. Implementing value-based payment today is still is a "learning-while-doing" endeavor.

This is partly because the current data systems of most providers, payers, and purchasers are incapable of generating the timely, complete, and precise feedback needed for making practice adjustments and tracking the flow of incentive dollars from plans to health systems, to hospitals and practices, and ultimately, to pay individual physicians.

A recent national survey identified infrastructure requirements, including information technology, as the top barrier to implementing value-based payment, as reported by 42% of the clinical leaders, clinicians, and executives at U.S.-based organizations that deliver health care who responded to the survey.

Providers need to be able to report accurate, complete, and editable data in a consistent, largely automated, and timely manner. Many providers just do not have, and may not be able to afford, the interoperable systems needed to participate. Some providers may join larger organizations or just not accept patients in value-based plans to solve the problem. This could lead to some unintended and undesired consequences.

For value-based payment arrangements to work as desired, there needs to be common: definitions for terms such as "cost", "value", "member attribution", and "data completeness"; core metrics and benchmarks for different patient populations and provider types; and methodology for attributing beneficiaries to providers that is comprehensive and acceptable to payers/purchasers and providers. Having transparent scoring methodologies and being able to generate interim scores that can be shared with practices to allow for adjustments before final incentive payments go into effect would help practices transition.

Incentivizing providers to embark and continue on this path requires building a critical mass of purchasers and payers adopting aligned approaches, and sending clear and consistent messages in terms of the metrics used, definitions of key terms, attribution methodologies, and pathways and visions for success. A significant portion of providers' businesses must shift to value-based arrangements to make it worth investing in the change and undergoing the required cultural transformation. Hitting this tipping point is believed to be key to reducing the fast-growing pace of healthcare spending.

Consequently, the HCA is working hard to incorporate this strategy across its business lines, and to push this strategy out across the state. CMS is also pushing heavily in this same direction.

A recent survey by Catalyst for Payment Reform found that, while there is much uncertainty about whether value-based payment will become the predominant business model in the US, the majority (51%) of providers reported having already adopted, or are planning to adopt, value-based payment arrangements within the next 3 years.

Practices are also advancing payment processes, anticipating that value-based payment will be part of the health care landscape in the near future.

Washington State, the federal government, and many industry leaders are confident that this is the right strategy to pursue. Once value-based payment operates as desired, providers can focus more on developing value-based health care. This is a much broader goal than value-based payment. Value-based care puts the patient first and helps ensure the "right care, at the right time and in the right place."

Beyond the Four Payment Redesign Strategies Evaluated in this Report

There were other HCA Healthier Washington/SIM activities worth mentioning that furthered the aim of "paying for value" but are not one of the four payment strategies evaluated in this report. Some of them were briefly mentioned in Chapter 2. Background and Context. They include: the Rural Health Transformation work, stakeholder engagement, Centers for Excellence Program, the offering of an ACO requirement for the agency's third-party administrator, the annual value-based health plan and provider surveys, and the addition and alignment of quality metrics in select contracts. Each of these activities is briefly discussed on the next few pages.

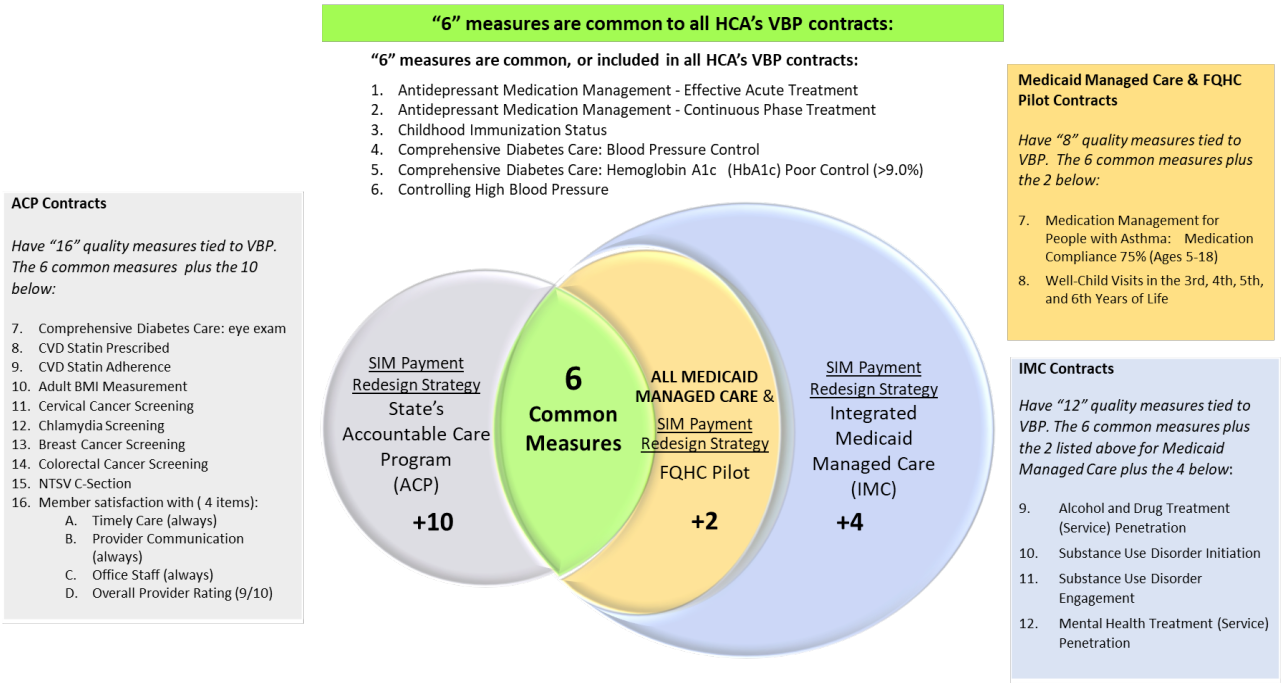
- **Rural health transformation system work.** As mentioned in the Introduction, the "encounter to value" payment redesign strategy included both the alternative payment model pilot with FQHCs and a second effort, the development of a Rural Health Payment System. Because the latter effort is

still in the formative stages, it was not evaluated in this report. However, it is important to mention that HCA has been working hard with rural health care providers, health plans, CMS, the Washington State Hospital Association, among others, to explore a new multi-payer value-based payment model, specific for rural communities. Developing such a model has been particularly difficult due to the specific critical access issues, financial fragility, and limited resources that often create additional burden for rural providers. These providers tend to serve residents who are older, sicker, have higher rates of substance abuse, and tend to access care later with more serious conditions than their urban counterparts. Transformation in rural areas is believed to be critical to simply sustaining a health care delivery system in those areas. Medicare, a large purchaser in rural areas, needs to be involved in the formation of this new system. New state legislation will also likely be required. All these factors make this a longer term and more complicated initiative than originally envisioned.

- **Stakeholder engagement.** The HCA engaged stakeholders through conferences, summits, webinars, and additional meetings to educate, motivate, and encourage further adoption of value-based payment strategies and accelerate market transformation.
- **Centers for Excellence Program (COE)**. HCA developed this program for its self-insured Uniform Medical Plan (UMP) Classic and Consumer Directed Health Plans. In January 2017, the state offered its first condition-specific population-based payment care bundle (total joint replacement) to qualified members. In 2019, the state offered its second bundle (lumbar spinal fusion). COE bundles provide high-quality health care at the lowest possible cost for members. This is accomplished by contracting with providers who excel in treating certain medical conditions in a cost-effective manner and incentivizing patients to use those providers.
- **Requiring the Uniform Medical Plan's Third-Party Administrator to offer an ACP option to its book of business.** Effective in 2020, the state negotiated a contract with Regence, the Third-Party Administrator of its self-insured Uniform Medical Plans (Classic, Consumer Directed Health Plan, and Accountable Care Program), that requires them to offer an Accountable Care Program option to all the self-insured employer groups they serve. This helps push the ACP concept out to self-insured (ERISA exempt) employers and other purchasers.
- **Annual survey of health plans and providers.** Since 2016, the HCA has been conducting annual surveys with plans/payers and providers. Results are shared broadly through the Healthier Washington Newsletter and website. Results from these surveys help HCA track movement along the value-based payment continuum, improve current programs, and develop future initiatives. The HCA invites all plans and providers on its Healthier Washington listserv to participate. In 2018, all five Medicaid MCOs were required to complete the survey. In 2020, all PEBB and SEBB plans will also be required to complete the survey. This will enable the state to have a more accurate and complete picture of value-based payments in the state. Ideally, this survey would be conducted with all plans (including self-insured plans) and would include a representative sample of providers throughout the state. However, because there is no legal/contractual requirement for other plans to participate, nor is there a directory of providers from which to develop a representative sample, this is the best the state can do for now.
- **Addition and alignment of quality metrics in select contracts.** This activity was briefly mentioned in the background section under foundational investments but warrants further discussion here. HCA added performance measures and quality incentives in its contracts with all five Medicaid Managed Care Plans operating in the state. This went beyond what was required by the SIM payment redesign strategies (specifically the three Medicaid Managed Care plans serving the Integrated Managed Care regions, the two networks participating in the Accountable Care Program for public employees, and

the 16 FQHCs participating in its payment redesign pilot). HCA carefully selected metrics in terms of the number used, the topics covered, the definitions adopted, and the rules for whom to include in the numerator and denominator. They started with the state's common measure set to ensure alignment with Medicare and reduce the reporting burden on providers. Multiple measures are common to all the state's value based payment contracts (see Figure 2 for a diagram of measures.)

Figure 2. Alignment of Common Measures across HCA's Value-Based Payment Contracts



The remaining portion of Chapter 5 evaluates each of the four SIM payment redesign strategies developed to help move more providers into value-based care arrangements.

5.2 Encounter to Value:
FQHC Alternative Payment Model Pilot (PM2)

BRIEF 5.2.A

Washington SIM Evaluation

FQHC Alternative Payment Model Pilot

Introduction

There are 24 FQHCs in Washington State excluding three tribal community health centers. In 2017, those health centers served 1,092,022 patients in total, of whom a little over fifty percent were low-income individuals living under 100% poverty level.

The current FQHC reimbursement system is defined by face-to-face, encounter-based payments. This structure results in a system that delivers care based on volume over value. It has been mentioned elsewhere that FQHCs are incentivized to schedule billable in-person patient visits for simple health problems such as blood pressure checks. Moreover, health centers cannot receive direct reimbursement for providing patient education, case management or non-clinical services aimed at increasing access and improving population health (transportation or housing assistance) . Hence, the main objective of PM2 is to switch from volume-based to value-based care, which creates financial incentives for health care organizations to innovate and provide integrated, whole-person services.

In July 2017, sixteen FQHCs began using this new alternative methodology, under which their payment transformed to a per member per month (PMPM) system with a prospective adjustment based on quality performance[1]. Potentially, this provides flexibility for primary care providers to have a larger member panel without the burden of increasing the number of face-to-face patient encounters to generate revenue. It also creates financial incentives for improved health outcomes. In parallel with this program, Health Care Authority (HCA) and various private and public stakeholders are developing a future value-based payment model for critical access hospitals (CAHs) and rural health clinics (RHCs).

The specific purpose of this paper is to estimate the impact of one of the programs within the SIM program: a value-based payment (VBP) model named "Encounter to Value" by CMMI as "Alternative Payment Model 4 ("PM2") in its lexicon. Except when alluding to this CMMI naming convention, we use Payment Redesign Model 2 ("PM2") to refer to the specific SIM "Encounter to Value" VBP in Washington state. PM2 is addressed to managed care Medicaid beneficiaries who have selected a primary care provider within, or been assigned to a specific federally qualified health center (FQHC), and who are recorded as such on the managed care organization (MCO) monthly roster of Medicaid beneficiaries for that center.

Methods

The general design of this evaluation is to compare performance on those measures over time between the 16 PM2-participating FQHCs (the intervention group) and eight non-participating FQHCs (the control group). The study is observational, and FQHC participation in PM2 is voluntary (self-selected)– not randomly assigned. Hence, we use a difference-in-difference research design for estimating PM2 impact that mitigates potential selection biases and large-sample inconsistency in our estimates. Individual-level regression analysis, using general estimating equations (GEE), was used to estimate the impact on utilization, quality of care, and per capita spending of Medicaid managed care beneficiaries served by FQHCs.

1 Washington State Health Care Authority (2017) *Clinics transition to new, value-based payment model* [online]. Available at: https://www.hca.wa.gov/assets/program/PM2-fact-sheet.pdf

Using a "mixed-methods" approach, in the qualitative component of the PM2 evaluation investigators conducted two rounds of semi-structured interviews were conducted with representatives of PM2 participating FQHCs: six in 2017 and eight in 2018. Each interview, which lasted between 50 and 80 minutes, was recorded and then transcribed. De-identified transcripts were initially coded by interview question and then once more using axial coding approaches to uncover specific themes. The whole process was repeated for the second round of interviews in an identical fashion. Purposive sampling was used to recruit clinical and administrative leaders from FQHCs. The executives from eight FQHCs were chosen based on FQHC size (number of providers), area type (urban vs rural), and region of Washington State (Eastern vs Western).

Findings

Results for adults reveal the following statistically significant PM2 effects (referred to as "comparative (changes)":

- Comparative decline of pharmacy prescription payments of $4.29 per person-month
- Comparative increase in outpatient hospital utilization per person-month of 0.13%
- Comparative decline in the probability of inpatient hospitalization of roughly 0.03% per person-month
- Comparative decline of cervical cancer screening of 1.9% per person-year
- Comparative increase in eye examinations within comprehensive diabetes care of 2.4% per person-year.

We also note two estimates of PM2 impact that – while not statistically significant – are of sufficient policy interest and magnitude to warrant mention:

- Comparative decline in inpatient hospital payment of $5.41 per person-month
- Comparative decline in total payment of $11.53 per person-month

For children none of the five major dependent measures in the logit model of probability of any utilization (bottom panel) is significantly affected by the PM2 intervention. The combined estimate of PM2's impact on payment is statistically significant ($p < .10$, 2-tailed test) only in one category: inpatient hospital spending. The estimate implies, controlling for the other covariates in the model, inpatient hospital spending was approximately $8 higher per person-month among children in the intervention group compared to the controls.

Conclusions

The individual-level regression analyses presented in this chapter suggest modest short-run (one-year) impacts of the PM2 intervention for adults in the participating FQHCs. Pharmacy prescription payments , outpatient hospital visits, and inpatient hospitalizations declined somewhat. Among quality measures, cervical cancer screening declined slightly and the frequency of eye exams within comprehensive diabetes care increased. The declines in inpatient hospital payment and total payment – while not statistically – hint at two domains possibly changing in a favorable direction. Among children the individual-level regression analyses revealed only one statistically significant impact of PM2 on utilization and payment, and that estimate (a small increase in inpatient hospital spending per person-month) was in the opposite direction from expected.

In parallel with these quantitative findings, qualitative interviews with FQHC administrative and clinical leaders and content analyses of background documents are consistent with the expectation that the movement from paying FQHCs per encounter to a payment regime based on value will take time to show substantial improvements in population health, quality of care, and reductions in the growth of per capita health care spending. The impressions from the first year of PM2 intervention are generally favorable, progress is in small steps, and FQHC leaders appear patient and committed to sustaining the movement toward value-based payment and whole-person care.

Implications for Policy and Practice

The investigators have chosen to be circumspect in drawing implications for policy and practice from an evaluation of the first year of the PM2 intervention, even more so because the initial findings demonstrate small and generally statistically insignificant impacts on the primary SIM targets of better care, better quality, and lower cost. That said, we do present a set of lessons learned that are consistent with the quantitative evidence adduced in this evaluation and the qualitative analysis.

Several encouraging signs are emerging from the initial implementation of PM2 : perceptions of improved patient experience derived from a whole-person care perspective, the value of new connections in the community, ability to identify redundancies and discrepancies in service provision, and the realization that PM2 and similar VBP investments have created a future foundation on which to build.

The principal challenges have been to align the organization's internal data consistently with that received from HCA, to ensure relevance of the quality metrics for the organization's specific patient population, to secure consistent and continued presence at the table of "dedicated" individuals from the beginning, and to show organizational resilience in rebounding from external shocks. FQHC leaders' commitment to sustaining value-based payment and whole-person care appeared firm in the face of environmental pressures and the challenge of encouraging persons to take greater accountability for their own health.

CHAPTER 5.2.B

Washington SIM Evaluation

FQHC Alternative Payment Model Pilot

5.2.B.1 Introduction

On February 1, 2015, the Washington State Health Care Authority (HCA) was awarded a four-year, $64.8 million Round 2 State Innovation Model (SIM) Test grant from the Center for Medicare and Medicaid Innovation (CMMI) to implement a broad range of health and health care reforms in Washington state. Those reforms were directed to the goals of improved population health, improved quality of care, and reduced growth in per capita health care payments.

To attain those goals, HCA assumed the lead agency role in the reforms, primarily supported by two other state agencies: The Department of Social and Health Services (DSHS) and the Department of Health (DOH). Those agencies, under direction from the Office of the Governor and in consultation with a broad range of private and public sector stakeholders, formulated three core strategies for achieving the State Innovation Model (SIM) goals:

- Paying for value
- Whole-person care
- Community-clinical linkages

In implementing those core strategies, the SIM program has formulated an approach whereby the "State" – in particular, HCA (representing a total of approximately 2.2 million covered lives in the Medicaid beneficiary population and the Public Employee Benefits Board [PEBB] program), DSHS, and DOH mutually act as the "first mover" in driving the three core SIM strategies.

5.2.B.2 Purpose

The specific purpose of this paper is to estimate the impact of one of the programs within the SIM program: a value-based payment (VBP) model named "Encounter to Value" by CMMI as "Alternative Payment Model 4 ("PM2") in its lexicon. Except when alluding to this CMMI naming convention, we use Payment Redesign Model 2 ("PM2") to refer to the specific SIM "Encounter to Value" VBP in Washington state. PM2 is addressed to managed care Medicaid beneficiaries who have selected a primary care provider within, or been assigned to a specific federally qualified health center (FQHC), and who are recorded as such on the managed care organization (MCO) monthly roster of Medicaid beneficiaries for that center.

The quantitative analysis focuses on three research questions: What has been the impact of PM2 on the following aspects of care for FQHC Medicaid beneficiaries:

(1) Utilization of specific types (modalities) of health services?

(2) Per capita payment ("payment") from the Medicaid payers' perspective) for those services?

(3) Quality of care delivered to beneficiaries of those services?

The analysis examines the calendar year period 2014-2017, with years 2014-2016 representing the baseline (pre-intervention) prior to actual implementation of PM2 and 2017 representing the post-intervention period. The analysis is therefore conceived as estimating the "short term" (one-year) impact of this VBP model.

5.2.B.3 Context

There are currently 24 FQHCs in Washington State excluding three tribal community health centers. In 2017, those health centers served 1,092,022 patients in total, of whom a little over fifty percent were low-income individuals living under 100% poverty level[1].

The current FQHC reimbursement system is defined by face-to-face, encounter-based payments. This structure results in a system that delivers care based on volume over value. It has been mentioned elsewhere that FQHCs are incentivized to schedule billable in-person patient visits for simple health problems such as blood pressure checks. Moreover, health centers cannot receive direct reimbursement for providing patient education, case management or non-clinical services aimed at increasing access and improving population health (transportation or housing assistance) . Hence, the main objective of PM2 is to switch from volume-based to value-based care, which creates financial incentives for health care organizations to innovate and provide integrated, whole-person services.

In July 2017, sixteen FQHCs began using this new alternative methodology, under which their payment transformed to a per member per month (PMPM) system with a prospective adjustment based on quality performance[2]. Potentially, this provides flexibility for primary care providers to have a larger member panel without the burden of increasing the number of face-to-face patient encounters to generate revenue. It also creates financial incentives for improved health outcomes. In parallel with this program, Health Care Authority (HCA) and various private and public stakeholders are developing a future value-based payment model for critical access hospitals (CAHs) and rural health clinics (RHCs).

5.2.B.4 Background and Significance

The implementation of PM2 in Washington state is important for several reasons. First, this Medicaid payment regime in Washington state is one of few known current examples of FQHCs implementing such a form of per member per month (pmpm) and quality incentive-based provider payment.[3] Thus, an impact analysis of PM2 in Washington state offers a timely opportunity to assess early effects of an innovative payment model for provider organizations specializing in the care of vulnerable populations. By limiting downside risk, this particular value-based-payment attempts to protect health care providers caring for populations at considerable health and socioeconomic risk, while rewarding quality and treatment efficiency by allowing providers to capture gains (shared savings). The potential lessons from Washington state's PM2 implementation in Washington state are substantial for payers, policymakers and providers seeking to enhance clinical quality of care and patient health outcomes, while enhancing the financial stability of provider organizations treating vulnerable populations.

Second, this Washington state PM2 quantitative evaluation complements the recent findings of Cottrell and colleagues (2017[4]) in their qualitative examination of implementation of Oregon's Alternative Payment Methodology (APM). Their study utilized site visits and key informant interviews to assess delivery system changes and challenges related to the Oregon APM payment model, which closely resembles Washington's

1 HRSA (2017) *Health Center Data* [online]. Available at: https://bphc.hrsa.gov/uds/datacenter.aspx?q=tall&year=2017&state=WA

2 Washington State Health Care Authority (2017) *Clinics transition to new, value-based payment model* [online]. Available at: https://www.hca.wa.gov/assets/program/PM2-fact-sheet.pdf

3 We allude to a second implementation: WACMHC (Washington Association of Community and Migrant Health Centers). APM: A Path to Innovative Care – An Oregon FQHC's Experience. May 31, 2018. http://www.wacmhc.org/about-us/resource-bank/quality-improvement-practice-transformation/293-5-31-18-apm-a-path-to-innovative-care-presentation-slides/file Interestingly, while Oregon's APM employs primary care capitation and encourages positive health outcomes by having providers record non-billable enabling services ("touches") for patients, it does not explicitly offer quality financial incentives. See also: Conrad DA, Vaughn M, Grembowski D et al. Implementing value-based payment reform: A conceptual framework and case examples. Medical Care Research and Review. 2016. 73(4): 445 – 447.

4 Cottrell E.K., Hall J.D., Kautz J.D., et al. Reporting from the Front Lines: Implementing Oregon's Alternative Payment Methodology in Federally Qualified Health Centers. Journal of Ambulatory Care Management. 2017. 40 (4): 339-346. See also WACMHC (2018).

PM2. The authors documented innovations in scheduling (longer patient visits; dedicated time for care coordination), changes in visit types (group visits; telephone visits), and transformations in the use of human resources (use of an online patient portal; changing team composition, such as adding a clinical pharmacist; altering role descriptions, e.g., for medical assistants). The key informant interviews in our complementary PM2 qualitative study illustrate similar shifts in practice within participating FQHCs[5].

While the Oregon APM is similar in terms of using the prospective payment system (PPS) and previous year revenues for determining PMPM rates and, thus, limiting downside risk for participating health centers, it does not provide direct financial incentives for quality performance. In contrast, the Washington state HCA identified seven quality measures which affect perspective adjustment of FQHC PMPM reimbursement rate. By limiting downside risk, this particular VBP attempts to protect health care providers caring for populations at considerable health and socioeconomic risk, while rewarding quality and treatment efficiency by allowing providers to capture gains (shared savings).

Third, FQHCs are an important testing ground for developing more efficient and effective ambulatory care for vulnerable populations. Payment innovation that reinforces their sustainability and best care practices can contribute to lowering per capita payments for care and improving population health. A recent study (Nocon et al 2016)[6] found that patients in FQHCs experienced lower payment (24%) and use across all services when compared to patients in non-health centers: 22% fewer visits, 33% lower payment on specialty care, 25% fewer admissions, and 27% lower payment on inpatient care. The PM2 model seeks to stimulate growth in the population served by participating FQHCs ("panel size"), reducing payments, stabilizing revenue streams, and rewarding improved quality. The current empirical study of Washington state's PM2 experience will provide new information on the growth of participating FQHCs' panel size, their utilization patterns, per capita payments, and quality compared to Washington state FQHCs not participating in PM2.

Finally, this PM2 study is unique relative to published papers regarding FQHCs, in that this study estimates in the quantitative impact of the modified version of primary care capitation, with explicit quality incentives and limited downside financial risk, in a controlled before-after observational study design. In that sense, it goes beyond previous studies.

5.2.B.5 The PM2 Model

In July 2017, the Washington State Health Care Authority (HCA) signed contracts with 16 of 27 FQHCs in the state to participate in PM2. Figure 1 compares APM4, or PM2, (value-based) with its predecessor, APM3 (encounter- or volume-based).

5 Cf., Washington State Innovation (SIM) Model Key Informant Interview Summaries (Rounds 1 and 2). October 8, 2018.

6 Nocon R.S. et al. (Nov 2016). *Health Care Use and Payment for Medicaid Enrollees in Federally Qualified Health Centers Versus Other Primary Care Settings.* Am J Public Health, 106:1981–1989. doi:10.2105/AJPH.2016. 303341

Figure 1: Comparing APM3 and APM4

The payment model in 2017 applies only to Medicaid managed care beneficiaries within the 16 participating FQHCs. When Washington's PM2 began in July 2017, dental services, specialty mental health services, and services aimed at persons with substance use disorders were not included in PM2 payments (i.e., "carved out"), just as in the prevailing encounter-based payment model (APM3) for Washington state FQHCs prior to July 2017[7].

HCA acts as the purchaser for Medicaid managed care beneficiaries and has fixed payment per member per month (pmpm) contracts with managed care organizations (MCOs), which in turn negotiate direct payment arrangements with the FQHCs and other provider organizations serving Medicaid managed care beneficiaries. The latter direct MCO-FQHC contracts can take several forms: e.g., primary care capitation (pmpm), and encounter-based. The following quoted excerpt (NACHC 2018) describes the PM2 payment algorithm:

(1) "State Medicaid agencies are responsible for paying the difference between the FQHC PPS rate and market Medicaid rates paid by managed care organizations (MCOs), unless designated to the MCOs. In Washington State, these "wrap around payments" are estimated by the state and flow from the state to the MCOs and then to the FQHCs on a prospective monthly basis. There is an annual reconciliation process to verify that the FQHC received the PPS revenue equivalency. This process is time intensive and requires

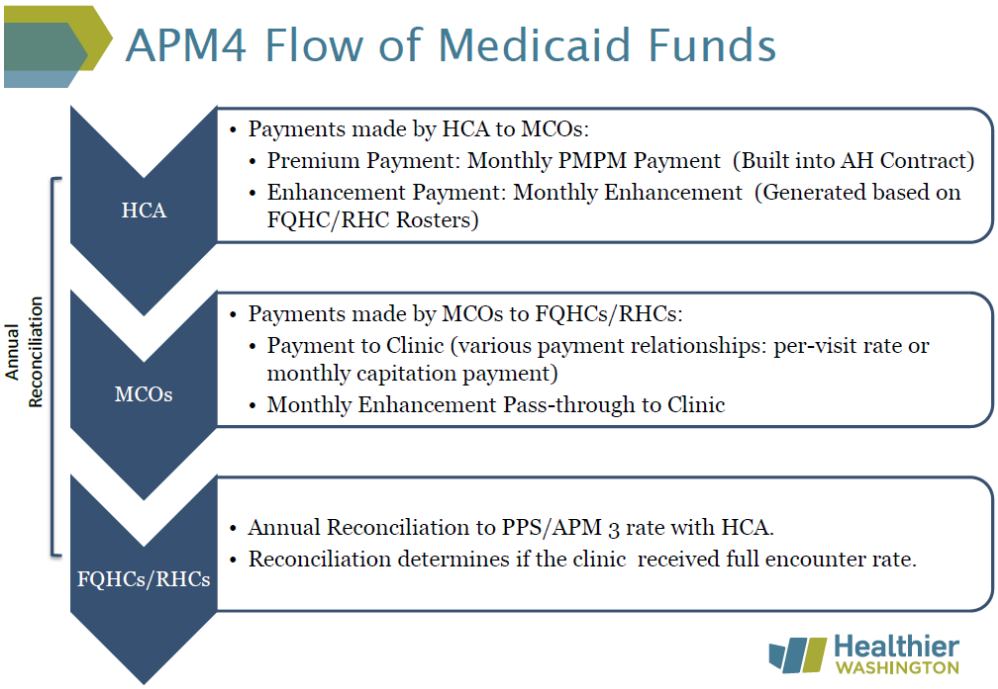
7 http://www.nachc.org/wp-content/uploads/2018/05/NACHC-WA-APM-Case-Study-2018.pdf

Accessed October 3, 2018.

FQHCs to pay an auditor to certify its accuracy. The state makes a supplemental payment to correct any underpayment, and FQHCs must refund any overpayment." (p. 2)

(2) The PM2 does not change the funds flow pattern between HCA, the MCOs, and the FQHCs, which is depicted in Figure 2 below[8]:

Figure 2. APM4 Flow of Medicaid Funds



(3) Other key features of the PM2 model are[9]:

- Annual payments per member per month to the participating FQHCs are budget neutral to HCA relative to what the FQHC would have received under the prior encounter-based method ("APM3") for each year.
- Conversion from an encounter rate to a pmpm rate to ensure federal requirements are met will be done individually for each FQHC, as will measurement of quality performance.
- The participating FQHC's encounter rate for 2015 will be converted to a pmpm-equivalent 2015 rate, and the 2015 pmpm rate will be adjusted annually based on the Medicare Economic Index (MEI) for each performance year.
- Based on the quality performance of the particular FQHC in the current performance year (year "t"), its pmpm rate for the next year ("t+1") will be adjusted in that next year. Table 1 describes the specifics of the quality adjustment[10].
    - Three of the seven metrics are outcome (not process) measures for diabetes care; two are for medication management (for anti-depressants and asthma medicines, respectively); another for childhood immunization status; and one for well-child visits.
    - In total dollars, the individual FQHC's pmpm downward rate adjustment will never go

8 https://nashp.org/wp-content/uploads/2017/11/WA-HCA-FQHC-VBP-Alignment_2017.pdf. Accessed (p.8 of 9) October 9, 2018 [Note: AH = "Apple Health" (Medicaid managed care)]
9 https://www.hca.wa.gov/assets/program/APM4-fact-sheet.pdf. Accessed October 9, 2018 (p.2 of 3)
10 https://www.hca.wa.gov/assets/program/APM4-fact-sheet.pdf. Accessed October 9, 2018 (p. 3 of 3)

below its encounter-based equivalent payments. After any year-by-year downward adjustments, the FQHC can earn back the full benefit of the baseline pmpm rate (as inflated annually per the MEI) upon meeting quality improvement targets. The policy objective is to encourage quality improvement by limiting downside financial risk. There is no direct "reward" (positive incentive) for quality attainment or improvement, but instead a disincentive for decline in quality. In that sense, this approach taps the behavioral economics concept of loss aversion (Kahneman and Tversky 1979).[11]

5.2.B.6 Methods

As stated previously, the purpose of this paper is to estimate the impact of the PM2 payment model on measures of health services utilization, payment (i.e., direct payment by Medicaid) for specific health services, and quality of care. Accordingly, the general design of this evaluation is to compare performance on those measures over time between the 16 PM2-participating FQHCs (the intervention group) and eight non-participating FQHCs (the control group). The study is observational, and FQHC participation in PM2 is voluntary (self-selected)– not randomly assigned. Hence, we use a difference-in-difference research design for estimating PM2 impact that mitigates potential selection biases and large-sample inconsistency in our estimates.

Since the individual FQHCs choose whether or not to participate in PM2, that organizational selection is the prime source of potential bias in our estimates of PM2 impact if the characteristics of the participating FQHCs and non-participants (the controls) are different on variables that also affect the dependent variables of interest – utilization, payment, and quality. Individual Medicaid beneficiaries select their primary care provider (PCP), who practices within an FQHC or, if the individual does not choose a PCP, are assigned to a PCP based on the process described in Table 2. Consequently, individual selection based significantly on the FQHC's participation in PM2 is unlikely. Moreover, our model's individual-level covariates capture the time-varying variables suggested by previous empirical studies as the main explanators of health services utilization, payment, and quality: i.e., age, gender, health risk (measured as expected payment per person based on diagnoses, co-morbidities, and pharmacy utilization), Medicaid eligibility category, and county of residence.

Accordingly, we focus our attention on potential omitted variable confounders at the FQHC level. Review of Health Resources and Services Administration (HRSA) annual program data for 2014 – 2017 suggests that major categories of FQHC characteristics that might cause confounding (e.g., size in patients served or number of providers, provider mix, service mix) have changed little over the four-year duration of our observational period[12]. However, as a suggestive test for potential confounding due to time-varying unobservables, we do compare baseline trends for the intervention and control group, after adjusting for the six individual-level covariate categories. Those tests fail to reject the null hypothesis of parallel trends.

If such unobserved (or unobservable) confounders do not change over time, their potential biasing effect is eliminated in a difference-in-difference statistical model that follows subjects (FQHCs and their assigned Medicaid managed care beneficiaries) over time. That is, if the omitted independent variable X correlated with the dependent variable Y(t) does not change over time (t = 0, 1, 2, ...), then X(t+1) – X(t) = 0, and any potential omitted variable bias is eliminated.

11 Kahneman D,, Tversky A. Prospect Theory: An Analysis of Decision under Risk. Econometrica, 1979. 4: 263-291.
12 HRSA Annual Program Data. Years 2015 – 2017. https://bphc.hrsa.gov/uds/datacenter.aspx. Accessed October 1, 2018

Estimation Model. We exploit this logic and choose a statistical estimation design of the following form:

$$Y_{ijt} = \beta_1 + \beta_2 Post_t + \beta_3 Treat_{ijt} + \beta_4 (Post_t * Treatijt) + \beta_5 X_{ijt} + \mathcal{E} \qquad (1)$$

where Y_{ijt} is the outcome (dependent variable) of interest for individual i in FQHC j at time t. β_1 is the constant term. β_2 is an indicator for the post-treatment time period; $Treat_{ijt}$ is an indicator that the individual is part of the treatment group (i.e., ever in the ultimately participating FQHC). X_{ijt} is a vector of individual, organization, and time-specific control variables, and $\mathcal{E}$ is a vector of error terms. The coefficient of interest is β_4, which measures the effect of the program intervention on the treatment group. Equation (1) will be estimated via general estimating equations, which can accommodate clustered errors. Those clustered errors result from the correlation of measurement errors of multiple individuals within a common FQHC ($\mathcal{E}_{ij}$), repeated measures on the same individual over time ($\mathcal{E}_{it}$), and repeated measures on the same FQHC over time ($\mathcal{E}_{jt}$), which – if not embodied in the estimating model – could give rise to biased and inconsistent standard errors. To accommodate these features of the error structure, we cluster on the individual FQHC and calculate robust standard errors to correct for heteroscedasticity.

There are three sets of regressions in this analysis[13]:

(1) Logistic regression analyses for the dependent variables of utilization per person-month, estimating the probability of use in the given month for each of the five distinct service modalities of principal interest:
   - Physician/clinic/professional services
   - Outpatient hospital department services
   - Emergency room services (in hospital or free-standing facilities)
   - Hospital inpatient services
   - Pharmacy prescriptions

(2) Two-part models for payment per person-month (actual direct payments for fee-for-service claims and shadow prices for sub-capitated managed care encounters) in each of the above service modalities, plus total aggregate payment over <u>all</u> service modalities (including the five listed above and three modalities of secondary interest for the study population and of lesser utilization levels: nursing home stays, maternity support services, and other services – the latter including hospice, home health, and other services not included in the other seven service modalities)
   - The first part of the model is estimated by logistic regression.
   - The second part of the model is estimated by a general linear model with a log link and gamma family distribution.
   - In the Results section, we present "margin estimates" for the combined effect of the PM2 intervention (captured in the "Post*Treat interaction term). These estimates combine the impact on probability of any payment with the impact on level of payment conditional on any payment.

(3) Logistic regression analyses are performed for each of the nine quality measures. Each of these is measured at the person-year level, to reflect the time period required to observe whether the quality behavior met the criterion.

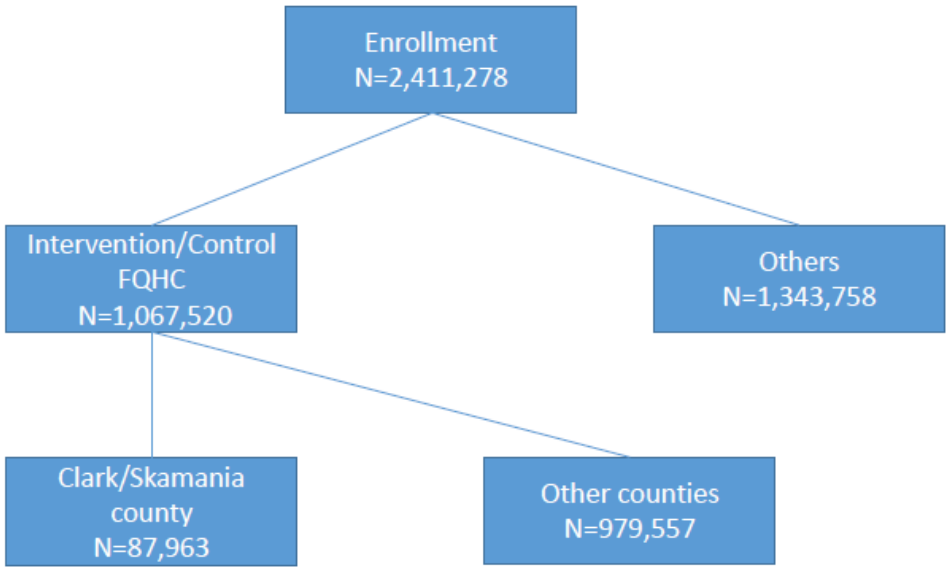
Population of Interest. Of all Medicaid managed care beneficiaries in Washington state (approximately ¾ of Medicaid beneficiaries in the state), our general study population comprises those who have either chosen or been assigned to a PCP within one of the 24 study-eligible FQHCs (either intervention or control group FQHCs,

13 The study team has been guided by the state-of-the art in estimating models of health care utilization and expenditure, as represented particularly in two papers: 1) Deb P., Norton E.C. Modeling Health Care Expenditures and Use. Annual Review of Public Health. 2018. 19: 489-505. 2) Karaca-Mandie P., Norton E.C., and Dowd B. Interaction Terms in Non-Linear Models. Health Services Research. 2011. 47(1): 25-274.

excluding tribal centers, which are ineligible for PM2). For certain analyses, the study population is restricted due to gaps in data availability.[14]

Figure 3 below describes the high-level sample selection for our study population.

Figure 3. Sample Selection at Different Levels



Note: Sample size represents the number of unique individuals in the Medicaid enrollment records for the entire 4 years study period.

Dependent Variables. This PM2 study addresses three sets of dependent variables posited to be affected by the PM2 value-based payment incentives: utilization, payment, and quality.

Utilization Measures: The service modality utilization measures per member month of direct relevance in this analysis are:

- Inpatient hospitalizations
- Nursing home stays
- Physician/clinic/professional claims count[15]

14 One of the five MCOs in managed care Medicaid erroneously reported the servicing provider in the billing provider data field, which meant that FQHCs could not be correctly matched to individual Medicaid beneficiaries for that MCO. Hence, that MCO's data is deleted from the study population for all analyses. The second gap in data availability refers to all managed care encounter data affected by different submission guidelines for behavioral health organizations and managed care organizations. This distorts claims counts and payment measure data for two Washington counties: Clark and Skamania (the Southwest Washington region). This early-adopter region for fully integrated physical health and behavioral health care (mental health and substance abuse disorder services) is therefore omitted from utilization and payment measures– all of which include behavioral health service utilization. Further detail on this problem is provided in Table 3.

The same distortion affects encounter and claims data for certain hospital inpatient DRGs in those two counties, so that subset of psychiatric-related DRGs are eliminated from all hospital inpatient analyses to ensure consistent service utilization definitions across all counties. See Table 4 for a list of those eliminated DRGs.

15 Dental service claims are excluded because dental services are not included in the PM2 payment intervention.

- Outpatient ER claims count
- Outpatient hospital claims count (non-ER)
- Pharmacy prescriptions
- Maternity support services claims count
- Other services claim count (e.g., hospice, home health, x-ray, lab, imaging)

Payment Measures: The payment measures will be direct payments per member month for each of the above eight service modalities plus total direct payments per member month over all service modalities.

Quality Measures: The individual-level, annual quality measures (adults only) for analysis are the following:

- Breast Cancer Screening
- Cervical Cancer Screening
- Chlamydia Screening in Women
- Colorectal Cancer Screening
- Comprehensive Diabetes Care- Hemoglobin A1c Testing
- Comprehensive Diabetes Care- Eye Exam
- Comprehensive Diabetes Care- Medical Attention for Nephropathy
- Statin Therapy for Patients with Cardiovascular Disease- Received Statin Therapy
- Statin Therapy for Patients with Cardiovascular Disease- Statin Adherence 80%

The above individual-level, annual process measures are based on claims and encounter data. The technical specifications for each measure are delineated in Table 5. Each annual measure is relevant only for qualifying persons meeting the specific age or diagnostic criteria for that measure. While trailing values as of a given month are available, the quality analyses will be performed for the subset of qualifying individuals for each measure- using the person-year as the unit of observation.

Individual-level quality measures would require electronic health record data, which were not available for this evaluation. However, HCA has reported FQHC-level outcome measures for 2016 and 2017 for which the FQHC intervention group are held accountable in Year 1 (2017). These measures are available only at the aggregate FQHC level (as per-person year values by FQHC) and only for intervention group FQHCs (not the control group). The measures are:

- Comprehensive Diabetes Care- Poor HbA1c Control (>9%)
- Comprehensive Diabetes Care- Blood Pressure Control (<140/90)
- Controlling High Blood Pressure (<140/90)
- Antidepressant Medication Management: Effective Acute Phase Treatment
- Antidepressant Medication Management Continuation Phase Treatment (6 Months)
- Childhood Immunization Status- Combo 10
- Well-child visits in the 3rd, 4th, 5th and 6th years of life
- Medication Management for people with Asthma: Medication Compliance 50% (Combined Measure: Ages 5-18)

Independent Variables (Covariates). The independent variables in the individual-level regression models for estimating PM2 impacts on the utilization, payment, and quality variables are the following:

- Age
- Race
- Gender
- Person-level county of residence indicator variable (King = 0; omitted category); 38 other county dummies
- Diagnostic and Pharmacy Risk (DxRx) Score
- Medicaid Eligibility Category
- Indicator variables for presence of behavioral health disorder (BH Flag):
    - Mental Health (MH) only
    - Substance Use Disorder (SUD) only
    - MH and SUD (Co-occurring)
    - None of the above

To estimate the impact of the PM2 intervention at the individual-level unit of observation, the following independent variables will be added to the model:

- Indicator variable for all months after the start of PM2: Post (t)
- Indicator variable for persons (i) assigned to PM2- participating FQHCs in month t: Treat (i, j, t)
- Ordered dummy variables for time (months) since the first month of baseline (January 2014): Time (t)
- Dummy variables for each month of any year (to capture monthly/seasonal variations in health behavior and health conditions): e.g., for January, month 1 = 1 (otherwise 0); for February, month 2 = 1 (otherwise 0), …, for December: month 12 = 1 (otherwise zero)

The impact on any specific dependent measure will be estimated by the regression coefficient on the Treat (i, j, t) *Post(t) interaction term.

5.2.B.7 Results

The results of this PM2 impact evaluation are presented in three parts within this section:

(1) Descriptive tables for the independent and dependent variables in the regression models of utilization, payment, and quality for children and adults;

(2) Regression model estimates of the impact of the PM2 intervention on utilization, payment, and quality;

(3) Brief presentation of a secondary analysis of aggregate, pre-post tests of change in quality from baseline to intervention year in measures used to determine prospective payment increases in recognition of quality improvement.

Descriptive Tables. Descriptives of the independent and dependent variables in the total study population are displayed as follows:

Independent variables. These are separately tabulated for adults (Table 6A.1) and children (Table 6A.2), and distinctly presented for persons in the intervention and control groups by year (2014-2017). The main independent variable comparisons of interest are between the intervention and control group.

Adult results for independent variables: For adults the values of gender, age, DxRx severity score, behavioral health flags, and Medicaid eligibility categories are roughly similar between the intervention and control group. The principal differences appear in the race/ethnicity distribution and county of residence: comparatively fewer whites in the intervention group and a marked difference in the proportion of intervention versus control group members in several counties. Notably, the values of the independent variables are relatively stable over time.

Children results for independent variables: For children the pattern of independent variable values are virtually identical to those for the adult study population. Only race/ethnicity and county of residence are perceptibly different between the intervention and control groups: as for adults, there was a comparatively lower proportion of whites in the intervention group and substantial difference in the distribution of county of residence between the two groups.

Dependent variables for utilization and payment. For each utilization and payment measure, these variables are separately tabulated for adults (Table 7A.1) and children (Table 7A.2), and distinctly presented for persons in the intervention and control groups by year (July 1, 2014 thru December 31, 2017[16]).

Adult results for utilization and payment: Beginning in 2015 (the first of two complete baseline years), the values for utilization and payment for adults in the five principal service modalities and total payment per adult--year are as follows: (values for the control group are presented first; then for the intervention group)

- 2015 ER visits (payments): 0.2; 0.3 ($166; $190)
- 2015 Hospital outpatient visits (payments): 0.2; 0.3 ($276; $312)
- 2015 Physician/Clinic/Professional visits (payments): 0.6; 0.7 ($452; $532)
- 2015 Pharmacy prescriptions (payments): 0.6; 0.6 ($680; $731)
- 2015 Inpatient hospitalizations: 0.06; 0.06 ($820; $819)
- 2015 Total payments (totaled over all seven services): $3189; $3297

The 2015 variability in per adult-year utilization and payment for specific service modality utilization and payment categories and total payments is substantial. For example, The coefficient of variation (CV: standard deviation divided by the mean) for inpatient hospitalization is between 4 to 5 for both groups (control and intervention), The CV for inpatient hospital payments is almost 10 for the control group and almost 9 for the intervention group.

The picture for utilization and payment of adults in 2017 (the only intervention year) is similar to that for 2015. The principal differences between 2015 and 2017 are that inpatient hospital payment per adult-year is roughly 24% higher in 2017 for the control group and almost 13% higher for the intervention group. The CV for inpatient hospital payments increased from roughly 9 in 2015 to almost 19 in 2017 – a large rise in variability.

Children results for utilization and payment. Beginning in 2015 (the first of two complete baseline years), the values for utilization (and payment) per child-year in the five principal service modalities are as follows: (values for the control group are presented first; then for the intervention group):

- 2015 ER visits (payments): 0.2; 0.3 ($72; $99)
- 2015 Hospital outpatient visits (payments): 0.1; 0.1 ($92; $99)
- 2015 Physician/Clinic/Professional visits (payments): 0.7; 0.8 ($237; $274)
- 2015 Pharmacy prescriptions (payments): 0.4; 0.5 ($104; $127)
- 2015 Inpatient hospitalizations:.02; .02 ($283; $228)
- 2015 Total payments (totaled over all seven services) : ($873. $931)

16 Enrollment records for this study and utilization, payment, and quality data were available for July 1, 2014 thru December 31, 2017, The records for January 1, 2014 thru June 30, 2014 were excluded from this study primarily to the issue of crossover in DRG codes where the coding that HCA used changed in July 2014 between AP and APR DRGs.

The 2015 variability per child-year in utilization and payment for specific utilization and payment categories and total payments is substantial, as was true for adults. For example, the coefficients of variation (CV) in children's ER utilization and payment are approximately 2 and 4, respectively, for the control group and roughly the same for the intervention group. The CV for inpatient hospitalization is roughly 8 for both the intervention and control groups. Inpatient hospital payment is even more variable: CV for the control group is almost 39; for the intervention group it is close to 52. Pharmacy payments have a CV of roughly 18 for both groups. Total payment also is highly variable: its CV for both the control and intervention groups is roughly 14.

The picture for utilization and payment of children in 2017 (the only intervention year) is similar to that for 2015. For example:

- ER visits per child-year (0.2) are the same in both years for both groups.
- Similarly, physician/clinic/professional visits are roughly the same (0.7 to 0.8 per child-year) and little changed between the two years for both groups.
- Hospital outpatient visits are the same for both groups (0.1) and unchanged between the two years

Specific utilization and payment measures exhibiting high CVs in 2015 also maintained high variability in 2017: e.g., pharmacy prescription payments, inpatient hospitalizations and payments, and total payments.

Dependent variables for individual-level quality. The individual-level quality measures are available only for adults (Table 8). The percent meeting the quality target in the intervention and control group is displayed for each of the four years for all eight quality measures. In Table 8, the far-right column shows the changes in quality performance between 2014 and 2017.

- Focusing on the 2017 endpoint measures and noting the direction of change, seven of eight quality measures improved for both the intervention and control group. The only exception was for chlamydia screening in women, in which the intervention group experienced a decline.
- The highest scores in 2017 were in two measures:
    - Comprehensive Diabetes Care- Medical Attention for Nephropathy (88.0 and 86.0 for the intervention and control group, respectively)
    - Statin Therapy for Patients With Cardiovascular Disease- Received Statin Therapy (80.1 and 81.9 for the intervention and control group, respectively)
- The largest improvements between 2014 and 2017 were in the same two measures with the highest scores in 2017 (11.9% for the Comprehensive Diabetes Care nephropathy measure and 8.8% for cervical cancer screening – both among persons in the control group).

Regression Model Estimates. This section presents the regression results for the utilization, payment, and quality analyses. General estimating equation (GEE) regression model estimates of the effect of the PM2 intervention on the dependent measures of utilization, payment, and quality are presented separately here for adults (Table 9A.1) and children (Table 9A.2).

Estimates for adults. The coefficients in Table 9A.1 for visit counts and other utilization measures are expressed as proportionate differences between the intervention and control group in changes in utilization per person month from baseline (pre-PM2 intervention) to the post-intervention year (2017). These are the "difference-in-difference" estimates referenced earlier in this chapter. These coefficients can be interpreted as the effect of PM2 on the intervention group, compared to what would have happened if that same group had not experienced the PM2 intervention (i.e., compared to the "counterfactual"). Strictly speaking, the validity of this interpretation rests on our success in explicitly adjusting for person-level characteristics that might differ between the intervention and control groups, and the comparability of the intervention and control FQHCs on

time-varying factors that we have not observed. Based on comparisons of baseline trends of the dependent measures (utilization, payment, and quality), we perceive that our estimates of the effect of PM2 are not biased by time-varying omitted variables.

The results for adults reveal the following statistically significant PM2 effects (referred to as "comparative (changes)[17]":

- Comparative decline of pharmacy prescription payments of $4.29 per person-month
- Comparative increase in outpatient hospital utilization per person-month of 0.13%
- Comparative decline in the probability of inpatient hospitalization of roughly 0.03% per person-month
- Comparative decline of cervical cancer screening of 1.9% per person-year
- Comparative increase in eye examinations within comprehensive diabetes care of 2,4% per person-year.

We also note two estimates of PM2 impact that – while not statistically significant – are of sufficient policy interest and magnitude to warrant mention:

- Comparative decline in inpatient hospital payment of $5.41 per person-month
- Comparative decline in total payment of $11.53 per person-month

Overall, the difference-in-difference (DID) regression results for utilization, payment, and quality suggest modest short-run (one-year) impacts of the PM2 intervention for adults in the participating FQHCs. Pharmacy prescription payments , outpatient hospital visits, and inpatient hospitalizations declined somewhat. Among quality measures, cervical cancer screening declined slightly and the frequency of eye exams within comprehensive diabetes care increased. The declines in inpatient hospital payment and total payment – while not statistically done – hint at two domains possibly changing in a favorable direction.

Estimates for children. The regression analyses for children focus exclusively on utilization and payment. Quality measures for the care received by children were not available in the Medicaid claims data for this PM2 evaluation. Table 9A.2 presents the summary results of the two-part model. None of the five major dependent measures in the logit model of probability of any utilization (bottom panel) is significantly affected by the PM2 intervention. The combined estimate of PM2's impact on payment is statistically significant ($p< .10$, 2-tailed test) only in one category: inpatient hospital spending. The estimate implies, controlling for the other covariates in the model, inpatient hospital spending was approximately $8 higher per person-month among children in the intervention group compared to the controls[18].

5.2.B.8 Conclusion

The individual-level regression analyses presented in this chapter suggest modest short-run (one-year) impacts of the PM2 intervention for adults in the participating FQHCs. Pharmacy prescription payments , outpatient hospital visits, and inpatient hospitalizations declined somewhat. Among quality measures, cervical cancer screening declined slightly and the frequency of eye exams within comprehensive diabetes care increased. The declines in inpatient hospital payment and total payment – while not statistically – hint at two domains possibly changing in a favorable direction. Among children the individual-level regression analyses revealed only one statistically significant impact of PM2 on utilization and payment, and that estimate (a small increase in inpatient hospital spending per person-month) was in the opposite direction from expected.

17 The "comparative changes" reported here and elsewhere in the PM2 Structured Brief and in this PM2 Chapter are absolute changes. For example, if the margin estimate in Table 9A.1 for adults implies a 2% effect of the PM2 intervention, we report that absolute difference-in-difference as a 2% comparative change. Alternatively, if one wishes to report that 2% change relative to the baseline mean % prior to the intervention, one would divide the absolute change by the baseline mean.

18 The authors suggest caution regarding the estimate for PM2's effect on inpatient hospital spending. Examining the frequency distribution of this measure (in results not shown here) suggests that the model's assumption of a gamma distribution for this variable might not fit the actual distribution for inpatient hospital spending.

In parallel with these quantitative findings, qualitative interviews with FQHC administrative and clinical leaders and content analyses of background documents are consistent with the expectation that the movement from paying FQHCs per encounter to a payment regime based on value will take time to show substantial improvements in population health, quality of care, and reductions in the growth of per capita health care spending. The impressions from the first year of PM2 intervention are generally favorable, progress is in small steps, and FQHC leaders appear patient and committed to sustaining the movement toward value-based payment and whole-person care.

Secondary pre-post analyses of quality. None of the individual-level quality metrics available to this evaluation was included in the measurements used to determine performance improvement targets for receiving prospective increases in PM2 payments per member per month. Thus it is possible the health care providers in FQHCs participating in PM2 might be focusing attention on other quality measurers that were used to determine prospective payment increases.

Aggregate data for one baseline year (2016) and one intervention year (2017) were available at the organization level for the 16 PM2-participating (intervention group) FQHCs, but not for eight control group FQHCs. Absent a control group, and given that the small sample size for aggregate analysis precludes adjusting for other variables (covariates), any changes in quality from the single baseline year to the intervention year cannot be attributed to PM2, but may be due to other factors, including secular trends. However, in order to supplement the interpretation of the individual-level regression analysis of PM2 impacts on quality, the investigators did perform two pre-post statistical tests of quality change: one parametric (Student t-test) and the other non-parametric (the Wilcoxon signed-rank test).

The detailed results and full interpretation of those tests are presented in Appendix A.4.3 of this report, so only a broad summary of those findings is provided here. Four of eight quality measures showed statistically significant improvement: two measures of effectiveness of anti-depressant medication management, one of effectiveness of medication management for children and adolescents living with asthma, and one for receipt of well-child visits at ages 3-6.

None of the other four measures (control of blood pressure and of glucose levels among persons with diabetes, blood pressure control among persons with hypertension, or childhood immunization status) showed significant improvement. Weighting each of the eight measures by its proportionate contribution to the total quality measurements for each FQHC, the change in aggregate quality score did not change significantly from 2016 to 2017.

This descriptive evidence shows some significant quality improvement among the targeted measures for payment incentives, but on the whole, statistically insignificant change. Viewed from that perspective, these organization-level findings are consistent with the results of the individual level regression analyses: modest and occasionally significant change in quality in the first year of the PM2 intervention. These findings also parallel the conclusions derived from the key informant interviews and background documents gleaned from a purposive sample of eight of the 16 FQHCs participating in PM2. The details of the latter qualitative analysis are reported in Appendix A.4.3 of this report.

5.2.B.9 Implications for Policy and Practice

The investigators have chosen to be circumspect in drawing implications for policy and practice from an evaluation of the first year of the PM2 intervention, even more so because the initial findings demonstrate small and generally statistically insignificant impacts on the primary SIM targets of better care, better quality, and lower cost. That said, we do present a set of lessons learned that are consistent with the quantitative evidence adduced in this evaluation and the qualitative analysis.

Several encouraging signs are emerging from the initial implementation of PM2 : perceptions of improved patient experience derived from a whole-person care perspective, the value of new connections in the community (e.g., with gyms, food sources), ability to identify redundancies and discrepancies in service provision, and the realization that PM2 and similar VBP investments have created a future foundation on which to build.

The principal challenges have been to consistently align the organization's internal data with that received from HCA, to ensure relevance of the quality metrics for the organization's specific patient population, to secure consistent and continued presence at the table of "dedicated" individuals from the beginning, and to show organizational resilience in rebounding from external shocks. FQHC leaders' commitment to sustaining value-based payment and whole-person care appeared firm in the face of environmental pressures and the challenge of encouraging persons to take greater accountability for their own health.

Table 1: Quality Adjustment in PMPM Rates under PM2

How is quality performance measured?

The Health Care Authority will determine prospective adjustment percentages annually based on the clinic achieving quality improvement score targets. Clinics that demonstrate quality improvement and attainment against their quality baseline will continue to receive their full PMPM rate. Clinics that do not demonstrate quality improvement and attainment will be subject to downward adjustment of their PMPM rate in future years. In total dollars, downward adjustment of the PMPM rate will never go below encounter-based equivalent payment amounts. After being adjusted downward, clinics can earn back the full benefit of the baseline PMPM rate (as trended by the MEI) upon meeting quality improvement targets.

Each clinic will be measured by seven quality measures:

1. Comprehensive diabetes care - poor HbA1c control (>9%)
2. Comprehensive diabetes care - blood pressure control (<140/90)
3. Controlling high blood pressure (<140/90)
4. Antidepressant medication management
    a. Effective acute phase treatment
    b. Effective continuation phase treatment (6 months)
5. Childhood immunization status - combo 10
6. Well-child visits in the 3rd, 4th, 5th and 6th years of life
7. Medication management for people with asthma: medication compliance 50%
    a. (Ages 5-11)
    b. (Ages 12-18)

Table 2: Member Selection or Assignment to a Primary Care Provider (PCP)

The HCA gives all Washington Apple Health Members the opportunity to select a health plan from the list of its contracted Medicaid MCOs. Once the Member has selected a health plan, they are also given the opportunity to select a PCP from the health plan's list of participating PCPs. If the Member fails to select a health plan at the time of enrollment, HCA will select a health plan on their behalf through auto-assignment. Upon assignment to Coordinated Care, we in turn must ensure the member has selected a PCP within reasonable proximity to the member's home, no later than fifteen (15) business days after coverage begins. For those members who have not selected a PCP during enrollment, Coordinated Care will use a PCP auto-assignment algorithm, approved by HCA, to assign a PCP for the member. The algorithm assigns members to a PCP according to the following criteria, and in the sequence presented below:

1. Member history with a PCP. The algorithm will first look to see if the member is a returning member and attempt to match them to previous PCP. If the member is new to Coordinated Care, claim history provided by the state will be used to match a member to a PCP that the member had a previous relationship, where possible.

2. Family history with a PCP. If the member has no previous relationship with a PCP, the algorithm will look for a PCP that someone in the member's family, such as a sibling, is or has been assigned to.

3. Geographic proximity of PCP to member residence. The auto-assignment logic will ensure members travel no more than twenty-five (25) miles in non-urban regions and ten (10) miles in urban regions of the service area.

4. Appropriate PCP type. The algorithm will use age, gender, and other criteria to ensure an appropriate match, such as children assigned to pediatricians.

Excerpted from: Coordinated Care. Washington Apple Health Medicaid and Foster Care Provider Operations Manual: p. 19. Link: https://www.coordinatedcarehealth.com/content/dam/centene/Coordinated%20Care/provider/PDFs/508-CoordinatedCareProvider-Manual.pdf. Accessed October 12, 2018.

Table 3: Behavioral Health Data Reporting Differences

Here is the more detailed explanation of the problem The managed care delivery model for behavioral health in pre-integration regions is split between two entities: (1) Managed care organizations (MCO) contracting through HCA's Apple Health program, which includes a mental health benefit, and (2) Behavioral health organizations (BHO) which are regional entities providing mental health and substance use disorder services. In a post-integration region, all behavioral health managed care is delivered solely through MCOs and the pre-integration BHO ceases to exist. The managed care encounter submission guidelines and rules for MCOs differ in key aspects from those of BHOs. As a result, it is not possible to create consistent time series of MCO encounters when spanning pre- and post- integration time frames. This is an issue with the early adopter region, Southwest WA, where integration was implemented in April 2016.

Table 4: DRGs for Psychiatric Care-Related Hospitalization Eliminated from Inpatient Analyses

Medicare Severity-Diagnosis Related Code	Code Description
426	DEPRESSIVE NEUROSES
427	NEUROSES EXCEPT DEPRESSIVE
428	DISORDERS OF PERSONALITY/IMPULSE CONTROL
430	PSYCHOSES
431	CHILDHOOD MENTAL DISORDERS
432	OTHER MENTAL DISORDER DIAGNOSES
740	MENTAL ILLNESS DIAGNOSIS W O.R. PROCEDURE
750	SCHIZOPHRENIA
751	MAJOR DEPRESSIVE DISORDERS OTHER/UNSPECIFIED PSYCHOSES
752	DISORDERS OF PERSONALITY IMPULSE CONTROL
753	BIPOLAR DISORDERS
754	DEPRESSION EXCEPT MAJOR DEPRESSIVE DISORDER
755	ADJUSTMENT DISORDERS NEUROSES EXCEPT DEPRESSIVE DIAGNOSES
756	ACUTE ANXIETY DELIRIUM STATES
757	ORGANIC MENTAL HEALTH DISTURBANCES
758	CHILDHOOD BEHAVIORAL DISORDERS
759	EATING DISORDERS
760	OTHER MENTAL HEALTH DISORDERS

Table 5: Technical Specifications for Individual-Level Quality Measures (Measure Steward**)**[19]

- Adults' Access to Preventive/Ambulatory Health Services: NCQA (HEDIS_AAP)
- Whether the individual adult age 20 or older had an ambulatory or preventive care visit in the measurement year
- Mental Health Tx Penetration- Broad Definition: DSHS
- Whether the individual (age 6-17 years or 18 years or older) with a mental health service need received services in the measurement year
- Breast Cancer Screening: NCQA (HEDIS)
- Whether the woman 50-74 years of age had a mammogram to screen for breast cancer
- Cervical Cancer Screening: NCQA (HEDIS)
- Whether the woman 21-64 years of age was screened for cervical cancer using either of the two methods defined by the measure (interval depending on the screening method)
- Chlamydia Screening in Women: NCQA (HEDIS)
- Whether the woman 16-24 years of age identified as sexually active had at least one test for chlamydia during the measurement year
- Colorectal Cancer Screening: NCQA (HEDIS)
- Whether the individual 50 – 75 years of age had appropriate screening for colorectal cancer (interval dependent on screening method)
- Comprehensive Diabetes Care- Hemoglobin A1c Testing: NCQA (HEDIS)
- Whether the individual 18-75 years of age and with diabetes (Type 1 or Type 2) had an HbA1c test during the measurement year
- Comprehensive Diabetes Care- Eye Exam: NCQA (HEDIS)
- Whether the individual 18-75 years of age and with diabetes (Type 1 or Type 2) had a retinal eye exam during the measurement year or year prior
- Comprehensive Diabetes Care- Medical Attention for Nephropathy: NCQA (HEDIS)
- Whether the individual 18-75 years of age and with diabetes (Type 1 or Type 2) received a nephropathy screening or monitoring test or had evidence of nephropathy during the measurement year or year prior
- Statin Therapy for Patients with Cardiovascular Disease- Received Statin Therapy: NCQA (HEDIS)
- Whether the male 21-75 years of age or female 40-75 years of age identified as having clinical atherosclerotic cardiovascular disease (ASCVD) received statin therapy
- Statin Therapy for Patients with Cardiovascular Disease- Statin Adherence 80%: PQA
- Whether the male 21-75 years of age or female 40-75 years of age identified as having clinical atherosclerotic disease (ASCVD) met the proportion of days covered (80%)

19 Source: Washington State Common Measure Set, Approved 2018 (as of April 2018) Link: https://www.hca.wa.gov/assets/Washington-State-Common-Measure-Set-2018.pdf Accessed October 1, 2018.

Table 6A.1: PM2 Study Population, Adults 18-64, Independent Variables

	2014		2015		2016		2017		
	Control	Intervention	Control	Intervention	Control	Intervention	Control	Intervention	Total
Female									
No	44.6%	42.3%	46.0%	43.9%	46.7%	44.8%	47.3%	45.2%	45.0%
Yes	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
County	55.4%	57.7%	54.0%	56.1%	53.3%	55.2%	52.7%	54.8%	55.0%
Adams	0.0%	1.1%	0.0%	1.1%	0.0%	1.1%	0.0%	1.1%	0.7%
Asotin	0.0%	0.4%	0.0%	0.4%	0.0%	0.4%	0.0%	0.4%	0.2%
Benton	0.1%	4.3%	0.1%	4.2%	0.1%	3.9%	0.1%	3.8%	2.4%
Chelan	0.0%	3.0%	0.1%	2.8%	0.1%	2.6%	0.1%	2.4%	1.6%
Clallam	0.1%	0.0%	0.1%	0.1%	0.1%	0.8%	0.1%	1.2%	0.4%
Columbia	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cowlitz	10.7%	0.3%	10.8%	0.3%	10.7%	0.3%	9.4%	0.3%	4.4%
Douglas	0.0%	1.4%	0.0%	1.3%	0.0%	1.2%	0.0%	1.1%	0.7%
Ferry	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%
Franklin	0.0%	2.9%	0.0%	2.9%	0.0%	2.7%	0.0%	2.6%	1.6%
Garfield	.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grant	0.2%	4.3%	0.2%	4.2%	0.2%	4.1%	0.2%	3.9%	2.5%
Grays Harbor	4.0%	0.1%	3.0%	0.2%	3.2%	0.2%	3.2%	0.2%	1.5%
Island	0.9%	0.0%	1.2%	0.1%	1.1%	0.1%	0.8%	0.1%	0.5%
Jefferson	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%	0.1%
King	33.2%	19.1%	34.2%	19.5%	36.0%	19.3%	37.8%	18.7%	25.8%
Kitsap	0.3%	6.2%	0.3%	6.5%	0.4%	6.0%	0.5%	6.0%	3.8%
Kittitas	0.0%	0.9%	0.0%	1.1%	0.1%	1.2%	0.1%	1.2%	0.7%
Klickitat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Lewis	0.3%	2.5%	0.3%	2.6%	0.3%	2.7%	0.4%	2.7%	1.7%
Lincoln	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Mason	0.2%	0.2%	0.2%	0.2%	0.3%	0.2%	0.3%	0.4%	0.3%
Okanogan	0.0%	1.9%	0.0%	2.0%	0.0%	1.8%	0.0%	1.6%	1.1%
Pacific	0.4%	0.4%	0.5%	0.4%	0.6%	0.4%	0.5%	0.3%	0.4%
Pend Oreile	0.0%	0.3%	0.0%	0.4%	0.0%	0.3%	0.0%	0.2%	0.2%
Pierce	6.9%	11.7%	6.3%	12.5%	7.1%	13.3%	6.9%	13.4%	10.4%
San Juan	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skagit	4.4%	0.1%	4.5%	0.1%	4.3%	0.1%	3.9%	0.1%	1.8%
Snohomish	18.3%	1.0%	18.4%	1.1%	16.6%	1.3%	17.2%	1.4%	7.9%
Spokane	0.3%	17.3%	0.3%	16.3%	0.4%	16.4%	0.4%	16.9%	10.0%
Stevens	0.0%	1.1%	0.0%	1.1%	0.0%	1.2%	0.0%	1.3%	0.7%
Thurston	7.0%	0.9%	6.7%	1.1%	6.5%	1.2%	6.4%	1.6%	3.5%
Wahkiakum	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.1%
Walla Walla	0.0%	1.4%	0.0%	1.4%	0.0%	1.3%	0.0%	1.4%	0.8%
Whatcom	12.1%	0.1%	11.8%	0.1%	10.9%	0.1%	10.6%	0.2%	4.7%
Whitman	0.0%	0.1%	0.0%	0.1%	0.1%	0.2%	0.1%	0.2%	0.1%
Yakima	0.2%	16.8%	0.3%	15.8%	0.3%	15.2%	0.3%	14.8%	9.3%

Age category									
18-34	48.0%	50.8%	50.6%	52.7%	51.2%	53.6%	50.8%	53.5%	51.8%
35-44	19.5%	18.8%	18.9%	18.2%	18.6%	18.1%	18.7%	18.1%	18.5%
45-64	32.4%	30.3%	30.5%	29.1%	30.2%	28.4%	30.5%	28.4%	29.7%
DxRx Score category									
<0.5	71.6%	69.4%	72.7%	69.4%	72.4%	69.7%	73.2%	69.6%	70.8%
0.5 - <1.0	15.7%	16.8%	15.2%	16.8%	15.5%	16.5%	14.8%	16.4%	16.1%
1.0 - <1.5	5.4%	5.5%	5.1%	5.5%	5.3%	5.5%	5.2%	5.6%	5.4%
>=1.5	7.4%	8.2%	6.9%	8.3%	6.7%	8.2%	6.8%	8.4%	7.7%
Medical Eligibility category									
Disabled	11.2%	9.6%	8.8%	8.0%	8.1%	7.5%	7.7%	7.5%	8.3%
Elders	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Disabled Children	4.6%	5.9%	4.8%	6.2%	5.0%	6.3%	5.0%	6.3%	5.7%
Non-ABD Adults	20.9%	24.1%	18.4%	21.6%	16.4%	19.3%	15.3%	18.2%	19.3%
Expansion Adults	63.4%	60.4%	68.1%	64.2%	70.5%	66.9%	72.0%	68.0%	66.7%
Indicator of MH Need, SUD Need, Both, or Neither									
Co-occurring SUD + MH Need	13.0%	11.8%	12.1%	11.6%	13.6%	12.9%	14.8%	14.4%	13.0%
MH Need only	22.2%	23.2%	21.8%	23.0%	23.1%	24.6%	23.6%	25.5%	23.6%
Neither SUD or MH Need	59.1%	59.7%	60.2%	59.9%	57.2%	56.8%	56.3%	54.9%	57.8%
SUD Need only	5.7%	5.3%	5.9%	5.5%	6.0%	5.8%	5.3%	5.2%	5.6%
Race/Ethnicity									
Missing	2.1%	1.8%	2.7%	2.2%	3.0%	2.6%	3.4%	2.8%	2.6%
White	52.6%	46.7%	52.7%	46.9%	51.6%	46.8%	50.9%	46.9%	48.9%
Black	8.0%	5.4%	7.6%	5.6%	7.9%	5.8%	8.0%	5.8%	6.6%
Indian	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%
Asian	7.6%	2.5%	7.4%	2.6%	7.7%	2.5%	8.0%	2.5%	4.6%
NHOPI	1.0%	1.2%	1.2%	1.4%	1.3%	1.5%	1.3%	1.5%	1.3%
API	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	0.9%	1.1%	1.0%	1.1%	1.0%	1.2%	1.2%	1.3%	1.1%
Two or more	22.1%	30.7%	21.3%	29.7%	21.1%	29.3%	20.7%	28.8%	26.1%
Hispanic	5.5%	10.4%	6.0%	10.4%	6.1%	10.1%	6.2%	10.0%	8.5%

Table 6A.2, Children, Independent Variables

	2014		2015		2016		2017		
	Control	Intervention	Control	Intervention	Control	Intervention	Control	Intervention	Total
Female									
N	51.1%	50.6%	51.0%	50.8%	51.1%	50.9%	51.1%	51.0%	50.9%
Y	48.9%	49.4%	49.0%	49.2%	48.9%	49.1%	48.9%	49.0%	49.1%
County									
Adams	0.1%	3.3%	0.1%	3.1%	0.1%	3.1%	0.1%	3.1%	2.1%
Asotin	0.0%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.2%	0.1%
Benton	0.1%	3.8%	0.1%	4.1%	0.1%	4.0%	0.1%	3.8%	2.7%
Chelan	0.0%	3.1%	0.0%	3.0%	0.1%	3.0%	0.1%	2.9%	2.0%
Clallam	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.0%	0.8%	0.2%
Columbia	.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cowlitz	4.5%	0.1%	6.2%	0.1%	6.5%	0.1%	6.6%	0.1%	2.1%
Douglas	0.0%	1.9%	0.0%	1.8%	0.0%	1.7%	0.0%	1.6%	1.2%
Ferry	.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Franklin	0.1%	4.7%	0.1%	5.1%	0.1%	4.9%	0.1%	4.6%	3.2%
Garfield	.	0.0%	.	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Grant	0.9%	8.0%	0.9%	7.5%	0.8%	7.4%	0.8%	7.3%	5.3%
Grays Harbor	2.2%	0.1%	1.8%	0.1%	2.0%	0.1%	2.4%	0.1%	0.8%
Island	0.6%	0.0%	0.8%	0.1%	0.7%	0.0%	0.5%	0.1%	0.2%
Jefferson	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
King	43.1%	17.5%	40.5%	17.1%	41.0%	17.3%	40.9%	17.5%	25.3%
Kitsap	0.2%	4.1%	0.3%	4.3%	0.3%	4.2%	0.3%	4.1%	2.9%
Kittitas	0.0%	0.6%	0.0%	0.7%	0.0%	0.7%	0.0%	0.7%	0.5%
Klickitat	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%
Lewis	0.1%	0.7%	0.1%	1.2%	0.2%	1.2%	0.3%	1.2%	0.8%
Lincoln	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Mason	0.1%	0.2%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%
Okanogan	0.0%	2.0%	0.0%	2.0%	0.0%	1.9%	0.0%	1.8%	1.3%
Pacific	0.4%	0.3%	0.4%	0.4%	0.5%	0.4%	0.4%	0.3%	0.4%
Pend Oreile	0.0%	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.1%	0.1%
Pierce	5.5%	8.7%	5.6%	9.6%	6.2%	9.6%	5.9%	9.5%	8.2%
San Juan	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Skagit	3.6%	0.1%	4.0%	0.1%	3.8%	0.1%	3.7%	0.1%	1.3%
Snohomish	25.4%	1.0%	25.1%	1.1%	24.2%	1.2%	24.5%	1.2%	9.0%
Spokane	0.2%	8.2%	0.2%	8.5%	0.2%	9.2%	0.2%	9.4%	6.0%
Stevens	0.0%	0.8%	0.0%	0.9%	0.0%	1.0%	0.0%	1.1%	0.6%
Thurston	3.5%	0.4%	3.9%	0.6%	4.2%	0.7%	4.3%	0.9%	1.8%
Wahkiakum	0.2%	.	0.2%	0.0%	0.2%	0.0%	0.2%	0.0%	0.1%
Walla Walla	0.0%	1.3%	0.0%	1.3%	0.0%	1.2%	0.0%	1.5%	0.9%
Whatcom	8.9%	0.0%	8.8%	0.1%	7.8%	0.1%	8.0%	0.1%	2.8%
Whitman	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
Yakima	0.2%	28.2%	0.4%	26.5%	0.3%	25.8%	0.3%	25.4%	17.7%

Age category									
0-5	37.3%	37.9%	39.1%	39.6%	37.6%	38.8%	37.7%	38.5%	38.5%
6-12	38.6%	38.9%	37.1%	37.9%	38.0%	38.3%	38.1%	38.4%	38.2%
13-17	24.1%	23.2%	23.8%	22.5%	24.4%	22.9%	24.2%	23.1%	23.3%
DxRx Score category									
<0.5	93.6%	91.8%	93.8%	92.1%	93.7%	92.9%	94.0%	93.1%	93.0%
0.5 - <1.0	4.3%	4.5%	4.3%	4.7%	4.7%	5.0%	4.4%	4.8%	4.6%
1.0 - <1.5	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%	0.5%	0.6%	0.5%
>=1.5	1.6%	3.1%	1.4%	2.7%	1.0%	1.6%	1.1%	1.5%	1.9%
Medical Eligibility category									
Disabled	2.0%	2.2%	2.0%	2.1%	1.7%	1.9%	1.7%	1.9%	2.0%
Non-Disabled Children	98.0%	97.7%	97.9%	97.8%	98.2%	98.0%	98.2%	98.1%	98.0%
Expansion Adults	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%
Indicator of MH Need, SUD Need, Both, or Neither									
Co-occurring SUD + MH Need	0.9%	0.8%	1.0%	0.9%	1.1%	1.0%	1.1%	1.1%	1.0%
MH Need only	11.4%	11.9%	11.5%	12.3%	13.1%	14.5%	14.6%	16.2%	13.5%
Neither SUD or MH Need	86.8%	86.5%	86.6%	86.1%	84.8%	83.5%	83.3%	81.8%	84.6%
SUD Need only	0.9%	0.8%	0.9%	0.8%	1.1%	1.0%	1.0%	1.0%	0.9%
Race/Ethnicity									
Missing	6.2%	5.5%	7.2%	6.7%	8.4%	8.0%	10.3%	9.7%	7.8%
White	24.6%	20.8%	26.7%	22.2%	25.6%	22.2%	25.6%	22.5%	23.2%
Black	9.8%	3.6%	9.4%	3.8%	9.6%	4.1%	9.7%	4.1%	5.8%
Indian	0.3%	0.4%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.4%
Asian	8.5%	1.5%	7.9%	1.5%	8.1%	1.5%	8.1%	1.6%	3.7%
NHOPI	1.4%	1.5%	1.6%	1.7%	1.8%	1.9%	1.9%	2.0%	1.8%
API	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Other	2.2%	2.3%	2.2%	2.3%	2.2%	2.4%	2.3%	2.5%	2.3%
Two or more	31.4%	41.8%	29.0%	38.5%	28.0%	36.0%	25.7%	33.2%	34.2%
Hispanic	15.7%	22.6%	15.6%	22.8%	16.0%	23.4%	16.1%	23.9%	20.8%

Table 7A.1: PM2 Utilization and Payment Dependent Variables, Adults 18-64

Year	24 FQHCs	N	Variable	Mean	Std Dev
2014	Control	104,048	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	122.0	505.3
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	173.0	1266.9
			Physician/Clinic/Professional Visit (Yes/No)	0.6	0.5
			Physician/Clinic/Professional Visit Payment	295.9	1105.1
			Pharmacy Prescription (Yes/No)	0.5	0.5
			Pharmacy Prescription Payment	372.1	2577.4
			Total Payment, Except Dental and Psych.	1660.2	8097.0
			In-patient Hospitalization (Yes/No)	0.040	0.196
			In-patient Hospital Payment	563.229	6414.359
	Intervention	148,132	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	134.0	510.1
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	195.0	1436.2
			Physician/Clinic/Professional Visit (Yes/No)	0.6	0.5
			Physician/Clinic/Professional Visit Payment	330.9	1807.2
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	383.9	2425.2
			Total Payment, Except Dental and Psych.	1716.2	8023.2
			In-patient Hospitalization (Yes/No)	0.043	0.203
			In-patient Hospital Payment	512.088	6131.165
2015	Control	147,051	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	166.2	611.5
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	275.6	1847.2
			Physician/Clinic/Professional Visit (Yes/No)	0.6	0.5
			Physician/Clinic/Professional Visit Payment	451.7	2075.1
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	680.1	4841.8
			Total Payment, Except Dental and Psych.	2611.4	11523.1
			In-patient Hospitalization (Yes/No)	0.055	0.228
			In-patient Hospital Payment	820.050	8065.320
	Intervention	201,229	ER Visit (Yes/No)	0.3	0.4
			ER Visit Payment	189.2	652.0
			Hospital Outpatient Visit (Yes/No)	0.3	0.4
			Hospital Outpatient Visit Payment	311.7	2275.2
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	532.4	2318.6
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	731.3	4600.2
			Total Payment, Except Dental and Psych.	2846.6	10985
			In-patient Hospitalization (Yes/No)	0.064	0.245
			In-patient Hospital Payment	818.878	7130.227

2016	Control	142,814	ER Visit Payment	192.2	672.9
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	272.8	1996.8
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	521.4	3296.2
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	831.9	5573.7
			Total Payment, Except Dental and Psych.	3069.2	13432.2
			In-patient Hospitalization (Yes/No)	0.059	0.237
	Intervention	206,912	ER Visit (Yes/No)	0.3	0.5
			ER Visit Payment	220.3	711.0
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	293.9	1884.0
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	575.6	2355.5
			Pharmacy Prescriptionl (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	846.5	5754.7
			Total Payment, Except Dental and Psych.	3129.1	12080.6
			In-patient Hospitalization (Yes/No)	0.065	0.247
			In-patient Hospital Payment	910.068	7737.381
2017	Control	144,383	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	169.8	665.8
			Hospital Outpatient Visit (Yes/No)	0.2	0.4
			Hospital Outpatient Visit Payment	278.0	2213.2
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	530.1	2875.0
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	918.4	5717.2
			Total Payment, Except Dental and Psych.	3188.7	21726.6
			In-patient Hospitalization (Yes/No)	0.060	0.237
			In-patient Hospital Payment	1015.310	19214.719
	Intervention	214,502	ER Visit (Yes/No)	0.3	0.5
			ER Visit Payment	198.7	668.2
			Hospital Outpatient Visit (Yes/No)	0.3	0.4
			Hospital Outpatient Visit Payment	311.7	2167.2
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	606.9	2961.7
			Pharmacy Prescription (Yes/No)	0.6	0.5
			Pharmacy Prescription Payment	950.0	5822.2
			Total Payment, Except Dental and Psych.	3292.6	13245.8
			In-patient Hospitalization (Yes/No)	0.065	0.246
			In-patient Hospital Payment	921.513	8832.214

Note:
Because of inconsistent reporting, psychiatric hospitalizations have been excluded from the data for the study population. In addition, because of changes in coding hospitalizations, 2014 hospitaliizations are only available for July 1, 2014 through December 31, 2014. Years 2015 - 2017 are not affected and reflect the full calendar year.

Table 7A.2: PM2 Utilization and Payment Dependent Variables, Children 0-17

Year	24 FQHCs	N Obs	Variable	Mean	Std Dev
2014	Control	65,487	ER Visit (Yes/No)	0.1	0.3
			ER Visit Payment	39.2	181.8
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	43.1	505.1
			Physician/Clinic/Professional Visit (Yes/No)	0.6	0.5
			Physician/Clinic/Professional Visit Payment	135.7	910.1
			Pharmacy Prescription (Yes/No)	0.3	0.5
			Pharmacy Prescription Payment	54.6	807.1
			Total Payment, Except Dental and Psych.	441.5	6397.4
			In-patient Hospitalization (Yes/No)	0.006	0.079
			In-patient Hospital Payment	121.105	5912.201
	Intervention	131,304	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	54.5	263.5
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	46.0	764.6
			Physician/Clinic/Professional Visit (Yes/No)	0.6	0.5
			Physician/Clinic/Professional Visit Payment	151.3	2531.7
			Pharmacy Prescription (Yes/No)	0.4	0.5
			Pharmacy Prescription Payment	65.0	1101.1
			Total Payment, Except Dental and Psych.	466.1	5325.3
			In-patient Hospitalization (Yes/No)	0.006	0.079
			In-patient Hospital Payment	92.515	3728.589
2015	Control	82,535	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	72.0	254.0
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	91.5	1708.5
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	237.3	1217.7
			Pharmacy Prescription (Yes/No)	0.4	0.5
			Pharmacy Prescription Payment	104.3	1851.2
			Total Payment, Except Dental and Psych.	873.4	12438.1
			In-patient Hospitalization (Yes/No)	0.015	0.120
			In-patient Hospital Payment	283.150	10972.756
	Intervention	157,550	ER Visit (Yes/No)	0.3	0.4
			ER Visit Payment	98.6	376.9
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	98.5	1085.3
			Physician/Clinic/Professional Visit (Yes/No)	0.8	0.4
			Physician/Clinic/Professional Visit Payment	273.6	3315.1
			Pharmacy Prescription (Yes/No)	0.5	0.5
			Pharmacy Prescription Payment	127.3	2265.8
			Total Payment, Except Dental and Psych.	930.9	13688.2
			In-patient Hospitalization (Yes/No)	0.015	0.121
			In-patient Hospital Payment	227.621	11799.858

2016	Control	81,813	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	75.2	263.6
			Hospital Outpatient Visit (Yes/No)	0.1	0.4
			Hospital Outpatient Visit Payment	95.8	871.5
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.5
			Physician/Clinic/Professional Visit Payment	264.0	1355.9
			Pharmacy Prescriptionl (Yes/No)	0.4	0.5
			Pharmacy Prescription Payment	114.9	1741.0
			Total Payment, Except Dental and Psych.	946.1	13433.9
			In-patient Hospitalization (Yes/No)	0.014	0.119
			In-patient Hospital Payment	296.385	12536.382
	Intervention	163,406	ER Visit (Yes/No)	0.3	0.4
			ER Visit Payment	104.1	375.1
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	99.7	1154.2
			Physician/Clinic/Professional Visit (Yes/No)	0.8	0.4
			Physician/Clinic/Professional Visit Payment	292.4	2886.9
			Pharmacy Prescription (Yes/No)	0.5	0.5
			Pharmacy Prescription Payment	141.1	2840.4
			Total Payment, Except Dental and Psych.	987.5	10455.6
			In-patient Hospitalization (Yes/No)	0.016	0.126
			In-patient Hospital Payment	234.103	8419.346
2017	Control	83,814	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	71.8	253.1
			Hospital Outpatient Visit (Yes/No)	0.1	0.4
			Hospital Outpatient Visit Payment	99.3	955.1
			Physician/Clinic/Professional Visit (Yes/No)	0.7	0.4
			Physician/Clinic/Professional Visit Payment	281.8	1421.6
			Pharmacy Prescription (Yes/No)	0.4	0.5
			Pharmacy Prescription Payment	128.8	3056.1
			Total Payment, Except Dental and Psych.	1015.5	12284.6
			In-patient Hospitalization (Yes/No)	0.020	0.139
			In-patient Hospital Payment	315.921	10420.380
	Intervention	168,540	ER Visit (Yes/No)	0.2	0.4
			ER Visit Payment	98.6	331.1
			Hospital Outpatient Visit (Yes/No)	0.1	0.3
			Hospital Outpatient Visit Payment	115.8	3892.4
			Physician/Clinic/Professional Visit (Yes/No)	0.8	0.4
			Physician/Clinic/Professional Visit Payment	301.9	1660.2
			Pharmacy Prescription (Yes/No)	0.5	0.5
			Pharmacy Prescription Payment	147.8	3380.2
			Total Payment, Except Dental and Psych.	1090.9	15048.4
			In-patient Hospitalization (Yes/No)	0.020	0.139
			In-patient Hospital Payment	302.375	12691.721

Note:
Because of inconsistent reporting, psychiatric hospitalizations have been excluded from the data for the study population. In addition, 2014 hospitaliizations are only available for July 1, 2014 thru December 31, 2014. Years 2015 - 2017 are not affected and reflect the full calendar year

Table 8: PM2 Quality Dependent Variables, Adults 18-64

Person	2014				2015				2016				2017				2014 to 2017 % Change in Yes	
	Control		Intervention		Control		Intervention		Control		Intervention		Control		Intervention		Control	Intervention
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	%	%
Breast Cancer Screening																		
No	1,609	56.6%	1,702	51.0%	1,898	55.6%	2,033	49.5%	4,216	51.2%	4,376	44.3%	4,461	51.6%	4,719	44.3%		
Yes	1,236	43.4%	1,632	49.0%	1,518	44.4%	2,076	50.5%	4,011	48.8%	5,497	55.7%	4,185	48.4%	5,924	55.7%	5.0%	6.7%
Cervical Cancer Screening																		
No	19,248	58.1%	21,439	51.3%	27,607	56.7%	29,144	49.9%	24,772	52.0%	26,996	46.0%	21,496	49.3%	26,189	44.9%		
Yes	13,870	41.9%	20,364	48.7%	21,088	43.3%	29,258	50.1%	22,828	48.0%	31,688	54.0%	22,081	50.7%	32,134	55.1%	8.8%	6.4%
Chlamydia Screening in Women (HEDIS-CHL)																		
No	1,630	39.3%	2,945	38.9%	2,509	37.9%	4,075	39.4%	2,598	39.2%	4,392	41.9%	2,301	38.1%	4,053	39.4%		
Yes	2,522	60.7%	4,621	61.1%	4,103	62.1%	6,277	60.6%	4,034	60.8%	6,081	58.1%	3,733	61.9%	6,236	60.6%	1.2%	-0.5%
Colorectal Cancer Screening																		
No	4,637	69.1%	4,686	64.7%	10,859	69.7%	12,216	68.0%	13,324	66.4%	15,228	66.2%	13,952	68.5%	15,381	64.5%		
Yes	2,077	30.9%	2,559	35.3%	4,720	30.3%	5,740	32.0%	6,746	33.6%	7,778	33.8%	6,403	31.5%	8,480	35.5%	0.6%	0.2%
Comprehensive Diabetes Care																		
Eye Exam (HEDIS-CDC-EYE)																		
No	3,481	62.9%	5,011	61.8%	4,878	63.1%	6,826	63.0%	5,000	64.4%	6,874	62.6%	4,437	58.7%	6,220	55.5%		
Yes	2,049	37.1%	3,094	38.2%	2,849	36.9%	4,013	37.0%	2,768	35.6%	4,099	37.4%	3,118	41.3%	4,983	44.5%	4.2%	6.3%
Medical Attention for Nephropathy (HEDIS-CDC-																		
No	793	14.3%	998	12.3%	1,180	15.3%	1,504	13.9%	1,110	14.3%	1,509	13.8%	1,061	14.0%	1,341	12.0%		
Yes	4,737	85.7%	7,107	87.7%	6,547	84.7%	9,335	86.1%	6,658	85.7%	9,464	86.2%	6,494	86.0%	9,862	88.0%	0.3%	0.3%
Cardiovascular Disease																		
Statin Adherence 80% (HEDIS-SPC-80PCT)																		
No	131	43.8%	159	44.3%	209	38.3%	258	37.4%	262	43.5%	294	38.6%	265	41.1%	315	38.6%		
Yes	168	56.2%	200	55.7%	337	61.7%	432	62.6%	340	56.5%	468	61.4%	379	58.9%	502	61.4%	2.7%	5.7%
Received Statin Therapy (HEDIS-SPC-PRSCR)																		
No	128	30.0%	139	28.0%	171	23.8%	187	21.3%	131	17.9%	197	20.5%	142	18.1%	203	19.9%		
Yes	299	70.0%	358	72.0%	546	76.2%	690	78.7%	602	82.1%	762	79.5%	644	81.9%	817	80.1%	11.9%	8.1%

Table 9A.1: PM2 Regression Methods, Adults 18-64

Dependent Measures of Utilization. Payment, and Quality	Model Type	Effect among treated in SIM period	95% CI	
Payment, Monthly	**Two-part model ᵠ**			
Physician/Clinic/Professional Services Spending (Yes/No)		-0.084	-2.635	2.468
Outpatient ER Visit Spending (Yes/No)		-0.150	-0.649	0.348
Outpatient Hospital without ER Spending (Yes/No)		-0.098	-1.343	1.146
Pharmacy Prescriptions (Yes/No)		-4.285*	-9.355	0.784
Inpatient Hospital Spending, except Psychiatry (Yes/No)		-5.407	-14.098	3.283
All Payment Spending, except Dental and Psychiatry (Yes/No)		-11.435	-25.633	2.764
Visit counts, Monthly per person,Yes/No	**Logit model**			
Physician/Clinic/Professional Services Spending (Yes/No)		0.00391	-0.002	0.009
Outpatient ER Visit Spending (Yes/No)		0.000714	0.000	0.002
Outpatient Hospital without ER Spending (Yes/No)		0.00133*	0.000	0.003
Pharmacy Prescriptions (Yes/No)		-0.00212	-0.005	0.001
Inpatient Hospital Spending, except Psychiatry (Yes/No)		-0.000316**	-0.001	0.000
Quality Measurement, Yearly,Yes/No, ᵞ	**Logit model**			
Breast Cancer Screening		0.011	-0.035	0.057
Cervical Cancer Screening		-0.0186*	-0.039	0.002
Chlamydia Screening in Women (HEDIS-CHL)		0.005	-0.018	0.028
Colorectal Cancer Screening		0.027	-0.009	0.062
Comprehensive Diabetes Care - Eye Exam (HEDIS-CDC-EYE)		0.0237***	0.008	0.039
Comprehensive Diabetes Care - Hemoglobin A1c Testing (HEDIS-CDC-HBA1C)		0.006	-0.008	0.020
Comprehensive Diabetes Care - Medical Attention for Nephropathy (HEDIS-CDC-NEPHR)		0.00970	-0.004	0.023
Statin Therapy for Patients With Cardiovascular Disease - Received Statin Therapy (HEDIS-SPC-PRSCR)		-0.0201	-0.058	0.018
Statin Therapy for Patients With Cardiovascular Disease - Statin Adherence 80% (HEDIS-SPC-80PCT)		0.003	-0.041	0.048

Note:

ᵠCombined marginal effects from both parts of two-part model and standard errors

*Significance level: * p-value <0.10, ** p-value <0.05, *** p-value <0.01*

All models also control for indicators for year, month ,age, female, race, health condition(dx-rx score), county, eligibility, BH flag. Cluster by Tax_ID

Quality Measurementᵞ outcome model ajusted by year, county ,age, female, race, health condition(dx-rx score), eligibility, BH flag, cluster by Tax ID

Two-part model, second part model is GLM with log link and gamma family

Quality measurement models are restricted to members who quality for each measure.

Clark and Skamania counties have been excluded from all utilization and spending regressions because of behavioral health utilization coding inconsistencies between those two in IMC and the other 37 counties served by BHOs.

Table 9A.2: PM2 Regression Methods, Children 0-17

Dependent Measures of Utilization and Payment		Effect among treated in SIM period	95% CI	
	Two-part model ®			
Physician/Clinic/Professional Services Spending (Yes/No)		0.015	-1.179	1.209
Outpatient ER Visit Spending (Yes/No)		0.152	-0.206	0.509
Outpatient Hospital without ER Spending (Yes/No)		0.406	-0.555	1.368
Pharmacy Prescriptions (Yes/No)		-0.364	-1.283	0.556
Inpatient Hospital Spending, except Psychiatry (Yes/No)		8.112*	-1.397	17.620
All Payment Spending, except Dental and Psychiatry (Yes/No)		4.474	-3.994	12.942
	Logit model			
Physician/Clinic/Professional Services Spending (Yes/No)		0.00199	-0.006	0.010
Outpatient ER Visit Spending (Yes/No)		0.001	0.000	0.002
Outpatient Hospital without ER Spending (Yes/No)		0.000776	-0.001	0.002
Pharmacy Prescriptions (Yes/No)		-0.00114	-0.004	0.002
Inpatient Hospital Spending, except Psychiatry (Yes/No)		-0.0000519	0.000	0.000

Note:

®Combined marginal effects from both parts of two-part model and standard errors

*Significance level: * p-value <0.10, ** p-value <0.05, *** p-value <0.01*

All models also control for indicators for year, month ,age, female, race, health condition(dx-rx score), county, eligibility, BH flag. Cluster by Tax_ID

Quality Measurement[v] outcome model ajusted by year, county ,age, female, race, health condition(dx-rx score), eligibility, BH flag, cluster by Tax ID

Two-part model, second part model is GLM with log link and gamma family

Quality measurement models are restricted to members who quality for each measure.

Clark and Skamania counties have been excluded from all utilization and spending regressions because of behavioral health utilization coding inconsistencies between those two in IMC and the other 37 counties served by BHOs.

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5.3 Accountable Care Program for Public Employees (PM3)

BRIEF

5.3.A

Washington State Innovation Models (SIM)

Accountable Care Program for Public Employees (PM3)

Description

One of the four payment models established under the Washington State Innovation Model (SIM) initiative, Payment Model 3 (PM3) entailed the development of an accountable care program (ACP) available to public employees in Washington State. In 2016, PM3 was first implemented within 5 counties in eastern Washington (King, Kitsap, Pierce, Snohomish, and Thurston counties), with expansion to four more counties in 2017 in both eastern and western Washington (Skagit, Spokane; Yakima, and Grays Harbor). The new Accountable Care Networks (ACNs), together referred to as UMP-Plus, move away from traditional fee-for-service reimbursement to value-based insurance design. To employees and their dependents, the new plan promised lower premiums, lower deductibles, coordinated provider networks, and the same insurance benefits as provided in UMP Classic. The networks accepted both upside and downside risk in order to participate in the program. The current evaluation of PM3 has a qualitative component and quantitative component.The quantitative evaluation findings for the first year of the program are presented in this report; longer-term outcomes will be explored at a later date.

Evaluation Methods

For the quantitative evaluation, we capitalize on the geographic-specific implementation design and use difference-in-difference estimation to isolate the impact of the ACN network on health care utilization, spending, and quality. For this report, we focus on the 1-year outcomes. The treatment group for the initial roll-out of the payment reform are the UMP members that live in the 5-county Puget Sound Region. The control group consists of UMP members who live outside of the treated counties. The difference-in-difference design isolates the impact of an intervention as long as the control group is valid.

For the qualitative evaluation, we conducted two rounds of semi-structured interviews (n=20) using a single questionnaire aligned with an evidence-based conceptual model between January 2017 and May 2018. Most informants were interviewed twice, once per round, to obtain longer-term perspectives of organizational learning. Results provide evidence that support the appropriateness of using the original theory-based conceptual model to assess accountable care program implementation. Results further indicate the need to revise key aspects of the original conceptual model to align with ACP implementation.

Evaluation Findings

Quantitative Findings. We find that the payment model was effective at changing health care treatment patterns consistent with goals of SIM:

- The probability of having a primary care visit increased by 0.9 percentage points per month.
- The probability of having a specialist visit decreased by 2.6 percentage points per month.
- The probability of having a hospital admission decreased by 0.03 percentage points per month.
- The probability of having an ED visit decreased by 0.09 percentage points per month.

However, within the first year of the program, we do not find significant effects on health care spending or quality of care.

Qualitative Findings. Key informant interviews indicated that in the context of Washington State SIM, public policy reform played a crucial role in driving adoption of the ACP and influencing the external economic market to bolster system reform. Results also showed that ACP implementation was an iterative, non-linear process, a finding that added to the original conceptual model. External environmental fluctuations and internal organizational changes in information management and use, care structures, and patient engagement were happening simultaneously and were often interconnected. Overall thematic topics were documented in the following areas: **(a) conditions for accountable care adoption; (b) components of accountable care implementation; (c) accountable care effectiveness; and (d) the future of accountable care.**

Conclusions

SIM played a crucial driving role in making ACP happen. Even with the identified barriers and complications to implementation, the first year quantitative results suggest that the ACP is changing health care utilization patterns. Further work is needed to tell whether this change is due to patients changing doctors to ones with different referral practices, or physicians changing their behavior, or some combination of the two. It is also important to determine if this is a one-time gain, like the introduction of HMOs, or if this can lead to sustained change.

Implications of Findings for Policy and Practice

- **Conditions for Accountable Care Adoption.** External pressure from a shifting health care market combined with the innovation opportunity motivated organizations to participate. Consequently, each organization has cited organizational alignment with the ACP as key to the success of the program. Informants highlighted in particular organizational vision and leadership as key facilitators to achieve accountable care objectives. Policy makers and practitioners, therefore, should monitor the external environment for factors that promote or impede ACP implementation, specifically where factors may influence participating organizations to shift priorities and/or to more fully align with value-based purchasing initiatives of all types. In addition, it is imperative for State leadership to continue to communicate their vision for ACP implementation, its goals and objectives. Lastly, the State, working collaboratively with practice partners, should see to better define key metrics and support organizations as they attempt to demonstrate objective measures of success.
- **Components of Accountable Care Implementation.** External data availability and internal data and information technology were mostly delayed and/or problematic; consequently, informants described this issue as a barrier to achieving objectives. In the future, government officials should provide timely, accurate data that reflect current business so to better inform participating organizations and sustain the effort. Informants have also suggested the following contribute to ACP success: (1) keeping patients in-network, (2) controlling costs, and (3) ensure that ACP patients seek preventive care and manage chronic conditions to attain preferred quality/outcome metrics. To achieve these aims, Informant stakeholders believe that clinical care processes, such as care coordination and care management, can influence the effectiveness of the ACP and discuss integrating physical and behavioral health care. Subsequently policy makers must coordinate with provider organizations to support patient engagement and communication initiatives that support ACP success.
- **Accountable Care Effectiveness.** Informants indicate that the environmental context reflects a need for widespread change in the health care system before the ACP will work as expected. State level policy as well as health law reform promulgates facilitators and barriers to achieving ACP objectives, particularly through state policy priorities, funding, and its role as a purchaser of health care. Thus, policy makers must continue to assess and refine current policy and its impacts on ACP providers and patients,

particularly with regard to data availability and contract requirements. Informants also indicate a need to engage local employers and additional health services organizations in an effort to increase ACP enrollment and reduce risk.

- **Despite these barriers, preliminary utilization patterns look promising.** Increasing primary care utilization and decreasing more expensive specialty care, hospitalization, and ED use is moving the needle.
- **The Future of Accountable Care.** Sustainability of the initiative is closely tied to the findings and recommendations outlined through the previous sections. Collaboration with key stakeholders at all levels, open communication, information sharing, and ongoing flexibility through implementation lie at the crux of informants' hopes and concerns for the future. Through Round 2, informants continue to focus on health equity and population health, and have made significant investments in supporting the ACP with regard to managing enrollees' ongoing health. As the ACP moves forward and participants refine benefits, they will focus on keeping patients within their network, by leveraging what they have learned about value-based payment design thus far, and mitigating the systemic effects that keep them from achieving their aims under the initiative. Key decision-makers must ensure that all voices are at the table, innovative solutions are welcome and tested, and health systems stakeholders can rely upon government leaders at the state and local levels to provide an infrastructure to support ongoing change that has a positive impact on the populations of interest.

CHAPTER 5.3.B

Washington State Innovation Models (SIM)

Accountable Care Program for Public Employees (PM3)

5.3.B.1 Abstract

The State of Washington, as part of a State Innovation Model (SIM) grant, is changing the payment model within state employee health insurance plans. The system is moving away from traditional fee-for-service reimbursement to value-based payment,through the creation of two accountable care networks (ACN). New insurance plans were rolled out January 2016 (enrollment occurred in late 2015), in five counties in the state of Washington. The goal of payment reform is to improve member health, improve quality of care delivered, and cut health care costs. By exploiting the geographic nature of the roll-out, this paper estimates the impact the introduction of the ACNs was in the first year on terms of costs, utilization, and quality of care. We find that ACP introduction changed the pattern of care received, with an increase in primary care visits and decreasing specialty care, hospitalization and emergency room use. The changing utilization pattern has not yet lead to lower costs nor changed quality of care.

5.3.B.2 Introduction

By catalyzing improvements in health care information technology, care processes, and care integration, value-based health insurance is expected to lead to improved health and functioning in the enrolled population (Fisher et al., 2012). Recent work indicates that value-based insurance is associated with trends that are expected to lead to improved population health, such as reductions in inpatient and emergency department utilization, and improvements in preventive care and chronic disease management (Kaufman et al., 2017; McClellan et al., 2017). The long-term impacts are yet unknown, given the relatively recent introduction of value-based insurance design.

Despite this uncertainty in long-term outcomes, policies continue to encourage the spread of value-based insurance design. The Patient Protection and Affordable Care Act (ACA) established the Center for Medicare and Medicaid Innovation (CMMI), which started the State Innovation Model (SIM) program in 2013 (Shrank 2013). The SIM program aims to drive the development of effective value-based insurance designs, and has set a target for states awarded SIM grants to shift 80% of care from fee-for-service or volume-based, to value-based payment contracts (Rajkumar, Conway, and Tavenner 2014).

In 2014, Washington state received a SIM Round 2 Model Test Award to test reforms in health care payment and service delivery including value-based insurance programs (Centers for Medicare & Medicaid Services 2014). One of five major initiatives[1] developed under the Washington State SIM grant is the creation of a value-based accountable care insurance program available to public employees, which launched in 2016. The initial roll-out included five counties within the state, encompassing the Seattle and Vancouver regions. In 2017, four more counties were included. This particular reform lowers out of pocket costs, through lower premiums, without increasing individual financial risk in the case of bad health outcomes through stable co-payments and co-insurance rates. Premiums charged for single individuals decreased by 30 percent, without increasing co-

1 The other 4 initiatives are: supporting accountable communities of health (ACH), shaping the practice transformation support hub, and 2 payment reform models within the Medicaid program. While both the ACHs and the practice transformation hub could theoretically also impact state employees, we think this is unlikely having a large effect during our study period. The ACHs focus, while not exclusive, is on Medicaid MCO providers. The Practice transformation hub portal launched in January 2017.

payments or out-of-pocket maximums. Employee enrollment in the new program is voluntary.

Using administrative data from state employees in Washington, and a difference-in-difference model exploiting the geographic difference in the introduction of the accountable care program, we test the impact of the introduction of a value-based insurance reform on health care utilization, health care spending, and quality of care delivered. We find that within the first year, health care utilization patterns have changed, with an increase in the probability of primary care visits and decreases in the probability of receiving more intensive care, such as specialty care visits, ED visits, and hospital admissions. However, we find no corresponding changes in health care spending, as measured by a relative value unit (RVU)-based proxy for prices. We also find no impact on quality measures.

5.3.B.3 Background

WA State Health Insurance

Pre-reform. Prior to 2016, state workers and retirees could choose health insurance through Group Health, Kaiser Permanente, and the Uniform Medical Plan (UMP). All insurance companies had 4 products – a high deductible plan, a "classic" plan, and two variants for "smart-health," where individuals could do more screening and more reporting back to the insurance company about activities and health behaviors in exchange for a premium deduction. Kaiser (concentrated in the Washington suburbs of Portland, Oregon) and Group Health (concentrated in Seattle-King County and Spokane, WA) ran relatively closed health insurance and provider systems, and accounted for 34 percent of the active state-employee enrollment in 2015[2]. UMP offered traditional, fee for service health insurance coverage, and enrolled 66 percent of active employees in 2015 (HCA, 2015). While UMP had a preferred provider network, which led to lower co-insurance rates and decreased paperwork for patients, the preferred provider network was very inclusive. As the primary insurance provider within the state with a mandate to have an adequate network of providers in all counties, most health care providers in the state were within the UMP preferred provider network.

2016 Reforms. In 2016 (enrollment in Fall 2015), the state introduced UMP-Plus, a new value-based insurance plan that has two networks. UMP-Plus is a self-insured health plan, administered by Regence BlueShield and Washington State Rx Services. There are two networks of providers – one was offered by the University of Washington Medicine Accountable Care Network (UW) and the other by Puget Sound High Value Network (PSHVN). Employees and retirees that are not enrolled in Medicare who live in the 5-county Puget Sound region for the 2016 calendar year (King, Kitsap, Pierce, Snohomish, and Thurston counties) were the first eligible.

The new plan promised lower premiums, lower deductibles, coordinated provider networks, and the same insurance coverage as provided in UMP Classic. See Table 1 for a benefit and cost comparison between UMP Plus and UMP Classic. While this combination of lower premiums and same coverage typically means higher co-payments for services delivered, the copayments were identical between UMP Classic and UMP Plan plans if one used the network providers within the UMP Plan (HCA, 2016a). The providers also promised to collaborate to reduce unnecessary care; they were to be committed to using best practices and research-based medicine, and to work with patients to make the best decisions for their health. This was touted as an especially valuable benefit for members who have multiple providers (HCA, 2016b).

2 Kaiser Permanente acquired Group Health Cooperative in 2017.

Table 1: Comparison of UMP-Plus and UMP-Classic

	UMP Plus	UMP Classic	% Change
Premiums: State and Higher Education Employees			
Employee only	59	84	30%
Employee + Spouse	128	178	28%
Employee + Children	103	147	30%
Full family	172	241	29%
Premiums: non-Medicare retirees			
Subscriber only	552.4	576.78	4%
subscriber + spouse	1098.77	1147.53	4%
Subscriber + children	962.18	1004.84	4%
Full family	1508.55	1575.59	4%
Deductibles			
Medical (per person, capped at 3)	125	250	50%
Prescription Drugs	0	100 for Tier 2 or 3	0%-100%
Medical OOP limit	2000 per member 4000 family	2000 per member 4000 family	none
Prescription drug OOP limit	2000 per member	2000 per member	none

While the insurance coverage is similar and out-of-pocket costs are lower, the one major change from a consumer-perspective is the creation of a network. UMP Classic covers virtually all providers in the state, so by definition any network created would be narrower by comparison. Every provider within the ACN networks is also within the preferred provider network within UMP Classic. UW Medicine claims to be the most comprehensive health care network in the Puget Sound region, offering over 1,000 primary care providers, 1,000 clinics, 5,000 specialists, 33 urgent care clinics, 15 hospitals and 15 emergency departments in 2016 (HCA, 2016c), and expanded in 2017. The network includes specialized hospitals like Seattle Children's, Mary Bridge Children's hospital, and the Seattle Cancer Care alliance. PSHVN is slightly smaller and operates in some different areas, although still had a network with over 1,000 primary care providers and 5,500 specialists in 2017.

While the networks had the possibility of being unique, there is overlap in providers between the networks. There is one large provider within both networks who operates in King, Pierce, and Kitsap counties, and both networks contracted with Seattle Children's hospital.

One way to gauge the narrowness of the network is to examine how many people in UMP Classic in 2015 were primarily seeing doctors that eventually became affiliated with UMP-Plus. Our calculations suggest that out of 48,188 state-employees living in the 5-county region in 2015 eligible to switch, almost 20 percent were seeing doctors that were later affiliated with one of the UMP-Plus networks. This is similar for the 2017 expansion in the 4-county region, with almost 20 percent of state-employees already seeing doctors that were later affiliated with a network.

While these reforms were enacted due to the state winning additional funding from the Center for Medicare and Medicaid Innovation (CMMI) as part of the State Innovation Model, it is important to note that no SIM funding went to subsidizing premiums for state-employees. In addition, no additional revenues were raised – the funding rate, historically, has been set by the legislature and did not change around this time, and the

employer contribution to premiums is set by collective bargaining agreement. In 2017-2019, it was set to be 85 percent of the total weighted average of the projected health care premiums across all plans (HCA, 2018). Negotiated prices and the ACNs accepting both upside and downside financial risk to maintain or improve their quality metrics while decreasing costs of treating their patients are the long-term goals in keeping these contracts and ACN plans financially sustainable.

Enrollment. As of January 2016, after the first open enrollment offering these plans, 10,571 beneficiaries, or 3 percent of the total non-Medicare beneficiaries, were enrolled in a UMP-Plus plan. Based on our data, we estimate approximately one-third of eligible employees enrolled in a UMP plan in 2015 enrolled in a UMP-Plus plan in 2016. Enrollment has been increasing since (see Figure 1). In 2017, the UMP-Plus extended its geographic reach to four more counties: Skagit (only UW-ACN); Spokane (only PSHVN); Yakima (only PSHVN); and Grays Harbor (both). There are plans to continue expansion in 2019.

There were five primary goals for this health insurance reform: (1) Improve health status of state-employees; (2) Improve quality of care; (3) Reduce costs trends over the life of the contract; (4) Decrease inappropriate utilization; and (5) Improve member experience. Many of these are difficult to measure with claims data. In this paper we estimate the impact the introduction of the ACN had on patient utilization patterns, spending on that utilization, and quality of care within the first year.

5.3.B.4 Data

We use longitudinal administrative data for UMP-covered employees, containing information from January 2013 – December 2016, at the per-member-per-month level. We limit the sample to examine individuals age 18 to 65 who are not enrolled in Medicare, since Medicare enrollees were not eligible for UMP-Plus. With these age-based restrictions, our data cover approximately 134,000 state-employees and retirees over the 4-year period. Dependents of state employees were excluded in the study.

Outcome measures

Health Care Utilization. One of the stated goals of the reform was to decrease inappropriate utilization. However, defining inappropriate utilization is difficult to nearly impossible from simply looking at claims data without reviewing medical records. Some researchers have performed detailed review of medical records in order to determine appropriateness of various procedures (Chassin et al., 1987), while Medicare has relied heavily on 30-day readmission rates (Boccuti and Casillas, 2017). We do not have either of those measures in the administrative data. Instead, we examine utilization by component, indicators for any visits within the month to: inpatient hospitalizations, emergency department (ED), outpatient, primary care physician (PCP), and specialty care. Specialty care includes all physical health specialists, but not mental health or substance abuse disorder specialists, as presented in the table in Appendix A.5.9. Pharmacy utilization was also excluded for this study.

Health Care Spending. Limiting health care spending is an explicit goal of the health insurance reforms. However, we do not have access to provider prices due to contracting privacy concerns. Instead, we have allowed amounts that reflect statewide average level of reimbursement for each category of service. This is achieved through, first, the assignment of relative value units (RVUs) for all services, for all UMP Plans (UMP Classic, UMP CDHP and UMP Plus). Second, the RVUs are then converted to dollars for all UMP plans, defined as the average negotiated allowed amount per RVU, calculated per year and per benefit category (e.g. inpatient medical admissions, emergency room, office visits.) See appendices A.5.10.A and A.5.10.B for details of these calculations. To be clear, this means we are estimating the impact of the reform on the intensity of care received, not necessarily the actual price paid for the care. We use these imputed spending amounts and

examine the following measures of health care spending: amount of spending in inpatient, ED, primary care, and total spending.

Health Care Quality. The quality of health care received is also difficult to measure. We rely on the following seven process measures, available at the individual-level annually and merged to our administrative dataset.

- Adult BMI documented during the measurement year or the year prior, age 18-74 with an outpatient visit
- Antidepressant medication management, age 18+ with a diagnosis of major depression, at 12 weeks and 6 months.
- Retinal eye exam, patients age 18-75 with diabetes (type 1 or 2)
- Cervical cancer screening (women age 21-64)
- Breast cancer screening (women age 50-74)
- Colorectal cancer screening (age 50-75)

These measures were derived from claims (screenings, antidepressant medication management, eye exam) or claims combined with clinical data (BMI assessment). They were all HEDIS measures and NQF-endorsed (HCA, 2018).

Control Variables

The dataset contains limited personal information but fairly comprehensive information about health and health insurance. We have demographic information including age, race, gender, and the county in which the beneficiary lives. We have some information about employment and the sector in which the individual works through the reason of health insurance eligibility (active state employee, commodity, K-12 employment, post-secondary education employment, leave without pay, COBRA, and retiree benefits). We have individual health information, which includes self-reported smoking status and the claims-based VERISK risk score (Cid et al., 2016).

The database provides fairly comprehensive information about the insurance contract. We know who is insured under the plan (employee only, employee and child, employee plus spouse, employee and family), and the type of insurance plan (UMP Classic, UMP Plus (UW or PSHVN), UMP Consumer-Driven Health Plan (CDHP)). We also know whether the doctors they primarily saw in a year were enrolled in either UMP-Plus plan in 2016. We include these as controls as well.

5.3.B.5 Study Design and Data Analysis

We capitalize on the geographic-specific implementation design and use difference-in-difference estimation in order to isolate the impact of the ACP network on health care utilization, spending, and quality. Since signing up for UMP-Plus is a choice, and likely related to one's health care utilization, it is hard to identify the impact of the ACP by examining this selected group. However, we have the benefit of having the ACP being available in only a selected geographic region. Thus, we can use difference-in-difference estimators to test whether the outcomes of interest are changing in the expansion region, compared to the non-expansion regions.

The treatment group for the initial roll-out of the payment reform are the UMP members that live in the five county Puget Sound Region. The control group consists of UMP members who live outside of the treated counties. The difference-in-difference design isolates the impact of an intervention as long as the control group is valid. While there is no perfect way to identify a control group, there are statistical tests that give confidence to the validity of the control group. First, we test for balance on observable characteristics between the

treatment and control population [See Table 2].

Second, we test for similar trends between the treatment and control groups before the intervention. This is a key statistical property that determines the composition of the control group is meeting the "parallel trends" assumption. This means that, prior to treatment, the control group and the treatment group(s) have similar time-trends (after controlling for demographic or other factors). The control group and the treatment group do not need to be receiving the same levels of care – for example, they do not need to be spending the same amount—but the growth in the spending over time in the pre-intervention period should be similar between the two groups. If this assumption is met, it helps alleviate concerns about differential secular trends that could be causing any divergence in outcome measures instead of the treatment itself.

Table 2: Descriptive statistics

Person Level	2015		2016		
	Not in 5-county	5-county	Not in 5-County	5-county	
				Not UMP-Plus	UMP-Plus
	N	N	N	N	N
N (People)	55,475	93,190	57,004	65,911	31,687
Age(years)					
15-20	4%	4%	4%	4%	3%
20-25	12%	11%	12%	12%	8%
25-30	6%	7%	7%	8%	8%
30-35	8%	10%	9%	10%	10%
35-40	9%	10%	9%	10%	10%
40-45	9%	11%	9%	11%	11%
45-50	10%	11%	10%	11%	11%
50-55	12%	12%	11%	11%	12%
55-60	14%	13%	14%	12%	14%
60-65	16%	12%	16%	11%	13%
Female	56%	57%	56%	55%	62%
State employment Sector					
Active State	66%	88%	66%	87%	89%
K-12	5%	1%	6%	1%	1%
PS	17%	5%	17%	6%	4%
Retired	9%	5%	8%	4%	4%
Other	3%	2%	3%	2%	2%
Self-reported Smoker	18%	14%	16%	13%	12%
Health Insurance Information					
ACP UMP	0%	0%	4%	0%	100%
Uniform Medical Plan	93%	94%	88%	91%	0%

Uniform Medical Plan CDHP	7%	6%	8%	9%	0%
Coverage					
Employee Only	27%	31%	28%	32%	33%
Employee and Child	13%	14%	13%	14%	13%
Employee and Family	33%	33%	33%	33%	31%
Employee and Spouse	24%	19%	23%	19%	20%
Unknown	3%	2%	3%	3%	2%

Estimation Model

To estimate the effect that UMP-Plus has on our outcomes of interest on the entire population, we capitalize on the geographic-specific implementation design and use a difference-in-difference framework to evaluate the effect of health insurance reform. We estimate the following regression:

$$Y_{i,c,t} = \beta_1 + \beta_2 X_{i,t} + \beta_3 5C_t + \beta_4 Post_t + \beta_5 5C_t * Post_t + y_t + \varepsilon_{it}$$

where Y is our outcome of interest, health care utilization, health care spending, or quality of care. C, M and Y are county, month and year fixed effects, respectively. $X_{i,t}$ are the covariates measured in year t, including beneficiary demographics (age in 5-year age bands, gender, county of residence, 31 aggregated condition categories (ACC) based on previous diagnoses (Cid et al., 2016)), insurance contract characteristics in 2015 (Contract Type (individual, spouse, child); and eligibility type (active employee, K-12 coverage, commodity commission coverage, cobra coverage, retiree coverage, other coverage). 5C is an indicator variable for living in the 5 treated counties, post is an indicator for 2016, and the interaction term identifies the difference in health care outcomes in the 5 county region after the introduction of UMP-Plus.

When Y is measuring health care utilization, we employ logit regression models. When estimating health care spending, we use a two-part model due to the skewness in medical cost data; the first part of the model estimated the probability of any costs during each month using a logit model, while the second part estimated the magnitude of costs when costs were greater than zero using a generalized linear model with gamma family and power link of 0.95. The observations are at the per-member per-month level.

When Y is measuring health care quality, the observations are at the member-year level. We estimate the relationship using logit regressions.

All models are clustered on the county, to account for potential correlation among members living in the same county because it is the definition of the intervention. We run all regressions on adults (18<=age <65) who were eligible to sign up for UMP-Plus.

5.3.B.6 Results

Impact on Health Care Utilization

Table 3 presents the estimated marginal effects of the intervention within the first year of the intervention. Each row presents the results from a different regression model. Columns 1 and 2 indicate the outcome for each regression, column 4 indicates the model used. Column 5 presents the marginal effect of the intervention, while columns 6 and 7 present the 95% confidence interval of this estimate. Finally, in order to help gauge the size of the estimated effect, column 8 presents the mean value of the outcome variable in 2015, before the intervention.

We find that the probability of having an inpatient hospitalization and the probability of having an ED visit decreased in the 5-county intervention region within the first year of the introduction of UMP-Plus. The predicted probability of hospitalization decreased by 0.03 per month. This is statistically significant and clinically meaningful, based on a mean monthly hospitalization rate of 0.004, this is a 7.5 percent decrease in the probability of hospitalization. The predicted probability of an ED visit also decreased significantly due to UMP-Plus, with a percentage point decrease of 0.09 per month. We find promising signs that outpatient visits could be declining, but it lacks statistical significance.

We find the anticipated effect of an increase in the probability of primary care physician visits, with an increase of 0.9 percentage points per month. We also find the anticipated effect of a decrease in specialty visits for physical health, with a 2.6 percentage point decrease in the probability of a specialist visit per month, representing a 22 percent drop in visits.

Impact on Health Care Spending

While we detect significant impact of UMP-Plus introduction on utilization patterns, we do not find any impact on the total spending amount in the three categories explored or in total spending. The direction is as anticipated, with decreases in inpatient and ED spending and increase in spending on primary care, but are not statistically significant.

Table 3: Difference-in-Difference Results: ACN impacts on utilization, spending and quality among state employees in SIM Year 1, per member per month units of observation

Outcomes	Estimating Model	N	Marginal Effect	95% CI		Mean in 2015
Health Care Utilization	Logit model					
In-patient hospitalization Visit (Yes/No)		6,699,573	-0.000271**	-0.000502	-0.0000399	0.004
ED visit (Yes/No)		6,699,573	-0.000919***	-0.001406	-0.0004319	0.011
OP visit(Yes/No)		6,699,573	-0.00150	-0.005928	0.0029273	0.092
PCP care visit (Yes/No)		6,699,573	0.00873**	0.0014342	0.0160316	0.135
Specialty Care visit (Yes/No)		6,699,573	-0.0256***	-0.041925	-0.0093714	0.115
Health Care Spending	Two-part model					
In-patient Hospitalization		6,699,573	-0.4270	-7.7598	6.9058	98.37
ED spending		6,699,573	-0.7780	-1.9855	0.4295	17.84
OP spending			+			143.54
PCP care spending		6,699,573	2.3890	1.0116	3.7664	20.85
Specialty Care spending			+			19.65
Total Spending in all categories		6,699,573	+			

Quality of Care	Logit model				
Adult BMI		126,858	-0.000653	-0.014711	0.0134048	0.0
Depression Medication Management - 12 weeks		5,021	0.0394357	-0.013876	0.092747	0.7
Depression Medication Management - 6 months		4,982	0.0385	-0.013478	0.0904033	0.6
Diabetes patients with eye exam		15,787	0.0142	-0.011665	0.0401568	0.5
Cervical Cancer Screening		85,367	-0.00832*	-0.017131	0.0004864	0.7
Breast Cancer Screening		51,809	-0.0178	-0.051612	0.0159126	0.7
Colorectal Cancer Screening		75.556	-0.000383	-0.016796	0.0160293	0.5

Notes:

Sample: Washington state employees insured by Uniform Medical Plan (UMP), age 18-64 years, January 1, 2013-December 2016.

* p-value < 0.10,

** p-value < 0.05

*** p-value < 0.01

+ indicates lack of model convergence

All models also control for indicators for year, month, age, female, race, health condition (risk score, current), county, eligibility type, smoking status, member assignment, contract type, dependent code. Two-part model is specified as a with log link and gamma family. Quality of care measures are annual, all other data are monthly.

Impact on Quality of Care delivered

Much like the impact on health care spending, we do not find evidence of a change in the quality of care received due to the UMP-Plus introduction. The anticipated effect would be increases on all seven measures, but we do not find consistent suggestive evidence in this domain.

5.3.B.7 Conclusions

The creation of a value-based insurance plan with upside and downside risk was successful based on enrollment. One year after launch, we find that the ACP is impacting how patients interact with the health care system – they are more likely to seek primary care and less likely to see specialists or use more intense care available through the emergency room or inpatient hospitalization. These effects are statistically significant even though only one-third of the UMP-Plus eligible population actually enrolled in year 1. These findings are consistent with the literature (Kaufman et al., 2017; McClellan et al. 2017). Further work should examine whether these changes are due to doctors changing their practice, or insured individuals changing their doctors.

However, spending on care has not decreased as quickly. Our results suggest that cost increases and decreases may follow the change in the utilization pattern, but do not yet achieve statistical significance within the first year. One caveat to note again is that we are measuring a proxy of actual costs, essentially an intensity of utilization measure which should be highly correlated with costs. Together with the utilization impact, these findings suggest that we are not seeing large changes in the composition of the population using hospitals or ED visits, even if the probability of a hospitalization or ED visit decreases. The hospitalizations and ED visits that are occurring are receiving the same intensity of care. Further, we lack the price data required to accurately assess whether the state of Washington achieved cost savings.

Our analysis of the quality of care metrics suggests that widespread practice transformation was not achieved within the first year of the ACP. This is not surprising; transformation takes time even if the providers are measured and reimbursed based on these quality metrics. Future work should look into barriers to achieving these process improvements, including patient willingness, and availability of screening.

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5.4 Multi-Payer Data Aggregation Solution (PM4)

BRIEF

5.4.A

Washington SIM Evaluation

Greater Washington Multi-Payer Program and Data Aggregation Solution

The purpose of this component of the SIM Evaluation was to evaluate implementation of a data platform that integrates electronic health record (EHR) and claims/encounter data to facilitate population health management and the growth of value-based payment (VBP) contracting in two health care organizations.

Methods

Two rounds (2017; 2018) of semi-structured key informant interviews were conducted with administrative leaders in three participating organizations: To triangulate results, the lead investigator and coders reviewed thematic findings, addressed discrepancies, and reached consensus on interpretation. Information extracted from semi-annual and annual reports was linked to interview responses. This paired information was the primary source for this qualitative evaluation.

The Washington State Health Care Authority (HCA) distributed requests for information from health care provider organizations and information technology (IT) vendors, and responding organizations replied with information on their characteristics, capacity, and specific interest. A series of informational meetings and contract discussions led to three contracts: one with a national IT vendor, and two with provider organizations: (1) a large, urban-based physician network of 1100-plus specialty and primary care providers; (2) a rural hospital system with three rural health clinics.

Findings

The data platform was not completed by the end of SIM (January 2019). Implementation of an integrated data platform has experienced a mix of challenges and potential for success:

Two of the organizations (the IT vendor and one provider organization) expressed disappointment in delays in receiving, and gaps in claims data needed for the integrated data solution. Both reported little progress in using such data to improve quality, cost, health outcomes, or patient experience, with the exception of data solution-related improvement in Medicare wellness visits. Both organizations noted the lack of clinical data in the data aggregation. Of those two, the provider organization is beginning to see the potential of an integrated data platform, and the process of obtaining clinical data is almost complete as of November 2018. That provider entity has used additional means to engage providers and clinical staff, including monthly report cards from payers on HEDIS quality metrics, preventive screening tools, direct outreach, and monthly sharing of goals and performance.

The third participating organization (physician network) has shifted from integrating data through the contract vendor to an in-house solution, with some promising results. The network is concentrating on providing patient profiles and performance reports to member practices. They have managed to close some care gaps and to provide actionable data to member practices – enabling follow-up with patients and increasing their use of primary care. Disparate files are now within a single view-- available to population health management, risk adjustment, and internal reporting tools. This organization is working with a regional multi-specialty medical group partner to enhance performance in its Medicaid programs. They have built a dashboard of 17 quality metrics based on their internal claims data.

Major facilitators include:

- Internal executive support and prioritization of Model 4 objectives
- HCA policy leadership and the agency's security and privacy office
- Provider education encouraging utilization of support staff at the top of their license
- Increased market penetration of VBP

Major barriers to implementation:

- Delays introduced by a difficult data security and design review process
- Required changes by Medicaid managed care organizations security and transmission of member assignment files
- More than 50 organization-based, non-interoperable EHR record systems
- Lack of timely EHR data feeds

Conclusions

Realizing benefits of data integration in a VBP contracting environment, each organization is sustaining efforts to develop an integrated EHR/claims/encounter data platform in the face of significant IT and operational challenges.

Implications for Policy and Practice

- Based on experience of the first 18 months of PM4 implementation, considerable external resources will be required to build an ongoing data platform that will effectively integrate timely and actionable clinical and financial claims-based data from multiple payers.
- Washington state should fund explicit comparisons of "best practices" of the in-house and external vendor in creating interim data aggregation solutions.

CHAPTER 5.4.A

Washington SIM Evaluation

Greater Washington Multi-Payer Program and Data Aggregation Solution

5.4.B.1 Introduction

This chapter of the Washington State Innovation Model (SIM) Evaluation Final Report addresses the implementation of Payment Redesign Model 4: The Greater Washington Multi-Payer Program and Data Solution. This program (henceforth referred to as "Model 4") is one of the four Value-Based Payment (VBP) components of the Healthier Washington initiative supported by a grant from the Center for Medicare and Medicaid Innovation to the Washington State Health Care Authority[1].

Model 4 is being implemented in Washington state initially within two voluntarily participating provider organizations, one of which (PO1) is currently supported by an external information technology (IT) vendor in implementing the data aggregation solution, and the other (PO2), which is developing an in-house solution to data aggregation after initially contracting with the same external vendor.

PO1 is a rural provider organization comprised of a 10—bed critical access hospital and three affiliated rural health clinics. The medical center is governed by a board of commissioners on behalf of the public hospital district that owns and operates the hospital and three rural health clinics. The providers of the medical center and its three primary care clinics recently have formed a Medicare Accountable Care Organization (ACO), changing the organization's approach to caring for its Medicare fee-for-service (FFS) patients. The organization has built a dedicated patient portal that allows 24/7 access to any of the hospital departments or the three primary care clinics.

PO2 is an independent practice organization, or IPA, comprised of more than 1100-member primary care physicians and specialists in western Washington. The core organization executes managed care contracting on behalf of its provider member practices and is fully staffed with nurses, social workers, coders, billers and other support personnel. The network comprises 56 different specialties and sub specialties. The principal relationship between the IPA and provider members is the payer contract. The IPA is fully delegated to assume actuarial risk and has extensive experience in managed care contracting, including two-sided risk, shared savings arrangements, and Medicare Advantage.

The underlying idea behind Model 4 is to aggregate clinical electronic health record (EHR) data on a broad multi-payer population with claims/encounter data for the same population covered by those multiple payers. The programmatic objectives are twofold:

(1) To develop an integrated claims and clinical data platform that can be utilized for population health management across multiple public and private payers

(2) To tap the potential of that integrated data platform (the "data aggregation solution") for accelerating and scaling VBP adoption across Washington state – beginning with persons covered by Medicaid managed care and Public Employee Benefit Board (PEBB).

1 The project described was supported by Grant Number 1G1CMS331406 from the Department of Health and Human Services, Centers for Medicare & Medicaid Services. The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of the U.S. Department of Health and Human Services, or any of its agencies. The research presented here was conducted by the awardee. Findings might or might not be consistent with or confirmed by the findings of the independent federal evaluation contractor. Direct funding for this project came from a subcontract with the Washington State Health Care Authority (HCA). The contents of this publication are solely the responsibility of the authors and do not necessarily represent the official views of HCA or other Washington state agencies.

Thus, Model 4 is not a VBP model per se, but an integrated data solution that seeks to create an IT platform to support providers' capacity to manage health, healthcare quality, and costs for defined patient populations, while enhancing provider experience.

5.4.B.2 Context

The funding for SIM originally was focused on advancing the "Triple Aim" of:

(1) Better population health outcomes
(2) Better clinical quality of care, especially for persons with co-occurring physical and behavioral health conditions
(3) Lower growth in per capita health care costs

As the Healthier Washington (HW) initiative has progressed since its inception in February 2015, the Washington State Triple Aim has been augmented to include a fourth aim (thus forming a "Quadruple Aim"):

(4) To improve provider experience

These overall HW goals establish the objectives for Model 4. In this qualitative evaluation we examine the process of specific Model 4 implementation, which is instrumental to achieving the Quadruple Aim.

Nature of the Model 4 Intervention

Figure 1 displays the difference between the information systems support in the current state of the art and the desired state required to support effective population health management.

The existing state of the art in information system support for population health management relies on separate claims-based reports from independent health plans and EHR-based clinical records. These disparate sources thus do not directly integrate health and clinical information with health care utilization and cost (spending) information. Failure to integrate these information inputs encourages transaction-based care and a fee-for-service versus whole-person care perspective. Fragmentation of clinical and financial information further limits the primary care team's ability to manage population health.

In contrast, the desired state under Model 4 integrates claims-based and clinical information from multiple sources within a common data platform for population health management. This integrated data platform would facilitate access by identifying gaps in care, promote team-based, coordinated care, and thereby enable expansion of the patient population served by the provider organization.

The aspirations of the Model 4 intervention suggest a set of research questions for the qualitative evaluation presented in this chapter. We outline those questions in the next section.

5.4.B.3 Research Questions for Evaluation

This evaluation of Model 4 focuses on implementation of the intervention, and draws on qualitative information sources for its analysis. The UW team has articulated the following set of research questions for evaluation:

(1) What are the provider organization and contract IT vendor objectives for this intervention?
(2) What organizational strategies are being deployed to attain those objectives?
(3) To what extent have those objectives been attained in Model 4 implementation?
(4) What have been the major facilitators and barriers to attaining those Model 4 objectives?
(5) What lessons have been learned from Model 4 implementation?
(6) How do the Model 4 participating organizations plan to sustain the implementation of an integrated data platform when the SIM funding ends?

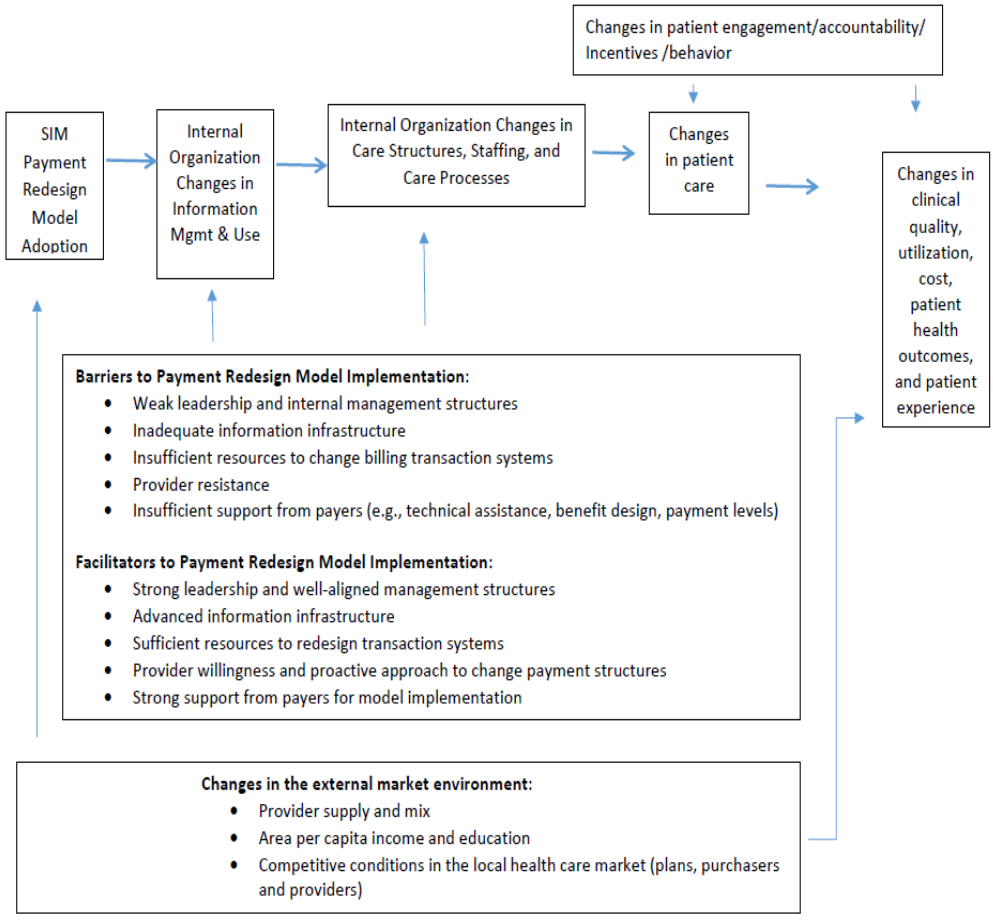
The methods for answering those evaluation questions are delineated in the next section of this report.

5.4.B.4 Evaluation Methods

Conceptual Framework.

To address the six research questions, the UW team developed a conceptual model, based primarily on previous studies of value-based payment (Conrad et al. 2016)[2], and also informed by the Consolidated Framework for Implementation Research, or CFIR (Damschroder et al. 2009)[3]. Figure 2 depicts our conceptual model:

Figure 2. Conceptual Model of Payment Model Changes' Effects on the Provider Organization and Patient Outcomes



For example, the model implies that VBP adoption not only will drive changes in the organization's management and use of information (the central purpose of the Model 4 integrated data platform), but also will spur downstream internal care structures, staffing, and care processes. In turn, those changes in structures and processes will prompt direct changes in patient care, which will lead to ultimate impacts on health care quality, utilization, cost, health outcomes, and patient experience. The patient role is explicitly acknowledged; changes in patient engagement, accountability, incentives, and behavior are important factors in changing patient care

2 Conrad DA, Vaughn M, Grembowski D, Marcus-Smith M. Implementing value-based payment reform: a conceptual framework and case examples. Med Care Res Rev. 2016 Aug; 73(4): 437-57.

3 Damschroder LJ, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implement Sci. 2009 Aug 7; 4:

patterns and ultimate impacts. Internal and external barriers and facilitators to VBP implementation act as "modifiers" to the necessary changes in internal organization management and use of information, as well as well as the accompanying changes in care structures, staffing and processes. The model incorporates the role of external environmental factors (e.g., market conditions and demographics) in influencing adoption of VBP, as well as the ultimate impacts of VBP adoption.

This conceptual model was used as a guide for the semi-structured interview instrument used to query key informants for the evaluation[4].

Data Collection: Interviews and Background Information.

Interview Round 1: Between May 2017 and August 2017, the lead investigator performed a total of six key informant interviews with administrative leaders in the three participating organizations. Executives with primarily administrative or clinical backgrounds (training) were carefully selected to ensure potentially differing perspectives were represented. All respondents participated in phone interviews using a single questionnaire. Each interview, which lasted between 45 and 75 minutes, was recorded and then transcribed by an external transcription service. De-identified transcripts were then subjected to three rounds of coding using Dedoose qualitative software. To provide structure for qualitative findings based on the framework that guided this study, a team of two coders initially coded by interview question and then coded twice more using (a) open followed by (b) axial coding approaches to uncover specific themes and their relationships by interview question. Two coders assessed thematic results, discussed areas of agreement or divergence, and reached consensus based on the study's purpose, context, and structured interview framework. To triangulate results, the lead investigator then reviewed thematic findings independently, addressed discrepancies, and clarified results working collaboratively with the larger investigative team.

Interview Round 2: Between April 2018 and June 2018, the lead investigator performed nine key informant interviews with administrative leaders in the three participating organizations – following a protocol identical to that of Round 1, except that each interview was automatically recorded and simultaneously transcribed by Zoom®, rather than sent to an external service as in Round 1.

Background Information: The final source of information for this evaluation was a series of annual and semi-annual reports from each of the two provider organizations, beginning with the January 2017 annual report (covering 2016), followed by reports in July 2017, January 2018, July 2018 and November 2018. The research assistant and lead investigator extracted information from those documents relevant to each of the six research questions. Those extracts were then paired with the key informant interview responses to provide more detailed information on each research question. That paired information is the primary source for the qualitative analysis in this evaluation. We next present the major findings from this paired interview and report-based information, organized by research question.

5.4.B.5 Major Findings by Research Question

What are the provider organization and IT vendor objectives for Model 4?

The organizations set out different objectives to achieve through integrated data solution reform. The first organization sought to use data to better identify high-risk and high-cost patients, to coordinate and thereby improve the quality of their care through integrated patient information. They also saw this as an opportunity to identify low and high performing providers and crafting targeted strategies.

In a similar vein, the second organization also mentioned monitoring individual provider performance and producing cross-provider comparative data as an objective behind the Model 4 engagement. Another objective

4 The key informant interview instrument is duplicated in Appendix 1 to this paper.

for that organization was to make the data more real-time, and therefore, actionable for providers. Actionable data would allow non-physicians to assist in patient engagement, namely, marketing, screening, and referrals. This way they also expected to invest less time on traditional administrative tasks and more on population health management. Improving performance across providers in different regions would also help to increase the market value of the organization.

The third organization's objectives focused on integrating data sources to address care gaps and generally to improve cost, quality, and patient experience. However, the organization also anticipated that their involvement in the Integrated Data Solution would lead to more business opportunities with value- based payment. According to them, success in this project would mean more opportunities in the future.

What organizational strategies are being deployed to attain Model 4 Objectives? The three participating organizations are pursuing distinct approaches to an integrated data solution. The vendor organization is building an interface to another organization's EHR and extracting data from that EHR to build a single clinical patient record. That clinical record will be joined with claims-based cost data in a data system that records the clinical and utilization paths of patients across different practices and hospitals. It should be more flexible in the use of diverse data sources from different EHRs and will not require adaptation for each distinct data source. The organization seeks ease of data access, use, and transfer.

For its part, one provider organization is working with the contract vendor to develop a population health management system that includes, but does not rely on, Medicaid data. The approach is grounded on tracking quality metrics (starting with Medicaid) drawn from the organization's EHR and then doing direct outreach to patients who show up on a "missing services" list.

In parallel, the organization sends monthly report cards to providers. That monthly report card is based on data from two Medicaid MCOs: Amerigroup and Molina. This information is sent out and discussed at clinic huddles. All members of care teams are actively involved in improving the quality of care. The Care Transformation team identifies the quality measures in need of greatest improvement and takes this information to the clinics and develops strategies and initiatives to improve specific quality measures.

The report card tracks all 17 quality metrics that are in the Model 4 contract with the Health Care Authority. For example, those measures include adult MBI assessment, anti-depression medication management, blood pressure control, comprehensive diabetes care, well-child visits, medication management for asthma, and an array of preventive screenings.

The same organization has initiated a number of other changes:

- Increased visit times from 15 to 20 minutes, which has been well received by providers and patients. Providers report this is giving them more time to address preventive screenings during one visit -- for example, turning a routine office visit into a well-woman exam and screening for cervical cancer.
- The organization has implemented a Preventative Health Agenda tool. This tool was developed by their medical assistants to help maximize their workflow processes to identify preventative health screenings that the patients they are seeing that day are due for. The tool covers all of the clinical quality measures that are included as part of the Model 4 contract plus additional measures.
- Similar to a previously mentioned provider organization, the network delivers monthly quality reports to its primary care providers, but the delivery is done in person via practice advocates. From 2019, monthly reports will be accompanied by quarterly action plans to drive the quality improvement process. The organization is currently providing motivational interviewing training to staff members who deliver those reports and action plans.

- A steering committee has been established which includes key stakeholders from the provider organization and the two MCOs. These members meet quarterly, alternating locations, to discuss the current status of the clinical quality measures, medical loss ratio, and future goals. On a monthly basis, the members have a conference call to touch base on any outstanding questions, new initiatives, or requests.

The third organization's approach to an in-house integrated data solution starts with educating and engaging providers and staff. One of the most valuable approaches they have implemented so far is engaging with providers in face-to-face conversations to explain the VBP efforts. By building data structures internally, the organization can "get that information in [their] current system to be able to produce it, make it replicable quickly." The plan is to develop a method of streamlining data so providers can compare their patients to other patients of similar demographics. They hope these data will be available and analyzed weekly. The organization also seeks to create a stronger sense of urgency to implement VBP and care delivery reforms and will use IT and state pressure for VBP to ramp up that urgency.

This provider organization also has partnered with an external vendor to demonstrate that an interactive patient calling system would benefit both the patient and provider in closing care gaps, scheduling appointments for comprehensive wellness exams, and establishing care with the primary care provider. As of early 2018, outreach campaigns were completed for several of their smaller primary care clinics in the following two areas, Colorectal Cancer Screening and Breast Cancer Screening. The engagement rate for both campaigns was between 40-43%, which means that the patient answered the call, accepted the information that care was due, gave information indicating the care had already been done and the general date, or requested to be transferred for scheduling. The provider credits the success of this interactive calling system for its ability to identify itself on a caller ID screen as the primary care practice and when transferring to schedule, the system transfers to their primary care practice or location closest to the patient for the service in the campaign. In 2018, plans were underway to implement a series of campaigns on topics of establishing care, comprehensive health assessments, flu vaccine, colorectal cancer screening, breast cancer screening, diabetic eye examination and potentially others.

In keeping with its focus on quality improvement and value-based physician incentives, in 2018 the organization implemented its Physician Quality Incentive Program (PQIP). The program incentivizes primary care providers for managing their entire patient panel – ensuring they all have visits within a calendar year, accurate documentation and coding, and attempted care gap closure. The program consists of the following components:

- PMPM reimbursement
- Reimbursement for provider and staff training time
- Reimbursement for complete and accurate comprehensive visit point of care tool
- Additional reimbursement for attaining 75% Annual Comprehensive Visit rate by September 1st

In an example of drawing on integrated data platforms, the organization has created a Patient Care Profile, which is a combined report to address care opportunities and chronic conditions. The profile is being reconstructed to include care opportunities for all payor contracts. The goal is to move to the development phase, which would give their providers an option to pull a Patient Care Profile record from the eligibility screen in OneHealthPort, the state's health information exchange (HIE). This illustrates the possible patient care synergies from leveraging integrated data solutions from different sources – the state's HIE and the Model 4 platform.

Exploring the Logic behind Participating Organizations' Model 4 Strategies

Round 1 and Round 2 informants reported different logics. In Round 1, one of the organizations is principally

implementing changes in their care management and data analytic capability, and their leadership team is explicitly focused on providing integrated data tools that enhance care coordination, provider communication, and performance improvement. The second organization anticipates the need for continued State support (including funding) for building and spreading the integrated data solution, establishing the "brand" for value-based payment, creating a stronger sense of urgency among providers, and creatively addressing the social determinants of health in order to improve health outcomes and reduce total costs of care. The contract vendor's leadership has identified critical needs to implement integrated data solutions in several domains: primarily, common data standards, improved flexibility in IT solutions in receiving and analyzing data from different EMR sources, continued market pressure for value-based, performance–based payment, and enhanced patient engagement.

In Round 2, respondents focused on different matters. The logic underlying one provider organization's approach to creating and sustaining an integrated data solution is to seek help interpreting the data and to determine who would control and manage the integrated data. Their team is looking to health plans (e.g., their MCOs) to co-create and fund initiatives in use of integrated data – potentially as part of future value-based payment (VBP) contracts. The second provider organization's main strategy is to fashion a structure for ongoing integrated information reporting to providers, using their existing Medicare reporting method as a launching pad. The organization hopes to extend this structure to Medicaid. The approach is underpinned by a Plan-Do-Study-Act (PDSA) process for continuous performance improvement. Tying this integrated clinical and claims information to an automated patient outreach system, with nurse case managers coordinating care and care planning for chronically ill patients, is a central element in this strategy for Model 4.

According to the latest annual report from a provider organization, integrated claims and patient data will be first viewed and analyzed by a population health analyst. Following that, data will be reviewed to determine trends in population health and to identify particular areas for improvement. Based on the findings of the review process, the organization's Quality Director in cooperation with clinic managers will implement organization-wide improvement initiatives (personnel education, performance monitoring, improvement goals) to further enhance quality metrics.

The role of nurses and medical assistants will also be important in reaching out to non-compliant patients and explaining the purpose as well as significance of preventive measures. Because of that, patients will be more likely to come for their visits.

To what extent have those objectives been attained in Model 4 implementation?

When asked about the effectiveness of the model, Round 1 (2017) informants spoke in hypothetical terms and more about their expectations rather than actual results that they had seen up to that point. The common theme was the emphasis on the application of integrated, patient-level data to improve patient care – by facilitating primary care and prevention, remedying gaps in care, providing patient-friendly feedback, better preparing the provider with patient-specific information prior to the clinical encounter, and driving patient behavior change through the provision of relevant, actionable information. The population-based information could be applied to improve care coordination and – through early identification of health problems – reduce the total costs of care.

In contrast, Round 2 interviewees were able to discuss some of the trends and results associated with the integrated data solution. Two of the organizations expressed disappointment in the delays in receiving, and the gaps in claims data needed for the integrated data solution. Both reported little progress in using such data to improve quality, cost, health outcomes, or patient experience, with the exception of data solution-related improvement in Medicare wellness visits. The lack of clinical data in the data aggregation so far was also noted

by the representatives of those organizations. One stated, "So, unfortunately, I have yet to see any data inside the integrated data solution to then utilize to roll out any initiatives." The latest report from one of the provider organizations suggested that PM4 project has never passed the 'plan' stage of the Plan, Do, Check, Act (PDCA) model due to multiple challenges associated with data integration.

The third participating organization had shifted from integrating data through the contract vendor to an in-house solution, with some promising results. It is concentrating on providing patient profiles and performance reports to member practices. It has managed to close some care gaps and to provide actionable data to its member practices – data that facilitates follow-up with patients and increases their use of primary care (e.g., screenings and wellness visits). One significant problem was the assignment of Medicaid beneficiaries to providers without their knowledge. Hence, providers were unable to identify or track these patients who were behind on preventive care, which may have hindered the effectiveness of the outreach efforts.

This third organization reported some progress in early 2018 in data aggregation. Specifically, disparate files have been combined into a single view that is now available to any population health management, risk adjustment, or internal reporting tools. Plans currently available in the eligibility view include: Aetna, Cigna, Humana Medicare Advantage, Premera ACO, Premera Medicare Advantage, United Medicaid, and United Medicare. Claims information is currently available from the organizations' claims processing system, and includes Humana Medicare Advantage, United Medicaid, and United Medicare. In addition to the eligibility and claims information, the organization gathers data abstracted via electronic medical records and papers charts from their member practices. This data is imported into their data warehouse and used to close care gaps for improved reporting accuracy to their member practices.

What have been the major facilitators for attaining Model 4 objectives?

The blend of facilitators supporting Model 4 differed somewhat for the two provider organizations. In Round 1, a representative of the first organization alluded to provision of improved data analytics and a population health dashboard as important facilitators- as was internal buy-in and executive support for Model 4. All three primary care clinics were utilizing screening tools and tracking quality measures within the patient's medical record.

Some of these factors were also mentioned in Round 2 of the interviews with representatives of the same organization. For example, the interviewees highlighted the importance of executive support and the organizational leaders' expression of Model 4 objectives as a top priority. Having a steering committee and getting the provider organization's leaders and both Medicaid MCOs at one table has been beneficial for sharing successes and challenges and coming together to brainstorm new ideas to help the VBP arrangements continue to be successful. The chief clinical officer's focus on quality over volume and receiving monthly MCO report cards were also called out as facilitators in Round 2.

This first organization pointed to several other facilitating factors:

- The support of the Health Care Authority's (HCA) policy leadership team
- Increased market penetration of value-based payment contracting
    - Particularly among public payers, but also gradual growth in private payer VBP contracts
- State resources in general to support VBP contracting
- Valuable assistance from the HCA's privacy and security office
- While challenging, the WaTech security and design review process has had the benefit of strengthening those systems

The second organization highlighted the significant assistance of HCA policy leadership and the agency's privacy and security office. Internally, the leadership has supported their member practices beyond managed care

contracting – viewing the practice holistically rather than as "an insurance contract" for a modest percentage of the practice's patient panel. In Round 2, hiring of key personnel, State resources, and the enhanced fee schedule for Medicaid were all pointed out as facilitating factors. Through the first iteration of its Provider Quality Incentive Program with Medicare Advantage members, this organization is assisting clinics in removing barriers such as staffing constraints or technology limitations to increase performance. The executive team is developing financial models to educate providers and validate the return on investment when participating in value-based payment models. The organization is providing education to clinical managers and providers to assure that they are utilizing support staff to the top of their licensure, and assisting in work flow assessment to reassign duties that allow for increased quality and patient satisfaction.

From the external IT vendor's vantage point, the increased penetration of VBP contracting – particularly among public payers, but also gradually among private carriers, has lent impetus to Model 4 development.

What have been the major barriers to attaining Model 4 objectives?

Participants mainly focused on external barriers. The State's (WaTech) security and design review process was perceived by both provider organizations and the external vendor as introducing substantial delays in implementation of Model 4. According to one of the interviewees, the delays for filling out different checklists, access identification for different uses, login procedures, and multi-factor authentication significantly impeded progress in developing the tool. There also were instances in which the organization received apparent approvals that turned into required resubmissions of the protocol – which introduced further delays.
Apart from lack of timely data, the accuracy of the information was also seen as a barrier by that particular organization. Furthermore, it was challenging for the organization to take on this project while simultaneously implementing a new EHR system. They also experienced individual resistance to the Model 4 efforts as well as the uncertainty of the political climate. Finally, the recent reduction in State support was a significant barrier to addressing the Model 4 objectives.

In the first six months of 2018, this first organization reported that it has been challenging to implement the analytic platform. All issues derive from technology and IT requirements. Medicaid MCOs had to change their security and transmission method of member assignment files to meet HCA's requirements. This resulted in a delay of HCA being able to send claims data. To mitigate that issue, HCA worked with the MCOs to establish a proper secure file transfer protocol, and- as of mid-2018- both MCOs are compliant. However, data was sent only for one MCO's members.

Delays in receiving data and the intensive security assessment were two major barriers for the second organization as well, particularly as HCA had trouble in aggregating and correctly attributing the data. Collaborating with the VA medical group presented new challenges for this entity, because the VA had an internal view of how and when to engage outsourced solutions. Next, the MCOs assigned to primary care physicians presented difficulties receiving Medicaid data. The use of an external, national vendor to develop the integrated data solution seemingly has created a greater level of concern regarding security and confidentiality of information, as compared to the degree of such concerns if the vendor were based in Washington state. This challenge was unexpected and caused significant slowdowns in the work. In general, implementing the integrated database has taken substantial extra time for the staff and the IT vendor. For a small company, that has been very difficult, and although they are beginning to see progress, "the shift is hard – it is very distributed work." Last, there was a significant challenge finding data analysts or programmers with experience in healthcare, and they predict there will be a shortage moving forward.

For the third organization, again timeliness and general availability of data were main issues. To quote a representative of that organization, "the big one is just the lack of data…we never got a feed from their

electronic medical records and still haven't gotten the claims data that we would need. So that's the biggest impediment there." It seemed that some EMR vendors appear to have taken a proprietary perspective on their participation, have been reluctant to release their data, and have insisted on insinuating their organization directly into Model 4 development. The other major perceived barrier was that member practices felt overwhelmed for reasons other than database development challenges and thus were initially unwilling to participate. While most ultimately did participate, many participants appeared to be doing so only to avoid CMS financial penalties for not implementing "meaningful use" of IT and electronic health records.

5.4.B.6 Lessons Learned from Model 4 Implementation

Positive Lessons

As of mid-2018, several general positive lessons have emerged:

- Tracking quality metrics, improved clinical information, and supporting a patient-centric view has facilitated provider buy-in
- Integrated data supports a different kind of conversation between the medical director and providers
- Despite multiple challenges, implementation is progressing
- Having encountered problems on the way, provider organizations still managed to find additional pathways to engage providers and clinical personnel in improving quality measures through monthly report cards, preventive screenings during patient visits, direct outreach and setting out monthly goals on quality performance
- Promotion of VBP contracts has contributed to increased preventive health screening
- Familiarity with and working with insurers has improved mutual communication
- "If you give people information about their practice in a way they can translate it to create action, they will do it"
- Patients have proven very open to process changes, e.g., automated calling
- Albeit requiring extra time, new security audit procedures have enhanced documentation and security
- For the contract vendor, many product features developed for this program have proven useful for other clients

The provider organization implementing an in-house solution reported the ways in which implementing the Physician Quality Incentive Program (PQIP) has galvanized remedies to the early "pain points" in Model 4 implementation, e.g., failure to close the referral loop from PCP to specialist via reports back from the specialist and difficulty in achieving access to clinical chart information. Specifically, this program has given the provider organization insight into the quality of clinical documentation taking place in member practices – thereby enabling follow-up and closure of care gaps, remediation of diagnosis code submission limitations through an alternative submission process, and access to previously unavailable panel feedback. These wins will be considered when implementing enhancements to the existing Medicare PQIP and implementation of the Medicaid PQIP.

Intradepartmental synergies have also been identified as part of this process. The new CHAPs and Quality Department has been able to work with Technology, Medical Management, Customer Service, and Claims Operations to remediate numerous barriers, enhance deliverables to the provider network, and work steadily to improve performance across all lines of business.

Challenges

Among the negative aspects of Model 4 implementation, the informants discussed at length the challenges of integrating claims and financial information:

- While hoping to receive the integrated data by the end of the contract, one of the provider organizations mentioned that they are unlikely to implement changes, monitor them and make necessary improvements in the time frame of the project.
- Significant delays in implementing Model 4 due to complex and sometimes difficult-to-interpret Washington state privacy, security, and data platform design requirements.
- Challenges in following patients across different health plans. Information does not follow the patient across myriad job changes and health plan switches. Instead, at present the information (predominantly claims-based) follows the health plan (MCO). This results in missed opportunities to provide continuity of care for patients and redundancies in care plans across providers.
- Various issues of MCOs not having a reliable method of transmitting member eligibility files to HCA (as of mid-2018). This resulted in a delay because both MCOs had to change security processes and systems to meet HCA standards.
- The sheer number of different EMR systems (49) being integrated within the developing Model 4 offered challenges to creating a generic, interoperable integrated data platform.
- Another surprising lesson learned by one of the organizations was the difficult process of writing contracts – specifically, the targets and the language.
- Reduced funding for the project.
- The unique challenges of extracting information from both claims and EHR sources, even with access to IT vendor expertise. As of mid-2018, one organization reported that claims data had not yet been integrated with EHR data.
- Additionally, they have recognized that it is difficult for provider organizations to take on this responsibility, as it is full time, "heavy lifting" work. Understanding the technology requirements was challenging and required hiring a specialized individual to oversee the process.
- Finally, the contract organization found that the clinical data were not always accurate and that linking patients to specific providers was difficult.

5.4.B.7 Plans for Sustainability of Model 4

The provider organizations are planning to sustain the integrated data solution work by establishing routines for linking the claims and EHR data, modifying certain personnel roles, and tying the integrated reports to the future of whole-person care. The data aggregation supports the organizations' existing business models and is necessary to control costs. The respondents acknowledged that such data integration is a new territory. To be sustainable, this model will require continued support of executive leadership, infrastructure investment, employee training, and continued profitability.

Having said that, a provider organization will evaluate if continuing the relationship with PM4 vendor organization is going to be a financially and operationally viable choice. Even if the organization decides to end the relationship, there will still be a consistent focus on quality metrics and data analytics. Having value-based contracts with payers and tools, such as Business and Clinical Analytics, will help the organization to share quality report cards for attributed patients with providers. Moreover, the organization is hoping to receive access to a new technology that will be introduced in 2019 and will provide data on HEDIS measures and financial performance.

One of the informants was more specific and referred to other necessary steps to ensuring that their efforts are sustained-- incorporating it into their infrastructure, developing a self-service dashboard, and continuation of adding claims data.

Another representative cited that their organization is going to continue to seek and become engaged in opportunities similar to the State Innovation Model in order to secure external funding. They also want to seek partnerships and to evaluate other VBP strategies.

The vendor organization shared that their Model 4 work in Washington state will continue if the contract with their current client organization is extended, and hoped that there would be further integration and further demand and significant support of the types of services that they provide in the future.

5.4.B.8 Implications of Model 4 Implementation for Practice, Policy, and Research

The principal implications of this qualitative evaluation of Model 4 Implementation are fourfold:

(1) Implementing an integrated claims and EHR-based data solution requires significant infrastructure and IT investment and is more likely to be sustained if the organization has a parallel commitment to increased value-based contracting, whole-person care, and population health management.

(2) Provider engagement and buy-in is crucial to initiating and sustaining an integrated data solution, as is access to regular, timely, accurate, and actionable data from the database.

(3) External funding is significant for building data infrastructure that supports population health management across providers, payers, and communities, but not as a source of ongoing operational dollars.

(4) Long-term, public research funding must support development, testing, and evaluation of innovative and cost-effective integrated data platforms that are interoperable across different EHR and claims-based information systems and capable of producing timely, accurate, and actionable data.

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5.5 Integrated Medicaid Managed Care (PM1)

BRIEF

5.5.A

Washington SIM Evaluation

Integrated Medicaid Managed Care Qualitative Results (PM1)

Description

PM1 was implemented in Clark and Skamania counties in April 2016. The central innovation of PM1 was the integrated purchasing of physical and behavioral health services within a single accountable managed care organization (MCO), in contrast to the presence of separate medical and behavioral health services in the balance of the state. Behavioral health risk factors were believed to be the most common and impactful drivers of adverse health outcomes in Medicaid populations. The study's aim was to expand understanding of the effects of the PM1 initiative on payer and provider organizations through the lens of a conceptual framework.

Evaluation Methods

Between August 2017 and September 2018, the investigative team conducted two rounds of face-to-face or telephonic key informant interviews with 20 clinical and administrative executives from eight organizations representing the SIM PM1's Early Adopter Region in Southwest Washington. Mapping results to an evidence-based conceptual framework revealed emergent themes that were further validated through discussion and consensus between coders and with the larger research team.

Evaluation Findings

PM1 and clinical integration efforts require extensive consideration of provider and managed care organization (MCO) needs as well as practice-based integration techniques. Integration depends on both internal and external contributing factors, which inform and guide changes to a focused evaluation framework. Future behavioral and physical health payment integration development in Washington State must consider the impacts on care coordination, partnerships, and regional leadership to ensure success. Overall thematic findings included: **(a) organizational change and goal setting; (b) key priorities and approaches; (c) common facilitators and barriers of integration; (d) lessons learned; and (e) sustainability** of the initiative in the future.

Key Evaluation Findings

- **Organizational change and goal setting:** Goals derived from the organizational context revealed several themes: (1) meeting financial and contractual obligations; (2) growing the service area, improving quality, and diversifying revenue; (3) improving data management and sharing; (4) aligning with community stakeholders; and (5) workforce engagement and implementing service model change. Thematically, goals of a more patient-centered orientation included: (1) improving coordination to address the social determinants of health, and (2) changing the service delivery model to accommodate whole-person care.
- **Key priorities and approaches:** Key informant stakeholders shared myriad approaches for achieving objectives for payment reform. MCOs focused on: internal change, benchmarking, organizational learning, use of internal resources, building infrastructure, and instituting a more "integrated" care model. Some BHPs discussed care coordination and a team-based approach to services delivery; others discussing plans to engage with community stakeholders to deliver the full continuum of behavioral health services by leveraging and sharing data to take a more epidemiological approach to population health at the community level.

- **Common facilitators and barriers of integration:** External **facilitators** for SIM PM1 implementation and increasing its pace included: (1) proactive community organization around supporting the initiative; (2) the presence of a health system champion to spur care integration associated with reform; (3) the ability to envision a patient-centered medical home model or similar approach to care; and (4) good provider engagement. Thematic **barriers** included: (a) access to data and lack of infrastructure, (b) addressing complex social determinants of health, (c) leadership and ambiguity, and (d) workforce shortages.
- **Lessons learned:** Informants shared thematic headings: (a) collective effort and sharing information (both optimism and caution), (b) limited impacts on business (BHPs), and (c) organizational as well as individual learning, and (d) thoughts regarding time as a factor and its impact on select lessons learned. Lessons learned fell into three broad categories: positive, neutral, and somewhat negative.
- **Sustainability**: Plans for PM1 sustainability by MCOs included: advancing clinical integration, increasing provider flexibility, and incorporating the new business model and associated infrastructure. Plans for PM1 sustainability by BH providers included: identifying new funding sources, maintaining existing funding, and an expressed fear of losing funding across multiple organizations.

Implications of Findings for Policy and Practice

Organizational Change and Goal Setting. The complicated nature of implementation requires that policy makers and key system stakeholders continue to refine and revise policy so as to address continuing financial and contractual challenges and supporting common definitions for key terms, such as quality and integration. Stakeholders, working collaboratively are seeking ways to connect with community stakeholders to address the underlying social determinants of health. Such efforts should be recognized through ongoing policy, reimbursement mechanisms, and other supporting structures so as to achieve whole-person care for those with behavioral and physical health needs.

Key Priorities and Approaches. MCOs with greater access to financial and other key resources are innovating internally through benchmarking, organizational learning, and the building of key infrastructure, particularly workforce training and data management. Such organizations have created alliances with competitors to facilitate progress and make gains that can be applied in other regions. BHPs, alternatively, struggle with a lack of resources and workforce shortages that would facilitate implementation. Policy makers and key stakeholders must reach out to providers to listen to their particular concerns and to find sustainable solutions that facilitate regional collaboration and holistic care delivery concurrently.

Facilitators and Barriers. Facilitators support key priorities and approaches above. Informants point to community collaboration, system champions, and whole person care through provider engagement as key to successful implementation. However, an ongoing lack of access to timely data and information sharing to address social determinants of health continues to slow the pace of implementation. Policy makers and key stakeholders must seek to define key metrics and terminology, and work cooperatively to develop innovative solutions, particularly with provider organizations whose voices are often unheard. State-level decision makers must also assure the integrity of ongoing leadership and seek to communicate often and succinctly a vision, key priorities, and measurable objectives associated with implementation.

Lessons Learned. MCOs generally express more optimism with PM1 implementation, likely because they have longer-term and more intensive contact with state-level decision makers. Their knowledge of the vision for Healthier Washington is, therefore, more robust. Alternatively, BHP informants have less contact with and

knowledge around this and other related initiatives. Thus, they believe implementation has had an impact on administration of their business, particularly around billing and reimbursement. Thus, policy makers should leverage the deep and positive relationships they have with MCOs in communicating to providers and community stakeholders the initiative's key priorities and objectives and to provide regions with stable, informed leadership upon whom providers and others can rely for timely information and who are willing to address or champion their concerns at the state level.

Sustainability. Sustainability of the initiative is closely tied to the findings and recommendations outlined through lessons learned. Collaboration with key stakeholders at all levels, open communication, information sharing, and ongoing flexibility through implementation lie at the crux of informants' hopes and concerns for the future. While MCOs can spread risk across regions and among several states in some cases, local providers find strict funding limitations and reimbursement options a detriment to their ongoing business. MCOs also have the resources to innovate internally and to train and/or hire a skilled workforce capable of implementing value-based and other reimbursement models. BHPs, however, find that ongoing workforce shortages in hiring, training, and retention of personnel to be troublesome at best. Other support organizations wish to innovate and to help create sustainable solutions to ongoing challenges. Key decision-makers must ensure that all voices are at the table, innovative solutions are welcome and tested, and health systems stakeholders can rely upon government leaders at the state and local levels to provide an infrastructure to support ongoing change that has a positive impact on the populations of interest.

For more information from the Key Informant interviews see **Appendix A.7.4.**

BRIEF 5.5.B

Washington SIM Evaluation

Evaluation of Integrated Managed Care for Medicaid Beneficiaries in Southwest Washington: First Year Outcomes

Under the State Innovation Model Grant, Washington selected four alternative payment models focused on different aspects of the Washington state health care delivery system to be implemented over the life of the SIM grant (February 2014 through January 2019). The focus of this evaluation is Payment Model 1: Integrated Managed Care and the impact on the Medicaid population of moving to an integrated managed care (IMC) model.

In this model, Medicaid beneficiaries now receive physical and behavioral health services through a single integrated managed care plan. The alignment of behavioral and physical health care financing within a single plan is intended to support better coordination of care for beneficiaries with physical and behavioral health comorbidities, increase access to needed services, reduce potentially avoidable health care costs, and improve beneficiary care experiences. In non-IMC regions of Washington State, most Medicaid beneficiaries are enrolled with both a behavioral health organization (BHO) and a separate managed care organization (MCO). Concerns about misalignment of financial incentives and suboptimal coordination of care, particularly for beneficiaries with serious mental illness and/or substance use disorders, were key drivers leading to the implementation of the IMC model.

On April 1, 2016, Clark and Skamania counties became the first region in Washington to adopt an IMC model. The focus of this evaluation is on differences in outcomes for the early adopter region of integrated managed care (Clark and Skamania counties) compared to the balance of the state. This analysis examines the impact in the first year after moving to IMC on a set of health and social outcomes. Twenty-nine metrics that measure access to care, quality of care, coordination of care, utilization of high intensity services, and social outcomes were included in this analysis. The full evaluation report is available at: https://www.dshs.wa.gov/ffa/rda/research-reports/evaluation-integrated-managed-care-medicaid-beneficiaries-southwest-washington-first-year-outcomes

Methodological Approach

The analysis uses two methodological approaches to understand the impact of IMC. The first approach, a difference-in-difference t-test, compares the change in outcomes in the year before and year after IMC implementation for Clark/Skamania counties with the experience in the balance of the state. The second approach uses generalized estimating equation (GEE) regression models to examine the relative change in outcomes while controlling for potential differences in case mix between Clark/Skamania counties and the balance of the state. In addition, the GEE regression models examined the Medicaid population including and excluding those who were dually eligible for Medicaid and Medicare. Separate analyses examined the impact of integration for Medicaid beneficiaries with serious mental illness (SMI) and for those with co-occurring mental illness and substance use disorder (COD). These subpopulations reflect beneficiaries potentially most impacted by integration, as they would be likely to receive behavioral health services through a separate BHO in non-IMC regions and might derive the greatest benefit from alignment of physical and behavioral health care services in a single managed care plan.

Findings and Discussion

In general, the two analytical approaches produced consistent results. Of the health and social outcome metrics examined, two-thirds showed no significant relative change in Southwest Washington, compared to the balance of state. The outcome measures that had significant differences were mostly positive for the Southwest region, with few statistically significant negative results (see table below). Additional analyses conducted for subpopulations with serious mental illness and co-occurring mental illness and substance use disorder showed results generally similar to those experienced in the broader Medicaid population.

Summary of IMC Impact across Populations

Clark/Skamania county experience relative to balance of state:	**ALL MEDICAID**		
	Diff-In-Diff	GEE w/ Duals	GEE w/o Duals
Better and statistically significant (++)	7	8	8
Worse and statistically significant (--)	1	0	1
Not statistically significant (all other)	21	21	20
	Medicaid Beneficiaries with SMI		
Better and statistically significant (++)	7	6	8
Worse and statistically significant (--)	1	0	1
Not statistically significant (all other)	21	23	20
	Medicaid Beneficiaries with COD		
Better and statistically significant (++)	8	8	7
Worse and statistically significant (--)	2	1	0
Not statistically significant (all other)	19	20	22

Looking across Medicaid populations, improvements in access to needed services were most commonly observed. Of the seven access to care measures, four measures, including mental health treatment penetration, cervical cancer screening, chlamydia screening in women, and adult access to preventive/ ambulatory care, saw statistically significant improvements for all Medicaid beneficiaries in Clark and Skamania counties relative to the balance of the state. Medicaid beneficiaries with serious mental illness and co-occurring mental health and substance use disorders also saw significant positive relative improvements in mental health treatment and cervical cancer screening.

There are also indicators of improvement in beneficiary level of functions and quality of life, as measured by social outcomes. Medicaid beneficiaries broadly, and those with co-occurring disorders, saw a significant improvement in the rate of homelessness (broad definition including both the unhoused and unstably housed) and a significant positive relative change in criminal justice interactions (fewer arrests) for those in the IMC region compared to the balance of the state. Other measurement areas, including quality, coordination of care, and utilization metrics, saw improvements that were more modest. This included significant positive relative change in diabetes screening for individuals with schizophrenia or bipolar disorder and follow-up after emergency department visits for alcohol or other drug dependence (at both 7 and 30 days). However, most metrics showed no significant relative change between the IMC region and the balance of the state.

The focus of this evaluation was on the experience of Medicaid beneficiaries after the first year of IMC. Longer-term impacts of the shift to IMC are unknown. In addition, as of January 1, 2019, more than half of the counties in Washington have implemented IMC and, as required by state law, all 39 counties in the state of Washington will move to IMC by January 1, 2020. As more counties move to IMC and as the early adopters of IMC create more established practices and mechanisms for IMC in their regions, the Medicaid beneficiary experience may change.

RDA's full evaluation report is available at:

https://www.dshs.wa.gov/ffa/rda/research-reports/evaluation-integrated-managed-care-medicaid-beneficiaries-southwest-washington-first-year-outcomes

Prepared by DSHS-Research and Data Analysis Division as part of the Washington State Innovation Model Grant evaluation.

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6. Accountable Communities of Health

CHAPTER 6.1

Washington State Innovation Models (SIM)

Accountable Communities of Health Evaluation

The ACH Full Evaluation was submitted by CCHE separately to HCA.

This report will be available online under the Evaluations tab, at:

https://www.hca.wa.gov/about-hca/healthier-washington/accountable-communities-health-ach

CCHE
CENTER FOR COMMUNITY HEALTH AND EVALUATION
www.cche.org

APPENDIX 7

Washington State Innovation Models (SIM)

Appendix

The Appendix for this report is available for download at:

https://indd.adobe.com/view/c5fb9799-300f-4235-840f-5bcc74230d2f