

AGENDA
VERMONT HEALTH CARE INNOVATION PROJECT
STEERING COMMITTEE

Wednesday, October 16, 2013
1:30pm to 3:30pm
DVHA Large Conference Room, 312 Hurricane Lane, Williston
Call in number is 1-866-951-1151, 4554014

- 1. Welcome and Introduction: Al Gobeille and Mark Larson**
- 2. General Project Update and Report from the Core Team: Anya Rader Wallack**
- 3. Reports from Innovation Project Work Groups:**
 - A. Payment Models Work Group (formerly ACO standards work group): Don George
 - a. Update on the Commercial ACO Standards: Richard Slusky
 - b. Update on the Medicaid ACO RFP: Erin Flynn
 - B. Quality and Performance Measures Work Group (formerly ACO measures work group): Cathy Fulton
 - a. Recommendations on Shared Savings ACO Performance Measures: Pat Jones
 - C. Duals Demonstration Work Group (no work product, status update only):
Deborah Lisi-Baker
 - D. Health Information Exchange Work Group (no work product, status update only):
Simone Rueschemeyer
 - E. Care Models and Care Management Work Group (no work product, status update only): Bea Grause
 - F. Population Health Work Group (no work product, status update only): Tracy Dolan
 - G. Work Force Steering Committee (status update at November meeting of the Steering Committee)
- 4. Discussion of Potential Measures for the Vermont SIM “Driver Diagram”: Pat Jones**

*The Next Steering Committee Meeting is scheduled for Wednesday, November 20,
1:30-3:30 PM, DVHA Large Conference Room*

Vermont Commercial ACO Pilot
Compilation of Pilot Standards
October 10, 2013 Draft

The Vermont ACO Standards Work Group has developed and endorsed the following recommendations for consideration by the SIM Payment Models Work Group and the GMCB. While they represent the consensus of the work group as of the above date, the work group considers them subject to reconsideration and modification by the work group's planned successor, the SIM Payment Models Work Group, as new information becomes available and the pilot ACOs and insurers and GMCB gain experience. The work group anticipates that these standards will subsequently become a part of a three-way contractual agreement among the GMCB, the participating insurers and the participating ACOs.

The Standards Work Group has drafted standards for ACOs in the following categories:

- Standards related to the ACO's structure:
 - [Financial Stability](#)
 - [Risk Mitigation](#)
 - [Patient Freedom of Choice](#)
 - [ACO Governance](#)

- Standards related to the ACO's payment methodology:
 - [Patient Attribution Methodology](#)
 - [Calculation of ACO Financial Performance and Distribution of Shared Risk Payments](#)

- Standards related to management of the ACO:
 - [Care Management](#)
 - [Payment Alignment](#)
 - [Data Use Standards](#)

The objectives and details of each draft standard follow.

I. Financial Stability

Objective: Protect ACOs from the assumption of "insurance risk" (the risk of whether a patient will develop an expensive health condition) when contracting with private and public payers so that the ACO can focus on management of performance risk (the risk of higher costs from delivering unnecessary services, delivering services inefficiently, or committing errors in diagnosis or treatment of a particular condition).

A. Standards related to the effects of provider coding patterns on medical spending and risk scores

1. Payers will assess whether changes in provider coding patterns have had a substantive impact on medical spending, and if so, bring such funding and documentation to the GMCB for consideration with participating pilot ACOs.

B. Standards related to downside risk limitation

1. The Board has established that for the purposes of the pilot program, the ACO will assume the following downside risk in each pilot program year:
 - Year 1: no downside risk
 - Year 2: no downside risk
 - Year 3: downside risk not less than 3% and up to 5%
2. ACOs are required to submit a Risk Mitigation Plan to the state that demonstrates that the ACO has the ability to assume not less than 3% and up to 5% downside risk in Year Three and receive state approval. Such a plan may, but need not include, the following elements: recoupment from payments to participating providers, stop loss protection, reinsurance, a provider payment withhold provision, and reserves (e.g., irrevocable letter of credit, escrow account, surety bond).
3. The Risk Mitigation Plan must include a downside risk distribution model that does not disproportionately punish any particular organization within the ACO and maintains network adequacy in the event of a contract year in which the ACO has experienced poor financial performance.

C. Standards related to financial oversight.

1. The ACO will furnish financial reports regarding risk performance to the SIM Payment Model Work Group or its successor¹ and to the GMCB on a semi-annual basis by June 30th and December 31st in accordance with report formats defined by the GMCB.

D. Minimum number of attributed lives for a contract with a payer for a given line of business.

1. ACOs are required to demonstrate that projected enrollment meets or exceeds a minimum of 5,000 attributed lives in aggregate.

¹ All future references to the SIM Payment Models Work Group should be understood to mean that work group or its successor,

2. Participating insurers may choose not to participate with a given ACO should projected or actual attributed lives with that ACO fall below 3000.

E. **The ACO will notify the Board if the ACO is transferring risk to any participating provider organization within its network.**

II. Risk Mitigation

The ACOs must provide the GMCB with a detailed plan to mitigate the impact of the maximum potential loss on the ACO and its provider network in Year 3 of the commercial ACO pilot. Such a plan must establish a method for repaying losses to the insurers participating in the pilot. The method may include recoupment from payments to its participating providers, stop loss reinsurance, surety bonds, escrow accounts, a line of credit, or some other payment mechanism such as a withhold of a portion of any previous shared savings achieved. The ACO must provide documentation, of its ability to repay such losses 90 days prior to the start of Year 3..

Any requirements for risk mitigation, as noted above, will be the responsibility of the ACO itself, and not of the participating providers. The burden of holding participating providers financially accountable shall rest with the ACO, and the ACO should be able to exhibit their ability to manage the risk as noted above.

III. Patient Freedom of Choice

1. ACO patients will have freedom of choice with regard to their providers consistent with their health plan benefit.

IV. ACO Governance

1. The ACO must maintain an identifiable governing body that has responsibility for oversight and strategic direction of the ACO, holding ACO management accountable for the ACO's activities.
2. The organization must identify its board members, define their roles and describe the responsibilities of the board.
3. The governing body must have a transparent governing process which includes the following:
 - a. publishing the names and contact information for the governing body members;
 - b. devoting an allotted time at the beginning of each in-person governing body meeting to hear comments from members of the public who have signed up prior to the meeting and providing public updates of ACO activities;

- c. making meeting minutes available to the ACO's provider network upon request, and
 - d. and posting summaries of ACO activities provided to the ACO's consumer advisory board on the ACO's website.
4. The governing body members must have a fiduciary duty to the ACO and act consistently with that duty.
 5. At least 75 percent control of the ACO's governing body must be held by ACO participants or provide for meaningful involvement of ACO participants on the governing body.
 6. The ACO's governing body must at a minimum also include at least one consumer member who is a Medicare beneficiary (if the ACO participates with Medicare), at least one consumer member who is a Medicaid beneficiary (if the ACO participates with Medicaid), and at least one consumer member who is a member of a commercial insurance plan (if the ACO participates with one or more commercial insurers). Regardless of the number of payers with which the ACO participates, there must be at least two consumer members on the ACO governing body. These consumer members should have some personal, volunteer, or professional experience in advocating for consumers on health care issues. They should also be representative of the diversity of consumers served by the organization, taking into account demographic and non-demographic factors including, but not limited to, gender, race, ethnicity, socioeconomic status, geographic region, medical diagnoses, and services used. The ACO's governing board shall consult with advocacy groups and organizational staff in the recruitment process.

The ACO shall not be found to be in non-conformance if the GMCB determines that the ACO has with full intent and goodwill recruited the participation of qualified consumer representatives to its governing body on an ongoing basis and has not been successful.

7. The ACO must have a regularly scheduled process for inviting and considering consumer input regarding ACO policy, including the establishment of a consumer advisory board, with membership drawn from the community served by the ACO, including patients, their families, and caregivers. The consumer advisory board must meet at least quarterly. Members of ACO management and the governing body must regularly attend consumer advisory board meetings and report back to the ACO governing body following each meeting of the consumer advisory board. The results of other consumer input activities shall be reported to the ACO's governing body at least annually.

V. Patient Attribution

Patients will be attributed to an ACO as follows: An ACO must have at least 5000 commercial Exchange pilot lives attributed to the participating insurers and at least 3000 commercial Exchange pilot lives attributed to one insurer in order to participate in the pilot with that insurer.

1. The look back period is the most recent 24 months for which claims are available.
2. Identify all members who meet the following criteria as of the last day in the look back period:
 - Employer situated in Vermont or member/beneficiary residing in Vermont for commercial insurers (payers can select one of these options);
 - The insurer is the primary payer.
3. For products that require members to select a primary care provider, attribute those members to that provider.

For other members, select all claims identified in step 2 with the following qualifying CPT Codes² in the look back period (most recent 24 months) for primary care providers where the provider specialty is internal medicine, general medicine, geriatric medicine, family medicine, pediatrics, naturopathic medicine; or is a nurse practitioner, or physician assistant; or where the provider is an FQHC or Rural Health Clinic.

CPT-4 Code Description Summary
Evaluation and Management - Office or Other Outpatient Services <ul style="list-style-type: none"> • New Patient: 99201-99205 • Established Patient: 99211-99215
Consultations - Office or Other Outpatient Consultations <ul style="list-style-type: none"> • New or Established Patient: 99241-99245
Nursing Facility Services: <ul style="list-style-type: none"> • E & M New/Established patient: 99304-99306 • Subsequent Nursing Facility Care: 99307-99310
Domiciliary, Rest Home (e.g., Boarding Home), or Custodial Care Service: <ul style="list-style-type: none"> • Domiciliary or Rest Home Visit New Patient: 99324-99328 • Domiciliary or Rest Home Visit Established Patient: 99334-99337

² Should the Blueprint for Health change the qualifying CPT Codes to be other than those listed in this table, the SIM Payment Models Work Group shall consider the adoption of such changes.

CPT-4 Code Description Summary
Home Services <ul style="list-style-type: none"> • New Patient: 99341-99345 • Established Patient: 99347-99350
Prolonged Services - Prolonged Physician Service With Direct (Face-to-Face) Patient Contact <ul style="list-style-type: none"> • 99354 and 99355
Prolonged Services - Prolonged Physician Service Without Direct (Face-to-Face) Patient Contact <ul style="list-style-type: none"> • 99358 and 99359
Preventive Medicine Services <ul style="list-style-type: none"> • New Patient: 99381-99387 • Established Patient: 99391-99397
Counseling Risk Factor Reduction and Behavior Change Intervention <ul style="list-style-type: none"> • New or Established Patient Preventive Medicine, Individual Counseling: 99401-99404 • New or Established Patient Behavior Change Interventions, Individual: 99406-99409 • New or Established Patient Preventive Medicine, Group Counseling: 99411-99412
Other Preventive Medicine Services - Administration and interpretation: <ul style="list-style-type: none"> • 99420
Other Preventive Medicine Services - Unlisted preventive: <ul style="list-style-type: none"> • 99429
Newborn Care Services <ul style="list-style-type: none"> • Initial and subsequent care for evaluation and management of normal newborn infant: 99460-99463 • Attendance at delivery (when requested by the delivering physician) and initial stabilization of newborn: 99464 • Delivery/birthing room resuscitation: 99465
Federally Qualified Health Center (FQHC) - Global Visit <i>(billed as a revenue code on an institutional claim form)</i> <ul style="list-style-type: none"> • 0521 = Clinic visit by member to RHC/FQHC; • 0522 = Home visit by RHC/FQHC practitioner • 0525 = Nursing home visit by RHC/FQHC practitioner

4. Assign a member to the practice where s/he had the greatest number of qualifying claims. A practice shall be identified by the NPIs of the individual providers associated with it.

5. If a member has an equal number of qualifying visits to more than one practice, assign the member/beneficiary to the one with the most recent visit.
6. Insurers can choose to apply elements in addition to 5 and 6 above when conducting their attribution. However, at a minimum use the greatest number of claims (5 above), followed by the most recent claim if there is a tie (6 above).
7. Insurers will run their attributions at least quarterly.
8. The SIM Payment Models Work Group will reconsider whether OB/Gyns should be added to the attributing clinician list during Year 1.

VI. Calculation of ACO Financial Performance and Distribution of Reconciliation Payments

(See attached spreadsheet.)

I. Actions Initiated Before the Performance Year Begins

Step 1: Determine the expected PMPM medical expense spending for the ACO's total patient population absent any actions taken by the ACO.

Years 1 and 2: The medical expense portion of the GMCB-approved Exchange premium for each Exchange-offered product, adjusted from allowed to paid amounts, adjusted for excluded services (see below), high-cost outliers³, and risk-adjusted for the ACO-attributed population, and then calculated as a weighted average PMPM amount across all commercial products with weighting based on ACO attribution by product, shall represent the expected PMPM medical expense spending ("expected spending") for Years 1 and 2.

The ACO-responsible services used to define expected spending shall include all covered services except for:

1. services that are carved out of the contract by self-insured employer customers
 - prescription (retail) medications (excluded in the context of shared savings in Years 1 and 2, with potential inclusion in the context of shared (upside and downside) risk in Year 3 following SIM Payment Models Work Group discussion, and

³ The calculation shall exclude the projected value of Allowed claims per claimant in excess of \$125,000 per performance year.

2. dental benefits ⁴.

Year 3: The Year 3 expected spending shall be calculated using an alternative methodology to be recommended by the pilot participants (insurers and ACOs) and presented to the SIM Payment Models Work Group, and ultimately to the GMCB Board. The employed trend rate will be made available to the insurers prior to the deadline for GMCB rate submission in order to facilitate the calculation of premium rates for the Exchange. It is the shared intent of the pilot participants and the GMCB that the methodology shall not reduce expected spending based on any savings achieved by the pilot ACO(s) in the first two years.

The GMCB will also calculate the expected spending for the ACO population on an insurer-by-insurer basis. This is called the “insurer-specific expected spending.”

At the request of a pilot ACO or insurer and informed by the advice of the GMCB’s actuary and participating ACOs and insurers, the GMCB will reconsider and adjust expected spending if unanticipated events, or macro-economic or environmental events, occur that would reasonably be expected to significantly impact medical expenses or payer assumptions during the Exchange premium development process that were incorrect and resulted in significantly different spending than expected.

Step 2: Determine the targeted PMPM medical expense spending for the ACO’s patient population based on expected cost growth limiting actions to be taken by the ACO.

Targeted spending is the PMPM spending that approximates a reduction in PMPM spending that would not have otherwise occurred absent actions taken by the ACO. Targeted spending is calculated by multiplying PMPM spending by the **target rate**. The target rate(s) for Years 1 and 2 for the aggregate Exchange market shall be the expected rate minus the CMS Minimum Savings Rate for a Medicare ACO for the specific performance year, with consideration of the size of the ACO’s Exchange population. The GMCB will approve the target rate.

As noted above, the Year 3 targeted spending shall be calculated using an alternative methodology to be defined by the GMCB with pilot participant input.

The GMCB will also calculate the targeted spending for the ACO population on an insurer-by-insurer basis in the same fashion, as described within the attached worksheet (see Appendix XX). The resulting amount for each insurer is called the “insurer-specific targeted spending.”

⁴ The exclusion of dental services will be re-evaluated after the Exchange becomes operational and pediatric dental services become a mandated benefit.

II. Actions Initiated After the Performance Year Ends

Step 3: Determine actual spending and whether the ACO has generated savings.

No later than six months following the end of each pilot year, the GMCB or its designee shall calculate the actual medical expense spending (“actual spending”) by Exchange metal category for each ACO’s attributed population using commonly defined insurer data provided to the GMCB or its designee. Medical spending shall be defined to include all paid claims for ACO-responsible services as defined above.

PMPM medical expense spending shall then be adjusted as follows:

- clinical case mix using a common methodology across commercial insurers;
- truncation of claims for high-cost patient outliers whose annual claims value exceed \$125,000, and
- conversion from allowed to paid claims value.

For Years 1 and 2, insurers will assume all financial responsibility for the value of claims that exceed the high-cost outlier threshold. The GMCB and participating pilot insurers and ACOs will reassess this practice during Years 1 and 2 for Year 3.

The GMCB or its designee shall aggregate the adjusted spending data across insurers to get the ACO’s “actual spending.” The actual spending for each ACO shall be compared to its expected spending.

- If the ACO’s actual aggregate spending is greater than the expected spending, then the ACO will be ineligible to receive shared savings payments from any insurer.
- If the ACO’s actual aggregate spending is less than the expected spending, then it will be said to have “generated savings” and the ACO will be eligible to receive shared savings payments from one or more of the pilot participant insurers.
- If the ACO’s actual aggregate spending is less than the expected spending, then the ACO will not be responsible for covering any of the excess spending for any insurer.

Once the GMCB determines that the ACO has generated aggregate savings across insurers, the GMCB will also calculate the actual spending for the ACO population on an insurer-by-insurer basis. This is called the “insurer-specific actual spending.” The GMCB shall use this insurer-specific actual spending amount to assess savings at the individual insurer level.

Once the insurer-specific savings have been calculated, an ACO’s share of savings will be determined in two phases. This step defines the ACO’s eligible share of savings based on the degree to which actual PMPM spending falls below expected PMPM spending. The share of savings earned by the ACO based on the methodology above will be subject to qualification and modification by the application of quality performance scores as defined in Step 4.

In Years 1 and 2 of the pilot:

- If the insurer-specific actual spending for the ACO population is between the insurer-specific expected spending and the insurer-specific targeted spending, the ACO will share 25% of the insurer-specific savings.
- If the insurer-specific actual spending is below the insurer-specific targeted spending, the ACO will share 60% of the insurer-specific savings (The cumulative insurer-specific savings would therefore be calculated as 60% of the difference between actual spending and targeted spending plus 25% of the difference between expected spending and targeted spending).
- An insurer's savings distribution to the ACO will be capped at 10% of the ACO's insurer-specific expected spending and not greater than insurer premium approved by the Green Mountain Care Board.

In Year 3 of the pilot:

The formula for distribution of insurer-specific savings will be the same as in Years 1 and 2, except that the ACO will be responsible for a percentage % of the insurer-specific excess spending up to a cap equal to an amount no less than 3% and up to 5% of the ACO's insurer-specific expected spending.

All participating ACOs shall assume the same level of downside risk in Year 3, as approved by the SIM Payment Models Work Group and the GMCB.

The calculation of the ACO's liability will be as follows:

- If the ACO's total actual spending is greater than the total expected spending (called "excess spending"), then the ACO will assume responsibility for insurer-specific actual medical expense spending that exceeds the insurer-specific expected spending in a way that is reciprocal to the approach to distribution of savings.
- If the insurer-specific excess spending is less than the amount equivalent to the difference between expected spending and targeted spending, then the ACO will be responsible for 25% of the insurer-specific excess spending.
- If the ACO's excess spending exceeds the amount equivalent to the difference between expected spending and targeted spending, then the ACO will be responsible for 60% of the insurer-specific excess spending over the difference, up to a cap equal to an amount no greater than 5% of the ACO's insurer-specific expected spending.

If the sum of ACO savings at the insurer-specific level is greater than that generated in aggregate, the insurer-specific ACO savings will be reduced to the aggregate savings amount. If reductions need to occur for more than one insurer, the reductions shall be proportionately reduced from each insurer's shared savings with the ACO for the performance period. Any

reductions shall be based on the percentage of savings that an insurer would have to pay before the aggregate savings cap ⁵

Step 4: Assess ACO quality performance to inform savings distribution.

The second phase of determining an ACO’s savings distribution involves assessing quality performance. The distribution of eligible savings will be contingent on demonstration that the ACO’s quality meets a minimum qualifying threshold or “gate.” Should the ACO’s quality performance pass through the gate, the size of the distribution will vary and be linked to the ACO’s performance on specific quality measures. Higher quality performance will yield a larger share of savings up to the maximum distribution as described above.

Methodology for distribution of shared savings: For year one of the commercial pilot, compare the ACO’s performance on the payment measures (see Table 1 below) to the PPO HEDIS national percentile benchmark⁶ and assign 1, 2 or 3 points based on whether the ACO is at the national 25th, 50th or 75th percentile for the measure.

Table 1. Core Measures for Payment in Year One of the Commercial Pilot

#	Measure	Data Source	2012 HEDIS Benchmark (PPO)
Core-1	Plan All-Cause Readmissions NQF #1768, NCQA	Claims	Nat. 90 th : .68 Nat. 75 th : .73 Nat. 50 th : .78 Nat. 25 th : .83 *Please note, in interpreting this measure, a lower rate is better.
Core-2	Adolescent Well-Care Visits HEDIS AWC	Claims	Nat. 90 th : 58.5 Nat. 75 th : 46.32 Nat. 50 th : 38.66 Nat. 25 th : 32.14
Core-3	Cholesterol Management for Patients with Cardiovascular Conditions (LDL-C Screening Only for Year 1)	Claims	Nat. 90 th : 89.74 Nat. 75 th : 87.94 Nat. 50 th : 84.67 Nat. 25 th : 81.27

⁵ A reciprocal approach shall apply to ACO excess spending in Year3, such that excess spending calculated at the issuer-specific level shall not exceed that calculated at the aggregate level.

⁶ NCQA has traditionally offered several HEDIS commercial product benchmarks, e.g., HMO, POS, HMO/POS, HMO/PPO combined, etc.

Core-4	Follow-Up After Hospitalization for Mental Illness: 7-day NQF #0576, NCQA HEDIS FUH	Claims	Nat. 90th: 67.23 Nat. 75th: 60.00 Nat. 50th: 53.09 Nat. 25th: 45.70
Core - 5	Initiation and Engagement for Substance Abuse Treatment: Initiation and Engagement of AOD Treatment (composite) NQF #0004, NCQA HEDIS IET CMMI	Claims	Nat. 90th: 35.28 Nat. 75th: 31.94 Nat. 50th: 27.23 Nat. 25th: 24.09
Core-6	Avoidance of Antibiotic Treatment for Adults With Acute Bronchitis NQF #0058, NCQA HEDIS AAB	Claims	Nat. 90th: 28.13 Nat. 75th: 24.30 Nat. 50th: 20.72 Nat. 25th: 17.98
Core-7	Chlamydia Screening in Women NQF #0033, NCQA HEDIS CHL	Claims	Nat. 90th: 54.94 Nat. 75th: 47.30 Nat. 50th: 40.87 Nat. 25th:

The Gate: In order to retain savings for which the ACO is eligible in accordance with Steps 1-3 above, the ACO must earn meet a minimum threshold for performance on a defined set of common measures to be used by all pilot-participating commercial insurers and ACOs. For the commercial pilot, the ACO must earn 55% of the eligible points in order to receive savings. If the ACO is not able to meet the overall quality gate, then it will not be eligible for any shared savings. If the ACO meets the overall quality gate, it may retain at least 75% of the savings for which it is eligible (see Table 2).

The Ladder: In order to retain a greater portion of the savings for which the ACO is eligible, the ACO must achieve higher performance levels for the measures. There shall be six steps on the ladder, which reflect increased levels of performance (see Table 2).

Comment [KB1]: Please note that the impact of the complete submission of reporting measures on the eligibility for shared savings has yet to be determined.

Table 2. Distribution of Shared Savings in Year One of Commercial Pilot

% of eligible points	% of earned savings
55%	75%
60%	80%
65%	85%
70%	90%
75%	95%
80%	100%

Step 5: Distribute shared savings payments

The GMCB or its designee will calculate an interim assessment of performance year medical expense relative to expected and targeted medical spending for each ACO/insurer dyad within four months of the end of the performance year and inform the insurers and ACOs of the results, providing supporting documentation when doing so. If the savings generated exceed the insurer-specific targeted spending, and the preliminary assessment of the ACO's performance on the required measures is sufficiently strong, then within two weeks of the notification, the insurers will offer the ACO the opportunity to receive an interim payment, not to exceed 75% of the total payment for which the ACO is eligible.

Each insurer will calculate the final performance year medical expense six months following the end of the calendar year to allow for completion of the typical time lag in claims payment. The GMCB or its designee will complete the analysis of savings within two months of the conclusion of the six-month period and inform the insurers and ACOs of the results, providing supporting documentation when doing so. The insurers will then make any required savings distributions to contracted ACOs within two weeks of notification by the GMCB. Under no circumstances shall the amount of a shared savings payment distribution to an ACO jeopardize the insurer's ability to meet federal Medical Loss Ratio (MLR) requirements. The amount of the shared savings distribution shall be capped at the point that the MLR limit is reached.

Step 6: Process for Review and Modification of the Measures

1. The SIM Quality and Performance Measures Work Group will review all **Payment and Reporting measures** included in the Core Measure Set at the beginning of the third quarter of each pilot year, with input from the SIM Payment Models Work Group. For each measure, these reviews will consider payer and provider data availability, data quality, pilot experience reporting the measure, ACO performance, and any changes to national clinical guidelines. The goal of the review will be to determine whether each measure should continue to be used as-is for its designated purpose, or whether each measure should be modified or dropped for the next pilot year. Recommendations will go to the SIM Steering Committee, GMCB, and the SIM Core Team for review. Final approval for any changes must be received no later than September 30th of the year prior to implementation of the changes. In the interest of maintaining the stability of the measure set, the Year 1 Payment and Reporting measures will not be modified for Year 2 unless there are significant issues with data availability, data quality, pilot experience in reporting the measure, ACO performance, and/or changes to national clinical guidelines.
2. The SIM Quality and Performance Measures Work Group and the SIM Payment Models Work Group will review all **targets and benchmarks** for the measures designated for Payment purposes at the beginning of the third quarter of each pilot year when NCQA publishes its Quality Compass product. For each measure, these reviews will consider whether the benchmark employed as the performance target (e.g., national xth percentile) should remain constant or change for the next pilot year. The Work Group should consider setting targets in year two and three that increase incentives for quality improvement. Recommendations will go to the SIM Steering Committee, GMCB, and the SIM Core Team for review. Final approval for any changes must be received no later than September 30th of the year prior to implementation of the changes.
3. The SIM Quality and Performance Measures Work Group will review all **measures designated as Pending** in the Core Measure Set beginning in the first quarter of each pilot year, with input from the SIM Payment Models Work Group. For each measure, these reviews will consider data availability and quality, patient populations served, and measure specifications, with the goal of developing a plan for measure and/or data systems development and a timeline for implementation of each measure. If during the review, the SIM Quality and Performance Measures Work Group determines that a measure has the support of the Work Group and is ready to be implemented in the next pilot year, it shall recommend the measure as either a Payment or Reporting measure and indicate whether the measure should replace an existing Payment or Reporting measure. If the Work Group designates the measure for Payment, it shall recommend an appropriate target that includes consideration of any available state-level performance data and national benchmarks. Recommendations will go to the SIM Steering Committee, GMCB, and the SIM Core Team for review. Final approval for any changes must be received no later than September 30th of the year prior to implementation of the changes.

4. The SIM Quality and Performance Measures Work Group will review **state or insurer performance on the Monitoring and Evaluation measures** during the third quarter of each year after NCQA publishes its Quality Compass product, with input from the SIM Payment Models Work Group. The measures will remain Monitoring and Evaluation measures unless the Work Group determines that one or more measures presents an opportunity for improvement and meets measure selection criteria, at which point the SIM Quality and Performance Measures Work Group may recommend that the measure be moved to the Core Measure Set to be assessed at the ACO level and used for either Payment or Reporting. Recommendations will go to the SIM Steering Committee, GMCB, and the SIM Core Team for review. Final approval for any changes must be received no later than November 30th of the year prior to implementation of the changes.
5. The GMCB will release the **final measure specifications for the next pilot year by no later than November 30th**. The specifications document will provide the details of any new measures and any changes from the previous year.
6. If during the course of the year, a national clinical guideline for any measure designated for Payment or Reporting changes or an ACO or payer participating in the pilot raises a serious concern about the implementation of a particular measure, the SIM Quality and Performance Measures Work Group will review the measure and recommend a course of action for consideration, with input from the SIM Payment Models Work Group. Recommendations will go to the SIM Steering Committee, GMCB, and the SIM Core Team for review. Upon approval of a recommended change to a measure for the current pilot year, the GMCB must notify all pilot participants of the proposed change within 14 days.

VII. Care Management Standards (*still under development*)

Objective: Effective care management programs close to, if not at the site of care, for those patients at highest risk of future intensive resource utilization is considered by many to be the linchpin of sustained viability for providers entering population-based payment arrangements. Any standards will be developed by the SIM Care Management Care Model Work Group. For Year 1 of the pilot emphasis will be placed upon member communication and care transitions.

VIII. Payment Alignment

Objective: Improve the likelihood that ACOs attain their cost and quality improvement goals by aligning payment incentives at the payer-ACO level to the individual clinician and facility level.

1. The performance incentives that are incorporated into the payment arrangements between a commercial insurer and an ACO should be appropriately reflected in those that the ACO utilizes with its contracted providers. ACOs will share with the GMCB their written plans for:

- a. aligning provider payment (from insurers or Medicaid) and compensation (from ACO participant organization) with ACO performance incentives for cost and quality, and
 - b. distributing any earned shared savings.
2. ACOs utilizing a network model should be encouraged to create regional groupings (or "pods") of providers under a shared savings model that would incent provider performance resulting from the delivery of services that are more directly under their control. The regional groupings or "pods" would have to be of sufficient size to reasonably calculate "earned" savings or losses. ACO provider groupings should be incentivized individually and collectively to support accountability for quality of care and cost management.
3. Insurers shall support ACOs by collaborating with ACOs to align performance incentives by considering the use of alternative payment methodology including bundled payments and other episode-based payment methodologies.

IX. Vermont ACO Data Use Standards (*still under development*)

1. **Payer Provision of Data to ACOs and ACO provision of data to Payers**

Update on Medicaid ACO RFP

SCHEDULE OF EVENTS:

RFP Posted	Tuesday, October 2, 2013	http://www.vermontbusinessregistry.com/BidPreview.aspx?BidID=10236
Intent to Bid Due	Monday, October 14, 2013	Letters of intent and bidder's questions received from OneCareVermont and Community Health Accountable Care (CHAC).
Bidder's Questions Due	Monday, October 14, 2013	
Bidder's Conference	Friday, October 18, 2013, 10:00am – 11:00am EST	In person: DVHA Large Conference Room Dial-In: 877-273-4202, conf. id 9586994
Response to Bidder's Questions	Friday, October 25, 2013	
Response to Conference	Friday, October 25, 2013	
Proposal Due/Closing Date	Monday, November 11, 2013, 3:00pm EST	
Bid Opening	Monday, November 11, 2013, 3:00pm EST	
Selection Notification	Wednesday, November 20, 2013	
Contract Negotiation	Beginning after selection notification and continuing until commencement of contract	
Commencement of Contract	January 1, 2014	

Commercial Shared Savings Program: Recommended Performance Measures

Vermont SIM Steering Committee

October 16, 2013

ACO Measures Work Group Members

Representatives from wide variety of organizations, including:

- Accountable Care Coalition of the Green Mountains
- Agency of Administration
- Agency of Human Services
- Bi-State Primary Care Association
- Blue Cross and Blue Shield of Vermont
- Blueprint for Health
- Department of Financial Regulation
- Department of Mental Health
- Department of Vermont Health Access
- Fletcher Allen Health Care
- Green Mountain Care Board
- MVP Health Care
- OneCare
- Vermont Assembly of Home Health Agencies
- Vermont Association of Hospitals and Health Systems
- Vermont Information Technology Leaders
- Vermont Legal Aid
- Vermont Medical Society
- Vermont Program for Quality in Health Care

ACO Measures Work Group Objectives

To identify standardized measures that will be used to:

- Evaluate the performance of Vermont's Accountable Care Organizations (ACOs) relative to state objectives for ACOs,
- Qualify and modify shared savings payments, and
- Guide improvements in health care delivery.

Criteria for Selecting Measures

- Representative of array of services provided and beneficiaries served by ACOs;
- Valid and reliable;
- NQF-endorsed measures with relevant benchmarks whenever possible;
- Aligned with national and state measure sets and federal and state initiatives whenever possible;
- Focused on outcomes to the extent possible;
- Uninfluenced by differences in patient case mix or appropriately adjusted for such differences;
- Not prone to effects of random variation (measure type and denominator size);
- Not administratively burdensome;
- Limited in number and including only measures necessary to achieve state's goals (e.g., opportunity for improvement);
- Population-based; and
- Consistent with state's objectives and goals for improved health systems performance.

Work Group Process

- Over the course of nine months (January 2013-October 2013), the ACO Measures Work Group met about every two weeks.
- Two sub-groups also held several meetings:
 - Patient Experience of Care Survey Sub-group
 - End-of-Life Care Measures Sub-group

Work Group Process (continued)

- Created “crosswalk” of over 200 measures from numerous measure sets, including:
 - BCBSMA Alternative Quality Contract
 - Blueprint for Health
 - Buying Value
 - CHIPRA
 - CMS Medicare Shared Savings Program
 - Initial Core Set of Adult Health Care Quality Measures for Medicaid Eligible Adults
 - Maine ACO
 - Meaningful Use
 - NCQA
 - OneCare
 - PQRS
 - Uniform Data System (required for FQHCs)
 - Vermont reporting requirements for providers and health plans

Work Group Process (continued)

Work Group Participants:

- Identified their priority measures for consideration
- Eliminated measures through application of criteria and extensive discussion
- Expressed support for and concerns about measures
- Focused on measures in various domains, with national specifications, with benchmarks, and with opportunities for improvement
- Compromised
- Expressed widespread support, but not quite unanimity

Two Measure Sets

Core Measure Set

- The Core Measure Set consists of measures for which the ACO has current or pending responsibility for collection, for either reporting or payment purposes.

Monitoring and Evaluation (M&E) Measure Set

- The Monitoring & Evaluation Measure Set consists of measures that will be used for programmatic monitoring, evaluation, and planning. Collection of these measures will not influence the distribution of shared savings.

Measure Use Terminology: Core Measure Set

Payment

- Performance on these measures will be considered when calculating shared savings.

Reporting

- ACOs will be required to report on these measures. Performance on these measures will be not be considered when calculating shared savings; ACO submission of the clinical data-based reporting measures will be considered when calculating shared savings.

Pending

- Measures that are included in the core measure set but are not presently required to be reported. Pending measures are considered of importance to the ACO model, but are not required for initial reporting for one of the following reasons: target population not presently included, lack of availability of clinical or other required data, lack of sufficient baseline data, lack of clear or widely accepted specifications, or overly burdensome to collect.

Recommended Year 1 Payment Measures

(Claims data)

Commercial and Medicaid Shared Savings Programs:

- All-Cause Readmission
- Adolescent Well-Care Visits
- Follow-Up After Hospitalization for Mental Illness (7-day)
- Initiation and Engagement of Alcohol and Other Drug Dependence Treatment
- Avoidance of Antibiotic Treatment for Adults with Acute Bronchitis
- Chlamydia Screening in Women
- Cholesterol Management for Patients with Cardiovascular Disease (LDL Screening)*

Medicaid Shared Savings Program:

- Developmental Screening in First 3 Years of Life
- Depression Screening by 18 Years of Age

*Related to Medicare Shared Savings Program Measure

Recommended Year 1 Reporting Measures

(Claims data)

Commercial and Medicaid Shared Savings Programs:

- Ambulatory Sensitive Conditions Admissions: COPD or Asthma in Older Adults*
- Breast Cancer Screening*
- Rate of Hospitalization for Ambulatory Care-Sensitive Conditions: PQI Composite
- Appropriate Testing for Children with Pharyngitis

*Medicare Shared Savings Program Measure

Recommended Year 1 Reporting Measures (Clinical Data)

Commercial and Medicaid Shared Savings Programs:

- Adult BMI Screening and Follow-Up*
- Screening for Clinical Depression and Follow-Up Plan*
- Colorectal Cancer Screening*
- Diabetes Composite
 - HbA1c control*
 - LDL control*
 - High blood pressure control*
 - Tobacco non-use*
 - Daily aspirin or anti-platelet medication*
- Diabetes HbA1c Poor Control*
- Childhood Immunization Status
- Pediatric Weight Assessment and Counseling

*Medicare Shared Savings Program Measure

Recommended Year 1 Reporting Measures

(Survey Data)

Patient Experience Survey Composite Measures:

- Access to Care
- Communication
- Shared Decision-Making
- Self-Management Support
- Comprehensiveness
- Office Staff
- Information
- Coordination of Care
- Specialist Care

Impact of Payment Measures

“Gate and Ladder” Approach:

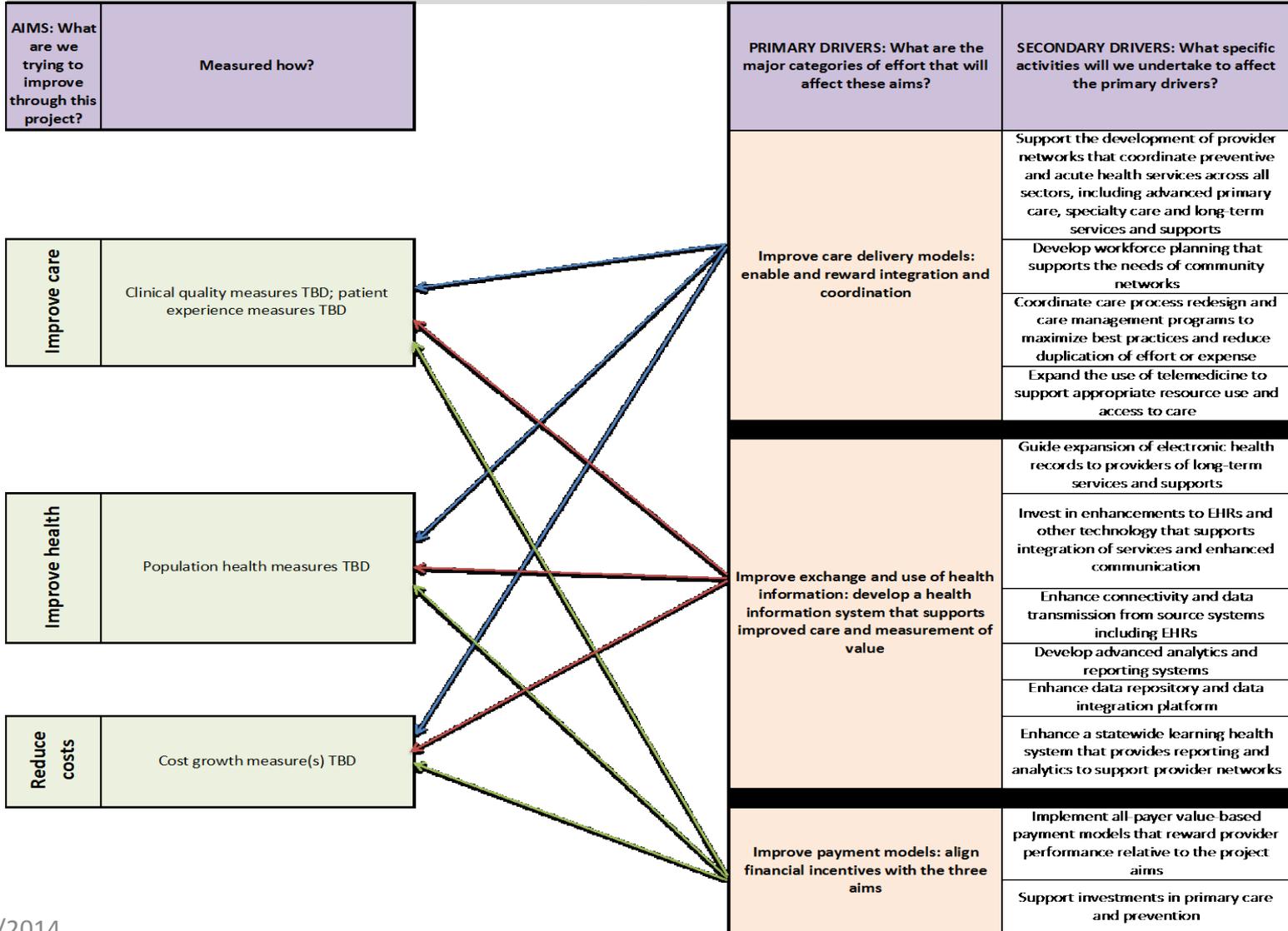
- Compare each payment measure to the national benchmark and assign 1, 2 or 3 points based on whether the ACO is at the national 25th, 50th or 75th percentile for the measure.
- If the ACO does not achieve at least 55% of the maximum available points across all payment measures, it is not eligible for any shared savings (“quality gate”).
- In proposed commercial SSP “quality ladder,” ACO earns:
 - 75% of potential savings for achieving 55% of available points,
 - 85% of potential savings for achieving 65% of available points,
 - 95% of potential savings for achieving 75% of available points.

Commercial Shared Savings Program Ladder (proposed)

Percentage of available points	Percentage of earned savings
55%	75%
60%	80%
65%	85%
70%	90%
75%	95%
80%	100%

DRAFT-Vermont driver diagram

SIM DRIVER DIAGRAM -- DRAFT 7/30/13 -- WORK IN PROGRESS, TO BE DEVELOPED FURTHER BY THE SIM STEERING COMMITTEE



**VERMONT SIM DRIVER DIAGRAM MEASUREMENT CATEGORIES AND
POTENTIAL GOALS/MEASURES FOR GUAGING OUR SUCCESS**

Improved Care:

Patient Experience Measures (9 Composite Measures) – Access to Care, Communication, Shared Decision-Making, Self-Management Support, Comprehensiveness, Office Staff, Information, Coordination of Care, Specialist Care

- ***By 2017, Vermont will achieve statistically significant improvement in at least 3 patient experience composites for attributed ACO shared savings members, attributed PCMH members, or both.***

Mental Health and Substance Abuse Treatment/Appropriate Use of Antibiotics Process of Care Measures (4 Measures) – Follow-up After Hospitalization for Mental Illness, Initiation and Engagement of Alcohol and Other Drug Dependence Treatment, Avoidance of Antibiotic Treatment for Adults with Acute Bronchitis, Appropriate Testing for Children with Pharyngitis

- ***By 2017, Vermont will achieve statistically significant improvement in at least 2 process of care measures at the ACO, PCMH, and/or health plan level.***

Improved Health measures – see below.

Improved Health:

Adult Health Screening and Preventive Care Measures (5 Measures) – Adult Weight (BMI) Screening and Follow-Up, Colorectal Cancer Screening, Mammography/Breast Cancer Screening, Chlamydia Screening in Women, Depression Screening and Follow-Up

- ***By 2017, Vermont will achieve statistically significant improvement in at least 2 adult health screening and preventive care measures at the ACO, PCMH, and/or health plan level.***

Pediatric Health Screening and Preventive Care Measures (5 Measures) – Pediatric Weight Assessment and Counseling, Childhood Immunization Status, Adolescent Well-Care Visits, Developmental Screening in the First Three Years of Life, Depression Screening by 18 Years of Age

- ***By 2017, Vermont will achieve statistically significant improvement in at least 2 pediatric health screening and preventive care measures at the ACO, PCMH, and/or health plan level.***

Chronic Disease Outcome Measures (3 Measures) – Ischemic Vascular Disease: Complete Lipid Panel and LDL Control, Diabetes: Hemoglobin A1c Poor Control, Diabetes Composite (Hemoglobin A1c Control, LDL Control, Blood Pressure Control, Tobacco Non-Use, Aspirin Use)

- ***By 2017, Vermont will achieve statistically significant improvement in at least 1 chronic disease outcome measure at the ACO, PCMH, and/or health plan level.***

Reduced Costs:

Hospital Admission or Readmission Measures (3 Measures) – All-Cause Readmission, Ambulatory Care-Sensitive Conditions Admissions (COPD), Rate of Hospitalization for Ambulatory Care-Sensitive Conditions (PQI Composite)

- ***By 2017, Vermont will achieve statistically significant improvement in at least 1 hospital admission or readmission measure at the ACO, PCMH, and/or health plan level.***

Total Cost of Care Measures (2 Measures) – Total Cost of Care (Total Cost Index), Total Cost of Care (Resource Use Index)

- ***By 2017, Vermont will achieve statistically significant improvement in at least 1 total cost of care measure at the ACO, PCMH, and/or health plan level.***



Case Study

October 2013

The mission of The Commonwealth Fund is to promote a high performance health care system. The Fund carries out this mandate by supporting independent research on health care issues and making grants to improve health care practice and policy. Support for this research was provided by The Commonwealth Fund. The views presented here are those of the authors and not necessarily those of The Commonwealth Fund or its directors, officers, or staff.

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Establishing a Coalition to Pursue Accountable Care in the Safety Net: A Case Study of the FQHC Urban Health Network

KAREN E. SCHOENHERR, ARICCA D. VAN CITTERS, KATHLEEN L. CARLUZZO, SAVANNAH BERGQUIST, ELLIOTT S. FISHER, AND VALERIE A. LEWIS

ABSTRACT: The Federally Qualified Health Center Urban Health Network is a coalition of 10 federally qualified health centers (FQHCs) in the Minneapolis–St. Paul area that pursued an accountable care organization (ACO) through a Medicaid demonstration project with Minnesota. Under the ACO model, the coalition has assumed responsibility for the total cost and quality of care delivered for an assigned patient population. This case study explores: the state context under which the ACO contract emerged; origins of the coalition; the members' motivations to participate; strategies and processes established to work toward cost and quality benchmarks; challenges faced in pursuing accountable care; and the organizational strengths that facilitated the health centers' shift from competition to collaboration. The keys to the coalition's success include a committed leadership team focused around a singular purpose; the partnership with its administrative services partner; and the diversity of programs, services, and experiences among the 10 FQHCs.



OVERVIEW

The Federally Qualified Health Center Urban Health Network (FUHN) is a coalition of 10 federally qualified health centers (FQHCs) in the Minneapolis–St. Paul area that came together to pursue an accountable care organization (ACO) contract with the state of Minnesota. Under an ACO contract, the FQHCs will collectively be held accountable for meeting established quality and cost benchmarks for a defined Medicaid patient population, and the coalition will be eligible to share in any savings they achieve during the three-year contract.¹ FUHN's delivery system consists of nearly 40 service sites across seven counties. The clinics provide care to approximately 150,000 patients, of which nearly 23,000 are Medicaid patients that will be served by the ACO.²

FUHN is one of the nation's first safety-net ACOs. In forming an ACO, the FQHCs have transitioned (in the words of one FUHN board member) from "fierce competitors to fierce collaborators." The 10 FQHCs view accountable care as a mechanism to leverage resources and foster collaboration in the face of limited funding and a geographically dispersed and diverse network. By participating in accountable care at an early stage, FUHN hopes to demonstrate the capacity of an FQHC-based ACO to deliver high-quality, low-cost care for safety-net patients.

This case study was written as contract negotiations between FUHN and the state of Minnesota were nearing a close; the final contract was executed and the ACO's performance period began in January 2013 (Exhibit 1). The study explores the state context under which the ACO contract emerged; origins of the coalition; the health centers' motivations to participate; strategies and processes established to work toward cost and quality benchmarks; challenges faced in pursuing accountable care; and the organizational

strengths that facilitated the FQHCs' shift from competition to collaboration.

The ACO model developed by FUHN may be of interest to organizations pursuing a coalition-based ACO and may provide insights to safety-net organizations considering accountable care. Based on FUHN's model, it appears each of the following may be important to the development of a coalition-based ACO, particularly in the safety net:

- aligning leadership through the identification of a shared vision;
- establishing a strong governance structure tasked with overseeing and driving progress;³
- developing a unified strategy for using data to measure progress and identify improvement opportunities; and
- prioritizing the development of care coordination infrastructure.

Exhibit 1. FQHC Urban Health Network (FUHN): Contract Features

Contract feature	
Length of contract	Three years, starting January 1, 2013.
Patients	
Attribution method	Performance year attribution.*
Attributed patients	Approximately 23,000 Medicaid beneficiaries. Covered patients include both fee-for-service and managed care beneficiaries, excluding dual eligibles.
Financial model	
Risk model	Upside shared savings only (no downside risk).
Shared savings rate	Savings achieved are shared equally between FUHN and the state.
Covered services in total cost of care	A range of services including inpatient, ambulatory, pharmacy, laboratory, and mental health services. Excluded services include dental, supplies, transportation, and most long-term supports and services.
Baseline spending calculation	Calculated using fee-for-service claims and managed care encounter data from the base year.
Risk adjustment	Adjusted Clinical Groups (ACG) risk scores weighted to reflect differences in the health risk between attributed and nonattributed populations.
Upfront payments	No upfront payments received from the state.
Quality performance	Year 1: 25% of shared savings contingent on reporting quality and patient experience measures. Year 2: 25% of shared savings tied to relative improvement on clinic-based measures and absolute performance on hospital-based and patient experience measures. Year 3: 50% of shared savings tied to relative improvement on clinic-based measures and absolute performance on hospital-based and patient experience measures.

* V. A. Lewis, A. B. McClurg, J. Smith et al., "Attributing Patients to Accountable Care Organizations: Performance Year Approach Aligns Stakeholders' Interests," *Health Affairs*, March 2013 32(3):587-95.

STATE CONTEXT

Health System Performance and Reforms

Minnesota has one of the most advanced state health care systems in the nation. According to The Commonwealth Fund's 2009 *State Scorecard*, Minnesota leads on many indicators of population health and is ranked third in the country in rates of insurance coverage.⁴ The state passed health care reform legislation in 2008 designed to achieve the "triple aim" of improved patient care, improved population health, and reduced per capita costs of care.⁵ The law included provisions to develop standard quality measures, establish a statewide health improvement program, increase consumer engagement, and promote the patient-centered medical home model.⁶ Despite these factors, Minnesota experiences high levels of racial, ethnic, and socioeconomic health disparities, ranking only 17th nationally on measures of health equity.⁷

Safety-Net Efforts

Seventeen FQHCs in Minnesota serve as safety-net providers for 170,000 patients, 45 percent of whom are enrolled in public health insurance programs and 40 percent of whom are uninsured. The health centers provide care to disadvantaged patients from a range of cultural backgrounds. Ninety-four percent of health center patients have incomes below 200 percent of the federal poverty level, and many of the clinics make efforts to provide culturally competent care to specific populations (e.g., Somali, Native American, Latino, African American, or Hmong).⁸ Patients seeking care from the health centers often have complex medical and social needs, including multiple chronic conditions, low health literacy, and hardships such as poverty and homelessness.

Despite sharing the goal of providing high-quality care to low-income and medically underserved populations, the state's FQHCs—particularly the 12 in the Minneapolis–St. Paul region—describe their historical relationship as competitive. The health centers have had to vie for grant funding, service areas,

providers, and patients. The Minnesota Association of Community Health Centers has served as a hub for some collaboration, mainly in response to policy issues at the state and national levels. From this association, a subset of urban FQHCs and community clinics met regularly to coordinate efforts around emergency preparedness, billing support, and a limited number of local quality improvement initiatives.

Impact of Market Consolidation and Managed Care

Horizontal and vertical integration in Minnesota's insurance, hospital, and purchasing sectors has resulted in a highly consolidated marketplace, with high levels of managed care and several large, hospital-based systems.⁹ The FQHCs have often felt dwarfed in a marketplace dominated by large systems with greater resources and managed care plans, and thus view the ACO demonstration as an opportunity to better represent their collective interests within this consolidated marketplace.

ORIGINS OF FUHN

In May 2010, Minnesota passed legislation mandating the Department of Human Services to develop and implement the Health Care Delivery Systems (HCDS) demonstration to test innovative delivery systems, including accountable care organizations for Medicaid beneficiaries. Later that year, the Minnesota Association of Community Health Centers held a board meeting focused on health reform activities at the state level. This resulted in the formation of a planning committee tasked with investigating the future of ACOs. The committee members—chief executive officers from four of the 10 organizations that would eventually compose FUHN—saw the HCDS demonstration as an opportunity for the health centers to participate in accountable care.¹⁰ They studied the principles and concepts of accountable care and gauged interest among the other FQHCs in pursuing an ACO contract. Resulting from this investigation, the 10 CEOs that would form FUHN's board of directors began meeting

in July 2011 to develop a response to the state's request for proposals for the demonstration program.

Participating FQHCs and Patients Served

FUHN includes 10 of the 12 FQHCs in the Minneapolis–St. Paul area, totaling 40 service sites that provide care to 150,000 patients annually. One member's predecessor clinic was founded in the 1930s, and the newest health center formed in 2008 to serve the Somali and other East African communities. The 10 FQHCs vary greatly in their size and capabilities. For example, the smallest, the Native American Community Clinic, serves just 4,000 patients at one location, whereas the largest, West Side Community Health Services, serves 33,000 patients across 18 locations (Exhibit 2).

FUHN's clinics provide care to patients who may benefit greatly from strong care coordination. The HCDS demonstration's covered beneficiary population includes all Medicaid fee-for-service and managed care beneficiaries, except those who are dually eligible for Medicare and Medicaid. Among FUHN's patient population in the ACO demonstration, 43 percent sought care at the emergency department over a one-year period, often for nonemergent conditions such as respiratory illness, nonpsychotic mental health conditions, and dental pain. FUHN's adult patients (ages 20 to 64) also experience high levels of chronic disease: 36.2 percent have a depressive condition; 17 percent have been diagnosed with asthma; and 11.8 percent are diabetic. The high chronic disease burden and potentially avoidable use of emergency departments represent key cost drivers among FUHN's patient population.

Exhibit 2. Member Organizations of the FQHC Urban Health Network (FUHN)

Clinic	Target population	Number of sites	Number of patients*	Patient insurance status*	Year founded
Axis Medical Center**	Somalis, East Africans, residents of Stevens Square & Loring Heights	1 medical	4,500	9% uninsured 89% public 2% private	2008
Community-University Health Care Center	Children and low-income families in South Minneapolis	1 medical, dental & behavioral health	12,000	28% uninsured 58% public 14% private	1966
Indian Health Board of Minneapolis	American Indian community in Minneapolis	1 medical, dental & behavioral health	5,000	51% uninsured 38% public 11% private	1971
Native American Community Clinic	Native American families in metro area	1 medical, dental & behavioral health	4,000	26% uninsured 53% public 21% private	2003
Neighborhood HealthSource	Community members of North & Northeast Minneapolis	4 medical & behavioral health	10,000	39% uninsured 43% public 18% private	1971
Open Cities Health Center	African Americans, Southeast Asians, immigrants, refugees	2 medical, dental & behavioral health	14,000	38% uninsured 47% public 15% private	1967
People's Center Health Services	Economically disadvantaged and socially disenfranchised	2 medical & behavioral health, 1 dental	10,000	28% uninsured 61% public 11% private	1970
Southside Community Health Services	Low-income women & children from Southside Minneapolis	2 medical, 1 dental & vision	10,000	37% uninsured 50% public 13% private	1971
United Family Medicine**	Medically uninsured, underinsured, underserved residents of St. Paul	1 medical & behavioral health, 1 satellite	15,000	20% uninsured 47% public 33% private	1971
West Side Community Health Services	Latinos, Hmong, adolescents, immigrants, low-income community	18 medical & behavioral health, including 2 dental	34,000	51% uninsured 38% public 11% private	1969

* Data from the Bureau of Primary Health Care's 2011 Uniform Data System, <http://bphc.hrsa.gov/uds/view.aspx?q=rlg&year=2011>.

** Data from the Bureau of Primary Health Care is unavailable for FQHC Look-Alikes. Patient information based on organization's annual reports.

Organizational Formation

The FQHCs’ proposed ACO was selected for contract negotiations under the HCDS demonstration in December 2011.¹¹ The group identified early on that lack of data would be a significant barrier to implementation of a new care delivery model, particularly given the absence of integrated electronic medical records to connect the FQHCs. To overcome this, FUHN pursued a partnership with an administrative services organization for data management and population health analysis. FUHN interviewed four organizations before contracting with Optum (a subsidiary of UnitedHealth Group) to provide data tools, strategic and operational insight, and other administrative services to support clinic-level improvements and network-wide infrastructure.

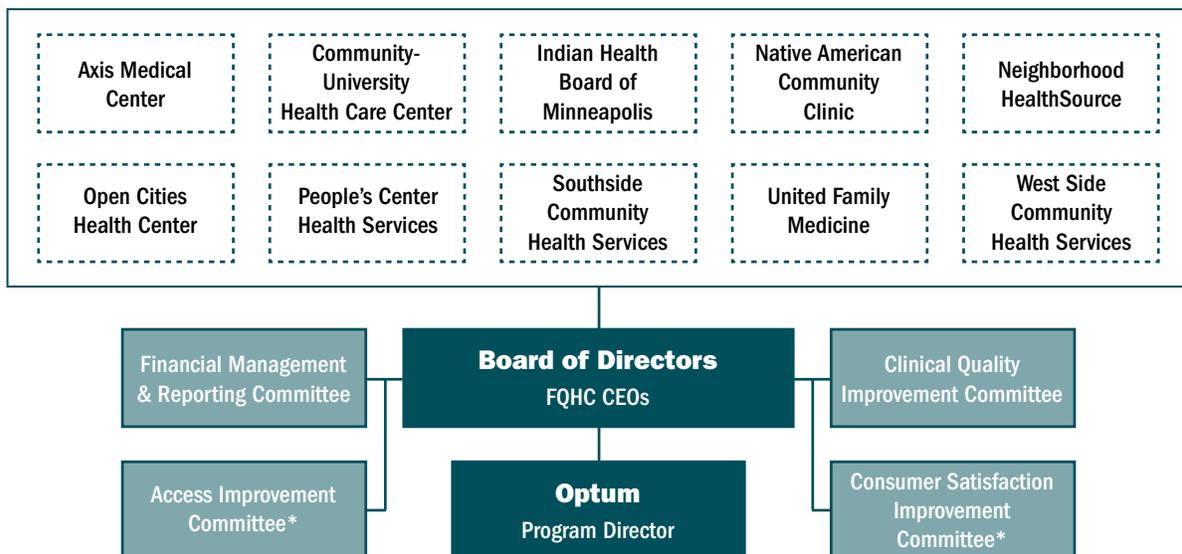
The FQHCs worked with Optum to develop a care delivery model that includes performance improvement coaching, quality analysis and monitoring, and information technology infrastructure. Because of the limited funding available among the FQHCs, Optum has taken on significant financial risk for the ACO’s infrastructure investments. FUHN’s leaders considered the investment from Optum as necessary to pursuing the ACO contract because the state did not provide any upfront or advance funding for the demonstration, such as advances on shared savings or

upfront care management payments. Neither Optum nor the member FQHCs went into the demonstration blindly: they worked with a nonprofit health plan in Minnesota to analyze data on 9,000 patients served by the FQHCs and concluded there was potential for significant shared savings under an ACO contract. Optum advised the FQHCs on the development of FUHN’s proposal to the state and is providing an array of expertise, services, and technology to support FUHN in meeting cost and quality benchmarks.

Governance and Leadership

The democratic and collaborative nature of the FUHN coalition is firmly rooted in its governance structure (Exhibit 3). FUHN’s board of directors consists of the executive director or CEO from each of the 10 FQHCs. Board members convene weekly with Optum to discuss program development and implementation. According to FUHN’s members, the coalition’s success has come in large part from the fact that its leaders have devoted significant time to the effort. An Optum-employed program director supports the executives, working closely with them to establish a program development office charged with documenting policies and processes, and creating reporting templates, data reports, and job descriptions for new care coordination and analytic staff.

Exhibit 3. Governance Structure of the FQHC Urban Health Network (FUHN)



* Committee outlined in FUHN’s “Response to Request for Proposals,” but not yet established.
 Source: West Side Community Health Services, Inc., “Response to Request for Proposal,” Letter to Minnesota Department of Human Services Health Care Administration, Nov. 4, 2011, St. Paul, Minnesota.

FUHN's Financial Management and Reporting Committee, consisting of the chief financial officers or finance directors from each of the health centers, is tasked with forecasting operational needs and establishing the coalition's policy on the distribution of shared savings across sites. The Clinical Quality Improvement Committee, which includes medical directors, senior physicians, and quality personnel, is working to share best practices, determine standard treatment protocols for common chronic conditions, set performance targets for improvement, and monitor quality results achieved by FUHN and the member FQHCs. Both committees are supported by the Optum-employed FUHN program director.

MOTIVATIONS TO PARTICIPATE IN THE ACO INITIATIVE

The health center executives view the move toward value-based payment as inevitable and believe the formation of a coalition (with its increased patient volume and strengthened political voice) is the best way to ensure the health centers' survival and success in an evolving health care system. Within this context, three main motivations drove the FQHC's pursuit of an ACO: the opportunity to demonstrate the effectiveness of the FQHC model, the desire to lead health reform, and the ability to leverage scarce resources and participate in shared learning. The relative importance of these motivations varied for each FQHC, often because of the size and capabilities of the organization.

Demonstrating the Effectiveness of the FQHC Model

Many members chose to participate in FUHN in hopes of demonstrating that FQHCs can provide high-quality, low-cost care. With increased numbers of newly insured individuals coming under the Affordable Care Act, the FQHCs saw the formation of an ACO as a way to transition (in the words of its board chair) from "default provider to preferred provider."

In particular, the FQHCs viewed their participation as a defensive move to more permanently secure their relationship with their Medicaid patients. Many clinic leaders thought the state might eventually move

"We saw the opportunity to demonstrate that we can manage care as effectively, or in fact maybe more effectively, than some of the big health systems in our market here."

Financial Management and Reporting Committee

the majority of Medicaid patients into value-based contracts should the HCDS demonstration prove successful. A number of executives also expressed concern for the overall future of the FQHCs, fearing that failure to participate in the demonstration would result in either absorption by a larger hospital-based system or marginalization. Of the six projects selected to participate in the first phase of the HCDS demonstration, FUHN is the only participant in the HCDS demonstration that is not an integrated delivery system but is instead coalition-based.¹² FUHN sought to demonstrate the effectiveness of an alternate model that was "primary care-led and community-based, rather than hospital-led and system-based."¹³

Leading Health Reform

Some health centers also wanted to play a leading role in health reform. FUHN's leaders believe that as a coalition they have been able to exert much greater influence on the state's health reform process than any one of the FQHCs would have been able to do on its own.

The HCDS demonstration marked the first time the health centers felt they had an opportunity to guide state-level policies affecting a large proportion of their patient population. Their ability to take part in contract negotiations and shape the ACO model to the benefit of the FQHCs was a significant departure from past payment arrangements with the state. Previously, the health centers negotiated primarily with managed care organizations that were under contract with the state. For the HCDS demonstration, they have instead been able to negotiate directly with Minnesota's Department of Human Services. FUHN hopes its participation in the demonstration will serve as a model, providing lessons for other states and health centers considering Medicaid ACO initiatives.

Leveraging Scarce Resources and Participating in Shared Learning

Finally, the opportunity to leverage scarce resources and participate in shared learning motivated some of the health centers to participate. Executives and clinical staff saw FUHN as a vehicle for sharing resources (e.g., after-hours care, transportation, and administrative and psychiatric services), standardizing policies and procedures, and sharing best practices for the treatment of common chronic conditions. Regular meetings among clinic leaders provided opportunities for mentorship and guidance around issues such as performance measurement, risk-management, workforce planning, and health information technology support. Additionally, some executives were eager to take advantage of the added resources and business expertise they felt Optum could provide. The ability to leverage scarce resources and participate in shared learning held greater importance for some of the smaller and less established organizations, while the desire to lead health reform served as a greater motivation for the larger FQHCs. The executives of the larger FQHCs often saw shared learning as more of a byproduct of the collaboration and less as a primary motivation for participating in FUHN.

ACCOUNTABLE CARE DELIVERY MODEL

In addition to forming a strong governance structure, FUHN's leaders identified three interdependent elements of their accountable care delivery model: 1) data analytics, 2) performance improvement coaching, and 3) patient-centered medical home certification.

Data Analytics

FUHN is working with Optum to implement an analytic tool called ImpactPro, which is designed to improve the utility of administrative claims data by monitoring cost, utilization, and quality trends for individual patients, as well as for providers and clinics. It will produce four types of reports: 1) patient follow-up reports will identify opportunities for preventive services and follow-up care; 2) panel view reports will give physicians information on their patients' historical

utilization of care and relative risk; 3) high-risk patient management reports will use quality measures, evidence-based care protocols, and predictive analyses to identify opportunities to help patients at highest risk of hospitalization; and 4) clinic-specific performance reports will track each FQHC's progress in meeting overall cost and quality benchmarks. The reports aim to drive continuous improvement activities and measure their impact in reducing utilization and improving the quality of care.

Performance Improvement Coaching

To enable effective use of the data available through ImpactPro, FUHN plans to place performance improvement advisors at each of the FQHCs. Performance improvement advisors and medical directors will work directly with staff to analyze clinic performance, identify improvement strategies, and monitor their implementation. In particular, they will help design care coordination processes aimed at reducing emergency department and inpatient utilization, in particular for high-risk populations and patients with high hospital utilization. Additionally, performance improvement advisors will study high-performing clinics and bring recommendations to the governance committees for spreading effective practices across the network.

Patient-Centered Medical Home Certification

FUHN strives to strengthen primary care by having each of its members attain Health Care Home certification, Minnesota's version of patient-centered medical homes. Introduced by the state's 2008 health care reform legislation, health care home certification is a rigorous process that requires the use of effective team care delivery, patient registries to identify gaps in care, previsit planning, care plans to track patients' progress over time, patient experience surveys, and ongoing partnerships with community resources.¹⁴ The FQHCs in the network are at varying stages of becoming health care homes, with four having already obtained certification.

CHALLENGES IN PURSUING ACCOUNTABLE CARE

In developing and implementing its new care delivery model, FUHN's leaders have identified three internal challenges: 1) providing significant upfront investment of time and resources; 2) establishing a means for effective communication, decision-making, and standardization among coalition members; and 3) managing performance variation among member organizations. FUHN hopes to address these challenges through the careful design of its care delivery model, the terms reached in its contract negotiations with the state, and the strength of its governance structure.¹⁵

Investment of Time and Resources

FUHN's leaders have made significant upfront investments, both in terms of time and money, in order to launch the ACO initiative. The CEOs devoted substantial time to gain expertise in accountable care. In addition, the subset of CEOs that served as the FUHN negotiating team invested significant time during the negotiation process with the state. FUHN's workgroup and committee meetings demand hours of time from the CEOs, financial directors, and medical directors of member organizations. This investment of time presents a particular challenge for the smaller FQHCs, whose leaders often have a hard time balancing the needs of their own clinics with those of FUHN.

FUHN also has had to overcome significant resource constraints among its members. For example, FUHN determined early on that it would be unaffordable for the FQHCs to develop a health information exchange to connect their disparate electronic medical records. Although FUHN's partnership with Optum may address some resource constraints through the provision of analytic tools and performance improvement advisors, FUHN must continue to work with the limited resources available to safety-net organizations.

Cross-Site Communication, Decision-Making, and Standardization

FUHN faces a number of logistical issues in trying to work effectively as a coalition. A strong governance

structure has been established to facilitate coordination across the 10 independent organizations, but this requires time and effort. The board operates by consensus to facilitate full inclusion of all members. Despite the benefits of this approach, decision-making at the board level is often time-consuming and slow.

In addition, FUHN must decide when to standardize across the FQHCs and when to foster clinic-specific strategies and programming. To date, efforts have centered on identifying protocols to be standardized, such as policies for emergency preparedness and for patients seeking pain medication. Going forward, FUHN's leaders will need to think about broader strategies, including the standardization of provider and patient engagement efforts. Care management approaches will likely remain site-specific, adapted by performance improvement advisors to address local needs. For example, Community-University Health Care Center anticipates making more extensive use of case managers for serious and persistent mental illness because of its higher prevalence of patients with behavioral health needs.

Managing Performance Variation

FUHN's member organizations vary widely with respect to their size and staffing, relationships with hospitals, implementation of electronic medical records, provider engagement in care delivery reform efforts, and progress toward health care home certification. These differences will likely affect each health center's ability to meet cost and quality benchmarks. FUHN's leaders must address fundamental questions about how to achieve equity among the 10 organizations, including how to help underperforming sites improve and how to distribute shared savings.

The Financial Management and Reporting Committee is designing a formula to distribute shared savings among the FQHCs while accounting for variance in their size and performance. Thus far, the CFOs have developed a conceptual framework that includes three levels of distribution: 1) a lump-sum payment, equally shared among the FQHCs; 2) a payment tied to each health center's performance; and 3) a payment

indexed to the number of attributed patients at each health center. The committee still needs to develop and implement a specific formula for distributing savings.

ORGANIZATIONAL STRENGTHS

FUHN intends to rely on a number of the coalition's strengths to overcome challenges and facilitate the transition to accountable care. These strengths include a committed leadership team focused on a singular purpose; the partnership with Optum; and the diversity of programs, services, and experiences among the 10 FQHCs.

Committed Leadership Team with a Singular Purpose

FUHN has been a CEO-led initiative since its onset, and members say that their CEOs' commitment and creativity has been critical to the coalition's development. FUHN's leaders feel their singular purpose—to succeed under the ACO model—has enabled unprecedented levels of collaboration. This collaboration has depended on strong governance, including a clearly designed board and committee structure and the active and regular engagement of clinic leaders. The board of directors and each committee has a charter that defines its purpose, outlines key responsibilities, and establishes membership representative of all 10 FQHCs. Clear delineation of roles and responsibilities has fostered the enthusiastic and sustained participation of clinic leadership. The active engagement of a number of leaders from each FQHC (CEOs, medical and finance directors, and quality personnel) differentiates the FUHN initiative from the FQHCs' past efforts to work together.

The health center executives believe their devotion of significant time each week has been essential for successful collaboration. Through weekly board meetings, for example, clinics' CEOs and executive directors have established informal relationships and a level of trust that they hope will facilitate the sharing of resources and insights. Similarly, clinics' quality and medical leaders have built stronger ties through the Clinical Quality Improvement meetings. Members

“Optum’s participation with us is critical, because they are going to provide some of the infrastructure that we need to be able to positively influence utilization. And that’s a whole set of tools and tasks that none of us, individually or collectively, could bring to bear.”

Financial Management and Reporting Committee

have started connecting outside of committee meetings to discuss progress and share materials, such as previsit checklists.

Partnership with Optum

According to clinic leaders, Optum played a key role in supporting the development of FUHN's care delivery model. Through this innovative partnership, Optum has provided critically important data analytics software, staff, and business expertise. Additionally, Optum and its program director have set up the pathways for communication by facilitating committee meetings. For example, the program director is responsible for coordinating agenda items with FUHN's leaders as well as distributing notes and reminders for meetings.

Optum is taking on significant financial risk for the resources it provides to FUHN.¹⁶ Over the course of the three-year demonstration, Optum will invest in both upfront and implementation costs, including costs for hiring new staff members (e.g., the program director and performance improvement advisors), analytic tools, and data warehouse infrastructure and maintenance. FUHN must meet cost and quality benchmarks and achieve shared savings in order for Optum and the 10 FQHCs to recoup their investments. Without this financial investment, FUHN's leaders believe it would not have been possible for them to pursue the ACO contract.

Diversity of Programs, Services, and Experiences

The diversity of FUHN's member organizations may strengthen opportunities for collaboration. The 10 FQHCs have tailored their services to be responsive to the unique needs of the underserved, low-income

communities they serve.¹⁷ With each FQHC providing care to different subsets of the population, the coalition hopes to benefit from sharing best practices among FQHCs. For example, Neighborhood HealthSource requested culturally tailored information on diabetes and nutrition for its Latino patients from West Side Community Health Services, the member organization that serves the largest number of Latino patients in the network. Similarly, when United Family Medicine opened its first dental clinic, they lacked the expertise to hire dental staff. The dental director from Open Cities Health Center assisted in the hiring process and helped United Family Medicine establish dental procedures and protocols. Although the integration of 10 disparate organizations will prove challenging, the diversity among the FQHCs means the coalition has a large pool of experience, resources, and knowledge to draw upon.

MOVING FORWARD IN THE PURSUIT OF ACCOUNTABLE CARE

FUHN hopes to improve population health and achieve shared savings by increasing preventive health care services, reducing the number of hospital admissions and readmissions, and reducing emergency department use. As they move forward in the performance period, the coalition expects to encounter a variety of emerging challenges. Their experiences may provide lessons for community health centers and other groups pursuing accountable care.

Emerging Challenges

FUHN anticipates a new set of challenges will emerge as it implements its care delivery model and is held accountable for the overall care and cost of its clinics' underserved patient population. For example, the performance improvement advisors will need to be effectively integrated into the clinic workflow. FUHN must develop a standardized process for accurately collecting and reporting data on clinical quality and patient experiences.¹⁸ The FQHCs also must improve their relationships with local hospitals and specialists to better coordinate care across settings. While some

"I'm excited about the opportunity to collaborate with the other clinicians. As you can see, we're all trying to reach the same goals, but we all have a different set of resources, we all have a different set of skills and ideas, and we should be bringing those together to improve quality."

Neighborhood HealthSource

have established formal referral relationships with tertiary care centers, the majority make referrals on an ad hoc basis. Given the geographic spread of the FQHCs, FUHN does not plan to standardize these relationships, but instead will look to each clinic to develop its own activities for engaging hospitals and accessing timely admissions and discharge information.¹⁹ Perhaps most important, FUHN must finalize how shared savings will be distributed among the member organizations. Its leaders anticipate considerable performance variation across clinics and are developing strategies to help underperforming sites improve.

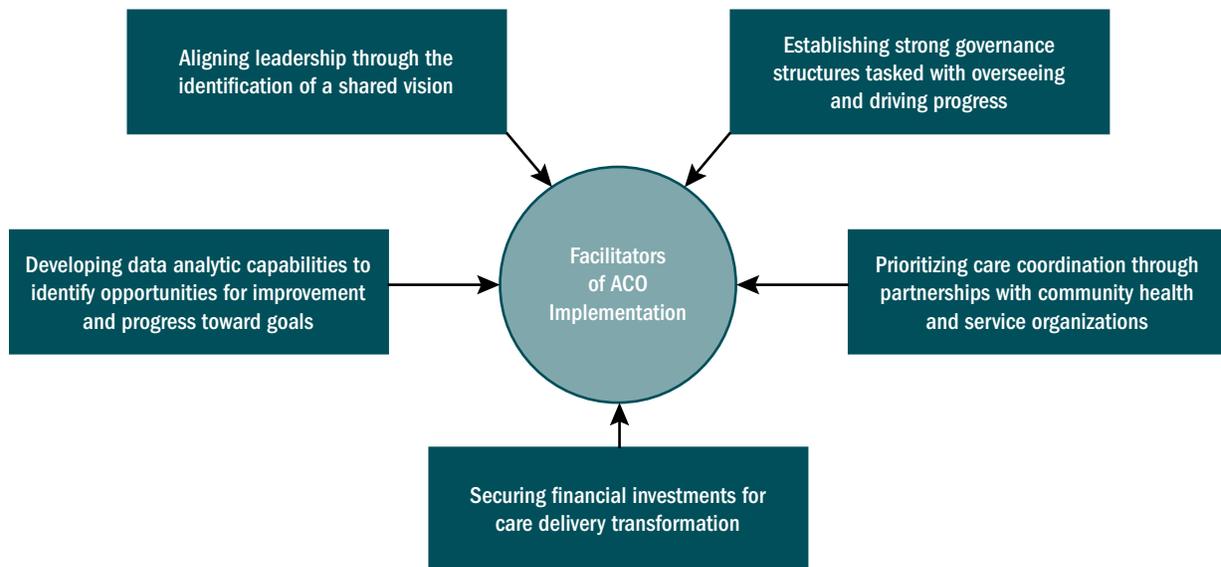
Along with these implementation barriers, FUHN faces additional challenges in serving a highly vulnerable patient population. The long-term success of FUHN will hinge in part on the clinics' ability to meet the behavioral health and social service needs of their patients. FUHN clinics plan to collaborate in order to optimize increasingly scarce resources and to learn from each other how to better integrate physical health, behavioral health, and social services.

Lessons for the Field

FUHN's transition to accountable care may be of interest to other FQHCs as well as organizations outside of the safety net that are pursuing coalition-based ACOs in a fragmented system of care. Despite serving disadvantaged patients, FUHN faces many of the same challenges as does any organization seeking to pursue accountable care.

Based on FUHN's experience, it appears the following approaches may be important to the development of a coalition-based ACO (Exhibit 4):

Exhibit 4. FQHC Urban Health Network (FUHN) ACO Implementation Facilitators



- aligning leadership through the identification of a shared vision;
- establishing a strong governance structure tasked with overseeing and driving progress;²⁰
- developing a unified strategy for using data to routinely measure progress and identify improvement opportunities;
- prioritizing the development of care coordination infrastructure, which may involve community partnerships to overcome size and resource limitations or collaboration with an administrative services group such as Optum; and
- securing financial investments for care delivery transformation.

CONCLUSION

FUHN's performance period began on January 1, 2013. As the ACO evolves, its members will continue to address the challenges of: procuring sufficient resources; communicating, decision-making, and standardizing across sites; and managing cross-site variation. To address these challenges and advance toward the provision of lower-cost, higher-quality care, FUHN plans to rely on the strength of its leaders; its partnership with Optum; the diversity of its member organizations; and the growing ability of the health centers to learn from one another and jointly problem-solve. Success in the HCDS demonstration could lead FUHN to pursue additional ACO contracts with payers other than the state, though for now FUHN remains focused on its Medicaid contract.²¹ FUHN looks forward to full implementation of its new care delivery model and sees accountable care as a pathway to providing high-quality, low-cost care in the safety net.

ABOUT THIS STUDY

In late September 2012, a team from The Dartmouth Institute for Health Policy & Clinical Practice conducted a five-day site visit with each of the 10 members of the Federally Qualified Health Center Urban Health Network (FUHN) in Minneapolis–St. Paul, Minnesota. Information in this case study was collected through in-person interviews with the CEOs, medical and finance directors, and quality personnel at the 10 FQHCs. The site evaluation team also attended meetings with FUHN’s Clinical Quality Improvement Committee; Financial Management and Reporting Committee; board of directors; and administrative services partner, Optum. Additional information was derived from a review of internal and external documents, including FUHN’s response to the Minnesota Department of Human Service’s request for proposals, press releases, relevant presentation slides, annual reports, job descriptions, and committee charters.

NOTES

- 1 FUHN is participating in an upside-only risk arrangement with the state; therefore the coalition is not liable for costs that exceed the established cost benchmark.
- 2 Under the Health Care Delivery Systems (HCDS) demonstration, patients who receive the plurality of their primary care services at one of FUHN’s member clinics will be attributed to the ACO. FUHN is responsible for the overall cost and quality of its attributed patients’ care, regardless of whether the ACO delivers the services. Attributed patients face no network restrictions and are free to receive care outside of FUHN’s member clinics. The demonstration’s covered beneficiary population includes all Medicaid fee-for-service and managed care beneficiaries, except those who are dually eligible for Medicare and Medicaid.
- 3 Strong governance refers to the design and commitment of FUHN’s board of directors and committees. Each committee has a charter that defines its purpose, outlines key responsibilities, and establishes committee membership representative of all 10 FQHCs. In addition to clear roles and responsibilities, FUHN’s governance has active commitment and engagement of participants, including regular meeting attendance and active participation from committee members.
- 4 D. McCarthy, S. K. How, C. Schoen, J. C. Cantor, and D. Belloff, *Aiming Higher: Results from a State Scorecard on Health System Performance, 2009* (New York: The Commonwealth Fund, Oct. 2009). In Minnesota, 91.6 percent of the adult population is insured, owing to the state’s strong base of employer-provided insurance and large, state-sponsored programs that subsidize coverage for the poor and near-poor, including Medical Assistance (its Medicaid program) and MinnesotaCare (the state’s public insurance program for the near-poor).
- 5 D. M. Berwick, T. Nolan, and J. Whittington, “The Triple Aim: Care, Health, and Costs,” *Health Affairs*, May/June 2008 27(3):759–69.
- 6 Laws of Minnesota 2008, Ch. 358, Art. 2.
- 7 McCarthy, How, Schoen et al., *Aiming Higher*, 2009.
- 8 R. Degelau, *Minnesota’s Federally Qualified Health Centers* (Minneapolis: Minnesota Association of Community Health Centers). Available at <http://www.health.state.mn.us/healthreform/ship/events/degelauppt.pdf>. The FQHCs have tailored their workforce and services to be responsive to the unique characteristics of the communities and cultures they serve. For example, 60 percent of the 250 employees at West Side Community Health Center are bilingual and bicultural. Similarly, at United Family Medicine all clinic signs are posted in English, Spanish, Russian, Hmong, and Somali.
- 9 In the Minneapolis–St. Paul area, four insurance plans (Blue Cross Blue Shield, HealthPartners, Medica, and UCare) and three multihospital systems (Allina, Fairview, and HealthEast) dominate the market. The January 2013 merger of HealthPartners and Park Nicollet is the most recent indication of Minnesota’s consolidated marketplace and marks a growing trend of strategic partnerships between different types of health care organizations. The new organization, which goes by the name HealthPartners, is both a health insurer and a health care delivery system that includes five hospitals. See <http://www.healthpartners.com/public/newsroom/newsroom-article-list/1-1-2013.html> for HealthPartners January 2013 press release. Among the more than 50,000 Medicaid beneficiaries served by the 10 member organizations of FUHN, approximately 70 percent are enrolled in managed care plans.

- ¹⁰ The four-person planning committee has since evolved into FUHN's Executive Committee, a subset of the board of directors that led contract negotiations with the state.
- ¹¹ FUHN became a legal entity later that month through the repurposing of the Neighborhood Health Care Network, the subset of urban FQHCs and community clinics that met regularly to coordinate efforts around emergency preparedness, billing support, and a limited number of local quality improvement initiatives. Eight of FUHN's 10 member organizations were already members of the Neighborhood Health Care Network. The organization submitted a Doing Business As (DBA) application in order to repurpose the Neighborhood Health Care Network to support the activities of the demonstration project. FUHN was approved as a legal entity by the state of Minnesota after the FQHCs not participating in the FUHN initiative resigned and the two FQHC Look-Alikes (Axis Medical Center and United Family Medicine) joined the repurposed organization.
- ¹² FUHN is classified as a virtual delivery system under the HCDS demonstration. In the demonstration's request for proposals, the Minnesota Department of Human Services defines a virtual delivery system as "primary care providers and/or multispecialty provider groups that are not formally integrated with a hospital or integrated system via aligned financial arrangements and common clinical and information systems."
- ¹³ West Side Community Health Services, Inc., "Response to Request for Proposal," Letter to Minnesota Department of Human Services Health Care Administration, Nov. 4, 2011, St. Paul, Minnesota.
- ¹⁴ "Health Care Homes Certification Assessment Tool," Minnesota Department of Health, <http://www.health.state.mn.us/healthreform/homes/index.html>.
- ¹⁵ FUHN's contract negotiations with the state ended in January 2013. The exact terms of the final contract (including the performance measures used to determine eligibility for shared savings) have not been released.
- ¹⁶ Three administrative services organizations other than Optum expressed interest in partnering for the demonstration. One of these was willing to take on similar financial risk.
- ¹⁷ For example, People's Center Health Services is located within five blocks of a high-density housing complex that is home to over 10,000 Somali refugees and immigrants. The FQHC operates disease-specific programs targeting the needs of its Somali patients, including programs for hepatitis and post-traumatic stress disorder.
- ¹⁸ To become accountable for the quality of its patients' care, FUHN must overcome technical challenges in collecting performance measures specific to the HCDS demonstration. Although FQHCs have long reported on performance as required by the Bureau of Primary Care, the demonstration uses measures from Minnesota's Statewide Quality Reporting and Measurement System (Minnesota Statutes 62U.02; MN Rules, Chapter 4654). Performance measurement and reporting may present greater difficulty for the less-resourced FQHCs.
- ¹⁹ Although the coalition does not include a hospital partner, FUHN's total cost of care will include inpatient and emergency care services. Because of this, FUHN is working to improve care transition management and hopes to reduce preventable readmissions and emergency department visits through strengthened community partnerships with local hospitals and specialists. Medical directors and performance improvement advisors plan to work with clinic staff to implement methods for ensuring that primary care physician designations are understood by hospitals caring for FUHN's patients.
- ²⁰ Strong governance refers to the design and commitment of FUHN's board of directors and committees. Each committee has a charter that defines its purpose, outlines key responsibilities, and establishes committee membership representative of all 10 FQHCs. In addition to clear roles and responsibilities, FUHN's governance has active commitment and engagement of participants, including regular meeting attendance and active participation from committee members.
- ²¹ Because the core of the clinics' patient population is uninsured or enrolled in Medicaid, FUHN does not anticipate pursuing additional ACO contracts in the immediate future. Currently, the commercial payer mix varies widely at each FQHC, and only United Family Medicine sees a significant number of Medicare beneficiaries (approximately 13 percent of their overall patient population). With upcoming Medicaid expansion and the opening of state insurance exchanges under the Affordable Care Act, however, the payer mix at the FQHCs could change significantly. This may affect FUHN's decision to participate in additional ACO contracts. FUHN will do so only if regulatory concerns, such as antitrust laws, can be overcome.

ABOUT THE AUTHORS

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Comparison of Proposed 2014 ACO Reporting or Payment Measures for MSSP (Medicare ACO), Vermont Commercial ACO, and Vermont Medicaid ACO

Key: Y=Yes; N=No; C=Claims; MR=Medical Record; S=Survey; R=Reporting; P=Payment

MSSP	Measure Description	Data: Claims, Medical Record, or Survey?	Medicare ACO Use Year 2 2014	Commercial ACO Use Proposed 2014	Medicaid ACO Use Proposed 2014
Y	Risk-Standardized All Condition Readmission	C	R		
Y	Ambulatory Sensitive Conditions Admissions: COPD or Asthma in Older Adults	C	P	R	R
Y	Ambulatory Sensitive Conditions Admissions: Heart Failure	C	P		
Y	% of PCPs who Successfully Qualify for an EHR Program Incentive Payment	Other	P		
Y	Medication Reconciliation	MR	P		
Y	Falls: Screening for Future Fall Risk	MR	P		
Y	Influenza Immunization	MR	P		
Y	Pneumococcal Vaccination for Patients 65 and Older	MR	P		
Y	Adult BMI Screening and Follow-Up	MR	P	R	R
Y	Tobacco Use: Screening and Cessation Intervention	MR	P		
Y	Screening for Clinical Depression and Follow-Up Plan	MR	P	R	R
Y	Colorectal Cancer Screening	MR	R	R	R
Y	Breast Cancer Screening	C	R	R	R
Y	Screening for High Blood Pressure and Follow-Up Documented	MR	R		
Y	Diabetes Composite (HbA1c control)	MR	P	R	R
Y	Diabetes Composite (LDL Control)	MR	P	R	R
Y	Diabetes Composite (High Blood Pressure Control)	MR	P	R	R
Y	Diabetes Composite (Tobacco Non Use)	MR	P	R	R
Y	Diabetes Composite (Daily Aspirin or Antiplatelet Medication)	MR	P	R	R
Y	Diabetes HbA1c poor control	MR	P	R	R
Y	Hypertension: Controlling High Blood Pressure	MR	P		
Y	IVD: Complete Lipid Panel and LDL Control	MR/C*	P	P*	P*
Y	IVD: Use of Aspirin or Another Antithrombotic	MR	P		
Y	Heart Failure: Beta Blocker Therapy for LVSD	MR	R		
Y	Coronary Artery Disease Composite (Lipid control)	MR	R		
Y	Coronary Artery Disease Composite (ACE or ARB for LVSD)	MR	R		

*Recommendation for Vermont Commercial/Medicaid ACO is to substitute the claims based Cholesterol Management for Patients with Cardiovascular Conditions (LDL Screening only) for the medical record based IVD: Complete Lipid Panel and LDL Control measure, due to data collection challenges.

MSSP	Measure Description	Data: Claims, Medical Record, or Survey?	Medicare ACO Use Year 2 2014	Commercial ACO Use Proposed 2014	Medicaid ACO Use Proposed 2014
N	All-Cause Readmission	C		P	P
N	Adolescent Well-Care Visit	C		P	P
N	Follow-Up After Hospitalization for Mental Illness (7 day)	C		P	P
N	Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	C		P	P
N	Avoidance of Antibiotic Treatment for Adults with Acute Bronchitis	C		P	P
N	Chlamydia Screening in Women	C		P	P
N	Developmental Screening in First 3 Years of Life	C			P
N	Depression Screening by 18 Years of Age	C			P
N	Rate of Hospitalization for Ambulatory Care-Sensitive Conditions: PQI Composite	C		R	R
N	Appropriate Testing for Children With Pharyngitis	C		R	R
N	Childhood Immunization Status	MR		R	R
N	Pediatric Weight Assessment and Counseling	MR		R	R
	Patient Experience Surveys				
Y	NIS Patient Experience: Getting Timely Care, Appointments, Information	S	P		
Y	NIS Patient Experience: How Well Providers Communicate	S	P		
Y	NIS Patient Experience: Patients' Rating of Provider	S	P		
Y	NIS Patient Experience: Access to Specialists	S	P		
Y	NIS Patient Experience: Health Promotion and Education	S	P		
Y	NIS Patient Experience: Shared Decision Making	S	P		
Y	NIS Patient Experience: Health Status/Functional Status	S	R		
N	PCMH Patient Experience: Access to Care	S		R	R
N	PCMH Patient Experience: Communication	S		R	R
N	PCMH Patient Experience: Shared Decision-Making	S		R	R
N	PCMH Patient Experience: Self-Management Support	S		R	R
N	PCMH Patient Experience: Comprehensiveness	S		R	R
N	PCMH Patient Experience: Office Staff	S		R	R
N	PCMH Patient Experience: Information	S		R	R
N	PCMH Patient Experience: Coordination of Care	S		R	R
N	PCMH Patient Experience: Specialist Care	S		R	R
	Total Measures for Payment or Reporting 2014		33	31	33

*Recommendation for Vermont Commercial/Medicaid ACO is to substitute the claims based Cholesterol Management for Patients with Cardiovascular Conditions (LDL Screening only) for the medical record based IVD: Complete Lipid Panel and LDL Control measure, due to data collection challenges.

Intervention Effects

Default view: review articles appear first, followed by remaining articles in alphabetical order by last name of lead author.

Citation	Type of Intervention	Type of Provider/Care Setting	Payment Incentives	Disease/Condition	Payer	Age	Additional Study Population Details	Duration	ROI	Total Cost Impact	Emergency Department		Hospital Admissions		Hospital Readmissions		Primary Care Services		Specialty Care Services		Quality/Other	Comments			
											ED Visits	ED Cost	Admissions and Inpatient Days	Cost	Readmissions	Cost	Utilization	Cost	Utilization	Cost					
Bodenheimer T, Berry-Miller R. "Care management of patients with complex health care needs." Research Synthesis Report No. 19 (2009). Robert Wood Johnson Foundation.	Care management	Review of multiple studies		Patients with complex health care needs	Varied					In primary care settings, 5 of 8 studies showed no significant reduction	In primary care settings, 5 of 8 studies showed no significant reduction	In primary care settings, 5 of 8 studies showed no significant reduction, though 3 showed reductions for some subpopulations of patients (higher-risk patients)		Hospital-to-home management of CHF patients reduces readmissions. Other studies w/ varied health conditions also showed reduction in readmissions associated with lower readmissions.		Hospital-to-home management of CHF and other studies w/ varied health conditions report cost reductions associated with lower readmissions.					In primary care, 7 of 9 studies found improvements in quality, with longer duration more likely to demonstrate positive improvement.				
Hoff T, Weller W, DePuccio M. "The Patient-Centered Medical Home A Review of Recent Research." Medical Care Research and Review 69.6 (2012): 619-644.	Medical home	Review of multiple studies		Varied	Varied	Varied				7 of 10 that reported found significant reduction		4 of 7 that reported found reduction	1 of 5 that reported found reduction in total overall cost, 1 increase, 1 no difference, 2 mixed								7 of 7 that reported found improved clinical quality of care, 3 of 6 that reported found improved patient experience				
Jackson GL, et al. "The Patient-Centered Medical Home A Systematic Review." Annals of Internal Medicine 158.3 (2013): 169-178.	Medical home	Review of multiple studies		Varied	Varied	Varied				Overall, studies showed some evidence for reduction in ED visits for adults.		No evidence of impact	No evidence of impact								Small to moderate improvement in preventive services, improved patient experience				
Boult C, et al. "The effect of guided care teams on the use of health services: results from a cluster-randomized controlled trial." Archives of Internal Medicine 171.5 (2011): 460-466.	Care management	Integrated delivery systems		Medium to high risk	Multiple	65+		20 month trial													Reduction in episodes of home health care. For one payer, reduced skilled nursing facility admissions and days.				
Buster M, Kane RL, McAlpine D, et al. "Integration of Mental Health/Substance Abuse and Primary Care." Rockville (MD): Agency for Healthcare Research and Quality (US); 2008 Oct. (Evidence Reports/Technology Assessments, No. 173.) 3. Results.	Integration of mental health and primary care	Review of multiple studies		Depression, anxiety disorders, somatizing disorders, ADHD		Varied		Varied		Evidence of potential savings, but significant barriers remain.															
Coleman EA, Parry C, Chalmers S, Min S. "The Care Transitions Intervention: Results of a Randomized Controlled Trial." Arch Intern Med vol 166, sep25, 2006, 1822-1828	Care management	Care transitions across settings		Complex conditions	Medicare	65+	Admitted to study hospital with 1 of 11 selected conditions	6 months						Intervention patients had lower rehospitalization rates and rehospitalization for same diagnosis as index hospitalization at 30, 90 and 180 days than comparison group. Results were statistically significant for 90 days and 180 days (same diagnosis)	Nonelective hospital costs were lower for intervention patients at 30, 90, and 180 days.										
Domino ME. "Enhancing the medical homes model for children with asthma." Med Care. 2009 Nov;47(11):1113-20.	Medical home and case management compared to traditional fee-for-service	Primary care clinic	Per member per month payment	Asthma	Medicaid	<21		3 years		Total costs were higher for medical home and PCMH vs. fee for service, cost neutral considering only claims with asthma diagnosis		Overall 8% decline, similar in MH and PCMH compared to FFS		Rate of hospital use decreased by 13% for case management, and 18% for medical home, as compared to fee-for-service								Improvement in quality indicators for maintenance medications, all services, and all services with asthma diagnosis.			
Dorr DA, et al. "Implementing a multidisease chronic care model in primary care using people and technology." Disease Management 9.1 (2006): 1-15.	Medical home	Primary care clinics		Diabetes, Depression		18+		1 year		8% reduction for patients with depression, compared to 19% increase for control group.				3.2% fewer hospitalizations for care managed patients with diabetes.											
Dorr DA, Wilcox AB, Brunner CP, Burdon RE, Donnelly SM. "The effect of technology-supported, multidisease case management on the mortality and hospitalization of seniors." J Am Geriatr Soc. 2008;56(12):2195-2202.	Medical home	Primary care clinics		Chronic conditions		65+		2 years		No significant impact.				No significant impact on total hospitalizations or ambulatory care sensitive hospitalizations.							Reduced mortality.				
Druss B, Rohrbach R, Levinson C, Rosenheck R. "Integrated Medical Care for Patients with Serious Psychiatric Illness: A Randomized Trial." Archives of General Psychiatry 58 (2001): 861-868.	Integration of mental health and primary care	VA mental health clinic		Serious mental illness				12 months		No net impact		Study group less likely to have ED visit than control group (11.9% vs. 26.2%)						Study group more likely to have primary care visit than control group (91.5% vs. 72.3%)				Study group had greater improvement in health status, was more likely to receive recommended preventive services and reported higher satisfaction.			
Duru DK. "Cost evaluation of a coordinated care management intervention for dementia." Am J Manag Care. 2009 Aug;15(8):521-8.	Disease Management	Primary care clinics		dementia		65+		12 months+		No significant cost savings.				No significant difference											
Exposito D, et al 2008. "Impacts of a Disease Management Program for Dually Eligible Beneficiaries." Health Care Financing Review. 2008; 30(3): 27-45.	Disease Management	Telephonic patient education and monitoring services	\$162 PMPM payment	CHF, diabetes, heart disease	Dual Eligibles - Medicare and Medicaid	65+		18 months		Overall, no effect. One subpopulation in one community had 9.6% lower cost		Very small difference in proportion of patients with an ED visit, but no significant difference between treatment and control groups in number of ED visits.		No effect								Participants were more satisfied with care outcomes and provision of needed services such as transportation.			
Giffman RJ et al. "Value and the medical home: effects of transformed primary care." American Journal of Managed Care 16.8 (2010): 607-14.	Medical home	Primary care clinics			Medicare Advantage	65+		Four year pre-post		Not statistically significant.				18% reduction		36% reduction									
Gill J, et al. "The Effect of Continuity of Care on Emergency Department Use." Arch Fam Med. 2000;9:313-318.	Continuity of Care	Ambulatory care		All	Medicaid	0-64		1 year				Higher continuity of care was associated with a significantly lower likelihood of making an ED visit, and even more strongly associated with a lower likelihood of making multiple ED visits.													
Gill J, et al. "The Role of Provider Continuity in Preventing Hospitalizations." Arch Fam Med. 1998;7:352-357.	Continuity of Care	Ambulatory care		All	Medicaid	0-64		2 years						Higher continuity of care was associated with lower likelihood of hospitalization for any condition and for ambulatory care-sensitive chronic conditions.											
Holmes AM, Ackermann RJ, Zisch AJ, Katz RP, Downs SM, Inui T. "The Net Fiscal Impact Of A Chronic Disease Management Program: Indiana Medicaid." Health Affairs vol27 no3 2008 855-865	Disease Management	Intensive nurse care management (high risk patients) or telephonic program (low risk patients)		CHF, diabetes, or both	Medicaid			21 months		Claims paid by Medicaid decreased by \$283.01 per participant per month for CHF patients. No significant effect for diabetic patients.															
Katon W, Russo J, Lin E, Schmittzel J, Ciechanowski P, Ludman E, Pearson D, Young B, Von Korff M. "Cost-effectiveness of a Multicondition Collaborative Care Intervention." Archives of General Psychiatry 69.5 (2012): 506-514.	Integration of mental health and primary care	Primary care clinics		Patients with poorly controlled diabetes, coronary heart disease or both and coexisting depression				24 months		Not statistically significant.												Study population had better health outcomes and quality of life.			
Kiltner TS, Rabbitt LA, Chang BKR. "Benefits of care coordination for children with complex disease: a pilot medical home project in a resident teaching clinic." The Journal of pediatrics 156.6 (2010): 1006-1010.	Medical home	Primary care clinic		Children with complex conditions	Medicaid	Over age 1	Continuously enrolled in Medicaid for 12 months before and 12 months after intervention	12 months				Statistically significant reduction in average number of ED visits per patient.		No significant change											
Lin WC, Chen HL, Willis G, O'Connell L, Renzie KS, Bettella HM, Ferris TG. "The Effect of a Telephone-Based Health Coaching Disease Management Program on Medicaid Members with Chronic Conditions." Medical Care vol 50:3:91-98, 2012.	Disease Management	Integrated delivery system		Chronic illness	Medicaid	18-64	High-risk patients	2 years		No effect		In year 2, ED visits decreased by more for control group than for the study group.		No effect	No effect										
Long KR, Sobel DS, Stewart AL, Brown BW, Bandura A, Ritter P, Gonzalez VM, Laurent D, Holman HK. "Evidence Suggesting That a Chronic Disease Self-Management Program Can Improve Health Status While Reducing Hospitalization: A Randomized Trial." Medical Care Jan 1999 vol 37:1-14	Disease Management	Community-based patient self-management education course		Chronic illness	Varied	40+	Chronic lung disease, heart disease, stroke, chronic arthritis or other chronic conditions	6 months	Estimated at +10 by study authors (no claims data)	Estimated \$820 6-month savings for study patients vs. control patients. Net savings estimated at \$750 per participant accounting for costs of intervention.		No effect		Reduction in number of admissions and inpatient days.	Estimated \$820 6-month savings for study patients vs. control patients. Net savings estimated at \$750 per participant accounting for costs of intervention.							Treatment group had significant improvement in five of the health status variables (self-rated health, disability, social/role activities limitation, energy/fatigue, health distress).			
Martin AB, Crawford S, Probst JC, Smith G, Saunders RP, Watkins RW, et al. "Medical homes for children with special health care needs: a program evaluation." J Health Care Poor Underserved. 2007; 18(4): 916-930.	Medical home	Rural family practice		Children with special health care needs	Medicaid	Over age 2		2 years				ED visits fell for study and control groups. In second year of study, the decline in ED visits was larger for the study population than the control group.													
Naylor MD, Brosten DA, Campbell RL, Maxlin G, McCauley K, Schwartz JS. "Transitional Care of Older Adults Hospitalized with Heart Failure: A Randomized, Controlled Trial." J Am Geriatr Soc. 2004 52:675-684	Care management	hospital		Heart Failure	Medicare	65+	Hospitalized patients	52 weeks		Mean 52-week total costs (including intervention costs) were \$7,636 for intervention group vs. \$12,481 for control group (adjusted for unequal follow-up)				At 52 weeks, rehospitalizations or deaths were lower in the intervention group (48% vs. 61%). Fewer hospital days for intervention patients.								increase in home visits	increased cost for home visits was offset by savings in hospitalization costs	increase in patient satisfaction and quality of life on a short-term basis	intervention effect declined as time post-intervention increased - largest impacts seen in the first 3 months post-discharge.
Parthasarathy S, Mertens J, Moore C, et al. "Utilization and cost impact of integrating substance abuse treatment and primary care." Med Care. 2003;41:357-367.	Integration of mental health and primary care	Outpatient chemical dependency recovery program		Adult patients being treated for chemical dependencies		18+		24 months		Total medical costs per member-month declined by more for study patients with substance-abused related medical conditions (SAMC) than for control group patients with SAMC		Decline in both the study and control groups, with no significant difference between the two groups.		Decline in both the study and control groups, with no significant difference between the two groups.											

Citation	Type of Intervention	Type of Provider/Care Setting	Payment Incentives	Disease/ Condition	Payer	Age	Additional Study Population Details	Duration	ROI	Total Cost Impact	Emergency Department		Hospital Admissions		Hospital Readmissions		Primary Care Services		Specialty Care Services		Quality/Other	Comments		
											ED Visits	ED Cost	Admissions and Inpatient Days	Cost	Readmissions	Cost	Utilization	Cost	Utilization	Cost				
Peikes D, Chen A, Schore J, Brown R. "Effects of Care Coordination on Hospitalization, Quality of Care, and Health Care Expenditures Among Medicare Beneficiaries: 15 Randomized Trials." <i>JAMA</i> . 2009;301(6):603-618	Care management	Varied - 15 separate demonstration projects	Each care coordination program received monthly fee per patient	Chronic illness (primarily congestive heart failure, coronary artery disease, and diabetes)	Medicare	Mostly 65+		3 years		Medicare expenditures in three groups of the 15 were less than control groups. Savings offset care coordination fees for two locations, but for one of these two were too small to be sustainable.			13 of the 15 programs had no significant difference in hospitalization. Of the two programs with significant changes, one program found fewer hospitalizations per person per year, and the other found more.									Favorable effects on only a few of the quality of care indicators examined, but none of the adherence measures.		
Peikes D, et al. "How Changes in Washington University's Medicare Coordinated Care Demonstration Pilot Ultimately Achieved Savings." <i>Health Affairs</i> v 31, no. 6, June 2012: 1216-1226.	Care Coordination	In-person clinic model, or telephonic model	Care coordination fee	Chronic illness	Medicare	65+	Medicare beneficiaries deemed to be at high risk of requiring hospitalization within the next 12 months.	42 months for original model with telephone and in-person for highest risk; 29 months for redesigned in-person only model	When intervention costs are included, only the savings for the higher-risk group was statistically significant (9.7% savings)	Claims costs declined by 9.6% and 14.8% respectively, for all program enrollees and the higher-risk group			After redesign, hospitalizations among all program enrollees declined by 11.7% compared to control group and 17% for a higher-risk subgroup.											
Reid RJ, et al. "The Group Health Medical Home At Year Two: Cost Savings, Higher Patient Satisfaction, And Less Burnout For Providers." <i>Health Affairs</i> , 29, no. 5 (2010): 835-843.	Medical home	Primary care clinic in an integrated delivery system		All	Group Health	Adults		21 months	Though savings not statistically significant, authors estimate \$1.50 saved for every \$1 invested in program	Not statistically significant (but "approaching significance")	ED/urgent care visit rate for study group was 29% lower than for controls	Savings of about \$4 pm/m	6% reduction in all-cause admissions; 13% reduction in ambulatory care sensitive admissions	Savings of about \$14 pm/m			6% reduction compared to control group	Increase of \$1.63 per member per month compared to control group	3% increase compared to control group	Increase of \$5.78 per member per month compared to control group		The results also show improvements in patients' experiences, quality, and clinician burnout through two years.		
Reid RJ. "Patient-centered medical home demonstration: a prospective, quasi-experimental, before and after evaluation." <i>Am J Manag Care</i> . 2009 Sep 1;15(9):e71-87.	Medical home	Primary care clinic in an integrated delivery system		Varied	Group Health	Adults		12 months	No significant differences in overall costs at 12 months.		Rate of ED visits was 29% lower in study group than control group	Savings of \$54 per person per year	Rate of ambulatory care sensitive hospital admissions was 13% lower in study group than control group				Study group rate of primary care use was 6% lower than control group.	Cost increase of \$16 per person per year.	Study group had 8% higher rate of use of specialty care services.	Change not statistically significant.	PCMH patients gave higher ratings on 6 of 7 patient experience scales. Composite quality gain at the PCMH clinic were between 1.2% and 1.6% greater than for patients enrolled at other clinics.	PCMH patients used more email and phone services.		
Reiss-Brennan B. "Cost and quality impact of intermountain's mental health integration program." <i>J Healthc Manag</i> . 2010 Mar-Apr;5(2):97-113.	Integration of mental health and primary care	Primary care physicians		Depression	SelectHealth (Private Insurance)	19-62		2 years	After initial diagnosis, total costs increased for both study group and control group, but grew less quickly for study group patients.		Study patients were 54% less likely to have ED visits than control group.													
Rice KL. "Disease Management Program for Chronic Obstructive Pulmonary Disease: A Randomized Controlled Trial." <i>Am J Respir Crit Care Med</i> . 2010 Jan 21	Disease Management	Veterans Affairs medical centers		COPD	VA	21+	Patients determined to be at high risk for hospitalization	1 year			Disease management group had a 41% composite reduction in hospitalizations and ED utilization for COPD.		Disease management group had a 41% composite reduction in hospitalizations and ED utilization for COPD. Decrease in hospitalizations for other cardiac and pulmonary conditions.										Study group participants also had significant improvement in self-reported respiratory health status compared to control group.	
Sharma G, et al. "Continuity of Care and Intensive Care Unit Use at the End of Life." <i>Arch Intern Med</i> . 2009;169(1):81-86.	Continuity of Care	Hospital		Lung Cancer	Medicare	66+	Died within 1 year of diagnosis	10-year retrospective study					Patients with outpatient-to-inpatient continuity of care had a 25.1% reduced odds of entering the ICU during their terminal hospitalization											
Sommers LS, Marton KI, Barbaccio JC, Randolph J. "Physician, nurse, and social worker collaboration in primary care for chronically ill seniors." <i>Arch Intern Med</i> . 2000; 160(12):1825-1833.	Disease Management	Primary care		Chronic conditions	Medicare	65+		2 yrs.	Average annual per-patient savings estimated at \$90, net of program cost.	Average annual per-patient savings estimated at \$90, net of program cost.			No significant change in year 1. In year 2, intervention patients had fewer admissions than control group.			No significant change in year 1. In year 2, intervention patients had fewer readmissions than control group.							Improvements in self-reported health and quality of life.	
Stein CD, et al. "How Geisinger's advanced medical home model argues the case for rapid cycle innovation." <i>Health Affairs</i> 29:11 (2010): 2047-2053.	Medical home	Integrated delivery system		All	Medicare FFS, Medicare Advantage, and commercial insurance	Varied		Ongoing					With each program expansion, risk-adjusted acute hospital admission rates fell significantly.											
Toseland RW, et al. "Outpatient geriatric evaluation and management: is there an investment effect?." <i>The Gerontologist</i> 37:3 (1997): 324-332.	Care management	VA Primary care practice			VA	55+	Medically frail	2 yrs.	Costs initially higher for study population but lower towards the end of the study period. No net savings over the 2-year study period.		Use of ER services was lower for study patients than for control group		Although admissions increased for both groups, it grew less quickly for study patients.											
Unutzer, Jürgen, et al. "Long-term Cost Effects of Collaborative Care for Late-life Depression." <i>Am J Manag Care</i> 14 (2008): 95-100.	Integration of mental health and primary care	Integrated delivery system		Depression	HMO	60+		4 years		87% probability that the intervention was associated with lower health costs														
Wasson JL. "Continuity of Outpatient Medical Care in Elderly Men: A Randomized Trial." <i>JAMA</i> . 1984;252(17):2413-2417.	Continuity of Care	Veterans Administration Hospital General Medical Clinic			VA	55+		18 months					Patients randomized to the care continuity group had fewer emergent hospital admissions than those in discontinuity group (20% v. 39%), and shorter average length of stay (15.5 v 25.5 days)									Patients who had been randomized to the continuity group perceived that the providers were more knowledgeable, thorough, and interested in patient education.		
Wegner SE. "Estimated savings from paid telephone consultations between subspecialists and primary care physicians." <i>Pediatrics</i> . 2008 Dec; 122(6):e1136-40.	Care Coordination	Primary care clinics/academic medical centers	Reimbursement for phone consultation with primary care physicians	All	Medicaid	<22		8 months	Estimated \$39 savings for each dollar in program cost	Estimated \$39 savings for each dollar in program cost	Avoidance of ED visits		Avoidance of hospital admissions and transfers										Avoidance of specialist visits	
Wells L et al. "Faithful patients: the effect of long-term physician-patient relationships on the costs and use of health care by older Americans." <i>Am J Pub Health</i> . 1996; 86: 1742.	Continuity of Care	Physician clinics			Medicare	65+		Retrospective survey		Patients with ties of long duration (10+ yrs) had substantially lower costs of care (\$495.61 less in part A; \$116.78 less in part B) than counterparts w/ties of short duration (<1yr).			Patients with long-standing ties to their physicians had lower rates of hospitalization.	Patients with long-standing ties to their physicians had lower costs.										
Wheeler JL. "Can a Disease Self-Management Program Reduce Health Care Costs? The Case of Older Women With Heart Disease." <i>Medical Care</i> June 2003; 41(6): 706-715	Disease Management	Hospital		Heart disease		60+	Female	3 month intervention, with 11-month follow-up	Cost savings were estimated to exceed program costs by a nearly 5:1 ratio.	Estimated savings of about \$1,800 per participant per year	No effect	No effect	For heart disease, 41% fewer admissions and 61% fewer inpatient days than control group. In total, 46% fewer hospital inpatient days than control group.	48% decline in inpatient cost for heart-related hospitalizations.										



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Health Care Utilization and Cost Impacts of Delivery System Innovations: A Review of Evidence

INTRODUCTION

The payment model and delivery system changes designed and implemented by states under the SIM initiative will vary along a continuum of reform. Regardless of the new initiative forged, states will need to ensure that:

- Robust forecasts of health care utilization and cost impacts for various program design scenarios are available;
- Reimbursement models account for the risks of populations served; and
- Overall financial resources and budgets are adequate to support the changes desired.

Health care modeling and financial analysis will be core to informing and supporting these key objectives. However, modeling and financial analysis can only be as good as the research evidence that informs the assumptions and structure of the model. Thus, it is important to ensure that the projections rely on objective and rigorous research evidence wherever possible. In addition, it will be important for projections to be transparent with regard to the modeling of impacts, including assumptions about the effectiveness of interventions for various segments of the population – especially where multiple stakeholders are involved in developing interventions, each with an interest in understanding potential impacts on their own organization.

When it comes to the research evidence available to inform states' assumptions about the impacts of their proposed SIM initiatives, there are two main challenges:

- **Scope:** While many payers are attempting to reduce unnecessary utilization and costs through payment and delivery system reform, the impact of these innovations has most often been estimated through investigations of standalone pilot programs or narrowly implemented demonstration projects. There are few examples of research studies that can be directly applied to the larger scale, multi-payer implementation efforts under the SIM initiative that will affect larger and more diverse patient and health care provider populations than those participating in demonstrations and pilot programs that are smaller in scope.
- **Duration:** Another difficulty in forecasting the impact of system change is accounting for long-term versus short-term outcomes. Reducing potentially avoidable admissions and emergency room visits for certain conditions are examples of outcomes that can often be directly associated with specific interventions. Other interventions, such as hypertension control over many years, are more difficult to directly associate with health care impacts and the performance of the system. Much of the available research evidence focuses on shorter-term, easier to quantify outcomes.

These challenges highlight the importance of sensitivity analysis to assess how robust models are to different assumptions about model impacts.

This issue brief provides a review of existing evidence about the impacts of delivery system interventions, primarily based in ambulatory care. The types of impacts examined include utilization of care and cost impacts. There are five primary categories of interventions that are included in this review of research evidence:

- **Care management** interventions, which include features such as care coordination, managing transitions across care settings and between providers, and patient self-management interventions;
- **Medical home** models, which include the care management and care continuity features described above but also includes functions such as the collection and use of data for population management, using evidence-based guidelines for care management, tracking and coordinating of tests, referrals, and care transitions, and use of performance measures for quality improvement. Standards for defining and certifying medical homes vary across states, with different levels of recognition. The medical home studies included in this review also use varying definitions of the term;
- **Integration of behavioral health and primary care**, which can take place inside or outside of a medical home model;

- Traditional **disease management** interventions, which are more often payer-based or sponsored (e.g., nurse-care line) and may have limited involvement by a patient’s own health care providers. In contrast to care management, disease management interventions treat specific conditions, rather than the multiplicity of conditions that an individual may have. Based on research findings that showed little impact of these models, few payers are currently pursuing these models, but we include them here because they help to tell the story of how interventions to reduce unnecessary health care utilization and contain cost have evolved over the past decade;
- Similarly, **care continuity** interventions have largely been replaced by more complex interventions with many advanced features, but we include the research findings on these earlier models for comparison.

This review primarily relies on evidence from peer-reviewed research studies, although other sources of information are included when deemed to be sufficiently well-documented and reliable. More information about how studies were selected for inclusion in this review is provided in the appendix. This review is intended to be used by SIM states to inform their stakeholder discussions about potential strategies and interventions, as well as to inform states’ modeling of the impacts of interventions.

EVIDENCE ABOUT UTILIZATION AND COST IMPACTS

In this brief and the accompanying detailed Excel table, we provide an overview of four review studies that summarize evidence across multiple studies, and 34 individual studies.

Review Studies

Critical review articles and reports are helpful to consider because they look across varying results from multiple studies, identify commonalities and differences in study results, and help to identify factors that contribute to differences in results. We found four review studies/reports that were particularly relevant to states’ activities around care delivery interventions. Summaries of each are provided below:

- Hoff et al (2013) reviewed 36 articles evaluating medical home models for the period 2007 to 2010. Overall, these evaluations showed reasonably strong associations between the provision of medical home care and improved quality. In addition, medical home care was associated with decreased utilization of high-cost services such as emergency department use. Most of the studies included in Hoff’s review were of programs for older adults with multiple chronic illnesses, while only a few were conducted in pediatric or general adult primary care populations. Hoff also reported a relationship between the lengths of exposure to medical homes with longer exposure resulting in lower health care costs.
- Another recent article summarizing research evidence on the patient-centered medical home (PCMH) model (Jackson et al 2013) reviewed 19 studies, although only a few of these studies addressed the care utilization and cost impacts that are the focus of this issue brief. The authors

concluded there is no evidence for overall cost savings, but also noted substantial variation in how PCMH is defined and the likelihood that research that will be generated in the next couple of years will shed more light on the impacts of PCMH over a longer period of time.

- A December 2009 review of evaluations of care management interventions for people with multiple chronic conditions (Bodenheimer and Berry-Millett 2009) found that for *primary care based interventions*, five of eight studies found no effect on hospital use, while three studies found reduced hospital use and total costs for subpopulations of patients (those at highest risk). Meanwhile, for hospital to home transition programs many studies showed reduced hospital use and costs.
- Finally, Butler et al. (2008) synthesized information about models of integration of mental health services into primary care settings or integrating primary care into mental health outpatient settings. The scope of this review was very broad, categorizing the many types of interventions that have been used and the many different processes and outcomes that have been measured. Specific to the purpose of this issue brief, the review included a summary of the evidence on the cost impact of integrating mental health and primary care – showing mixed results overall (with higher costs in some cases for the study intervention groups than for the control groups).

Individual Studies

In Table 1 and in a more detailed accompanying Excel table that is sortable by type of intervention, care setting, disease/condition, payer, age, and study duration, we provide a scan of the evidence from the 34 individual studies that are included in our review (more detail on how the studies were selected is included in the appendix). Many of these studies are included in the review articles described above, and our purpose for including them individually is to provide easy to access information for states in a consistent format that is as comparable as possible across studies.

In general, these studies evaluated the impact of interventions at the provider or physician clinic level. The study populations were most often older adults, typically with chronic or complex conditions – in other words, populations at relatively high risk for significant use of health care resources. In addition, Medicare or Medicaid was most often the source of insurance coverage for study populations. (Although private insurers conduct their own studies, these are less commonly published in peer-reviewed journals.)

The tables include descriptive information about the study populations, duration of the study, and reported findings about return on investment (ROI), total cost impact of the intervention, and cost and utilization impacts for emergency department visits, hospital admissions, hospital readmissions, primary care services, and specialty care services separately where available. Although quality was not a primary focus of our review, the detailed Excel table also includes information about quality outcomes where the study authors provided it.

General Conclusions

Overall, the literature on utilization impacts and cost savings due to delivery system reform is of varying quality and reports inconsistent findings. In addition, individual studies can be difficult to compare because of variations in the care interventions and the target populations. Even when the interventions and target populations seem to align, different types of outcomes may be reported. In many studies, the sample size is small which limits the ability to detect statistically significant changes in utilization and cost that are needed to conclude that the intervention had an impact.

Although this issue brief is a useful starting point for deciding where to drill deeper into the existing literature and evidence that is most relevant to the state's target populations and planned interventions, we recommend that states and their consultants or advisors closely review the relevant research studies before making decisions about what types of models to pursue or what types of assumptions to use about the impacts.

Other general observations include the following:

- Some studies showed cost impacts that developed or grew over longer durations. This suggests that duration of the study may be important – studies with shorter durations and low impact may not have been long enough to demonstrate full effects.
- The intensity of the intervention also seems to make a difference. Telephonic standalone disease management programs have produced mixed results but in general seem to not have produced significant savings; on the other hand, nurse-based programs with contact and engagement with patients and physicians have produced the greatest savings through reducing both emergency department visits and inpatient use.
- The nearly universal pathway for cost savings, regardless of the specific intervention, is through emergency department (ED) and inpatient hospitalization reductions in admissions and readmissions.
- In addition to ED and inpatient use reductions as the driver of cost savings, modest primary care and sometimes specialty care use increases are often reported - as one would expect. These increased costs and the additional costs of the program itself must be offset by the reductions in ED and inpatient use to achieve a positive net savings for the intervention.

QUESTIONS FOR STATES TO ASK ABOUT NEW EVIDENCE AND ADDITIONAL INFORMATION SOURCES

Care delivery transformation initiatives, and medical home initiatives in particular, have proliferated in recent years and the evidence base on the impacts of medical home initiatives is expected to expand rapidly in the next few years. Furthermore, there are many other potential sources of information in addition to the peer-reviewed research literature, and it can be difficult to sort out which information is rigorous and reliable enough to inform states' projections of impact.

When considering any type of evidence, states should keep the following questions in mind:

- Does this study come from a neutral, reputable source?
- How applicable are the study results to the state's proposed initiatives? For example, is the study population similar to the proposed population for the state initiative? Is the intervention similar?
- Does the study clearly describe the intervention, the study population, and the analysis methods? Is enough information included to back up the study conclusions about impacts of care interventions?
- What efforts do the study authors make to disentangle their observed results for the study population from other possible factors? For example, do they use a control group?
- How clearly do the study authors describe the impacts of the intervention? For example, do they include cost and utilization impacts? Over what period of time do they observe the impacts? From whose perspective are the impacts provided (e.g., payer, provider, society)?
- What are the study limitations? How likely is it that the study findings are applicable to the type of intervention that the state is considering? For example, states might want to be cautious about applying results from a study of a commercially-insured population to an intervention that they are planning in their Medicaid program.

SUMMARY

Many of the ideas that states are pursuing as part of their SIM initiatives are newer models that have not yet generated a sizeable research literature demonstrating results. However, much of the recent evidence points in a direction toward reducing the use of ED and hospital care for populations at particularly high risk for these services, using strategies that are fairly intensive. As states continue on their journeys toward accelerating the transformation of health care, they will need to critically review the evidence and make their own judgments about what evidence is reliable and what evidence is applicable to the programs they are considering. This issue brief represents a starting point for states to begin to do that, and the NORC Technical Assistance team is available to states for further consultation on these issues.

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Additional references:

CHCS memo to SIM Grantees, "The Return on Investment for Integrating Behavioral Health and Physical Health Care Delivery," July 23, 2013, M. Crawford and T. McGinnis.

Mercer issue brief for SIM Grantees, "Actuarial Measurement of New Payment/Delivery Models," forthcoming.

TABLE 1: SUMMARY OF RESEARCH EVIDENCE ON UTILIZATION AND COST IMPACTS OF CARE DELIVERY INTERVENTIONS

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Care management studies			
Bodenheimer & Berry-Millett 2009	Review of multiple studies.	Patients with multiple chronic conditions who were at high or moderate risk of incurring major health care costs	<p>In primary care settings, 5 of 8 studies showed no significant reductions in health care costs, emergency department use, or hospital use. However, three studies showed reductions in hospital use for subpopulations of patients (higher-risk patients).</p> <p>Studies of hospital-to-home management of CHF and other health conditions showed reduced hospital readmissions and lower costs.</p>
Boult 2011	Use of guided care teams with a high-risk population.	Elderly Medicare enrollees, medium to high risk. Multiple payers/delivery systems.	The only statistically significant reduction in service use overall was in home health care. One payer also saw reduced skilled nursing facility admissions and days.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Coleman et al. 2006	Care transitions intervention designed to encourage patients and their caregivers to assert a more active role during care transitions.	Elderly patients who were hospitalized with one of 11 selected conditions.	<p>Statistically significant reductions in hospital readmissions at 30 and 90 days after initial admission. In addition, at 90 and 180 days there was a significantly reduced likelihood of being rehospitalized for the same condition as the initial hospitalization.</p> <p>Intervention participants had lower nonelective hospital costs at 90 days and 180 days than the control group.</p>
Naylor et al. 2004	Care transitions intervention involving discharge planning and home follow-up carried out by advanced practice nurses.	Elderly patients who were hospitalized with heart failure.	<p>After 52 weeks, rehospitalization rates were lower in the intervention group than in a control group (47.5% vs. 61.2%), and there were fewer hospital days for the intervention group patients.</p> <p>Adjusted 52-week costs per patient for the intervention group were \$7,636 (including intervention costs) vs. \$12,481 for control group.</p> <p>Largest impacts were seen in the first 3 months, with size of the intervention impact declining over time.</p>

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Toseland et al. 1997	Care management intervention involving comprehensive geriatric assessment and continuing care by an outpatient geriatric evaluation and management team.	Frail elderly population served by VA (ages 55+)	Costs were initially higher for study populations but lower towards the end of the study period. Effects varied over time, but no net savings were found over the 2-year study period. Use of ER services was lower for study patients, but outpatient service use was higher. Although inpatient admissions increased for both groups, they grew less quickly for study patients.
Care coordination studies			
Peikes et al. 2009	15 care coordination demonstration projects using varied interventions, such as patient education, ongoing monitoring, and improving communication between patients and physicians.	Fee-for-service Medicare patients (primarily with congestive heart failure, coronary artery disease, and diabetes)	Only two of the 15 programs had significant differences in hospitalization: one program had fewer hospitalizations and the other had more hospitalizations. None of the 15 programs generated net savings. Intervention patients had lower Medicare expenditures in three of the programs; however, savings offset program costs in only two of those programs and savings were too small to be sustainable for one of those two programs.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Peikes et al. 2010	Changing a telephone-based intervention model to a locally-based, in-person model. Program redesign included other enhanced features such as stronger transitional care, more comprehensive medication management, and more thorough assessment of unmet needs.	Medicare beneficiaries deemed to be at high risk of requiring hospitalization within the next 12 months.	<p>After redesign, hospitalizations among all program enrollees declined by 11.7% compared to control group and 17% for a higher-risk subgroup.</p> <p>Claims costs declined by 9.6% and 14.8% respectively, for all program enrollees and the higher-risk group; when intervention costs are included, only the reduction for the higher-risk group was statistically significant (9.7% savings).</p>
Duru 2009	Care management intervention involving home assessments, follow-up, access to community services, and provider education.	Medicare beneficiaries age 65+ with dementia who had an informal caregiver	No significant cost savings.
Sommers et al. 2000	Care management intervention involving collaboration and coordination between primary care physicians, nurses, and social workers.	Elderly patients with chronic illness and functional deficits.	<p>No significant changes in year 1 of the study. In year 2, intervention patients were less likely to be hospitalized, were less likely to experience hospital readmissions, and had fewer physician office visits (primary for specialty care) than control group patients.</p> <p>Cost savings were modest (estimated at \$90 per patient per year).</p>

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Wegner 2008	Reimbursement for telephone consultations between primary care physicians and pediatric subspecialists	Pediatric Medicaid patients	<p>Providing reimbursement for telephone consults led to avoidance of specialist visits, hospital transfers, hospital admissions, and emergency department visits.</p> <p>Overall, an estimated \$39 was saved per dollar spent.</p>
Medical home studies			
Hoff et al. 2012	Review of multiple studies.	Varied.	<p>Seven of ten studies that reported impact on ED visits found significant reduction.</p> <p>Four of seven that reported impact on hospital admissions found reduction.</p> <p>One of five studies that cost impact found a reduction in total overall cost, while 1 reported increased costs, 1 reported no difference, and 2 reported mixed impacts.</p>
Jackson et al. 2013	Review of multiple studies.	Varied.	<p>Overall, studies showed some evidence for reduction in ED visits in adults.</p> <p>No evidence of impact on inpatient admissions or cost.</p>
Dorr et al. 2006	Medical home model using teams of physicians, care managers, and medical assistants. Also emphasizes patient self-management and coaching and connection to community resources..	Patients diagnosed with diabetes and/or depression.	<p>Care managed diabetic patients had 3.2% fewer hospitalizations compared to control patients.</p> <p>Costs for depression patients decreased by 8% for care management patients, but increased by 19% for control patients.</p>

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Dorr et al. 2008	Medical home model involving nurse care managers supported by specialized information technology in primary care	Elderly Medicare patients with chronic conditions.	No significant impacts on inpatient hospitalizations, ambulatory care sensitive hospitalizations, or ED visits.
Gilfillan et al. 2010	Medical home model using patient-centered primary care team practice, integrated population management, micro-delivery systems, quality outcomes program, and a value reimbursement system.	Medicare Advantage patients.	18% reduction in inpatient admissions and 36% reduction in readmissions. Impact on cost was not statistically significant.
Klitzner et al. 2010	Pediatric medical home intervention including longer intake and follow-up visits, access to a "family liaison" to serve as primary contact and coordinator, and a regularly updated medical records binder	Children with complex medical needs (requiring treatment by at least 2 pediatric subspecialists on an ongoing basis); enrolled in Medicaid	Significant reduction in average number of ED visits per patient. No significant impact on outpatient visits, urgent care visits, hospital admissions, hospital length of stay, or hospital days.
Martin et al. 2007	Pediatric medical home project involving a full-time care coordinator in a rural family practice, focusing on organizational capacity, chronic care management, care coordination, community outreach, data management, and quality improvement.	Children with special health care needs, over age 2; at least 6 months of continuous Medicaid eligibility	ED visits fell for study and control groups. In second year after the intervention was implemented, the decline in ED visits was larger for the study population than the control group.
Steele et al. 2010	Medical home model using patient-centered primary care team practice, integrated population management, value care system, quality outcomes program, and reimbursement model.	Medicare fee for service, Medicare Advantage, and commercial populations.	With each program expansion, risk-adjusted acute hospital admission rates fell significantly.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Reid et al. 2010	Medical home model involving advanced care teams, and enhanced staffing to promote stronger relationships with patients, address care needs more comprehensively, and provide time to coordinate care.	Adults served by a prototype medical home clinic	<p>Compared to control group, patients in the study group had 29% fewer ER/urgent care visits, 6% fewer hospitalizations, and 13% fewer ambulatory care sensitive hospitalizations.</p> <p>Total savings were not statistically significant but "approaching significance"; cost reductions for ED and inpatient utilization were partially offset by higher costs for primary and specialty care. Authors estimated \$1.50 in savings for every \$1 invested in the pilot.</p>
Reid et al. 2009	Redesign of a patient-centered medical home (PCMH) with the goal of improving patient experience, lessening staff burnout, improving quality, and reducing downstream costs.	Adults served by a prototype medical home clinic	<p>After 12 months, compared to the control group study patients had a 29% lower rate of ED use and 11% lower rate of hospitalization for ambulatory care sensitive conditions (though no significant difference in hospitalizations overall).</p> <p>Reductions in ED and hospital use were somewhat offset by an increase in specialty care visits.</p> <p>No statistically significant difference in total costs at 12 months.</p>

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Domino 2009	Analysis comparing utilization and cost among fee for service, primary care case management, and medical homes.	Children with asthma enrolled in Medicaid	<p>Both MH and PCCM had about 8% lower rates of emergency department use compared to the FFS rate. The rates of hospital use were 18% and 13% lower in the MH and PCCM programs, respectively.</p> <p>Both MH and PCCM programs were associated with an increase in total Medicaid expenditures compared to FFS, in part due to increase use of asthma maintenance medications. Considering only claims with an asthma diagnosis, both MH and PCCM were cost neutral.</p>
Mental health/primary care integration studies			
Butler et al 2008	Integration of behavioral health and primary care: Review of multiple studies.	Varied.	Evidence of potential savings, but significant barriers remain.
Druss 2001	Creation of an integrated clinic to provide coordinated primary care services to patients being treated for serious mental illness.	Patients with serious mental illness.	<p>Study population was more likely to have a primary care visit and less likely to have an emergency department visit.</p> <p>No significant differences in total health care costs.</p>
Katon 2012	Guideline-based, collaborative care management provided by nurses to control risk factors associated with multiple diseases.	Patients with poorly controlled diabetes, coronary heart disease, or both and coexisting depression.	Study population had better health outcomes and quality of life but there was no statistically significant net cost savings.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Unützer 2008	Collaborative care program provided by nurse or a psychologist in primary care clinic	Patients ages 60+ with depression.	Likely cost savings (87% probability that the intervention was associated with lower costs than usual care).
Reiss-Brennan 2010	Mental health integration (MHI) team-based approach involving primary care providers and staff, mental health professionals, community resources, care management and the patient.	Patients ages 19-62 diagnosed with depression	<p>Study patients were 54% less likely to have ED visits than control group.</p> <p>After initial diagnosis of depression, costs for both study and control group patients increased, but grew by less for study group patients.</p>
Parthasarathy et al. 2003	Integration of behavioral health and primary care: Integrated care model with primary care provided along with substance abuse treatment	Adult patients entering treatment at an outpatient chemical dependency recovery program	<p>Hospitalization rates, inpatient days, and ER use declined in both the study and control groups, with no significant differences between study and control groups for full population.</p> <p>Among a subset of patients with substance abuse related medical conditions (SAMC), total medical costs declined by more for the SAMC patients in the study group than in the control group.</p>
Disease management studies			
Esposito et al. 2008	Telephone-based intervention providing patient education and monitoring	Medicare-Medicaid dual eligibles who had congestive heart failure, diabetes, or coronary artery disease	<p>No significant differences in hospital admissions, emergency room use, or total cost.</p> <p>For enrollees with congestive heart failure, expenditures were reduced by 9.6%.</p>

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Holmes et al. 2008	Intensive nurse care management program offered to high-risk members, and a less intensive telephonic program offered to lower-risk members.	Aged/blind/disabled Medicaid members in Indiana with congestive heart failure, diabetes, or both.	<p>Claims paid by Medicaid decreased by \$283.01 per participant per month for congestive heart failure patients overall. Larger program impacts were found in the low-risk than in the high-risk congestive heart failure subgroup.</p> <p>There was no significant effect for patients with diabetes.</p>
Lin et al. 2012	Telephone health coaching	High-risk nonelderly adult Massachusetts Medicaid and safety net patients with one or more chronic conditions	No statistically significant effects on acute hospitalizations, ambulatory care visits, or medical expenditures. During the second year of the intervention, emergency department visits decreased significantly more for the comparison members than the study group.
Lorig et al. 1999	Self-management program for chronic disease designed for use with a heterogeneous group of chronic disease patients.	Patients 40 years of age or older with a physician-confirmed diagnosis of heart disease, lung disease, stroke, or arthritis.	<p>The treatment group experienced a greater reduction in the number of hospital stays and nights in the hospital compared to the adult group.</p> <p>Study authors estimated cost savings in excess of 10 times the program costs.</p>
Rice et al. 2010	Disease management program for COPD patients that included an education session, action plan for self-treatment, and monthly case manager follow-up calls.	VA patients with COPD who experienced hospital admission or ED visit for COPD, use home oxygen, or had a corticosteroid COPD treatment in the past year	Disease management group had significantly fewer cumulative COPD-related hospitalizations and ED visits compared to control group, a 41% composite reduction in hospitalizations and ED utilization for COPD, and a significant decrease in hospitalizations for other cardiac and pulmonary conditions.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Wheeler 2003	Disease management intervention involving 4-week patient self-management education program.	Women age 60+ with heart disease	<p>For heart disease, 41% fewer admissions and 61% fewer inpatient days and 44% lower hospital costs than control group. In total, program participants experienced 46% fewer inpatient days and 49% lower inpatient costs than the control group.</p> <p>Hospital savings exceeded program costs by an estimated ratio of nearly 5:1.</p>
Continuity of care studies			
Gill et al. 2000	Analysis of the association between long-term relationship with a single health care provider and ED use.	Continuously enrolled nonelderly Medicaid patients with at least 3 physician office visits during the study year	Higher continuity of care was associated with a significantly lower likelihood of making an ED visit, and even more strongly associated with a lower likelihood of making multiple ED visits.
Gill et al. 1998	Analysis of the association between long-term relationship with a single health care provider and inpatient hospitalizations.	Continuously enrolled nonelderly Medicaid patients with at least 3 physician office visits during the study year	Higher continuity of care was associated with lower likelihood of hospitalization for any condition and for ambulatory care sensitive chronic conditions.
Sharma et al. 2009	Analysis of the impact of outpatient-to-inpatient continuity of care on use of ICU during terminal hospitalization	Medicare beneficiaries diagnosed with advanced lung cancer over age 66, and who died within one year of diagnosis.	Patients with outpatient-to-inpatient continuity of care had a 25.1% reduced odds of entering the ICU during their terminal hospitalization.

*See bibliography for complete citation.

Citation*	Intervention Description	Study Population	Summary of Utilization and Cost Impacts
Wasson 1984	Randomized controlled trial of the effect of continuous vs. discontinuous care.	Men over age 55 receiving care in a Veterans Administration clinic	Study participants in the continuous care group had fewer emergent hospital admissions (20% vs. 39%) and a shorter average length of hospital stay (15.5 days vs. 25.5 days) compared to those with discontinuous care.
Weiss et al. 1996	Analysis of the impact of duration of relationship with provider on health care costs.	Medicare beneficiaries ages 65+ who had a usual source of care	Beneficiaries who had long-standing ties with their physicians had lower rates of hospitalization and lower overall Medicare costs.

*See bibliography for complete citation.

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APPENDIX - METHODS

“Medical home(s)”, “patient-centered medical care”, “patient-centered health care”, “case management”, “care coordination”, and “chronic disease” were the terms used for identifying relevant literature from PubMed, Medline, and EconLit. Articles in English pertaining to U.S.-based interventions were selected. More than 120 articles were thus identified. Articles were selected for review only if the abstracts/articles described a clinical trial, secondary data analysis from claims records or if they described projects implementing the core concepts of advanced ambulatory care. The intervention and outcomes, if possible in terms of impacts on cost, utilization, and quality, as well as return on investment, cost-benefit or cost savings were identified and mapped. Since the focus of this issue brief is on cost and utilization impacts, articles that reported only on quality outcomes were excluded.

The interventions identified included care management strategies to support better continuity of care through care coordination/transition management and comprehensive medical home models, and other miscellaneous interventions (such as availability of dedicated care staff, primary care provider access and triage and end of life care.) We also identified interventions related to traditional disease management programs often sponsored by payers which are being replaced or augmented by provider delivered and patient centered interventions often based on advanced primary care structures and processes. Outcomes were charted in terms of impact on utilization (effect on emergency room utilization, prevention of hospital admissions or readmissions), use of specialists, overuse of services, impact on utilization of hospitals/lengths of hospital stays and overall cost.