

Evaluation of a Primary Care Model for High-Risk High-Cost Patients

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Background

As health care expenditures in the United States rise without concomitant improved health of the population, it is vital to demonstrate how to risk stratify the population and deliver appropriate services to achieve the triple aim: improve clinical outcomes, improve patient experience, and lower cost of care.

Clinical Setting

Stanford Coordinated Care is a primary care clinic established in May 2012 for high-risk high-cost patients in the Stanford self-insured health plans to achieve the triple aim. SCC recruits patients from the top 20% of Stanford employees and dependents that account for the top 65% of health plan costs. SCC features integrated team care with on-site multidisciplinary services. Care Coordinators/Medical Assistants perform routine preventive and chronic disease monitoring and interact with their panel of 100 patients between clinic visits to encourage completion of the patient's action plans. Other team members are: primary care physicians, physical therapist for pain management, LCSW for management of depression and anxiety, pharmacist for management of diabetes and other chronic conditions, and dietitian. PCPs have panels of 300 patients/FTE. A clinical nurse specialist supervises the Care Coordinators, provides care transition assistance to patients and assists with acute complex care issues.

The SCC team explicitly focuses on improving each patient's self management by supporting the patient's self-identified goals and assisting the patient to form achievable action plans, scaled according to their responses to the Patient Activation Measure survey. Patient Activation Measure (PAM) assesses a patient's knowledge, skill, and confidence in managing health and healthcare (higher numbers indicate increased skill and confidence). SCC fosters relationship based care, which has been shown to improve compliance.¹

Objectives

- Determine quantitative changes in Patient Activation Measure (PAM) for patients enrolled in SCC.
- Measure changes in key clinical parameters (HbA1c, Systolic Blood Pressure [SBP] and SF-12 measure of physical and mental functioning) for patients enrolled in SCC.
- Compare key clinical parameters (HbA1c and SBP) between SCC patients and SCC-eligible patients who receive primary care elsewhere.
- Determine patient satisfaction based on Press Ganey survey of "likelihood to Recommend."
- Examine cost of care and utilization pre- and post-enrollment

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SCC Population

Table 1. Patient Characteristics

Age	Percentage
<39	20%
40-49	18%
50-59	29%
60-69	27%
>70	6%

Marital Status	Percentage
Married / Life Partner	61%
Single / Separated / Divorced	35%

Race	Percentage
White	69%
Asian / Pacific Islander	9%
Black / African American	4%
Other / Unknown	17%

Ethnicity	Percentage
Hispanic or Latino ethnic group	8%

Risk and Cost	Value
Average annual health care spend/patient	\$43,000
Average MARA prospective risk score SCC patients	2.5

Medical History	Percentage
# Medical Conditions -- Mean (interquartile range)	9.3 (6-12)
Hypertension -- no. (%)	116 (35%)
Diabetes -- no. (%)	74 (22%)
Dyslipidemia -- no. (%)	124 (37%)

HEDIS Quality Metrics

SCC utilizes a dashboard that pulls from the EHR and alerts Care Coordinators of care gaps due. The 10 screening HEDIS metrics are completed by CC following protocols. They regularly achieve the 90th percentile.

Figure 1. HEDIS Metrics Performance

Measure	Current Rate	Goal	Patients to goal	Percentage Ranking (estimated)
Diabetes				
• HbA1c Screening	54%	91.0%	87	0
• LDL Screening	34%	82.0%	87	0
• LDL Control	62%	55.6%	87	0
• Neuropathy Monitoring	74%	88.0%	87	0
• Eye Control	81%	91.0%	87	0
Cardio				
• LDL Screening	69%	92.0%	19	1
• LDL Control	47%	37.2%	19	0
Preventive				
• Flu Immunization	23%	61.0%	372	11
• Pneumococcal Immunization	11%	84.7%	76	0
• Cervical Cancer Screening (CC)	6%	82.0%	105	0
• Breast Cancer Screening	87%	80.0%	139	0
• Colorectal Cancer Screening	88%	70.0%	231	0
Medication				
• ACEI/ARB/Thiazide/Diagnos	33%	94.0%	123	5

Clinical Outcomes Study: Methods

Prospective observational cohort study

Measured change in PAM at initial visit and at 6 months after initial for all SCC patients.
 Measured change in SF-12 at initial visit and 1 year after initial for all SCC patients.
 Measured change in SBP, HbA1c from initial visit to average of follow-up visits (3-15 months after initial) for SCC patients meeting these baseline thresholds:

- SBP \geq 150 mmHg
- HbA1c \geq 8%

Retrospective cohort comparison study

Identified a matched cohort of patients from Stanford health insurance plans (receiving care at other Stanford primary care clinics) to serve as control. Matched on the basis of similar intake date and similar baseline measure (i.e., SBP, HbA1c). Compared change in the biomarker measures for the SCC and control cohorts.

Clinical Outcomes: Results

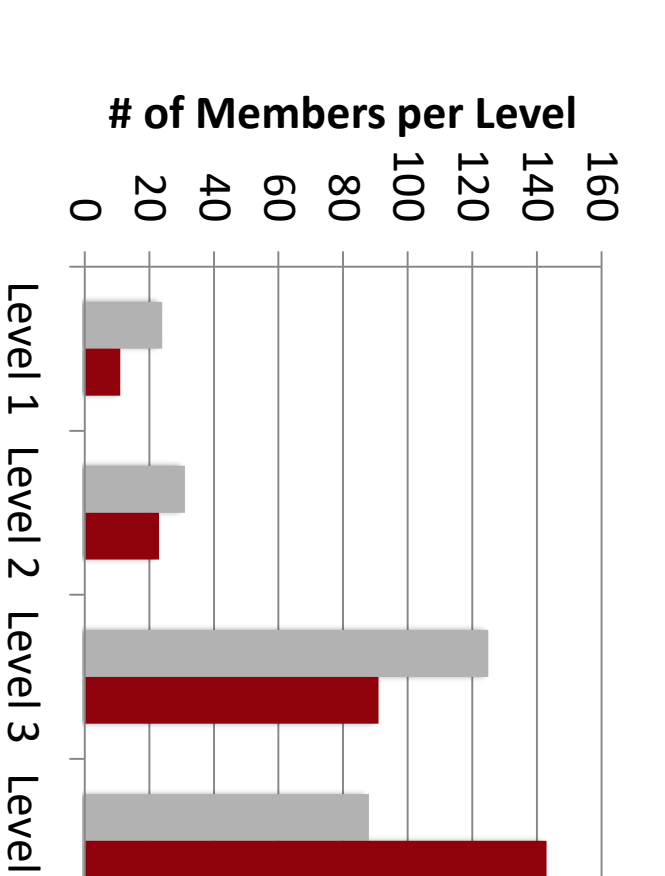
Clinical outcomes were assessed for 333 SCC patients enrolled in SCC for at least 6 months as of 12/31/2014.

Patient Activation Measure (PAM)

We summarized change in PAM according to net improvement: the percent of patients who improve minus the percent who worsen.

- Net 34% [95%CI: 24%-44%] of SCC patients experienced a significant (3 points) positive change in PAM.
- 57% of SCC patients had significant increase in PAM.
- 23% of SCC patients had significant decrease in PAM.
- Net 27% [95%CI: 19%-34%] of SCC patients improved PAM by \geq 1 level (Fig. 1).
- 37% improve by \geq 1 PAM level.
- 10% drop by \geq 1 PAM level.

Figure 2. PAM Level at Baseline and Follow-Up



Short Form-12 Health Survey (SF-12)

- Physical composite score change:
- Mean 2.5 point increase (p-value <0.0001)
- Median: 1.7 point increase
- Mental composite score change:
- Mean 0.9 point increase (p-value = 0.15)
- Median: 0.4 point increase

Systolic Blood Pressure (SBP)

Patients with average follow up SBP \leq 140 mmHg with baseline \geq 150:

SCC

58% [95%CI: 41% - 74%]

Difference between SCC and control: 9% (p-value = 0.30)

Matched Control (N=317)

48% [95%CI: 45% - 52%]

Glycated Hemoglobin (HbA1c)

Patients with average follow up HbA1c \geq 0.5% reduced from baseline of \geq 8:

SCC

68% [95%CI: 51% - 85%]

Difference between SCC and control: 11% (p-value = 0.30)

Matched Control (N=43)

57% [95%CI: 46%-68%]

Utilization and Cost of Care: Methods

253 patients with at least 6 months enrollment compared with 6 months pre-enrollment from Crimson claims data base. Excludes one heart transplant patient with \$2.5 million unavoidable cost after SCC enrollment. Savings assumed to persist for 12 months. Average enrollment based on monthly reports from SCC to health plans.

Utilization and Cost: Results

Inpatient Admissions	ER Visits	Cost of Care
-29%	-59%	-13%

Based on an average of \$43,000 per year paid claims per patient, potential savings per year for 300 SCC patients would be approximately \$1.8 million. Stanford health plan concluded that the capitated rate was less than what would have been paid for the same level of service as fee for service.

Patient Experience

SCC patients receive Press Ganey surveys after attending clinic visits. 22 patients completed the survey on average per month for the last 6 months. For 28 of the past 30 months SCC has ranked in the 99th percentile (national) in "likelihood to Recommend."

Conclusions

- The SCC team succeeded in increasing **patients' activation** and capacity for self management.
- SCC appears to improve **clinical outcomes** for high-risk patients, supporting one branch of the triple aim.
- Patients experienced significant improvements in SBP, and HbA1c, relative to baseline.
- SBP and HbA1c improvement relative to control suggests possible modest effect, although it was not statistically significant in this small sample.
- Limitations were the small number of enrolled patients due to SCC's newness, control groups were not risk matched to SCC patients, and control groups were not available for PAM or SF-12 because these surveys are only given by SCC.
- SCC appears to reduce **utilization and cost of care**, although further study with matched controls is needed to reduce "regression to the mean" bias. The small number of events of utilization limits the statistical significance of the findings.
- SCC patient centered care has received top ranking in **patient satisfaction** compared to a national sample.
- Care Coordinators/MAs working under protocol and informed by a care gap dashboard are very effective at ensuring **routine monitoring for prevention and chronic disease management**.

References

- Thom, David H., et al. "Further validation and reliability testing of the Trust in Physician Scale." *Medical Care* 37.5 (1999): 510-517.