CASE STUDY FOR QUALITY IMPROVEMENT

Improving Diabetes Care and Outcomes: An Integrated Approach to Population Management

ST. MARY'S/DULUTH CLINIC HEALTH SYSTEM

Organization Profile

The St. Mary's/Duluth Clinic Health System (SMDC) was launched January 1, 1997, through an integration of St. Mary's Medical Center and the Duluth Clinic. SMDC Health System is a nonprofit health care organization serving 450,000 residents of Northeastern Minnesota, Northwestern Wisconsin, and the Upper Peninsula of Michigan.

SMDC's 4 hospitals and 17 outpatient locations/clinics serve a rural area larger than the state of Delaware, spread over 25,000 square miles. It is the region's largest provider of medical services and is the exclusive provider in specialties ranging from Neurointerventional Radiology to Neonatal Intensive Care. SMDC's 438 physicians and 450 credentialed practitioners, including 55 specialties/subspecialties, handle more than 1 million patient visits each year.

Project Summary

To help patients understand and manage their disease, the SMDC team embarked on a proactive patient-centric program that delivers consistent evidence-based care according to proven clinical pathways and health services interventions across all sites. The program includes use of such tools as registries, Lean Six Sigma, centralization of scheduling, and a Patient Care Coordination Center.

Goals and Objectives

The overarching goal of the *Improving Diabetes Care and Outcomes: An Integrated Approach to Population Management* program is to transform the delivery of care to patients with diabetes who receive their care at SMDC by changing from a system that is reactive to one that is proactive. Using a population-based focus that assures needed care to all members of a population rather than simply individual patients (e.g., use of registries), its care-delivery goals include:

- Be patient-centered, placing high priority on the patient's participation, confidence, and skills in managing his/her illness.
- Deliver evidence-based care according to proven clinical pathways and health services interventions.
- Value excellence (and evidence) over autonomy.
- Ensure consistent clinical experience for patients across all sites—in other words, ensure that wherever a patient is within the system, the level and quality of care are consistent.

Team Composition

SMDC's team-based approach maintains effective coordination and collaboration among all available personnel within a practice and with external resources. The SMDC team includes all personnel with an interest in the patient's successful management of the disease:

- Patient
- Physician
- Midlevel Provider
- RN

- Certified Medical Assistant
- Schedulers
- Patient Educators
- Nurse On-Line
- Information Management (Clarity)
- Information Services (Epic)

Population Identification

In preparation for launching the program, program leads identified 11,500 system patients with diabetes, 22% of whom were over 75 years old and 77% of whom had a comorbidity of hypertension (HTN).

The system's EMR platform is used to feed patient information into a data warehouse. Data are updated on a weekly basis, but can be run more often if needed.

Improvement Interventions

Project improvement intervention tools fall into several key areas:

- Patient registry
- Evidence-based guidelines
- Collaborative team practice model
- Effective patient self-management and education tools
- Process and outcome measurement, evaluation, and management
- Routine reporting and feedback loop to providers

Registry

The registry maintains patient records of last PCP visit, future PCP visit, last HbA1C date and value, last LDL date and value, blood pressure, tobacco compliant, and antiplatelet compliant. It is a vital tool in population management, flagging noncompliance to alert the team that they need to intervene to discover why the patient is not compliant and to look for ways to correct it.

Self-Management Support

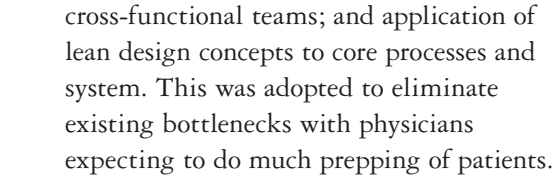
Team members form partnerships with patients. In this way the care team is able to help their partners become informed and activated with the motivation, information, skills, and confidence necessary to effectively make decisions about their health and manage it. To ensure consistent support across locations, all sites have ADA Certification in collaboration with the Duluth Clinic Diabetes Center, and multi-day motivational interview training is provided for RN educators.

Reporting and Feedback Loop

With full team cognizance of the necessity for regular and comprehensive reporting, a routine reporting and feedback loop has been established. To achieve consistent results, data are provided at the physician, clinic, and system levels monthly and are transparent within the health system. All reporting incorporates evidence-based guidelines as well as process and outcome measurement. And, reporting uses a Balanced Scorecard to ensure that performance measures are aligned with the program's strategic goals.

Impact of Practice Changes: Review of:

Quality Improvement Strategy	No. of Trials	Favors Intervention	Favors Control
Team Changes	26		
Case Management	26		
Patient Reminders	14		
Patient Education	38		
Electronic Patient Registry	8		
Clinician Education	20		
Facilitated Relay of Clinical Information	15		
Self-Management	20		
Audit and Feedback	9		
Clinician Reminders	18		
Continuous Quality Improvement	3		
All Interventions	66		



Improvement Interventions

1. System-wide improvement interventions utilize a variety of tools:
   - Lean Six-Sigma – a data-driven, results-oriented approach to process improvement that, by integrating the tools and processes of Lean and Six Sigma, provides a powerful engine for improving quality, efficiency, and speed. It includes value-stream mapping to help identify waste, gaps, and major constraints in care delivery; cross-functional teams; and application of lean design concepts to core processes and system. This was adopted to eliminate existing bottlenecks with physicians expecting to do much prepping of patients.

– Centralization of select patient services, such as outbound and inbound calls; pre-visit planning; outreach to overdue patients; Best Practice Alerts (BPA) through EMR; a workflow that attempts to ensure that the patient schedules his/her next appointment at the conclusion of current appointment, including lab orders with lab done prior to appointment (lab first). And, the motto for the team, "Every patient. Every time."

2. Centralization of scheduling, pre-visit planning, refill authorization, and RN triage services (hybrid model that shifts daytime triage out of clinical visits). This centralization supports Health Care Home, Patient Care Coordination Center (centralized scheduling group), and Nurse On-Line.
3. Monthly Volumes
   – Patient Care Coordination Center, with 34 FTEs manages 60,000 calls per month and 2,900 outbound calls per month (homecare phone rollout).
   – Nurse On-Line is staffed 24/7 with 28 FTEs, manages 20,000 refills per month and 8,500 triage encounters per month—all of which are documented in Epic.
4. Develop Patient Care Coordination Center for quality improvement by raising the minimal qualification of schedulers to include CMA baseline clinical skills; centralized scheduling of primary care clinics using template standards; and more proactive patient outreach through the use of health maintenance alerts that fire to support evidence-based best practices and "lab first" and "working the list" (e.g. registry), and pre-visit planning through outbound calls.
5. Leverage EMR: Health Maintenance Alert (See Figure 1A.)

Lab First

– BPAs fire by diabetes diagnosis and last test result for A1C, lipid profile, LDL, creatinine, and microalbumin
– Drug Monitoring BPAs fire by medication and diagnosis: cholesterol reducing—AST, cholesterol reducing—lipid profile, antihypertensive—creatinine, diuretic antihypertensive—potassium, diuretic antihypertensive—sodium, and other, such as yearly eye exam and mammogram

6. Nurse On-Line has 50 RN's with dual licensure (28 FTE). It supports 24-hour patient access which is required as part of Health Care Home Model, providing triage, appointment scheduling, and refill authorization.
7. SMDC Refill Protocol, jointly authored by physicians/pharmacists, is used for all primary care and leverages Epic. It serves as a safety net for patients with chronic disease by providing medication management labs, appointments needed, and patient education.

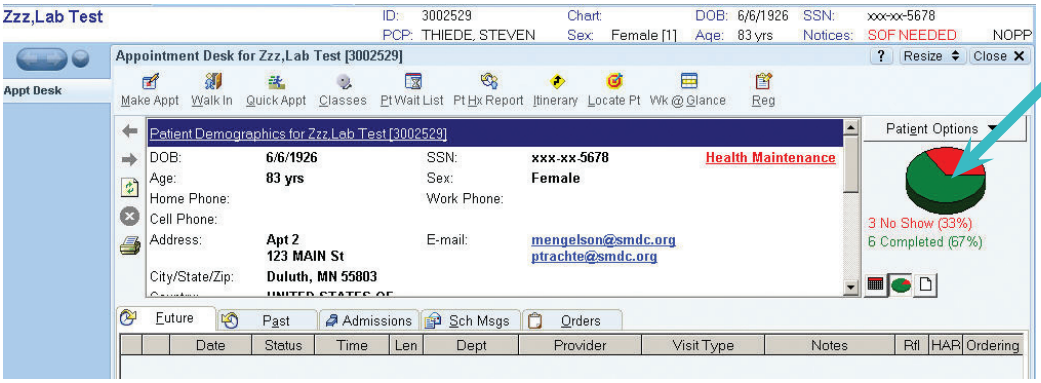
Measures Used

Process measures monitor A1C for 6 months and LDL for 12 months.

Outcome Measures

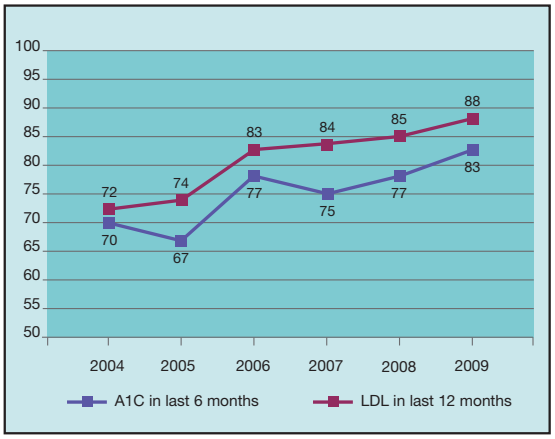
Measures sought for all patients in compliance with the ADA Guidelines Institute for Clinical Systems Improvement are:

1A



Health Maintenance area: If patient calls in, scheduler can schedule as requested, but also integrates other maintenance needs.

- A1C <7%
- LDL <100 mg/dL
- BP <130/80 mmHg
- Daily ASA (≥40 yrs)
- Documented non-tobacco use



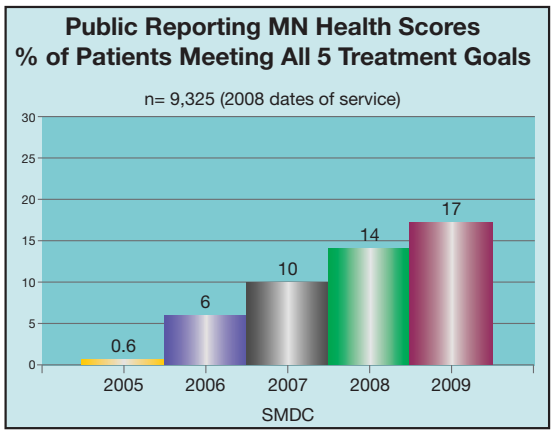
Lessons Learned

As the program continues, the team is eager to apply these lessons learned as means of strengthening the program:

- **Communication is essential.**
- **Do not underestimate the response to change in status quo.**
- **The vocal, unhappy minority cannot steer the ship.**
- **Senior leadership support is invaluable.**
- **Involve patients in the planning process.**
- **Not a "quick fix."**
  - **Improvement to metrics will take time.**
  - **It will require sustained commitment.**
- **Clear definition of roles and responsibilities will help project move forward (which may be different for the 17 different clinics).**
- **"You get what you expect and you deserve what you tolerate."**

Challenges

Leading the list of challenges is *Change Management*. "Change is hard because people overestimate the value of what they have—and underestimate the value of what they may gain by giving that up." *Belasco/Stayer Flight of the Buffalo* (1994). This is followed by the challenge of physician engagement clinical inertia and unexplained variance; accountability for implementation and results, i.e., becoming a culture of consequences; ensuring that efficiencies gained allow for increase in resources; defining values by external customer (patients and families) rather than internal (staff, physician, payers); and "No Net New" (ensuring that efficiencies gained allow for value added activities without increase in resources).



Outcomes and Successes

As demonstrated in the chart above, the percent of patients meeting all 5 treatment goals increased significantly from the onset of the program in 2005 to recent results in 2009. Other key elements are system leadership at both the senior and local level; strong information technology support from the EMR software and information management/data collection; and communication which presents a problem in the illusion that communication, has actually occurred.

Future Steps

- Pursue Health Care Home (Medical Home) Certification
- Rework compensation model (RVU linked to outcomes).

AMGA
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