New York City Health and Hospitals Corporation

Diabetes Improvement Initiative: Redesigning Chronic Illness Care in a Public Hospital System

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Background and Objectives:

In October of 2003, New York City Health and Hospitals Corporation launched a corporate-wide Diabetes Improvement Collaborative to redesign our systems to improve care and outcomes for patients with Diabetes. Reviews of populations of Diabetics within some of our facilities revealed that significant portions (40-80%) had poorly controlled blood glucose. The challenge to HHC staff and patients was to minimize complications of diabetes both through best management and treatment of those already diagnosed and early diagnosis of those currently in our communities. The collaborative uses the Chronic Care Model framework to guide diabetes care and focuses on improving control of key clinical priorities using the following corporate wide goals: A1c < 7 mg/dl, Blood Pressure < 130/80, LDLc < 100 mg/dl as per American Diabetes Association Guidelines and 90% of pilot populations will have an annual eye exam, annual foot exam and self management goals set.

Methods and Program Description:

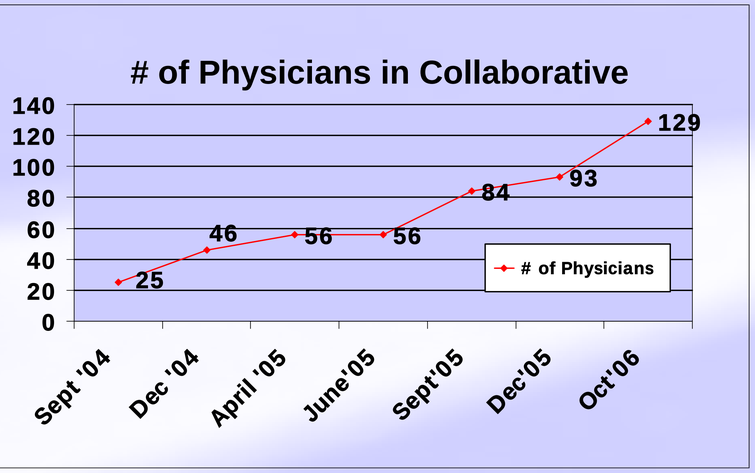
The Diabetes Improvement Collaborative utilizes principles of the Chronic Care Model developed by Edward H. Wagner, MD, MPH and the IHI Breakthrough Series (BTS) methods for improvement collaboratives to guide primary care providers in delivering quality chronic illness care leading to improved patient outcomes. This evidence based model identifies six elements key to improving care: self-management support, delivery system design, decision support, clinical information systems, healthcare organization and community resources. Clinical and process outcomes are improved through more productive interactions between patients and their clinical team. Improvement teams were selected by local medical directors at HHC facilities. Team members include some combination of the following staff: primary care provider, nurse, social worker, health educator, patient care associate or clinic administrative staff. Initially, patient (pilot) populations of focus were between 100-150 patients belonging to the primary care provider on the team. Collaborative populations have increased over the duration of the collaborative and will encompass the entire HHC registry by year's end. Using the IHI BTS methodology, teams were supported with a registry, change package, monthly phone calls, quarterly learning sessions and expert faculty in chronic disease care and improvement . Teams participate in weekly team meetings and test changes (PDSAs) at the facility, monitor data on their population of focus, as well as on results of changes tested and participate in phone calls and learning sessions. A dedicated corporate intranet site houses all tools, learning session materials and team reports. Teams can share data with faculty and other teams. Overall clinical results show improvements in all 6 diabetes goals.

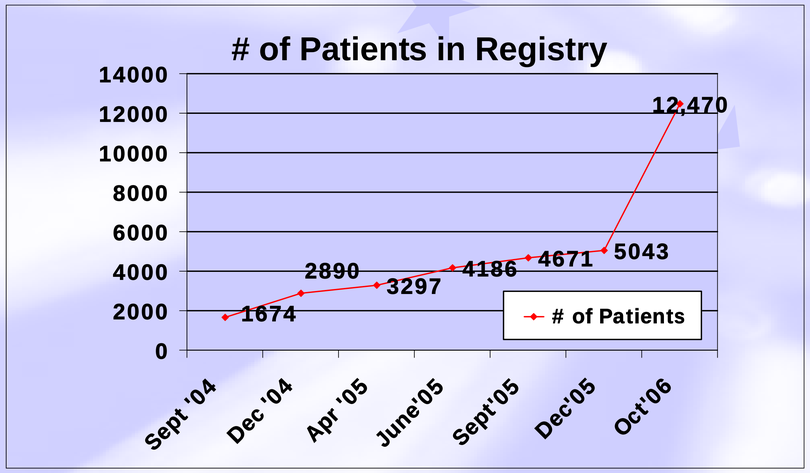
Results/Key Findings:

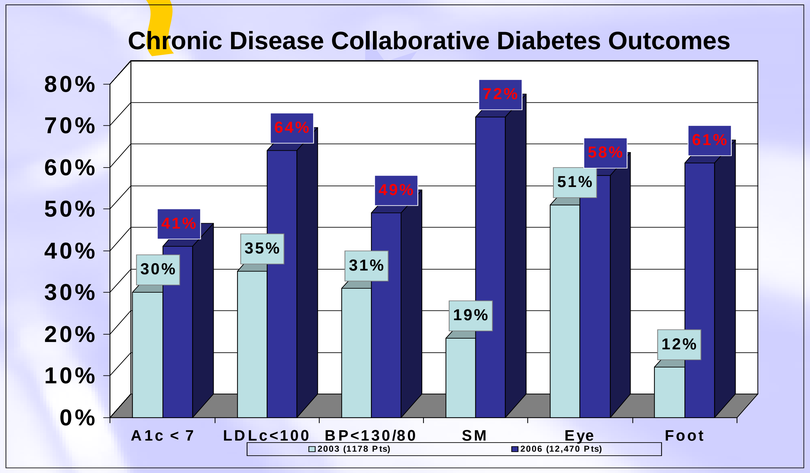
Beginning with 12 teams drawn from ambulatory practices across the corporation, the collaborative population has expanded to include 20 teams with over 12,000 patients with diabetes having been treated using the CCM, as of October 2006.

- **Number of physicians using the chronic care model has increased from 25 to 129.**
- **Percentage of patients with a LDLc < 100 increased from 35% to 64%.**
- **Percentage of patients with a Blood pressure < 130/80 increased from 31% to 49%.**
- **Percentage of patients with an A1c < 7 increased from 30% to 41%.**
- **Percentage of patients with self management plans increased from 19% to 72%.**
- **Percentage of patients with a retinal exams increased from 51% to 58.2% with 7 teams reporting.**
- **Percentage of patients with monofilament exams increased from 12% to 61% with 7 teams reporting.**

The teams are working to sustain and spread a corporate model of Diabetes Best Practices beyond the collaborative population of focus to include the entire HHC diabetes registry.

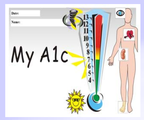






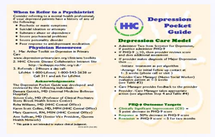
Key Changes in Diabetes Care Corporate-Wide

Self Management Support:
Established a model for care planning and problem solving by nurses, social workers and providers
Goal setting by nurses, social workers or providers at each visit
Follow-up of self management goals by nurses, social workers or providers via phone call or visit
Designed and developed self management tools: action plans, passports, checkbooks, log books



Delivery Systems Design:
Planned visits
Fast track/mini visits
Focused clinics: Diabetes clinics, A1c13 clinic,
Group medical visits
Designated staff for pre-visit calls and post visit follow-up
Care teams

Decision Support:
Developed and disseminated guidelines, protocols, pathways, visit tracking forms
Patient education: face to face, groups, classes
Education of all levels of staff: lectures, in-service, conferences
Specialty collaboration with Primary Care Physicians
Provider chart reviews



Conclusion/Lessons Learned:

All teams used a multifaceted approach and those teams that realized significant improvement worked in all areas of the Chronic Care Model: Strong self management support, Planned visits, including pre and post visit follow-up, Evidenced based guidelines incorporated into the workflow and Utilization of the chronic disease registry. Teams showed great ability to test new ideas (from everyone), and to think "outside the box". Our next challenges will be to maintain the progress made, ensure key changes are well integrated into clinic care, and continue to spread changes to reach more patients.

Key Changes in Diabetes Care Corporate-Wide

Clinical Information Systems
Registry used to follow a population: identify outliers, patients lost to F/U, track measures
Reports developed and providers are given feedback
Diabetes protocol/lab panel/note/summary in MISYS
EMR update including Diabetes medications, eye exams, foot exams, PHQ, SMS goal setting tool, care reminders

Community Resources:
Collaborate with HHC Home Care, VNS, VNAB, Telehealth to provide in home services for patients
Collaborate in clinical trials (e.g.. Treat to Target, DREAM)
Collaborate with Community Based Organizations (e.g.. NYLAG, Brooklyn Diabetes Task Force)
Partner with NYCDOHMH
Developed Wellness Programs and Walking Groups for patients
Participate in community outreach(e.g. health fairs, church activities, etc.)

Health Care Organization:
Monthly meetings with Senior Leaders: SVP, Medical Director, Clinic Directors, Network team leaders
Weekly meetings with the Clinic Chief to discuss progress
Provide dedicated time for the meetings and calls
Chronic Disease improvement activities reported at regular facility meetings (e.g., Quality Council, Executive management)
Redeploy and retrained staff to perform the duties required for chronic disease care.
Foster collaboration between departments working with the primary care staff