Diabetes Quality Improvement Initiative

Community Care of North Carolina
2300 Rexwoods Drive, Ste. 100 • Raleigh, NC 27607
(919) 745-2350 • www.communitycarenc.org
BACKGROUND

The Clinical Directors of CCNC chose diabetes as the second program-wide disease management initiative (after asthma) for the Access II and III Networks. In 2005, the Behavioral Risk Factor Surveillance System (BRFSS) reported that 8.5% of adults responding indicated having been told by a physician that they had diabetes. A 2002 report from the North Carolina Division of Public Health found that approximately 389,000 adults in North Carolina had been diagnosed with diabetes. From 1995 to 2005, the prevalence of diagnosed diabetes in North Carolina adults almost doubled, increasing from 4.5% to 8.5%. Diabetes is the leading cause of blindness, kidney failure, stroke, heart disease and hypertension. Diabetes causes approximately 14,000 hospital admissions per year and 3,000 lower extremity amputations across the state. Diabetes was ranked as the seventh leading cause of death in North Carolina in 2005, and resulted in 2,255 deaths.

The Diabetes Quality Improvement Initiative is built on the core components of process improvement and patient outcome improvement. Based on national studies, improving the quality of care people with diabetes receive can result in a variety of benefits to the individual and cost savings to the health care system. Several long-term studies, most notably the Diabetes Control and Complications Trial (DCCT) and the United Kingdom Prospective Diabetes Study (UKPDS), have shown that improved glucose control, improved blood pressure control, and improved lipid control, can delay the onset and progression of diabetes complications. Improving metabolic control, blood pressure control and preventing complications requires primary care, follow-up care and education that is consistent with evidence based practice guidelines. CCNC is committed to improving the quality of care provided to their patients with diabetes. This initiative has been designed based on guidelines developed by the American Diabetes Association (ADA) and national models for improvement.

PROGRAM SUMMARY

The following steps are defined as the core elements of the Diabetes Initiative:

Step One: Criteria for Diagnosis and Standards for Best Practice
Clinical Directors adopted ADA criteria for diagnosing diabetes, and ADA Clinical Practice Recommendations to define Best Practice guidelines and audit measures.

Step Two: Identify and Implement Diabetes Teams
Networks identify and recruit Diabetes Champions and multidisciplinary staff resources within their local practices and communities. Diabetes Teams work with providers and practice staff to achieve QI goals based on data from program-wide audits.

Step Three: Define and Develop Diabetes Resources and Tools
Develop and customize tools, tailored to meet the varying needs of each Network.

Step Four: Enhance Partnerships with Community Resources
Identify, collaborate, and coordinate with existing community resources. Develop and implement processes of communication with hospitals to follow-up with patients who have diabetes.

Step Five: Develop Materials and Tools for Provider Education & Buy-In
Customize tools; identify and meet new needs on an ongoing basis.
The following criteria are used to identify the Diabetes Population:

- Modified HEDIS criteria and CCNC enrollment criteria is used for defining a patient with diabetes.
- Identify individuals, age 3 and older, who meet ONE of the following:
  1. Patient has an ED visit with a primary diagnosis of diabetes (ICD-9 = 250...,3572,3620...,or 36641)
  2. Patient has an inpatient visit with a primary diagnosis of diabetes
  3. Patient has had two or more primary care contacts (physicians, outpatient) with primary diagnosis of diabetes.
  4. Patient has met the modified HEDIS prescription requirement of one or more prescription of insulin or hypoglycemics/antihyperglycemics using the approved drug list of diabetes related agents.

Enrollment Criteria: Patients must meet HEDIS AND have been enrolled with CCNC at least 10 of 12 months.

Program Performance Measures
Program Performance Measures – To identify patients with diabetes, modified HEDIS criteria are used. A randomized sample of patients are identified for chart reviews. The following best practice standards are used to trend performance:

a. % of diabetes patients with at least 2 continued care visits in 12 months.
b. % of diabetes patients with a blood pressure reading recorded at every continued care visit
c. % of diabetes patients with an annual foot exam documented
d. % of diabetes patient with at least 2 A1C tests performed each year
e. % of diabetes patients with an annual documented eye exam referral
f. % of diabetes patients with annual lipid panel results

Utilization Data – Using modified HEDIS criteria for defining a patient with diabetes and enrollment criteria, claims data was evaluated from 2002 through 2006 for:

a. Rate of hospital admissions with any diagnosis.
b. Rate of ED visits with a diagnosis code for diabetes
c. Rate of Inpatient Admission to hospital with any diagnosis
d. Rate of hospital admission with a diagnosis code for diabetes

FAST FACTS: Quality Improvement Started with Diabetes

- Provider toolkits with Best Practice guidelines are distributed to all CCNC providers
- Office tools, flow sheets, monofilaments, and other materials are provided to all CCNC practices
- Case Managers work with providers and practice staff to implement Best Practice guidelines
DATA DISCUSSION

The number of persons with diabetes in CCNC has increased substantially in the past 4 years. Although some of the increase can be attributed to the growth in the number of patients enrolled, a good portion of the increase is due to the higher incidence of diabetes in the population. Figure 1 describes this increase and documents the parallel increase of persons with diabetes among the dual eligibles (those with eligibility in Medicare as well as Medicaid) and non-dual (those solely eligible in Medicaid) populations within CCNC. The total number of patients with diabetes increased more than threefold between FY2003 and FY2006.

Although the number of persons with diabetes has increased significantly, the average age of patients with diabetes has remained the same. Other demographic and enrollment characteristics of patients with diabetes have been more prone to change (see Figure 2). For example, the proportion of non-whites among those with diabetes has decreased from 71% to 60% in three years. Most of that change can be attributed to the racial composition of

![Fig. 1 – Number of Diabetics in CCNC](image1)

![Fig. 2 – Characteristics of Diabetic Population in CCNC](image2)

*Percentage calculations exclude those with unknown race. **Duals are those with Medicare as well as Medicaid eligibility.
the newest networks which joined CCNC during those years. It will be interesting to see if this trend continues in the future once CCNC has reached maximum penetration of the Medicaid population in North Carolina. Figure 2 also shows that there has been very little change in the gender makeup of persons with diabetes or in the proportion of the patients who have dual eligibility status.

The utilization rates concerning admissions to Emergency Departments (ED) for those who had been already diagnosed with diabetes can be seen in Figure 3. Although there was a modest increase in the rates per 1,000 member months from FY2003 to FY2004, the rates have remained the same for the past three years. The steady rates have held fairly constant for both types of admissions.

A more varied pattern is evident (see Figure 4) for hospital admissions. While there has been a modest increase in the rate for admissions for any diagnosis, the rate for admissions with a diagnosis of diabetes has remained quite stable. The second type of admission is a better predictor of how well the condition of diabetes is being managed.
The next two figures show results from the last two rounds of chart reviews carried out to help monitor Best Practice guidelines in the networks. The reviews are done by trained coders who audit medical charts on site according to established protocols. The findings are then coded and sent to a central data base for further analysis. Figure 5 shows the results for six selected measures during the last two rounds of audits. With the exception of Testing for HbA1c, all the measures showed small improvements in compliance with these standard practices. Figure 6 compares the same six measures between new and established practices. Established practices are those which have been enrolled with CCNC for more than one year. As expected, established practices had higher percentages of compliance (excepting for two continued care visits) than new practices did.

Fig. 5 Community Care of North Carolina
Diabetes Disease Management Quality Initiative
Established Practices

Fig. 6 Community Care of North Carolina
Diabetes Disease Management Quality Initiative
Round 5 2005 • New and Established Practices
FAST FACTS:
- 94% of CCNC enrollees with diabetes see their PCP at least 2 times a year to address their diabetes.
- 96% of CCNC enrollees with diabetes have their blood pressure measured at each PCP visit.
- Approximately 70% of CCNC enrollees with diabetes have annual lipid tests, foot exams, and A1C tests performed every 6 months.
- Average A1C level for CCNC enrollees with diabetes is 7.7%.

■ PRACTICE & PROVIDER SUPPORTS

CCNC networks and central office staff provide participating practices and providers with a variety of supports and tools for implementing the diabetes disease management initiative, including, but not limited to the following:
- Provider toolkit with best practice guidelines and office tools, such as diabetes flow sheet.
- Program, network and practice level data on process and outcome measures.
- Technical assistance in quality improvement, diabetes care and targeted educational sessions for providers and case managers.
- Targeted case management support and interventions.
- Dedicated diabetes nurse educator to lead the initiative, provide training, technical assistance and follow-up.

Summary:

The CCNC Diabetes Quality Improvement Initiative serves as an effective vehicle to enhance provider process and patient outcome in order to screen for and reduce the rate of diabetes related complications. Ninety-four percent (94%) of patients with diabetes attend provider visits in which their diabetes is addressed. This indicates a high level of continued care which is necessary in treating chronic illness. Ninety-six percent (96%) have their blood pressure evaluated at every visit. Approximately 70% of patients with diabetes seen by CCNC providers have annual lipid tests, foot exams and A1C tests performed every 6 months.

In conclusion, the design of the CCNC Diabetes Quality Improvement Initiative involves strong partnerships between the local Networks and a variety of community agencies. In addition, network case managers target interventions to those individuals that are high risk and high cost and whom might benefit the most from interventions.

Information Sources
