Asthma Disease Management Program Summary
BACKGROUND

The Asthma Disease Management Program was the first program-wide quality improvement initiative developed by the Community Care of North Carolina (CCNC) Clinical Directors in 1998. The decision to address asthma was based on established guidelines for selecting a QI initiative, and on a review of Medicaid claims utilization data. The source for much of the utilization data was a 1999 report from the NC State Center for Health Statistics entitled *The Childhood Asthma in North Carolina Report*.

- In fiscal year 1998, the North Carolina Medicaid program spent more than $23 million on asthma related care.
- Approximately 14% of the Medicaid population had a diagnosis of asthma.
- Analysis of Medicaid claims data from the Community Care of North Carolina sites demonstrated that the primary reason for both hospital and emergency room visits for patients under 21 was asthma.

PROGRAM SUMMARY

Core Elements of the Asthma Disease Management Program

The CCNC Clinical Directors adopted core elements for the Asthma Disease Management Program. These core elements identify best practices and form the basis of the initiative to be implemented by the networks and participating providers and practices. Listed below are the core elements of the Asthma Disease Management Program:

1. Build capacity for routine assessment of asthma.
   - Adopt NIH (National Institutes of Health) guidelines for the diagnosis and management of asthma.
   - Develop and implement a method for identifying and recruiting asthma patients in the participating provider network.
   - Develop and implement a simple questionnaire that allows providers to quickly stage the severity of a patient with asthma.
   - Develop a method to record symptom frequency on a regular basis.
   - Establish peak flow meter readings as a tool for all patients with asthma, and record the peak flow at all appropriate times and in all appropriate settings.
   - Record each patient’s personal best peak flow in the medical record and/or care management plan.
   - Use spacers/holding chambers when appropriate.
   - Identify one staff person in each practice as the “asthma QI champion.”
2 Reduce unintended variation in care and establish consistency of care.
   • Educate all medical personnel regarding the proper use of maintenance medications based on NIH guidelines.
   • Educate all medical personnel regarding the stepwise approach to asthma management based on NIH guidelines.
   • Offer physician profiling as a part of this effort, conduct detailed visits with staff and physicians to review each practice’s prescribing histories, including a case-by-case discussion of diagnoses and recommended medications.
   • Use case managers to coordinate information gathering, transfer, and care delivery as appropriate.
   • Assess home environments for smoking, allergenic materials, and other known asthma triggers.
   • Coordinate sharing of information with all caregivers.

3 Build capacity to educate patients, families, and school personnel about asthma.
   • Develop and implement asthma action plans that include the patient monitoring peak flow meter readings when appropriate.
   • Develop the capacity to teach patients with asthma and caregivers how to properly use peak flow meters, inhalers, spacers and/or holding chambers.
   • When possible, collaborate with school nurses, teachers, administrators, and day care personnel to assure appropriate education, assessment, and treatment for school-age children with asthma.
   • For children who cannot use peak flow meters, educate family on symptom-based management.

4 Report outcomes and process measures to all providers and staff regularly.
   • Develop the information system capability to collect, monitor, and analyze data for measuring performance. Collect and disseminate information by physician, by practice, and by network.
   • Use this information to assess current performance, to encourage efforts to improve care processes at all levels, and to set goals for performance improvement targets.

**FAST FACTS:**

Core elements of an asthma management plan:

1. Build capacity for routine assessment of asthma.
2. Reduce unintended variation in care and establish consistency of care.
3. Build capacity to educate patients, families, and school personnel about asthma.
4. Report outcomes and process measures to all providers and staff regularly.
DATA DISCUSSION

As Figure 1 indicates, the number of patients with asthma enrolled in Community Care of North Carolina (CCNC) has increased significantly. The increase of 176% has resulted in 11427 additional CCNC patients with this chronic condition. Since most of the patients with asthma tend to be young, only 4.4% of persons with asthma in FY2006 were dually eligible for both Medicaid and Medicare, although that proportion is larger than in FY2003 when only 2.9% of individuals with asthma were dually eligible.

The percent of females in the past 4 years has not changed much (See Figure 2). However, the percentage of non-white patients with asthma decreased from 69% of all persons with asthma to 56%. These percentage calculations exclude patients for whom race was unknown. This trend reflects changes in the composition of CCNC because many of the newer practices enrolled during 2003, 2004 and 2005 were located in areas of the state where populations tend to have lower proportions of racial minorities.

During the same period of time the average age of the CCNC persons with asthma increased from 13.5 to 14.9 years old.

Fig. 1 – Number of Patients with Asthma in CCNC

Fig. 2 – Characteristics of Asthma Population

*Percentage calculations exclude those with unknown race.

Dual eligibility means that patients are eligible for Medicare as well as for Medicaid.
PERFORMANCE MEASURES

CCNC has adopted performance measures to monitor progress of enrollees in different disease categories. For asthma, the following measures are among the key indicators used.

Outcome measures (obtained from Medicaid Claims)
- Emergency Department Utilization Rate
- Emergency Department Utilization Rate for Asthma
- Inpatient Admission Rate
- Inpatient Admission Rate for Asthma

Process measures (obtained from annual chart audits)
- Percentage of Patients with Asthma Staged
- Percentage of Patients with Asthma Staged II, III, or IV on maintenance medications
- Percentage of Patients with Asthma Staged II, III, or IV with a Written Asthma Management Plan
- Percentage of Patients with Asthma Receiving an Annual Influenza Vaccine

During the past four fiscal years, the rate of admissions to Emergency Departments (ED) by patients with asthma has remained fairly constant or trended slightly downward. Admissions are calculated per 1000 member months to establish a rate that permits comparisons among different groups and different times. Figure 3 shows two sets of bars. The bars tracking total admissions to ED are based on any admissions by patients classified as having asthma. The second set of bars (asthma) refers to ED admissions by patients with a diagnosis of asthma recorded in the ED admission. This second trend is more representative of any impact that the asthma initiative may be having on ED admissions. It shows a 16.6% decline in admissions between FY2003 and FY2006.

**Fig. 3 – Rate of Emergency Department Use Rate by Patients with Asthma in CCNC**
(per 1,000 Member Months)

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<td>Rate (Total)*</td>
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*Total rate includes ED visits for any diagnosis while asthma rate includes ED visits with a diagnosis of asthma.

**FAST FACT:**
There is a slight trend for asthmatic patients to be older than in the past with average age increasing from 13.5 years old in FY2003 to 14.9 years old in FY2006. This trend reflects a higher proportion of newer practices (those enrolled in 2003-05) serving adult patients than practices enrolled before that time.
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CCNC networks and central office staff provide participating practices and providers with a variety of supports and tools for implementing the Asthma Disease Management Program. Highlights include:

- Technical assistance in quality improvement and provider educational sessions.
- Program, network, practice, and patient level data on process measures (chart audits), outcomes measures (emergency room and hospital utilization data), and other data extracted from the Medicaid claims system.
- Office tools such as Asthma Action Plans and Patient Questionnaire samples to determine severity of disease and Asthma Visit Forms to prompt providers on recommended clinical management and patient education.

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**FAST FACTS:**

- Between FY2003 and FY2006, there was a 16.6% decline in the rate of admissions to Emergency Departments.
- For the same period of time, there was a 40% decrease in the admission rate for patients with a diagnosis of asthma to Inpatient facilities.
- Practices which had been enrolled in CCNC for more than one year did better in four key performance measures than practices which had recently joined CCNC.
• Case management services for patients with asthma:
  - Disease specific assessments,
  - Medication adherence counseling,
  - Smoking cessation counseling,
  - Coordination of care,
  - Follow up from emergency room and inpatient visits,
  - Education on community resources,
  - Education on disease, medication, equipment, and avoidance of triggers, and
  - Practice assistance with quality improvement and the Plan, Do, Study, Act (PDSA) cycle.
• Dedicated pediatrician leading the asthma initiative and available to provide the following type of activities and technical assistance:
  - Asthma training and educational sessions to physicians, practice staff and/or case managers,
  - Update and present findings to network clinical directors,
  - Serve on local and state level asthma advisory groups and committees representing CCNC
  - Update and present findings at local network level to staff and physicians, and
  - Research and make recommendations for program changes and enhancements.