here are numerous reports that link the economic downturn to increased use of emergency departments (EDs). For example, in The Washington Post, Larry Gage, president of the National Association of Public Hospitals and Health Systems, stated that “the absolute number of people using emergency rooms has gone up as much as 20% to 30% in the last six to eight months due to the recession.” The same article reported that Providence Hospital in Washington, DC experienced a 13% increase in emergency room visits in the previous year.

Carolinas HealthCare System, centered in Charlotte, North Carolina provides the majority of safety net care for the Charlotte-Mecklenburg region; yet interestingly enough, the EDs at our hospitals are not experiencing similar trends as the rest of the nation. Comparing the first five months of 2009 to the first five months of 2008 shows only a slight increase in ED visits (0.5%) for all of the Carolinas HealthCare System’s Mecklenburg County hospitals. This is during a period in which our region is experiencing overall population growth, rising unemployment rates, and increasing numbers of people without health insurance. This commentary will explain some of the strategies implemented at Carolinas Medical Center over the past decade that are helping to control ED utilization.

Carolinas HealthCare System (CHS) is a large, vertically integrated health care system with facilities in North and South Carolina. The flagship hospital, Carolinas Medical Center (CMC), is an 808 bed facility and a Level I Trauma Center. As in many cities, our safety net hospital serves a significant role in providing access to services for underserved populations. CMC also serves as one of North Carolina’s five academic medical center teaching hospitals, providing residency training for over 200 physicians in 15 medical specialties. Additionally, CMC operates primary care clinics for uninsured and underinsured patients in four strategically located areas of the city. These clinics, along with affiliated specialty care clinics, provide medical care to over 70,000 low-income individuals in 250,000 annual visits.

In the 1940s, CMC began operating clinics for the uninsured on its main hospital campus and recently expanded to other sites to help meet community demand. It became apparent to the community and hospital leadership in the mid-1990s that the existing clinic infrastructure was at critical capacity. New patient appointments were scheduled months out, established patients could not get appointments so they utilized the ED, and there were growing concerns about potential impact to the quality of the medical education program if these trends continued.

The community clinics have demonstrated benefit to the hospital by delivering effective, efficient, patient-centered, and timely care. A key outcome was a decrease in hospital ED utilization rates.

Kristin E. Wade, RN, MSN; Scott L. Furney, MD, FACP; Mary N. Hall, MD, FAAFP

Kristin E. Wade, RN, MSN, is an assistant vice president at Carolinas Medical Center. She can be reached at kristin.wade (at) carolinashealthcare.org

Scott L. Furney, MD, FACP, is a clinical professor and chairman of the Department of Internal Medicine at Carolinas Medical Center.

Mary N. Hall, MD, FAAFP, is the chair of the Department of Family Medicine at Carolinas Medical Center and the director of the Charlotte Area Health Education Center (AHEC).
To address these concerns, CMC made the decision to help meet the needs of our community by expanding services and embracing the medical home concept; this decision has shown downstream success in terms of patient outcomes and improved utilization at appropriate care venues. As evidence of this, while ED visits have remained essentially flat at our Charlotte acute care hospitals, visits to the CMC primary care clinics are up 9% over the last year.

CMC continues to develop our primary care clinics to be true patient-centered medical homes. A decade ago, locations were chosen for the placement of new clinics by mapping where Medicaid patients lived, in order to provide care for patients in their surrounding communities. Key medical home principles for care delivery have been established, including:

- Each patient is assigned to a continuity physician (primary care provider).
- Patients have access to a 24-hour nurse advice line and to an on-call physician.
- There is facilitation of care across the continuum, including well care, sick care, specialty care, and hospitalization services.
- Support services are provided from a team of care providers including social workers, interpreters, dieticians, pharmacists, and health educators. This care team ensures that physicians focus on providing medical care while others collaborate to meet the patient’s broader needs.
- Partnerships are created with community-based care organizations. A few examples include co-location of Mecklenburg County Health Department services, such as WIC and maternity care coordination; onsite registered nurse care coordinators from the local Community Care of North Carolina’s Medicaid case management program; and partnerships with organizations that provide care for the homeless to streamline their access to free health care and medications.

The community clinics have demonstrated benefit to the hospital by delivering effective, efficient, patient-centered, and timely care. A key outcome was a decrease in hospital ED utilization rates. After the community clinics opened, we realized a steady decline in ED visits at Carolinas Medical Center from 118,400 visits in 1995 to 102,500 in 1999. A few years ago, ED visits were creeping up again and studies of ED patterns indicated that the Hispanic/Latino population disproportionately used the ED for non-emergent needs, particularly for their children. In February of 2004, we opened a pediatric after hours clinic at our CMC NorthPark location. It is open Monday-Friday in the evenings and during the day on Saturday and Sunday. After extending these hours, ED visits for Medicaid and uninsured children decreased by 20% over the following year, and the acuity of children that were presenting to the ED increased by 6.6%, indicating that the lowest acuity patients were indeed seeking care elsewhere. To continue this trend, a scheduler was added to the ED staff to directly book follow-up appointments in the clinic’s scheduling system and to educate patients about the importance of utilizing their primary care physician. Since then, ED visits slowly crept back up, and extended hours were added at a second pediatric location in late 2008. Without adjusting for growth, ED visits remain lower today than before the community clinics expansion in 1995 (see Figure 1).

Another major barrier to patient compliance, and also to physician productivity, was the high rate of patient “no-shows,” with an average of 38% of patients missing their appointments. In 2002, services were enhanced through implementation of an “open” or “advanced” access scheduling system, locally called Available Access and modeled after the work of Dr. Mark Murray and Catherine Tantau. This scheduling methodology improved the patient show rates at our two large family medicine clinics from 62% in 2001 to 90% in 2005. In this system, patients calling for well or sick care appointments are scheduled for the same or next day. In addition, reminder letters are sent to patients who have not called and scheduled a well visit appointment at the recommended time intervals appropriate to their chronic disease or preventive needs.

Charlotte has one of the fastest rates of Hispanic/Latino growth in the US, now accounting for 10% of the total county population—a 56.3% increase in less than one decade. Through focused efforts, we were able to address cultural and
linguistic needs in providing health care for this population. At just one of our clinics, 62% of the patients identify themselves as Hispanic/Latino. Meeting the needs of a non-English speaking population is necessary to provide health care services in our community. Use of interpreters helps to accomplish that, but can be extremely expensive and requires longer visits since conversations must be repeated. Recruitment of bilingual staff who can perform their job duties while communicating with the patient in their native language is more cost-effective and also provides cultural relevance for patients. CMC provides a Bilingual Incentive Pay Program for staff who pass a language competency assessment. Due to this program 50% of the staff at our largest clinic are bilingual. Other specific initiatives to provide culturally and linguistically appropriate services include patient education materials and signage in both English and Spanish, use of verbal and pictorial education to address both culture and lower literacy, and use of culturally appropriate items such as dietary guidance by nutritionists using ingredients more familiar to the patients in teaching Hispanic/Latino patients about diabetic diets.

Improved access to appointments, better show rates, onsite support staff, and a focus on culturally and linguistically appropriate care has led to better patient outcomes. A demonstration of this is the performance of patients receiving care at our CMC community clinics when compared to general North Carolina performance as reported by the Behavioral Risk Factor Surveillance Survey (NC-BRFSS). One of the measures on the BRFSS is “Number of times in the past 12 months you have seen a doctor, nurse, or other health professional for your diabetes.” Hispanic/Latino patients at our clinics are 23% more likely to have 1-5 visits and 64% more likely to have 6-11 visits than Hispanic/Latinos across North Carolina. African American patients are 4% more likely to have 1-5 visits and twice as likely to have 6-11 visits. Even more telling are statistics about patients with more than 12 visits in one year for diabetes. Hispanics were 11 times less likely to have 12 or more visits versus Hispanics across North Carolina, with less than 1% of the patients seeing the doctor more than 12 times. African American patients were 21% less likely to have had greater than 12 visits for diabetes in a year versus African American patients across North Carolina. This high number of visits could indicate that diabetes is poorly controlled, and that the medical homes at CMC are delivering better care for these minority populations (see Figure 2, page 344).

In addition to promoting a healthier lifestyle and decreasing morbidity complications for patients, improved diabetes care is financially beneficial to hospitals. Internal analysis found that uninsured patients admitted to CMC with a diagnosis of diabetes and who were not receiving services at one of our CMC medical homes, cost the hospital 31% more per day and 67% more per admission than for uninsured, diabetic patients with an established primary care home in a CMC clinic.

CMC community clinics have received national recognition for the care that we are delivering. Two of our community clinics received recognition in June 2008 from the National Commission on Quality Care (NCQA) for Physician Practice Connections (PPC). Three-quarters of our eligible primary care physicians are recognized by NCQA for meeting evidence-based standards in caring for patients with diabetes.

This medical home model for these high-risk patients in hopes of reducing their utilization of hospital resources. Interventions included easy access to physicians and clinic staff, frequent phone calls from case managers, free access to medications, and other interventions tailored to suit the needs of the individual patients.

Results of these interventions included reduced hospitalizations and emergency department utilization by more than 80%. While this medical home intervention was not a controlled study, the results for this high risk group were clearly beneficial. One of the patients, a 21-year-old Type-1 diabetic, had been hospitalized with diabetic ketoacidosis 22 times during the year prior to the pilot program. Her disease was further complicated by poor social support systems. We implemented a multidisciplinary medical home model for these high-risk patients in hopes of reducing their utilization of hospital resources. Interventions included easy access to physicians and clinic staff, frequent phone calls from case managers, free access to medications, and other interventions tailored to suit the needs of the individual patients.

In 2003, physicians in the Department of Medicine at Carolinas Medical Center identified a small subset of patients who were frequently hospitalized due to poor management of their medical conditions. Their medical problems were often complicated by other factors, such as substance abuse, psychiatric disorders, or poor social support systems. We implemented a multidisciplinary medical home model for these high-risk patients in hopes of reducing their utilization of hospital resources. Interventions included easy access to physicians and clinic staff, frequent phone calls from case managers, free access to medications, and other interventions tailored to suit the needs of the individual patients.

Results of these interventions included reduced hospitalizations and emergency department utilization by more than 80%. While this medical home intervention was not a controlled study, the results for this high risk group were clearly beneficial. One of the patients, a 21-year-old Type-1 diabetic, had been hospitalized with diabetic ketoacidosis 22 times during the year prior to the pilot program. Her disease was further complicated by poor social support systems and depression. With frequent clinic visits, psychiatric treatment, daily phone calls from a disease management nurse, and case management services provided by Medicaid, she was only hospitalized twice in the subsequent year. Objective measures of her diabetes control, such as Hemoglobin A1C, blood pressure, and lipid levels also demonstrated dramatic improvements with adherence to her medications. Six years later, her diabetes remains well-controlled and she has required less intensive intervention as her self-care skills have improved with education. In her case, provision of a medical home with comprehensive medical care and support was not only cost-effective, but potentially life-saving.
meet all of the need. Just as in the 1990s, the CMC community clinics are at capacity. CMC is actively participating with MedLink of Mecklenburg County, a community collaborative of all of the safety net organizations striving to help meet the needs of our growing local uninsured community. MedLink includes all of our local hospital systems, free clinics, our local federally qualified health center, Department of Social Services, health department, Physicians Reach Out (our Project Access style program and a part of Community Health Services), MedAssist (providing medications for uninsured patients), Community Care Partners of Greater Mecklenburg (our local Medicaid case management network), and other safety net providers. MedLink is working to develop strategies to address future health care needs in a more community wide manner.

We increasingly hear about people who are newly unemployed and do not know how to access social services or our safety net. We do not know what the future months and years will hold for us, as newly uninsured patients may be avoiding preventive services and chronic disease care due to financial consideration. Patients who have not historically received care within the existing medical home structure could present to our ED and hospitals for care in the upcoming months and years with higher rates of acuity.

Two principles can clearly be gleaned from the past successes of the CMC community clinics: (1) adoption and expansion of patient-centered medical home models are key to delivering effective, efficient, and appropriate care, and (2) support of collaborative work among the health care continuum, such as the work being done by MedLink of Mecklenburg and Community Care of North Carolina, will be critical to the success of future safety net care and, ultimately, the overlying cost of health care. NCMJ
REFERENCES