Mission Children’s Hospital’s Regional Asthma Disease Management Program
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The Regional Asthma Disease Management Program at Mission Children’s Hospital in Asheville, North Carolina, was designed to address health care disparities in underserved and impoverished children with asthma in the western part of the state. The program acknowledges the local population’s health care habits and asthma care needs, and it delivers asthma education and interventions beyond the clinical setting—in homes, schools, child care centers, and other care facilities.

The Regional Asthma Disease Management Program implements the 6 key recommendations of a 2008 report from the National Asthma Education and Prevention Program: assess asthma severity, assess and monitor asthma control, use inhaled corticosteroids, use a written asthma action plan, control environmental exposures, and schedule follow-up visits [1]. Through its various components, the program provides clinical assessments (lung spirometry, exhaled nitric oxide, etc.); patient education (using culturally appropriate and literacy-sensitive materials); medication assessments; development and implementation of an asthma action plan; environmental assessments; communication of pertinent information to physicians, families, and others; and educational programs and activities.

Key collaborators include the North Carolina Asthma Program; the Asthma Alliance of North Carolina; school systems and child care centers in Western North Carolina; the North Carolina Department of Health and Human Services, Environmental Health Section, Children’s Environmental Health Branch; the National Center for Healthy Housing; the National Asthma Control Initiative of the National Heart, Lung, and Blood Institute of the National Institutes of Health; the Asthma and Allergy Foundation of America; primary care providers in Western North Carolina; and the Cherokee Indian Hospital Authority. The Regional Asthma Disease Management Program has a strong presence outside its clinical settings, having built long-term relationships with faith-based organizations, community agencies, and others.

In Western North Carolina, more than 1 child in 4 lives in poverty [2]. Western North Carolina also has a large minority population that includes Native Americans, African Americans, and Hispanics. Minorities and groups with lower income-to-poverty ratios have the highest prevalence of asthma [3]. Social determinants of health must be addressed, because impoverished children are at risk for lower school performance, decreased attendance, fragile nutritional status, and inadequate housing.

In 2010, 10.3% of children in North Carolina had asthma [4], compared with 8.4% of children nationally [3]. Asthma is the leading chronic health condition among students in North Carolina schools; in the 2009–2010 school year, 52% of all students with a chronic health condition had asthma [5].

Because of the state’s temperate climate—which supports more than 100 species of trees and 1,600 species of flowering plants—plus the prevalence of cigarette smoking and high levels of poverty, children in North Carolina face significant exposure to environmental triggers that exacerbate asthma severity, which leads to relatively high rates of pediatric asthma. The Regional Asthma Disease Management Program uses a multifaceted approach to help families build skills in managing environmental triggers and to connect them with other community resources.

Environmental assessments are conducted at child care centers and school sites, as well as in the homes of children diagnosed with asthma. Each assessment lasts 1–3 hours, and results are discussed with the administrator of the site or the homeowner. An 8-page home environmental assessment questionnaire, which was developed in partnership with the National Center for Healthy Housing, is administered. This questionnaire uses a multipronged strategy to identify allergens and irritants to which the patient is sensitive. The Regional Asthma Disease Management Program uses faith-based organizations and charitable community partners to address the psychosocial needs of patients and to provide cleaning supplies, pest control services, and home remediation. Additional follow-up is conducted if remediation is required.
Regional workshops are used to take the program’s message into the community; this message promotes asthma awareness and the identification of indoor and outdoor environmental triggers. Residents throughout Western North Carolina are invited to attend these workshops, which are usually held in schools, child care centers, and primary care offices. From 2009 through 2011, nearly 3,500 children received “asthma friendly” environmental interventions, and 259 staff members were educated. Asthma community initiatives throughout Western North Carolina impacted an additional 2,767 individuals from 2009 through 2011.

In 2009, the Regional Asthma Disease Management Program was 1 of 13 national asthma demonstration sites chosen by the National Heart, Lung, and Blood Institute. Fifty children were enrolled in the institute’s National Asthma Control Initiative from 2009 through 2011. These children’s medical charts were audited to assess several different indicators of program effectiveness. Unpublished data from the initiative show statistically significant improvements across all variables. Decreases in the rates of emergency department visits and hospitalizations for asthma resulted in cost reductions exceeding $800,000. Participating patients also showed statistically significant improvements on lung spirometry and exhaled nitric oxide measures. School attendance improved 52%.

The Regional Asthma Disease Management Program emphasizes compassion and patient advocacy. The program’s ultimate goals are to improve patients’ subjective quality of life, decrease school absenteeism, and decrease emergency department utilization and inpatient admissions for asthma.

In 2012 the program was the premier health care provider recipient of the US Environmental Protection Agency’s National Environmental Leadership Award in Asthma Management. This was the first time that the award had been won by a program in the Southeastern United States. NCMJ

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References


