

Asthma in Low Income Communities

Background Information

As of 2010, asthma was the most common pediatric disease in the United States, affecting 7 million children under 18 years of age. Those with asthma must avoid potential triggers and take medication daily to prevent dangerous flare ups. Different from other diseases, children with asthma- and their parents or caregivers- must continuously monitor their health (McDaniel et al 2014). With asthma, the most common chronic pediatric disease in the United States (affecting 7 million children under 18 years in 2010; see Moorman et al. 2012), sufferers must avoid potential triggers and take medication daily to prevent dangerous flare-ups (National Asthma Education and Prevention Program [NAEPP] 2007). Unlike most children, those diagnosed with asthma—and their parents or caregivers—must continuously monitor their health.

It is important to note that asthma care stretches beyond daily medication regimens. There are many environmental triggers that may affect a child's asthma; sometimes, these environmental triggers may cause dangerous flare ups, sending children to the emergency room. While the National Institutes of Health made available highly effective guidelines for asthma treatment, children's overall morbidity and mortality have not decreased (NAEPP 2007; Gupta and Weiss 2009).

Asthma Triggers

As with most breathing related diseases, there are indoor and outdoor triggers. The higher presence of these triggers, the higher the chance of a flare up. While there are medications that may work against some triggers (i.e. pollen), most triggers (i.e. indoor triggers) must be controlled in order to reduce the amount of flare ups a child may experience. According to the Environmental Protection Agency, examples of indoor and outdoor triggers include, but are not limited to: secondhand smoke, dust mites, molds, cockroaches and pests, pets, nitrogen dioxide, chemical irritants, outdoor air pollution, and wood smoke.

Asthma Rates Among Low-Income & Minority Children

There are striking differences across racial, ethnic, and socioeconomic lines among children suffering from chronic asthma. African American youth from birth to age 17 visit the emergency room a total of 4.1 times greater than among non-Hispanic whites. The death rate is 7.3 greater for this population, as well. Among Latinos in the same age group, the emergency room visit rate is 1.8 times greater than non-Hispanic whites, and the death rate is 1.2 times greater (Akinbami et al. 2009).

Richmond, VA is one city consistently rated with the most harmful environments for children with asthma.

Evidence Based Practices

Breathe Easy Homes Intervention (BEH)

The BEH intervention builds homes to high standards including high energy-efficiency features and use of sustainable products. BEH has features in three main categories: (1) an enhanced exterior envelope to optimize moisture-proofing, (2) interior finishes, flooring, and other materials that minimized dust accumulation and off-gassing, and (3) an energy-efficient heat-exchange ventilation system with filtration for continuous fresh air. BEH families also receive in-home asthma education including trigger reduction and home management. Families have benefitted from BEH in Boston, MA; New York, NY; Seattle, WA; and other cities. A 2011 study showed that moving into an asthma-friendly home can benefit children and adolescents with asthma. The study suggests that those families who also moved into a BEH experienced additional improvement in a wide range of clinical outcomes and trigger exposures.

Improving Pediatric Asthma Care in the District of Columbia (IMPACT DC)

IMPACT DC is an award-winning pediatric asthma program in Washington, DC which works to combine asthma care through clinical care, education, research, and advocacy. The IMPACT DC model

starts when a child goes to the emergency room and/or was hospitalized for asthma. Children who have difficulty managing their asthma are also eligible for services. The clinic provides children and their families with a detailed medical consultation; an asthma care provider helps develop a unique coordinated plan of care for the child and family to follow. The asthma care provider then communicates and coordinates that plan with the child's primary care provider, school nurse, and other involved in the child's care regimen (IMPACT DC). In a clinical trial of IMPACT DC, a significant number of children who participated in the intervention saw decreased subsequent unscheduled health care use while improving compliance of medicine and quality of life (Teach et al 2006).

Another program similar to IMPACT DC is the Asthma Intervention gets Results Gateway program: "AIR". Gateway Health Plan care managers reach out to high-risk members who are identified through recent emergency room visits or hospitalizations (Dulworth and Greenberg 2011).

Chronic Disease Management Program

The coordinated care disease management program identified pediatric asthma members who have suspected and actual asthma diagnoses through multiple strategies (i.e. Health-Risk Assessments, risk scoring, data analysis, etc.). The key objectives of the program are to (1) improve identification of children with asthma, (2) increase appropriate treatment for asthma, (3) improving long-term asthma medication adherence, (4) using and measuring the effect of appropriate patient education, and (4) reducing environmental triggers for asthma. Group Health Cooperative works with families to find a holistic plan of coordinated care. For example, families with smokers are provided education information and counseling related to tobacco cessation. Members are given an asthma action plan that they can use to help guide conversations and create a plan of care (Dulworth and Greenberg 2011).

Citations

- Akinbami, Lara J., Jeanne E. Moorman, Paul L. Garbe, and Edward J. Sondik. 2009. "Status of Childhood Asthma in the United States, 1980–2007." *Pediatrics* 123: S131–45.
- Dulworth, Sherrie and Liza Greenberg. 2011. *Best Practices in Childhood Asthma Care*. Medicaid Health Plans of America. Washington, DC.
- Gupta, Ruchi S., and Kevin B. Weiss. 2009. "The 2007 National Asthma Education and Prevention Program Asthma Guidelines: Accelerating Their Implementation and Facilitating Their Impact on Children with Asthma." *Pediatrics* 123: s193–98.
- IMPACT DC: Improving Pediatric Asthma Care in the District of Columbia.
<http://childrensnational.org/departments/asthma-impact-dc>
- McDaniel, Marla; Susan J Popkin, Judy Berman, Paola Barahona, Priya Saxena, Deborah Quint, and Stephen J. Teach. 2014. "Making Sense of Childhood Asthma: Lessons for Building a Better System of Care". The Urban Institute.
- Moorman, Jeanne E., Lara J. Akinbami, C. M. Bailey, et al. 2012. "National Surveillance of Asthma: United States, 2001-2010." *Vital and Health Statistics Series 3, Number 35*. Hyattsville, MD: National Center for Health Statistics, Centers for Disease Control and Prevention.
- NAEPP (National Asthma Education and Prevention Program). 2007. *Expert Panel Report 3: Guidelines for the Diagnosis and Management of Asthma*. Full report. Bethesda, MD: NAEPP, National Heart, Lung, and Blood Institute, National Institutes of Health, US Department of Health and Human Services.
- Takaro, Tim K, James Krieger, Lin Song, Denise Sharify, and Nancy Beaudet. 2011. "The Breathe-Easy Home: The Impact of Asthma-Friendly Home Construction on Clinical Outcomes and Trigger Exposure." *American Journal of Public Health* 101 (1).
- Teach, SJ, EF Crain, DM Quint, ML Hylan, and JG Joseph. 2006. Improved asthma outcomes in a high-morbidity pediatric population: results of an emergency department-based randomized clinical trial. *Archives of Pediatric Adolescent Medicine* 160(5): 535-541.