

Physician

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According to the mother of an 8-year-old with asthma, there were no pets or smokers in the home and her daughter didn't participate in outdoor sports. The physician was concerned that the child's history did not match her current symptoms and made a referral to Pediatric Home Service (PHS). When a PHS clinician visited the home, she found three cats, an odor of stale smoke, and the daughter playing pickup soccer in a dusty, weed-filled lot across the street.

PHS certified asthma educators are the physicians' eyes and ears in the home. Asthma is a very manageable chronic disease, but only with the right balance of in-home visits, care management, environmental assessments, and interventions. What patients share with physicians is frequently not the entire reality, and until someone visits the home, patients may not receive asthma management to best fit their lives.

A persistent, chronic dilemma

In Minnesota, an estimated 7 percent of children up to the age of 17—more than

Creating a circle of care

Keeping kids with asthma in school and out of the ER

By Kay Kufahl, RRT, AE-C

85,000 children—currently have asthma. According to the Minnesota Department of Health 2008 epidemiology report, asthma hospitalization rates are highest among children under age 5. Asthma hospitalization rates are higher for boys than for girls until the late teenage years, at which point rates become higher for female adults than male adults.

Most children with asthma are treated in an episodic, reactive fashion, which can result in poor ongoing asthma control and inefficient use of hospital and emergency room (ER) services. "Our combined efforts of physicians and certified asthma educators achieve healthier children, empower families to handle asthma episodes, and reduce ER and hospital visits to save health care expenditures," says Judy

Giel, RRT, CRTT, senior vice president of clinical services for PHS.

Families in "survival mode"

PHS clinicians work mainly with families in low- to no-income brackets, predominantly in the Minneapolis-St. Paul metropolitan area. A typical family consists of a single mom who has several children with asthma, and relies on public transportation. Their homes often have no beds and little food. PHS has a growing population of families for whom English is not the primary language spoken in the home. These families are in survival mode.

Our job is to go into a home, sit across the kitchen table with the mother, in her domain, and help her learn how to handle her child's asthma within her reality.

Sometimes that means finding a pharmacy within walking distance or a Somali-owned grocery store for a Somali patient. It includes not scheduling home visits during prayer times or on cultural holidays. It includes labeling medications with symbols and diplomatically explaining the asthma-related hazards of the pile of stuffed animals on a child's bed. Above all, the approach means creating and maintaining a circle of care centered on best managing each child's asthma condition as directed by his or her physician.

Unique features of this approach include:

- Hands-on teaching with placebo inhalers
- Medication management
- Written, electronic care plans that are shared with attending physicians after each home visit
- Close access to complementary services, from durable medical supplies to social workers and patient advocates
- Oximetry and spirometry, if physician-ordered
- Care management
- Environmental assessments and interventions

Managing environmental impact

Perhaps the most dramatic impact on children's health has been PHS' involvement in environmental assessments and interventions (see sidebar on this page). For children with asthma, their home environment significantly contributes to a rise in asthma episodes and health care utilization.

Starting in 2003, seven grant-funded programs in the Twin Cities have reimbursed for environmental assessments, environmental interventions (including HEPA vacuum, HEPA air cleaners, allergy bed and pillow encasements), asthma education, and care management for families who have children with asthma. These grants have included a 2003 Minnesota Department of Health RETA health program with Environmental Protection Agency funding; two phases (2004–2007 and 2007–2009) of a City of Minneapolis Environmental Health program with Housing and Urban Development funding; a 2006–2007 Washington County Public Health program with UCare Foundation funding; another Washington County Public Health program with Medica Foundation funding; and a 2006–2008 project, "Controlling Asthma in American Cities," managed by the American Lung Association of Minnesota with funding from the Centers for Disease Control.

In five years combined, 1,315 children were enrolled and PHS was selected as the provider in all seven projects. Data Intelligence Consultants, Eden Prairie, Minn., evaluated all seven programs and reported these outcomes:

- Reduction in health service utilization (ER visits and hospitalizations);

PHS in-home asthma management program outcomes

Emergency room visits

Before	After
2,121	336

Prednisone use

Before	After
2,807	875

Parent-supplied data through December 2008
2,415 patients seen for a total of 5,447 visits

Hospitalizations

Before	After
1,017	131

School days missed

Before	After
6,646	1,769

- Improvement in school attendance; and
- Lower asthma symptom burden.

Paradigm shift

After a few years of doing in-home visits, it became obvious that visits alone were not meeting our patients' needs. Ninety-five percent of the families we serve live in a culture of poverty. Poverty brings forth issues regarding lack of healthy food, substandard housing, and no consistent access to health care. Most families could not deal with asthma on a daily basis until their basic needs of food and shelter were addressed.

Per-visit payment leaves a huge gap that cannot eliminate the barriers these families face. Though grants typically are finite and not always available, recent grant funding has allowed us to implement a care management model for these families. Today, we routinely help families with housing issues. This may mean partnering with St. Paul Public Health or City of Minneapolis Environmental Health for lead risk analysis; referrals for weatherization or windows grant program or assistance with housing code violations; and, sometimes, county child protection services. We also work with school nurses to make sure the child has the necessary rescue medication, delivery device, and asthma action plan available at school.

Commitment to quality

To assure the most qualified clinicians are working with physicians and families, in 2003 PHS sought additional certification for our in-home asthma management service from the Joint Commission. Certification is "based on an assessment of compliance with relevant standards and criteria, the effective use of clinical guidelines and outcomes measurement. Certification demonstrates excellence in fostering better outcomes by the integration and coordination of care," according to the Joint Commission.

PHS achieved recertification in 2005 and 2007. The 2009 survey will occur in late spring or early summer. Four performance-improvement measures are established for a two-year period. Data is then collected at every home visit and reviewed monthly. Current performance measures are the availability of a functional asthma action plan, compliance with controller medications, recognition of emergency symptoms, and no-smoking counseling.

To further ensure clinical excellence, PHS requires clinicians to become certified asthma educators. According to the National Asthma Educator Certification Board, "An AE-C is an expert in teaching, educating and counseling individuals with asthma and their families in the knowledge and skills necessary to minimize the impact of asthma on their quality of

life. The educator possesses comprehensive, current knowledge of asthma pathophysiology and management including developing theories, cultural dimensions, the impact of chronic disease, and principles of teaching-learning."

Future goals

PHS would like to see an asthma care management model in which certified asthma educators are care managers. Our patients would be stratified into risk categories that would identify future required resources. A bundled fee based on risk categorization could become the model for asthma care management. This model would cover the costs of home visits, environmental assessments, environmental interventions, environmental products, outcome measurement, and reporting. We've seen success using this care model.

In our work with a challenging patient base, it's very rewarding to see a single mom take charge of her child's asthma. Parents who can confidently, correctly handle their child's 4 a.m. breathing episodes, deal with lost inhalers, and contact their child's physician when advice is needed will ultimately reduce the high cost of pediatric asthma. ❑

Kay Kufahl, RRT, AE-C, is managing director of In-Home Asthma Management Service for Pediatric Home Service (PHS) in Roseville, Minn. In addition to representing certified asthma educators in the state "Baskets of Care" initiative, she is active in several national and regional health care and asthma care organizations. PHS is the only U.S. independent home health care agency certified by the Joint Commission for asthma; PHS is also part of the state's innovative "Baskets of Care" health reform initiative.