

# Home visits for asthma: A win for both patients and payers

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Nearly 1 in 10 children have asthma, according to government statistics, and in low-income parts of Boston, nearly 16 percent of children are affected. A program called the Community Asthma Initiative (CAI), developed and implemented in 2005 by clinicians at Children's Hospital Boston, demonstrates the potential to dramatically reduce hospitalization and emergency department visits for asthma -- improving patient outcomes and saving \$1.46 per dollar spent through reduced hospital utilization.

A study reporting these outcomes and cost savings appears in the March 2012 *Pediatrics* (published online February 20).

The CAI is a community-based [asthma care](#) model targeting low-income families. It includes nurse case management and care coordination combined with home visits by a bilingual nurse or Community Health Worker to educate families about [asthma](#), assess the home for asthma triggers, and provide materials and services to improve the [home environment](#), such as encasements for bedding, HEPA vacuums and pest control.

The CAI team, led by Elizabeth Woods, MD, MPH, of the Division of Adolescent/Young Adult Medicine, and Shari Nethersole, MD, of the Office of Child Advocacy at Children's Hospital Boston, selected children from four low-income zip codes for the intervention because they had been hospitalized or had made emergency department (ED) visits for asthma. Of 562 eligible children identified, 283 families agreed

to participate.

At enrollment, 43 percent of participating children had asthma scored as moderate or severe. Families received an average of 1.2 [home visits](#) during the year-long program. "The environmental issues have been much greater than expected, with high rates of pest infestation and dust and mold problems," Woods notes.

After 12 months in the program, the children had a 68 percent decrease from baseline in asthma-related ED visits and an 85 percent drop in hospitalizations. There was a 43 percent reduction in the percentage of children who had to limit physical activity on any day, a 41 percent reduction in reports of missed school days and a 50 percent reduction in parents having to miss work to care for their child. The percentage of children with an up-to-date asthma care plan rose from 53 percent at baseline to 82 percent at 12 months.

All of these improvements were evident within 6 months, and, among children who had follow-up, persisted for as long as two years.

The quality improvement intervention yielded a significant return on investment: When CAI patients were compared with nonparticipating children from four demographically similar communities, the CAI saved \$1.46 for every dollar spent. The program cost \$2,529 per child, but yielded a savings of \$3,827 per child because of reduced ED visits and hospitalizations. "This is a remarkable savings to society and reflects better health outcomes for the children," says Woods.

"Our experience with CAI allowed us to work with community partners to develop a business case for reimbursement of these services by insurers," adds Nethersole.

The CAI has started working with Massachusetts Medicaid and other

health care payers to develop and pilot a global or bundled payment system for asthma care. "We expect that the new payment models will incorporate these expanded education and home-visiting services and allow for more comprehensive care for [children](#) with high-risk asthma," says Nethersole.

The study was limited due to the lack of insurance data, and was unable to capture data on care at other hospitals, primary care sites and pharmacy claims. The authors believe their analysis underestimated the true cost savings, because it did not include physician fees or financial impacts on families. They suggest that further cost analyses incorporate insurance company data to capture other aspects of care.

Provided by Children's Hospital Boston

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