



Asthma, Asthma, Quality Improvement

Interventions improve asthma care for hospitalized children: report

by Melissa Jenco, News Content Editor

Asthma care improved at eight Utah hospitals after researchers implemented a standardized intervention model. The team saw declines in readmissions and lengths of hospital stay.

"Interventions implemented during a short hospital stay ... can have a long-term impact," said Flory L. Nkoy, M.D., M.S., M.P.H., lead author of the quality report *Improving Pediatric Asthma Care and Outcomes Across Multiple Hospitals* (Nkoy FL, et al. *Pediatrics*. Nov. 2, 2015, <http://pediatrics.aappublications.org/content/early/2015/10/28/peds.2015-0285>). Dr. Nkoy is associate research professor of pediatrics at the University of Utah School of Medicine.

The report follows up on the researchers' previous studies on asthma (bit.ly/1SmcWdy and bit.ly/1RtopqR) and calls the illness "the most frequent reason for preventable emergency department (ED) and hospital admissions among children in the U.S."



The study included children between 2 and 17 years at Primary Children's Hospital (PCH), which is a tertiary care children's hospital, and seven community hospitals.

The team looked at how well its evidence-based care process model (EB-CPM) was working at PCH where it was implemented in 2008 and 2009 and at the community hospitals where it was disseminated in 2011.

The EB-CPM includes assessments of asthma severity, recommendations for asthma control and algorithms for using albuterol and oxygen. It also provides criteria for a variety of situations, including consulting a specialist, transferring a patient to the pediatric intensive care unit (PICU), discharging a patient and transitioning a patient to a primary care provider.

During the study period, 3,510 children with asthma were discharged from PCH, and 1,721 were discharged from community hospitals.

At PCH, baseline compliance with the asthma quality measures was 45%. After implementation of the model, compliance stayed above 90% over five years. During those five years, the average asthma readmission rate and length of stay at PCH dropped significantly and stayed down. There was a slight reduction in hospitalization costs and no change in the use of hospital resources. There also was no change in PICU transfers or deaths.

At the community hospitals, baseline compliance scores ranged from 25% to 58% but reached 80% to 99% within six months and stayed there for the next two years. After implementation, the readmission rate dropped slightly but not enough to be statistically significant. There was a reduction in length of stay and hospitalization



Asthma, Asthma, Quality Improvement

cost, and a small increase in the use of hospital resources. Like PCH, there was no change in the rate of PICU transfers or deaths.

Co-author Bernhard A. Fassel, M.D., said getting doctors to embrace change was a challenge in some cases.

"I think for me the surprising thing was how simple the actual medicine is that we tried to disseminate and how difficult it was to bring providers along and convince them that there is a good evidence base for doing it a certain way," said Dr. Fassel, assistant professor of pediatrics at the University of Utah School of Medicine.

The study's limitations included a small sample size at the community hospitals, possible readmissions at hospitals in other systems, a relatively complex intervention model, unmeasured variables and the inclusion of children with a primary diagnosis of asthma only.

Researchers said they hope to continue implementing the model in different settings.

Resources

- [Information for parents at Healthychildren.org on asthma symptoms](#)
- [Information for parents at Healthychildren.org on asthma triggers](#)
- [National Environmental Education Foundation asthma guidelines](#)
- [Environmental Protection Agency asthma website](#)
- [National Institutes for Health asthma guidelines](#)