

Testing a new AHRQ pediatric asthma measure: Emergency department visit rates among children with asthma following a QI learning collaborative

Authors: Valerie S. Harder, Judith S. Shaw, Lindsay Van Leir, Michael Cabana, Naomi S. Bardach

Background: Pediatric asthma is a chronic condition associated with increased mortality, morbidity, and healthcare utilization. Reducing emergency department (ED) visits is a focus of healthcare reform efforts.

Objective: To assess the association between ED utilization for children with asthma and primary care participation in a quality improvement (QI) collaborative, using a new pediatric asthma measure of ED visit rates applied retrospectively.

Design/Methods: In 2015, 20 of 44 pediatric and family medicine practices in a Vermont QI network voluntarily participated in a seven month asthma QI learning collaborative. Participating practices attended an in-person learning session, at least three of six all-practice calls, and submitted monthly data. Participating practices worked on six clinical and office systems strategies to increase guideline-recommended asthma care, but did not specifically focus on reducing ED visits. We analyzed data provided by Vermont's Green Mountain Care Board from the state's VHCURES all-payer claims administrative data in 2014 and 2016 for children 2-21 years. We defined the outcome of ED rates per 100 child-years using a new measure specification from AHRQ's Pediatric Quality Measurement Program. Final analysis included 673 children with asthma at participating practices and 542 children at control practices within the QI network both years. We used zero-inflated negative binomial difference-in-differences regression to compare change in average ED rates from 2014 to 2016, adjusting for age, gender, insurance (Medicaid vs. other), and practice type (pediatric vs. family).

Results: Among children at participating practices, the ED rate decreased from 18.0 per 100 child-years in 2014 to 14.6 per 100 child-years in 2016. Among children at control practices, the ED rate decreased from 16.7 to 13.3 per 100 child-years over the same time period. Our regression adjusted model showed no differences in ED rate within treatment groups over time, and the difference in the average ED rate among participants was not different from the difference in the average ED rate among controls over time ($P>.05$).

Conclusions: This new measure of pediatric asthma ED use may not be sensitive enough to show a response to a QI collaborative not specifically focused on reducing ED rates compared to other practices. Focusing on guideline adherent care, while necessary to improve asthma care, may not be sufficient to decrease asthma ED use.