Accuracy of Using Medicaid Claims to Identify Children with Asthma for Influenza Vaccination

Kevin J. Dombkowski, DrPH, MS; Wei Perng, BS; Kara Lamarand, MPH; Subrahmanyam Pilli; Sarah J. Clark, MPH
Child Health Evaluation and Research (CHEAR) Unit,
Division of General Pediatrics; University of Michigan

University of Michigan
C.S. Mott Children's Hospital

Child Health Evaluation and Research Unit
CHEAR
University of Michigan

Background

- Influenza vaccination rates are consistently low among children with asthma, a group at increased risk for influenza complications.
- In 2006, Michigan public health officials implemented a new initiative, using Medicaid and Title V administrative data to identify children with asthma. These children were flagged with a "high-risk indicator" in the statewide immunization registry.

Objective

- To assess the accuracy of using Medicaid administrative claims to identify children 2-18 years with asthma.

Methods

Identification of Asthma via Administrative Data

- Michigan Medicaid and Title V administrative files (2005-2006) were analyzed to identify children with asthma.
- Children with asthma were classified in a sequential fashion into 3 mutually-exclusive groups:
  Title V program qualifying diagnosis of asthma
  OR
  ≥1 asthma medication claims (HEDIS criteria)
  OR
  ≥1 health services claim reporting an asthma diagnosis without asthma medications

Verification of Asthma via Parent Report

- A random sample of children with asthma was selected.
- Parents were invited to participate in a structured telephone interview to document physician diagnosis of asthma or related conditions, asthma symptoms, asthma medications and health services use, and activity limitations.

Outcome Measures

- The positive predictive value (PPV) of the administrative claims method was assessed, using parent report of a physician diagnosis of asthma, wheezy cough, or reactive airway disease as the gold standard.
- Asthma severity was classified based on parent reported asthma symptoms using National Asthma Education and Prevention Program criteria.

Results

Identification of Asthma via Administrative Data

- The identification criteria produced the following:
  - 2,530 children with Title V qualifying diagnosis of asthma
  - 112,113 children with asthma medication claims
  - 12,364 children with ≥1 health services claims reporting an asthma diagnosis

Verification of Asthma via Parent Report

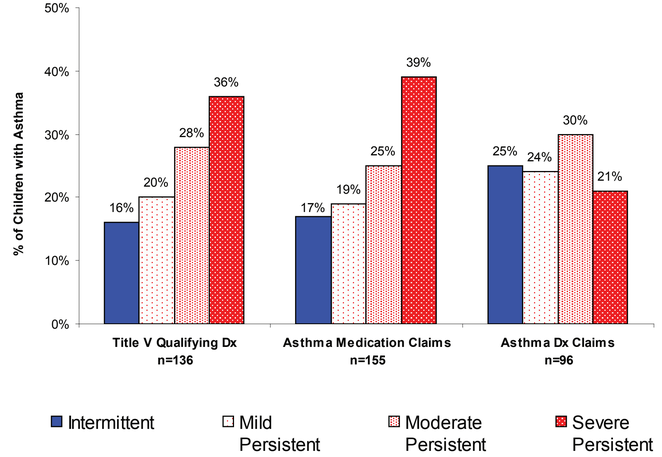
- Telephone interviews were conducted with 440 parents, out of 565 parents randomly selected for this phase of research with working phone numbers (78% participation rate)
- Of parents interviewed, 89% confirmed the child's high-risk status reporting a physician diagnosis of:
  - asthma (83%)
  - wheezy cough (5%)
  - reactive airway disease (1%)

  Of note, 11% reported their child had no asthma-related diagnosis
- The PPV varied by the three methods of asthma identification ($p<0.0001$):
  - 100% of children with Title V qualifying diagnosis
  - 91% of children with ≥1 asthma medication claim
  - 73% of children with ≥1 health services claims with an asthma diagnosis, but with no asthma medications
- PPV was similar across age, gender, and race groupings
- Based on parent-reported asthma symptoms, children's asthma severity was:
  - intermittent (19%)
  - mild persistent (21%)
  - moderate persistent (27%)
  - severe persistent (33%)

Results (cont.)

- Asthma severity was similar among cases identified from Title V qualifying diagnoses and medication claims (Figure). However, asthma severity was lower among cases identified based on claims reporting an asthma diagnosis without medication.

Asthma Severity Classification By Case Definition



Conclusion

- The use of Medicaid administrative data was accurate in identifying children with asthma.
- The asthma case criteria used with administrative data may influence the accuracy of identifying cases as well as the relative mix across asthma severity levels within the selected groups.
- Since state Medicaid programs and health plans have ready access to administrative data, this method represents a feasible approach to identify asthma cases for targeted influenza vaccination reminders.

Funded by the Blue Cross Blue Shield of Michigan Foundation