

The Impact of Tobacco Smoke Exposure on Childhood Asthma in a Medicaid Managed Care Plan



Harold J. Farber, MD; Richard R. Batsell, PhD; Edwin A. Silveira, BS; Rose T. Calhoun, RN, MEd; and Angelo P. Giardino, MD, PhD

BACKGROUND: Tobacco smoke exposure increases breathing problems of children. Texas Children's Health Plan is a Managed Medicaid and Children's Health Insurance Program (CHIP) managed care provider. The aim of this study is to determine associations among tobacco smoke exposure, asthma prevalence, and asthma health-care utilization.

METHODS: Texas Children's Health Plan conducts an annual survey of members who have a physician visit. Questions were added to the survey in March 2010 about asthma and tobacco smoke exposure. Survey results for children < 18 years of age were matched to health plan claims data for the 12 months following the date of the physician visit.

RESULTS: A total of 22,470 parents of unique members/patients from birth to < 18 years of age participated in the survey. More whites than African Americans or Hispanics report that the child's mother is a smoker (19.5% vs 9.1% and vs 2.3%, respectively; $P < .001$). Compared with children whose mother does not smoke, parent report of asthma diagnosis and claims for dispensing of short-acting beta agonist medication are greater if the mother is a smoker (adjusted OR, 1.20 [95% CI, 1.03-1.40] and 1.24 [95% CI, 1.08-1.42], respectively). In contrast to Medicaid, in which there are no out-of-pocket costs, the CHIP line of business requires copays for ED visits. ED visits are influenced by maternal smoking only in the CHIP line of business (adjusted OR, 4.40; 95% CI, 1.69-11.44).

CONCLUSION: Maternal smoking increases risk for asthma diagnosis and prescription of asthma quick relief medication. Maternal smoking predicted asthma-related ED visits only for the CHIP line of business. CHEST 2016; 149(3):721-728

KEY WORDS: involuntary smoking; pediatric asthma; pediatrics; secondhand smoke; smoke; smoking

ABBREVIATIONS: CHIP = Children's Health Insurance Program; TCHP = Texas Children's Health Plan

AFFILIATIONS: From the Department of Medical Affairs (Drs Farber and Giardino), Information Systems (Mr Silveira), Quality and Outcomes Management (Ms Calhoun), Texas Children's Health Plan, Houston, TX; Pulmonary Section (Dr Farber) and Academic General Pediatrics Section (Dr Giardino), Baylor College of Medicine, Houston, TX; and Jones Graduate School of Business (Dr Batsell), Rice University, Houston, TX.

FUNDING/SUPPORT: In kind support provided by Texas Children's Health Plan.

Preliminary results from this study were presented at the American Thoracic Society International Conference, May 20, 2014, San Diego, CA.

CORRESPONDENCE TO: Harold J. Farber, MD, Pulmonary Section, Baylor College of Medicine and Texas Children's Hospital, 6701 Fannin St, Ste 1040, Houston, TX 77030; e-mail: hjfarber@texaschildrens.org

Copyright © 2016 American College of Chest Physicians. Published by Elsevier Inc. All rights reserved.

DOI: <http://dx.doi.org/10.1378/chest.15-1378>

Tobacco smoke exposure among children is common. More than one-half of US children 3 to 11 years have biological evidence of tobacco smoke exposure (2007-2008 data).¹ Tobacco smoke exposure increases severity of bronchiolitis in infants.²⁻⁵ In utero tobacco smoke exposure increases risk for wheezing illness.⁶⁻⁹ Maternal smoking is associated with increased prevalence of childhood asthma.¹⁰ Detectable serum or saliva cotinine (a biomarker of tobacco smoke exposure) is associated with increased odds of asthma readmission in children hospitalized for asthma.¹¹ Tobacco smoking by mothers and caregivers is among the most significant sources of a child's tobacco smoke exposure.¹²

Demonstrating associations between children's tobacco smoke exposure and health-care utilization can further

our understanding about the effect of tobacco smoke exposure on children's health and may provide evidence to support allocating resources for tobacco control and parental tobacco dependence treatment.

Texas Children's Health Plan (TCHP) is a large, not-for-profit Medicaid and Children's Health Insurance Program (CHIP) Managed Care program that serves more than 340,000 children in the greater Harris and Jefferson county areas in East Texas, including the cities of Houston and Beaumont/Port Arthur. The specific aim of this study is to determine the associations between tobacco smoke exposure, asthma prevalence, and asthma-related health-care utilization among the children of the TCHP.

Methods

The TCHP conducts an annual telephonic interviewer-administered member satisfaction survey of a stratified random sample of members who had a physician visit. The stratification involves monthly quotas to avoid seasonality effects. For children younger than age 18 years, a parent or guardian participates on the child's behalf. In 2008, questions on tobacco smoke exposure and asthma diagnosis were added to the survey. After March 2010, a question on the relation of the smoker to the child was added. The physician visit that triggered the survey is considered the index visit, the date of which is used for determination of member/patient age and the 12-month follow-up period.

Inclusion criteria for this analysis are age < 18 years at the time of the index visit, use of the survey version that included the question on relation of the smoker to the child (begun March 1, 2010), and date of the index visit before March 1, 2014. Survey results were matched to claims data for asthma ED visits and for asthma medication dispensing. A claim is a request for payment for a health-care service. For a hospital to be paid for a patient encounter, a claim with diagnosis codes must be submitted to the health plan. For a pharmacy to be paid for medication dispensing to a health plan member, a claim must be submitted to the health plan with the National Drug Code of the medication dispensed. Claims data were extracted from TCHP computerized data systems for the 12 months following the index visit.

Parent-reported asthma diagnosis was assessed from the survey data using an item adapted from the National Health Interview Survey, "Has your child ever been diagnosed with asthma? By that we mean has a doctor or other health professional ever told you that your child has asthma?"¹³ In-home tobacco smoke exposure was assessed by the question, "Does anyone who lives in your house smoke?" If the answer was yes, the relation of the smoker to the child was

determined as "For anyone who lives in your house who is a smoker, please tell us how that person is related to {name of child}." Maternal smoking was defined as smoking by the mother or stepmother.

Survey responses were matched to health plan claims data for 12 months following the index visit. If the same member was surveyed in multiple years, the earliest eligible survey was selected for analyses. Ethnicity was determined from health plan enrollment data in which the member self-categorized ethnicity as one of five ethnic groups (Hispanic, white, African American, Asian/Pacific Islander, Alaskan/American Indian) or declined to state.

Short-acting beta agonist, leukotriene modifier, and inhaled corticosteroid dispensing were determined from pharmacy claims data. ED visits for asthma were determined as either a primary diagnosis of asthma (International Classification of Diseases, 9th revision, 493.xx) or another respiratory illness as the primary diagnosis and asthma as a secondary diagnosis.

Lines of business are managed Medicaid and CHIP. Both are government-sponsored health insurance programs for low-income families. In contrast to Medicaid, the CHIP program includes some cost-sharing and is designed for low-income families that have incomes too high to qualify for Medicaid but too low to be able to purchase private health insurance.

Statistical Methods

Bivariate analyses were conducted using the χ^2 test. Logistic regression procedures were used to determine robustness of bivariate findings to potentially confounding variables of age group, sex, Hispanic ethnicity, and line of business (Medicaid vs CHIP). Statistical significance was accepted as $P < .05$.

This study was approved by the Institutional Review Board of Baylor College of Medicine (protocol H-25760).

Results

Parents of 22,470 unique members/patients younger 18 years of age completed the survey, representing 85% of the members successfully contacted for survey participation. Mean age of members/patients was

5.7 years and median age was 4.4 years, with a range of 0 to < 18 years. Most of the members/patients had a reported ethnicity of Hispanic (58.7%), African American (15.6%), or white (13.3%). No ethnicity was reported for 9.1% of members surveyed. A total

Download English Version:

<https://daneshyari.com/en/article/5952495>

Download Persian Version:

<https://daneshyari.com/article/5952495>

[Daneshyari.com](https://daneshyari.com)