Healthcare Utilization for Asthma Exacerbation Among Migrant and Seasonal Farmworker Children

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Introduction

- Asthma is a common pediatric disease with high rates of avoidable acute exacerbations.[1,2]
- Medical access barriers for migrant seasonal farmworker (MSFW) children include insurance status, low income, low English proficiency, poor housing conditions, and frequent relocation.[9,10,11]
- Primary care providers caring for this population can prevent poor asthma outcomes with a better understanding of the unique disparities these patients may face.

Methods

- **Data Sources:** We utilized data from the eight states in the Accelerating Data Value Across a National Community Health Center Network (ADVANCE) Clinical Research Network, which contained clinics where migrant seasonal farmworker status was documented, for all ambulatory data. ED and hospitalization data came from Oregon Medicaid claims data.
- **Population:** We conducted a retrospective cohort study evaluating Latino and NHW children ages 3-17 with a primary care office visit between January 1, 2012 and December 31, 2017 and asthma diagnosis in their ambulatory electronic health record (EHR). Once included in the study, patient data was available as far back as 2005 (N = 13,423).
- **Exclusion Criteria:** Patients with cystic fibrosis on an encounter or problem list were excluded.
- **Outcome Variables:** We considered three sites where patients with asthma exacerbations could receive care: acute clinic visits, ED visits, and hospitalizations. For each of these sites we considered two sets of outcomes: 1) annual rates of visits, and 2) whether patients ever visited one of the sites for asthma exacerbation. Specific ICD-9 and ICD-10 codes for asthma exacerbation were used for acute clinic visits, ED visits, and hospitalizations.
- **Statistical Analysis:** We used generalized estimating equation (GEE) logistic regression model to estimate odds ratios comparing ethnicity/migrant groups adjusted for covariates. A negative binomial GEE model was used to evaluate rates of visits to one of the three sites over the study period. All statistical tests were performed with a two-sided type I error of 5%. Analyses were conducted in RStudio version 4.0 and SAS version 9.4.

Results

- Latino children, regardless of migrant status, were more likely to have ever had an acute clinic visit for asthma exacerbation compared to Non-Hispanic Whites (migrant status Odds Ratio [OR] = 1.17, 95% CI 1.03 to 1.33, p= 0.016; without migrant status OR = 1.13, 95% CI 1.03 to 1.23, p = 0.006).
- Latino children with migrant status had a lower rate of ED visits and hospitalizations compared to Non-Hispanic Whites (ED visit Rate Ratio [RR] = 0.717, 95% CI 0.519 to 0.993, p = 0.044; hospitalizations RR = 0.471, 95% CI 0.258 to 0.861, p = 0.014).

- There were no significant differences in odds of ever having an ED visit or hospitalization for asthma exacerbation, or in rates of acute clinic visits, for Latino children regardless of migrant status compared to Non-Hispanic Whites.

Discussion

- MSFW parents may more often choose to come to clinic instead of an ED when their child is having an acute exacerbation. Reasons for this pattern may include:
    - **Trust** - CHCs provide culturally sensitive care, in a patient's preferred language and with an established provider
    - **Reduced cost** - CHCs provide sliding fee-scales
    - **Political climate** of the region toward migrants
    - Proximity to the clinic versus the hospital
    - **Lower acculturation and health literacy** may similarly impact this outcome, with studies showing these factors correlating to lower patient empowerment (or perceived autonomy), greater trust in their provider, and higher medication adherence.[12,13]
- Further research is needed to determine whether these observed patterns are unique to culturally-sensitive community health centers compared to other clinic settings.

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