Childhood Asthma Disparities: A Renewed Opportunity

Health Equity

Date Posted:

May 30, 2019

Despite significant efforts to prevent and manage the disease, asthma remains the most common chronic illness among children in the United States. Those of us who follow trends in children's health noticed a possible silver lining when recent research showed overall prevalence of childhood asthma declining in 2013. However, with a closer look, the study reiterated the disproportional burden that exists among children who are poor, aged 10-17 or live in the south—all of whom had increasing prevalence. Additionally, Puerto Rican and non-Hispanic Black children had the highest prevalence among racial/ethnic groups.

Researchers Have Studied Disparities in Childhood Asthma for Almost Four Decades, So Why Should We Continue Presenting Data That is Already So Well-known?

I deliberated this question many times when working on my epidemiology research thesis in graduate school. Ultimately, I decided it was important to pursue this since asthma continues to place a high burden on children, and disproportionately impacts racial/ethnic minority children. Under the guidance of Dr. Philippa Clarke from the University of Michigan School of Public Health, I was particularly interested in whether management of a child's asthma—including use of an asthma action plan, preventative medication or a management course—could explain the racial/ethnic differences seen in emergency department (ED) usage among children with asthma.

Using public data from the National Health Interview Survey (NHIS), years 2013-2015, we found disparities nationwide in both the prevalence of childhood asthma and in the odds of having an ED visit due to asthma. Our results revealed that Puerto Rican children continue to have the highest prevalence of asthma (21.2%) followed by non-Hispanic black children (14.5%). While we did not find measures of asthma management to significantly affect our findings, we observed that among almost all racial/ethnic minority children, the odds of visiting the ED due to asthma were 1.7 to 2.4 times higher when compared to non-Hispanic white children.

Our use of national-level data reiterates the importance and continued relevance of this unequal health burden affecting children today. Deciphering national-level data informs clinicians which populations of children are most at risk and allows us to continue asking questions such as "What is causing these adverse outcomes?" and "What strategies can we employ to achieve health equity for children living with asthma?"

National guidelines emphasize that we can and should prevent adverse outcomes for children, such as ED visits or hospital admissions, by using appropriate asthma management techniques. While the fact that children today still experience disparities in asthma is disheartening, there are many clinical- and government-level success stories that offer a renewed sense of hope for children who live with asthma in the United States.

Strong Clinical-community Partnerships Can Significantly Reduce Asthma Disparities

Hospital systems have the ability to develop multidisciplinary interventions to target specific populations who are at a high-risk for ED visits, hospitalizations or repeat hospitalizations due to uncontrolled asthma. Our hospital system, Children's Hospital of Philadelphia (CHOP), is situated in a uniquely diverse city that continues to have one of the highest poverty rates among major U.S. cities. From an environmental perspective, Philadelphia also ranks high in particle pollution compared to other U.S. cities. Since we know that poverty, exposure to pollution and poor housing put children at higher risk for adverse asthma outcomes, CHOP has an opportunity to locate children experiencing these risk factors and bring together clinicians and community leaders to amplify community-based research and preventative health services in these areas.



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REPEAT HOSPITAL VISITS FOR HIGH-RISK CHILDREN WITH ASTHMA ARE COMMON, YET PREVENTABLE.

Asthma is the most common chronic medical condition in children, affecting nearly seven million children in the U.S. with a disproportionate impact on low-income and minority children and those who live in urban areas.[1,2] Asthma is also a leading cause of childhood hospital admissions, many of which are preventable.[3] Nearly 150,000 children are hospitalized for asthma each year, and 20 percent of them will have a repeat hospitalization that year.

But for some of the highest-risk children—those with multiple yearly hospitalizations—this timeline narrows. As many as one in four of these youth will return to the emergency department (ED) or an inpatient setting within just 30 days.[4] This small proportion of children with multiple asthma hospitalizations make up a relatively large portion of overall hospital admissions, readmissions and costs. Additionally, the cost to children of asthma that is not well-managed can stretch beyond health care, as multiple hospitalizations can impact parental employment and the child's ability to succeed in school.[5,6]

For children who suffer the most from their asthma, it is imperative that providers and health systems address the underlying reasons for their poor health outcomes. These include social determinants of health like poor housing conditions, as well as direct health care drivers like low medication adherence. **Using a multi-faceted approach that addresses the drivers of frequent asthma exacerbations, Children's Hospital of Philadelphia (CHOP) has nearly halved repeat ED visits and hospital readmissions for the highest-risk children in our care.** This brief identifies challenges facing children, families and providers working to control high-risk asthma, and outlines recommendations informed by our successful interventions to support providers and policymakers in reducing asthma hospitalizations in their communities.

1 in 4 of the highest-risk children return to the hospital within 30 days of discharge.

KEY TAKEAWAYS

Childhood asthma hospitalizations, although preventable, are major drivers of health costs and can negatively impact parental employment and a child's school success.

Social risk factors for childhood asthma are more prevalent among poor, urban and minority families, putting these already vulnerable children at greater risk for asthma hospitalizations.

Addressing these risk factors requires collaboration among everyone involved in a child's asthma management.

By considering a patient's needs both inside the hospital and in the community, health care providers, systems and payers can help reduce asthma hospitalizations.

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CHOP has done just that through the Community Asthma Prevention Program (CAPP), headed by PolicyLab researcher Dr.Tyra Bryant-Stephens. CAPP partners with community organizations to help families in West Philadelphia neighborhoods reduce environmental asthma triggers in their homes. CAPP community health workers also assist families with medication management or making doctor's appointments for children with asthma.

In a recent policy brief, Dr. Bryant-Stephens and fellow PolicyLab researcher Dr. Chén Kenyon illustrated how clinicians, at the time of a child's hospital admission, can leverage a prevention program like CAPP to reduce repeat hospital visits for children who have a high risk of returning. In just one year, Drs. Kenyon and Bryant-Stephens' intervention decreased the 30-day hospital revisit rate for these children by more than half.

Governments at All Levels Can Expand Evidence-based Programs to Reach More Children

We can look to Florida for a government-level success story with their launch of the Florida Asthma Program in 2009. With funding support from the Centers for Disease Control and Prevention's National Asthma Control Program, the Florida Department of Health invited multiple stakeholders—including clinicians, epidemiologists, environmental public health experts and non-profit representatives—to create a strategic plan informed by surveillance data to address the increased prevalence of asthma-related hospitalizations observed in the 2000s.

During this time period, prevalence of asthma in Florida, and nationwide, was particularly increasing among children younger than five years of age. In recognition that children spend the majority of their time in early child care or schools, the program initiated an asthma control curriculum in 2011 for early child care educators and acknowledged high-performing centers with an Asthma-Friendly Childcare Award. In just two years, almost 1,000 early child care educators completed training using the curriculum.

Renewed Opportunity to Address Childhood Asthma

The U.S. census projects that by the year 2060, racial/ethnic minorities will comprise 64% of the total child population. Given the already high burden that asthma poses on racial/ethnic minority children, the importance of strong clinical-community partnerships and relevance of government scaling up evidenced-based programs cannot be understated. I encourage researchers and clinicians to continue using national data on asthma prevalence and ED visits/hospitalizations as an impetus for making evidence-informed recommendations to mitigate childhood asthma disparities.

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