

Affordability and Accessibility of Asthma Self-Care Equipment

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Introduction

- Asthma affects more than 25 million people in the United States including over 7.1 million children
- Erie County has one of the highest rates of pediatric emergency department visits for asthma in New York State
- Asthma is a leading cause of disability in children and is the most common chronic condition of childhood
- Asthma is one of the leading causes of school absenteeism and was responsible for over 14 million missed school days in 2008

- Many self-care items are needed to manage asthma symptoms in the home:
 1. **Valved holding chambers (spacers):** create a “space” in between the inhaler and your mouth and allow for a slow, deep breath that increases the amount of medicine inhaled and prevents accidental exhalation
 2. **Pediatric masks:** attach to the spacer and create a seal around the face to ensure all the medication is inhaled, this is important especially in children who otherwise may not inhale the medicine properly



Spacer attached to inhaler



Spacer attached to pediatric mask

3. **Nebulizer kit:** device that delivers asthma medication in liquid form by turning it into a mist that can be inhaled
4. **Peak flow meter:** handheld device that measures your ability to push air out of your lungs, the peak flow rate can detect if your asthma is getting worse even before you feel the symptoms



Peak Flow Meter



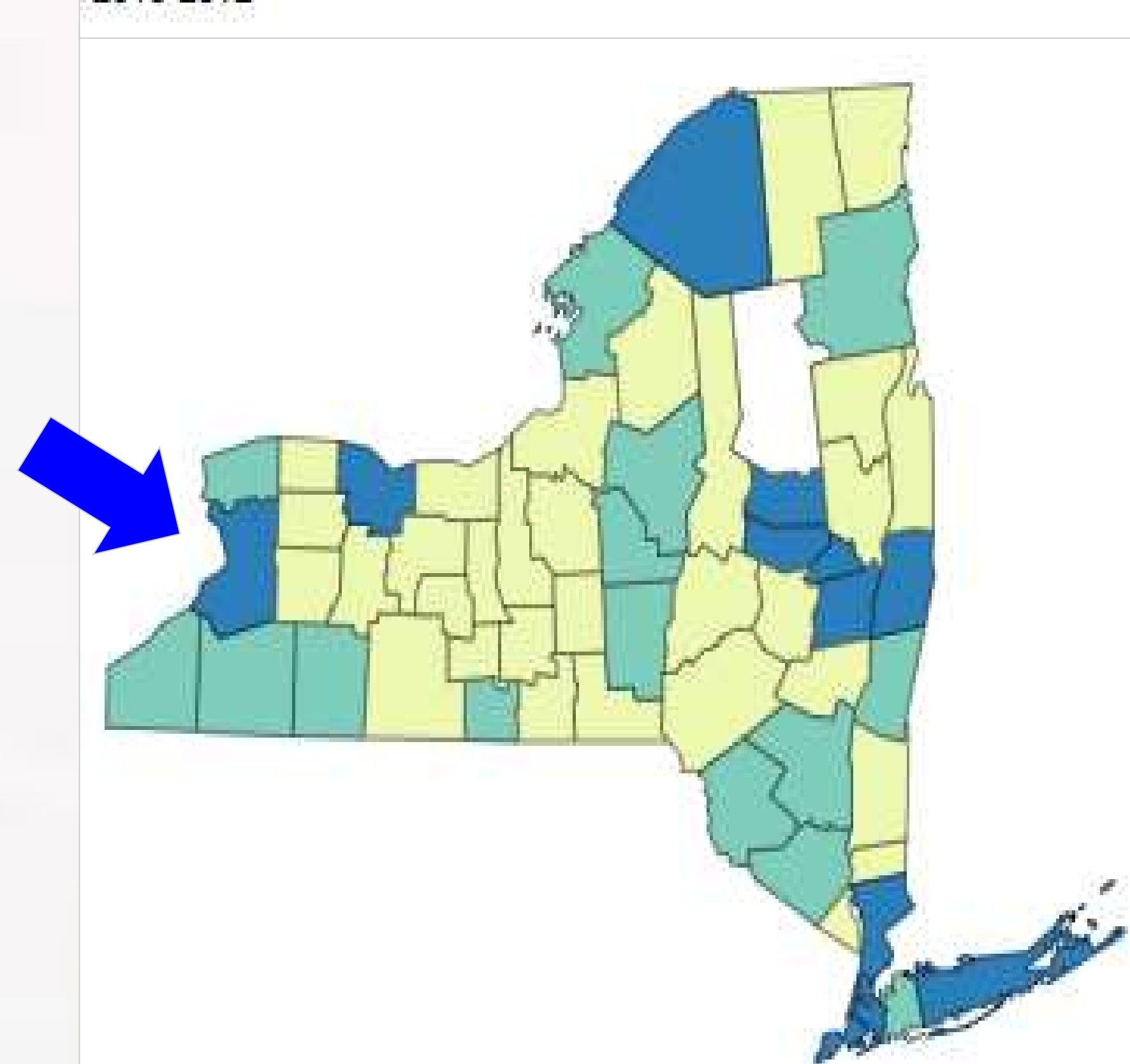
Nebulizer Kit

Many pharmacies offer this durable medical equipment conveniently for families to purchase or pick up at the same location they get their medications from. Spacers, pediatric masks, nebulizer kits and peak flow meters are some of the items that are available in most pharmacies for patients with asthma.

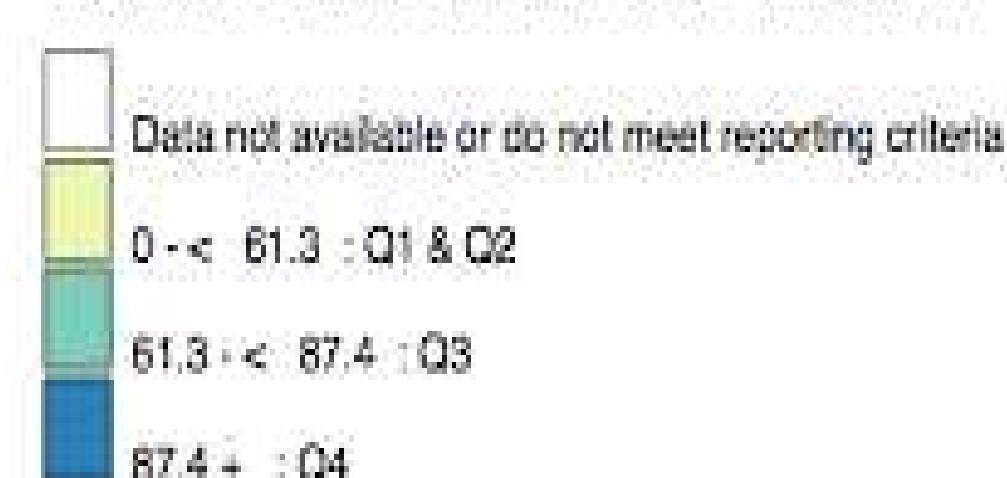
Purpose

- The purpose of our community-based needs assessment project was to evaluate the affordability and accessibility of asthma self-care equipment in 5 target zip codes with the highest pediatric emergency department visit rates for asthma.

Asthma emergency department visit rate per 10,000 Aged 5-11 years 2010-2012



ED Visit Rate Counties Are Shaded Based On Quartile Distribution



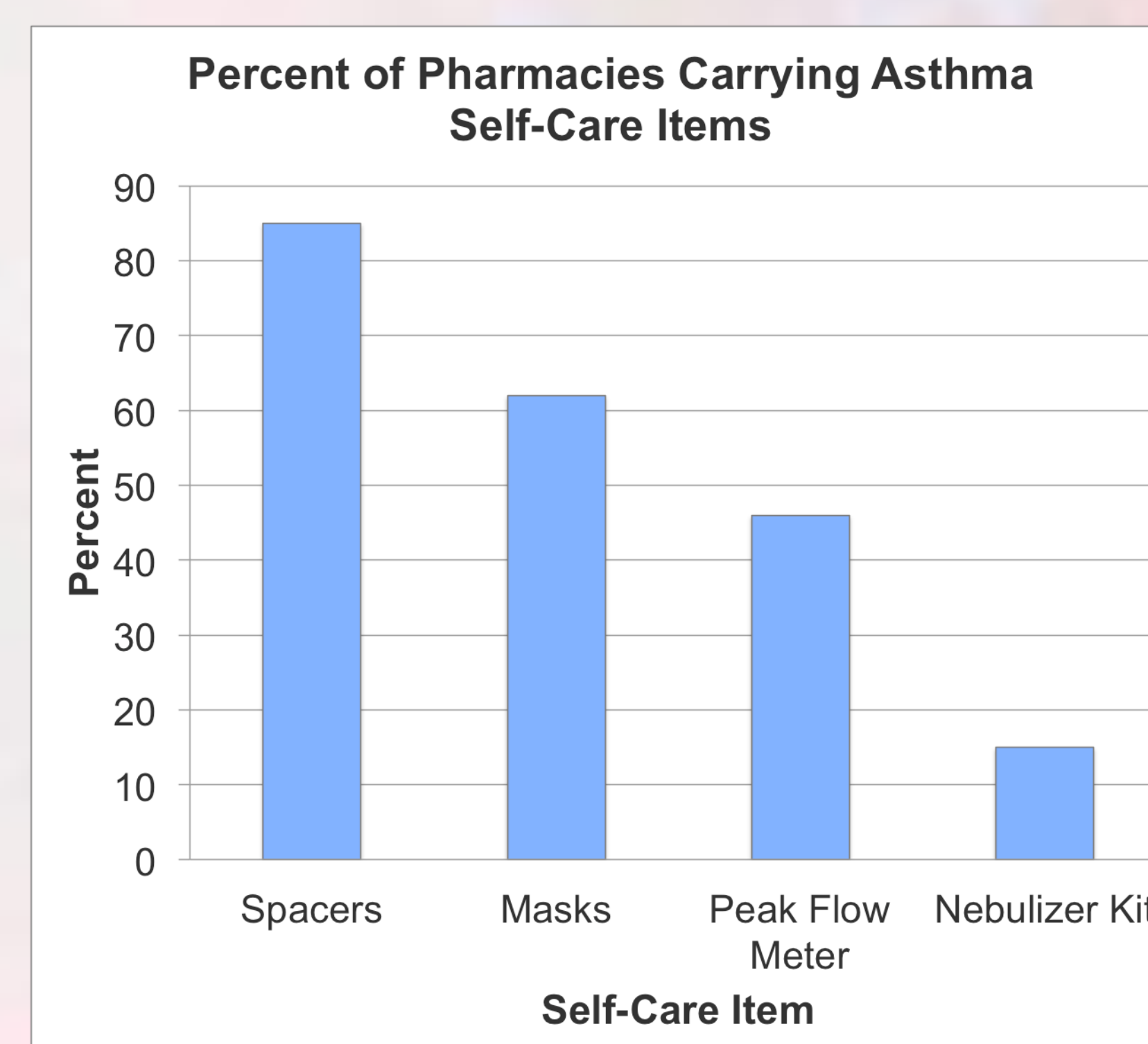
Source: 2010-2012 SPARCS Data as of November 2013

Methods

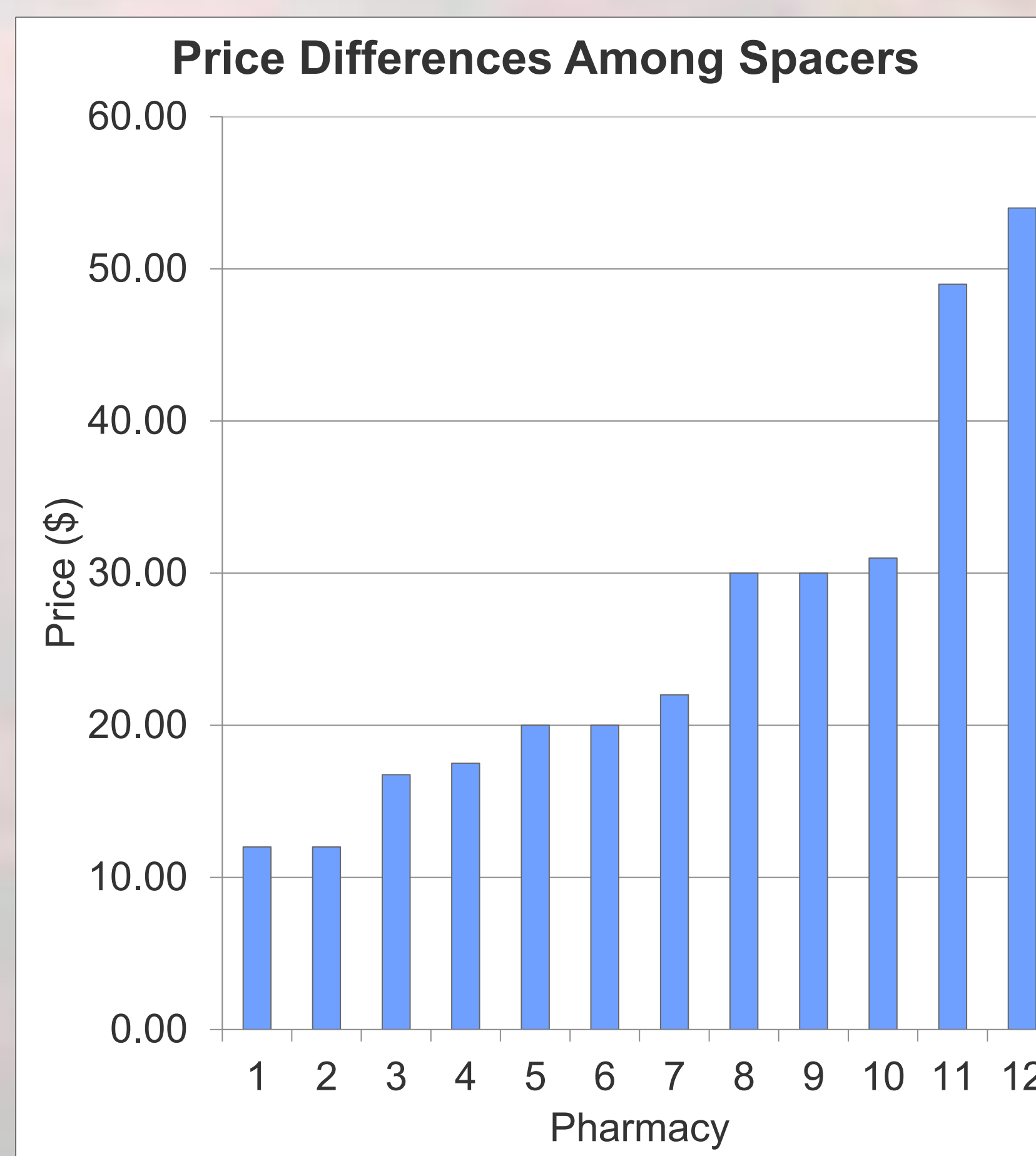
- Using publicly available information, we gathered data from 13 pharmacies within the 5 zip codes of Erie County, NY that have the highest number of pediatric emergency department visits for asthma.
- In collaboration with the Asthma Coalition of Erie County, we examined the availability and affordability of asthma self-care equipment to determine how accessible the items are for low-income patients.

Results

- There were many inconsistencies in availability; while many of the pharmacies carried spacers and masks, less than half carried nebulizer kits and peak flow meters



- While most pharmacies allowed electronic prescriptions, patients on Medicaid were required to have hand written prescriptions on tamper resistant paper in order to get the proper asthma equipment needed
- The price of spacers ranged from \$10 - \$54 among the different pharmacies

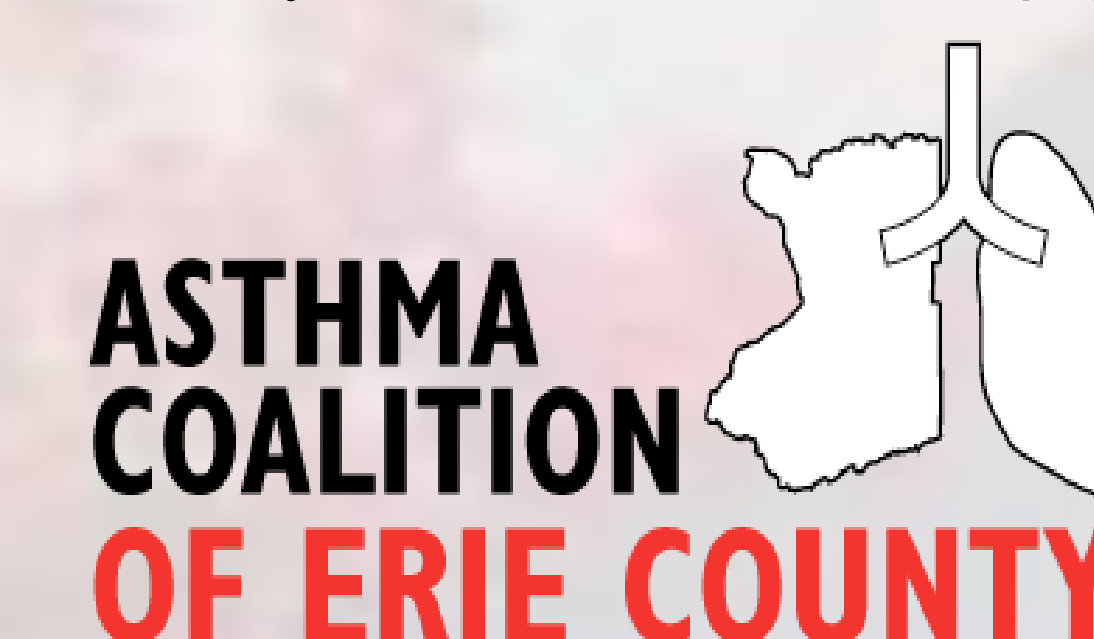


Discussion

- Spacers varied in price from \$10 - \$54, creating a price disparity that could affect many patients from obtaining the equipment needed
- Equipment that was not in stock could be pre-ordered by most of the pharmacies, but this would require an additional visit to either the pharmacy or a separate durable medical equipment company

Conclusion

- There are several barriers to obtaining the ideal equipment for asthma self-care and medication administration for low income families
- Price disparities, a different type of prescription (paper), the need to return to the pharmacy for pre-ordered equipment or need to visit an additional durable medical equipment company besides the pharmacy create barriers to the affordability and accessibility of asthma self-care equipment.



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