

Allergic rhinitis in asthmatic RCSD school children

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AAAAI Faculty Development Program

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Rochester, NY



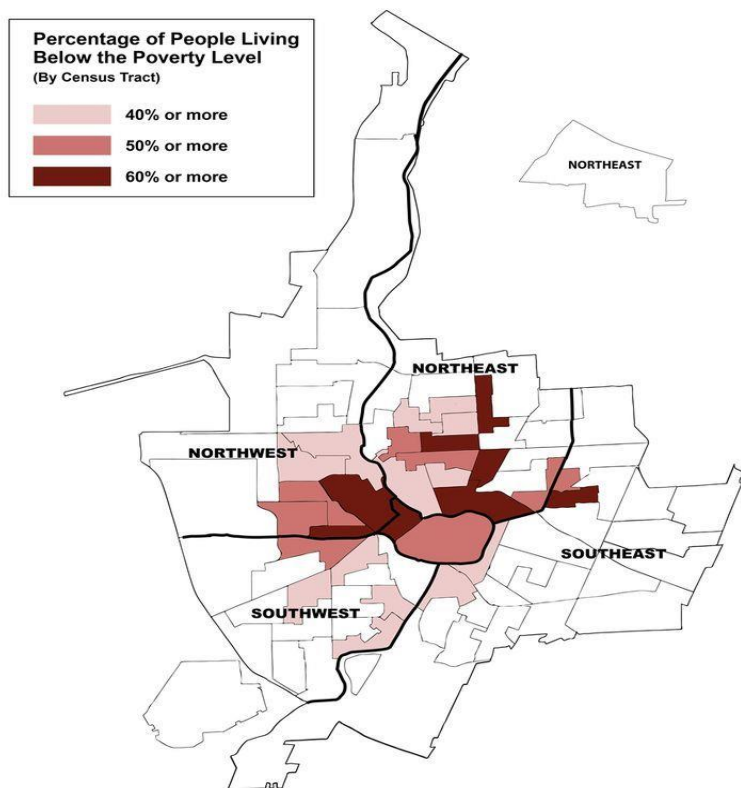
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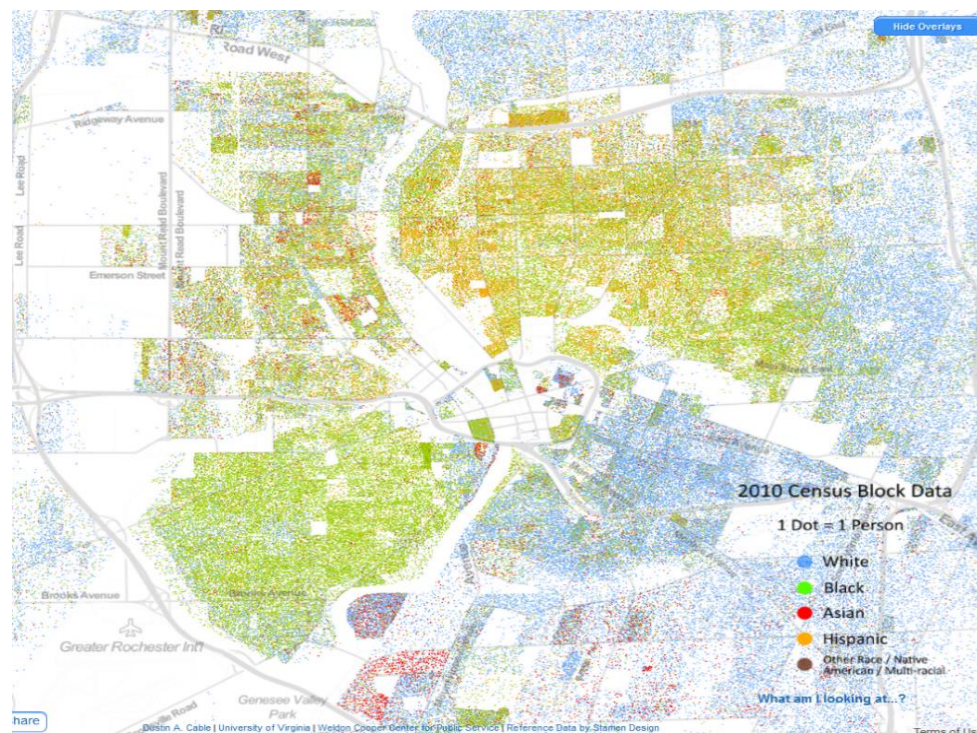
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Asthma as Symptom...

ROCHESTER'S CONCENTRATED POVERTY



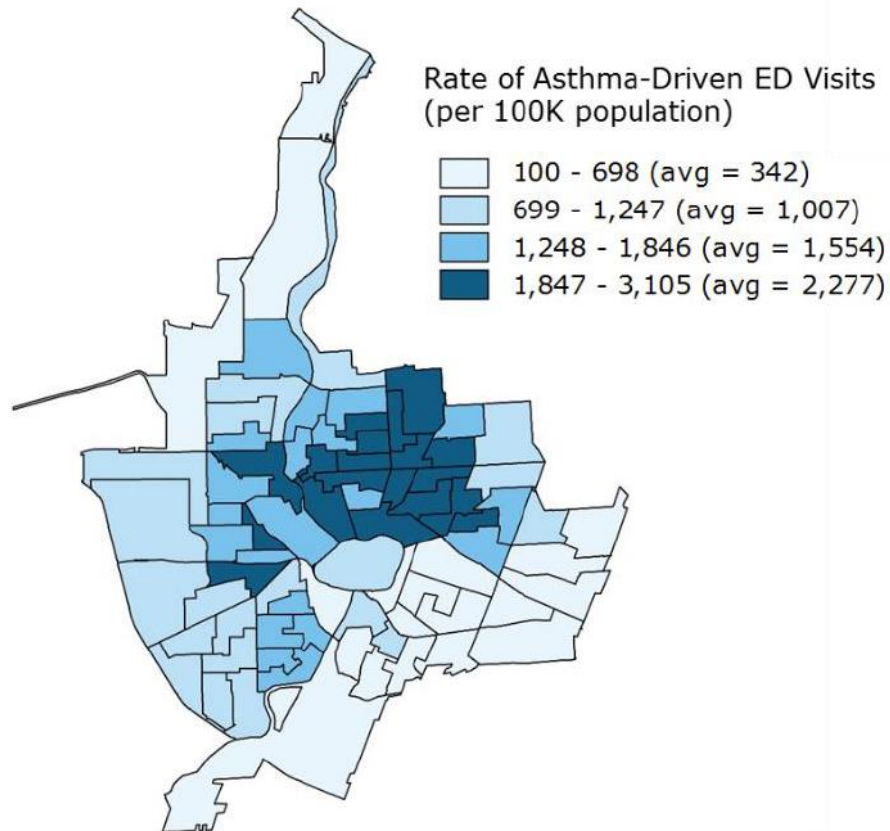
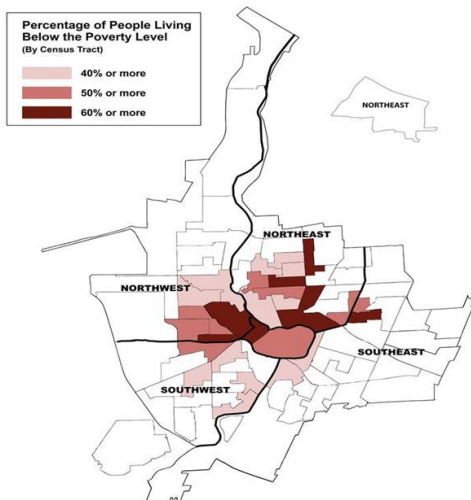
...of complex public health problems, contributing to significant health disparity, morbidity, and gaps in care provision and outcomes



Asthma in Rochester, NY

Rate of Asthma-Driven ED Visits by Census Tract

ROCHESTER'S CONCENTRATED POVERTY



Source: NYS SPARCS Outpatient Data. 2008-2013.

Rochester School Based Asthma Programs

- Partnership with RCSD and asthma programs for more than a decade
- Directly observed therapy in multiple cohorts vs. usual care has shown to improve asthma morbidity across a standard asthma outcomes (SFD, school absenteeism, rescue medication use)
- Subset of children in these cohort (s) continue to have difficult to control asthma and **increased morbidity** despite directly observed therapy of preventive medications
- Other studies/cities demonstrate burden of allergenic/ environmental exposures as direct influence on asthma morbidity in inner city children

Questions

- What is the prevalence of allergic rhinitis in several combined cohorts of urban underrepresented school children with persistent asthma?
- Is allergic rhinitis an independent risk factor for asthma morbidity in school based asthma program cohorts?
- When there is presence of allergic rhinitis, is it adequately treated?

Methods

- Secondary data analysis of 3 NIH funded school based asthma programs (N= 1029) in Rochester, NY
- Inclusion → children with mild persistent or more severe asthma, ages 3 -10 enrolled in RCSD
- Caregivers reported presence of 'hay fever' or allergic rhinitis and multiple asthma outcomes in structured interviews during a baseline home visit
- Bivariate and multivariate analysis used to compare asthma outcomes for children whose caregivers did and did not report AR

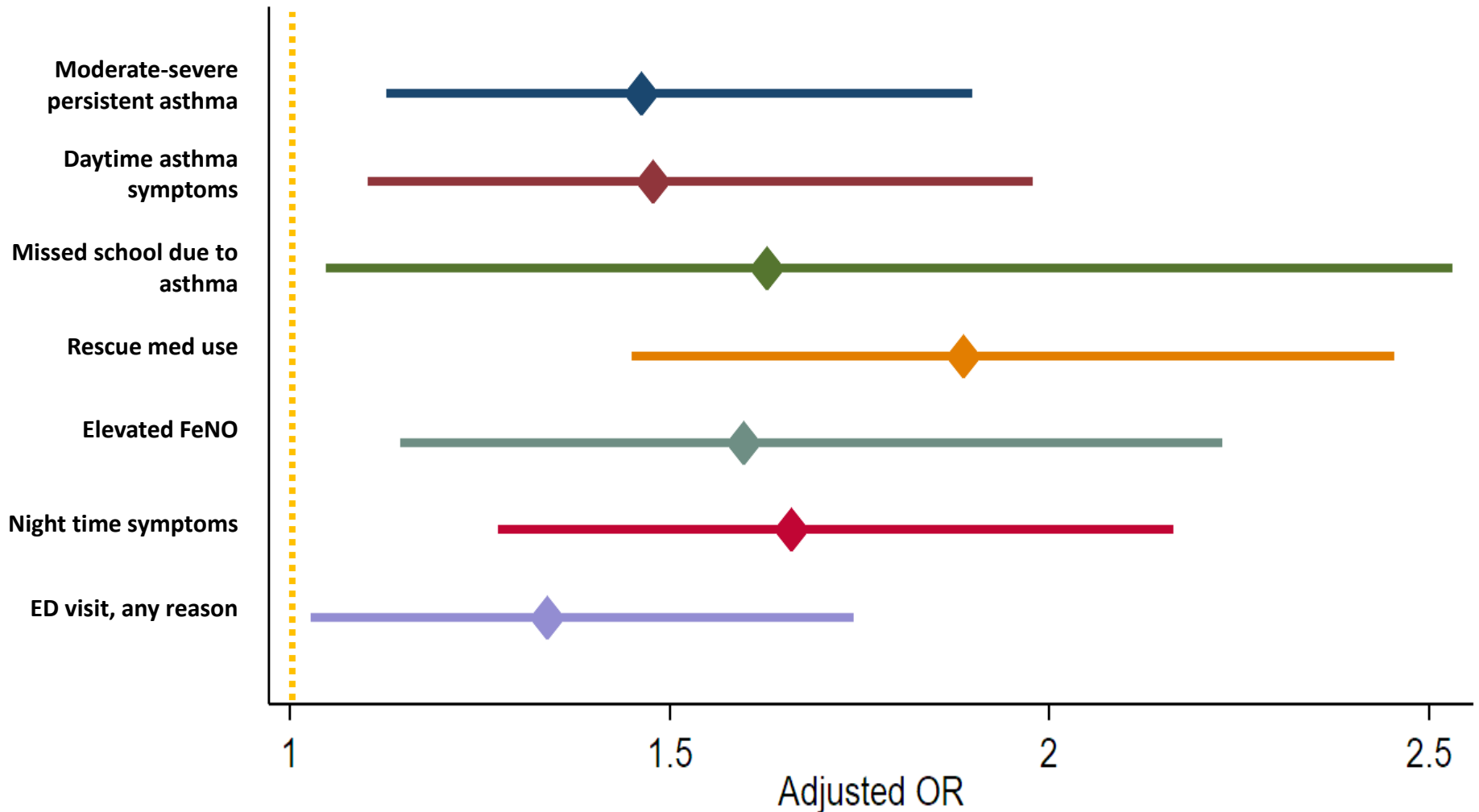
Sample Description

Demographics %	Overall N=1029	No AR N=383	AR N=646	P-value
Child age (mean):years	7.4 (1.9)	7.1	7.6	<0.001
Child gender: Male	60%	56%	62%	0.11
Child race: Black	60%	59%	62%	0.52
Child ethnicity: Hispanic	30%	31%	29%	0.41
Child Insurance: Public	73%	72%	73%	0.69
Caregiver age	34.3	33.5	34.8	0.03
Caregiver marital status: Married	22%	25%	20%	0.06
Caregiver Education: <High school	40%	44%	38%	0.07
Home Smoke Exposure	52%	53%	52%	0.85

Asthma Outcomes

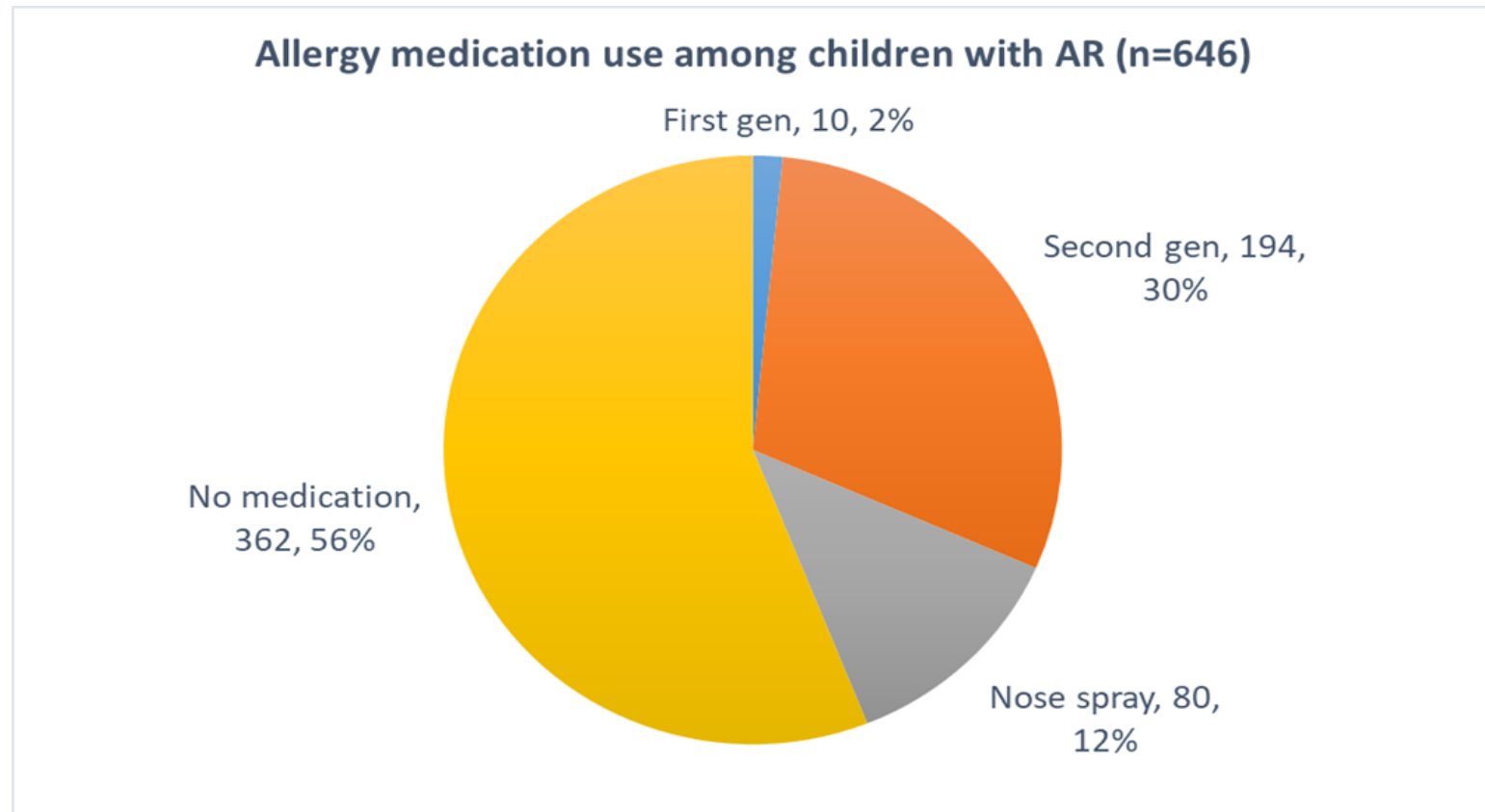
Baseline Asthma Characteristics, %	Overall N = 1029	No AR N = 383	AR N = 646	P-value
Moderate/severe persistent	51%	46%	54%	0.020
Daytime asthma symptoms	75%	70%	77%	0.015
Missed School Days d/t Asthma*	19%	15%	22%	0.036
SABA use > 2 days/week	61%	51%	66%	< 0.001
Elevated FeNO	26%	20%	30%	< 0.001
Night time asthma symptoms	57%	51%	61%	< 0.002
ED visit over past year (any reason)	43%	39%	45%	0.078

Association of Allergic Rhinitis with Asthma Morbidity



Covariates: caregiver's age, educational attainment, marital status, smoking at home, child's age, race, ethnicity, gender, and insurance status.

Treatment of allergic rhinitis



Conclusions

- **Allergic sensitization risk factor for asthma severity and exacerbation**
- **Report of** allergic rhinitis is prevalent in multiple school based asthmatic cohorts
- AR in these cohorts needs to be validated
- AR questions need to be refined (incorporate ARIA guidelines)

Next Steps

- Identify relevant dominant allergen(s) in ROC city homes and schools in terms of sensitization and exposure
- Allergen reduction strategies in conjunction with community based programs.
- Intervention strategy to suppress allergy pathway
- Extend directly observed therapy to AR treatment in schools

Acknowledgements

- AAAAI Faculty Development Workshop
- James Gern, MD



The Preventive Care Program
for Urban Children with Asthma



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