



HEALTH EQUITY REPORT

Asthma

February, 2017

Healthy Capital District Initiative
Population Health Improvement Program
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Albany, NY 12206

Health Equity Report-Asthma

Introduction

Reducing the impact of asthma in the Capital Region is an ongoing Prevention Agenda focus for several Capital Region counties and the Asthma Coalition of the Capital Region (ACCR).

The purpose of this report is to identify sub-populations in the Capital Region whose asthma rates are disproportionately high or inequitable. The report takes a broad definition of equity that includes: gender; age; race/ethnicity; and socioeconomic status.

The communities being assessed in this report include the counties of Albany, Columbia, Greene, Rensselaer, Saratoga and Schenectady. Comparisons will be made to the Capital Region as a whole and New York State, excluding NYC (Upstate). Maps will be presented by county in the Appendix for the counties above as well as Fulton and Montgomery counties to inform cooperative asthma reduction efforts by the Alliance for Better Health Care and the ACCR.

Capital Region Asthma Equity Summary

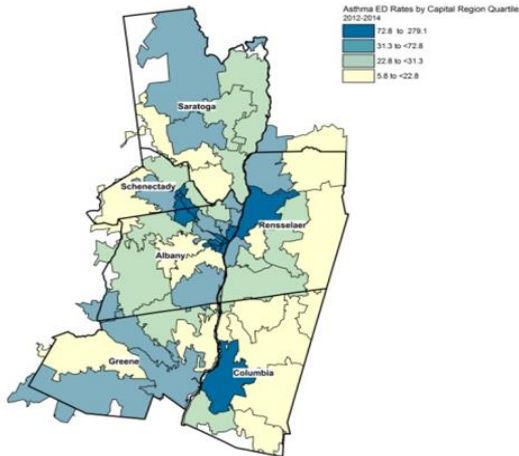
The largest overall asthma disparities across the Capital Region include:

- **Race**
 - Capital Region Black non-Hispanics have Emergency Department visit rates 6.4 times higher when compared to the Capital Region White non-Hispanic population.
 - Hospitalization rates are 3.9 times higher.
- **Low Socio-Economic Status Neighborhoods**
 - Low SES 1 populations in the Capital Region have higher hospitalization and ED visit rates (4.6 and 9.4 times, respectively) vs. the high SES 5 population.
 - Neighborhoods with a high density of non-Whites and with low socio-economic status have the highest needs for asthma care. For example, in the West End, West Hills and South End neighborhoods of Albany, as well as the Hamilton Hill neighborhood of Schenectady (SES 1 zip-codes), ED visit rates are 11 to 14 times higher than in SES 5 zip-codes.
- **Gender**
 - Boys have 70% higher hospitalization rates and 60% higher ED visit rates than girls until puberty.
 - Women have increasingly higher rates than men after puberty. By age 75+, women have over three times the hospitalizations and almost double the ED visits.

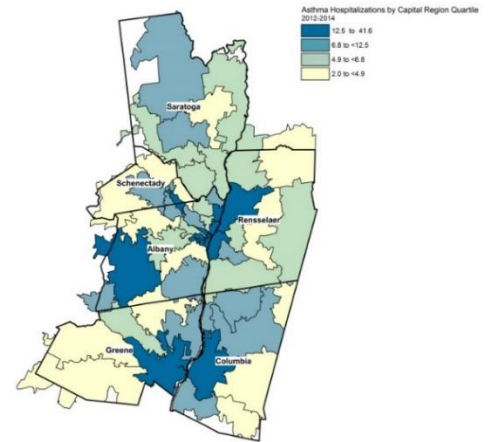
- **Age**

- Capital Region children have the highest hospitalization and ED visit rates of any age group (both are 60% higher than the overall regional average).
- Adults comprise 72% of the population of asthmatics. They seek hospital care less than children, but still represent half of hospitalizations and 2/3 of ED visits.

Age-Adjusted Emergency Department Rates per 10,000 by Capital Region Neighborhood, All Ages, 2012-2014



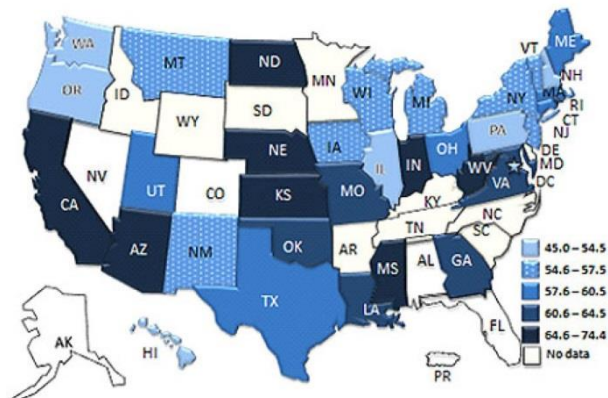
Age-Adjusted Hospitalization Rate per 10,000 by Capital Region Neighborhoods, All Ages, 2012-2014



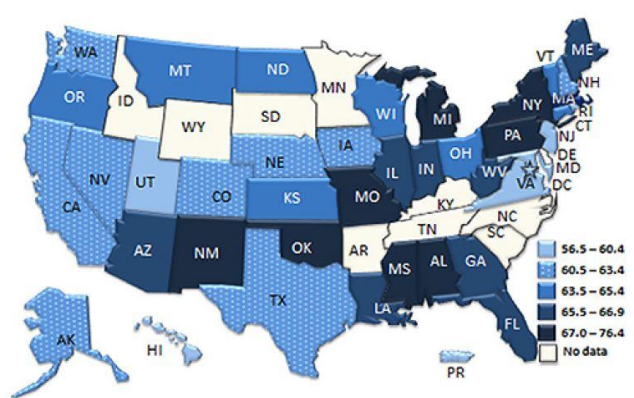
Federal and State Context

Asthma is a complex condition with many disparities and wide fluctuation by geography. Both severity and control are major drivers of impacts on people and costs. Two-thirds of those with asthma have “persistent” severity, and are prone to “asthma attacks”. For diagnosed persistent asthmatics, the focus is then on control and management to avoid these attacks.

% of Children with Persistent Asthmaⁱ



% of Adults with Persistent Asthmaⁱⁱ



Source: CDC, BRFSS—Adult Asthma Call-back survey Data, 2006-2010

Those with persistent asthma are more likely to be admitted for acute care in hospitals, visit hospital emergency departments (ED) or clinics, or see their primary care physician. In addition to medical costs, asthma impacts employee absenteeism, can limit performance at work and is a leading cause of school days missed. The economic cost of asthma in the United States from all of these factors is \$ 56 Billion.ⁱⁱⁱ For the Capital Region, this economic cost is approximately \$220 million per year.^{iv}

There is no cure for asthma itself, but its impact does change over time and can be reduced and managed through a combination of prevention, trigger avoidance, daily medications, and other clinical management. The focus of action is therefore reducing cost and impact on the quality of life of asthmatics.

Over 24 million Americans currently have asthma. Prevalence is affected by age, gender, race, ethnicity, and poverty risk factors, leading to a wide variation across geographic areas due to the different mix of these factors in state and local county populations. Trigger exposure, clinical management and access to assistance for each also vary considerably by location. 2014 data from CDC's National Asthma Control Program (NACP) shows 8.6% of children and 7.4% of adults reported having current asthma.^{xvii}

Over 2 million New Yorkers currently have asthma. Adult asthma prevalence is 36% higher than national rates (10.1% NY vs. 7.4% US).^v Because of this, reducing exposure to asthma triggers and providing high quality asthma preventive care and management are high priority focus areas in New York's Prevention Agenda. New York average asthma ED visit and hospitalization rates are higher than US rates by 29% (86.9/10,000 NY vs. 67.4 US) and 35% (17.6/10,000 NY vs. 14.1 US) respectively.^{vi} Local regions can target diverse high opportunity areas. They can tailor interventions most likely to reduce total impact and the disparities that drive different outcomes.

Nationally, under 18, males have higher rates than females (10.1% vs. 7.0%), but over 18, males have lower rates than females (5.1% vs. 9.6%).^{xvii} These gender/age differences are due in part to:

- In children: differential prenatal and early childhood lung and immune system development^{vii,viii,ix,x}
- In younger adults: post-puberty hormonal and allergic responses^{xi}, unrecognized work related asthma^{xii}, high BMI^{xiii,xiv,xv}, and smoking and exposure to second hand smoke^{xvi}
- In seniors: exacerbation of current acute asthma by chronic lung disease (COPD, emphysema) and longer life expectancy for women provides more opportunity for asthma exacerbation.

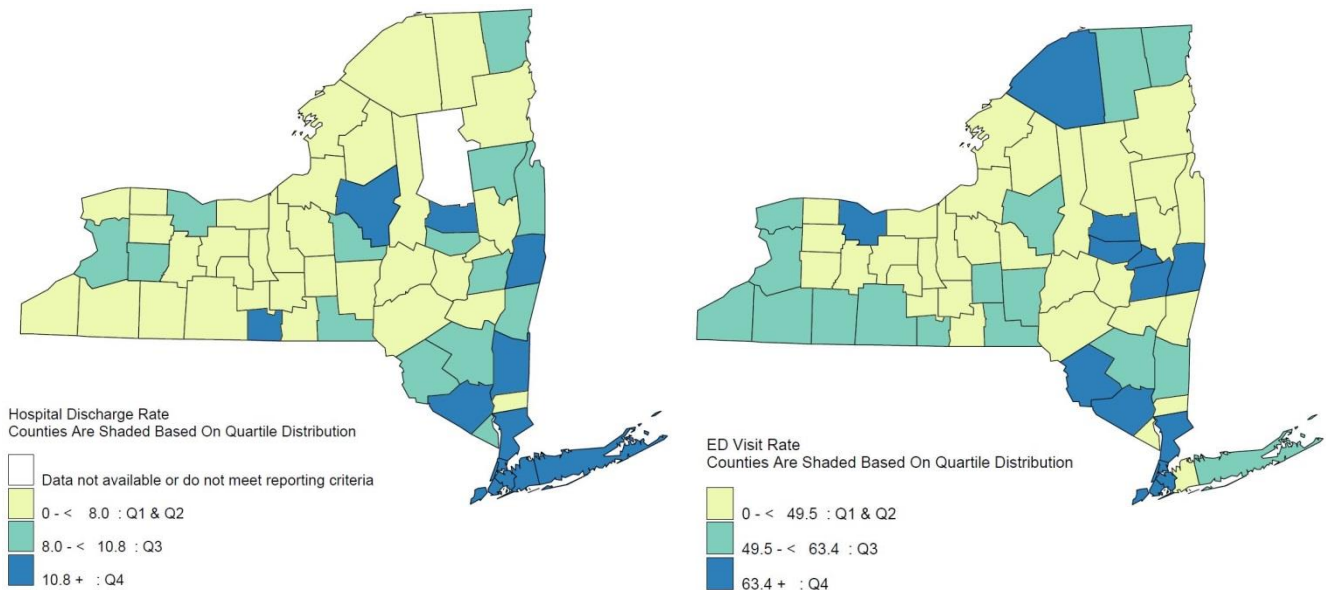
In the United States, compared to White non-Hispanics, Hispanics of Puerto-Rican origin have current asthma rates more than triple for children (23.5% vs. 7.6%) and almost double for

adults (13.3% vs. 7.6%). Black non-Hispanic children have current asthma rates almost double that of whites (13.4% vs. 7.6%).^{xvii}

Income and asthma rates are related. Nationally, people with incomes below 100% of the Federal Poverty Level have higher current asthma rates (10.4%) and those with household income 450%+ have lower rates (6.3%) than those living between 100%-450% (7.6%).^{xvii}

As you can see below, there is a cluster of high emergency department (ED) visit and hospital discharge rates in several Greater Capital Region counties. High rates also exist for the New York City area and the northern NYC suburbs.^{xviii} In addition to the sociodemographic asthma risk factors mentioned above, other factors vary considerably by county. Smoking and exposure to environmental tobacco smoke (ETS), or second hand smoke, obesity, heating source, and mental health and substance use challenges also contribute to asthma rates and hospital inpatient^{xix} and ED encounters.^{xx}

Age-Adjusted Asthma Hospital Discharge and ED Rates per 10,000, 2012-2014



A detailed examination of these geographic disparities in the context of identified asthma socio-economic, environmental, and health behavior drivers was performed. This allows targeting of promising areas for further local improvement efforts.

Capital Region Asthma —Equity Data Findings

Hospitalization-Trend

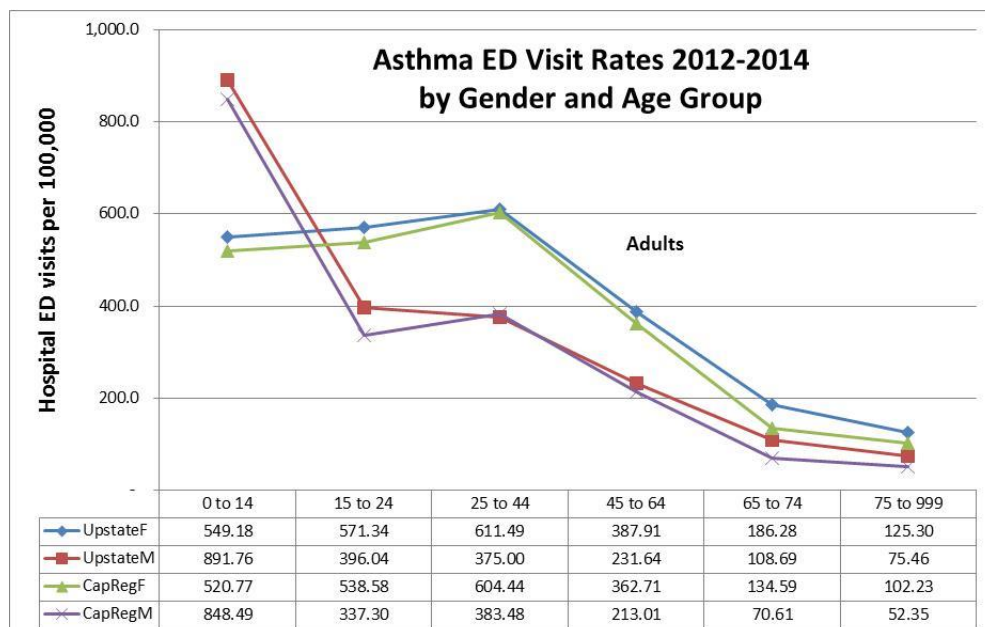
- Overall, the six county Capital Region reduced (-31%) asthma hospitalization rates from 2005-2007 to 2012-2014.
- Columbia, however, had a 37% increase in asthma hospitalizations in this same period.

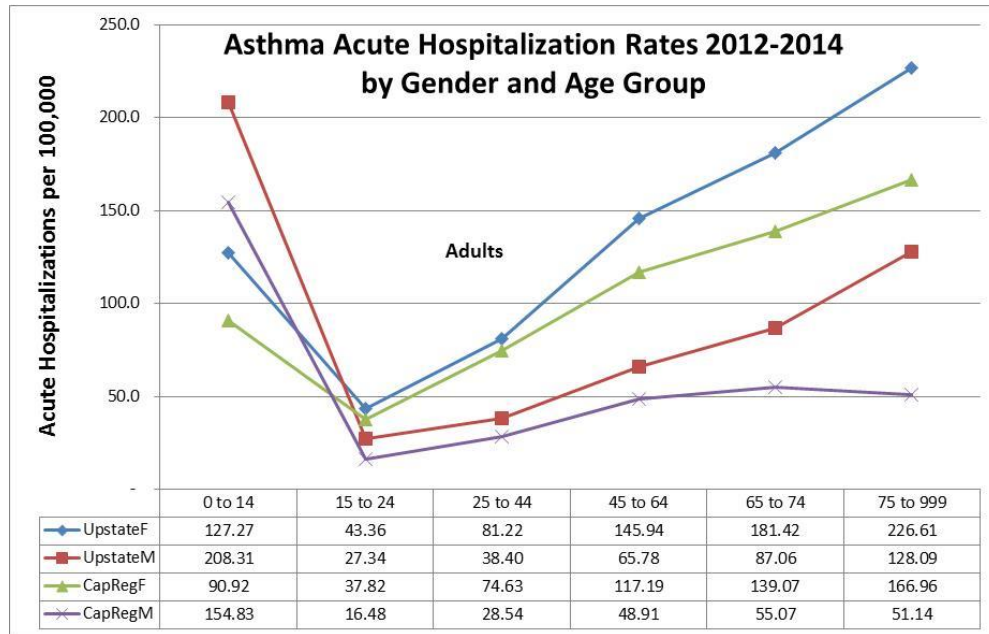
ED Visit-Trend

- Overall, the six county Capital Region reduced (-14%) asthma ED visit rates from 2005-2007 to 2012-2014.
- Schenectady, however, had a 25% increase in asthma ED visits in this same period.

Age and Gender

- Local data mirrors the national rates – males have higher asthma hospitalization and ED rates than females before puberty, but after, males have lower asthma rates than females.^{xxi}
- Children and those 65 and older have higher rates of acute hospitalizations when compared to young adults.
- Children have the highest asthma ED visit rates of any age group. Males 0-14 are particularly affected, representing 40% higher rates than their female counterparts and 50% higher than the Capital Region as a whole.





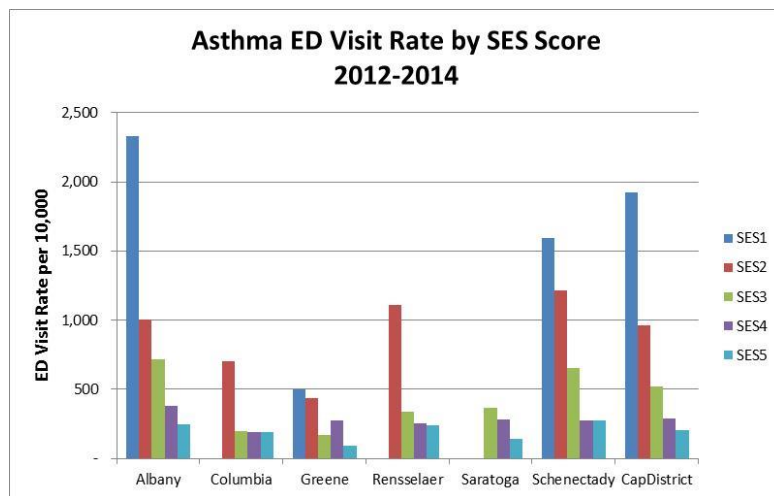
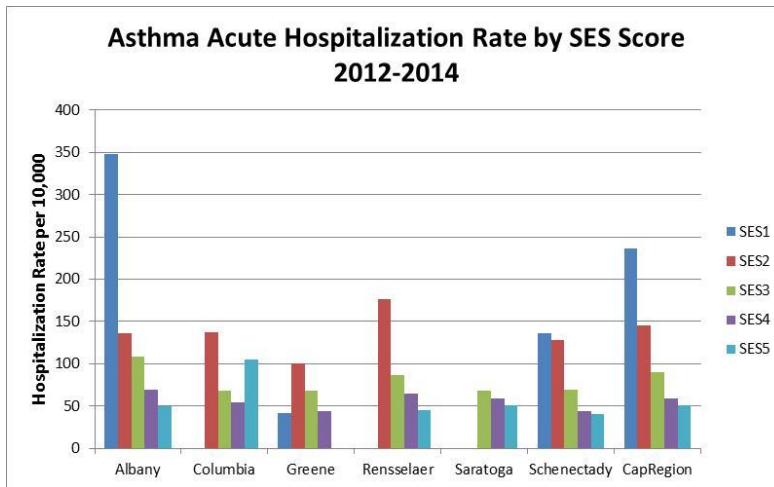
- The Capital Region has slightly better potentially avoidable ED visit rates and acute hospitalization rates than Upstate, across all age groups.

Race/Ethnicity

- Adult asthma prevalence is 28% higher for Black non-Hispanics and 22% higher for Hispanics versus White non-Hispanics in the Capital Region.
- While hospital acute inpatient use rates are lower than the Upstate benchmarks across all groups, Black non-Hispanic and Hispanic use rates for the ED are higher (21% and 6% respectively) than Upstate.
- Black non-Hispanic Capital Region residents have 6.4 times higher ED visit rates when compared to their White non-Hispanic counterparts.

Socioeconomic

- Hospital Encounter rates generally decrease as socio-economic status (SES) increases.
- Albany has disproportionately high hospitalization and ED rates for the lowest (SES 1) population zip-codes.
- Columbia and Rensselaer have no population in SES 1 zip-codes, but high SES 2 hospitalization and ED rates.
- Greene has lower asthma hospitalization and ED rates across all SES zip-codes.
- Overall, the lowest SES group (SES 1) group in the Capital Region had 9.4 times higher ED visit rates when compared to the highest SES group (SES 5).



Costs

- For the Capital Region, economic cost (direct health care spending plus indirect costs of lost wages, lost productivity, and lower academic performance) is approximately \$220 million per year.
- Of the asthma-related acute hospitalizations and ED visits billed in the Capital Region during 2012-2014, two-thirds (64%) is for acute hospitalizations while one third (36%) is for ED visits.
- Albany and Rensselaer relative spending is higher for both acute hospitalizations and ED visits than other Capital Region counties.
- Of the Capital Region counties, hospitalization spending is highest in Columbia and Greene; ED spending is highest in Schenectady.

Acknowledgements

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Data and Methods

See attached for more about the data sources and methods that went into this report.

Appendices

Appendix I displays asthma-related hospitalization and ED visit rates for the **Capital Region** by age, gender, race/ethnicity and socioeconomic status (SES). The Appendix includes bulleted highlights, charts and sub-county maps.

Appendix II contains county comparisons of the Capital Region and Upstate for asthma-related hospitalization and ED visit rates in bulleted highlights, tables and charts. In addition, this Appendix includes a **County-Specific** Section presenting asthma-related hospitalization and ED visit indicators over time; and by age, gender, race/ethnicity and SES categories for each of the six Capital Region Counties. Fulton and Montgomery counties also participate in the Asthma Coalition of the Capital Region (ACCR) and the Alliance for Better Health Performing Provider System (PPS). Data is included in the Appendix for these counties in addition to the other six Capital Region counties to provide comprehensive data to inform these initiatives. Covariate data for highlighted focus areas from the eBRFSS (smoking rates, mental health) and ACS (heating source).^{xxii}

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