

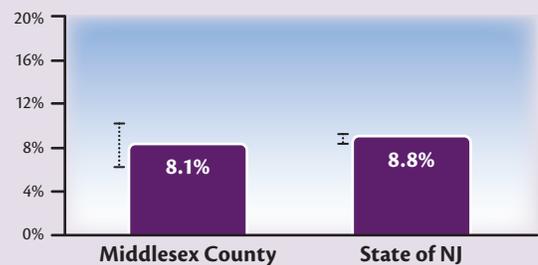
# Asthma in New Jersey



## ● Middlesex County Asthma Profile

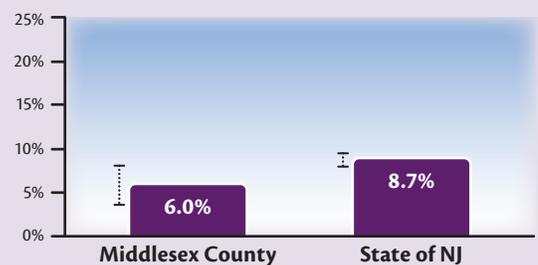
*Asthma is a serious chronic disease that is marked by inflammation and bronchoconstriction in the airways. Asthma symptoms can be triggered by many factors and include shortness of breath, coughing, wheezing and chest tightness. Asthma cannot be cured, but it can be controlled. Uncontrolled asthma can lead to emergency department visits, hospitalization and even death. This series of profiles is designed to give an overview of the prevalence of asthma and hospital utilization due to asthma (emergency department and inpatient admissions) in each New Jersey county. The purpose is to inform community based organizations, health care organizations, program planners, and policy makers about geographic areas and demographic groups most affected by asthma for application in effective targeting of asthma interventions.*

Figure 1 | **Estimated Percent of Adults with Current Asthma**



Population Source: NJ Behavioral Risk Factor Survey (Adults are people 18 and over; children are people under 18)

Figure 2 | **Estimated Percent of Children with Current Asthma**

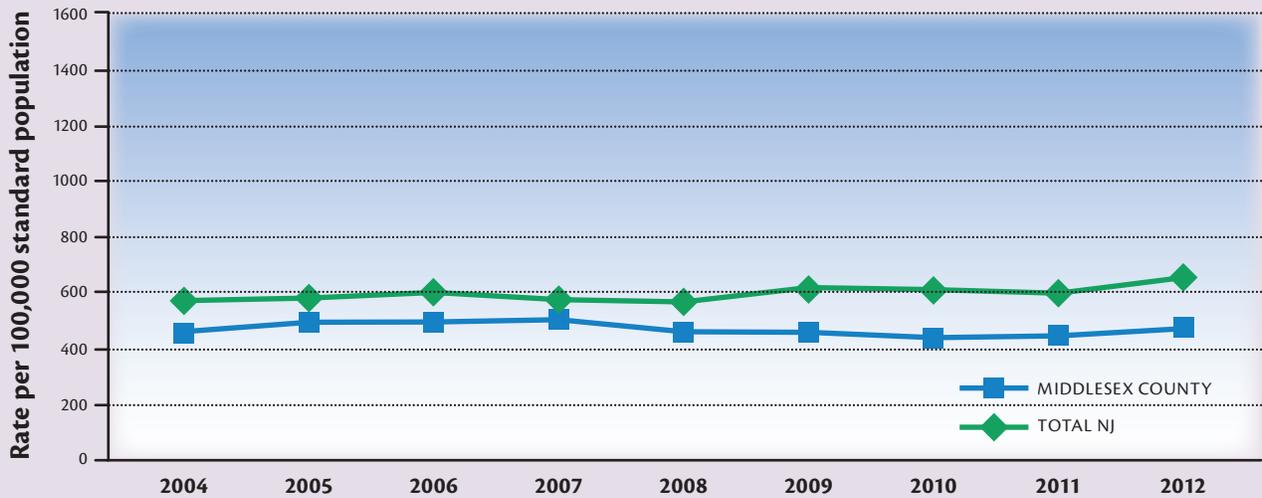


Population Source: NJ Behavioral Risk Factor Survey (Adults are people 18 and over; children are people under 18)

## Prevalence

Health survey data show that for 2011–2012, an estimated 49,056 adults (8.1 percent) and 11,611 children (6.0 percent) currently had asthma in Middlesex County. This compares with an estimated 8.8 percent of adults and 8.7 percent of children in the state. Figures 1 and 2 show the 95 percent confidence intervals for the survey measurements. Taking into account measurement error, we cannot say that Middlesex County's current asthma prevalence among adults or children differed from the state average.

Figure 3 | Age-adjusted asthma ED visits per 100,000 population



Direct method of age-adjustment using the 2000 U.S. standard population  
 Data source: 2004–2012 New Jersey ED Discharge Files  
 Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

### Emergency Department (ED) Visits<sup>1</sup>

With appropriate management, asthma can be controlled so that most visits to the ED are avoided. In 2012, residents of Middlesex County had 3,841 total asthma ED visits, or 467 per 100,000 residents, compared with the state average of 637 asthma ED visits per 100,000 residents. Middlesex County contains 9.3 percent of the state’s population and accounted for 6.8 percent of the state’s asthma ED visits in 2012. Figure 3 shows Middlesex

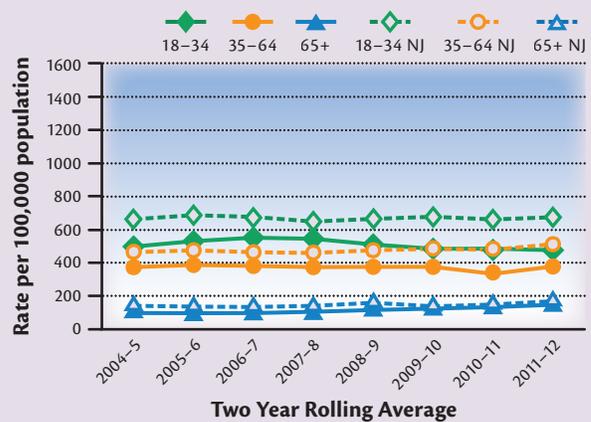
County’s asthma ED visit rates compared with the overall rate in the state of New Jersey for the years 2004–2012 (adjusted to standardize for age differences in the population). Middlesex County’s rate of asthma ED visits was below the state average by an average of 22 percent during the period, and increased by seven percent while the state average increased 14 percent.

Figure 4 | Asthma ED visits per 100,000 population for children, Middlesex County and State of NJ



Data source: 2004–2012 New Jersey ED Discharge Files  
 Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

Figure 5 | Asthma ED visits per 100,000 population for adults, Middlesex County and State of NJ

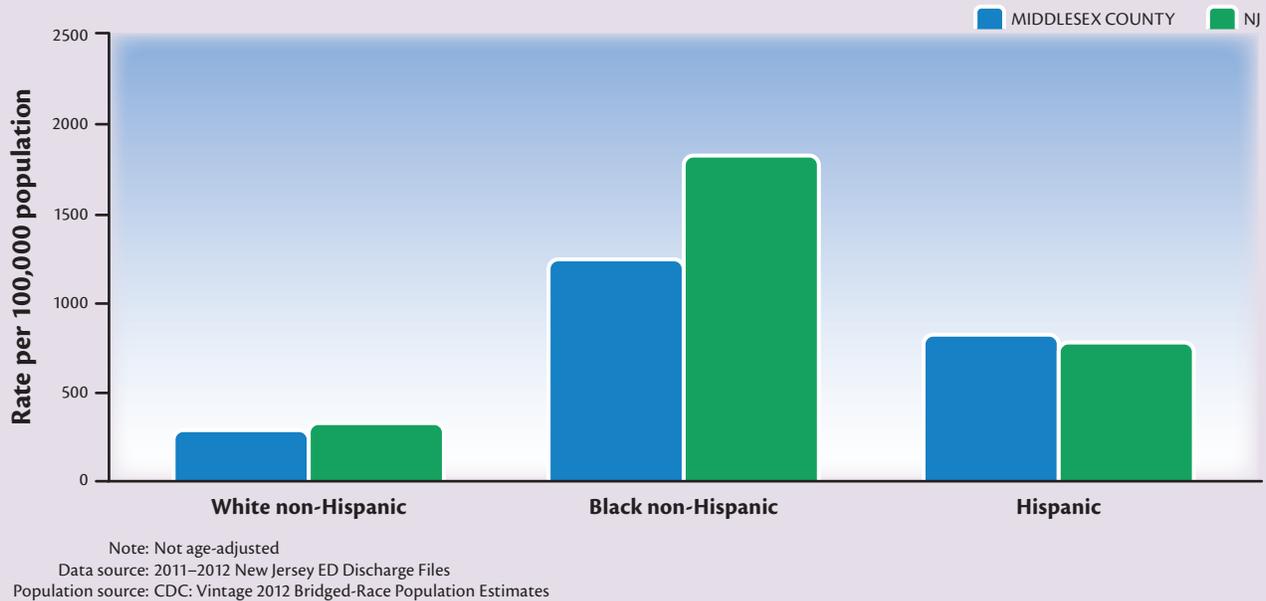


Data source: 2004–2012 New Jersey ED Discharge Files  
 Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

Asthma ED visits tend to vary by age, with children having higher visit rates than adults. Figures 4 and 5 show asthma ED visit rates per 100,000 population for Middlesex County children and adults, and children and adults in the state of New Jersey from 2004–2012 (rolling averages are used for comparability because of low numbers in some age groups in some counties). Rates for all age groups were below their respective state averages over the

period. Rates for all age groups except adults ages 65 and over decreased, or increased less than their state averages. Rates for adults ages 65 and over increased by 23 percent over the period, compared with a 16 percent increase in the state average for this age group. The largest decrease was in rates for children under age five years (25 percent over the period).

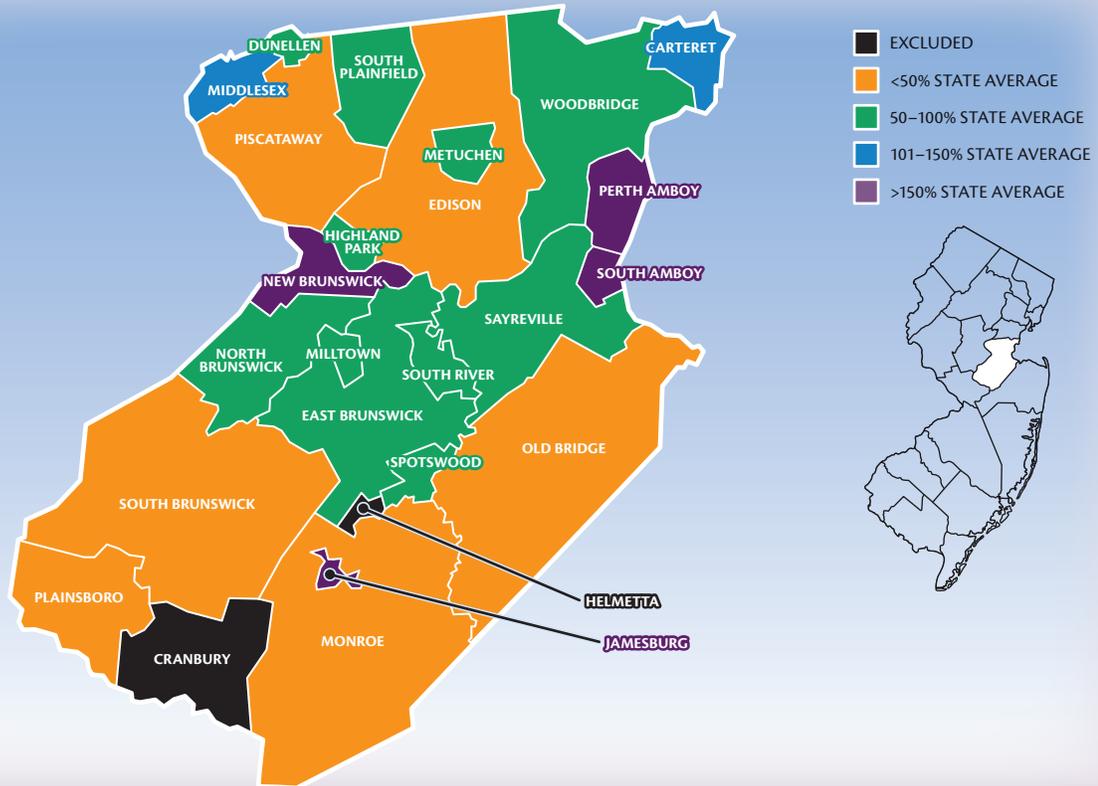
Figure 6 | Asthma ED visit rate per 100,000 population, 2011–2012



Asthma ED visits also vary quite a bit among racial and ethnic groups. Figure 6 shows asthma ED visit rates per 100,000 population for select racial/ethnic groups in Middlesex County and the state of New Jersey for 2011–2012.<sup>2</sup> The highest rate was for non-Hispanic black residents of Middlesex County, at 4.4 times the rate for non-Hispanic white residents and 1.5 times the rate for Hispanic residents. The asthma ED visit rate for Hispanic residents was 2.9 times the rate for non-Hispanic white residents. When comparing Middlesex County racial and ethnic groups to their state averages, the rate for Hispanic residents was above their state average by four percent. The rate for non-Hispanic black residents was below their state average by 32 percent and the rate for non-Hispanic white residents was lower by 11 percent.

The following map and table show the asthma ED visit rate by municipality of residence in Middlesex County from 2008–2012 (only municipalities with a population of 5,500 or greater are shown). New Brunswick, Perth Amboy, South Amboy and Jamesburg each had rates more than 1.5 times the state average, accounting for 38 percent of Middlesex County’s asthma ED visits while only holding 15 percent of the population. Carteret and Middlesex were also above the state average.

Figure 7 | Asthma Emergency Department Visits for Middlesex County Residents, 2008–2012



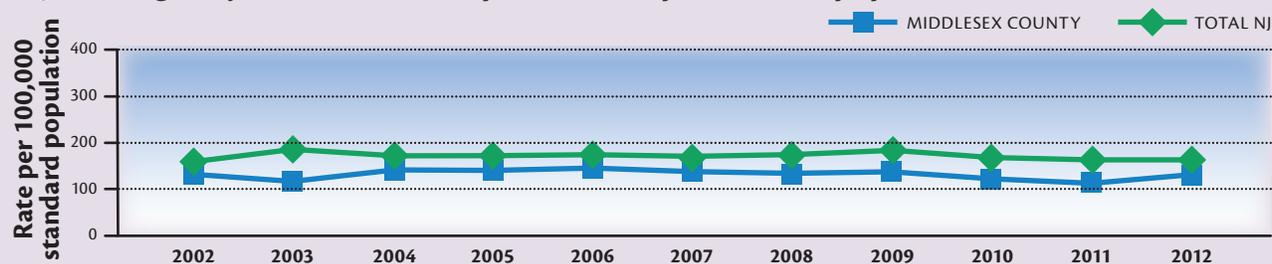
Municipality	Average population, 2008–2012	Asthma ED visits, 2008–2012	Percent of County ED visits	Percent of County Population	Asthma ED visit rate per 100,000 residents, 2008–2012	Age-adjusted* asthma ED visit rate per 100,000 residents, 2008–2012
Carteret borough	23,522	868	4.8%	2.9%	738	763
Dunellen borough	7,202	127	0.7%	0.9%	353	355
East Brunswick township	47,492	1,116	6.1%	5.9%	470	517
Edison township	100,059	1,433	7.9%	12.4%	286	301
Highland Park borough	14,180	243	1.3%	1.8%	343	363
Jamesburg borough	6,105	290	1.6%	0.8%	950	987
Metuchen borough	13,416	227	1.2%	1.7%	338	363
Middlesex borough	13,662	450	2.5%	1.7%	659	717
Milltown borough	6,932	110	0.6%	0.9%	317	365
Monroe township	38,878	141	0.8%	4.8%	73	96
New Brunswick city	53,912	2,925	16.1%	6.7%	1,085	1,232
North Brunswick township	40,383	1,066	5.9%	5.0%	528	536
Old Bridge township	65,769	266	1.5%	8.2%	81	86
Perth Amboy city	50,283	3,161	17.4%	6.2%	1,257	1,231
Piscataway township	55,028	710	3.9%	6.8%	258	268
Plainsboro township	22,292	209	1.2%	2.8%	188	187
Sayreville borough	42,808	854	4.7%	5.3%	399	417
South Amboy city	8,316	470	2.6%	1.0%	1,130	1,123
South Brunswick township	42,768	401	2.2%	5.3%	188	182
South Plainfield borough	23,151	441	2.4%	2.9%	381	413
South River borough	15,906	334	1.8%	2.0%	420	437
Spotswood borough	8,267	141	0.8%	1.0%	341	383
Woodbridge township	99,064	2,049	11.3%	12.3%	414	428
Municipalities below 5,500 population	6,000	137	0.8%	0.7%	457	n/a
<b>Middlesex County</b>	<b>805,397</b>	<b>18,169</b>			<b>451</b>	<b>462</b>
<b>State of NJ</b>	<b>8,774,778</b>	<b>261,822</b>			<b>597</b>	<b>622</b>

\*Direct method of age-adjustment using the 2000 U.S. standard population

Data source: 2008–2012 New Jersey ED Discharge Files

Population sources: NJ Department of Labor and Workforce Development: Municipal Estimates; US Bureau of the Census, 2010 Census Summary File 2 (QT-P2)

Figure 8 | **Age-adjusted asthma hospitalizations per 100,000 population**



Direct method of age-adjustment using the 2000 U.S. standard population

Data source: 2002–2012 New Jersey Hospital Discharge Files

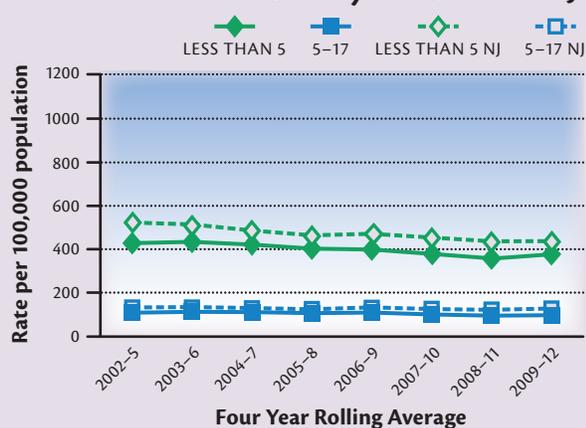
Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

## Hospitalizations<sup>1</sup>

As with ED visits, most asthma-related hospitalizations can be avoided through appropriate management. In 2012, residents of Middlesex County had 1,072 total asthma hospitalizations, or 130 per 100,000 residents, compared with the state average of 168 asthma hospitalizations per 100,000 residents. Middlesex County contains 9.3 percent of the state’s population and accounted for

7.2 percent of the state’s asthma hospitalizations in 2012. Figure 8 shows Middlesex County’s asthma hospitalization rates compared with the overall rate in the state of New Jersey for the years 2002–2012 (adjusted to standardize for age differences in the population). Middlesex County’s rate was below the state average by 20 percent, on average, over the period.

Figure 9 | **Asthma hospitalizations per 100,000 population for children, Middlesex County and State of NJ**

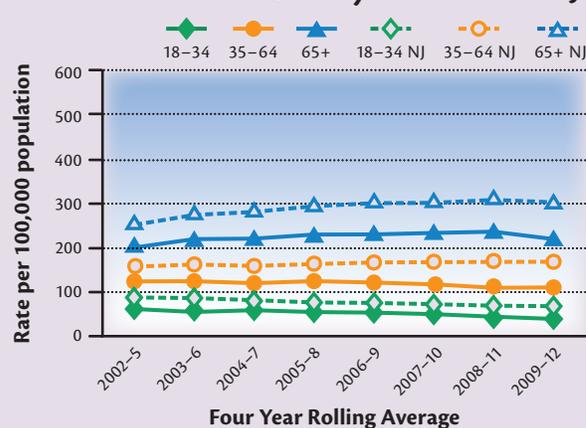


Data source: 2002–2012 New Jersey Hospital Discharge Files

Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

Asthma hospitalizations tend to be highest among the youngest and oldest residents. Figures 9 and 10 show asthma hospitalization rates per 100,000 population for Middlesex County children and adults, and children and adults in the state of New Jersey from 2002–2012 (rolling averages are used for comparability because of low numbers in some age groups in some counties). Rates for

Figure 10 | **Asthma hospitalizations per 100,000 population for adults, Middlesex County and State of NJ**

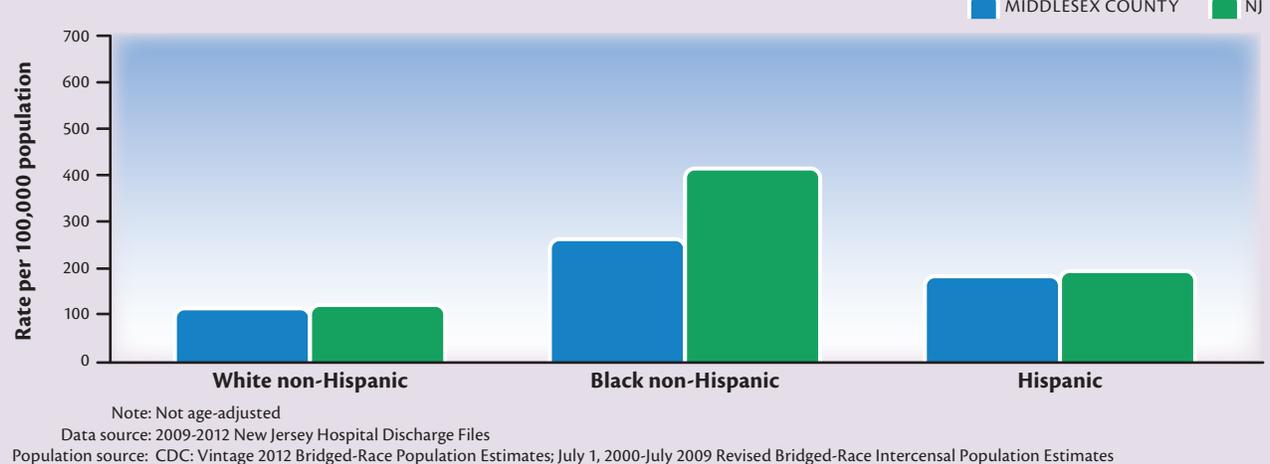


Data source: 2002–2012 New Jersey Hospital Discharge Files

Population source: CDC: Vintage 2012 Bridged-Race Population Estimates; July 1, 2000–July 2009 Revised Bridged-Race Intercensal Population Estimates

all age groups were below their respective state averages over the period. Rates for children decreased less than their respective state averages over the period, while rates for adults decreased more than their state averages (or increased less, for adults ages 65 and over).

Figure 11 | **Asthma hospitalizations per 100,000 population, 2009–2012**



Asthma hospitalizations also vary quite a bit among racial and ethnic groups. Figure 11 shows asthma hospitalization rates per 100,000 population for select racial/ethnic groups in Middlesex County and the state of New Jersey from 2009–2012.<sup>2</sup> Non-Hispanic black residents of Middlesex County had the highest asthma hospitalization rate—2.4 times the rate for non-Hispanic white residents and 1.4 times the rate for Hispanic residents. The asthma hospitalization rate for Hispanic residents was 1.7 times

the rate for non-Hispanic white residents. When comparing Middlesex County racial and ethnic groups to their state averages, the rate for non-Hispanic black residents was 37 percent below the state average for non-Hispanic black people, the rate for non-Hispanic white residents was 11 percent below their state average and the rate for Hispanic residents was five percent below their state average.

## Summary

*Middlesex County’s asthma prevalence in 2011–2012 does not differ significantly from the state average when looking at current asthma among adults and children. Rates of asthma-related emergency department (ED) visits and asthma-related hospitalizations over the past decade were below the state average and did not grow as fast over the past decade.*

*Asthma-related ED visit rates for all Middlesex County age groups were below their respective state averages over the past decade. Rates for all age groups except adults ages 65 and over decreased or increased less than their state averages. Rates for adults ages 65 and over increased by 23 percent from 2004–2012, compared with a 16 percent increase in the state average. The largest decrease was in rates for children under age five years (25 percent over the period).*

*Asthma hospitalization rates for all Middlesex County age groups were below their respective state averages in the past decade. Rates for children decreased less than their respective state averages from 2002–2012, while rates for adults decreased more (or increased less, for adults ages 65 and over).*

*Non-Hispanic black residents of Middlesex County had the highest rates of both asthma ED visit rates (2011–2012) and asthma hospitalizations (2009–2012) compared with non-Hispanic white and Hispanic residents. The asthma ED visit rate for non-Hispanic black residents was 4.4 times the rate for non-Hispanic white residents and the asthma hospitalization rate was 2.4 times as high. The asthma ED visit rate for Hispanic residents was 2.9 times the rate for non-Hispanic white residents, and the asthma hospitalization rate for Hispanic residents was 1.7 times the rate for non-Hispanic white residents.*

*An analysis of asthma-related ED visits by municipality from 2008–2012 showed that New Brunswick, Perth Amboy, South Amboy and Jamesburg had rates more than 1.5 times the state average, accounting for 38 percent of Middlesex County’s asthma ED visits while only holding 15 percent of the population. Carteret and Middlesex were also above the state average.*

## For more information:

New Jersey Asthma Awareness and Education Program: [www.nj.gov/health/asthma](http://www.nj.gov/health/asthma)

## For asthma resources and tools:

Pediatric Adult Asthma Coalition of New Jersey (PACNJ): [www.pacnj.org](http://www.pacnj.org)

## Notes:

- <sup>1</sup> Data on asthma-related ED visits and hospitalizations are derived from hospital uniform billing (UB) information, which is used to submit claims for health care. Some variables are not required for claim processing (such as race, ethnicity, and municipality of residence), and should be interpreted with caution. Our figures also use population estimates, which are subject to measurement error that may differ across population subgroups (for example, people who are homeless, move frequently or lack legal documentation for residence may be more difficult to measure).
- <sup>2</sup> There are many racial and ethnic groups in addition to the three shown in the figure. However, not all groups are adequately captured in the uniform billing data over time, and many groups do not have sufficient numbers across all counties to allow for a standard presentation. In addition, data on Hispanic ethnicity should be interpreted with caution as it may conceal important differences among sub-groups.

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