

LETTER FROM THE PRESIDENT

Fellow residents and friends of Brooklyn:

Asthma robs young and old of a full life. Children lose days from school, while adults miss work. Asthma can also sideline the athlete, disrupt the sleep of the office worker, and force parents to race with their breathless children to the emergency room.

Asthma is on the rise. From 1980 to 1996, according to the U.S. Department of Health and Human Services, the number of Americans with asthma has increased dramatically.

In Brooklyn the situation is particularly serious. Asthma deaths, though rare, are dramatically higher here than they are in the rest of New York State and the country. The borough has the highest number of hospitalizations for asthma in all of New York City—an indication that many Brooklyn residents are not receiving adequate treatment.

It does not have to be this way. Effective medicines and patient education can prevent hospital admissions for asthma and make visits to the emergency room a rarity. But Brooklynites often lack the knowledge to control asthma or the insurance coverage for the prescription drugs they need to prevent this chronic illness from escalating into a medical crisis.

We also know that indoor and outdoor air pollution often trigger asthma attacks. It is important that we address these public health issues by educating Brooklynites about such dangers as second-hand smoke and diesel exhaust fumes.

There is also more to learn about the disease. Is asthma one illness or several? What role do psychological factors, particularly depression, play? Why do more boys than girls, but more women than men, have asthma? Are there any racial disparities that affect asthma management?

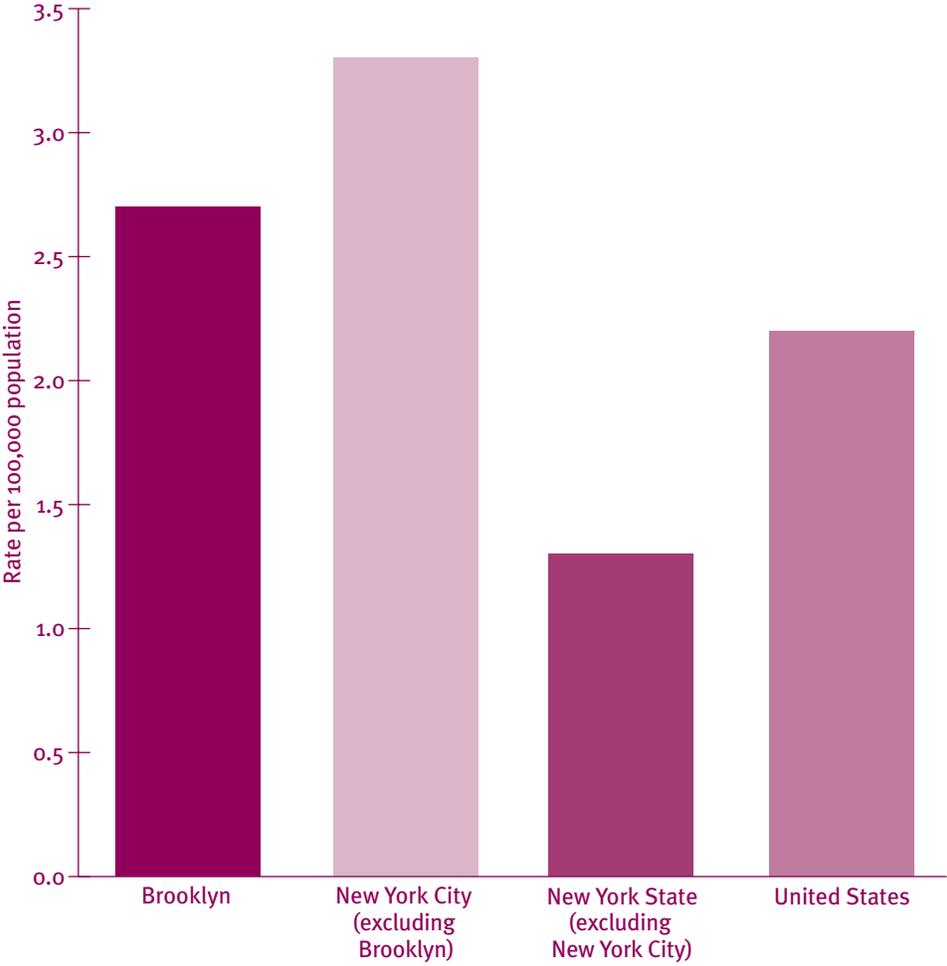
Although more research needs to be done to answer these and other questions, we already know a great deal about the prevention and treatment of asthma. By applying this knowledge, we can have a dramatic impact on the health of the borough.

John C. LaRosa, MD
President

ASTHMA DEATHS

Asthma Deaths, 1997

Brooklynites are twice as likely to die of asthma than other citizens of New York State and are at considerably greater risk than those living elsewhere in the United States.

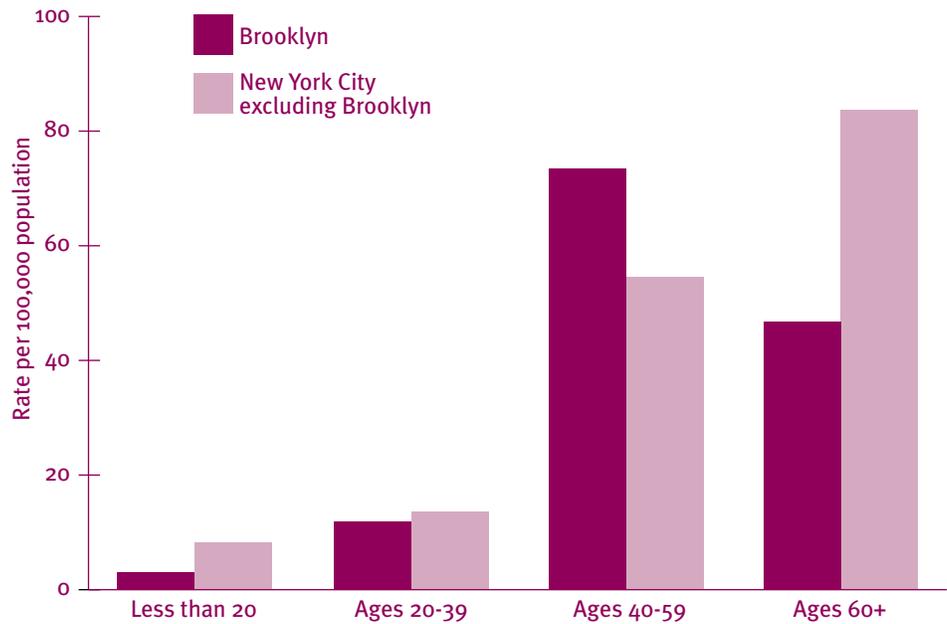


Source: NYCDOH Vital Statistics Summary Report, 1997; Deaths: Final Data for 1997 - CDC; NYSDOH - Bureau of Biometrics

Note: Death rate is not age-adjusted.

Asthma Deaths by Age, 1997

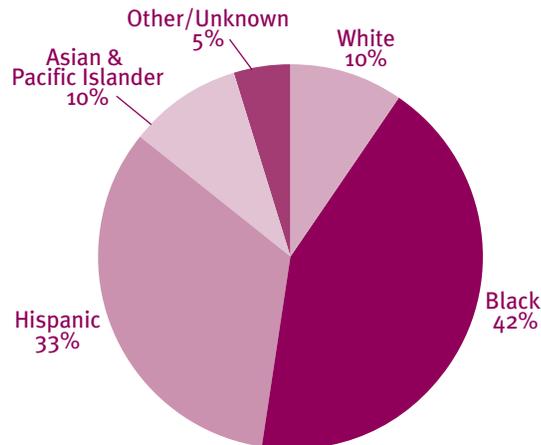
Nationally and here in New York City, the number of deaths from asthma increases with age. However, in Brooklyn the trend is somewhat different. Deaths from asthma peak in the 40-to 59-year-old age group. The majority of these deaths are among women.



Data Source: Bureau of Biometrics, NYS DOH, 1997

Asthma Deaths in Brooklyn by Race/Ethnicity, 1997

Marked racial and ethnic disparities also exist in asthma deaths. In Brooklyn, blacks and Hispanics make up 75 percent of all asthma deaths.

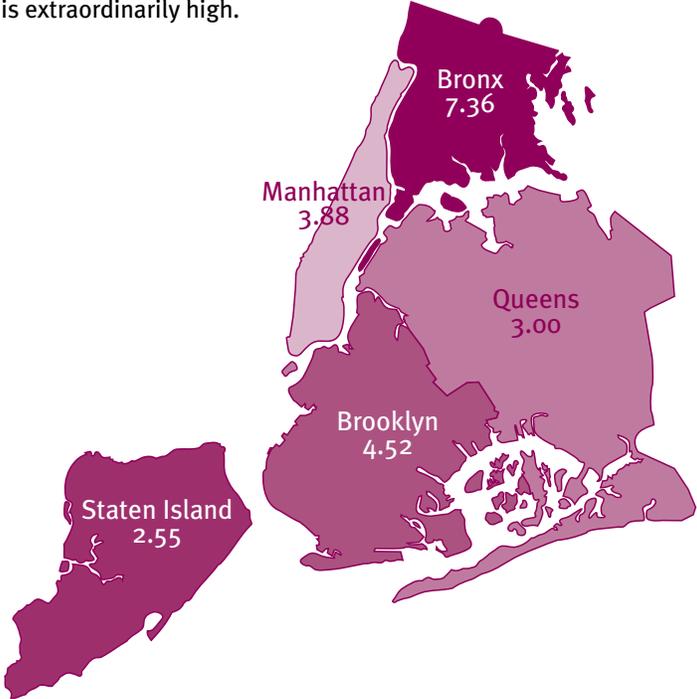


Data Source: NYC DOH, 1997

ASTHMA HOSPITALIZATION

Rates of Asthma Hospitalizations by Borough, 1999

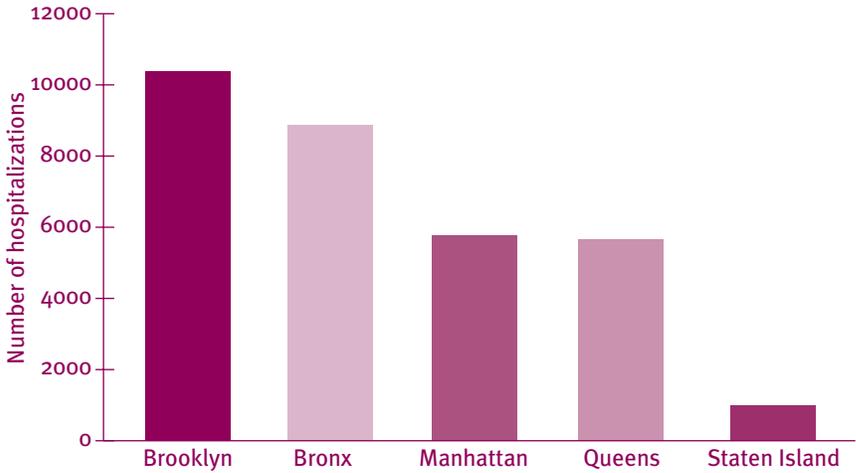
Hospitalization rates for asthma among Brooklynites is higher than for most other New Yorkers, except for those living in the Bronx, where the rate of asthma hospitalization is extraordinarily high.



Source: NYS SPARCS, 1999
Rates are per 1,000 population

Number of Asthma Hospitalizations by Borough, 1999

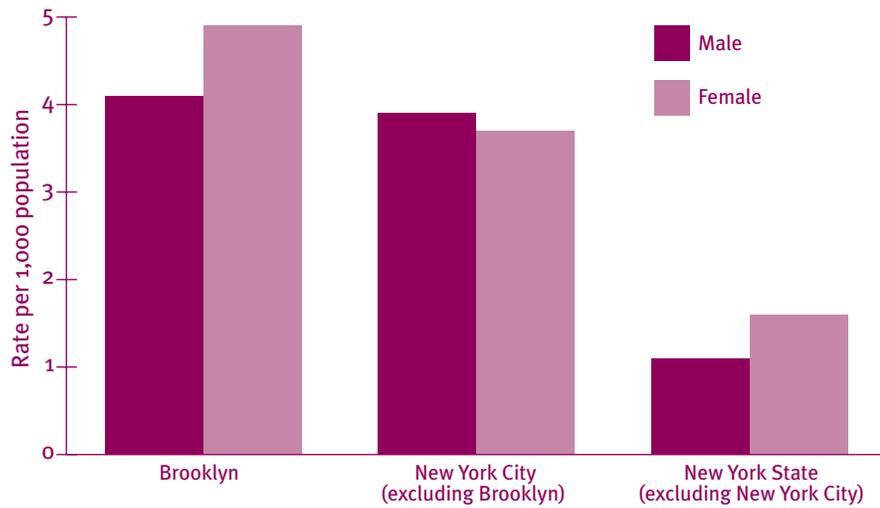
The burden of asthma is greater in Brooklyn because the *number* of Brooklynites hospitalized for asthma is greater than in any other borough.



Source: NYS SPARCS, 1999

Hospitalization Rates by Gender, 1999

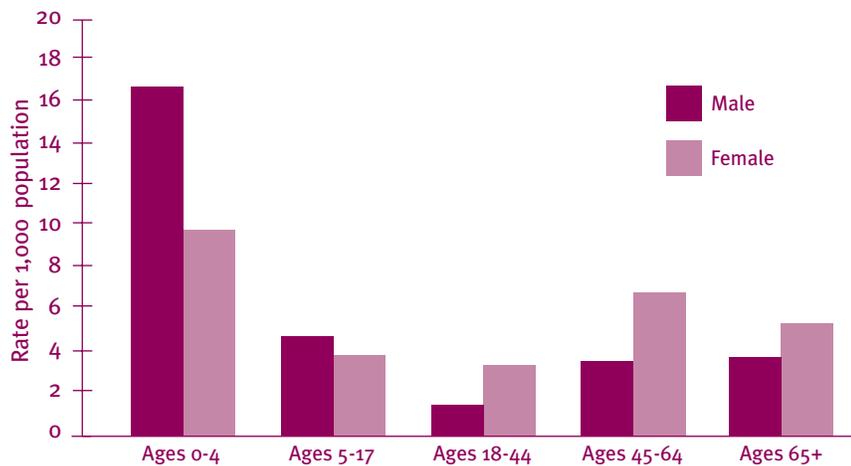
When asthma is properly controlled, hospitalization is rare. Hospitalization for asthma indicates a serious condition. In Brooklyn, women are more likely to be hospitalized for asthma than men, though that pattern does not hold across all age groups.



Source: NYS SPARCS, 1999

Brooklyn Asthma Hospitalization Rates by Age and Gender, 1999

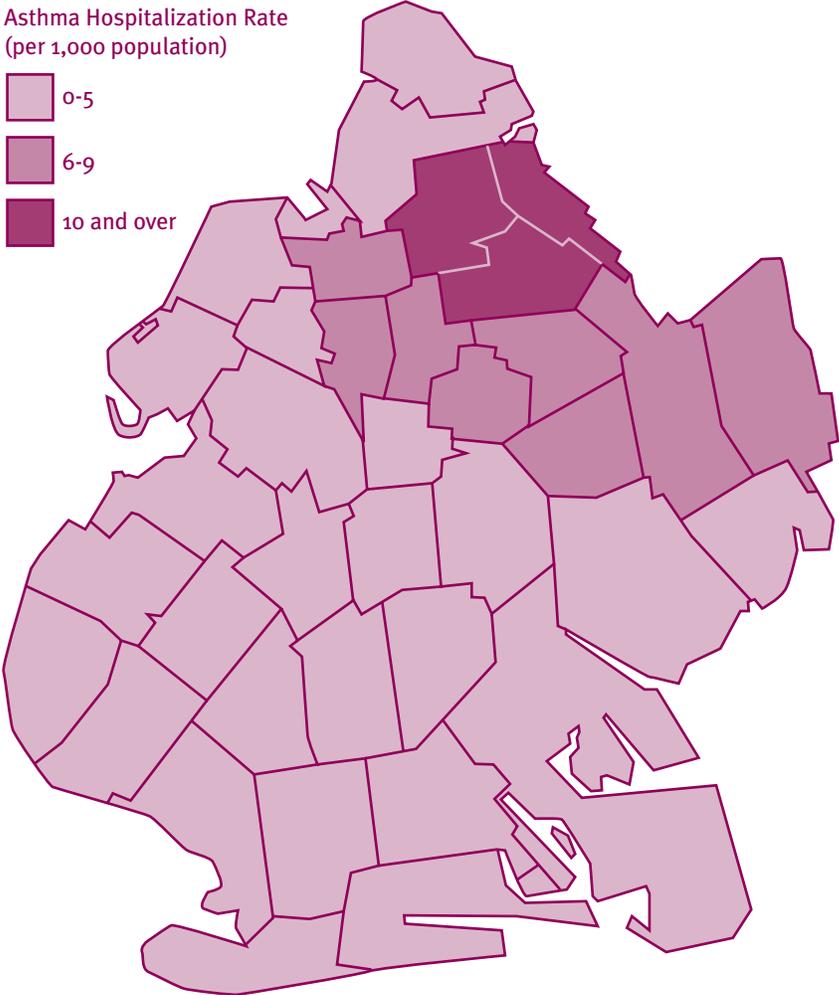
At younger ages, boys are more likely than girls to be hospitalized for asthma. Among adults, though, women are more likely to be hospitalized for asthma. Between the ages of 18 and 64, women are approximately twice as likely as men to be hospitalized.



Source: NYS SPARCS, 1999

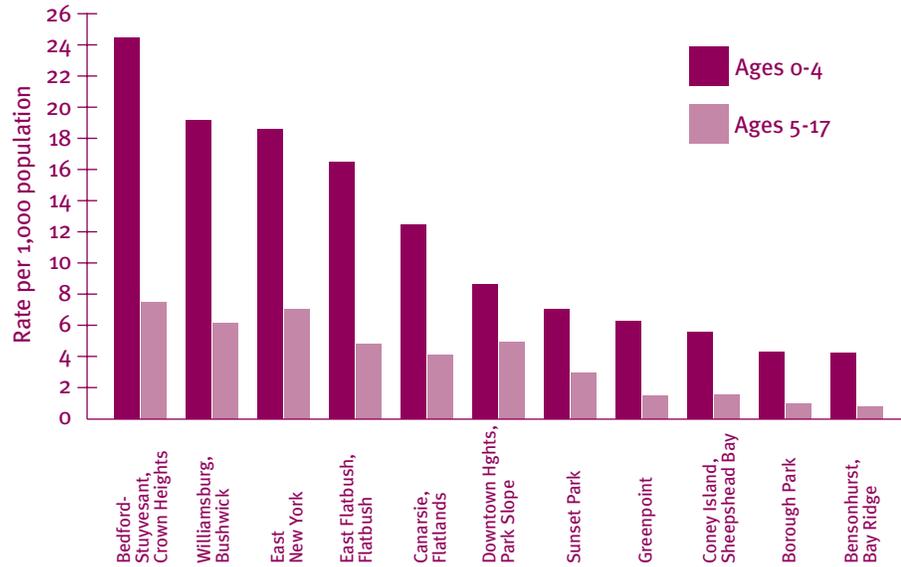
Asthma Hospitalization Rates by Zip Code in Brooklyn, 1999

Since the 1970s, public health officials have referred to northern and central Brooklyn as “Asthma Alley.” Hospitalizations in Williamsburg, Bushwick, East New York, Bedford-Stuyvesant, Fort Greene, Prospect Heights, and Brownsville continue to be far greater than the rest of the borough and the city as a whole. These neighborhoods are among the poorest in the city. Experts believe these higher rates are mostly the result of poorer housing conditions and less access to quality medical care—especially preventive care.



Child Hospitalizations for Brooklyn Neighborhoods, 1999

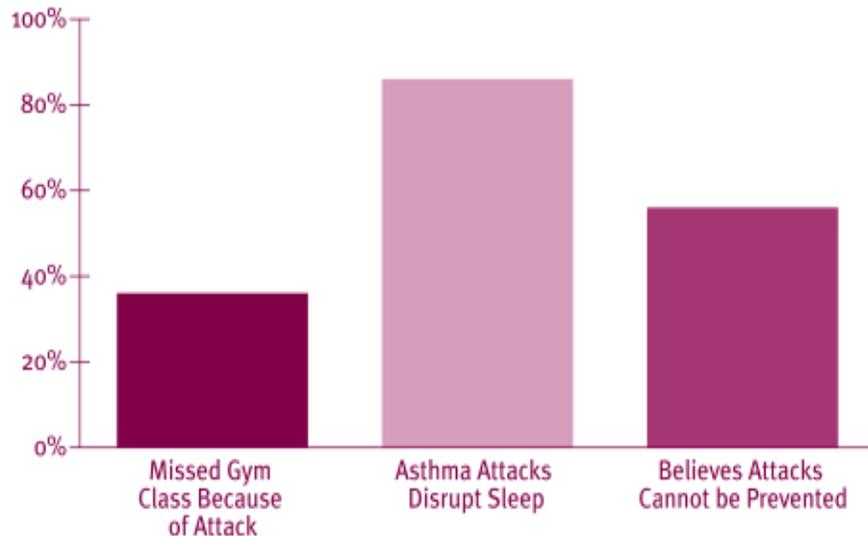
Children four and under are the most likely to be hospitalized for asthma. These rates are particularly high in Bedford-Stuyvesant/Crown Heights, Williamsburg/Bushwick, East New York, and East Flatbush/Flatbush.



Data Source: NYS SPARCS, 1999

Asthma and Quality of Life: Student Responses

Asthma disrupts lives. When young people suffer from asthma, they miss school and gym classes. They also have trouble sleeping, among other problems.

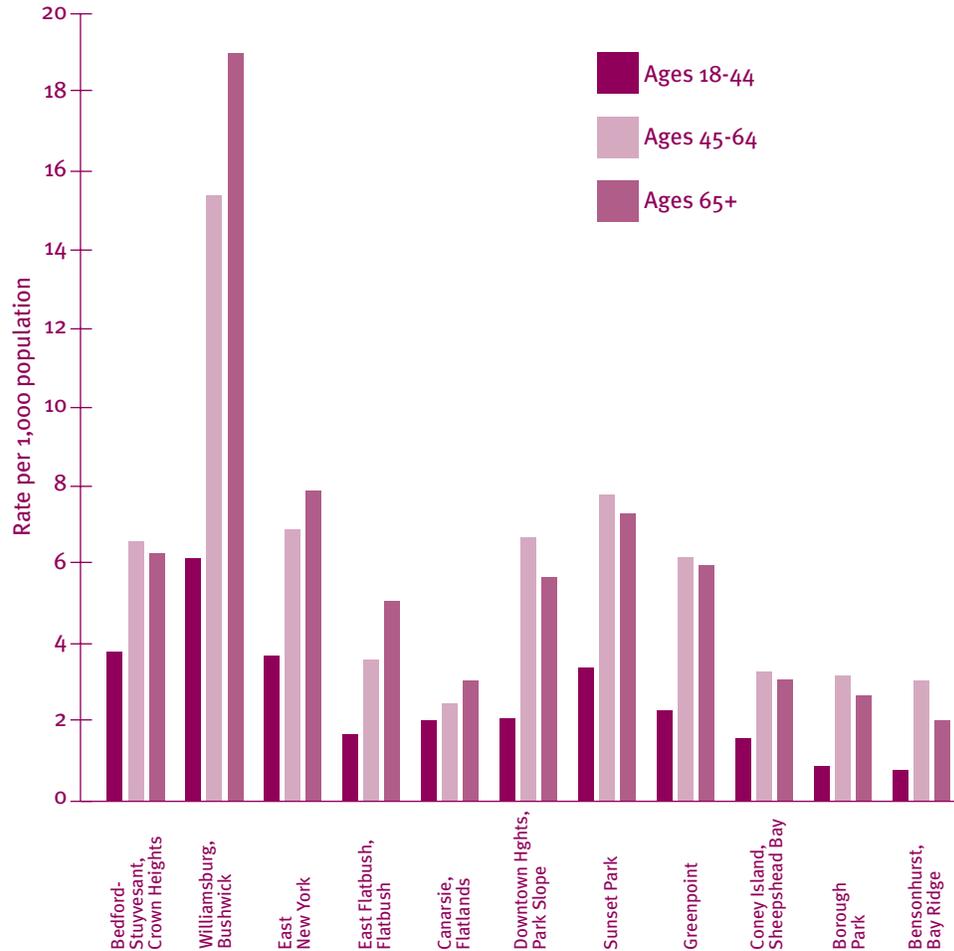


Source: Community Demonstration Project Questionnaire, School District 14, Woodhull MMHC
Number of Students with asthma in Survey=67

Adult Hospitalizations for Brooklyn Neighborhoods, 1999

Hospitalization rates for asthma among adults are lower than among children. However, because there are more adults than children, the *number* of adults hospitalized for asthma each year is greater than the number of children hospitalized.

Moreover, patients who are 65 and older face more serious complications from the disease. In 1999, the pattern of hospitalizations in the borough's neighborhoods followed roughly the borough-wide prevalence of asthma. However, in Williamsburg/ Bushwick, hospitalizations for residents 45 years old and older were dramatically higher than would have been expected.

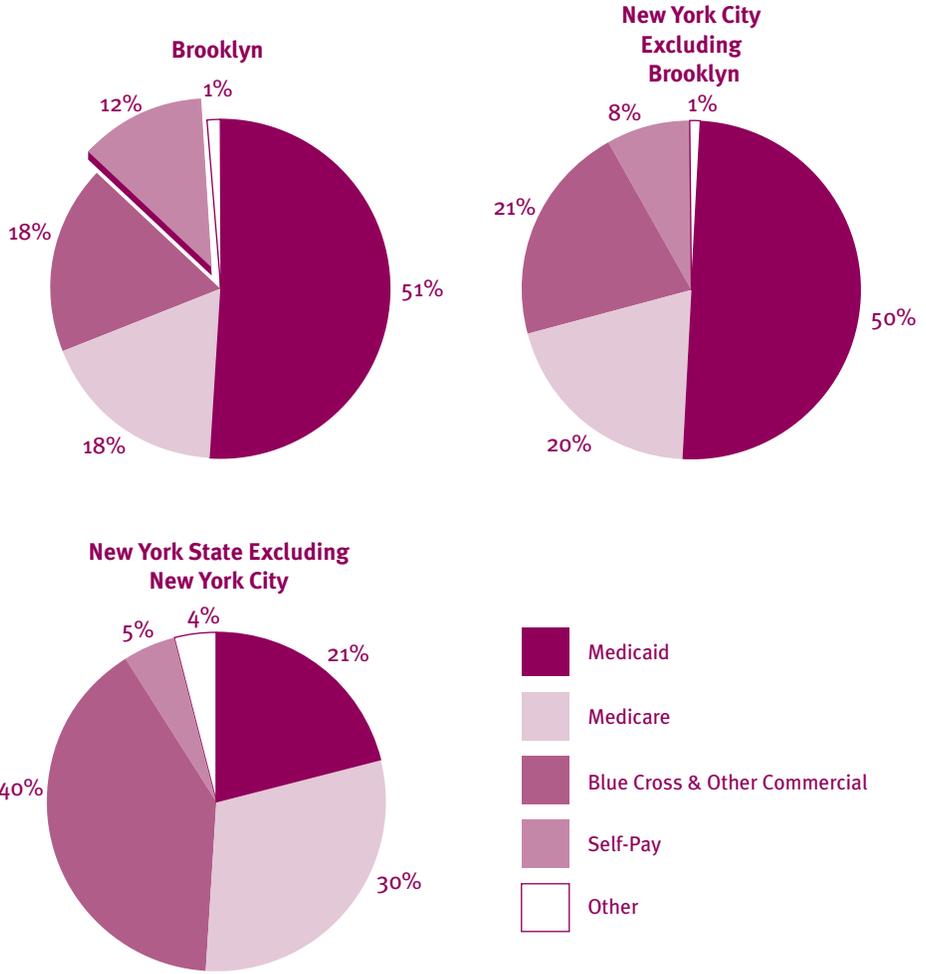


Source: NYS SPARCS, 1999

ASTHMA AND INSURANCE

Asthma and Insurance, 1999—All Ages

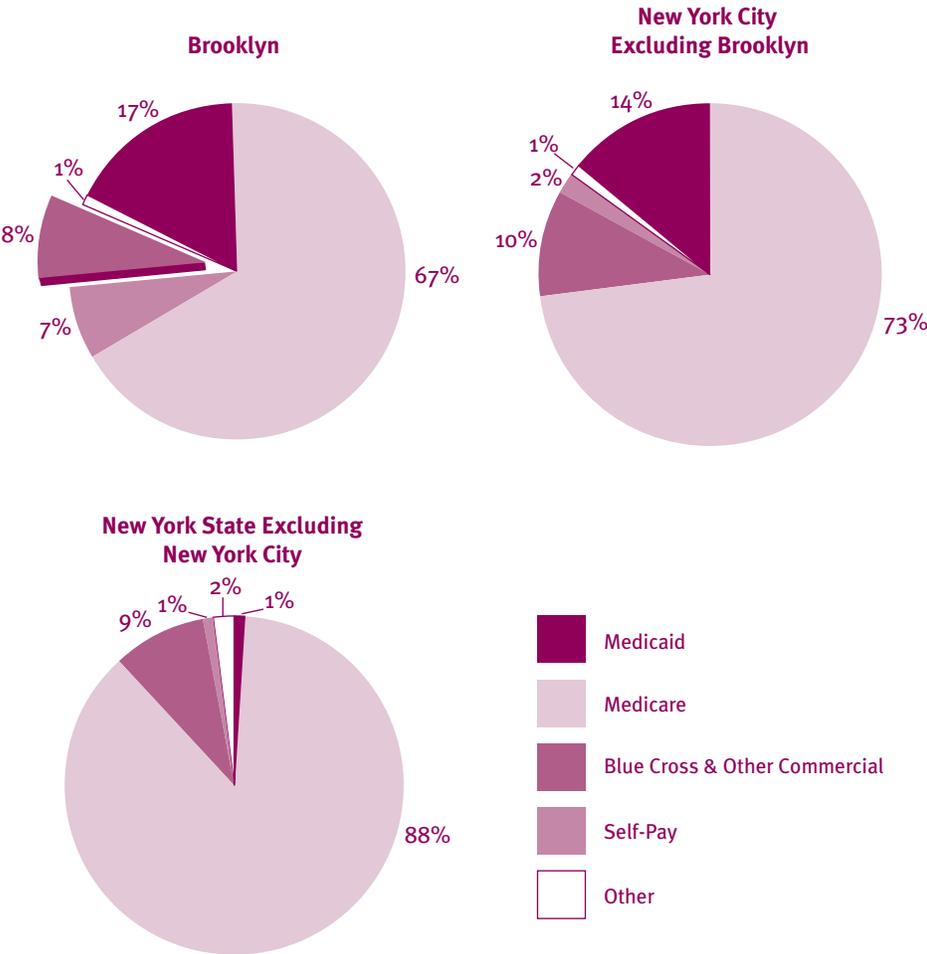
Poor housing and greater exposure to environmental hazards contribute to a higher incidence of asthma. So does poverty. Half of all Brooklynites rely on Medicaid—more than twice the state’s percentage of recipients. Those without health insurance have an especially hard time affording health care and medication. In Brooklyn, approximately 1 in 8 adults hospitalized for asthma is uninsured or under-insured compared to 1 in 20 for the state.



Source: NYS SPARCS, 1999

Asthma and Insurance Among Senior Citizens, 1999

In 1999, 8 percent of Brooklynites over 65 who were hospitalized for asthma lacked insurance—this despite the fact that they had reached the age necessary to qualify for Medicare. This is 4 times the city average and 8 times the state average. The high percentage of uninsured Brooklynites over the age of 65 may reflect the large percentage of recent immigrants living in the borough who are ineligible for Medicare.



Source: NYS SPARCS, 1999

COSTS OF ASTHMA MEDICINES

Asthma medicines are usually effective in controlling the symptoms of asthma; however, their high cost prevents many people with asthma from taking them regularly. For children with severe, persistent asthma, medicines can cost more than \$300 a month. The high cost of these drugs for those without insurance often means they go without proper care. This is one of the biggest reasons for high rates of emergency room visits, asthma hospitalizations, and death.

Asthma medicines fall into two main categories: quick relief/rescuer and controlling/preventive. Quick relief medicines are taken during an attack. They are less expensive, but their effectiveness is temporary. Taken daily, controlling medicines can prevent these attacks from occurring.

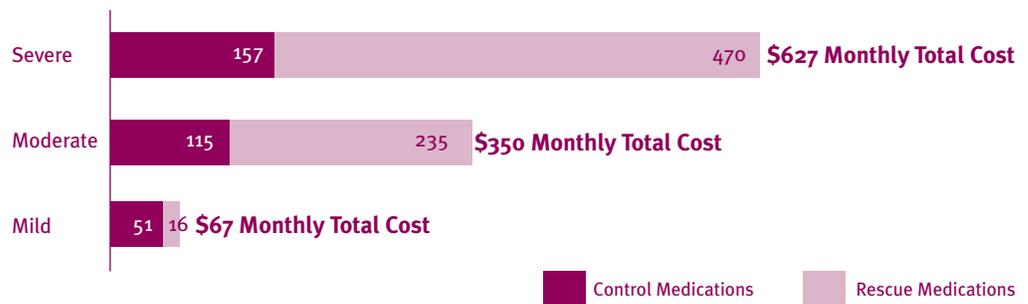
Those with more severe forms of asthma who rely on only quick relief medications live restricted lives while their lungs undergo progressive damage. They are also in more danger of severe asthma attacks, hospitalization, and even death.

The tables below show typical monthly costs of recommended medications for children using nebulizers (inhaled medication) and for adults using inhalers at different levels of asthma symptoms. The range in cost depends upon which type and how much preventive medication a person needs.

Typical Monthly Asthma Medication Costs



Typical Medication Costs for 4-Year Old Child



*The levels of asthma severity are defined this way: Mild intermittent: symptoms not more than once a week; Mild persistent: symptoms at least twice a week, but not daily; Moderate persistent: daily symptoms; Severe persistent: continuous symptoms.

FACTORS AFFECTING ASTHMA

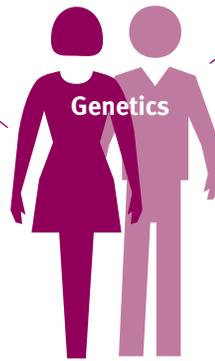
Many factors affect whether a person has asthma and how severe the asthma is. Family history makes some people more likely to develop asthma. Environmental factors, such as tobacco smoke and changes in temperature, may further increase their vulnerability. In Brooklyn, dustmites, cockroaches, and the chemicals used to kill roaches are probable factors. Exercise can also induce asthma in some people. Not all factors are well understood. For example, some studies indicate depression plays a role, but the reason is unclear. Does depression somehow narrow airways? Or does it cause the person with asthma to stop taking his or her medication regularly?

Indoor Factors

- Cockroaches and Dust Mites
- Cigarette Smoke
- Cat and Pet Hair
- Fungi and Molds
- Fumes from Stoves and Heaters
- Additives and Preservatives
- Cleaning Products

Outdoor Factors

- Smoke and Dust
- Ozone and Sulphur Dioxide
- Exhaust and Factory Fumes
- Very Cold Temperatures
- Pollen and Grasses



Other Factors

- Viruses and Bacteria
- Stress and Psychological Factors
- Occupational Hazards

INDOOR FACTORS AFFECTING ASTHMA

Indoor factors can affect both the development of asthma and the onset of an attack. Listed below are some of the many factors in each case. The factors listed are those for which scientists have strong evidence of a connection.

Exposure to dust mites and tobacco smoke is strongly associated with the development of asthma. Cats, dogs, molds, nitrogen oxides (fumes from gas stoves, heaters, etc.), and cold viruses are highly likely to trigger an attack. Other factors—birds, houseplants, pesticides—may lead to the development of asthma or trigger an attack, but scientists do not have clear evidence of the degree, if any, to which they may contribute.

Factors that Contribute to the Development of Asthma

House dust mites

Tobacco smoke (*especially in preschool children*)

Cockroaches (*especially in preschool children*)

Factors that Can Trigger an Asthma Attack

Cats

Cockroaches

House dust mites

Tobacco smoke (*especially in preschool children*)

Dogs

Fungi and molds

Fumes—gas stoves, heaters, etc.

Cold viruses

Fragrances

Adapted and Modified from *Cleaning the Air*, National Academy of Sciences, May 2000.

OUTDOOR FACTORS AFFECTING ASTHMA

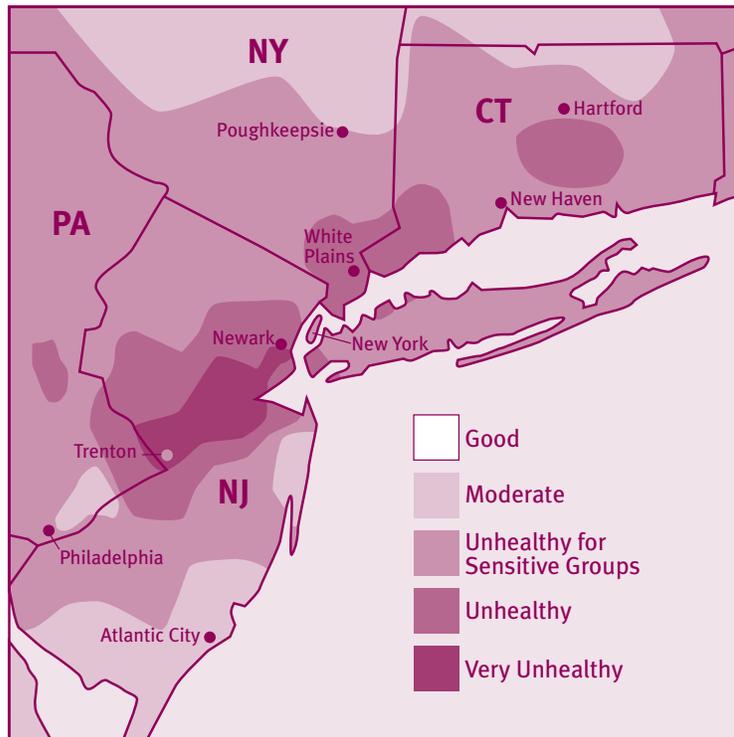
Outdoor air quality has a powerful effect on asthmatics. Pollen and air pollution triggers asthma attacks. The main pollutants that contribute to asthma are nitric oxide, ozone, particulate matter, and sulfur dioxide (common emissions of many industrial processes and motor vehicles). The presence of nitric oxides and sulfur dioxide is higher in the winter, while ozone is highest in the summer.

In North Brooklyn special environmental circumstances exist that may contribute to poor air quality. High-density industry is located alongside residential housing, and thousands of diesel tractor trailers rumble through the streets each day. With the closing of the Fresh Kills land fill on Staten Island, about half of all the City's commercial garbage is being hauled to North Brooklyn.

Ozone

Ozone, the main component of smog, can trigger an asthma attack, particularly among children and the elderly. It is created by the action of the sun on nitric oxides. The Eastern Seaboard from Philadelphia to New Haven experiences many days of unhealthy levels of ozone each year. The Environmental Protection Agency has classified Brooklyn as one of ten counties in the state with “severe non-attainment” of legal levels of ozone.

Ozone Levels at 4 pm, Saturday, July 17, 1999 EDT



Sensitive Groups for ozone are active children and adults and people with respiratory disease, such as asthma.

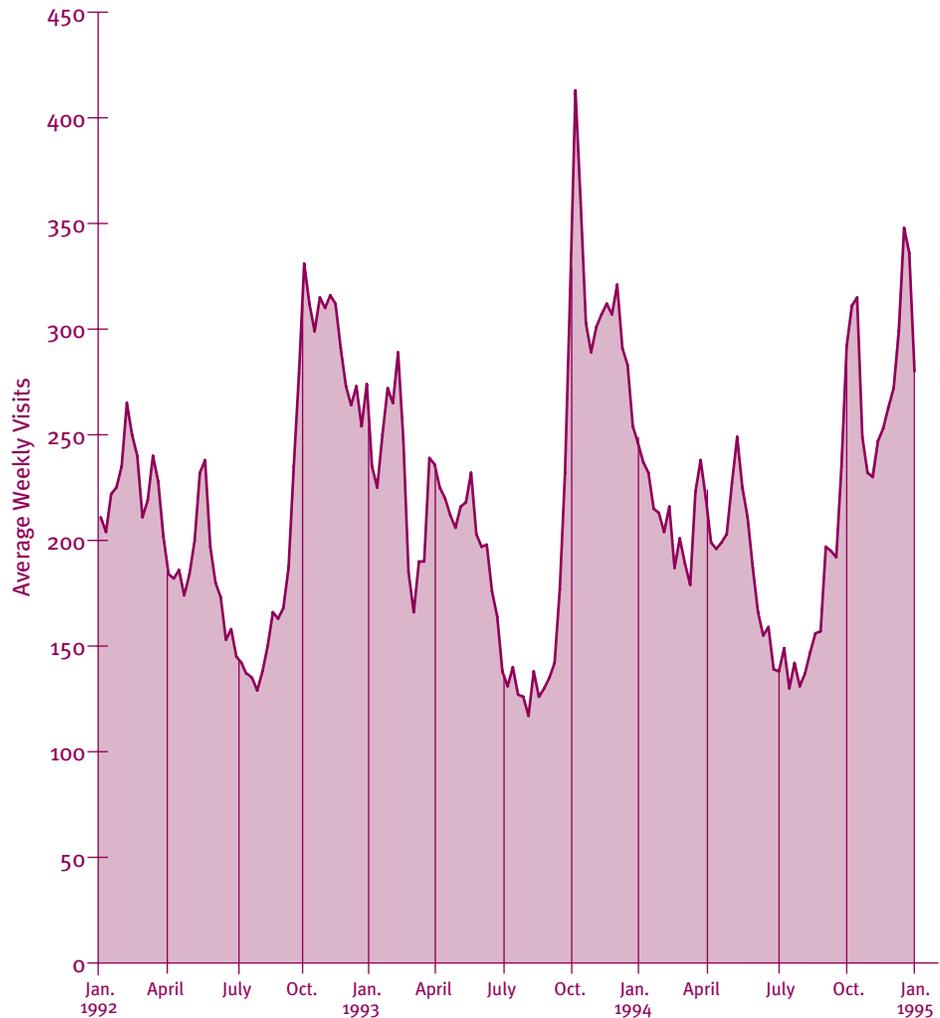
EMERGENCY VISITS

EMERGENCY VISITS FOR ASTHMA BY SEASON

In New York City, emergency visits for asthma follow a yearly cycle. They peak in the fall, when the temperature drops sharply, cold season begins, and mold spores reach their highest levels.

Although emergency visits follow a pattern, there are many days when visits are higher than the average for the time of the year. In the summer, these peaks are due to smoggy days with high ozone levels. In the fall, the peaks come on days with a precipitous drop in the day's temperature or with an unusually high spore count. No matter what time of year, patients arrive in emergency rooms gasping for breath, so it is important that every asthmatic understand his or her particular risk factors.

Seasonal Emergency Room Visits for Asthma at 11 HHC Hospitals, New York City



Data Source: Ron Low, MD HHC, 2001

WITH EDUCATION, PATIENTS CAN BREATHE EASIER

Primary Care Physicians in Brooklyn's Neighborhoods

With proper care, asthma patients, young and old, can enjoy productive lives. Yet many Brooklynites live in neighborhoods where there are not enough primary care doctors. These doctors are essential for helping patients create a management plan for their asthma or referring them to an asthma specialist when necessary. Below is the number of full-time equivalent primary care physicians per 10,000 residents living in each Brooklyn neighborhood.

Greenpoint/
Williamsburg 7.13
Downtown/Brooklyn
Heights/Park Slope 12.37
Bedford Stuyvesant/
Crown Heights 5.51
East New York 3.63
Sunset Park 6.67
Borough Park 6.11
East Flatbush/Flatbush 8.55
Canarsie/Flatlands 4.55
Bensonhurst/Bay Ridge 8.76
Coney Island/Sheepshead
Bay 7.99
Brooklyn-wide average 7.06

Source: New York State
Department of Health, 1995

A recent survey conducted by doctors at SUNY Downstate found that nearly 60 percent of asthma patients reported that asthma had negatively impacted their lives before they enrolled in an asthma program. Quality of life was measured by asthma's effect on the ability to exercise, need for emergency room visits, and hospitalizations. After enrolling in the asthma program, three-fourths found that their quality of life improved, including many who had not realized before how greatly asthma had diminished their quality of life.

Health care professionals need to know the latest methods of treating asthma. In another study, published in the *Journal of Asthma* [36 (3) 295-303, 1999] physicians at Downstate demonstrated a dramatic decrease in asthma relapse rates among adults following a program to educate emergency department health professionals at Kings County Hospital Center about the most up-to-date treatments for asthma. Following the training, repeat visits to the emergency room fell from 12 to 7.83 percent, and readmission to the hospital for asthma fell from 4.85 to 3.9 percent.

As individuals, we can try to lessen our exposure to tobacco smoke and other irritants that can trigger an asthma attack. However, it does not stop there. As a community, we must tackle the broader issues of environmental pollution, poor housing, and the need for better access to health care to enable those with asthma to breathe more easily. In addition, more research is needed to find new ways of treating asthma and reaching those who suffer from this condition.

If you have information or suggestions to contribute, please contact John C. LaRosa, MD, President, SUNY Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, NY 11203.