

Preventing Non-Communicable Diseases and Injuries



Innovative Solutions from New York City



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Letter from the Mayor



Dear Colleague:

Protecting our residents' health is one of New York City's highest priorities. No public health agency does more than our City's Department of Health and Mental Hygiene to combat the leading causes of injury and chronic disease.

Non-communicable diseases—including heart and lung disease, cancer and diabetes—and injuries are the primary causes of illness and death across the globe. Deaths from these diseases are more common than those caused by communicable diseases—such as HIV or pneumonia—in the United States and other developed countries, and this pattern is quickly becoming established in less-developed countries.

Since I took office in 2002, I have worked closely with the Health Department and other agencies on programs and policies to help our more than eight million residents live healthier lives. The City has launched many successful initiatives to prevent and reduce the impact of the most devastating non-communicable diseases.

Over the past few years, we have dramatically cut smoking rates, expanded access to nutritious foods, reduced deaths from homicides and traffic crashes, increased options for safe physical activity and improved the quality of preventive health care.

Cities across the globe face many of the same large health challenges we do. By sharing strategies and learning from one another, we have a chance to solve our common problems and to ensure that the world's cities become healthier places.

Sincerely,

A handwritten signature in black ink that reads "Michael R. Bloomberg". The signature is written in a cursive, flowing style.

Michael R. Bloomberg
Mayor

Letter from the Director-General, World Health Organization



Dear Colleague:

Non-communicable diseases (NCDs) are among our largest and most urgent global health problems. The most common NCDs—heart disease, strokes, diabetes, cancer and chronic lung disease—cause three out of five deaths worldwide. NCDs are particularly devastating in developing countries, where they push millions of people into poverty each year. Eight of ten NCD deaths in 2008 were in low- and middle-income countries.

Millions of these deaths can be prevented. There are proven, cost-effective interventions to prevent NCDs and reduce their effects. Smoking prevention, promotion of healthy eating and physical activity and access to essential health care can substantially improve health and save lives.

New York City has developed many effective solutions for the prevention of NCDs. Many of these ideas could be adapted in other cities around the world. Several of these interventions have been low- or no-cost, or have even generated revenue. It is our hope that policymakers and public health agencies will find New York City's experiences useful as they develop their own programs to take action against NCDs and to protect and promote the health of their residents.

Sincerely,

A handwritten signature in black ink that reads "M. Chan". The signature is written in a cursive, flowing style.

Dr. Margaret Chan
Director-General
World Health Organization

Introduction

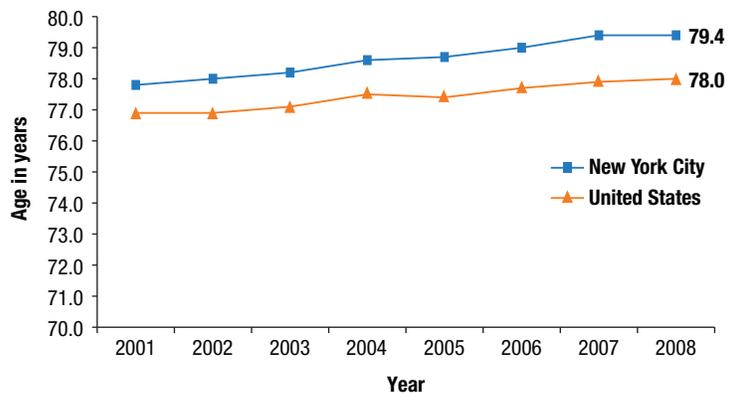
Non-communicable diseases and injuries are global health problems that need local solutions. New York City has a long history of leadership in public health. In previous centuries this work focused on prevention of communicable diseases. For example, in the 1800s New York City improved water quality and sanitation and in the 1900s produced its own vaccines to immunize its residents. In the last decade, New York City has greatly strengthened its efforts to prevent non-communicable diseases (such as heart disease, cancer, diabetes and lung disease) and injuries. The City did this by launching Take Care New York to focus work on the problems with the biggest impact on New Yorkers' health.

Just as New York City defeated communicable disease epidemics of the 19th century through environmental change, the City is addressing non-communicable diseases today by focusing on their underlying environmental causes, through actions such as requiring smoke-free workplaces, increasing access to healthy foods, building safer streets and creating infrastructure that supports physical activity. This report describes these successful efforts. Many of these interventions have cost city government very little, and some have actually generated government revenue. As such, these local efforts may serve as useful models for other cities as they also address these modern health problems.

New Yorkers Are Living Longer, Healthier Lives

- New Yorkers' life expectancy has increased faster and remains higher than that of Americans overall.
- By 2008, life expectancy had increased to 79.4 years of age for all New Yorkers—a gain of more than a year and a half since 2001.

Life Expectancy at Birth, New York City and United States, 2001–2008



Sources: New York City — NYC DOHMH, Bureau of Vital Statistics 2001-2009; U.S. — National Center for Health Statistics, "National Vital Statistics Reports," Vol. 58, No 19 and Vol. 59, No. 4.



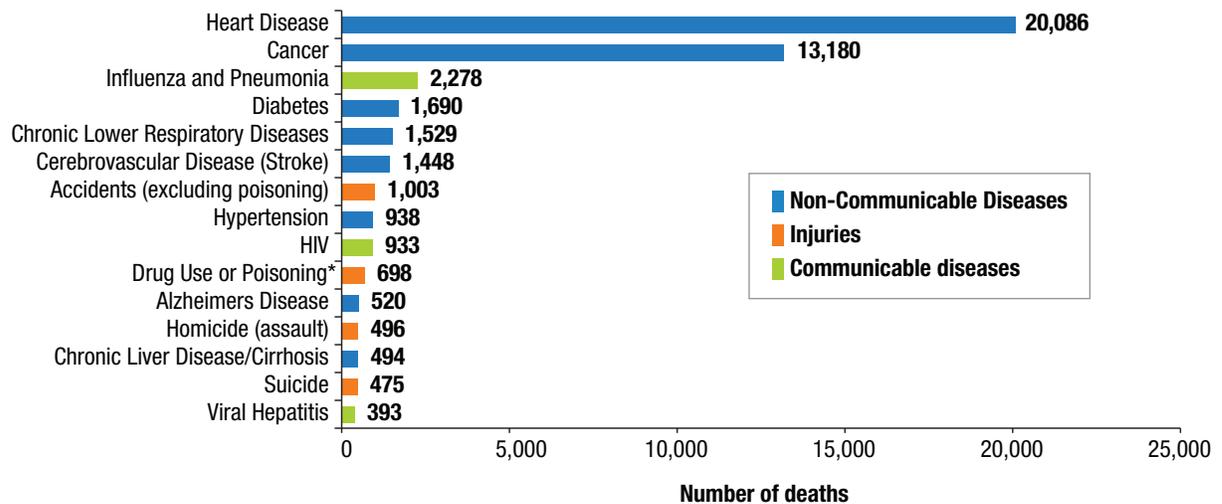
Many New Yorkers walk, rather than drive, as they go about their daily lives, and transportation developments like pedestrian islands increase their safety.

Photo: NYC Department of Transportation

Targeting the Leading Causes of Death

- The leading causes of death in New York City are heart disease and cancer. The most common forms of heart disease are ischemic heart disease (including heart attacks) and heart failure from high blood pressure, and the most common cancers are lung, colon and breast cancers.
- More than nine in 10 deaths in New York City are caused by non-communicable diseases or injuries (87% non-communicable diseases, 5% injuries).

Leading Causes of Death, New York City, 2009

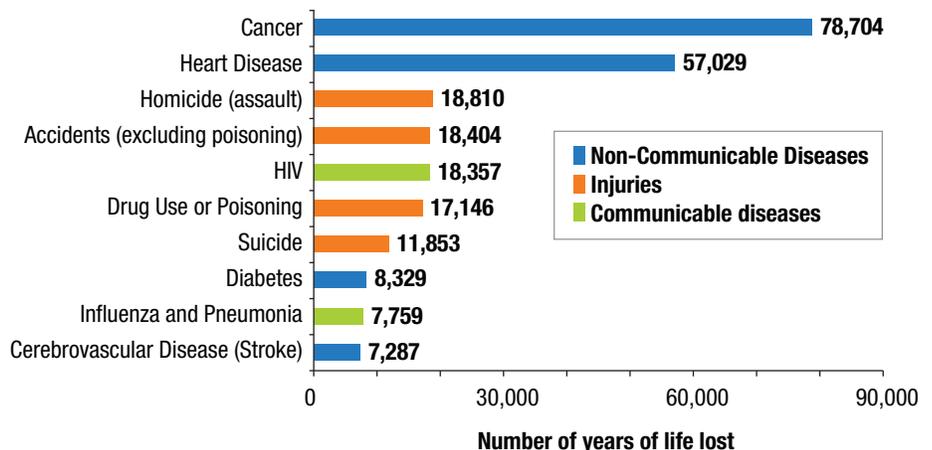


*More than 80% are injury deaths due to accidental drug poisoning (overdose). Remaining deaths are caused by the chronic effects of long-term drug use.

Source: NYC DOHMH Bureau of Vital Statistics 2009.

- People who die before 70 years of age can be thought of as dying early—or prematurely—resulting in years of life lost.
- Injuries often happen in younger people, so injury-related deaths tend to lead to many years of life lost. Four of the top seven causes of years of life lost in New York City are injury-related, resulting in more than 18,000 years of life lost each due to homicide and accidents, 17,000 to drug use or poisoning and nearly 12,000 to suicide in 2009.

Years of Life Lost Before Age 70 by Selected Causes of Death, New York City, 2009

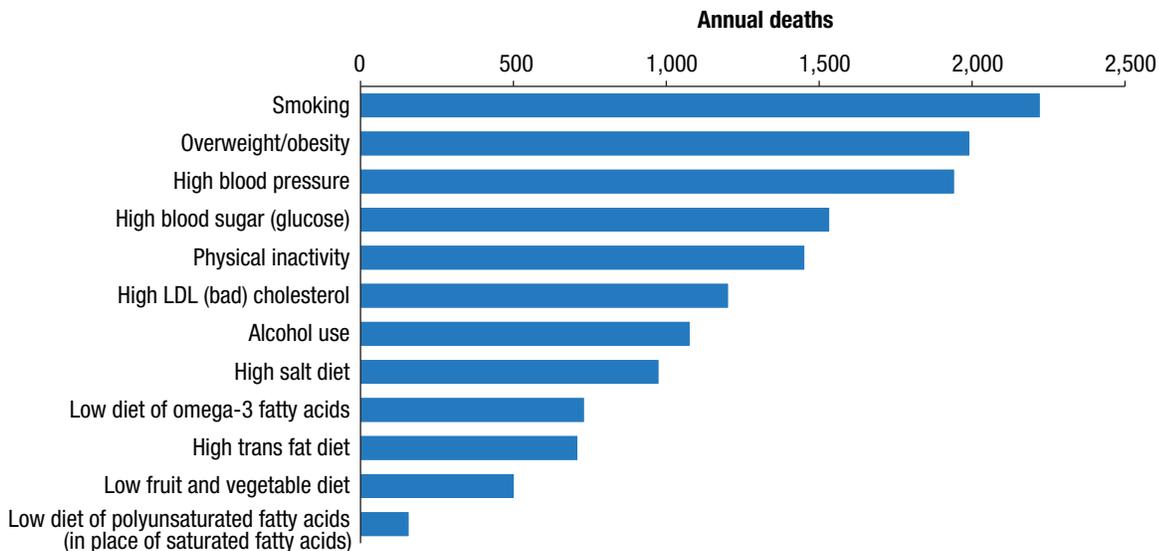


Source: NYC DOHMH Bureau of Vital Statistics 2009.

Reducing Risk

Certain behaviors like smoking, physical inactivity and unhealthy diet are particularly important contributors to poor health. The New York City Health Department estimated the number of premature deaths caused before 70 years of age by selected behaviors, like smoking or unhealthy diet, or by conditions caused by them, like obesity.

Premature, Preventable Deaths Attributable to Individual Risk Factors, New Yorkers Aged 30-69 Years, 2005-2007 Average



Deaths that could be prevented by reductions in more than one factor (such as quitting smoking and becoming more physically active) are counted for each relevant risk.
 Sources: NYC DOHMH Bureau of Vital Statistics 2005-2007, NYC Community Health Survey 2005-2007, NYC Health and Nutrition Examination Survey 2004, National Health and Nutrition Examination Survey 2003-2006, Continuing Survey of Food Intakes by Individuals 1989-1991.
 See Technical Notes for information on estimation methods.

- Despite the City’s successes, smoking remains a leading risk factor for preventable death in New York City, responsible for more than 7,000 deaths each year among New Yorkers 30 years of age and older and approximately 2,200 premature deaths.
- Overweight/obesity and physical inactivity are among the top risk factors for premature death citywide.
- In New York City, diets high in trans fat and salt are responsible for 700 and 1,000 premature deaths a year, respectively. If New Yorkers ate more fruits and vegetables, it could prevent 500 deaths a year.
- Environmental factors, such as air pollution, have also contributed to non-communicable disease deaths in New York City. Fine particulate air pollution from sources such as vehicle traffic and buildings burning high-sulfur heating oil is responsible for more than 3,000 deaths from heart and lung disease annually, contributing to 6.4% of deaths citywide.¹
- Premature death can be prevented by creating environments that support New Yorkers in making healthier choices, such as quitting smoking, eating better and exercising more. The Health Department’s initiatives to address non-communicable diseases have focused on these environmental changes.

Reducing Smoking Rates

Smoking is the leading cause of preventable, premature death in the United States and New York City. Smoking is responsible for about one in seven deaths overall in the city. In 2002, New York City launched an aggressive, comprehensive tobacco control program to protect people from second-hand smoke, discourage smoking and make it easier for smokers to quit.

- Virtually all workplaces in New York City, including restaurants and bars, have been smoke-free since 2003 because of the Smoke-Free Air Act. Compliance with the law has been very high—at or above 97%.
- Increases in excise taxes on cigarettes by New York City and New York State in 2002, 2008 and 2010 made New York City's cigarettes the most expensive in the nation. In 2011, cigarette packs cost on average \$11.20, approximately \$7 of which is taxes.
- From the time New York City's excise tax went into effect in July 2002 until June 2011, New York City and New York State excise taxes on cigarettes sold in New York City generated about \$4.4 billion in revenue.
- To reach smokers directly and shift New Yorkers' attitudes about smoking, the Health Department has developed and run anti-tobacco educational media campaigns, starting in 2006. Ads graphically depict the health consequences of smoking and feature testimonials from sick or dying smokers.
- Nearly all (92%) New York City smokers and recent quitters reported seeing at least one advertisement from the 2006 campaign. Of those who had seen an advertisement, more than half (57%) reported that it increased their motivation to quit.²
- Following initiation of the media campaigns, calls to 311, New York City's information line, for help quitting smoking increased almost four-fold, from about 11,000 to more than 40,000 annually.
- Since the start of the Health Department's tobacco control program, smoking among youth has decreased dramatically. Among public high school students (ages 14 to 18), smoking declined more than 50% between 2001 and 2009, from 18% to 8%.



**Dying from smoking is rarely quick...
and never painless.**

When smoking leads to emphysema,
you can suffer every minute of every day.

QUIT SMOKING TODAY.
For help, call 311 or search [nycquits](http://nycquits.com) on nyc.gov

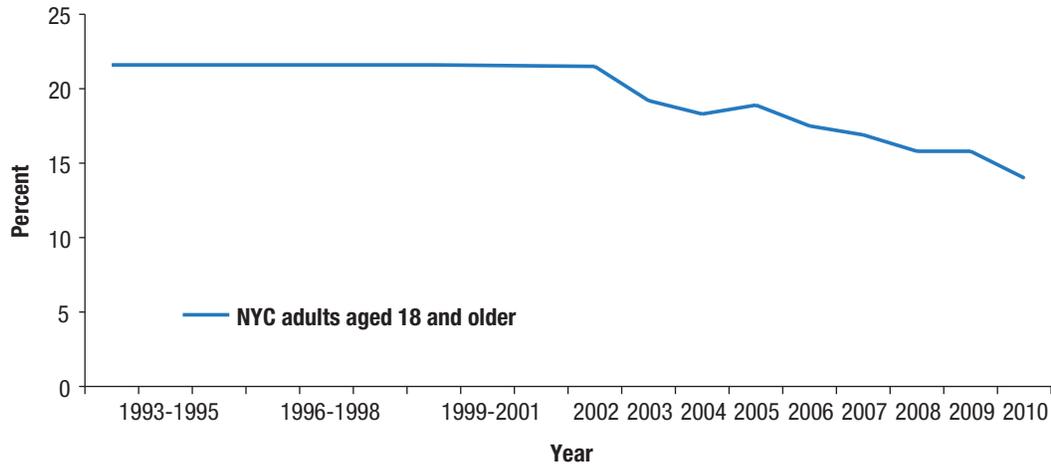
NYC
Health

Michael R. Bloomberg
Mayor
Thomas Farley, M.D., M.P.H.
Commissioner

This adaption is based in part on the Centers for Disease Control and Prevention's "Cigarette Smoking: Facts for New York State."

This bold campaign serves as a poignant reminder that smoking causes devastating health consequences, causing victims to suffer every minute of every day.

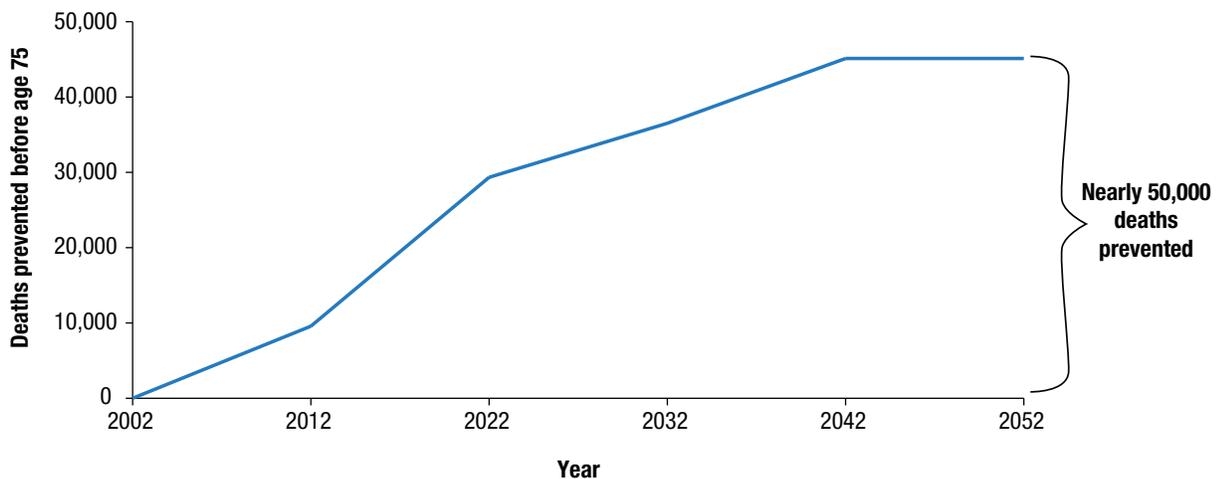
Adult Smoking in New York City, 1993–2010



Sources: U.S. Behavioral Risk Factor Surveillance System Survey Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 1993-2001: three-year averages presented. NYC Community Health Survey (CHS) 2002-2010. Data are age-adjusted to the U.S. 2000 standard population.

- Before 2002, the proportion of adult New Yorkers who smoked was about 22% for a decade. Between 2002 and 2010, smoking among adult New Yorkers dropped from 22% to 14%, resulting in more than 400,000 fewer adult smokers in New York City.
- The decline in smoking in recent years will prevent deaths from smoking-related disease for many years to come.
- The New York City Health Department estimates that nearly 50,000 adult New Yorkers who quit smoking as a result of tobacco control efforts from 2002-2010 will avoid a premature smoking-related death before age 75.

Estimated Cumulative Deaths Prevented Due to Decreased Smoking Between 2002 and 2010 in New York City



Sources: NYC Community Health Survey 2002, 2010; U.S. Census Intercensal Estimates Program, 2002. See Technical Notes for information on estimation methods.

Promoting Healthier Eating

Unhealthy diets contribute to many non-communicable diseases, including heart disease and diabetes. A diet that includes more fruits and vegetables, and less sodium and trans fat, can prevent many premature deaths.

Calorie Information in Restaurants

- Over the past several decades, Americans have been eating more away-from-home meals and snacks, which now account for approximately half of total food expenditures.³
- People often underestimate the number of calories in restaurant meals and other prepared foods. This can lead to excess calorie consumption and weight gain.
- In 2006, New York City became the first jurisdiction in the United States to require restaurant chains to post calorie information on menus and menu boards.
- After the regulation took effect in 2008, customers who used the calorie counts bought fewer calories: 15% of customers reported using the calorie information, and these customers purchased approximately 100 fewer calories at lunch than customers who did not see or use calorie information.⁴

Frappuccino® Blended Beverages			
Choose	– Milk: Whole, 2% or Nonfat, Choose Organic Soy Milk +60¢		
Your	– Coffee: Decaf, Extra Coffee +50¢; Espresso Shot +75¢		
	– Calories: No Whip, *Light – 1/3 Fewer Calories		
	<small>Tall 12 fl oz cal</small>	<small>Grande 16 fl oz cal</small>	<small>Venti 24 fl oz cal</small>
Coffee			
Mocha Coconut [®] <i>New</i>	4.45 320	4.95 410	5.45 550
Caramel [®]	4.25 300	4.95 410	5.45 510
Mocha [®]	4.25 280	4.95 400	5.45 500
Java Chip [®]	4.25 330	4.95 460	5.45 580
Coffee [®]	3.50 180	4.25 240	4.95 350
Caramel Light [®]	4.25 100	4.95 140	5.45 190
Mocha Light [®]	4.25 110	4.95 140	5.45 190
	<small>140 Calories in a Grande</small>		
	<small>Crème (Coffee-Free)</small>		
Coconut Crème <i>New</i>	4.45 260	4.95 350	5.45 450
Vanilla Bean	3.50 280	4.25 400	4.95 490
Strawberries & Crème	4.25 270	4.95 370	5.45 470
Double Chocolatey Chip	4.25 300	4.95 410	5.45 520

Calorie counts displayed on a menu board at Starbucks in New York City.

Restriction of Trans Fat in Food Service Establishments

Trans fat raises bad cholesterol, which increases the risk of heart disease. While small amounts of trans fat occur naturally in meat and dairy, most trans fat in foods is artificially produced through the partial hydrogenation of vegetable oils. These partially hydrogenated vegetable oils are used in processed foods because of their properties in cooking and in increasing product shelf life. Leading health organizations—including the American Heart Association, the National Academy of Sciences and the Institute of Medicine—recommend that people strictly limit their consumption of trans fat.

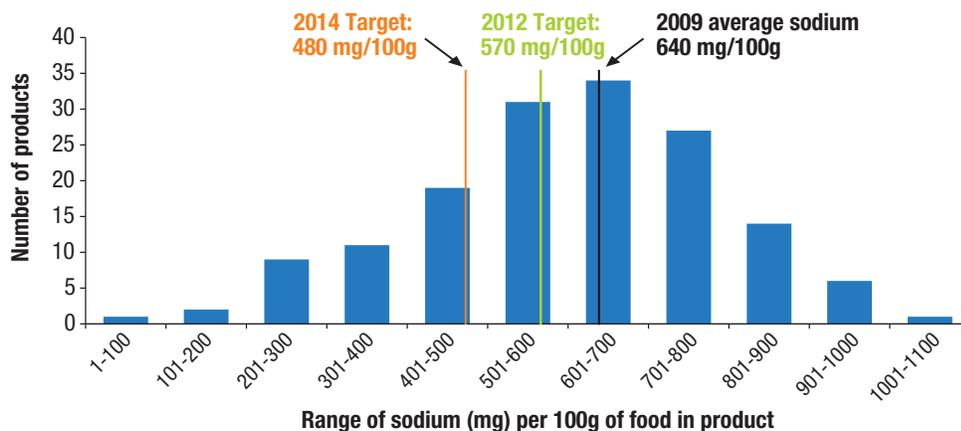
- In 2006, the New York City Board of Health restricted artificial trans fat in foods served in licensed food service establishments, such as restaurants, schools, cafeterias, caterers, senior centers and street-food vendors. As of July 1, 2008, all products used or served by food service establishments must contain less than 0.5 grams of trans fat per serving, if they contain partially hydrogenated vegetable oil. Foods served in the manufacturer's original, sealed packaging are exempt.
- As of March 2009, more than 93% of food service establishments in the city had achieved full compliance with the rule.
- This was the first legal restriction of artificial trans fat in the United States. Since New York City restricted trans fat, 16 cities and states have passed similar restrictions.
- The restaurant industry has followed suit, with more than 40 restaurant chains implementing similar reductions in artificial trans fat use across the nation.

National Salt Reduction Initiative

Most adults consume far too much sodium, or salt. Experts recommend that most adults consume no more than 1,500 mg of sodium per day, but average consumption in the United States is twice that amount. Reducing the amount of salt people eat will lead to lower blood pressure and subsequent lower risk for cardiovascular disease.⁵ A reduction of two grams of salt per day would prevent *per year* in the United States an estimated⁶:

- 29,000 – 63,000 deaths
- 36,000 – 68,000 heart attacks
- 22,000 – 45,000 strokes
- Nearly 80% of the sodium consumed by Americans comes from packaged and restaurant food, so individuals have little control over their sodium intake.
- The New York City Health Department-led National Salt Reduction Initiative (NSRI) aims to reduce Americans' salt intake by 20% over five years by reducing the sodium levels in packaged and restaurant foods by 25% during that time. More than 70 state and local health authorities and national health organizations, in partnership with the Department, are working with the food industry to achieve this goal.
- Modeled on a salt reduction campaign in the United Kingdom, the NSRI has set voluntary salt reduction targets for 62 packaged food categories and 25 restaurant food categories. Food categories group similar products (e.g., canned soup). Targets for 2012 and 2014 are based on the sales-weighted average sodium content of the products in each food category. This means that companies have flexibility to sell products with higher and lower sodium content, but the overall amount of sodium that people consume will be reduced if food companies all work to meet the NSRI targets.
- The chart below shows the number of products in each sodium content range for a sample food category. In this example in 2009, the average sodium for products in this category was 640mg/100g of food. The NSRI targets are 570mg/100g by 2012 and 480mg/100g by 2014. As companies lower sodium in their products to meet the NSRI targets, there will be more products in the lower sodium ranges, decreasing the average sodium level in each food category.

Example: Distribution of Products by Amount of Sodium in a Sample Food Category, 2009



Data presented here are for illustrative purposes only.

- So far, 28 manufacturers, supermarkets and restaurant chains have committed to NSRI targets. These include some of the world's largest food companies, including Kraft, Heinz, Unilever, Subway and Delhaize America (Food Lion, Hannaford). The NSRI continues to encourage commitments from companies in all sectors of the food industry.

Increasing Access to Fresh Fruits and Vegetables

Eating more fresh fruits and vegetables can reduce the risk of many diseases, such as heart disease, stroke and cancer.

- In New York City, mobile street vendors are a regular part of the streetscape, selling everything from pretzels to t-shirts. The City regulates this market and puts a cap on the number of vendors.
- To promote healthier eating, the City raised the cap on the number of vendors in 2008, but only for those who would sell fresh fruits and vegetables in neighborhoods with the lowest fruit and vegetable consumption and highest rates of diet-related diseases. The City also helps potential Green Cart vendors to obtain a license, a cart permit and a wholesale source of produce.
- Currently there are 459 carts with permits, readily accessible on the streets in many low-income neighborhoods.



Green Cart vendor selling fruits and vegetables on a New York City street.

Reducing Consumption of Sugar-Sweetened Beverages

- Sugar-sweetened beverages are a major contributor to the obesity epidemic in the United States. Americans consume 200 to 300 more calories per day than 30 years ago, with the largest increase due to sugar-sweetened beverages. Today, nearly half of the added sugar Americans consume comes from sugar-sweetened drinks.
- Consumption of sugary drinks is also linked to increased risk of diabetes and heart disease.^{7,8,9}
- To educate New Yorkers about the potentially serious health effects of consuming sugary drinks, the New York City Health Department launched an anti-sugar-sweetened beverage media campaign, including print, internet videos and television ads. The campaign showed how typical drinks are loaded with sugar, which the body converts to fat.
- Between 2007 and 2009, the percentage of adults who reported consuming at least one sugar-sweetened beverage per day in New York City declined from 36% to 32%, and the percent of teenagers drinking one or more sugar-sweetened sodas daily declined from 28% in 2005 to 22% in 2009.



This and similar images ran in New York City subway cars during February 2011. The print campaign corresponded with the New York City Health Department's first television ad targeting sugar-sweetened beverages.

New York City Food and Beverage Standards

New York City, through its schools, programs and contracts, serves approximately 260 million meals and snacks each year. The New York City Food Standards were created to improve the health of all New Yorkers served by City agencies. The standards promote better eating through requirements that limit the purchase of sugar-sweetened beverages, increase fruits and vegetables served and decrease the amount of sodium served in meals.

Food and Nutrition Standards

In 2008, New York City adopted food and nutrition standards for 11 City agencies that purchase or serve food to clients. These agencies operate facilities such as schools, senior centers, correctional facilities, child care centers and public hospitals.

Examples include:

- Lunches and dinners must contain a minimum of two servings of fruits and/or vegetables, and five servings of fruits and/or vegetables must be served per day, if serving three meals.
- Deep-fried foods are not allowed.
- Beverages must have fewer than 25 calories per 8 ounces except for 100% fruit juice and milk; milk must be nonfat or 1%.
- Meals must meet calorie, sodium, fiber and other nutrient standards.

Beverage Vending Machines

The standards for beverage vending machines were adopted in May 2009 and apply to City-contracted vending machines. The standards ensure that water and other low-calorie options are readily available. For example:

- High-calorie beverages like regular sodas (greater than 25 calories per 8 ounces) are restricted to two slots, must be placed the farthest from eye level, and can be no larger than 12 ounces in size.
- Machines must post calorie information for each product.
- Promotional material on machines is limited to low-calorie beverages.
- Standards for children are stricter. High-calorie beverages and beverages that contain artificial flavors, colors and sweeteners are prohibited in machines in locations that offer programming for children, including all public schools.



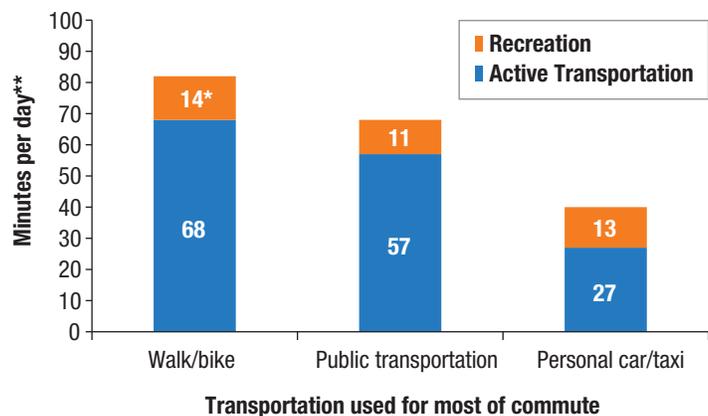
Beverage vending machine that complies with New York City standards.

Promoting Physical Activity

Physical activity not only helps prevent weight gain but also reduces the risk of high blood pressure, heart disease, stroke, diabetes, colon cancer, depression and osteoporosis. Increased physical activity could prevent an estimated 6,300 preventable deaths annually in New York City.¹⁰

- People are more likely to be physically active if they routinely use active transportation (for example, walking or biking to get to work or other places) rather than driving an automobile.
- On average, New Yorkers report that they do more than an hour of combined transportation and recreation physical activity each day. Active transportation makes up more than 50 minutes of activity, while less than 15 minutes of exercise come from recreational activities per day.
- Among adults who work outside the home, people who walk or bike to work report an average of more than an hour of active transportation time daily.
- New Yorkers who take public transportation for most of their commute get almost half an hour more daily combined transportation and recreation physical activity than those who use a personal car or taxi.
- Obesity in New York City has remained lower than in the US overall. In 2009, the prevalence of obesity in New York City was 23%,¹¹ compared with 27% nationally.¹² The reasons why New York City has lower obesity rates are not clear, but New Yorkers' reliance on active transportation may partly explain it.

Average Daily Transportation and Recreation Activity Reported by Those Who Work Outside the Home



*Due to small numbers, estimate should be interpreted with caution.
 **Minutes of at least moderate physical activity.
 Source: NYC Physical Activity and Transit Survey Wave 1, 2010.

Active Design

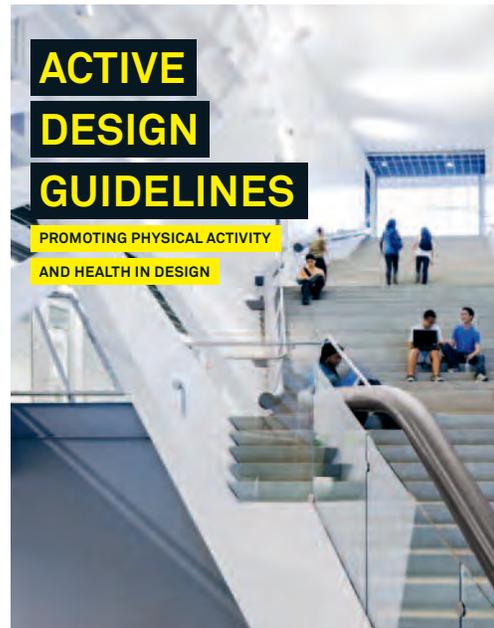
One way to increase physical activity is by designing neighborhoods and buildings to make active transportation and recreation appealing and easy.

- The New York City *Active Design Guidelines* (nyc.gov/adg) is a manual of evidence-based, best-practice strategies for increasing physical activity through the design and construction of neighborhoods, streets and buildings. Among the design features the *Guidelines* recommend are bicycle storage rooms in buildings, easier access to open stairways and locating workplaces and residences near parks and public transportation.



Pedestrian area on Broadway in Manhattan – buffering pedestrian areas from traffic can help increase walking.
 Photo: NYC Department of Transportation

- The *Guidelines* were developed by the New York City Departments of Design and Construction, Health and Mental Hygiene, Transportation, City Planning and Office of Management and Budget. Agencies worked with leading architectural and planning academics and the American Institute of Architects' New York Chapter.
- The City has distributed more than 12,000 copies in print and electronic format. Approximately one-fifth of downloads have been in New York City, and the remaining downloads are roughly split between the United States and more than 100 other countries.
- More than 1,200 architects and designers have been trained in use of the *Guidelines*.
- The recommendations are being incorporated into the City's contracting processes for construction, and some are recommended for incorporation into building codes and zoning amendments.



Active Design Guidelines
Photo: Iwan Baan

Promoting Bicycling

Walking and bicycling for transportation is a convenient way to increase physical activity. Building bicycle lanes and bicycle parking facilities can make it easier for people to bicycle.

- In June 2009, the New York City Department of Transportation completed the City's ambitious goal of building 200 bike-lane miles in all five boroughs in just three years, nearly doubling the citywide on-street bike network. The City also installed 4.9 miles of bike paths physically separated from car traffic lanes, 20 sheltered bike parking structures and 3,100 bicycle parking racks.



Shared-use paths encourage walking and bicycling, especially in areas with viewing attractions. Riverside Park, Manhattan.
Photo: NYC Department of Transportation

- In 2007, a New York City Council law required commercial and community parking lots to provide outdoor bicycle parking facilities. Laws passed in 2009 required secure bicycle parking in new, multifamily residential, commercial and community facility buildings and in existing parking garages and lots. Existing office buildings with freight elevators also had to allow tenants to bring bicycles into buildings.
- The New York City Department of Transportation conducts bicycle counts on selected roadways. These counts indicate that commuter cycling doubled from 2006 to 2010.
- Bicycle lanes in New York City have a good safety record. A New York City report on bicyclist injuries from 1996 to 2005 found that only one fatal crash with a motor vehicle occurred when a bicyclist was in a marked bicycle lane.¹³

Block Closures

Increased access to places for active play and recreation is associated with increased physical activity¹⁴ and decreased weight in children and youth.^{15,16,17,18}

- Playstreets are single blocks of streets that are closed to cars weekly to daily to increase children's active play space and promote physical activity. Community Playstreets are open in the summer, and school Playstreets during the school year.
- In surveys of parents from 2010's community Playstreets, the majority reported that their children would most likely have been indoors or watching television if the Playstreet had not been available.



Pedestrian plazas provide space for recreational activities.
Photo: NYC Department of Transportation

Promoting Exercise Groups

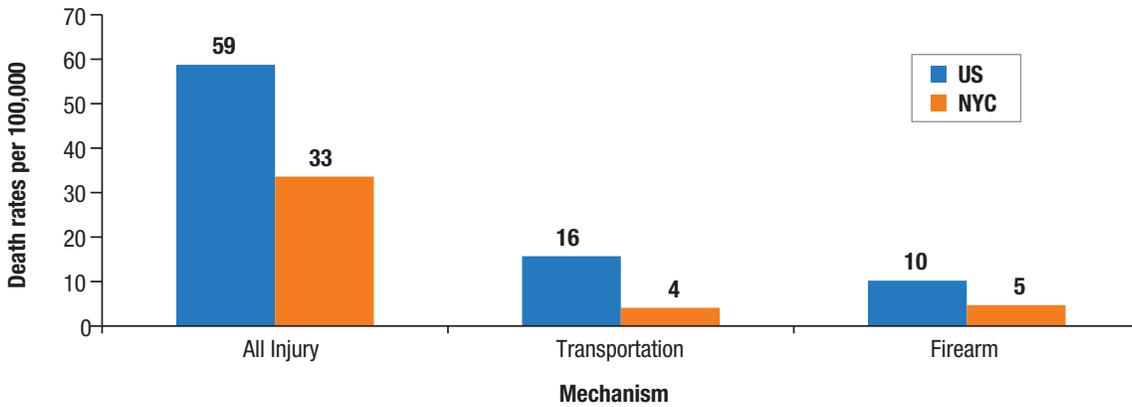
- In an effort to promote physical activity, the New York City Health Department, in conjunction with the Department of Parks and Recreation, created the BeFitNYC website. The BeFitNYC search engine lists nearly 1,000 free and low-cost fitness opportunities throughout New York City, such as lunchtime walking groups, after-work runs, or yoga meet-ups.
- New Yorkers can join a class in their neighborhood or organize their own fitness activity, using social networking media like Facebook to invite others to join.



Preventing Injuries

Injuries are major contributors to premature death in New York City. However, the city’s injury rates are much lower than those of the United States, mainly because of its far lower transportation and firearm death rates: the city’s transportation death rate is one fourth the U.S. rate (4 vs. 16 deaths per 100,000 people), and its firearm death rate is about half of the U.S. rate (5 vs. 10 per 100,000 people).

Death Rates by Type of Injury, United States and New York City

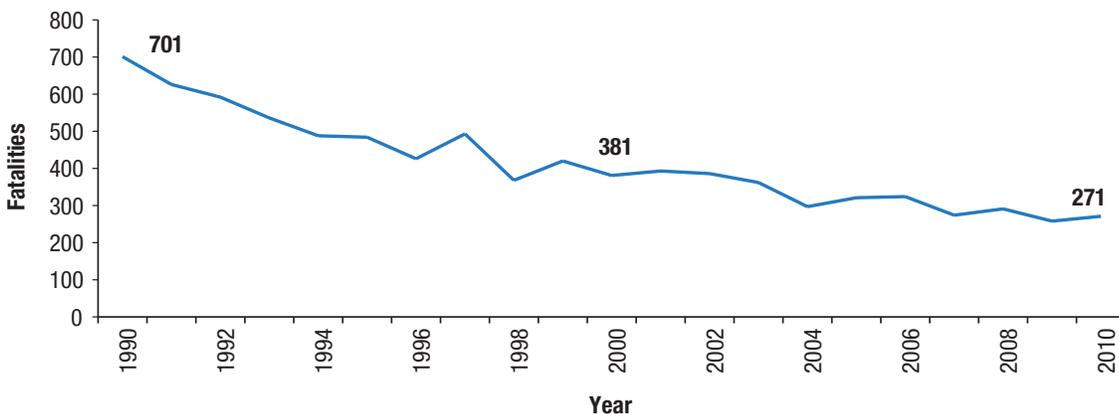


Sources: New York City – NYC DOHMH Bureau of Vital Statistics, 2007-2009, U.S. Census Bureau Population Estimate Program, 2007-2009; U.S. – National Center for Injury Prevention and Control, WISQARS, 2005-2007.

Transportation

- Widespread use of public transportation instead of personal automobiles is a likely reason for New York City’s low traffic death rates. More than half of workers regularly use public transportation to get to work. Nationally, for every 100 million miles traveled, passenger death rates on mass transit are 95% lower than passenger death rates in motor vehicles.¹⁹
- Traffic deaths have declined about 30% in New York City from 381 fatalities in 2000 to 271 in 2010. Decreases in pedestrian deaths, which make up the largest portion of traffic deaths in the city, have been a major contributor to the overall decline in traffic deaths.

Total New York City Traffic Deaths, 1990-2010



Source: NYC Department of Transportation Traffic Fatality Database.



Pedestrian islands shorten distances across major streets, making it safer to walk.
Photo: NYC Department of Transportation

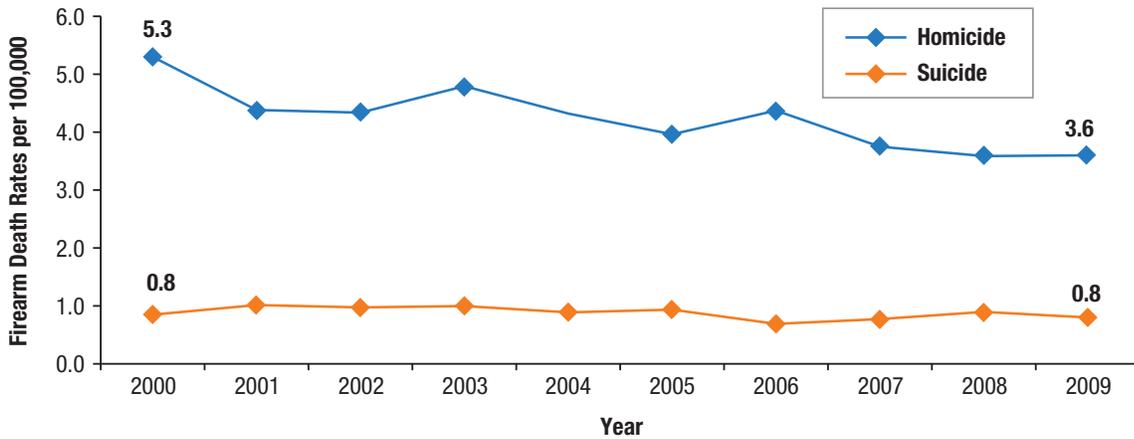
- New York City’s Department of Transportation regularly monitors roadway hot spots, where crashes are concentrated, and prioritizes those areas for road improvements. Engineering interventions, such as lane reconfigurations and sidewalk extensions, are important ways to further improve safety, especially along high-risk traffic corridors.

Firearm Injuries

- New York City has some of the strongest gun laws in the United States. New York City rigorously reviews applications for firearms permits, and state law carries one of the nation's highest penalties for illegal possession of handguns. In other parts of the country, places with weaker gun laws have higher homicide and suicide death rates.²⁰
- Since 2000, firearm-related homicides have declined 32%, from 5.3 deaths per 100,000 in 2000 to 3.6 deaths per 100,000 in 2009.
- New York City's firearm homicide rate for 2006–2007 was less than half the rate of cities in the 50 largest metropolitan areas in the United States (4.0 vs. 9.7 per 100,000).²¹

- Firearms are a small contributor to suicide in New York City, used in only 14% of suicides in 2009. The New York City firearm suicide rate is one sixth that of the United States (0.8 vs. 5.6 per 100,000), and according to recent CDC comparisons, it is one fifth that of cities in the 50 largest metropolitan areas (5.0 per 100,000).²¹

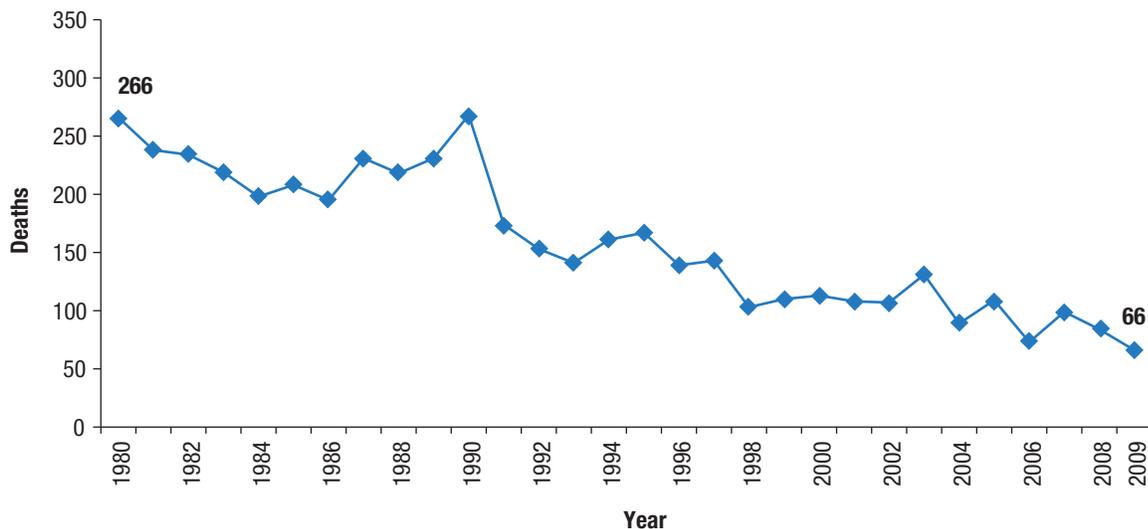
Firearm Death Rates, New York City, 2000-2009



Sources: New York City – NYC DOHMH Bureau of Vital Statistics, 2000 to 2009, analyzed by the Injury Surveillance and Prevention Program; U.S. Census Bureau Population Estimate Program, 2000 to 2009.

Fire Injuries

Fire Deaths, New York City, 1980-2009



Source: New York City DOHMH Bureau of Vital Statistics.

- In just under 30 years, fire-related deaths in New York City have decreased by more than half (266 fire related deaths in 1980 to 66 deaths in 2009). Many efforts have contributed to this decline, including improved fire codes for buildings, faster fire department response times to emergencies, and aggressive public outreach and education on fire prevention.

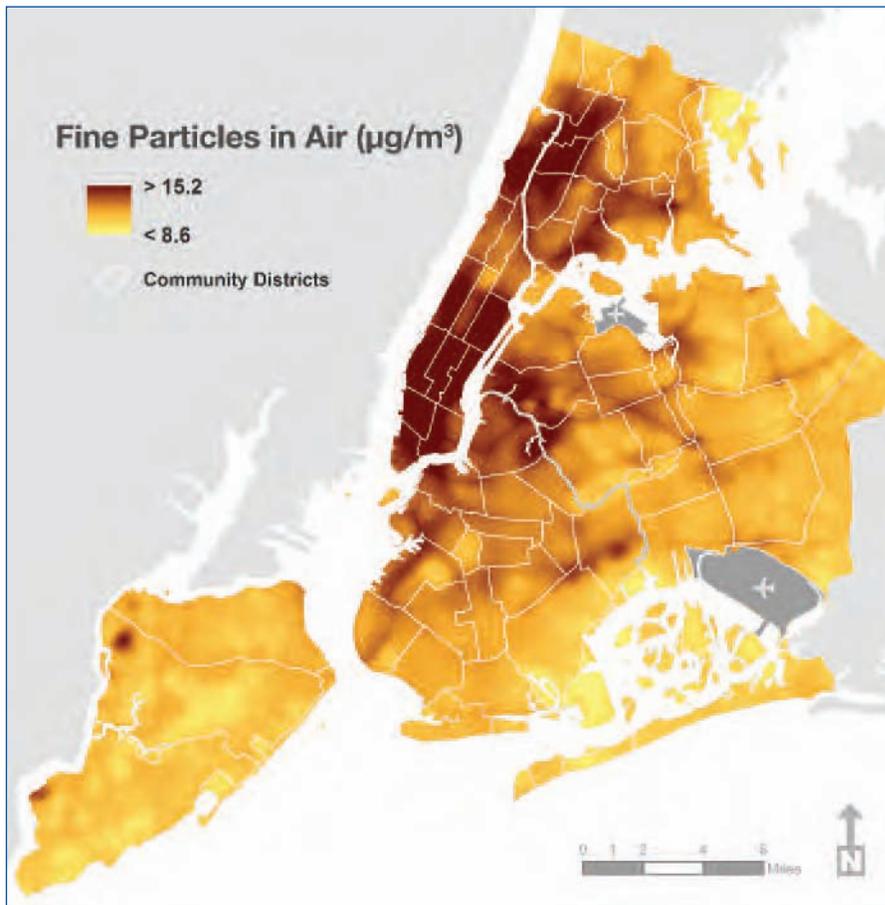
Improving Air Quality

Air pollution is a leading environmental threat to the health of most urban residents. Fuel combustion (from motor vehicles, industry, electric power generation, heating and cooking) is the source of urban air pollutants with the greatest impact on public health. Federal and state clean air regulations have reduced harmful pollutants across the United States. These lower concentrations still take a major toll on New York City residents, contributing to more than 3,000 deaths and 8,000 emergency visits and hospitalizations a year due to lung and heart conditions.

Measuring Air Quality

New York City's air quality is affected by sources outside and within the city. Sources in the city cause some neighborhoods to have much higher air pollution levels than others. To assess neighborhood air quality and identify important local sources, the New York City Health Department conducts the New York City Community Air Survey, measuring air pollutant levels at 100 street-level sites throughout the city.

Fine particles (PM_{2.5}) are small enough to be inhaled deep into the lungs. These particles contribute to heart and lung disease. New York City Community Air Survey monitoring has found that annual average fine particle levels are 30% higher in regions with higher density of boilers burning "residual fuel oil" and 22% higher at sites with higher traffic density.



Source: New York City Community Air Survey, NYC DOHMH.

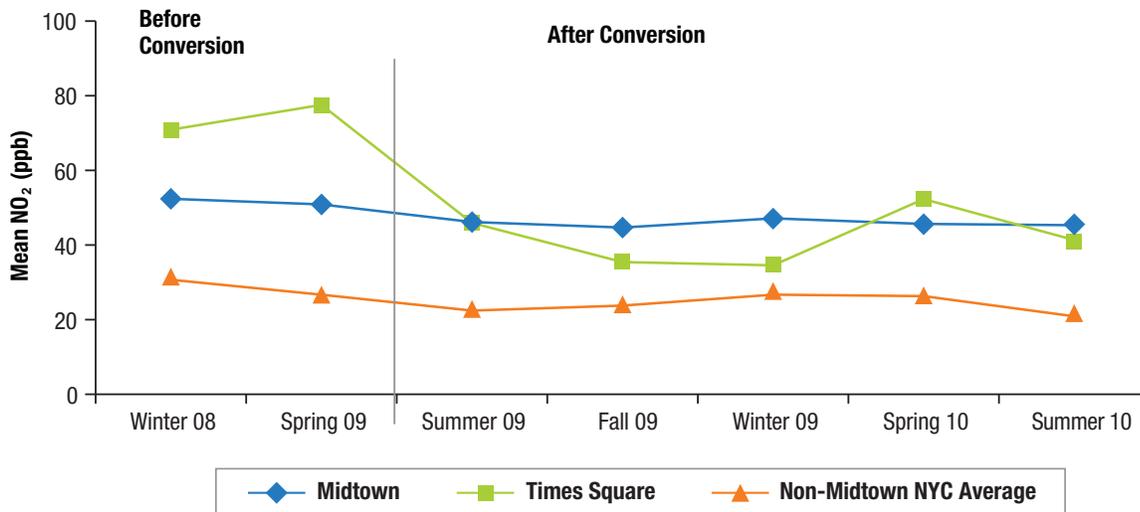
Reducing Air Pollution

- In 2010 the New York City Council enacted a Local Law that cut in half the maximum allowable sulfur content of No. 4 oil, one of the “dirtiest” fuel oils, to 1,500 ppm. That same year New York State enacted a bill lowering the maximum sulfur content of No. 2 home heating oil to 15 ppm, reducing sulfur levels by 99% in the most commonly used heating oil across the State.
- New York City fuel oil rules issued in January 2011 will require rapidly phasing out the use of the most heavily-polluting residual fuel oil (No. 6) by 2015 and all residual fuel oils by 2030.
- Together these rules could lower the overall concentration of fine particles in the city’s air by up to 5%, preventing an estimated 200 deaths, 100 hospitalizations and 300 emergency room visits each year for illnesses caused by air pollution.



Times Square pedestrian plaza in Manhattan.
Photo credit: NYC Department of Transportation

Nitrogen Dioxide Concentrations Before and After the Conversion to a Pedestrian Plaza at Times Square



Source: New York City Community Air Survey, NYC DOHMH.

- The best way to reduce exposure to traffic pollutants is to shift more travel from cars to public transit, walking and biking. Doing this requires investments in public transit, bicycle lanes and safe places for pedestrians to walk.
- In congested urban centers, reducing pedestrians’ proximity to heavy traffic can reduce their exposure to harmful pollutants. For example, the City’s creation of a car-free pedestrian plaza in Times Square in 2009 reduced levels of nitrogen dioxide in the plaza by more than 40%.

Improving the Quality of Preventive Medical Care



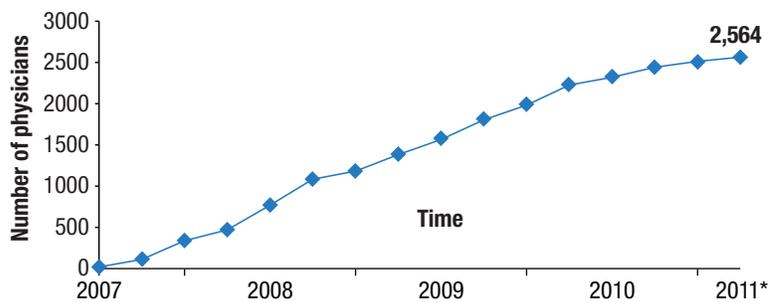
Physicians use electronic health records to identify gaps in preventive care.

Preventive medical care, such as advice to quit smoking and early detection and treatment of conditions including high blood pressure and colon cancer, can reduce illness and deaths. However, people in the United States receive these preventive health services at half the recommended rate.²² Strategic use of prevention-oriented electronic health records can improve delivery of preventive medical care.

- Automated reminders built into an electronic health record can alert providers that patients need specific preventive services.
- Patient registries allow providers to generate lists of patients who have gaps in care. Providers can then contact these patients to return for preventive services.

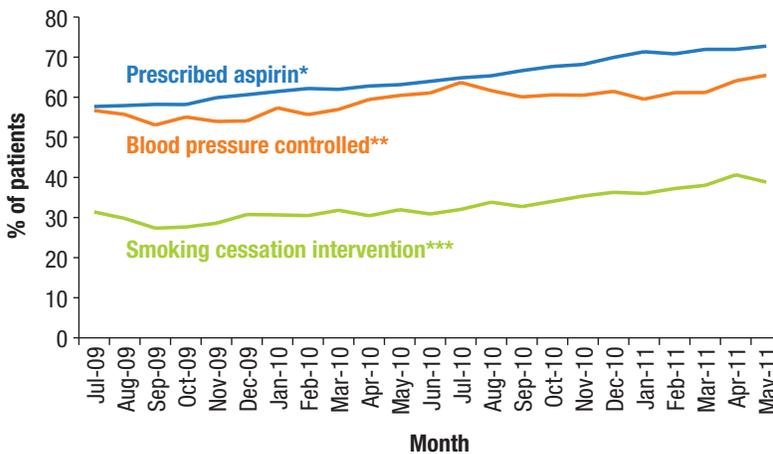
- The Primary Care Information Project has extended prevention-oriented electronic health records to more than 2,500 New York City primary care providers caring for more than two million patients, many in low-income neighborhoods.

Number of physicians using electronic health records with the Primary Care Information Project by quarter, New York City, 2007-2011



*through May 14
Source: NYC DOHMH Primary Care Information Project.

Improvements in the percent of patients receiving clinical preventive services in practices and community health centers using prevention-oriented electronic health records



*Among patients with vascular disease or diabetes
**Among patients with high blood pressure
***Among patients who currently smoke
Source: NYC DOHMH Primary Care Information Project.

- Data from the Primary Care Information Project show improvement in the delivery of clinical preventive services among participating providers. Providers using an electronic health record that prompts them to consider needed preventive services are increasing their rates of aspirin therapy for patients with vascular disease or diabetes, control of blood pressure for patients with hypertension, and smoking cessation interventions for patients who smoke.

Lessons Learned

For centuries, public health efforts throughout the world have made substantial progress in fighting communicable diseases. Today, non-communicable diseases and injuries have become leading global health problems. City governments can play an important role in preventing non-communicable diseases and injuries, just as they have in preventing communicable diseases.

The New York City Health Department has taken effective steps to reduce non-communicable diseases and injuries in New Yorkers. Several important factors contributed to this success:

- Approaches that change the physical and social environment have been more effective than efforts to change individual behaviors alone. Changing everyday settings into smoke-free spaces where it is easy to safely walk, bike and find healthy food makes it easier for individuals to make healthy choices.
- Effective interventions require support from the highest levels of government. Support from elected officials made it possible to pass smoking laws and tobacco tax increases, require calorie posting in chain restaurants, restrict use of artificial trans fat, and phase out air-polluting fuel oils.
- Cities can increase the impact of these policies by fostering interagency collaboration. Because all New York City agencies that purchase or serve food have adopted food and nutrition standards, millions of healthier meals and snacks are served in New York City each year.
- Some public health improvements can create positive health effects in more than one area. For example, bicycle lanes promote physical activity and decrease injury, and also improve air quality. Better air quality in turn prevents disease and promotes physical activity.
- Preventing non-communicable diseases is not necessarily costly. Policies such as the restriction on use of trans fat, the requirement for calorie posting in restaurants and the Smoke-Free Air Act cost virtually nothing in public funds to implement. Other initiatives, such as cigarette taxes, can generate revenue for governments to pay for prevention programs.

These ideas can be used in cities around the world.

New York City Global Partners, Inc. connects New York City with leading cities worldwide by encouraging cities to learn from one another's innovative solutions to common problems. For more information, visit nyc.gov/globalpartners.

Technical Notes

Life expectancy data: Life expectancy data for the United States are from the National Center for Health Statistics (NCHS), which used a revised methodology for the 2000–2006 calculations presented here, so data may differ slightly from those previously published. In addition, U.S. data for 2008 are preliminary.

Death rate analyses: All death rates presented or discussed were age-adjusted to the Year 2000 Standard Population.

Preventable, premature death analysis: Methods for estimating NYC premature deaths (30–69y) attributable to individual risk factors were reported in a national comparative risk assessment analysis by Danaei et al.,²³ except for NYC alcohol attributable deaths (20–64y; plus certain infant and injury deaths occurring <20y) estimated using Alcohol Related Disease Impacts (ARDI), and NYC smoking attributable deaths (35–64y) estimated using Smoking Attributable Mortality, Morbidity and Economic Costs (SAMMEC). The number of deaths should not be summed across individual risk factors because many diseases are caused by more than one risk factor and because the effects of some risk factors are partly mediated through other risks. Consequently some deaths appear more than once in the chart and could be prevented by intervening on one or more risk factors. For example, heart disease deaths can be prevented by reducing smoking or increasing physical activity, so the same death would be counted under both risk factors. The effect of high dietary sodium on cardiovascular disease deaths was estimated through its effect on systolic blood pressure.

Prevented deaths due to smoking decrease: Smoking prevalence estimates for 2002 and 2010 from the NYC Community Health Survey were applied to the 2002 NYC population (U.S. Census Intercensal estimates program, 2002). Age- and sex-specific mortality rates by smoking status²⁴ were used to estimate numbers of deaths, assuming a 10-year quit rate of 20%. The difference in deaths in the two scenarios was projected until age 75 or the year 2052. For more information, visit nyc.gov and search for CHS.

Physical activity analysis: The Physical Activity and Transit Survey was made possible by funding from the U.S. Department of Health and Human Services. Data are weighted to the NYC adult population per the American Community Survey (2006–2008) and are age-adjusted to the year 2000 Standard Population.

Injury death rate analyses: Injury deaths rates for the U.S. are generated by the Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS), 2005–2007. Injury deaths rates for NYC are computed by the Health Department's Injury Surveillance and Prevention Program using mortality data from the Office NYC DOHMH Bureau of Vital Statistics, 2007–2009. Population estimates were produced by the Department based on the U.S. Census Bureau Population Estimate Program and housing unit data obtained from the NYC Department of City Planning (DCP).

Air quality analysis: For more information, see The New York City Community Air Survey: Results from Year One Monitoring 2008–2009 (visit nyc.gov, search for Air Survey).

Endnotes

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