

REPORT TO THE MAYOR

for submission to
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MAYOR
CITY OF BOSTON

as prepared for
THE BOSTON PUBLIC HEALTH COMMISSION
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by
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THE HEALTH OF BOSTON 2001

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PREFACE

In 1995, the Legislature passed and the Governor signed legislation establishing the Boston Public Health Commission and requiring it to submit annual reports on various matters related to public health in the city of Boston:

Sect. 8. (b) ... the commission shall prepare and file with the mayor, the president of the city council and the city clerk an annual assessment of the public health needs of the city. The annual public health assessment shall include an evaluation of existing local, state and federal programs and services to address the public health needs of the city and the adequacy of funding sources available for such programs and services, an assessment of programs, services and other activities provided by private public health providers to address the public health needs of the city, including identification of all vulnerable populations in the city, the performance of providers under contract with the commission in accordance with this act, and proposals by the commission to enlarge or enhance its response to the public health needs of the city including new, expanded or revised programs or services to be provided by the commission or by public health providers under contract with it for the ensuing fiscal year.

The Health of Boston 2001 is the fifth in a series of annual reports in response to this legislation.

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THE HEALTH
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INTRODUCTION

As the city's health department, the Boston Public Health Commission (BPHC) is responsible for monitoring the health status of Boston residents. To fulfill this mandate, BPHC Research and Technology Services analyzes vital statistics, hospital discharges, the Behavioral Risk Factor Surveillance System and other surveys, and many other kinds of routinely collected health data. The Commission, under a number of different institutional names, has been reporting on the health status of Boston residents since its inception in 1799.

The Health of Boston is produced annually to provide the mayor, city administration, and public with an overview of the health status of Boston residents. It is intended to be used as a data resource and to help identify changes in health status, emerging health problems, and gaps in services. The data publications generated every year by the Commission fulfill one of the important goals of *Healthy People 2010*, to increase the proportion of the population that has access to public health information and surveillance data.

Public Health Work in Boston

The Boston Public Health Commission is committed to reducing morbidity and mortality and to improving the health of all Boston residents. The Commission's publications can be used to identify successes that can be built upon and areas of difficulty that need more attention. The Commission embraces the opportunity to work collaboratively with the community to improve the health of all of the city's residents.

Organization of This Report

Each edition of *The Health of Boston* differs in some respects from its predecessors. Every year this report highlights certain points of interest and updates readers on the annual surveillance of standard health indicators.

In this year's report, readers will find new data made available after the release of *The Health of Boston 2000* last summer and a look at trends from 1994 to 1999. The report's companion publication, *Access to Health Care*, gives information on Boston health indicators from the Behavioral Risk Factor Surveillance System survey and presents a special report on Boston's homeless population prepared by the Boston Health Care for the Homeless Program. The *Funding Streams Index* provides data from the Mayor's Health Line and other sources on health services access, and information from the Boston Public Health Commission, the state, and other funders of city health programs. Publications produced by the BPHC Research and Technology Services can be obtained by calling (617) 534-4757.

Data Issues

The most recent Boston data available from most sources is from 1999. However, the time span reported for the health indicators included in this report vary. Mortality and birth neighborhood data in this report are based on census tracts; data on hospitalization, lead poisoning, STDs, and HIV/AIDS are based on ZIP codes.

Rates are calculated using the Boston population as reported in the 1990 US census since the 2000 US census is only now beginning to be published. Rates provided by other sources may use different population

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bases. Data in this report are presented using numbers, percentages, and age-specific and age-adjusted rates. The Technical Notes provide details on these and related issues.

A Warning on Mortality Data

Because of changes made by international and national health organizations in the way data are collected and categorized, some mortality rates presented in this report cannot be compared to mortality rates presented in earlier reports, and 1999 mortality rates cannot be compared to rates from individual years 1994-1998. A brief summary of these issues follows. For more information, see the Technical Notes and Glossary.

Comparing Age-Adjusted Mortality Rates in this Report to Rates in Reports from Previous Years

In most cases, age-adjusted mortality rates for the years presented in this report, 1994-1999, cannot be compared to age-adjusted mortality rates in earlier editions of the Health of Boston and in presentations and reports published by the Boston Public Health Commission prior to the publication of the *Health of Boston 2001*. This circumstance is due to:

- revision of the International Classification of Disease Manual used for classifying causes of death
- adoption of a new population standard used in calculating age-adjusted mortality rates

Relevant charts are marked with the following box:

NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

See Technical Notes and the Glossary for further discussion.

Comparing Age-Adjusted Mortality Rates in this Report

In this report, most mortality charts include age-adjusted mortality data for the individual years 1994-1998, and data for 1999 presented as a single point. Although all age-adjusted mortality rates in this report were calculated based on the new population standard, an age-adjusted mortality rate for 1999 cannot be compared to other age-adjusted mortality rates within the same chart. This is because of the revision to the International Classification of Disease Manual, which became effective with 1999 mortality data. Appropriate charts are marked with the box shown above.

See Technical Notes and the Glossary for further discussion.

Comparability Ratios and Comparability Modified Rates

In a table on page 37 presenting overall Boston age-adjusted mortality rates, preliminary *comparability ratios* developed by the National Center for Health Statistics enable the comparison of overall Boston mortality rates for 1994 to rates for 1999. This chart is marked with the following box:

NOTE: The mortality rates for 1999 presented in this chart can be compared to the age-adjusted mortality rates for 1994 presented in this chart, since a preliminary comparability ratio has been applied to the data. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

For further information, see Technical Notes and the Glossary.

Race and Ethnicity

There are limitations associated with race and ethnicity data. National, state, and local health data sources usually make available data for only a few large racial and ethnic groups, and the classifications they use are not always consistent with other sources; caution should be used in comparing racial and ethnic data from different sources. The categories used in *The Health of Boston 2001* are non-Hispanic White (“White”), non-Hispanic Black (“Black”), Asian/Pacific Islander (“Asian”), and Hispanic (“Hispanic”). All data used in this report except those taken from death certificates are self-reported. When population data are needed to calculate age-specific rates and age-adjusted rates, the Modified Age-Race-Sex file for Boston census tracts is used in order to enable counting Hispanics as a distinct group, separate from Whites, Blacks, and Asian/Pacific Islanders.

In considering the racial and ethnic designations used in this report for Boston-specific data, several things should be kept in mind: (1) The concept of race has different meanings in different cultures. (2) Race is not a biological, but rather a social construction. (3) The meanings of racial designations—White, Black, Asian/Pacific Islander—are subject to historical, cultural, and political forces. (4) Finally, racial designations can be notably inaccurate in describing what they are called upon to describe. The term Black, for example, includes a variety of people who would describe themselves as African American, African, Caribbean, or Haitian.

In the charts which present data by race and ethnicity or in the text which discusses health problems among racial and ethnic populations, it should be kept in mind that, as the CDC has said, “race and ethnicity are not risk factors [for disease]—they are markers used to better understand risk factors.” Race is often a proxy for such factors as socioeconomic status, inadequate access to health care, and racial discrimination. Information on race and ethnicity is included in this report because it can assist public health efforts to recognize disparities between groups for a variety of health outcomes.

In Demographics, there is some additional Hispanic population data from the 2000 census. The race and Hispanic/Latino categories in that chapter are different from the categories used in the remainder of the report and should not be confused with population data used to calculate rates.

See further information on race and the most recent census in Demographics.

Racial Designations and the 2000 Census

The racial designations, or categories, used in the 2000 census differ from the designations used in the 1990 census and in the census documents based on it, like the 1990 Modified Age-Race-Sex File for Boston census tracts. For a discussion of this issue and its effect on this report, see Demographics, the Technical Notes and the Glossary.

SUMMARY OF CAUTIONS

1. The population numbers in Demographics come from the 2000 census.
2. Population figures used elsewhere in the report to calculate rates come from the 1990 Modified Age-Race-Sex File for Boston Census Tracts, drawn from the 1990 census.
3. Racial and ethnic designations used in Demographics are drawn from the 2000 census and are different from designations used in the rest of the report, which come from the 1990 census and which are used for the calculation of rates.
4. The standard population 2000 is not the same as population numbers from the 2000 census.
5. None of the age-adjusted mortality rates presented in this report can be compared to any age-adjusted mortality rates presented in earlier editions of the Health of Boston and the other reports and presentations prepared by the Boston Public Health Commission, and age-adjusted mortality rates for 1999 presented in this report cannot be compared to age-adjusted mortality rates for individual years 1994-1998 presented in this report. The sole exception to this is the chart on page 37, marked by a box.

DEMOGRAPHICS

Introduction

The national census, taken every ten years by the federal government, endeavors to count every person living in the United States and to collect detailed information from a sample of the population about their household composition, occupation, income, and other characteristics. The last census was conducted on April 1, 2000. Most of the information for Boston from the 2000 census will not be available by the time this report is printed. Total population counts for 2000 from the redistricting data (data designed to be used in the redistricting of congressional districts) are currently available and presented below. Data currently available do not provide the full details on age or sex distribution of the population. Therefore, the 1990 census must remain the source of population data used as the denominator in rates calculated in this report.

New data from census 2000 is being released daily, although not all releases include Boston-specific data. Selected socioeconomic data are planned for release starting March-May 2002, but most of this type of data is not planned for release until sometime during June-September 2002. Individuals or organizations who wish to monitor availability of 2000 census data can find information through the Census Bureau's Website at <http://www.census.gov/>. The American Fact Finder is a tool the Census Bureau has created as a means to distribute year 2000 census data. This tool can be accessed on the Internet at <http://factfinder.census.gov/servlet/BasicFactsServlet>.

Description of Boston's Population

Detailed census information on Boston's population has been presented in BPHC reports since the 1990 census was first made available. The 2000 census data show that there were 589,141 residents of the city in 2000. One of the most important changes in census 2000 was that for the first time people were given the opportunity to identify themselves by more than one race. Racial categories were also modified somewhat. In 2000 in Boston, 82.5% identified themselves as non-Hispanic, and 14.4% identified themselves as being Hispanic/Latino (of any race), while an additional 3.1% identified themselves as non-Hispanic and two or more races. The largest group (49.5%) were White non-Hispanic and reporting one race, 23.4% were Black or African American (one race), and 7.5% were Asian (one race). In addition, 0.3% were Native American/American Indian and Alaska Native (one race), less than 0.05% reported Native Hawaiian and Other Pacific Islander (one race), and 1.4% identified themselves as belonging to the category Some Other Race, non-Hispanic (one race). Since the way the data were collected and the categories are new, determining percentage changes in the racial distribution between 1990 and 2000 is not appropriate, according to the Census Bureau.

The Census 2000 and Changing Concepts of Race

There were two important changes in the census 2000. The first was that, for the first time, people were given the opportunity to identify themselves by more than one race. With this new way of asking the question, the US Census was able to provide information on the number of people who said they were of two or more races. This change reflects a growing understanding that the categories of race are not separate and genetically distinct groups of people, but are instead changeable approximations, formed by history and geography and other social factors, and that many persons can find a variety of "races" in their backgrounds.

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The second major change was that racial categories and the wording of the question were modified. For example, the census added "Latino" to the question about Spanish or Hispanic origin. They also added the term "African American" to the "Black or Negro" category, and "Native Hawaiian or other Pacific Islander" was taken out of the "Asian" category. Since the way the data were collected and since the categories are new, the Census Bureau does not recommend comparing the population by race in 1990 with the population by race in 2000.

At this time, when looking at the charts in this report, the reader should remember that in 1990, US residents could check off only one race, while in 2000, US residents could check off more than one race. Details on population with information on age, sex, race and Hispanic ethnicity in neighborhoods are not yet available, but will be reported as soon as the BPHC receives them. Selected socioeconomic data are planned for release starting March-May 2002, but more of this type of data is not planned for release until sometime between June and September 2002.

Population statistics presented in Demographics are drawn from the 2000 census, and population information used in the calculation of age-adjusted mortality rates in the rest of the report is drawn from the 1990 Modified Age-Race-Sex File for Boston census tracts.

Demographic Data, Boston, 2000

	BOSTON	
	number	% of total population
Population		
<i>Population by Hispanic/Latino Origin, 2000</i>		
Hispanic/Latino, Any Race	85,089	14.4
Non-Hispanic	504,052	85.6
Non-Hispanic, One Race Only	485,878	82.5
Non-Hispanic, Two or More Races	18,174	3.1
<i>Population by Race (Non-Hispanic Only), 2000</i>		
One Race Only	485,878	82.5
White	291,561	49.5
Black or African American	140,305	23.8
Asian	44,009	7.5
Hawaiian or Other Pacific Islander	271	0.0
American Indian and Alaska Native	1,517	0.3
Some Other Race	8,215	1.4
Two or More Races	18,174	3.1

DATA SOURCE: US Department of Commerce, Bureau of the Census, American Fact Finder, Census 2000.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

Demographic Data, Boston, 1990

	BOSTON	
	number	% of total population
Population		
<i>Population by Hispanic/Latino Origin, 1990</i>		
Hispanic/Latino, Any Race	61,963	10.8
Non-Hispanic	512,320	89.2
<i>Population by Race (Non-Hispanic Only)</i>		
White	341,142	59.4
Black	139,692	24.3
Asian or Pacific Islander	29,939	5.2
American Indian, Eskimo, or Aleut	1,547	0.3

DATA SOURCE: US Department of Commerce Bureau of the Census, American Fact Finder, Census 2000.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

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Trends

Communities often change greatly over the course of a decade, but because the census occurs only once every ten years, trends between censuses cannot be examined using census data. Two ways this problem is addressed are (a) through the use of population estimates and, (b) by demographic projections based on multiple sources of data, such as trends in historic census data, tax filings, birth data, immigration records, and motor vehicle registrations, which permit population estimates to be made for the years between censuses. Many city agencies, including the Boston Public Health Commission, use population surveys and extrapolations only for limited purposes because of the risk of significant distortions when small numbers are involved (such as in Boston neighborhoods).

In the early decades from 1960 to 1980, it appeared that Boston was experiencing a steady annual population decline of between 8.1% and 12.2% over the twenty-year period. Since then, the city's population has grown slowly. This type of unanticipated change may account for discrepancies in population estimates made by different agencies between censuses because they utilize historic census data in developing some of their assumptions. In Boston, there was an increase by 14,318 new residents in 2000 (2.5% increase), compared with the 1990 resident population of 574,283 people. This change varies considerably across neighborhoods. Boston's resident population grew most in East Boston (16.6% increase), the Fenway (9.1% increase), the South End (8.3% increase) and North Dorchester (7.6% increase). During the same period, other neighborhoods lost population, including an 8.0% decline in Jamaica Plain, 6.5% decline in Roxbury, and a 4.2% decline in West Roxbury.

Boston Population Trends, 1960-2000

<i>Year</i>	<i>Population</i>	<i>Difference</i>	<i>Pct Change</i>
1960	697,197		
1970	641,071	-56,126	-8.1
1980	562,994	-78,077	-12.2
1990	574,823	11,829	2.1
2000	589,141	14,318	2.5

DATA SOURCE: US Department of Commerce, Bureau of the Census.

DATA ANALYSIS: Boston Redevelopment Authority.

Boston Population: 1990 and 2000

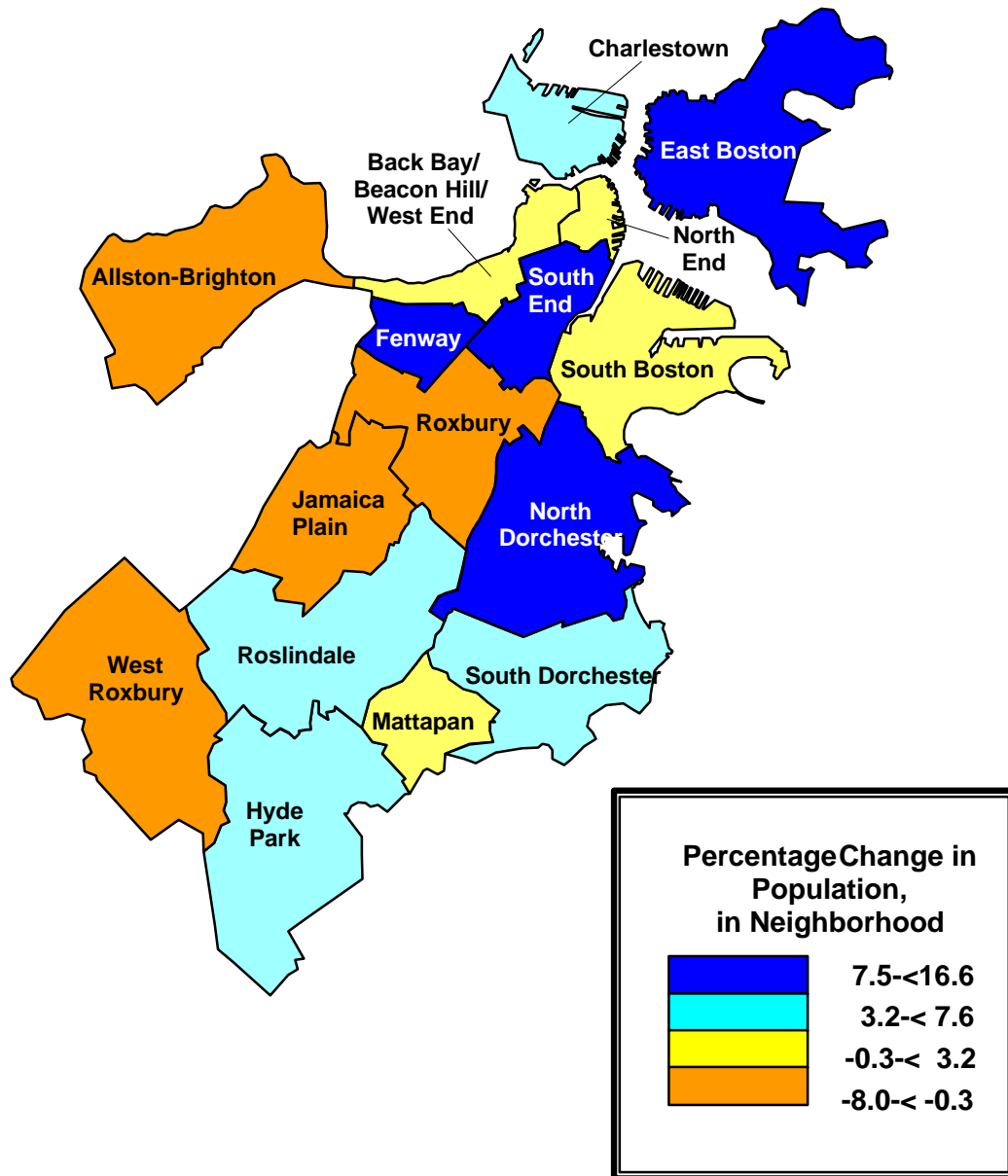
Neighborhood	Total Population, 1990	Total Population, 2000	Pct Change, 1990-2000
Allston-Brighton	70,284	69,648	-0.9
Back Bay/Beacon Hill/West End	35,690	36,235	1.5
Charlestown	14,718	15,195	3.2
East Boston	32,941	38,413	16.6
Fenway	27,333	29,823	9.1
Hyde Park	32,644	34,420	5.4
Jamaica Plain	32,032	29,482	-8.0
Mattapan	19,585	19,724	0.7
North Dorchester	77,348	83,212	7.6
North End	12,152	12,114	-0.3
Roslindale	33,185	35,047	5.6
Roxbury	53,828	50,349	-6.5
South Boston	29,433	29,938	1.7
South End	30,926	33,502	8.3
South Dorchester	43,663	45,291	3.7
West Roxbury	27,239	26,108	-4.2
TOTAL	574,283	589,141	2.6

NOTE: Neighborhoods as defined in the Health of Boston 2000 (may not match BRA Planning Areas or "neighborhoods" as defined in the media). The total for Boston includes also Harbor Islands and homeless populations counted by the census.

DATA SOURCE: US Department of Commerce, Bureau of the Census, American Fact Finder, Census 2000.

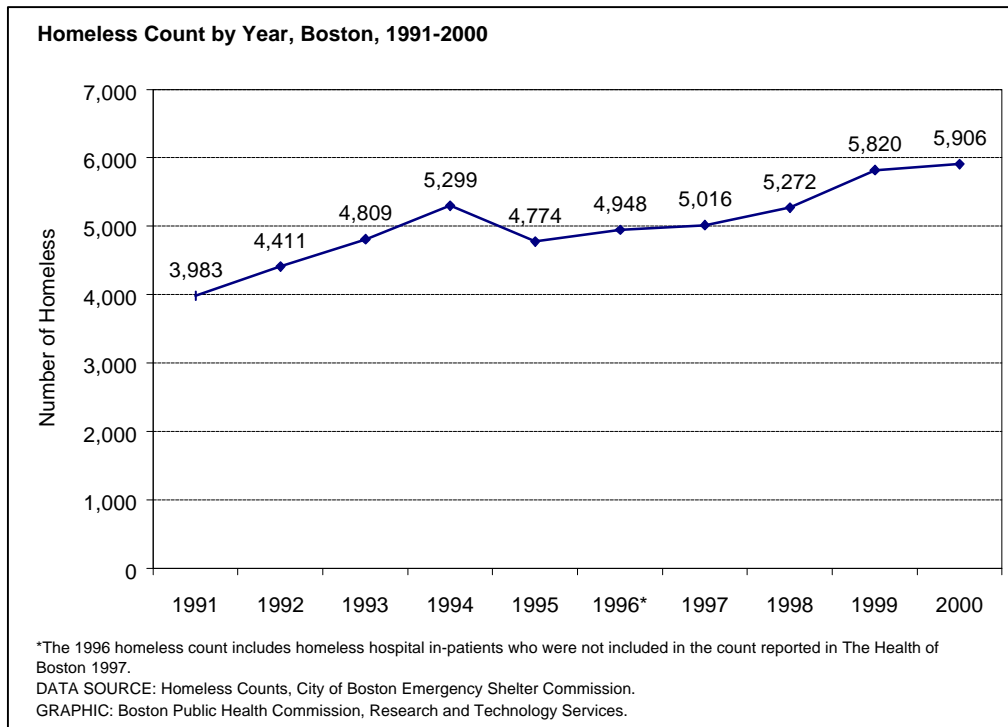
CALCULATIONS: Boston Public Health Commission, Research and Technology Services.

Change in Boston's Population By Neighborhood, 1990-2000



DATA SOURCE: US Department of Commerce, Bureau of the Census, American Fact Finder, Census 2000 Redistricting Data.

CALCULATIONS AND MAP PREPARATION:
Boston Public Health Commission, Research and Technology Services.



- Homeless people in Boston are counted in a citywide census in December every year by the City Emergency Shelter Commission.
- There were 5,906 homeless people residing either in shelters or on the street on the night of December 11, 2000.
- In the ten-year period 1991-2000, the number of people who were homeless increased 48.3%.
- The only time this number declined was in 1995, when it fell approximately ten percent.

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HEALTHY LIFESTYLE MEASURES (HEALTH PROMOTION)

Introduction

People’s risk of suffering many kinds of health problems is influenced by lifestyle factors such as diet, exercise, smoking, alcohol consumption and other substance use, and knowledge about health and health care. Combined with societal issues such as inadequate health insurance, low educational attainment, and poverty, these factors are often potent predictors of health status.

Tobacco use and lack of physical activity are major risk factors for both heart disease and several types of cancer. Nearly all skin cancer could be prevented with adequate protection from the sun. Various types of substance use are linked to a range of health conditions such as cirrhosis of the liver, hepatitis, and HIV transmission. Adequate early control of high cholesterol levels could substantially reduce later heart disease. Careful monitoring of blood sugar levels at home and by primary care providers would eliminate major causes of blindness and lower limb amputations among people with diabetes. These few examples illustrate some of the many links that exist between behavior (smoking, exercise, sun exposure, diet, substance abuse), access to, and quality of, health services, and health conditions that affect many people each year.

In the following section, findings from the Behavioral Risk Factor Surveillance Survey (BRFSS) and the Youth Risk Behavior Survey (YRBS), which further examine lifestyle and health care access issues, are presented. The BRFSS is a telephone survey conducted every year among Boston residents 18 years of age and older, and the YRBS obtains similar information about Boston high school students every other year. Findings from both of these surveys are presented by age, sex, race/ethnicity, and socioeconomic status.

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Five or More Servings of Fruit/Vegetables a Day (Adults)

Indicator	Percentage of Boston Residents
Ate Five or More Servings of Fruits/Vegetables a Day, 1994, 1996, and 1998*	26.2%
Male	22.1%
Female	29.9%
White	25.6%
Black	31.4%
Hispanic	22.5%
Asian	21.5%
Ages 18-24	20.1%
Ages 25-44	25.6%
Ages 45-64	30.8%
Ages 65+	31.7%
*Question not asked in 1999 Boston BRFSS	
NOTE: All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1994, 1996, and 1998, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Approximately one-fourth of adult Boston residents state that they eat five or more servings of fruits and vegetables a day, about the same as United States residents overall.
- More women than men are likely to eat five or more servings of fruits and vegetables a day.
- Blacks are more likely to eat five or more servings of fruits and vegetables a day than Whites, Hispanics, and Asians.
- The percentage of adult Boston residents eating five or more servings of fruits and vegetables a day increases with age, with the highest percentage for age groups 45-64 and 65 and over.

Fruit or Juice Within the Past 7 Days (High School Students)

Indicator	Percentage of Boston Residents
Ate Fruit or Drank Juice Within the Past 7 Days (High School Students), 1999	86.7%
Male	86.9%
Female	86.5%
White	87.1%
Black	85.1%
Hispanic	87.8%
Asian	89.8%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System (YRBSS), 1999, Boston Public School System and Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Almost ninety percent of Boston high school students reported eating fruit or drinking fruit juice within the past seven days.
- Male and female adolescents are equally likely to have eaten fruit or to have drunk fruit juice within the past seven days.
- A high percentage of students across all four racial and ethnic groups ate fruit or drank fruit juice within the past seven days.

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Vegetables Within the Past 7 Days (High School Students)

Indicator	Percentage of Boston Residents
Ate Vegetables Within the Past 7 Days (High School Students), 1999	79.4%
Male	78.1%
Female	80.7%
White	85.8%
Black	79.1%
Hispanic	68.2%
Asian	87.0%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System (YRBSS), 1999, Boston Public School System and Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- In 1999 almost eighty percent of Boston high school students reported that they ate vegetables within the past seven days.
- Slightly more female than male adolescents said they ate vegetables within the past seven days.
- More Asian and White than Black and Hispanic adolescents ate vegetables within the past seven days.

Regular Physical Activity (Adults)

Indicator	Percentage of Boston Residents
Regular Physical Activity*, 1994, 1996, 1998 (Either vigorous activity for 20 minutes per session, 3 or more days per week, or activity for 30 minutes per day, 5 or more days per week)	31.4%
Male	33.2%
Female	29.8%
White	34.1%
Black	32.8%
Hispanic	15.1%
Asian	33.2%
Ages 18-24	28.9%
Ages 25-44	31.7%
Ages 45-64	35.8%
Ages 65+	27.0%
*Question not asked in 1999 Boston BRFSS	
NOTE: All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Nearly a third of adult Boston residents engage in regular physical activity.
- More men than women report regular physical activity.
- Boston Hispanics are less likely to participate in regular physical activity than members of other racial and ethnic groups.
- Across age groups, Boston residents ages 45-64 are more likely to have regular physical activity than other age groups. The age groups least likely to have regular physical activity are ages 65 and over and ages 18-24.

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Moderate Physical Activity (High School Students)

Indicator	Percentage of Boston Residents
Participated in Moderate Physical Activity (High School Students), 1999	18.8%
Male	26.7%
Female	16.2%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System (YRBSS), 1999, Boston Public School System and Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Moderate activities are activities that do not cause sweating or hard breathing for approximately 30 minutes on 5 of the 7 days preceding. Almost a fifth of Boston high school students participate in moderate physical activity. This is somewhat less than for high school students nationally (29.6%).
- Male high school students are more likely than female high school students to participate in moderate physical activity.
- The Healthy People 2010 goal for adolescents is to increase moderate physical activity, at least 30 minutes of exercise on five or more days a week, to 30% of all adolescents.

Vigorous Physical Activity (High School Students)

Indicator	Percentage of Boston Residents
Participated in Vigorous Physical Activity (High School Students), 1999	48.9%
Male	60.5%
Female	38.2%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System (YRBSS), 1999, Boston Public School System and Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Vigorous activities are activities that cause sweating and hard breathing for approximately 20 minutes on 3 of the 7 days preceding. Although almost half of Boston high school students participate in vigorous physical activity, this is less than for the US overall (64.7%).
- Male high school students are one-and-a-half times more likely than female high school students to participate in vigorous physical activity.
- The Healthy People 2010 goal for adolescents is to increase the engagement in vigorous physical activity that promotes cardiorespiratory fitness on three or more days per week for 20 minutes per occasion, to 85% of all adolescents.

Weight Control (Adults)

Indicator	Percentage of Boston Residents	
Weight Control, 1999 (As determined by Body Mass Index (BMI). See glossary for more information)		
	Normal	54.1%
	Overweight	32.1%
	Obese	13.9%
<i>NOTE:</i> All percentages are weighted.		
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.		
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.		

- Only about half of Boston’s adult residents weigh in the normal range for their height.
- Almost a third are overweight and fourteen percent are considered to be obese. The percentage of Boston residents who are overweight or obese is less than for adults nationally. Nationally, the percentage for overweight is 36.8 and for obesity is 19.7.

Blood Cholesterol Checked (Adults)

Indicator	Percentage of Boston Residents
Blood Cholesterol Checked, 1999	78.5%
Male	77.5%
Female	79.5%
White	80.6%
Black	78.1%
Hispanic	74.2%
Asian	72.1%
Ages 18-24	65.7%
Ages 25-44	77.7%
Ages 45-64	87.2%
Ages 65+	87.9%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Adult Boston residents are somewhat more likely to have had their blood cholesterol checked within the past year than individuals nationally (73.6%).
- A slightly higher percentage of women than men are likely to have had their blood cholesterol checked.
- Asians are less likely to report having had their blood cholesterol checked than members of other racial and ethnic groups. Whites have the highest reported percentage of having blood cholesterol checked.
- Boston residents ages 45-64 and 65 and over are more likely to have had their blood cholesterol checked than individuals ages 18-24 and 25-44.

The Health of Boston 2001.....

Flu Shot in Past Year (Ages 65 and Over)

Indicator	Percentage of Boston Residents
Flu Shot in Past Year (Ages 65 and Over), 1999	67.4%
Male	69.8%
Female	65.8%
White	71.5%
Black	50.2%
Hispanic	80.2%
Asian	n<5

NOTE: All percentages are weighted.

DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

- Two-thirds of Boston residents ages 65 and over report having had a flu shot within the past year, similar to the US.
- A higher percentage of men ages 65 and over than women have had a flu shot within the past year.
- A higher percentage of Hispanics than members of other racial/ethnic groups are likely to have had a flu shot within the past year. Asians and Blacks are the least likely to have had a flu shot within the past year.

Dental Visit in Past Year (Adults)

Indicator	Percentage of Boston Residents
Dental Visit in Past Year, 1999	72.8%
Male	71.2%
Female	74.2%
White	76.1%
Black	63.8%
Hispanic	69.0%
Asian	71.8%
Ages 18-24	74.9%
Ages 25-44	74.3%
Ages 45-64	74.8%
Ages 65+	60.7%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS),1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Almost three-fourths of adult Boston residents (72.8%) have visited the dentist within the past year, compared with the US level of 68.1%.
- A slightly higher percentage of women than men have visited the dentist within the past year.
- Among all racial and ethnic groups, a higher percentage of White adults visited the dentist within the past year. Blacks are the least likely of Boston adults to have visited the dentist within the past year.
- Among all adult age groups, Boston residents ages 65 and over are the least likely to have visited the dentist within the past year.

The Health of Boston 2001.....

Ever Had a Mammogram (Adults)

Indicator	Percentage of Boston Residents
Ever Had a Mammogram, 1999	47.8%
White	50.5%
Black	48.8%
Hispanic	37.7%
Asian	25.4%
Ages 18-29	12.7%
Ages 30-39	26.5%
Ages 40-49	82.4%
Ages 50-59	91.6%
Ages 60+	93.8%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS),1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Almost half of Boston women have had a mammogram (47.8%), compared with 60.6% of all US women.
- Among all racial and ethnic groups, Asian women are the least likely to have had a mammogram, followed by Hispanics.
- The percentage of women who have ever had a mammogram increases with age.
- If this chart presented data only for women ages 40 and over, the percentages would increase. See *Access to Health Care 2001*, published by the Boston Public Health Commission.

Had a Pap Smear Test (Adults)

Indicator	Percentage of Boston Residents
Ever Had a Pap Smear Test, 1999	91.0%
White	93.5%
Black	94.3%
Hispanic	82.8%
Asian	65.1%
Ages 18-24	78.0%
Ages 25-44	96.3%
Ages 45-64	93.9%
Ages 65+	88.8%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- Nine out of ten Boston women have ever had Pap smear test (91.0%), lower than the percentage for the US (95.1%).
- Over ninety percent of Boston White and Black women and over eighty percent of Hispanic women have had a Pap test. Asians have the lowest percentage.
- Women ages 18-24 have the lowest percentage of those who have ever had a Pap test. Women ages 25-44 and 45-64 are more likely to have reported ever having had a Pap smear test.

Had Colorectal Cancer Screening (Colonoscopy or Sigmoidoscopy) (Adults)

Indicator	Percentage of Boston Residents
Ever Had Colorectal Cancer Screening, 1999 (Colonoscopy or Sigmoidoscopy)	33.6%
Male	37.1%
Female	31.1%
White	35.8%
Black	33.5%
Hispanic	23.8%
Asian	n<5
Ages 40-49	16.9%
Ages 50-59	37.0%
Ages 60+	46.3%
<i>NOTE:</i> All percentages are weighted.	
DATA SOURCES: Behavioral Risk Factor Survey, Behavioral Risk Factor Surveillance System (BRFSS), 1999, Massachusetts Department of Public Health.	
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.	

- One-third of Boston adults report ever having had a colorectal cancer screening examination.
- Men are more likely than women to have ever had a colorectal cancer screening examination.
- Whites and Blacks are more likely to have had a colorectal cancer screening examination than Hispanics.
- Boston residents ages 60 and over are more likely to receive a colon cancer screening examination than other age groups. The *Healthy People 2010* goal is to achieve a 50% colon cancer screening rate among adults over age 50.

Tobacco Use Among Students

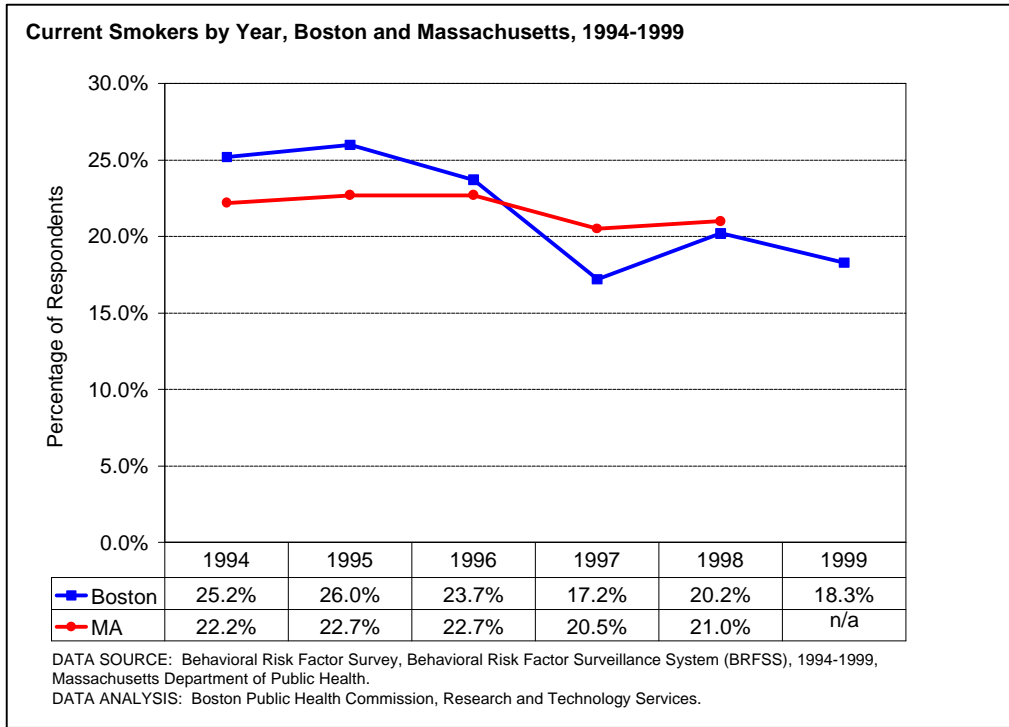
Smoking Among High School Students, Boston and Massachusetts, 1999

1999		
Ever tried smoking	Boston	59.9%
	MA	67.4%
Smoked cigarettes on 1 or more of past 30 days:	Boston	17.8%
	MA	30.3%
Smokers who bought their own cigarettes:	Boston	30.9%
	MA	26.5%
Smokers who were asked for proof of age at store:	Boston	45.8%
	MA	48.6%

DATA SOURCE: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System, 1999, Boston Public School Department and Massachusetts Department of Education; Centers for Disease Control, National Center for Chronic Disease Prevention & Health Promotion.
 DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

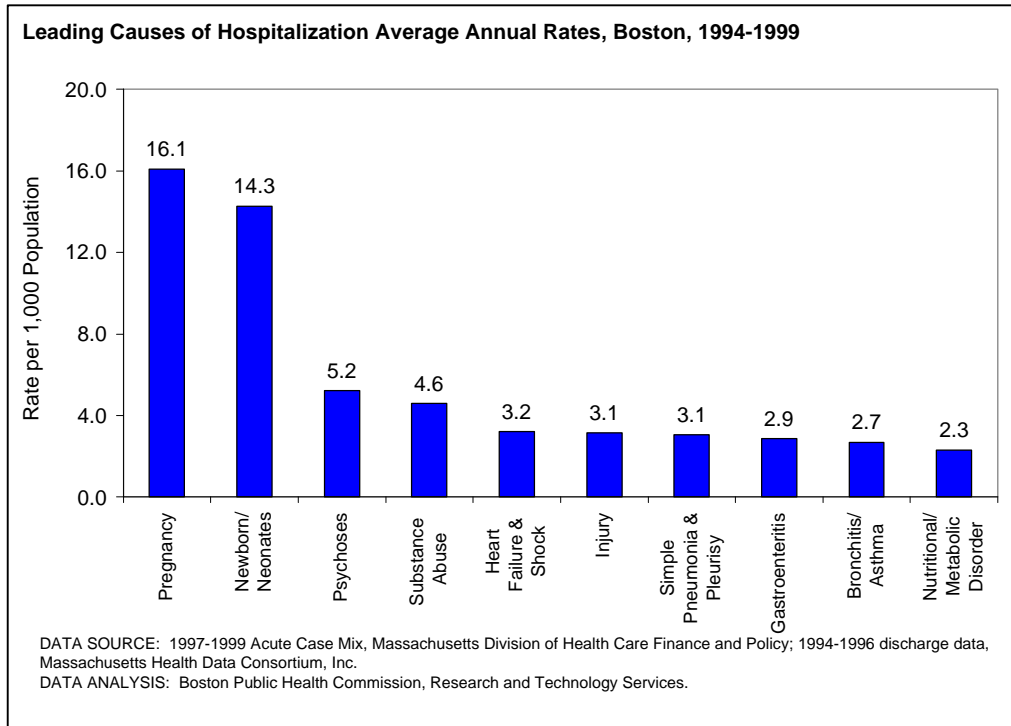
- During 1999, sixty percent of Boston high school students said they had tried cigarette smoking at some time, a lower percentage than for Massachusetts high school students overall.
- Massachusetts students were 1.7 times more likely to have smoked cigarettes on one or more occasion during the past 30 days than Boston students.
- Almost a third of Boston students who smoked reported buying their own cigarettes. This was slightly higher than the percentage reported by all Massachusetts students.
- About half of Boston students who smoked said they were asked for proof of age when they purchased cigarettes at a store. This was slightly lower than the Massachusetts percentage overall.

Tobacco Use Among Adults

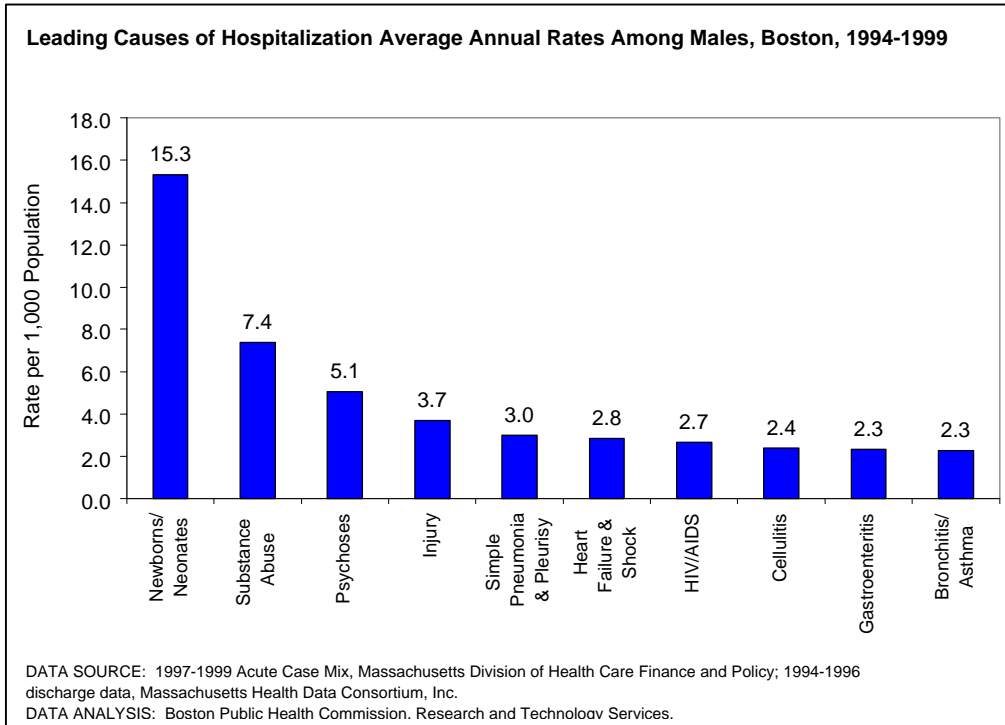


- In 1994, the Boston rate of smoking among adults was approximately fourteen percent higher than the Massachusetts rate.
- During the six-year period 1994-1999, the Boston rate fluctuated while the Massachusetts rate stayed fairly stable.
- The Boston rate declined 27.8% between 1994 and 1999. (The 1999 Massachusetts rate was unavailable).

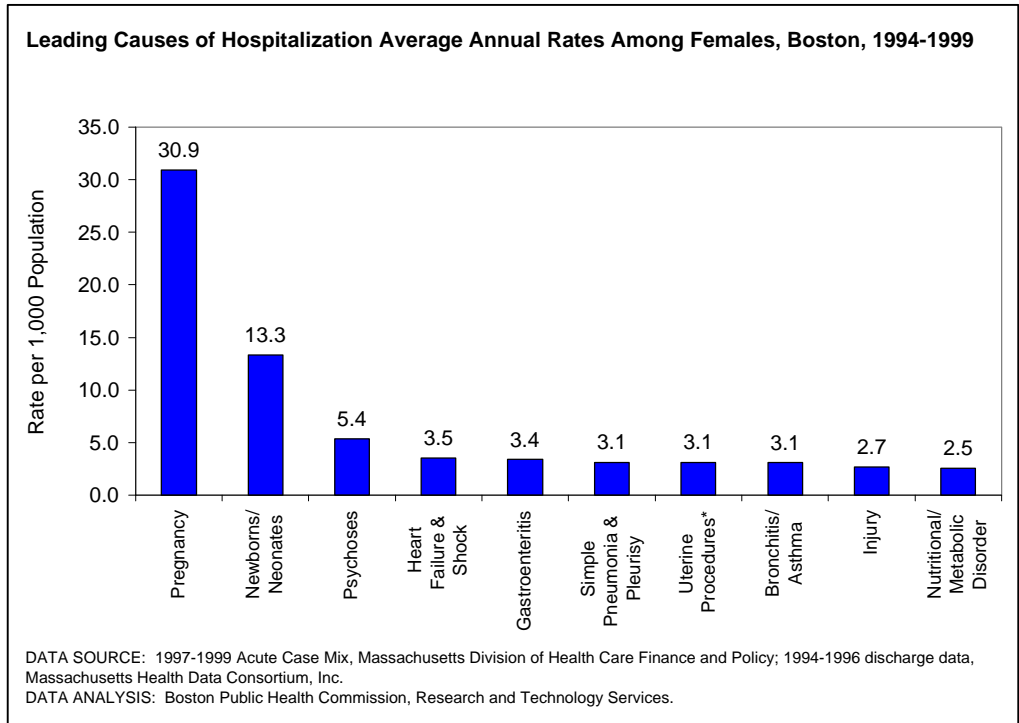
HOSPITALIZATION



- During the period 1994-1999, there were 467,241 hospitalizations of Boston residents. Pregnancy conditions, birth hospitalizations of newborns, psychoses, and substance abuse were among the ten leading causes, and together were responsible for 29.0% of all hospitalizations.
- The leading causes of hospitalization among Boston residents are similar to the ones for the US as a whole.



- Birth hospitalization of newborns was the number one reason for hospitalization among Boston’s men. Substance abuse and psychoses were the second and third most common reasons.
- The hospitalization rate for men for substance abuse was more than two-and-a-half times the rates for other leading causes such as heart failure and shock and HIV/AIDS.



- Pregnancy and birth hospitalizations of newborns were the first and second leading causes among Boston women. Psychoses was the third leading cause for women, as it was for men. Substance abuse was not a leading cause of hospitalization for women in Boston.
- The hospitalization rate for heart failure and shock among women was 25.0% higher than for men, and was the fourth leading cause of hospitalization.

MORTALITY

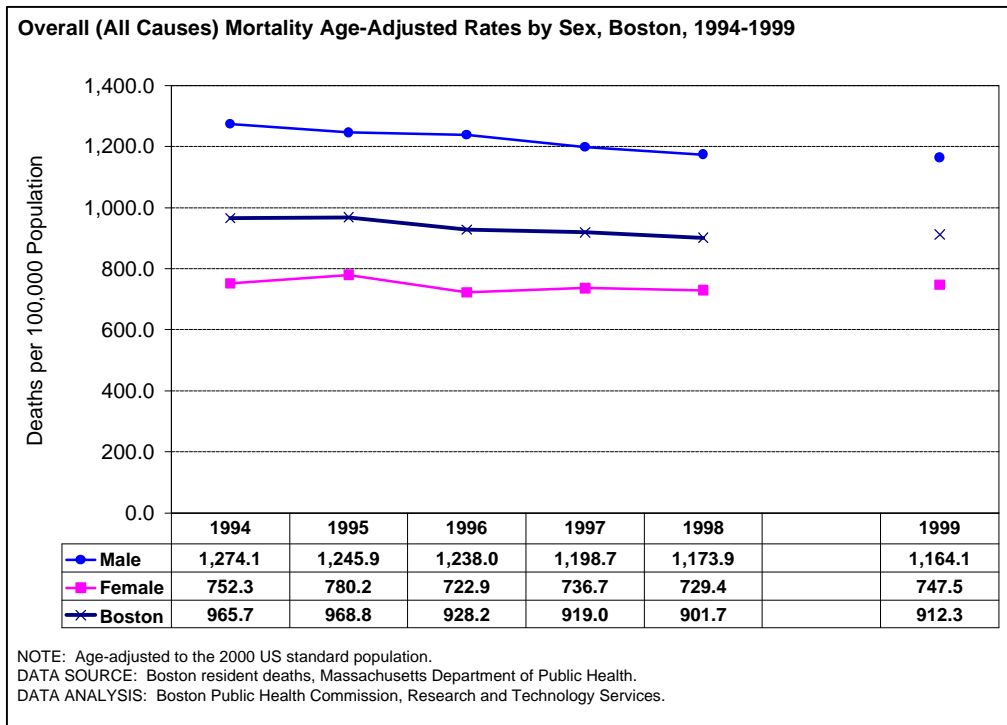
In 1999, there were 4,491 deaths among Boston residents, 1.0% more than in 1998. Females accounted for 53.9% of total Boston deaths, and males 46.1%.

The overall age-adjusted rate for 1999 was 912.3 deaths per 100,000. Heart disease was the leading cause of death (231.8 deaths per 100,000), and cancer (218.8 deaths per 100,000) the second leading cause of death.

Heart disease and cancer were also leading causes of death for both males and females, and for all 16 Boston neighborhoods.

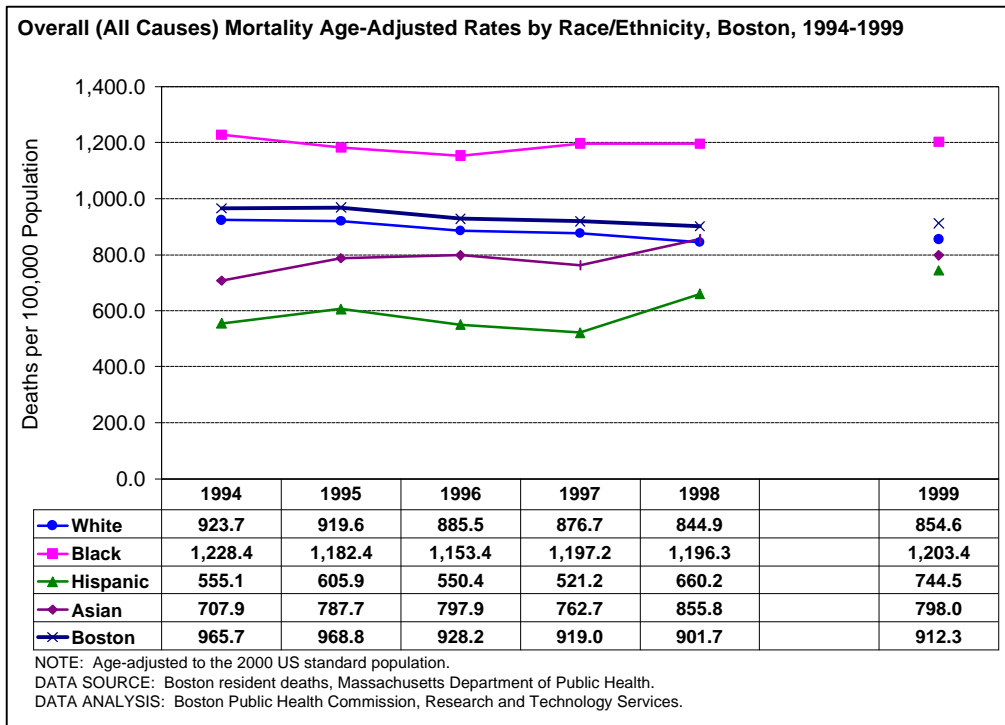
The age-adjusted mortality rates for 1999 and analysis of those rates are affected by two major changes which are described in the introduction to this report, and discussed in detail in the Technical Notes provided in the Appendix. Cautionary notes accompany each chart and table containing age-adjusted rates in the mortality section. They are meant to assist with the interpretation of the data presented and should be carefully reviewed.

Overall Mortality



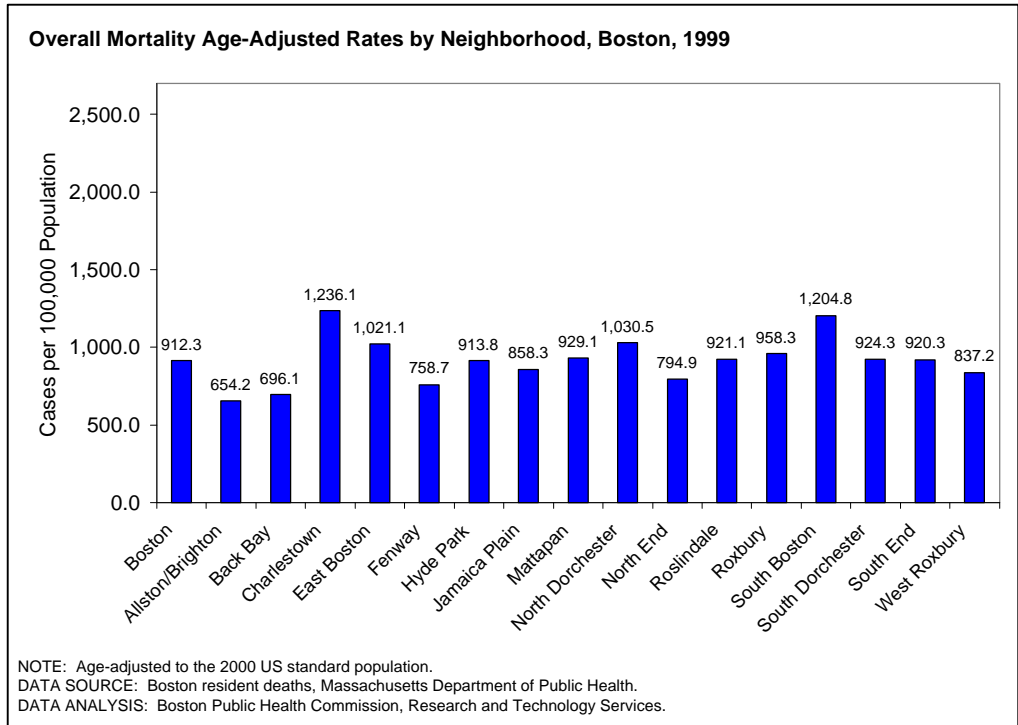
NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- As indicated, the overall mortality rate for Boston residents started to decline in 1996. Between 1994 and 1998, the overall age-adjusted mortality rate declined from 965.7 deaths per 100,000 to 901.7 deaths per 100,000, a decrease of 6.6%. The rate for 1999 was 912.3 deaths per 100,000.
- Males consistently had a higher rate than females. Their rate was 60% to 70% higher than the rate for females.
- Overall, for both males and females, age-adjusted mortality rates declined between 1994 and 1998. The decline was greater for males than for females. For males, the decline was 7.9%, and for females, 3.0%.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- The rate for Blacks was higher than the Boston rate and the highest among races/ethnicities. They were 22.0% to 32.7% higher than the Boston rate, 28.5% to 41.6% higher than the rate for Whites, and about double the rates for Hispanics and Asians.
- Between 1994 and 1998, overall mortality age-adjusted rates declined for Boston overall as well as for Whites and Blacks. The decline was 6.6% for Boston, 8.5% for Whites, and 2.6% for Blacks. However, Hispanics and Asians experienced increases of 18.9% and 20.9%.
- Among races/ethnicities, overall mortality age-adjusted rates for 1994-1999 for Whites, Hispanics, and Asians were lower than the Boston rate.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- For 1999, the overall mortality age-adjusted rate for Boston was 912.3 deaths per 100,000. Rates for 9 of the neighborhoods exceeded the Boston rate. Of those 9 neighborhoods, rates for Charlestown, South Boston, North Dorchester, and East Boston were the highest.
- The overall mortality rate was 35.5% higher for Charlestown, 32.1% higher for South Boston, 13.0% higher for North Dorchester, and 11.9% higher for East Boston than the Boston rate.
- Allston/Brighton and the Back Bay had the lowest overall mortality rates among Boston’s 16 neighborhoods, 28.3% and 23.7% below the Boston rate.

Leading Causes of Death

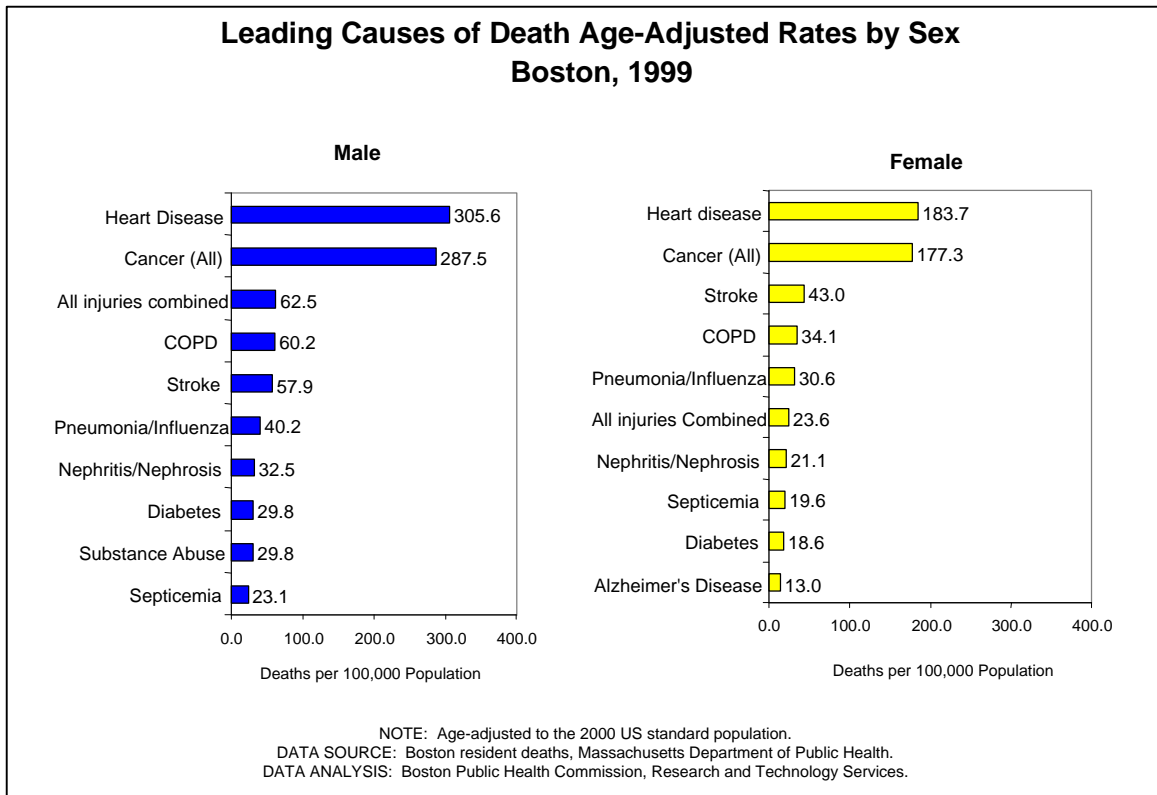
**Leading Causes of Death Age-Adjusted Mortality Rates, Boston, 1994 and 1999
Comparability Modified Mortality Rates for Selected Causes of Death**

Causes of Death	Estimated Comparability Modified Rate 1994	Age-Adjusted Mortality Rate 1999
Heart disease	239.5	231.8
Cancer (all)	235.6	218.8
Stroke	58.0	47.8
COPD	38.9	42.7
All injuries combined	not available	42.2
Pneumonia/Influenza	36.2	34.3
Nephritis/Nephrosis	21.6	24.4
Diabetes	24.1	22.3
Septicemia	22.9	21.1
Substance abuse	not available	19.1

NOTE: Age-adjusted to the 2000 US standard population.
 Comparability Modified Rate: This rate is adjusted using the preliminary comparability ratio (CR) from the National Center for Health Statistics. Please see Technical Notes and Glossary for further explanation of CR.
 DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health; Comparability ratio: Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics.
 DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

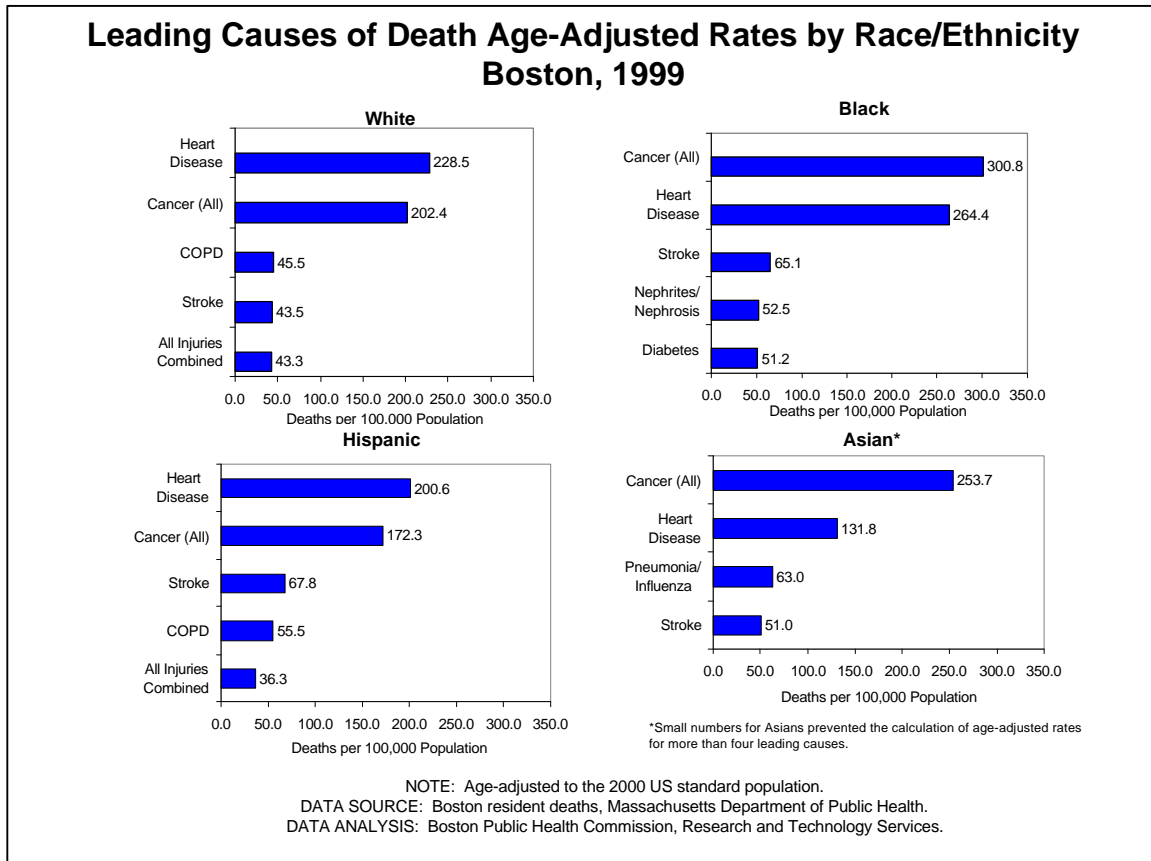
NOTE: The mortality rates for 1999 presented in this chart can be compared to the age-adjusted mortality rates for 1994 presented in this chart, since a preliminary comparability ratio has been applied to the data. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Between 1999 and 1994 (estimated comparability modified rate), Boston residents experienced a decline for certain leading causes of death. Heart disease decreased by 3.2% and cancer by 7.1%. The largest decline was seen in stroke mortality (17.6%). Increases were seen in COPD (9.8%) and nephritis/nephrosis (13.0%).



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- For 1999, the leading causes of death were mainly the same for both males and females, differing only by the magnitude of their rates.
- Males accounted for 46% of all Boston deaths in 1999. Heart disease was the leading cause of death, and cancer (all types), the second leading cause.
- The rates for heart disease and cancer among males were 5 to 13 times higher than rates for the remaining leading causes shown. They were almost double the rates for females.
- Females accounted for 54% of all Boston deaths in 1999. For females, as for males, heart disease was the leading cause of death, and cancer (all types), the second leading cause. Stroke was the third leading cause of death for females, but the fifth leading cause for males. However, the rate for females was 25.7% lower than for males.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- The 1999 leading causes of death were similar among racial/ethnic groups in Boston. Cancer was the leading cause of death for Blacks and Asians and the second leading cause, after heart disease, for Whites and Hispanics.
- The cancer mortality rates for Blacks and Asians were higher than rates for Whites and Hispanics.
- In addition to cancer, Blacks had higher mortality rates for heart disease, diabetes, HIV/AIDS (data not shown), and nephritis/nephrosis than did Whites, Asians, and Hispanics. Their mortality rate for diabetes (51 deaths per 100,000) was almost twice the rate for Hispanics (31 deaths per 100,000, data not shown) and three times the rate for Whites (17 deaths per 100,000, data not shown).
- In general, mortality rates for leading causes of death, except heart disease, were lower for Whites than for people of other races/ethnicities.

Leading Causes of Death by Age Groups, Age-Specific Rates, Boston, 1999

Age Group	Causes of death	Age-Specific Rate
1-19	All injuries combined	10.9
	Homicide	3.9
20-24	All injuries combined	30.1
	Homicide	14.4
25-34	All injuries combined	28.9
	Drug-related	10.6
	Cancer (all sites combined)	7.6
	HIV/AIDS	6.8
	Heart disease	6.1
35-44	Homicide	6.1
	All injuries combined	53.1
	Cancer (all sites combined)	44.1
	Heart disease	32.4
	Drug-related	29.8
45-54	HIV/AIDS	29.8
	Cancer (all sites combined)	209.6
	Heart disease	138.3
	All injuries combined	71.3
	HIV/AIDS	36.7
55-64	Drug-related	32.4
	Cancer (all sites combined)	387.3
	Heart disease	246.7
	All injuries combined	44.4
	COPD	41.9
65-74	Diabetes	37.0
	Cancer (all sites combined)	844.9
	Heart disease	549.2
	COPD	132.4
	Cerebrovascular	90.1
75-84	Diabetes	81.7
	Heart disease	1,568.8
	Cancer (all sites combined)	1,342.7
	COPD	373.8
	Cerebrovascular	359.9
85+	Pneumonia/Influenza	212.3
	Heart disease	5,068.4
	Cancer (all sites combined)	2,057.5
	Cerebrovascular	1,354.9
	Pneumonia/Influenza	1,179.3
	COPD	614.7

DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health.
 DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

- Many of the leading causes of death among Boston residents in 1999 were the same for most age groups. In general, mortality rates for the leading causes were progressively higher with age.
- Deaths due to all injuries combined include unintentional deaths (accidents), motor vehicle-related deaths, intentional deaths (homicide and suicide), and injuries with intent unknown at the time the death certificate was issued.

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- All injuries (combined) was among the leading causes of death shown for Boston age groups under age 65. It was the leading cause of death for Boston residents ages 1-19, 20-24, 25-34, and 35-44. The highest rate (71.3 deaths per 100,000) was incurred by residents ages 45-54 (but cancer was the leading cause of death in this age group.)
- HIV/AIDS and drug-related mortality were leading causes of death for age groups 24-34, 35-44, and 45-54.
- Cancer was a leading cause of death for all age groups except those under age 25. It was the first leading cause of death for ages 45-54, 55-64, and 65-74, and the second leading cause for ages 75-84 and 85 and over.
- Heart disease was also a leading cause of death for all age groups except those under age 25. It was the second leading cause of death for ages 45-54, 55-64, and 65-74, but the first leading cause for ages 75 and above.
- Respiratory diseases such as chronic obstructive pulmonary disease (COPD) and pneumonia/influenza were among the leading causes of death for age groups 55 and above. Stroke was a leading cause for age groups 65-74, 75-84, and 85 and over. Diabetes was the fifth leading cause for age groups 55-64 and 65-74.

**Leading Causes of Death Age-Adjusted Rates by Neighborhoods
Boston, 1999**

Neighborhood	Leading Cause	Deaths per 100,000 Population	Neighborhood	Leading Cause	Deaths per 100,000 Population
Allston/Brighton	Heart disease	181.7	North Dorchester	Cancer (all sites combined)	259.8
	Cancer (all sites combined)	164.0		Heart disease	280.1
	Pneumonia/Influenza	36.6		Stroke	64.4
	Stroke	34.3		All injuries combined	40.9
	All injuries combined	29.4		COPD	40.1
Back Bay	Cancer (all sites combined)	200.9	North End	Heart disease	222.2
	Heart disease	163.8		Cancer (all sites combined)	204.7
	Stroke	44.8		Stroke	41.6
	All injuries combined	23.6	Roslindale	Heart disease	218.4
Pneumonia/Influenza	23.5	Cancer (all sites combined)		198.0	
Charlestown	Heart disease	340.4		Stroke	66.7
	Cancer (all sites combined)	289.5	All injuries combined	49.7	
	COPD	70.0	COPD	43.0	
	Alzheimer's disease	67.7	Roxbury	Heart disease	236.9
Stroke	54.8	Cancer (all sites combined)		214.9	
East Boston	Heart disease	285.9		Stroke	51.1
	Cancer (all sites combined)	230.6		All injuries combined	39.9
	All injuries combined	67.4	Diabetes	33.8	
	Stroke	56.8	South Boston	Heart disease	319.7
COPD	47.3	Cancer (all sites combined)		301.6	
Fenway	Heart disease	206.2		COPD	97.4
	Cancer (all sites combined)	108.5		Stroke	46.9
	All injuries combined	96.3	All injuries combined	45.7	
	Pneumonia/Influenza	62.0	South Dorchester	Heart disease	230.7
Drug-related	38.5	Cancer (all sites combined)		210.5	
Hyde Park	Cancer (all sites combined)	255.5		All injuries combined	49.0
	Heart disease	219.5		Pneumonia/Influenza	42.7
	Stroke	47.2	Nephritis/Nephrosis	35.3	
	COPD	46.1	South End	Cancer (all sites combined)	218.4
Pneumonia/Influenza	36.2	Heart disease		195.5	
Jamaica Plain	Cancer (all sites combined)	221.0		All injuries combined	80.3
	Heart disease	194.0		Pneumonia/Influenza	46.0
	COPD	64.8	Stroke	37.6	
	Stroke	43.6	West Roxbury	Cancer (all sites combined)	197.1
Pneumonia/Influenza	31.1	Heart disease		192.3	
Mattapan	Cancer (all sites combined)	245.5		Stroke	50.5
	Heart disease	226.5		COPD	44.3
	Stroke	70.0	Pneumonia/Influenza	41.7	
	All injuries combined	54.0			

NOTE: Age-adjusted to the 2000 US standard population.

DATA SOURCE: Boston resident deaths, Massachusetts Department of Public Health.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- In 1999, heart disease and cancer were responsible for about half of all deaths of residents in most of Boston's 16 neighborhoods.

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- Heart disease was the leading cause of death for 9 out of 16 of Boston neighborhoods, with age-adjusted rates ranging from as high as 340.4 deaths per 100,000 in Charlestown to as low as 181.7 deaths per 100,000 in Allston/Brighton.
- Cancer was the leading cause of death for 7 Boston neighborhoods. Among those neighborhoods, North Dorchester had the highest age-adjusted cancer mortality rate. However, two neighborhoods for which cancer was the second leading cause of death (Charlestown and South Boston) had the highest age-adjusted cancer mortality rates of all 16 neighborhoods.
- Stroke, pneumonia/influenza, and injuries (intentional and unintentional) were also among the leading causes of death for many of the Boston neighborhoods.

HEALTH TOPICS

Introduction

The health indicators shown in this section present data on major health issues that affect Boston residents and identify key health problems, many of which can be tracked over time.

Using key indicators to monitor the health of Boston residents and to measure over time any improvements or setbacks enables an understanding of health problems and issues faced by Boston residents. The inclusion of race/ethnicity, age, and sex, whenever possible, as aspects of these indicators allows for understanding health issues affecting subpopulation groups within the Boston population. This information can facilitate the development of initiatives and improvements in public health programs where needed.

This section includes information on the number of homeless people in Boston, births, hospitalizations, childhood asthma, prevalence of lead poisoning among Boston children, and cases of infectious diseases such as sexually transmitted diseases (STDs), HIV, and AIDS.

The Health of Boston 2001.....

Childbearing

Introduction

Health outcomes related to childbearing are often-used indicators of the health status of a population. Racial/ethnic disparities are apparent in all aspects of childbearing health outcomes, especially overall birth rates, adolescent birthrates, low birthweight rates, and infant mortality rates. (1)

Birth rates are influenced by a number of complex factors such as socioeconomic status, access to health care, and religious and cultural values. They also vary by race and ethnicity.

The US birth rate declined slightly in 1999 to 14.5 births per 1,000, down from 14.6 in 1998. The 1999 rate was the lowest ever recorded in the US. (2) Birth rates also declined slightly for Whites, from 12.3 per 1,000 in 1998 to 12.2 in 1999, and for Blacks, from 18.2 in 1998 to 17.9. They increased slightly for Hispanic adolescents, from 24.3 in 1998 to 24.4, and for Asian adolescents, from 16.4 in 1998 to 16.7 in 1999. Hispanics continue to have the highest birth rates and Whites, the lowest. (2,3)

The US adolescent birth rate for ages 15-19 also declined between 1998 and 1999, from 51.1 births per 1,000 in 1998 to 49.6 in 1999, a 3% decrease. (2,4) Declines in birth rates were achieved by White and Black adolescents. The 1999 adolescent birth rate for White adolescents dropped from 35.2 in 1998 to 34.0 in 1999, a decrease of 3%. The rate for Black adolescents dropped from 88.2 in 1998 to 83.7 in 1999, a decrease of 5%. The rate for Hispanic adolescents declined by less than 1%, dropping from 93.6 in 1998 to 93.4 in 1999. (2)

Several factors have contributed to the decline in adolescent birth rates, including the stabilization of the percentage of sexually experienced adolescents, public and private initiatives relating to pregnancy prevention, and greater use of contraceptives by adolescents during first intercourse. (2)

An early indicator of the health of infants is birthweight. Infants born at low birthweight (less than 2,500 grams or 5.5 pounds) are at greater risk for physical disabilities, developmental delays, and infant death. Over time, the causes of low birthweight (LBW) appear to be changing. Recent increases in LBW rates for White women appear to be attributable to increases in multiple births (twins, triplets, and higher-order births). (4)

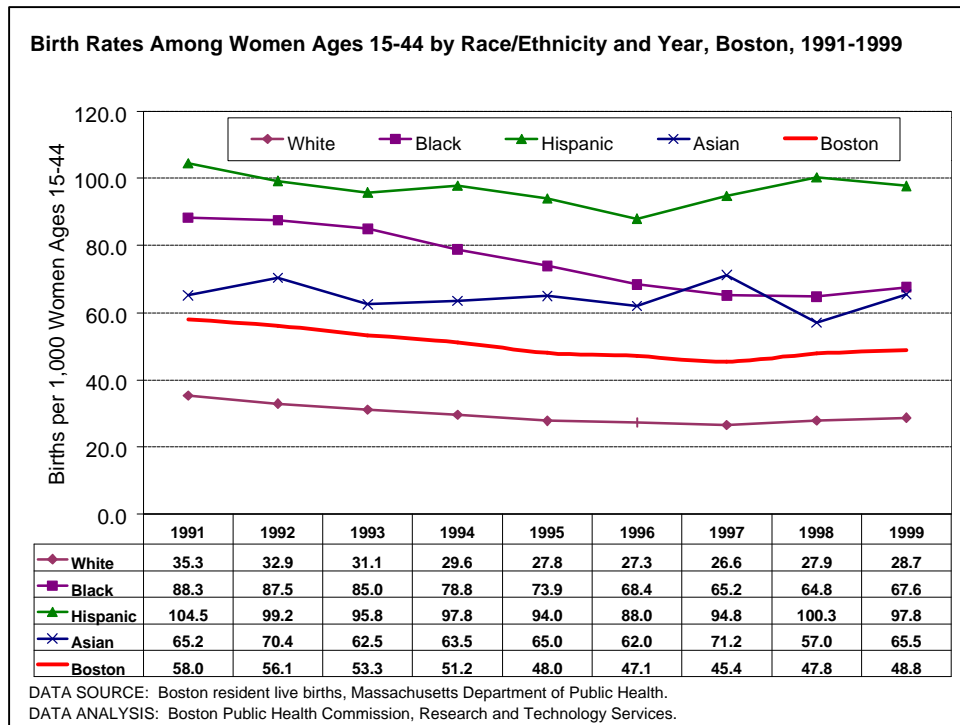
The US low birthweight rate for 1999, 7.6%, was unchanged from 1998. It was also unchanged for Whites, Blacks, and Hispanics, whose LBW rates for 1999 were 6.6, 13.2, and 6.4 respectively. (2,3) The LBW rate for the US has steadily increased since the mid 1980s. These trends have been influenced by the increase in multiple birth rates among Whites. Since 1990, overall LBW rates for White infants have increased, while overall LBW rates among Black infants have declined. LBW rates for Hispanic infants have remained stable. Singleton Black infants, however, are twice as likely as singleton White and Hispanic infants to be born LBW. (2)

Infant mortality (IMR) is another important health status indicator. In 1998, the IMR of 7.2 infant deaths per 1,000 live births was the same rate as in 1997, and the lowest rate ever for the US. Over time, declines in IMR have been achieved for all races/ethnicities, but the IMR for Black infants continues to be substantially higher than for other races/ethnicities. (4) In 1998, the IMR for Black infants (14.3 infant deaths per 1,000 live births) was 2.4 times higher than the rate for White infants (6.0 infant deaths per 1,000 live births). (5)

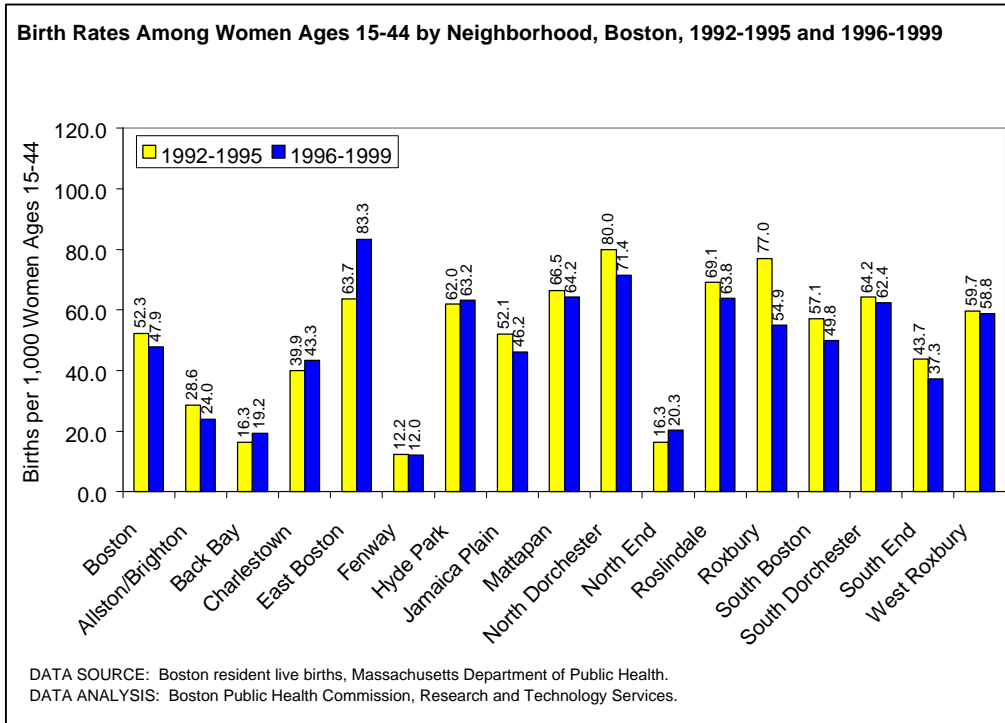
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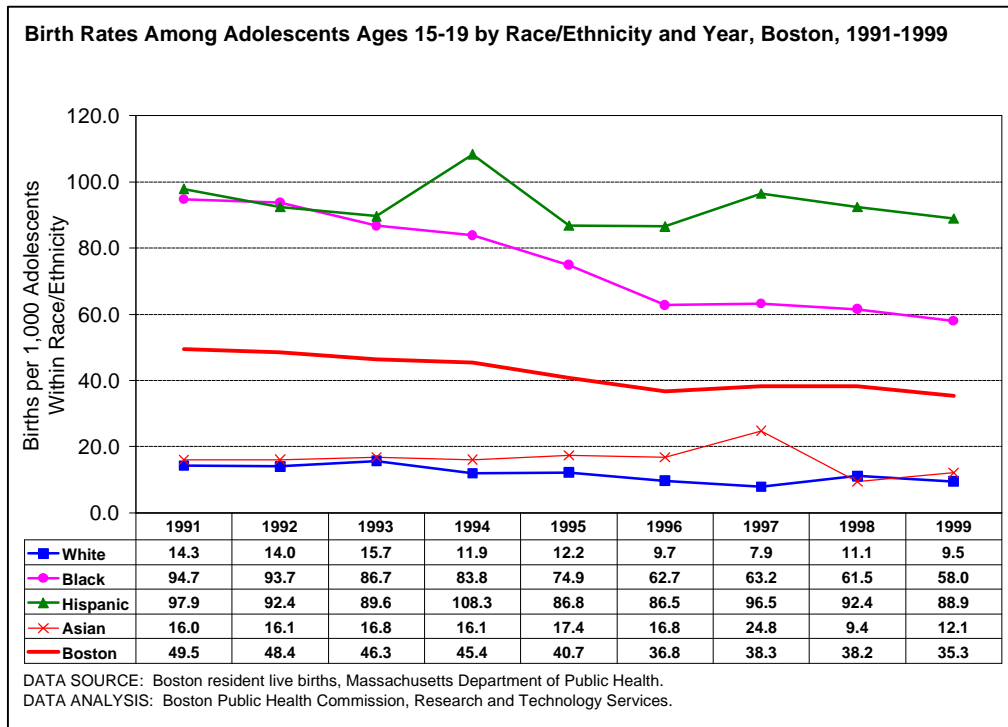
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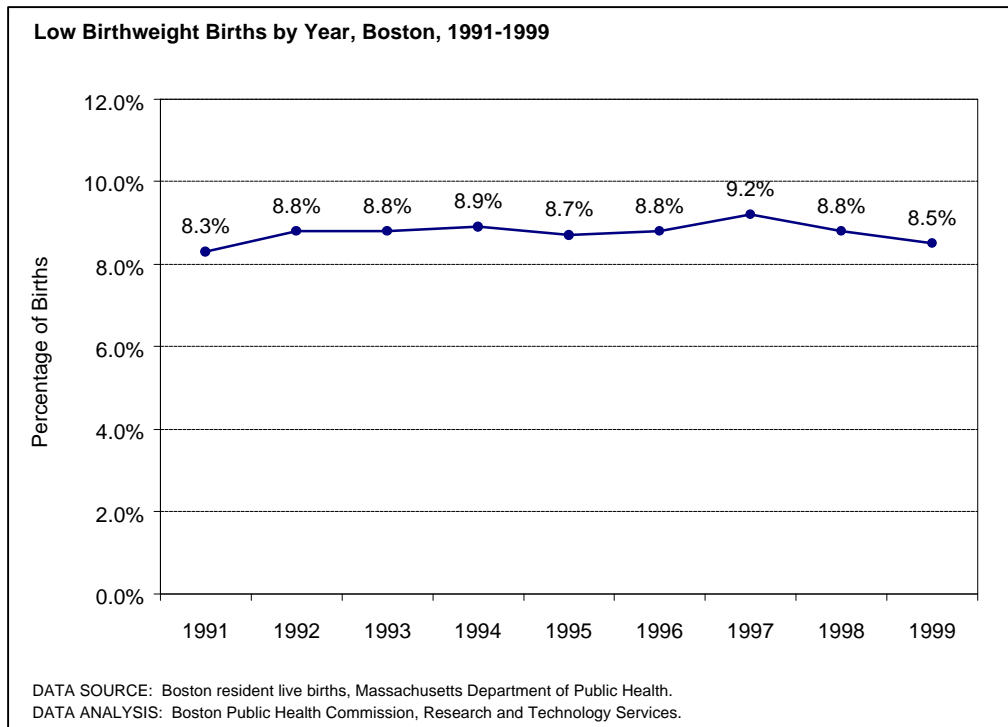
- Boston's birth rate (the number of births to women ages 15-44 per 1,000 women in that age range) was 48.8 in 1999, the most recent year for which data are available.
- In each of the years 1991 through 1999, the birth rate for White women ages 15-44 was lower than the rates for women of all other racial and ethnic groups, and the rate decreased by 18.7% between 1991 and 1999.
- Between 1991 and 1999, Black women ages 15-44 had the largest decline in birth rates (23.4%) of all racial and ethnic groups; however, the birth rate among Blacks is still more than 2 times higher than the birth rate among White women.
- From 1991 through 1999, the birth rate for Hispanic women ages 15-44 was the highest of the rates for women of all racial and ethnic groups. The Hispanic birth rate decreased by 6.4% between 1991 and 1999.
- From 1991 through 1999, birth rates among Asian women ages 15-44 fluctuated yearly, with no overall trend up or down between 1991 and 1999; for each year, birth rates among Asian women were higher than the Boston average and the birth rate among White women.



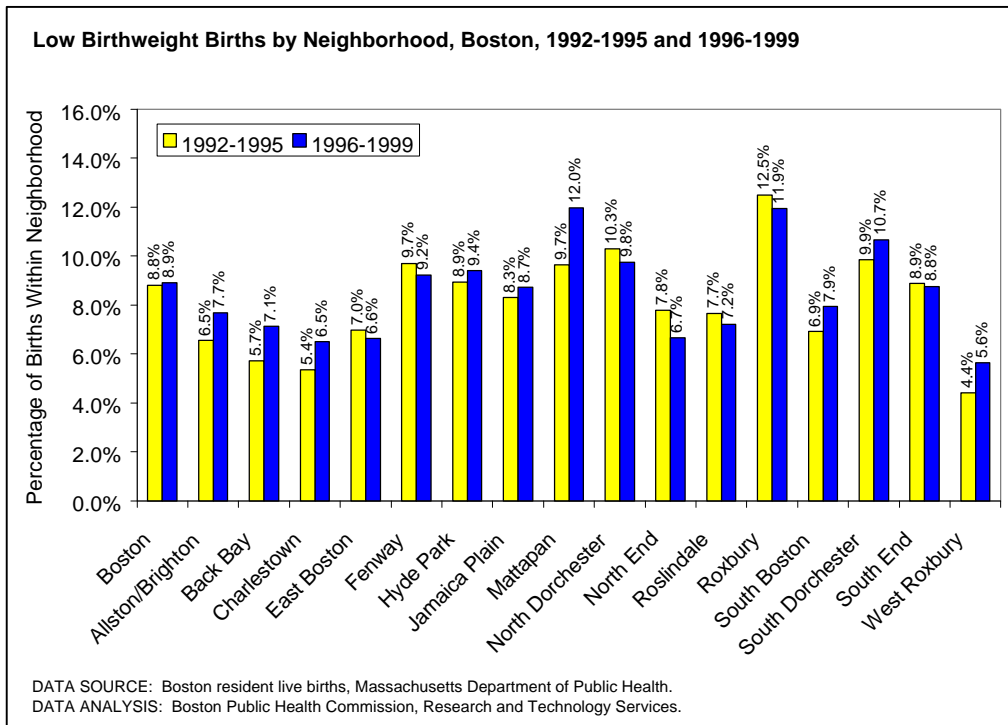
- Birth rates among women ages 15 to 44 decreased between 1992-1995 and 1996-1999 in 11 of Boston’s 16 neighborhoods. Roxbury’s birth rate decreased more than any of Boston’s neighborhoods, 28.7%, followed by Allston/Brighton, which decreased 16.1%.
- Birth rates increased in five of Boston’s 16 neighborhoods between 1992-1995 and 1996-1999. Between those time periods, the birth rate increased 30.8% in East Boston, to a rate higher than that of any of Boston’s other neighborhoods.



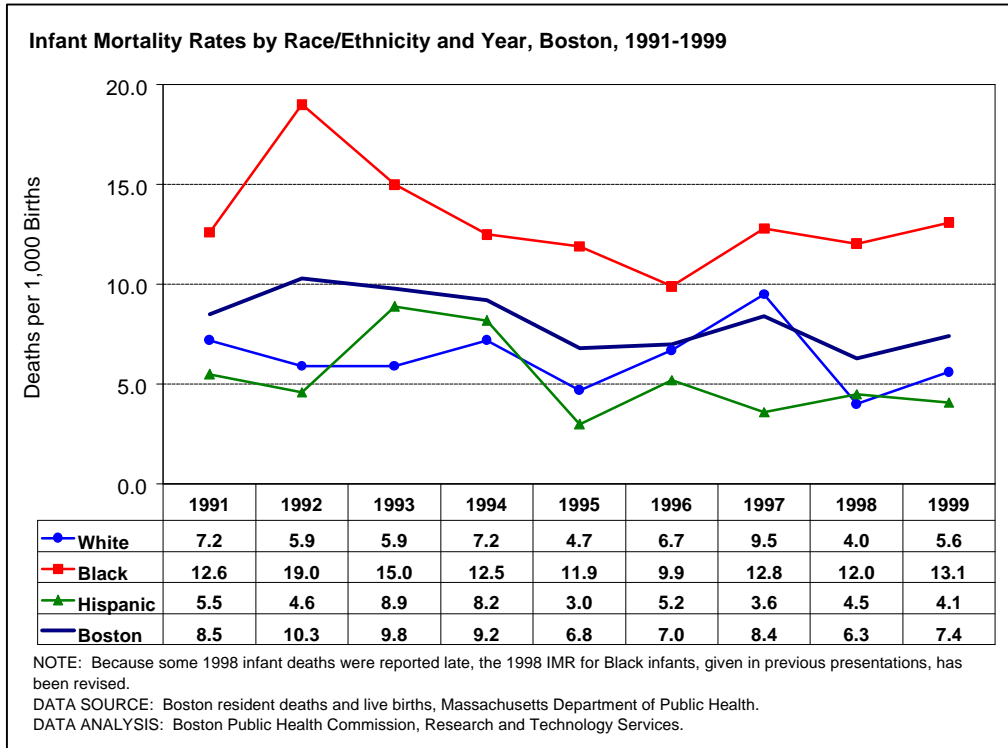
- The birth rate for Boston adolescents in 1999 was 35.3 per 1,000 adolescents, a 28.7% decline since 1991.
- Rates declined among all races/ethnicities over the period 1991-1999. Black adolescents had the largest decline (38.8%), followed by Whites (33.6%), Asians (24.4%), and Hispanics (9.2%).
- In 1999 the rate among Hispanics ages 15-19 was 88.9 per 1,000 adolescents, two-and-a-half times higher than the Boston rate.
- The Healthy People 2010 goal is to reduce births among adolescents to 46 births per 1,000 adolescents.



- In 1999, 679 births to Boston residents (or 8.5% of births) were low birthweight (LBW); these infants weighed less than 2,500 grams (5.5 pounds) at delivery.
- Between 1991 and 1999, the LBW rate for Boston births fluctuated from a low of 8.3% in 1991 to a high of 9.2% in 1997.
- The Healthy People 2010 goal is to reduce low birthweight rates to 5.0%.



- The low birthweight rate was highest in Roxbury during 1992-1995 (12.5%), and in Mattapan during 1996-1999 (12.0%).
- Between 1992-1995 and 1996-1999, the low birthweight rate increased in nine out of Boston's 16 neighborhoods.
- The greatest increase in low birthweight was in West Roxbury, where the rate rose 27.3% between 1992-1995 and 1996-1999. In the Back Bay, the rate increased 24.6%, in Mattapan, 23.7%, and in Charlestown, 20.4%.
- The low birthweight rate decreased in seven of Boston's 16 neighborhoods between 1992-1995 and 1996-1999. For six of these neighborhoods the decline was very small, Roslindale (6.5%), East Boston (5.7%), Fenway (5.2%), North Dorchester (4.9%), Roxbury (4.8%), and the South End (1.1%). In the North End, the rate decreased 14.1%.



- Infant mortality rate among Boston residents in 1999 was 7.4 deaths per 1,000 live births.
- Disparities in infant mortality rates (IMRs) among Boston’s infants continue to exist. Boston’s Black infants continue to have the highest infant mortality rate of all races/ethnicities. In 1999, the IMR for Black infants was 77.0% higher than the IMR for Boston.
- The 1999 IMR for Black infants was 13.1 deaths per 1,000 live births, a 31.1% decrease from a high of 19.0 in 1992. Previously the IMR for Black infants declined for four years, 1993 to 1996, but this trend reversed in 1997.
- The 1999 IMR for White infants (5.6 deaths per 1,000) was a 5.1% decrease from the 1992 rate of 5.9. In 1999, Hispanic infants had an IMR of 4.1 deaths per 1,000, a 10.9% decrease from 1992.
- Several factors may be related to the trends observed for the infant mortality rate for Boston’s Black infants and the disparity in IMRs between Black infants and White infants: (1) the proportion of infant deaths due to extremely low birthweight (<500 grams) is increasing, and Black infants make up the majority of extremely low birthweight deaths, (2) funding for a major infant mortality reduction program, the Boston Healthy Start Initiative, has been significantly reduced by the federal government, and (3) the possibility exists that risk factors contributing to infant mortality, such as institutional racism, differ for White women and for Black women or for different ethnicities within the Black population.

Asthma

Introduction

The Department of Health and Human Services has reported that, in the past fifteen years (1980-1996), the number of Americans with asthma has doubled to an estimated fifteen million people, the percentage of Americans with asthma has increased approximately 75%, and the percentage of pre-school age children with asthma has increased 160%. (1)

Asthma affects Americans of all ages, races and ethnic groups; however, low income and minority populations experience substantially higher rates of hospital admissions, emergency room visits, and fatalities due to asthma. (2) According to the Department of Health and Human Services, from 1993 to 1995, African Americans and Hispanics each had over twice the death rate from asthma as White Americans. In 1996, pediatric hospitalizations for asthma were estimated to be five times higher for children in lower income families than national norms. (2) In 1998, asthma affected an estimated 17,299,000 persons in the United States. (3) In Massachusetts, an estimated 6.5% of the population has asthma. (3)

While prevalence rates for asthma are increasing similarly throughout the country, there are different trends in hospitalization for asthma. In 1979, the four regions had similar hospitalization rates. By 1994, the Northeast had over twice the rate of asthma hospitalization as the West. Among those ages 5-34, the difference was more than threefold. (4)

Asthma Control

Asthma is a chronic respiratory disease which affects the bronchioles, tiny tubes which bring air in and out of the lungs. During an asthma episode, the bronchioles become swollen and constricted and fill with thick mucous, making it hard to breathe.

Treatment for asthma includes medical management and environmental control. Medications act to decrease swelling and mucous production and to relax the tightened airway muscles. Environmental control involves identifying and avoiding those things in the environment which trigger asthma.

- The exact cause of the increasing rates of asthma is not yet known; however, it is believed to be the result of an interaction between environment and other factors, including genetics. (4) In 2000, the Institute of Medicine released *Clearing the Air: Asthma and Indoor Air Exposures*, a review of the research on asthma and its relationship to indoor air quality. They concluded that triggers such as pets, cockroaches, fungi and molds, cold viruses, and certain air pollutants (NO_x) are involved in worsening existing asthma. They also concluded that other triggers—house dust mites and environmental tobacco smoke (ETS)—are involved in both the development and the worsening of asthma. (5) Recommendations included the following:
- Reducing exposure to house dust mites, cat dander, cockroach allergen, fungi/molds and preventing exposure to ETS.
- Increasing research on the role of the environment in the development of asthma, on effective interventions, and on the characteristics of a healthy indoor environment.

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Regional Activities

Regionally, the Massachusetts Department of Health and Human Services has led an effort to identify priorities for action, including the following:

- Launching a regional tracking initiative.
- Creating guidance on the design, renovation, and maintenance of asthma friendly schools and homes.
- Launching a regional coordinating council.

Boston

Boston is participating in regional activities and is the recipient of over three million dollars in federal money to initiate *Healthy Public Housing* research activities in both public and private housing. *Healthy Public Housing* activities are designed to measure the levels of environmental contaminants, implement reduction strategies, and measure change in environment and health.

A 1997 study in a South Boston housing development, which led to the *Healthy Public Housing* initiative (6), documented the need for a healthy housing intervention:

- 26% of adult respondents reported having medically diagnosed asthma.
- Leaks and moisture were reported in the apartments of 64% of the respondents, with 20% reporting visible mold.
- 49% reported being smokers.

In Boston, additional asthma information has been available through emergency medical service utilization data. In 2000, Boston Emergency Medical Services provided basic life support treatment for asthma in 467 instances of asthma. The neighborhoods of North and South Dorchester accounted for 33% of these service calls, and Roxbury another 20%.

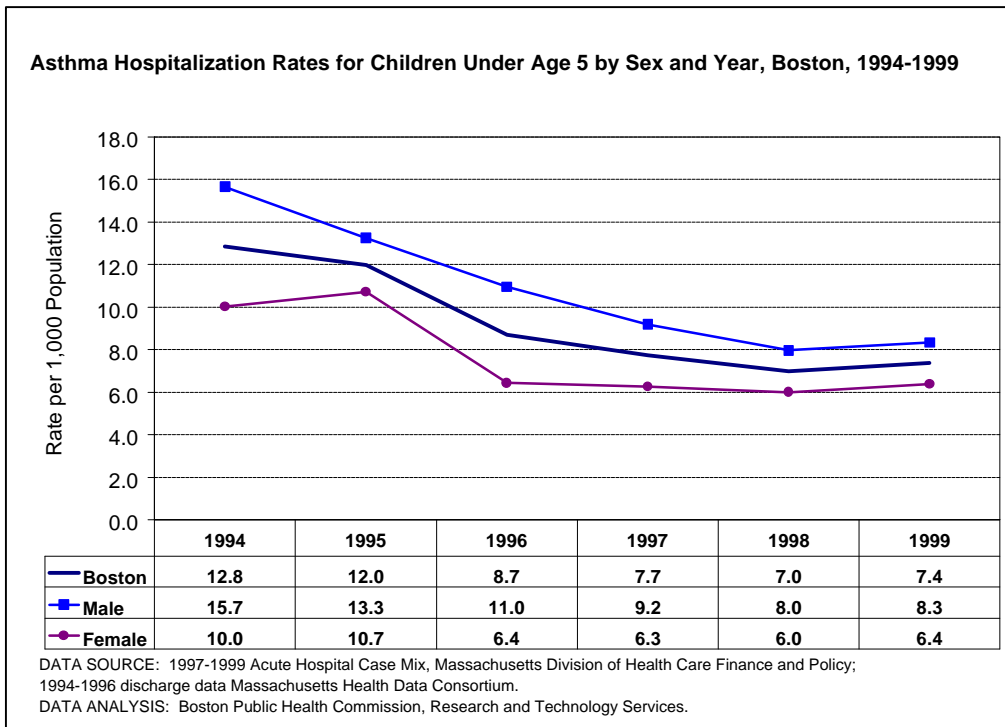
The Boston Public Health Commission and Boston Health Care for the Homeless Program (BHCHP) have conducted small-scale studies and surveys, giving further information on asthma prevalence, the burden of asthma, and environmental contributors. One of these is an asthma needs assessment among residents of family shelters served by BHCHP; homeless children are believed to have up to four times the rates of asthma as housed children. (8) To date 158 surveys have been completed.

Preliminary findings of this survey showed the following:

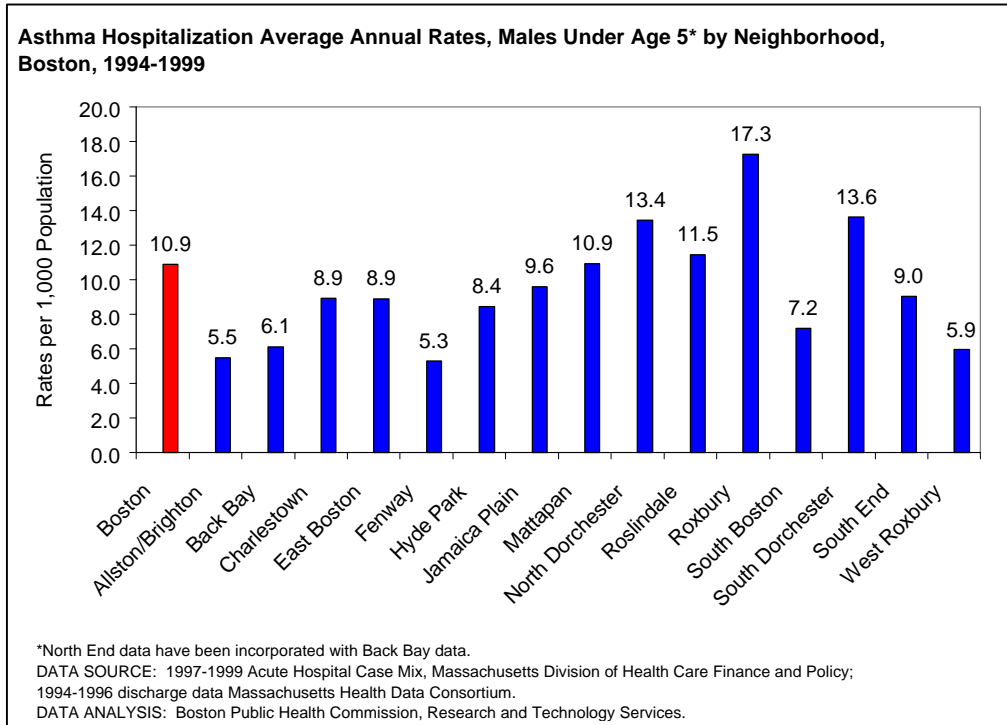
- 30.0 % of adults reported that they had doctor-diagnosed asthma.
- 22.5% of children included in the survey had doctor-diagnosed asthma.
- Of those diagnosed with asthma, 28.6% of adults and 22.2% of children had signs of poorly controlled asthma, including coughing, wheezing or having trouble breathing at night more often than one or two nights a week.
- Of those who did not have a diagnosis of asthma, 17.1% of adults and 13.3% of children reported symptoms indicative of undiagnosed asthma including coughing, wheezing or having shortness of breath more often than one or two nights a week.

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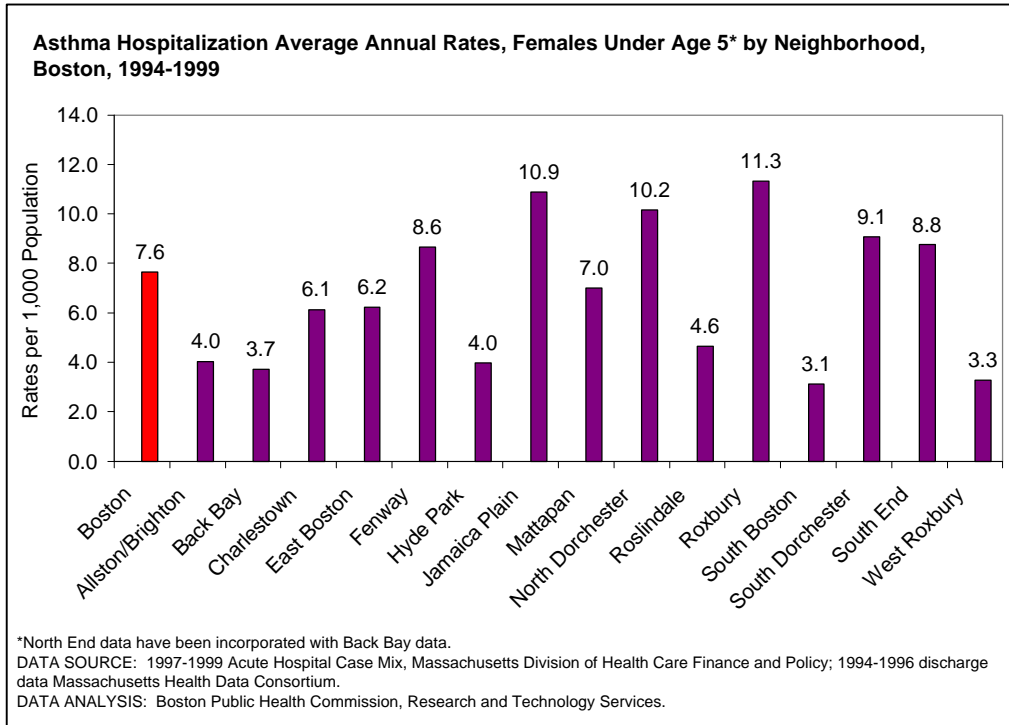
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- Nationally, asthma continues to be a major health problem, especially among children. The Centers for Disease Control and Prevention estimates that asthma affects 15 million people in the US, a third of them children. Asthma is the most common chronic disease for children.
- Children under the age of 5, especially Blacks and Hispanics, are disproportionately affected.
- Over time, however, asthma hospitalization rates among children under the age of 5 have declined in Boston. (There was a 5.7% increase in the overall rate and similar increases in the rates for male children and female children between 1998 and 1999.) Between 1994 and 1999, the overall Boston rate declined 42.2%. Although the rates declined for both male children and female children, the decline was greater for males (47.1%) than for females (36.6%).
- Between 1994 and 1999, Boston’s male children under the age of 5 were hospitalized more often for asthma than female children under the age of 5. In 1994, they were 1.6 times more likely to be hospitalized, and in 1999, 1.3 times more likely.



- During the period 1994-1999, in every Boston neighborhood except the Fenway and Jamaica Plain, asthma hospitalization rates for male children under the age of 5 were higher than for female children of the same age group. (See next chart for female rates.)
- Roxbury, South Dorchester, and North Dorchester had Boston’s highest asthma hospitalization rates for males under the age of five. Roxbury’s rate was 58.7% higher than the overall Boston rate for male children under the age of five, South Dorchester’s was 24.8% higher, and North Dorchester’s was 22.9% higher.



- Asthma hospitalization rates for Roxbury, Jamaica Plain, North Dorchester, and South Dorchester were the highest of all Boston neighborhoods. Asthma hospitalization rates for Roxbury were 48.7% higher during 1994-1999 than the overall Boston rate for females under the age of five. Rates for Jamaica Plain were 43.4% higher, for North Dorchester 34.2% higher, and for South Dorchester 19.7% higher.
- Although the rates for males under age five were higher than for females this age in most Boston neighborhoods, the rate for female children was higher in the Fenway and similar to the rate for male children in the South End. (See previous charts for male rates.)

Childhood Lead Poisoning

Introduction

According to the Centers for Disease Control and Prevention, childhood lead poisoning is among the most common pediatric health problems in the US, and one that is entirely preventable. Since most children with elevated blood lead levels (BLLs) have no symptoms, many cases are undiagnosed and untreated. (1) Approximately 1 million children in the US have elevated blood lead levels high enough to affect their health adversely. (2)

Lead exposure can occur from deteriorating paint and dust, food, drinking water, air, and contaminated soil. (3) Currently, however, leaded paint that has deteriorated and contaminated soil and dust in old housing is the major source of childhood lead exposure. (4)

Exposure to excessive levels of lead, especially for children under the age of 6, can cause brain damage; affect a child's growth and development; cause hearing problems, headaches and appetite loss; damage kidneys; and result in learning and behavioral problems. (3)

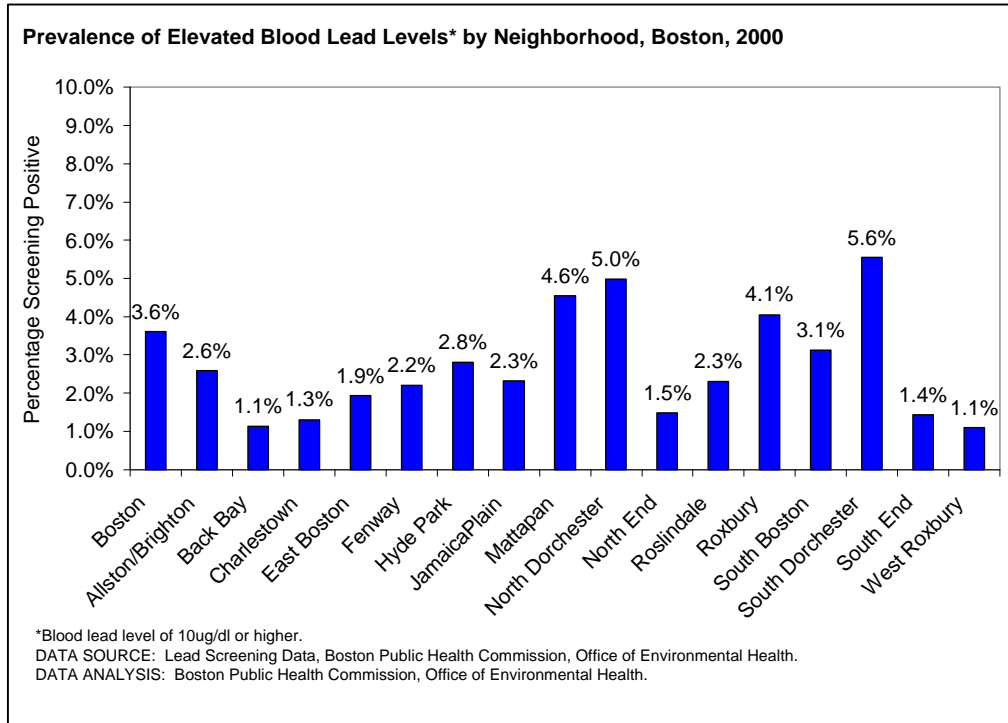
Exposure to lead is estimated by measuring levels in the blood. For children, the CDC considers levels of 10 micrograms per deciliter (10 ug/dL) or greater to be cause for concern. (3)

An analysis of BLLs during 1994-1999 among children ages 6 to 72 months in Boston indicates that despite a 45.0% decline in the percentage of children with elevated BLLs, geographic variation in lead exposure warranted continued surveillance. The analysis also found that although declines occurred in all Boston neighborhoods, elevated BLLs continued to be highest in neighborhoods with higher proportions of minority children, children from low-income families, and unoccupied properties. (5)

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- In 2000, 27,541 Boston children between the ages of six and 72 months were screened for lead. Of the children screened, 994 (3.6%) had blood levels of 10 micrograms per deciliter (µg/dL) or higher.
- The number of Boston children with blood lead levels of 10 µg/dL or higher has been declining since 1994, when 9.2% of children had blood lead levels at that level or higher. In 1999, this percentage was 4.6%. Between 1999 and 2000, the percentage of children with blood lead levels of 10 µg/dL or higher declined by 21.7%. The Healthy People 2010 goal is to have no children with elevated blood lead levels.
- In 2000, the prevalence of elevated blood lead levels in children was highest in South Dorchester (5.6%), followed by North Dorchester (5.0%). Two other neighborhoods, Mattapan (4.6%) and Roxbury (4.1%), also had children who had blood lead levels higher than Boston's overall average.

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Cardiovascular Disease

Introduction

Cardiovascular disease (CVD) is a group of conditions that affect the heart and blood vessels. It includes high blood pressure, coronary heart disease, stroke, congestive heart failure, and congenital heart defects. According to an estimate from the American Heart Association, 60,800,000 Americans have some form of CVD. (1,2)

Cardiovascular disease has been the leading cause of death in the US every year since 1900, with the exception of 1918, when the influenza pandemic ranked number one. An average of 1 death every 33 seconds in the US, or 2,800 deaths a day, is due to cardiovascular disease. In 1998, CVD claimed almost one million lives in the US, or about 41% of deaths from all causes. (4)

Coronary heart disease (CHD) is the most common form of cardiovascular disease and is responsible for half to two-thirds of all deaths from CVD annually. It is the cause of heart attacks, a well known form of heart disease. Approximately 1.1 million heart attacks occur each year in the US. (3) CHD is caused by a by narrowing of, or blockages in, the arteries that carry blood to the heart muscle.

According to recent Centers for Disease Control and Prevention and National Center for Health Statistics estimates, “if all forms of major CVD were eliminated, life expectancy in the US would increase by almost 7 years.” (1)

Despite declines in cardiovascular disease (CVD) mortality over the past several years, it remains the leading cause of mortality for all races/ethnicities. In 1998, CVD accounted for a greater percentage of deaths for White, Black, and Hispanic women than for White, Black, and Hispanic men. The percentages of CVD deaths for Asian women and men were about equal. (1) Cardiovascular disease mortality rates tend to increase with age for both men and women, with less difference between the sexes among older age groups. Rates vary by race/ethnicity, with the rate for Blacks the highest among all races/ethnicities.

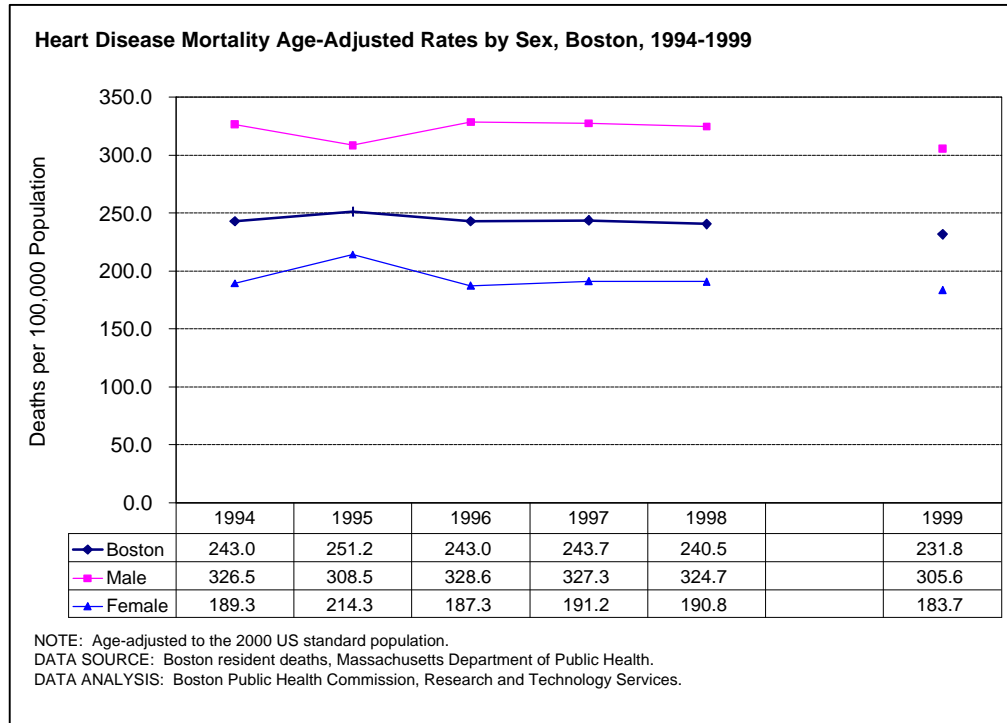
Risk factors for cardiovascular disease include tobacco smoke, overweight and obesity, diabetes, high blood cholesterol, physical inactivity, high blood pressure, gender, family history, and age. Many of these risk factors are preventable or modifiable once acquired. Boston data for many of these risk factors are presented in tables and charts in the “Healthy Lifestyle Measures” of this report and also immediately following this background section on cardiovascular heart disease.

Through lifestyle choices and changes, the risk for cardiovascular disease can be reduced. Some of these lifestyle choices or changes include the following: avoiding cigarette smoking, monitoring and controlling high blood pressure and blood cholesterol, engaging in physical activity on a regular basis, maintaining weight control, and eating healthful foods.

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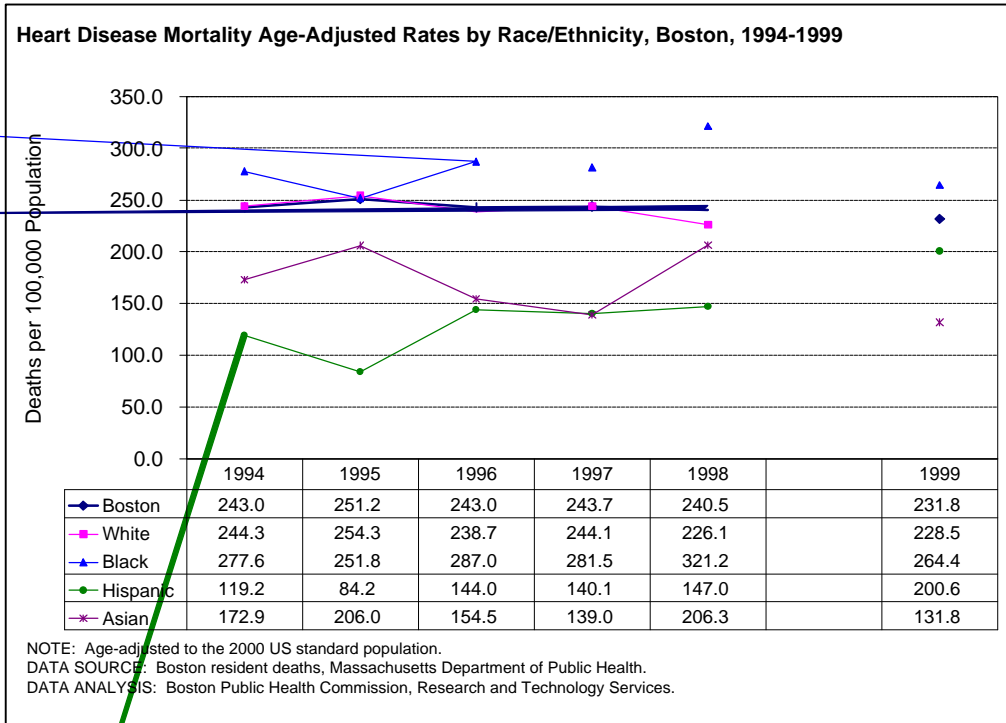
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NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

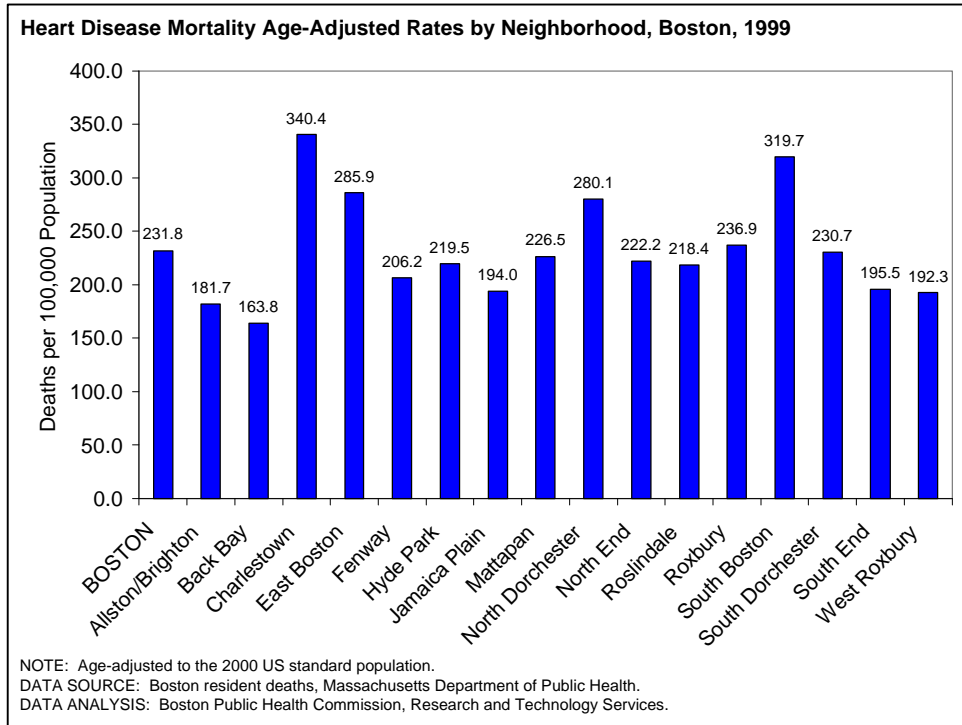
- Between 1994 and 1998 Boston’s heart disease mortality rate declined 1.0%. Males experienced a decline of less than one percent, while females experienced a small increase of less than one percent.
- Males had a consistently higher heart disease mortality rate than females and than Boston overall. The rate for males was 1.4 to 1.8 times higher than the rate for females.
- In 1999, the heart disease mortality rate for males was 1.7 times higher than the rate for females and 31.8% higher than Boston’s rate.

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NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Between 1994 and 1998, the heart disease mortality rate for Whites declined 7.4% following the trend in Boston. However, heart disease mortality rates among all other racial and ethnic groups increased. The highest increase occurred among Hispanics (23.3%). The heart disease mortality rate for Asians increased 19.3% and for Blacks, 15.7%.
- Between 1994 and 1998 the heart disease mortality rate was highest for Blacks except in 1995 when the rate was highest for Whites.
- In 1999, the heart disease mortality rate was highest for Blacks. That rate was 14.1% higher than the rate for Boston. Asians had the lowest mortality rate, which was also 43.1% lower than the rate for Boston.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD), and Preliminary comparability ratios* in Technical Notes and the Glossary.

- In 1999, heart disease was the leading cause of death for Boston residents, accounting for 25.3% of total deaths.
- The neighborhoods of Charlestown, South Boston, East Boston, and North Dorchester had heart disease mortality rates that were higher than for Boston overall. In 1999, the rate for Charlestown was the highest among Boston’s neighborhoods, 46.9% higher than the overall Boston rate. South Boston had the second highest rate, 37.9% higher than the Boston rate. East Boston had the third highest, 23.3% higher than the Boston rate. The rate for North Dorchester was 20.8% higher than the Boston rate.
- Back Bay had the lowest heart disease mortality rate, 29.3% lower than the Boston rate.

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Cancer

Introduction

Cancer occurs when organ cells proliferate abnormally. If left untreated, these abnormal cancer cells attack normal tissues and spread throughout the body. A cancerous tumor's cells divide without control and attack and damage normal tissues and organs. Cancer cells are able to break away from a malignant tumor and spread locally via the bloodstream or lymphatic system. The spreading of cancer is known as *metastasis*. Cancer is named according to the organ where it originates.

In the United States, the number of new cancer cases and deaths has declined during the 1990s, (1) but cancer is still ranked second to heart disease in leading causes of mortality. (2) During 1990-1997, the number of new cancer cases per 100,000 persons per year fell 0.8 %. The greatest decrease occurred after 1992 (1.3 %). Cancer mortality rates between 1990 and 1997 declined 0.8 %. The Healthy People 2010 goal is to reduce the overall cancer mortality rate to 158.7 cancer deaths per 100,000. Men have seen the largest decline, but they have higher incidence rate than women. Lung, prostate, breast, and colorectal cancer are the leading causes of cancer deaths and account for over half of new cancer cases. (1)

Disparities exist among races/ethnicities for cancer incidence as well as mortality. Blacks are more likely than other races/ethnicities to develop cancer. For the period 1990-1997, the national cancer incidence rate for Blacks was 444.6 new cases per 100,000. This was 10.6% higher than the rate for Whites, 59.2% higher than the rate for Asians, and 62.9% higher than the rate for Hispanics. (4)

During each of the years of 1995-1998, Blacks in the US had the highest cancer mortality rate and Whites the second highest. Rates for Hispanics and Asians were substantially lower. In 1998, the cancer mortality rate for Blacks (161.2 deaths per 100,000) was 33.2% higher than the rate for Whites (121.0 deaths per 100,000), double the rate for Hispanics (76.1 deaths per 100,000), and for Asians (74.8 deaths per 100,000). (5)

Prevention and early screening are ways to diminish cancer deaths. The Healthy People 2010 goals are to increase the percentage of women over 18 who have received a Pap smear test in the preceding three years to 90%. Another goal is to increase to 70% the number of women older than 40 who received a mammogram in the past two years. The Healthy People 2010 goals also include increasing to 50% the proportion of adults over 50 who have had a sigmoidoscopy for colorectal cancer screening examinations. Primary prevention involves identifying and avoiding risk factors, which include cigarette smoke, alcohol consumption, ultraviolet radiation exposure (sun), occupational exposure to carcinogens, some viruses, poor diet, and physical inactivity.

Lung cancer is the leading cause of cancer death in the United States. The Healthy People 2010 goal is to reduce lung cancer mortality to 44.8 deaths per 100,000 people. While it has been declining in men since 1990, lung cancer mortality continues to increase in women, reflecting the growing popularity of smoking among women in recent decades. (6) Cigarette smoking is the primary cause of lung cancer, accounting for about 85% of all cases. In non-smokers, environmental tobacco exposure also significantly increases the risk of lung cancer. (7)

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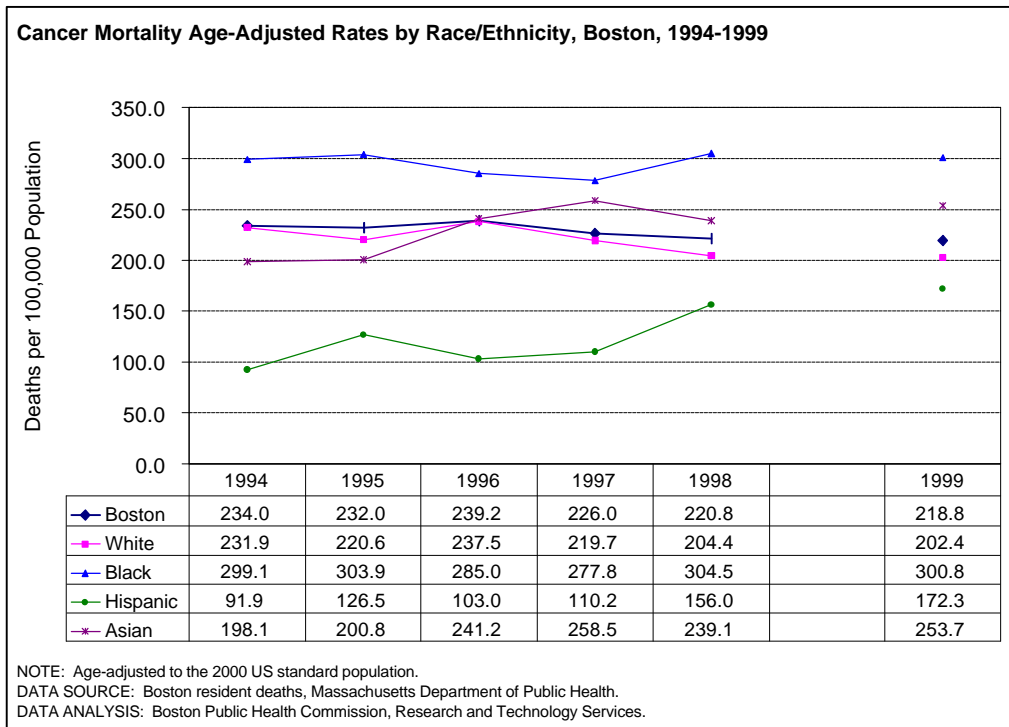
Breast cancer death rates in the United States have declined about 2% per year since 1990 and have dropped sharply since 1995. The Healthy People 2010 goal is to reduce breast cancer mortality rate to 22.2 deaths per 100,000 women. Between 1990 and 1997, the incidence rate in Black women was lower compared to White women, but the mortality rate was higher. Breast cancer is the leading cause of cancer mortality among women in the United States. Most cases and most deaths occur in women over age 50. (1)

Colorectal cancer is cancer of the large intestine. For American men, colorectal cancer has the third highest incidence of any cancer site. It ranks second to breast cancer for Hispanic, American Indian/Alaska Native, and Asian/Pacific Islander women, and third for White and Black women. Since 1985, incidence has decreased at an average of 1.6% per year. The Healthy People 2010 goal is to reduce the colorectal cancer mortality rate to 13.9 deaths per 100,000 people. Colorectal cancer mortality rates rank third after lung and prostate cancer for men and third after breast and lung cancer for women. Epidemiological studies have suggested an association between a diet that is high in fat and red meat and increased risk for colorectal cancer. (1)

Prostate cancer is the second leading cause of death from cancer among men in the United States. (8) The Healthy People 2010 goal is to reduce prostate cancer mortality rates to 28.7 deaths per 100,000 people. Black men have the highest incidence rate of prostate cancer, while Asian and Native American have the lowest. Men ages 65 and older account for 80% of the diagnosed cases. (8) Mortality rates are much lower than incidence rates for this disease. (9)

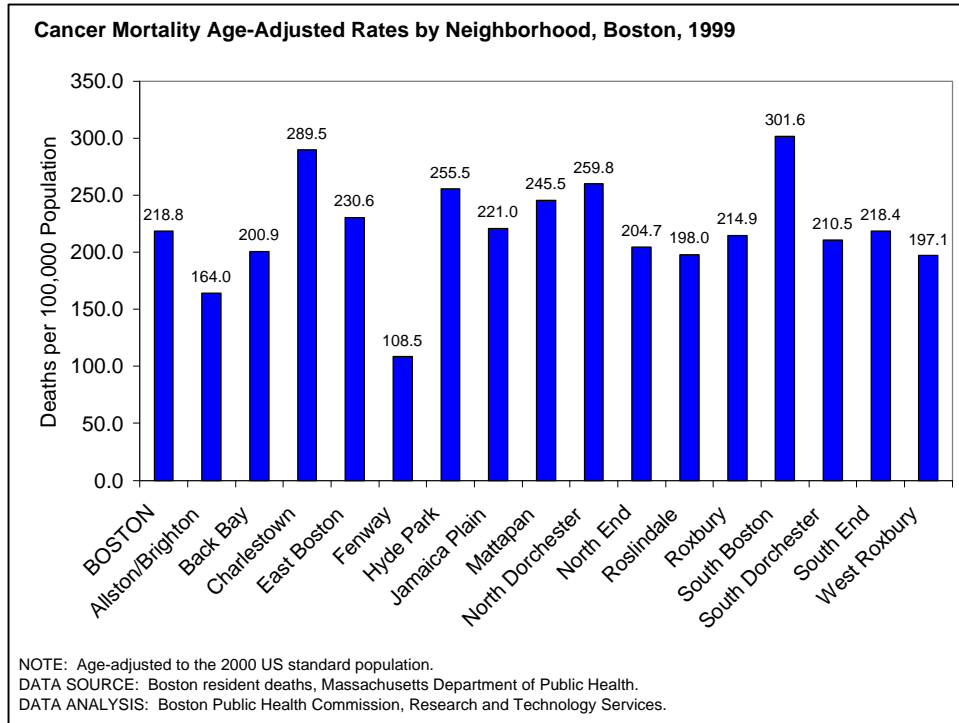
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- Between 1994 and 1998, the cancer mortality rate for Whites declined 11.9%, following a similar trend for Boston. However, cancer mortality rates among all other racial and ethnic groups increased. The highest increase occurred among Hispanics (69.7%). The cancer mortality rate for Asians increased 20.7%. Blacks experienced the smallest increase, 1.8%.
- In 1999, the cancer mortality rate was highest for Blacks, whose rate of 300.8 deaths per 100,000 was 37.5% higher than the rate for Boston. Asians had the second highest rate, which was 16.0% higher than the rate for Boston. Hispanics had the lowest cancer mortality rate, 21.3% lower than the rate for Boston.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- In 1999, cancer was the second leading cause of death (218.8 deaths per 100,000) among Boston residents. This is 37.9% above the Healthy People 2010 target of no more than 158.7 deaths per 100,000. Heart disease was the leading cause of death, among Boston residents.
- In 1999, cancer mortality rates for several Boston neighborhoods were higher than the rate for Boston overall. South Boston had the highest rate among the 16 neighborhoods and Charlestown the second highest. Their rates for were 37.8% and 32.3% higher than the rate for Boston.
- Fenway and Allston/Brighton were two of several neighborhoods with cancer mortality rates lower than the Boston rate. Their rates were the two lowest ones among Boston neighborhoods. They were 50.4% and 25.0% lower than the Boston rate.

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Stroke

Introduction

Stroke is a form of cardiovascular disease that affects blood vessels supplying blood to the brain. It is the third leading cause of death in the US and also a leading cause of long-term disability. Nationally, approximately 600,000 people a year have strokes. (1,2)

Although stroke morbidity is about the same for men and women, women account for over half of all stroke mortality. In 1998, there were 158,448 stroke deaths nationally, of which 97,303 were women and 61,145 men. More women than men die of stroke irrespective of age. (3)

The rate of age-adjusted stroke mortality is higher for Blacks than Whites. Nationally in 1997, the age-adjusted mortality rate was 25.7 deaths per 100,000 for White men, 48.6 for Black men, 22.5 for White women, and 37.9 for Black women. (2)

Risk factors for stroke include age, sex, race, family history, personal history of diabetes, high blood pressure, certain types of heart disease, high blood cholesterol, and having had a previous stroke. Certain lifestyle behaviors also contribute to the risk of stroke. They include cigarette smoking, excessive alcohol drinking, and being overweight or obese.

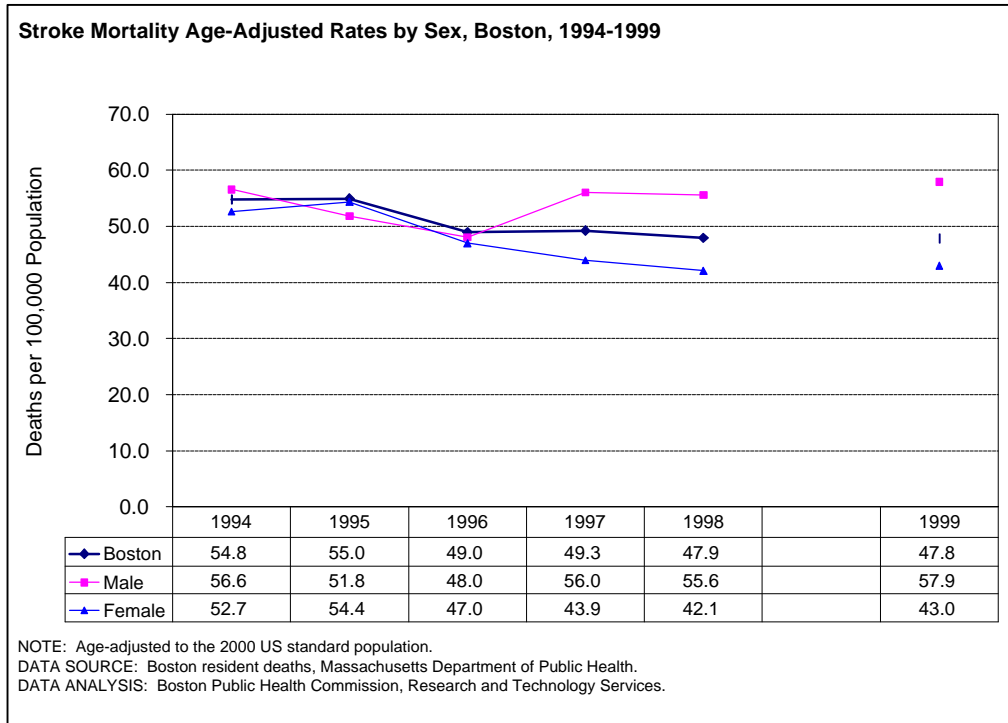
The risk of having a stroke increases with age. People over age 65 are disproportionately affected, with two-thirds of all strokes occurring in that age group. Men have a slightly higher stroke risk than women. However since US women generally live longer than men, more stroke survivors over age 65 are women. The risk of a stroke is also higher for Blacks, for people with a family history of stroke, and for people with diabetes. (4)

High blood pressure increases stroke risk by a factor of 4 to 6. Forty percent to 90% of all stroke patients had high blood pressure before their stroke. Having a form of heart disease such as atrial fibrillation or coronary heart disease, or having high blood cholesterol also place an individual at greater risk for a stroke. (4)

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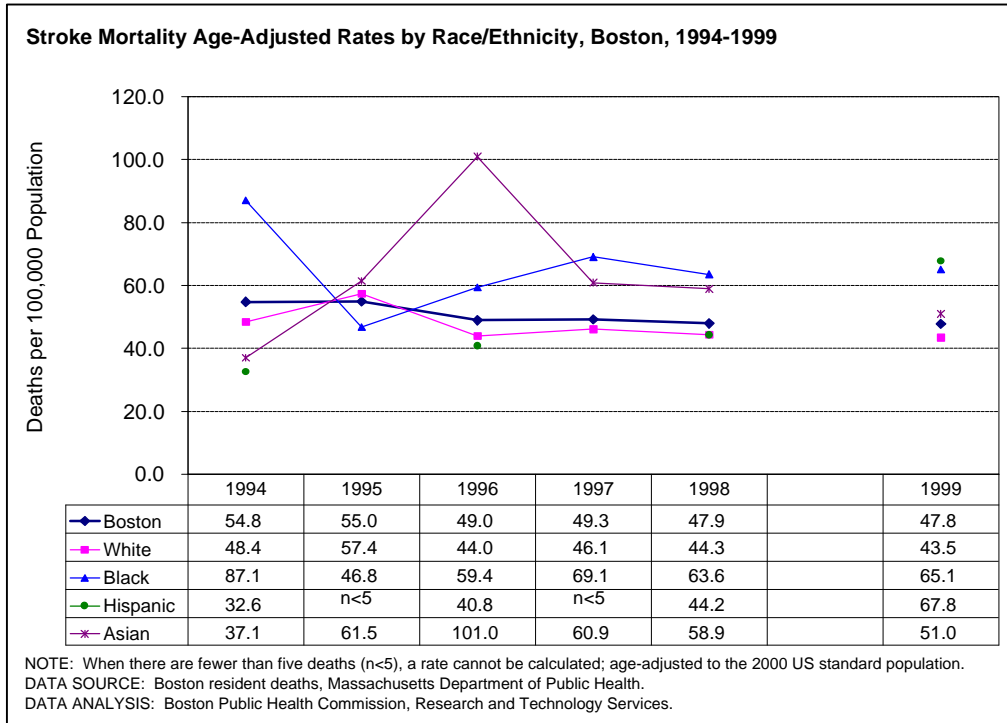
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- The stroke mortality age-adjusted rate among Boston residents declined 12.6% between 1994 and 1998.
- Except for 1995, males had a higher stroke mortality rate than females. Between 1994 and 1998, the stroke mortality rate among males was between 7.4% and 32.1% higher than the rate among females.
- In 1999, the stroke mortality rate for males was 34.7% higher than for females and 21.1% higher than the overall Boston rate.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Between 1994 and 1998, stroke mortality among Boston residents declined by 12.6%. The stroke mortality rates for Whites and Blacks followed a similar trend, with the mortality rate for Whites declining 8.5%, and for Blacks 27.0%. However, cancer mortality rates among Asians and Hispanics increased. The largest increase occurred among Asians (58.8%). During the years 1995 and 1997, there were insufficient numbers of stroke-related deaths among Hispanics for calculation of a mortality rate. Hispanics saw an increase of 35.6% in the stroke mortality rate between 1994 and 1998.
- In 1999, the stroke mortality rate was highest among Hispanics and Blacks, whose rates were 41.8% and 36.2% higher than the rate for Boston. Among Asians, the mortality rate was 6.7% higher than Boston's rate. Whites had the lowest mortality rate, 9.0% lower than the rate for Boston.

Diabetes

Introduction

Diabetes is chronic disease that affects an estimated 16 million Americans, of whom 5.4 million are unaware that they have the disease. Approximately 18% of the US population ages 65 and over has diabetes. (1,2)

Diabetes is the leading cause of kidney failure, accounting for 40% of new cases in 1995, the leading cause of new cases of adult blindness (each year, 12,000-24,000 people lose their eyesight due to diabetes), and the leading cause of non-traumatic lower-limb amputations. The risk of a leg amputation is 15-40 times greater for people with diabetes than for those who do not have diabetes. Approximately 56,000 lower limb amputations are performed annually on people with diabetes. People with diabetes are also 2 to 4 times more likely than non-diabetics to have a heart attack or stroke. Each year at least 190,000 people die as a result of diabetes and its complications. (1,3)

There are two main types of diabetes. The first is commonly diagnosed among children and affects 35,000 Americans. It is called Type 1 diabetes. The other type of diabetes accounts for 90-95% of all diabetes diagnoses and is called Type 2 diabetes. It is primarily diagnosed in people age 45 and over. The risk for Type 2 diabetes rises with age. (2,4,5)

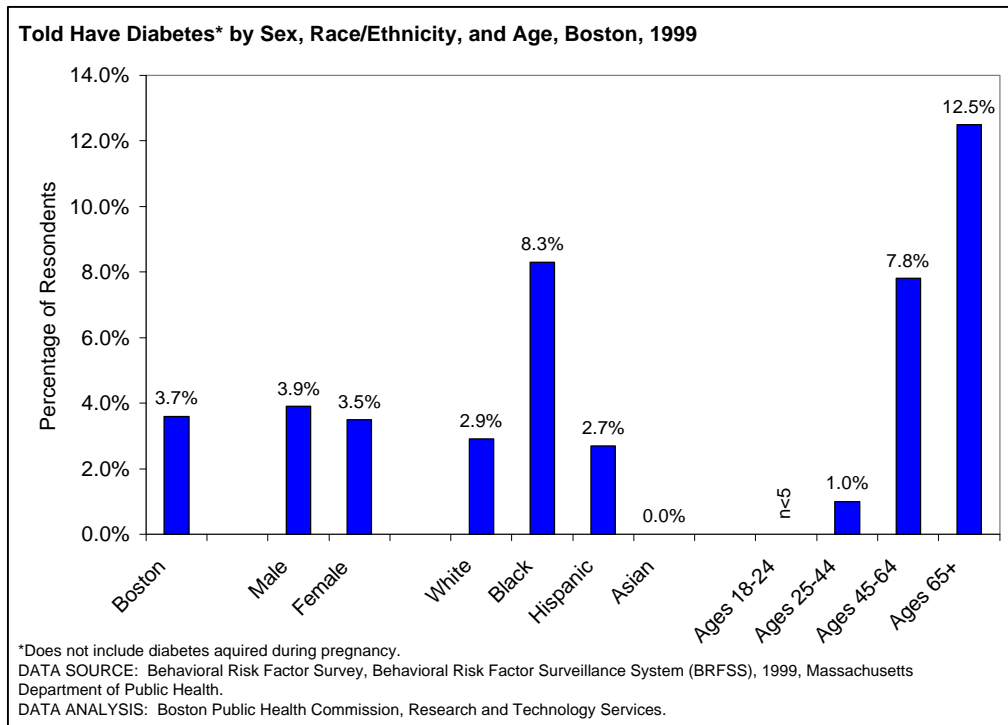
Individuals at increased risk for Type 2 diabetes include those over age 45, Blacks, Hispanics, Asians, and Native Americans, women who have had gestational diabetes, individuals with a family history of diabetes, and those who are overweight or not exercising regularly. (1,2,4,5)

Blacks are 1.7 times more likely to have Type 2 diabetes than non-Hispanic Whites. An estimated 2.3 million Black Americans have diabetes, of whom 25% are between the ages of 64 and 75. One in four Black American women over age 55 has diabetes. Hispanics are almost twice as likely to have Type 2 diabetes as non-Hispanic Whites. Approximately 26% of Puerto Ricans and almost 16% of Cuban Americans between the ages of 45 and 74 have diabetes. (1,2,4,5)

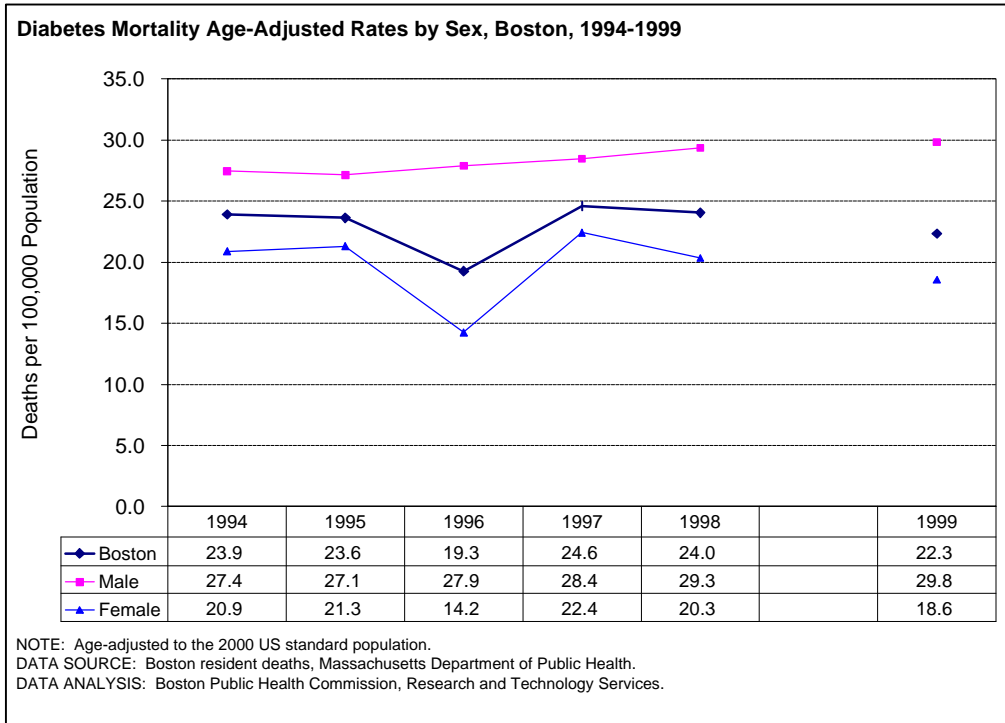
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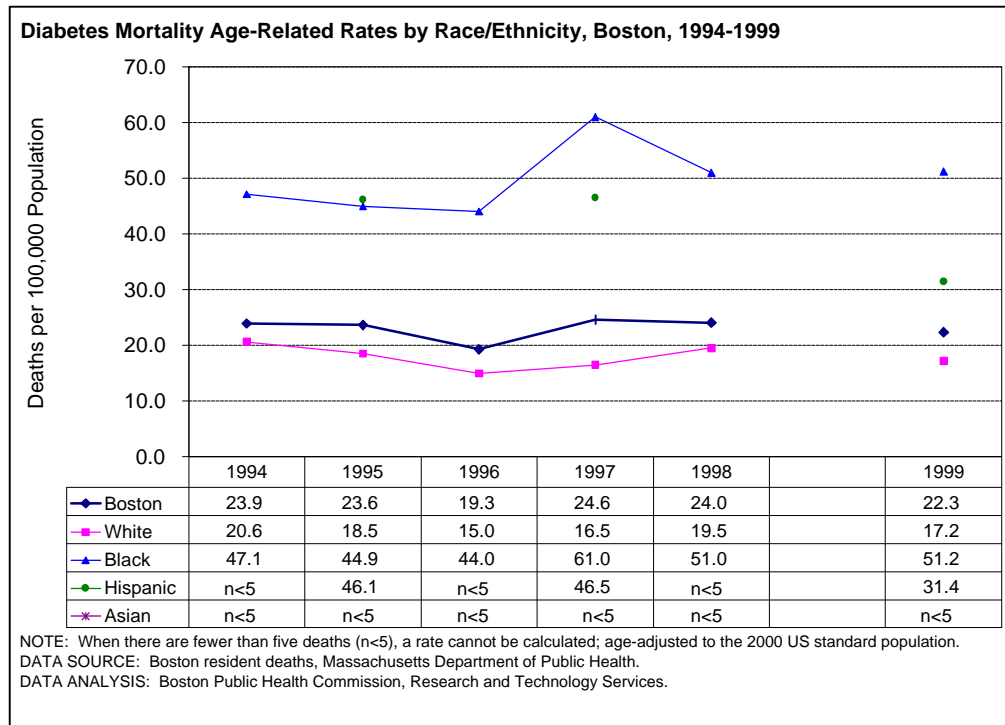


- Nearly 4% of adult Boston residents have been told by a health care professional that they have diabetes.
- Slightly more men than women reported being told that they have diabetes.
- A far greater percentage of Boston residents age 65 and over than younger residents have been told they have diabetes. Their percentage is 1.6 times higher than the percentage for ages 45-64.
- A much higher percentage of Black residents have been told they have diabetes. The percentage for Blacks is 2.2 times higher than the percentage for Boston overall. When compared with other racial and ethnic groups, the percentage of Blacks who have diabetes is 2.9 times higher than the percentage for Whites and 3.1 times higher than the percentage for Hispanics.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Deaths due to diabetes were consistently higher among males than among females and for Boston overall. Between 1994 and 1998 the mortality rate for males was 1.3 to 2.0 times higher than the rate for females.
- In 1999, the diabetes mortality rate for males was 60.2% higher than for females and 33.6% higher than the Boston rate.
- Diabetes mortality rates have changed very little for either males or females over time.



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- In each of the years shown the diabetes mortality rate was highest for Blacks.
- Between 1994 and 1998, the mortality rate due to diabetes remained unchanged among Boston residents (a slight increase of less than one percent). Deaths due to diabetes were lowest in 1996. Diabetes mortality rates by racial and ethnic groups varied. The mortality rate increased 8.3% among Black residents. The mortality rate among Whites decreased 5.3%.
- During the years 1994, 1996, and 1998, there were too few diabetes deaths among Hispanics to calculate a mortality rate. In those years in which a rate was calculable, the rate remained unchanged. Asians had fewer than five deaths in each of the years 1994-1999; therefore, a rate could not be calculated.
- In 1999, diabetes mortality was highest among Blacks, 2.3 times higher than the rate for Boston. Hispanics had the next highest mortality rate, 40.8% higher than the rate for Boston. The diabetes mortality rate among Whites was 22.9% lower than the Boston rate. Among Asians, there were fewer than five deaths from diabetes, which meant a rate could not be calculated.

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Substance Use

Drug Use

In 2000, the Department of Health and Human Services (DHHS) estimated that, in 1999, 14.8 million Americans (6.7% of those older than 12) were current users of illicit drugs, far lower the 1979 peak level of 25 million current users. (1)

National Health Services (NHS) data show that the total number of current (at least once in the past month) illicit drug users ages 12 and older has remained level since 1992. (1)

According to a recent national survey, adolescents' use of illicit drugs has shown a consistent moderating trend after dramatic increases in the early 1990s. (1)

Another survey shows a stable overall trend in the numbers of drug-related emergency room visits over the past five years in the general population. Among adolescents ages 12-17, there was an eleven percent decrease in emergency room visits for drug-related reasons from 1998 to 1999. (1)

A large proportion of the recent heroin initiates are young and are smoking, sniffing, or snorting heroin. Nationwide, an estimated 471,000 persons used heroin for the first time during the period 1996-1998, a quarter (125,000) of whom were under age 18 and another 47% (222,000) of whom were ages 18-25 at the time of first use. Only thirty-seven percent of those new users reported ever having injected heroin. Most of those reporting heroin use (89 percent) lived in metropolitan areas. (2)

Alcohol Use

According to NHS data, 105 million Americans (47.3%) reported current use of alcohol in 1999. About 45 million people (20.2%) engaged in binge drinking, and 12.4 million (5.6%) were heavy drinkers. For the past few years alcohol use has remained stable among Americans ages 12 and over. (1)

Alcohol use among all teenagers remains at high levels. In 2000, 30.0 % of twelfth graders, 26.2% of 10th graders, and 14.1% of 8th graders reported binge drinking, defined as more than five drinks in a row at least once in the two weeks prior to the survey. (1)

Alcohol use has generally remained stable in the past few years among teenagers. Daily use of alcohol among eighth graders decreased from 1.0% in 1999 to 0.8% in 2000. (1) An estimated 18.6% of young persons age 12-17 used alcohol in the month prior to the survey. (1)

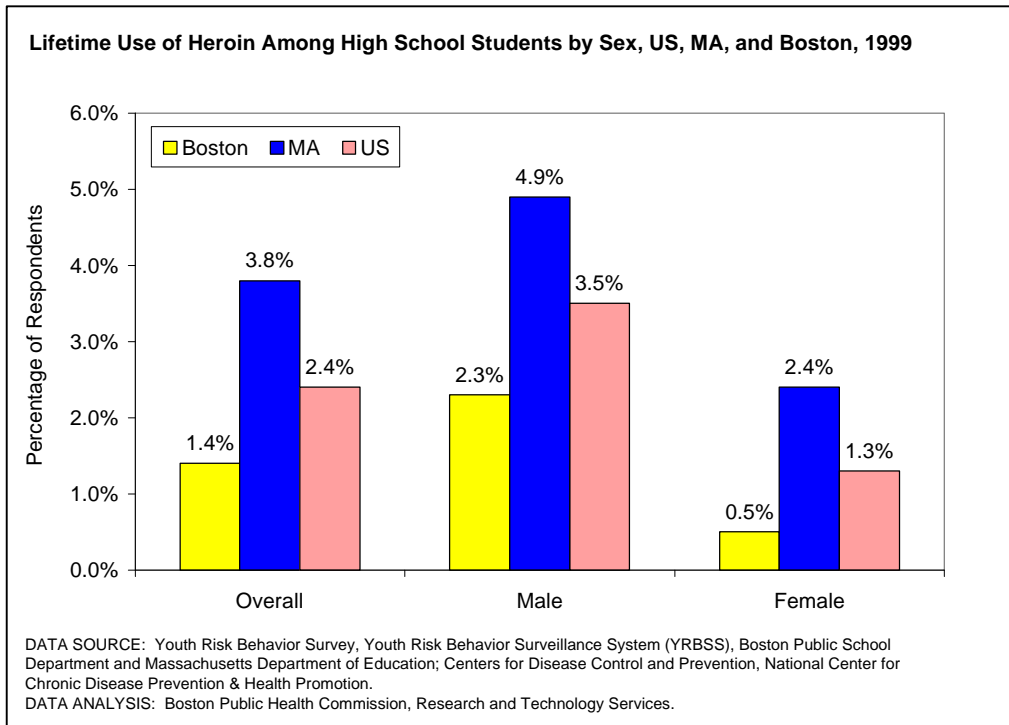
Risk factors for drug and alcohol use among adolescents and young adults include having the perception that drug and alcohol use is not harmful, a family history of substance abuse, not having a close relationship with a parent, having a mental disorder, being the victim of sexual or physical abuse, low academic achievement, and poor self image. (4) Being part of families that relocate two or more times during a five-year period may also be a risk factor for adolescent substance use. (5) Awareness and education programs of all kinds mitigate the risk of substance use for adolescents. (4)

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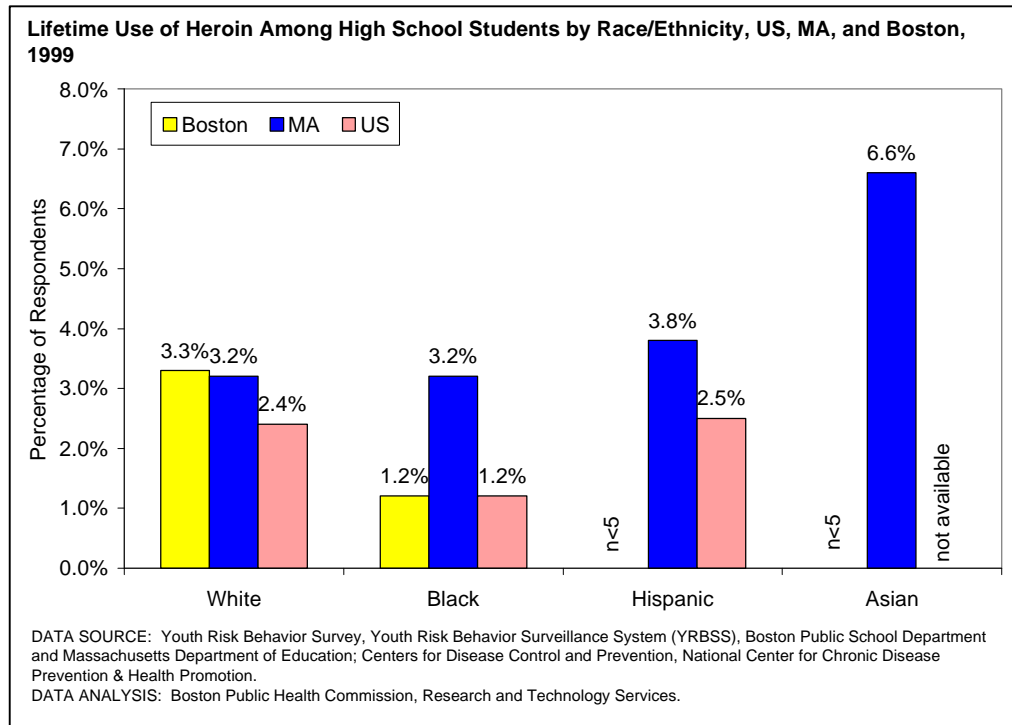
There are numerous adverse health consequences of alcohol and drug use. Substance use among pregnant mothers can lead to spontaneous abortions, fetal distress, preterm birth, low birthweight, small size for gestational age, and delays in babies' physical and mental development. (5) Chronic heavy drinking can cause cirrhosis of the liver and cancers of the liver, esophagus, throat, and larynx. (6,7) Substance use can also adversely affect behavior, which in turn puts abusers at risk for accidents and injuries of all kinds, and for sexually transmitted diseases. (3,5,6,7,8)

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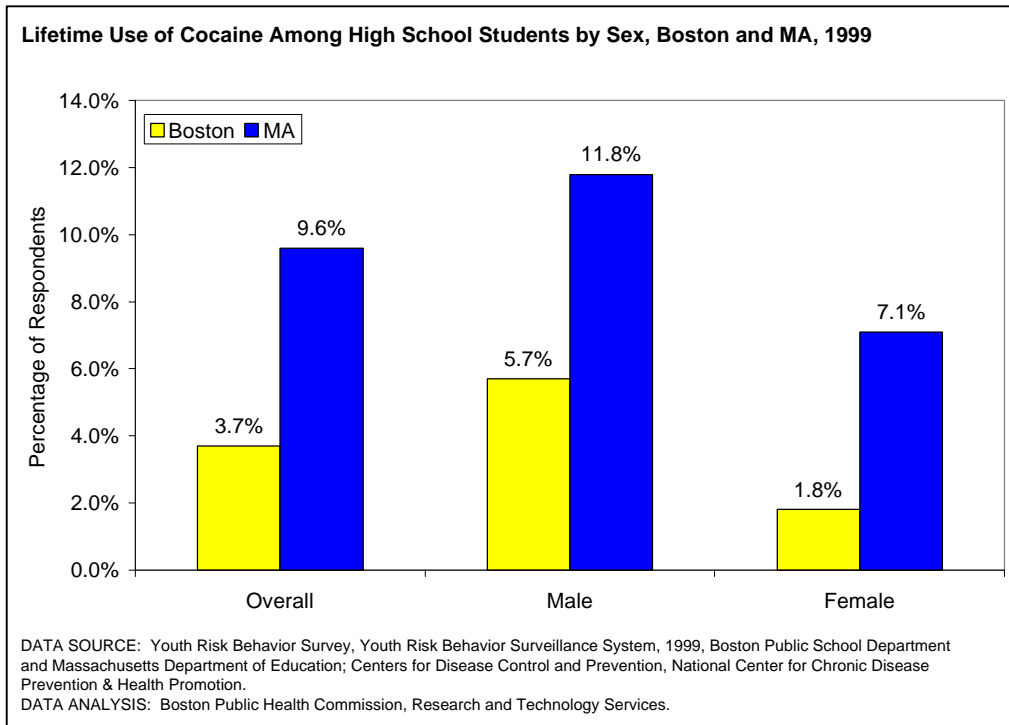
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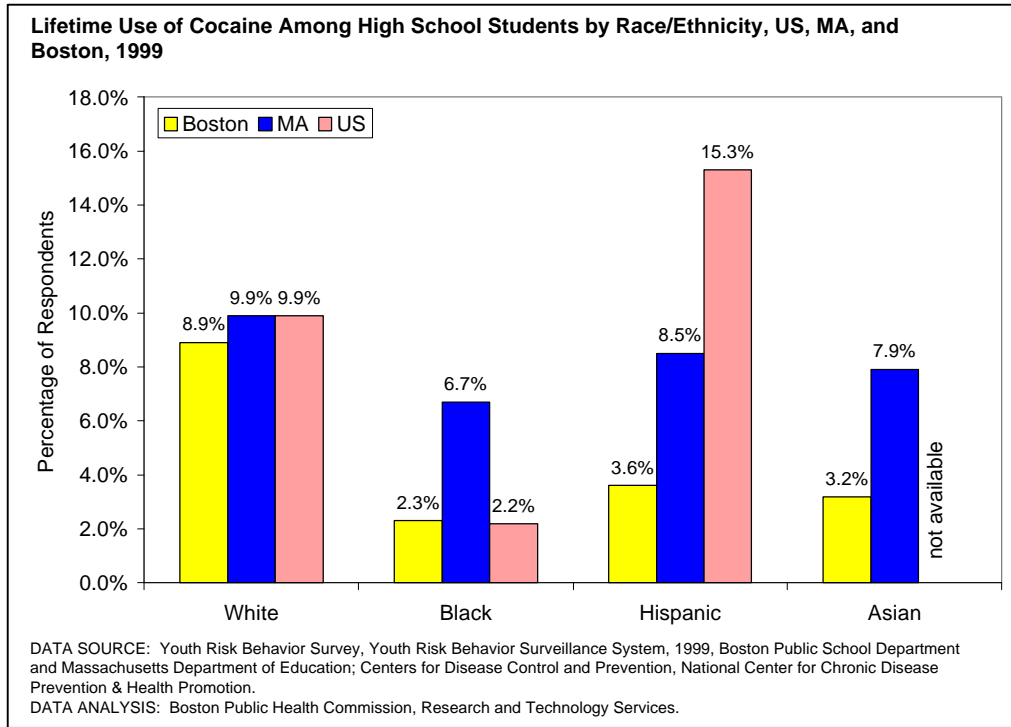
- In 1999, 1.4% of Boston high school students reported using heroin at some point in their lives.
- More than four-and-a-half times as many Boston male high school students as female high school students have used heroin at some point in their lives.
- The percentage of Boston male and female high school students who have ever used heroin is lower than the Massachusetts and the US percentages.



- The percentage of White students who have used heroin at some point in their lives is 2.8 times the percentage of Black students who have used heroin. This percentage is also slightly higher than the Massachusetts percentage.
- The numbers of Boston Hispanic and Asian high school students who reported ever having used heroin were too low to calculate rates, and the 1999 US percentage for Asians was not available.



- In 1999, 3.7% of Boston students had ever used cocaine in their lifetime.
- Three times as many male Boston high school students as female students reported ever using cocaine.
- However, only half as many male Boston high school students have ever used cocaine as male students in Massachusetts overall.



- About four times as many White Boston high school students as Black students reported ever using cocaine.
- White Boston high school students were two to three times as likely to report ever having used cocaine as Hispanic students.
- Hispanic high school students across the United States are more than four times more likely to use cocaine than Hispanic high school students in Boston.

Alcohol and Marijuana Use by High School Students, Boston and Massachusetts, 1997 and 1999

		1997	1999
One drink of alcohol past 30 days:	Boston	40.2%	37.0%
	MA	54.0%	51.8%
Binge drinking in past 30 days:	Boston	18.1%	17.5%
	MA	33.0%	32.6%
Marijuana use past 30 days:	Boston	23.2%	20.5%
	MA	31.0%	30.6%

DATA SOURCE: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System, 1997 and 1999, Boston Public School Department and Massachusetts Department of Education; Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention & Health Promotion.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

- Alcohol and marijuana use by high school students in Boston declined from 1997 to 1999.
- The largest decline (11.6%) was in marijuana use in the 30 days prior to the survey.
- The Healthy People 2010 goal is to reduce to 0.7% the use of marijuana in the past 30 days among adolescents ages 12-17.

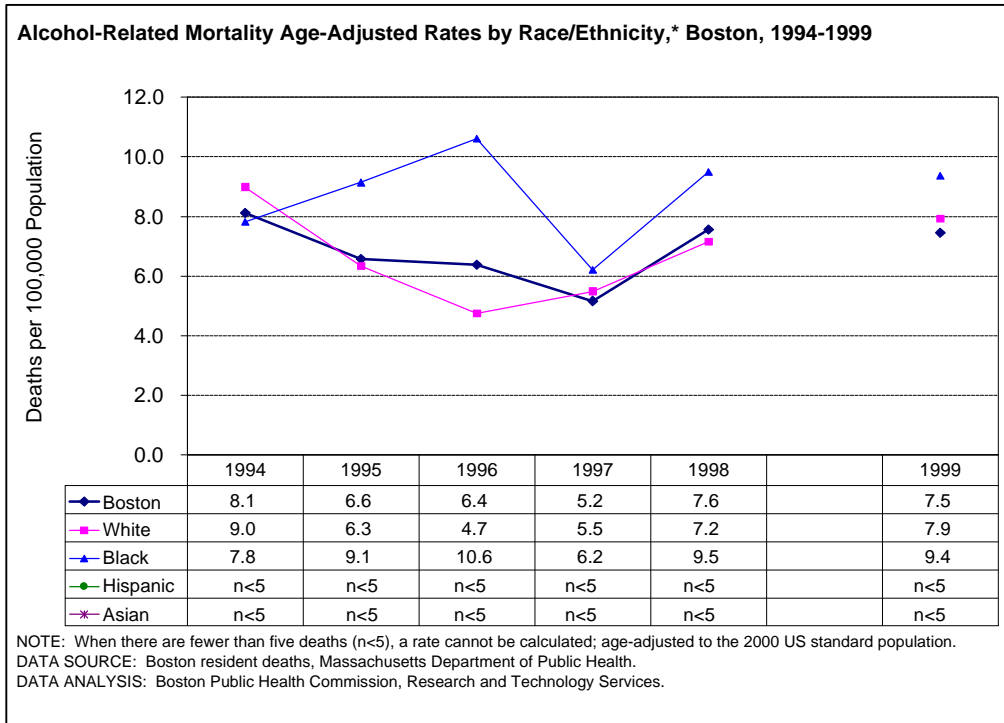
**Alcohol and Marijuana Use by High School Students by Sex,
Boston, 1997 and 1999**

		1997	1999
One drink of alcohol past 30 days:	Overall	40.2%	37.0%
	Male	44.7%	41.4%
	Female	35.9%	33.4%
Binge drinking in past 30 days:	Overall	18.1%	17.5%
	Male	21.4%	21.9%
	Female	14.9%	13.1%
Marijuana use past 30 days:	Overall	23.2%	20.5%
	Male	28.3%	26.4%
	Female	18.4%	14.8%

DATA SOURCE: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System, 1997 and 1999, Boston Public School Department and Massachusetts Department of Education; Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention & Health Promotion.
DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

- In 1999, 37% of Boston students had at least one alcoholic drink in the past 30 days, 21% smoked marijuana, and 18% engaged in binge drinking.
- Alcohol and marijuana use by male and female Boston high school students declined from 1997 to 1999.
- The percentage of male high school students who engaged in binge drinking increased slightly between 1997 and 1999.

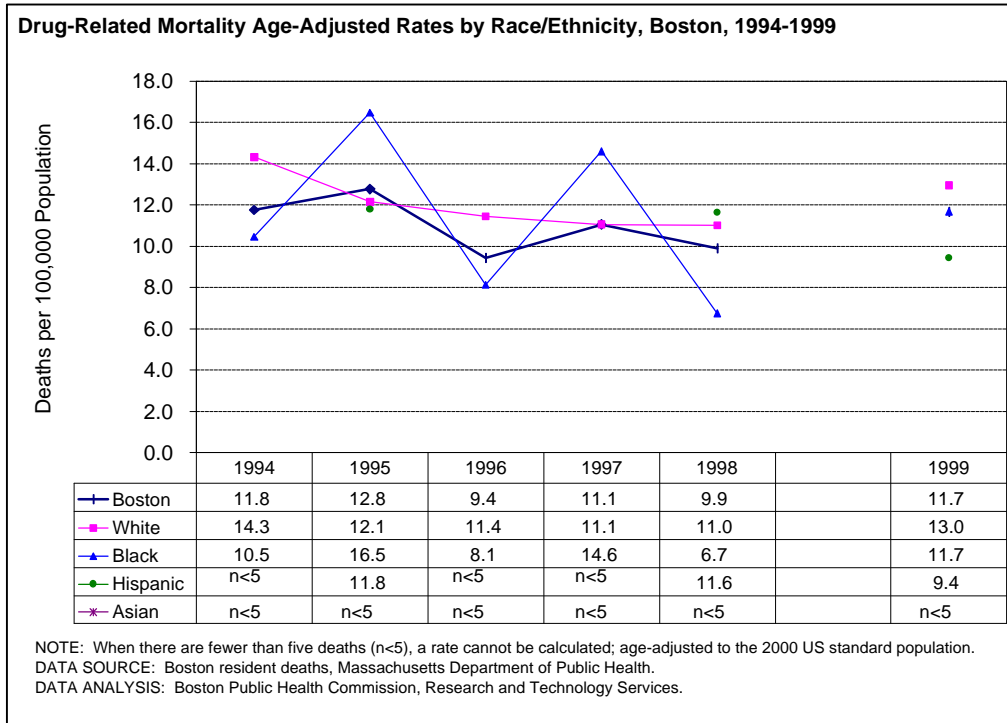
Alcohol-Related Mortality



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- From 1994 through 1997, the alcohol-related mortality rate for Boston residents seemed to be on a downward trend. However, between 1997 and 1998, the rate increased 46.2%. Despite this increase, there was still an overall decline of 6.2% between 1994 and 1998.
- Between 1994 and 1998, the alcohol-related the mortality rate declined 20.0% among Whites, despite an increase of 30.9% from 1997 to 1998. The 1999 rate is 5.3% higher than the overall Boston rate.
- The alcohol-related mortality rate for Blacks was higher than for Whites and for Boston overall for 5 of the 6 years shown.
- The rate for Blacks increased 35.8% from 1994 through 1996 but declined 41.5% from 1996 to 1997. This resulted in an overall increase of 21.8% between 1994 and 1998. In 1999, the alcohol-related mortality rate for Blacks was 19.0% higher than for Whites and 25.3% higher than for Boston overall.

Drug-Related Mortality



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Between 1994 and 1998, the drug-related mortality rate for Boston residents decreased 16.1%. The rate was highest in 1995 (12.8 deaths per 100,000).
- The drug related mortality rate for Whites was higher than for Boston overall in 4 years of the 6-year period, 1994-1999. Starting in 1995, the rate for Whites began decreasing. Between 1994 and 1998, they decreased 23.1%. In 1999, the drug-related mortality rate for Whites was 11.1% higher than the Boston overall rate.
- Drug-related mortality rate for Blacks has fluctuated yearly, making a trend less discernable. Rates were highest in 1995 and 1997. In those years, the drug-related mortality rate for Blacks was higher than rates for Whites and for Boston overall, 28.9% and 31.5% higher than the Boston rate and 36.4% and 31.5% higher than the rate for Whites. During 1999, the drug-related mortality rate for Blacks was the same as for Boston overall.
- Rates for Hispanics are available for only three years during 1994-1999, in 1995, 1998, and 1999. In 1995, the drug-related mortality rate for Hispanics was 7.8% lower than the Boston rate, but in 1998, 17.2% higher. In 1999, the rate was 19.7% lower. No rates are shown for Asians because there were fewer than 5 deaths in each year between 1994 and 1999.

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Violence

Introduction

Violence as used in this report encompasses self-inflicted injuries (suicide), injuries inflicted by others (homicide), and intimate partner violence. The outcome of violent attacks can range in severity from cuts and bruises to death. Victims of homicide, suicide, or domestic violence vary by age, sex, race/ethnicity, sexual orientation, and socioeconomic status. (1)

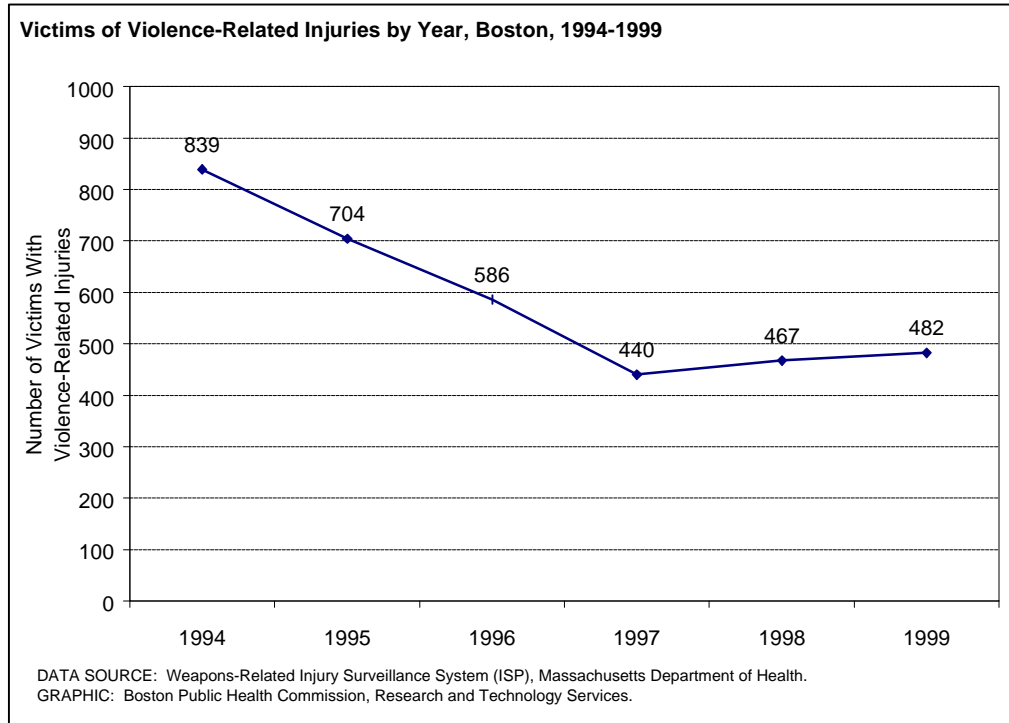
During 1998, in the United States, suicide was the eighth leading cause of death, accounting for 1.3% of total deaths. In that same year, homicide was the thirteenth leading cause of death, accounting for less than one percent of all deaths. Homicide, when broken down by race/ethnicity, was the sixth leading cause of deaths among Blacks and the seventh leading cause of death among Hispanics. (2)

Risk factors associated with violence include alcohol and drug use, mental health problems, the availability of firearms and other weapons, poverty, and racial discrimination. (1,3)

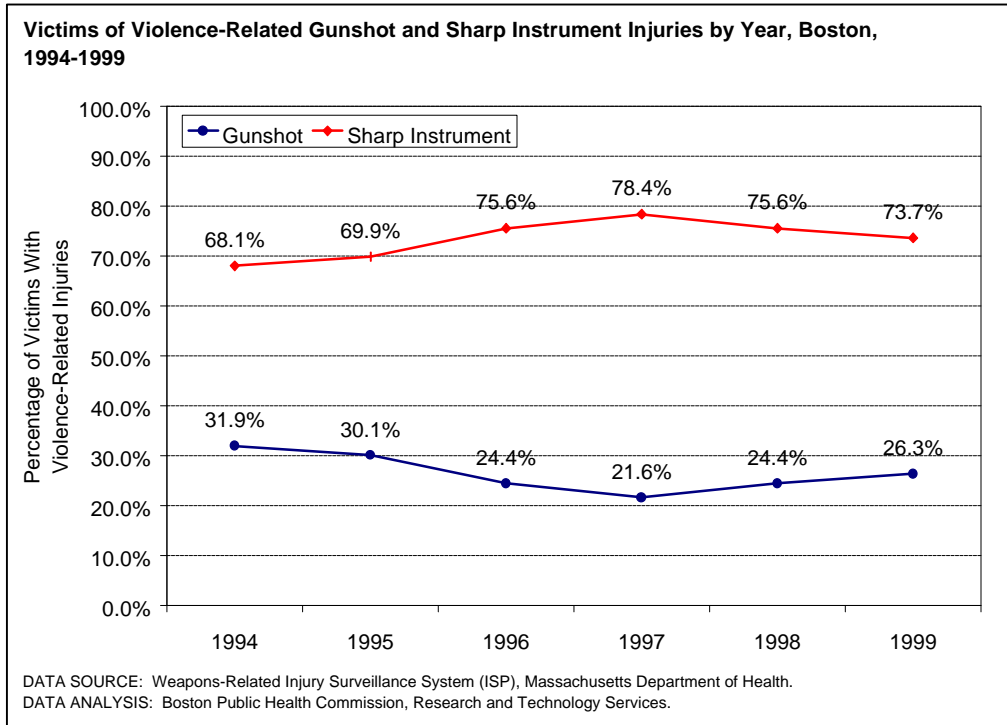
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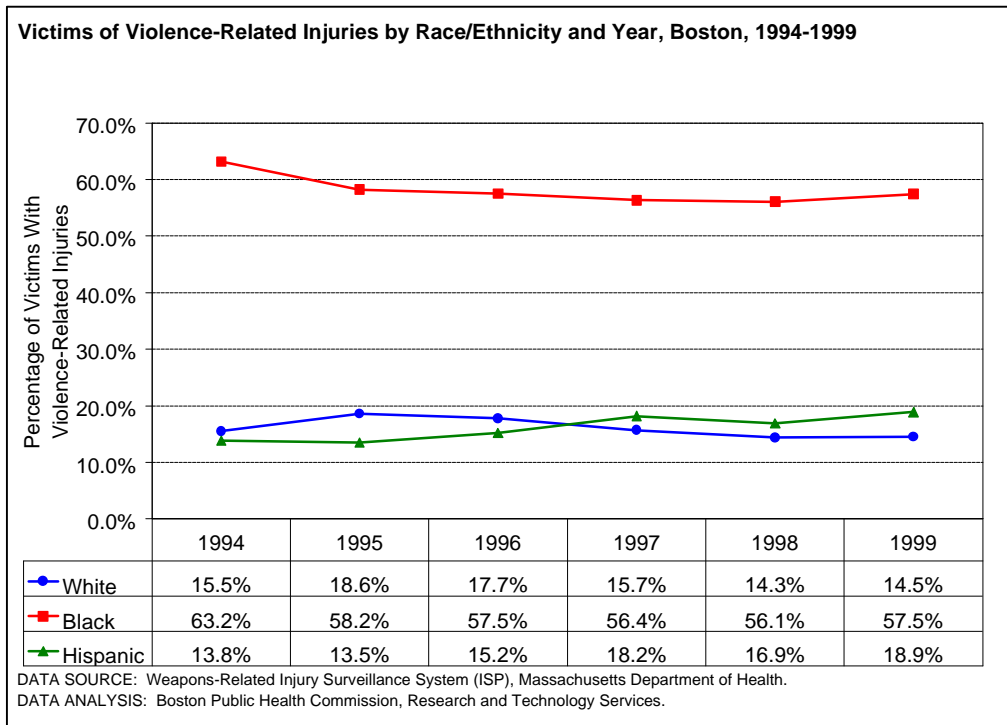
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- The violence-related injuries shown in the figure above include intentional injuries inflicted on the victim by another person, using a firearm, non-powder gun, sharp instrument, or other/unknown gun. Violence-related injuries are distinguished from accidental injuries and from self-inflicted injuries.
- The number of Boston victims with violence-related injuries declined 47.6% from 1994 to 1997 and increased slightly (9.5%) thereafter. Over the six-year period 1994-1999, the number of Boston victims with violence-related injuries declined 42.6%.



- Sharp instrument injuries include those inflicted with knives, razors, and similar weapons.
- The percentage of Boston residents with sharp instrument injuries increased 8.2% from 1994 to 1999.
- Gunshot injuries among Boston residents decreased 17.6% between 1994 and 1999.



- Higher proportions of Black Boston residents are victims of violence-related injuries than members of other race/ethnicity groups.
- The percentage of Boston violence victims who were Black remained relatively stable from 1994 to 1999, declining only 9.0%.
- The percentage of victims who were White declined 6.5% during the same period, and the percentage who were Hispanic increased 37.0%.

Suicidal Thoughts, Plans, and Attempts Among High School Students by Sex and Race/Ethnicity, Boston, 1997 and 1999

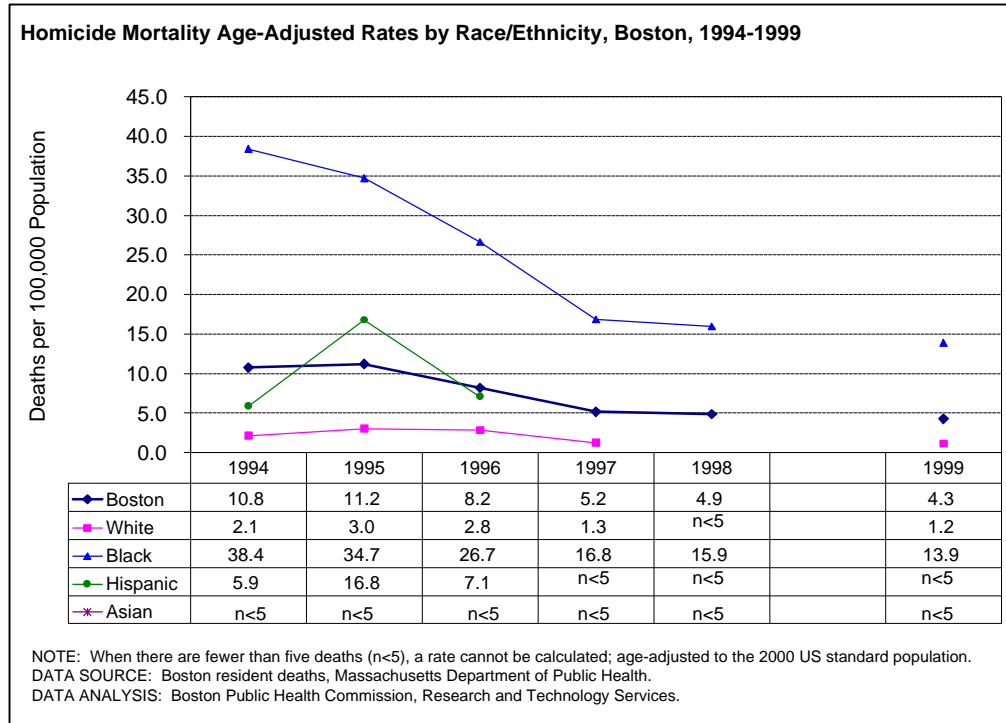
		1997	1999
Ever Considered Attempting Suicide	Boston	19.0%	20.2%
	Male	14.2%	16.8%
	Female	23.6%	23.4%
	White	23.4%	24.9%
	Black	16.6%	19.2%
	Hispanic	18.5%	18.7%
	Asian	16.2%	18.3%
Made a Suicide Plan in Past 12 Months	Boston	16.0%	16.1%
	Male	11.7%	13.6%
	Female	20.2%	18.4%
	White	21.2%	18.9%
	Black	11.2%	15.9%
	Hispanic	18.8%	14.0%
	Asian	12.0%	16.3%
Attempted Suicide in Past 12 Months	Boston	9.6%	8.0%
	Male	7.1%	4.9%
	Female	12.0%	10.9%
	White	12.1%	9.8%
	Black	7.8%	6.6%
	Hispanic	7.7%	8.6%
	Asian	7.4%	10.4%

DATA SOURCE: Youth Risk Behavior Survey, Youth Risk Behavior Surveillance System (YRBSS), 1997 and 1999, Boston Public School Department and Massachusetts Department of Education; Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention & Health Promotion.

DATA ANALYSIS: Boston Public Health Commission, Research and Technology Services.

- In 1999, about one in five Boston high school students reported ever considering suicide.
- Higher percentages of female high school students have considered attempting suicide, have made a suicide plan in the past twelve months, or have actually attempted suicide in the past twelve months than have male high school students.
- Higher percentages of White high school students than students of other racial/ethnic groups have considered attempting suicide, made a suicide plan, or actually attempted suicide in the past twelve months.
- The Healthy People 2010 goal is to reduce the rate of suicide attempts to a 1% annual average.

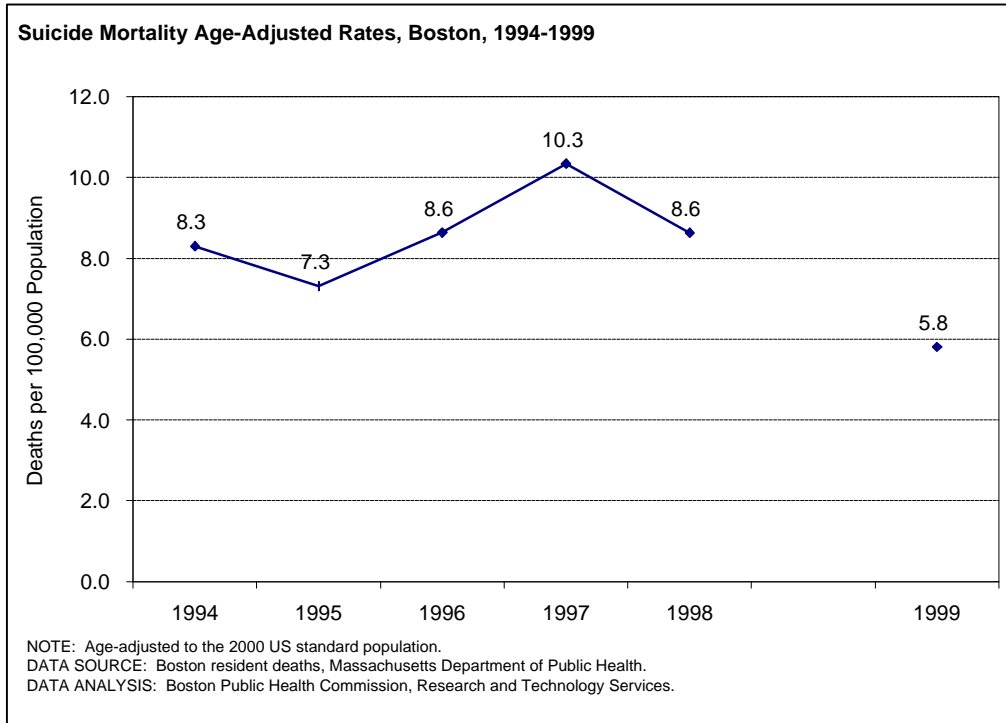
Homicide Mortality



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- For five years of the 6-year period 1994-1999, homicide mortality rates declined for Boston residents. Between 1994 and 1998, the decline was 54.6%. The highest rate was in 1995 (11.2 deaths per 100,000). In 1999, the rate was 4.3 deaths per 100,000.
- Among races/ethnicities for which rates are available, Whites have the lowest homicide mortality rates. During 1994-1999, rates for Whites were 65.9% to 80.1% lower than Boston rates.
- Homicide mortality rates for Blacks are substantially higher than overall Boston rates and the highest among racial/ethnic groups. They are about three times higher than Boston rates and about 12 to 18 times higher than rates for Whites. Between 1994 and 1998, homicide mortality rates for Blacks decreased 58.6%.
- Rates for Hispanics are available for only the first three years during 1994-1999. They are higher than rates for Whites but lower than rates for Blacks. In 1995, the homicide mortality rate for Hispanics exceeded the Boston rate by 50.0%.
- No rates are shown for Asians because there were fewer than 5 homicide deaths in each year between 1994 and 1999.

Suicide Mortality



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- During the six-year period 1994-1999, there were 271 suicides among Boston residents. Between 1994 and 1998, the suicide mortality rate increased 3.6%.
- From 1995 to 1997, the rate increased yearly, peaking at a rate of 10.3 deaths per 100,000 in 1997. Between 1997 and 1998, however, the rate declined 16.5%. In 1999, the suicide mortality rate for Boston was 5.8 deaths per 100,000.

Intimate Partner Violence

Introduction

The Centers for Disease Control and Prevention broadly defines intimate partner violence as "actual or threatened physical or sexual violence or psychological/emotional abuse." Some of the common terms that are used to describe intimate partner violence are domestic abuse, spouse abuse, domestic violence, wife beating, courtship violence, battering, marital rape, and date rape. Intimate partners include current or former spouses, boyfriends, or girlfriends, including heterosexual and same-sex partners. (1) Intimate partner violence crosses all economic, educational, sexual orientation, age, and racial lines. There is no "typical" victim.

The Bureau of Justice Statistics (BJS) and the Federal Bureau of Investigation (FBI) maintain hospital and law enforcement data on violence between people who have an intimate relationship. Violent offenses include crimes such as murder, rape, sexual assault, robbery, aggravated assault, and simple assault. Women are the primary victims. Intimate partner violence accounted for twenty-two percent of violent crime against women and roughly three percent of the violence against men between 1993 and 1998. Estimates from the National Crime Victimization Survey (NCVS) indicate that in 1998 roughly one million violent crimes were committed against individuals by an intimate partner; 85% of the victims were women. This survey also estimates that the rate of violent victimization by an intimate partner has declined for both women and men from 1993 to 1998. The rate of violent victimization of women by an intimate partner declined from 9.8 per 1,000 women in 1993 to 7.7 per 1,000 women in 1998, while men experienced intimate partner violence at a rate of 1.6 per 1,000 men in 1993 and 1.5 per 1,000 men in 1998.

Data from the FBI Supplemental Homicide Reports (SHR) of the Uniform Crime Reporting Program (UCR) indicate that the number of murders committed by an intimate partner has decreased from about 3,000 per year and 13.6% of all homicides in 1976 to 1,830 per year and 11% of all homicides in 1998. Of the 1,830 individuals murdered by intimates in 1998, 72% (1,320) were men. In 1998, the percentage of murder victims killed by an intimate partner was 33% for women and 4% for men. (2)

The BJS Study of Injured Victims of Violence, a special data collection activity conducted among a national sample of hospital emergency departments, revealed that in 1994 about 1.4 million people who were injured as a result of confirmed or suspected intentional violence were examined in the emergency departments. Roughly a quarter of these injuries had resulted from violence by an intimate. While women accounted for 39% of the hospital emergency department visits for intentional injuries, they comprised 84% of the persons treated for injuries inflicted by an intimate partner. (3)

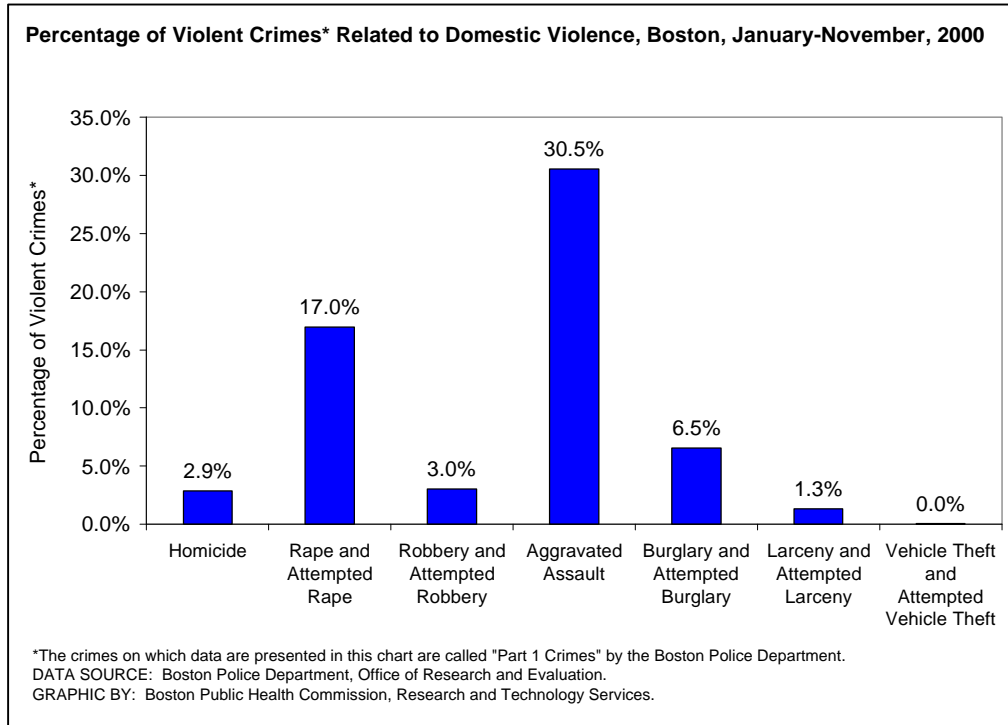
The National Violence against Women Survey, cosponsored by the National Institute of Justice and the Center for Disease Control and Prevention, found that 41.5% of the women who were physically assaulted by an intimate partner were injured during their most recent assault, compared with 19.9% of men. The survey also discovered that 36.2% of the women raped by an intimate since age 18 sustained an injury other than the rape itself during their most recent victimization. (4)

NOTE: Intimate partner violence does not include injuries sustained in other kinds of relationships, such as parent/child, siblings, grandparent/grandchild, or other persons not in an intimate relationship. Some organizations collect data on these other types of violence and include it in the broader category *domestic violence*.

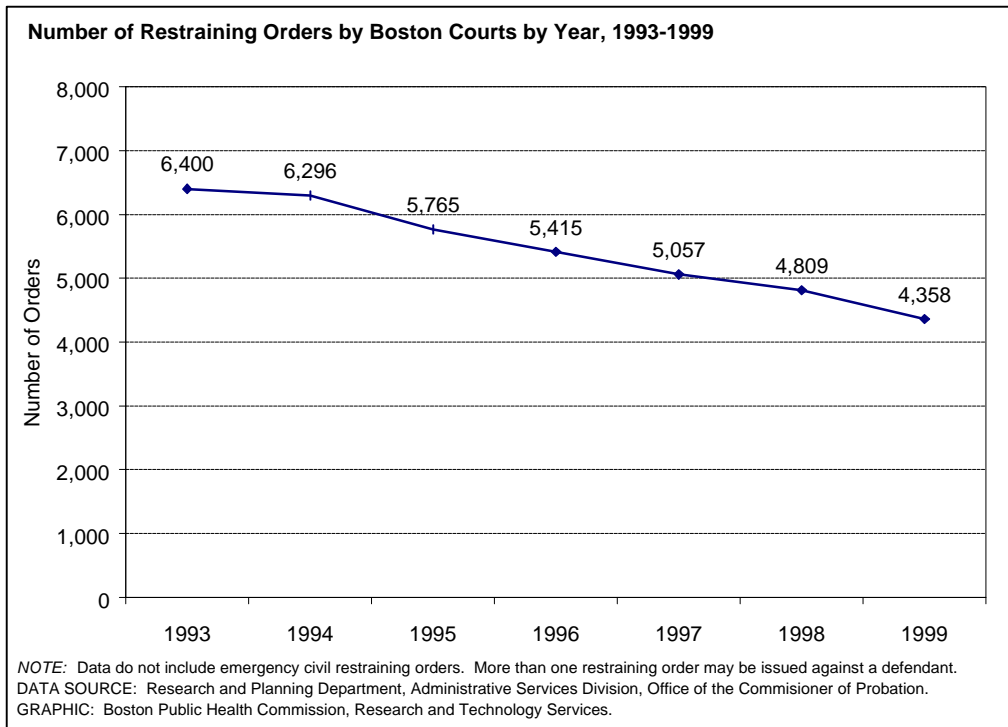
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3. U.S. Department of Justice, Office of Justice Programs. Bureau of Justice Statistics Factbook. Violence by Intimates. March 1998, NCJ 167237.
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- There were 1,862 violent crimes related to domestic violence in Boston between January and November 2000.
- Of all aggravated assaults in Boston documented by the Boston Police Department between January and November 2000, almost a third were related to domestic violence, which includes intimate partner violence and violence by other family members.
- Of all rapes and attempted rapes, almost one-fifth were related to domestic violence.
- Of all homicides, robberies and attempted robberies, and burglaries and attempted burglaries, more than twelve percent were domestic violence-related.



- The number of restraining orders issued by Boston courts declined 31.9% during the seven-year period 1993-1999.

Sexually Transmitted Diseases

Introduction

There are more than 25 diseases that can be transmitted sexually. After HIV, Chlamydia, gonorrhea, and syphilis are the most common sexually transmitted diseases (STDs). More than 65 million people in the US currently have incurable sexually transmitted disease. Of the additional 15 million new STD cases annually, 25% are among adolescents. (1)

Chlamydia is the most commonly reported STD in the US. (1,2) There are an estimated 3 million new cases of chlamydia each year. In 1999, 660,000 new cases were reported, with adolescents ages 15-19 accounting for 40% of those cases. (1)

An estimated 650,000 new cases of gonorrhea occur annually in the US. (1) Gonorrhea incidence is increasing, after a 72% decline between 1975 and 1997. Incidence rates for gonorrhea increased 9% between 1997 and 1999. (3)

There are an estimated 70,000 new cases of syphilis annually in the US. (1) In 1999, the US syphilis rate was 2.5 new cases per 100,000, an 88% decline from 20.3 new cases per 100,000 in 1990, and the lowest rate since reporting began in 1941. (4,5)

The number of actual cases of STDs is unknown because STDs are difficult to track, many people with STDs do not have symptoms and therefore remain undiagnosed, and health care providers do not always report STD cases. (1,2)

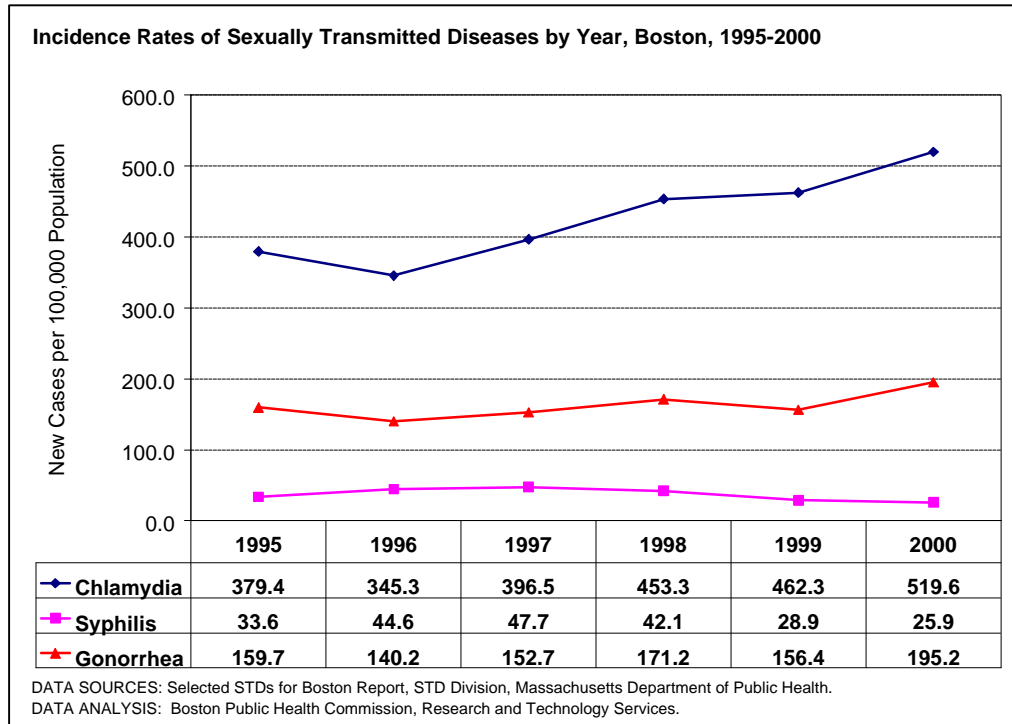
Women, adolescents, and people of color are disproportionately affected by STDs such as chlamydia, gonorrhea, and syphilis. (1,2,3,4,5,6) Up to 40 percent of women with untreated chlamydia will develop pelvic inflammatory disease (PID), and 20% of those women with PID will become infertile. Women who have chlamydia are also 3-5 times more likely to become infected with HIV, if exposed. (1,2) Gonorrhea is also a major cause of PID and subsequent infertility, and a major cause of ectopic (tubal) pregnancies. The presence of gonorrhea or other STDs in individuals increases the transmission of HIV. (1,7)

STD rates are generally higher among Blacks and Hispanics than Whites. (1, 3, 4, 5) Reported rates for gonorrhea and syphilis are as much as 30 times higher for Blacks than Whites. (1,3,4) This disparity is partly due to more complete reporting by public clinics where Blacks tend to seek treatment, and to poverty, inadequate access to quality health care, inadequate STD prevention outreach efforts, and other factors. (1,4,6)

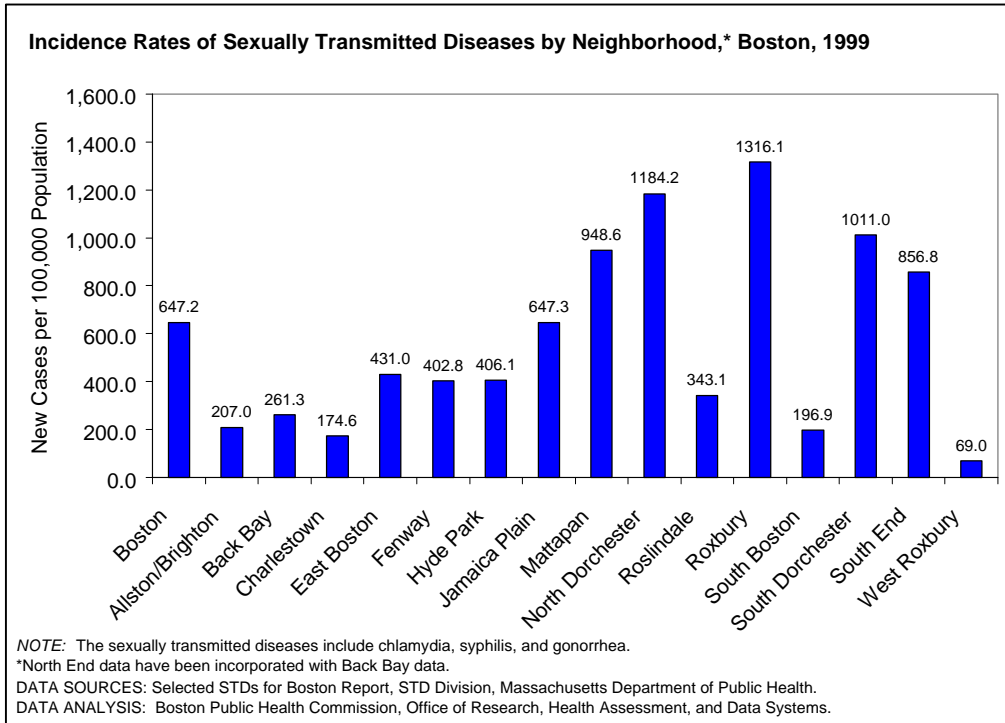
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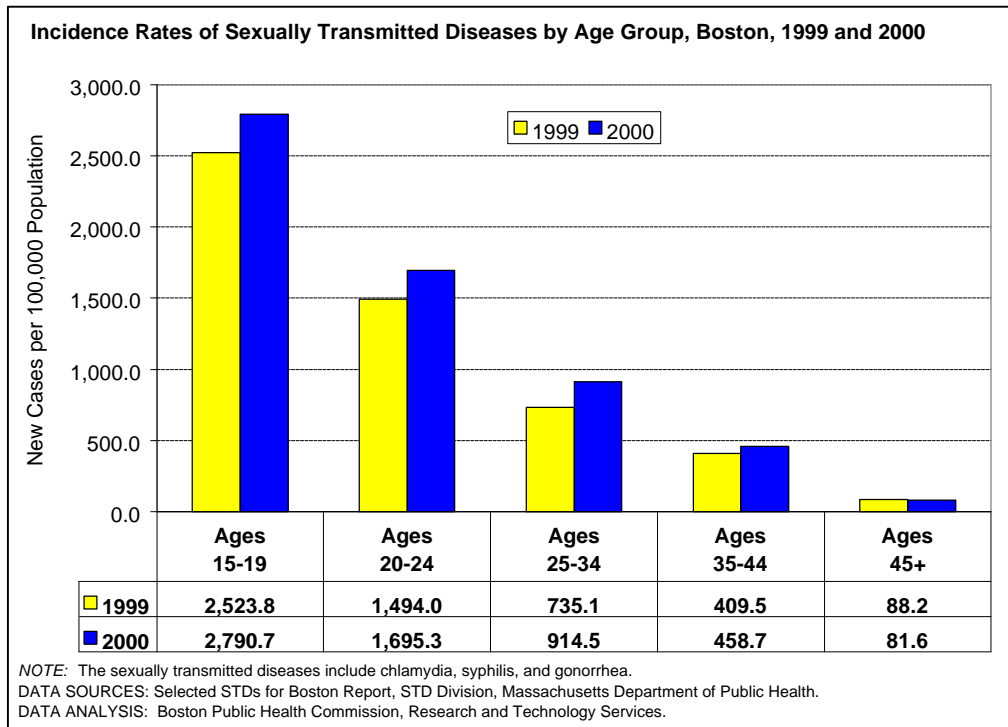
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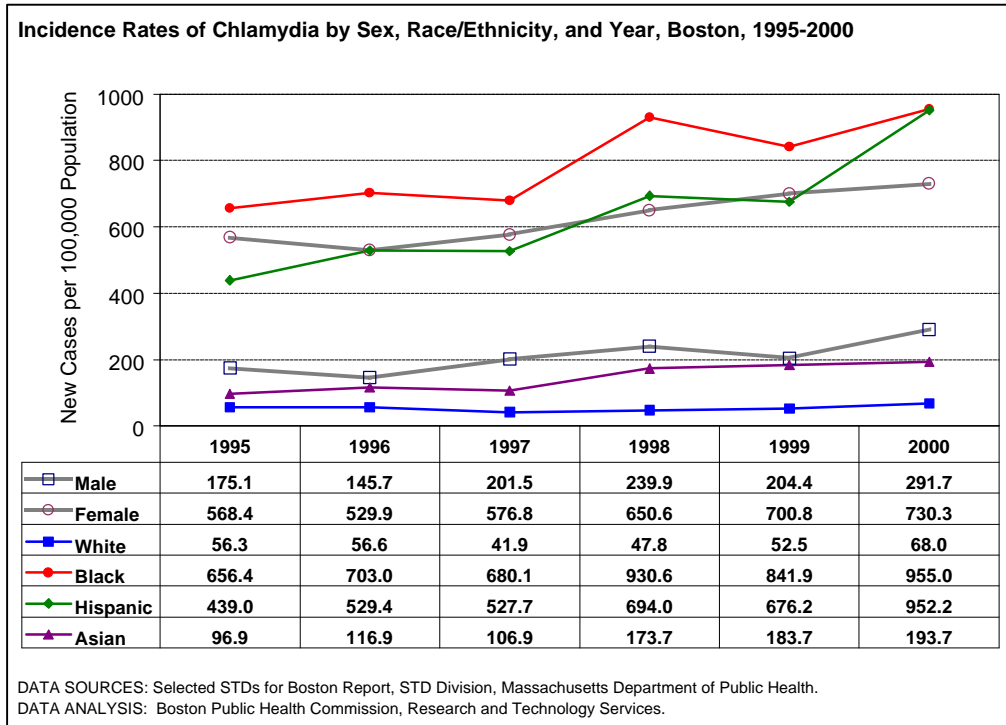
- Incidence rates for both chlamydia and gonorrhea increased during the period 1995-2000, chlamydia 37.0% and gonorrhea 22.2%. The rate for syphilis declined 22.9%.
- The rate for chlamydia is 2.7 times the rate for gonorrhea and 20.1 times the rate for syphilis.



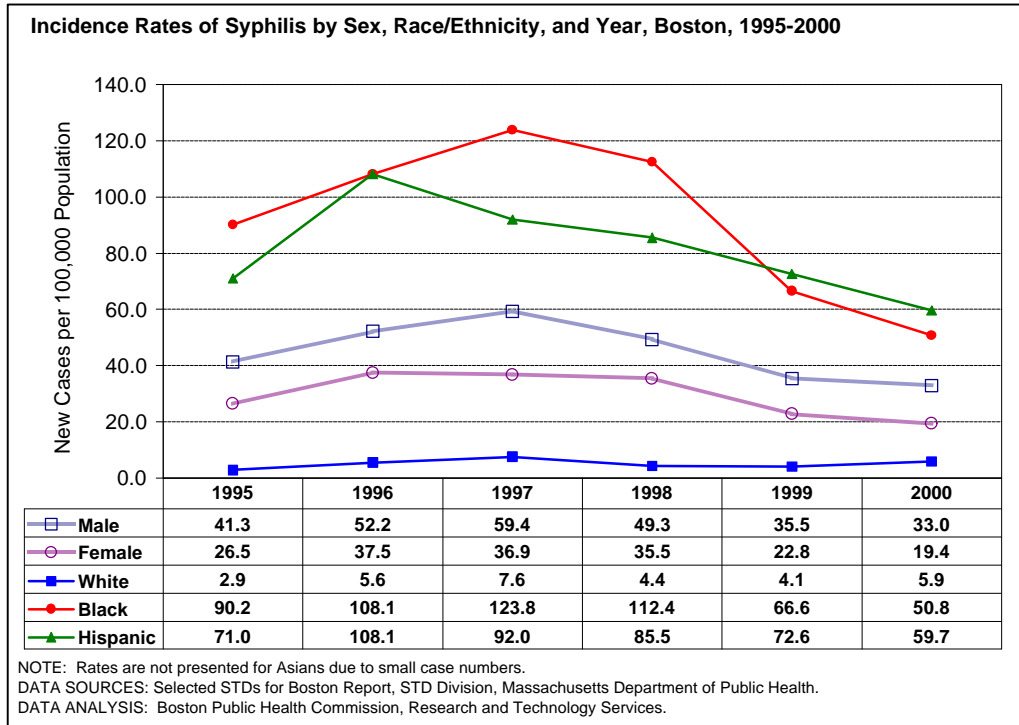
- In 1999, Roxbury, North Dorchester, and South Dorchester had the highest rates of sexually transmitted disease (STD) in the city. West Roxbury, Charlestown, and South Boston had the lowest.
- Roxbury’s rate was twice as high as the rate for Boston. The Boston rate was nine times higher than the rate in West Roxbury.



- Between 1999 and 2000, incidence rates of sexually transmitted diseases increased for all age groups except ages 45 and older. These increases ranged from 10.6% among ages 15-19 to 24.4% among ages 25-34. Residents age 45 and over experienced a 7.5% decline.

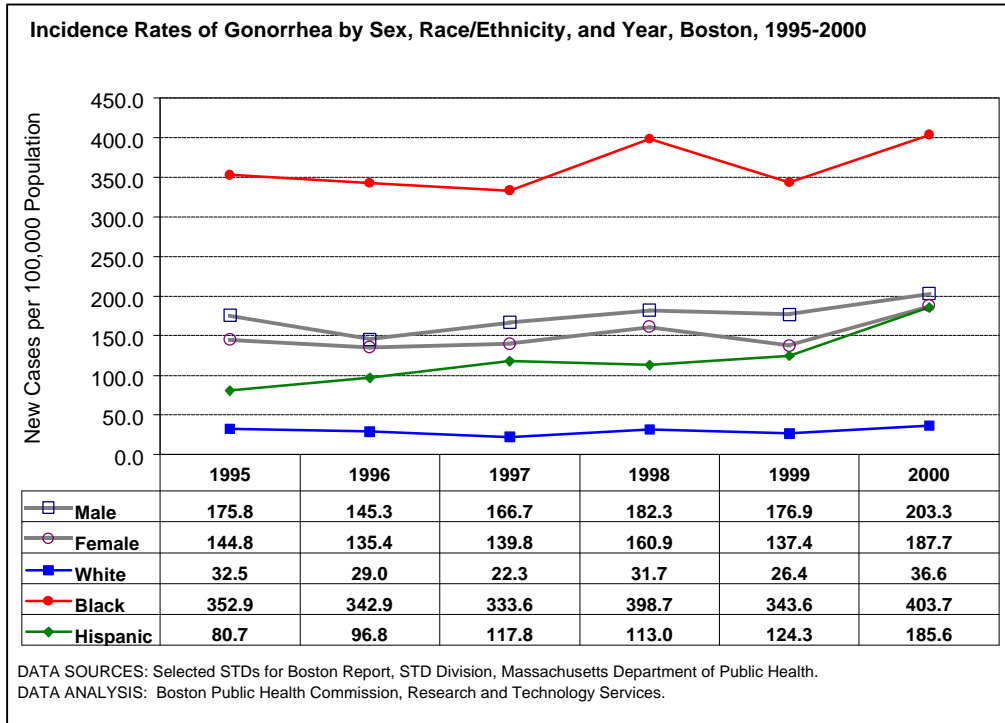


- Between 1995 and 2000, incidence rates for chlamydia increased for both sexes and all racial/ethnic groups.
- The largest increase was experienced by Hispanics, whose incidence rate more than doubled (116.9% increase), followed by Asians (99.9% increase), Blacks (45.5% increase), and Whites (20.8% increase).
- The rate for men increased 66.6% and the rate for women, 28.5%.
- In 2000, the chlamydia rate was the lowest among Whites. The rates were highest among Blacks and Hispanics, whose rates were 14.0 times higher than the rate for Whites. The rate for Asians was 2.8 times higher than the rate for Whites.



- Incidence rates for syphilis by race and ethnicity rose to their highest levels in 1996 or 1997 (depending on ethnicity) and declined thereafter. Over the entire six-year period, the rate for Hispanics declined 15.9%, and the rate for Blacks declined 43.7% while the syphilis incidence rate for Whites doubled.
- In 1999, the syphilis rate for Blacks was 16.2 times higher than the rate for Whites; the rate for Hispanics was 17.7 times higher than the rate for Whites.
- Between 1995 and 2000, the overall rate for men decreased 20.1%, while the rate for women decreased 26.8%.

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- In 2000, the gonorrhea rate for Blacks was 403.7. This rate is 11 times that of Whites (36.6).
- The rate for Hispanics in 2000 was 185.6 per 100,000 or 5.1 times greater than the rate for Whites.
- The incidence rate for gonorrhea among White residents fluctuated slightly over the six-year period. However, in 2000, the rate was 12.6% higher than in 1995.
- This same pattern held true for Black and Hispanic persons, although the fluctuation was more pronounced. From 1995 to 2000, the incidence rate of gonorrhea for Blacks increased 14.4%. For Hispanics the rate increased 130.0%.
- The rate for men increased 15.6%, and for women, 29.6%.
- The Healthy People 2010 goal is to reduce the number of gonorrhea cases to 19 new cases per 100,000 people.

HIV/AIDS

Introduction

Human Immunodeficiency Virus (HIV) is the organism that causes Acquired Immune Deficiency Syndrome (AIDS). People become infected with HIV through sexual contact, through needles that are contaminated with blood or at the time of birth when infection can be transmitted from mother to baby.

Most people who are infected with HIV go on to develop AIDS over a period of years as the virus damages the immune system. People are classified as having AIDS when their immune system shows signs of significant damage based upon blood tests (T-cell or CD4 counts) or when they develop an infection or tumor related to infection with HIV.

HIV

The Centers for Disease Control and Prevention (CDC) has established an overall national goal to reduce the number of new HIV infections in the US. The goal calls for a reduction in the number of new infections from an estimated 40,000 annually to 20,000 by 2004, with particular focus on eliminating racial and ethnic disparities in new HIV infections. (1)

During the past two decades, great strides have been made in HIV/AIDS prevention through widespread routine HIV counseling, community-level interventions and initiatives, and changes in risk-taking behavior. New drug combinations to treat HIV have delayed the progression to AIDS. (1)

According to CDC, an estimated 70% of all new HIV infections are among men, and the remaining are among women. Blacks and Hispanics (males and females both) are disproportionately affected by new HIV infection, and by AIDS, compared to other races/ethnicities. According to the 2000 US Census, Blacks represent only 12.3% of the US population, and Hispanics 12.5%. However, half of the men being newly infected with HIV are Black, and 20% are Hispanic. Among women, Black women account for an estimated 64% of new HIV infections, and Hispanic women 18%. (1)

Through June 2000, 130,352 HIV infection cases had been reported to CDC. These cases include only individuals who tested positive for HIV but had not developed AIDS. Non-Hispanic Whites accounted for 37.5%, non-Hispanic Blacks 52.3%, Hispanics 7.9%, and Asian/Pacific Islanders and others, 1.0% of HIV infection cases. (These percentages do not include 1,680 individuals whose race/ethnicity was not known.) (2)

AIDS

As of June 2000, 753,907 AIDS cases had been reported to CDC. Of those cases, 82.3% were among men, 16.6% among women, and 1.2% among children. Individuals ages 30-39 represented 44.8% of all AIDS cases. (3)

Racial and ethnic disparities exist among AIDS cases reported to CDC. Although during the early 1980s the majority of AIDS cases occurred among Whites, AIDS cases among Blacks began steadily to increase.

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During the period 1996-2000, Blacks accounted for a greater percentage of newly reported cases of AIDS (44.9%) than other racial or ethnic groups. Whites accounted for 34%, Hispanics, 19.7%, and Asian/Pacific Islanders and American Indian/Alaska Natives combined, 1.2%. (4)

Men having sex with men is still the most common transmission category for AIDS, followed by drug injection, and heterosexual contact. (4,5) Since 1996, declines in the number of new cases of AIDS have been largest for cases resulting from men having sex with other men and from cases resulting from injection drug use. (4)

Beginning in 1996, large declines have been reported for both AIDS incidence and AIDS deaths. However, from 1998 through June 2000, both AIDS incidence and deaths stopped declining, while the total number of AIDS cases continued to increase. (2) The decline in newly diagnosed cases of AIDS and AIDS deaths is due in large part to new medications that delay the onset of AIDS and increase the life span of those who have AIDS.

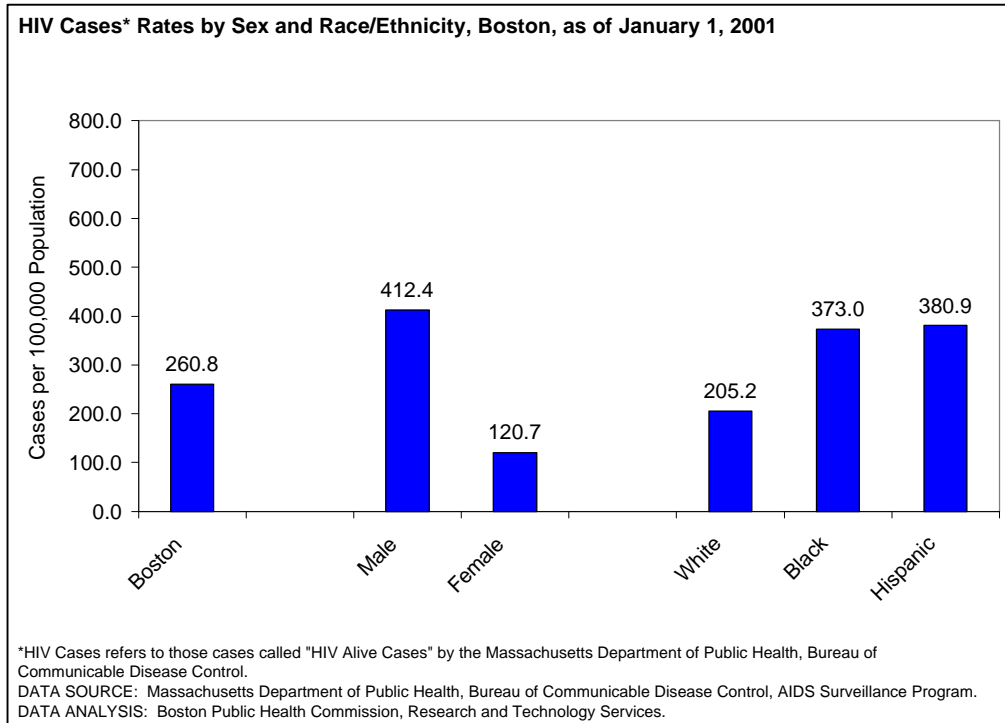
As of December 31, 2000, 774,467 persons with AIDS had been reported in the US, and almost 60% of them have died. This means that there were 322,866 persons in the US living with AIDS as of December 31, 2000, the highest number ever reported. (4)

For persons currently living with AIDS and HIV, the recent increase in average life expectancy is often accompanied by a number of challenges. Among them are difficulty and expense in complying with multiple and complex drug regimens, drug side effects that may result in a decrease in the quality of life, and antiretroviral drug resistance. (6)

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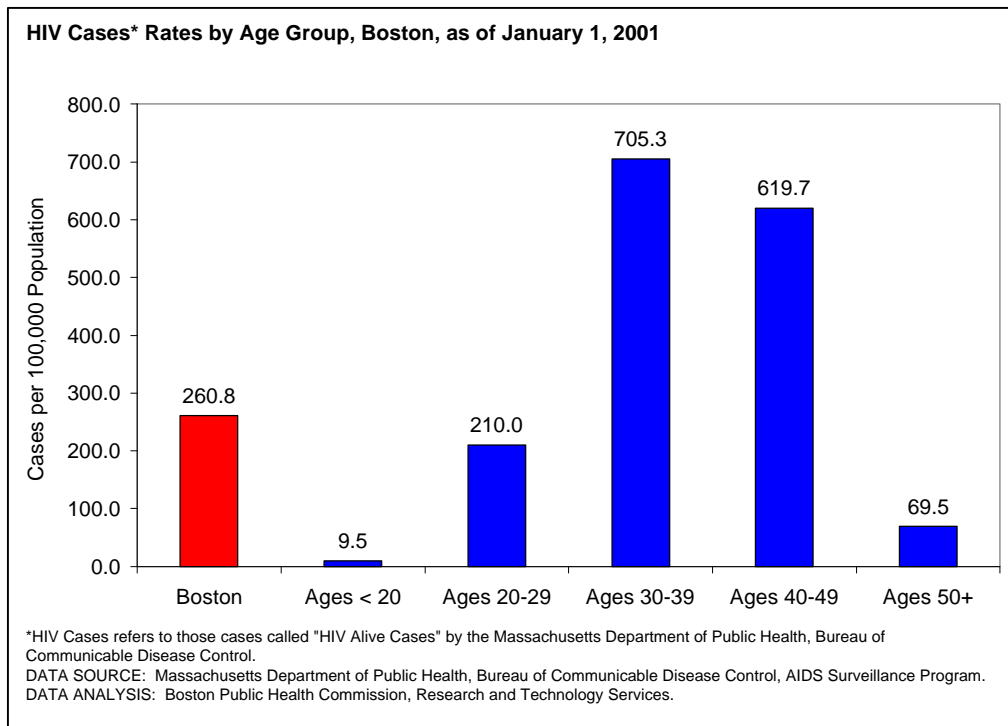
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NOTE: Effective January 1, 1999, all cases of HIV infection without clinical AIDS became reportable to the Massachusetts Department of Public Health. Reporting pertains only to Massachusetts residents and exempts individuals diagnosed with HIV infection through anonymous HIV testing sites.



- As of January 1, 2001, there were 1,663 reported HIV cases among Boston residents. However, the number of HIV cases is probably undercounted since not everyone who is HIV-infected has been tested.
- As of January 1, 2001 in Boston, the incidence rate for men was three-and-a-half times that of women.
- The HIV rate among Hispanic residents was 46.1% higher than the Boston rate, and among Black residents, 43.0% higher.

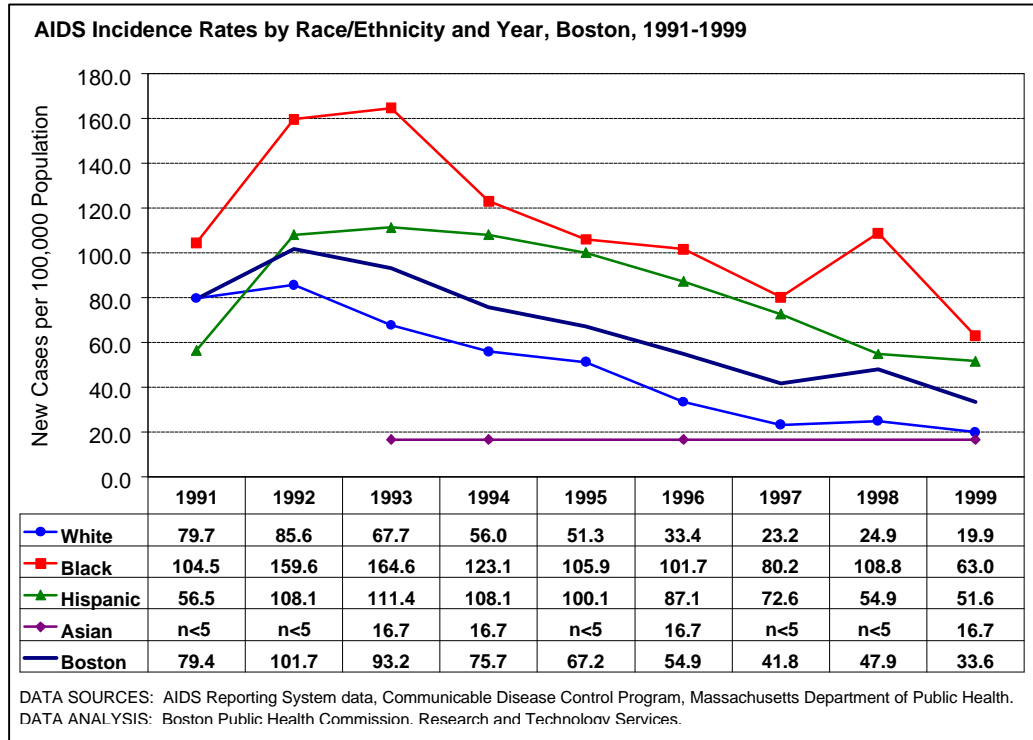
NOTE: Effective January 1, 1999, all cases of HIV infection without clinical AIDS became reportable to the Massachusetts Department of Public Health. Reporting pertains only to Massachusetts residents and exempts individuals diagnosed with HIV infection through anonymous HIV testing sites.



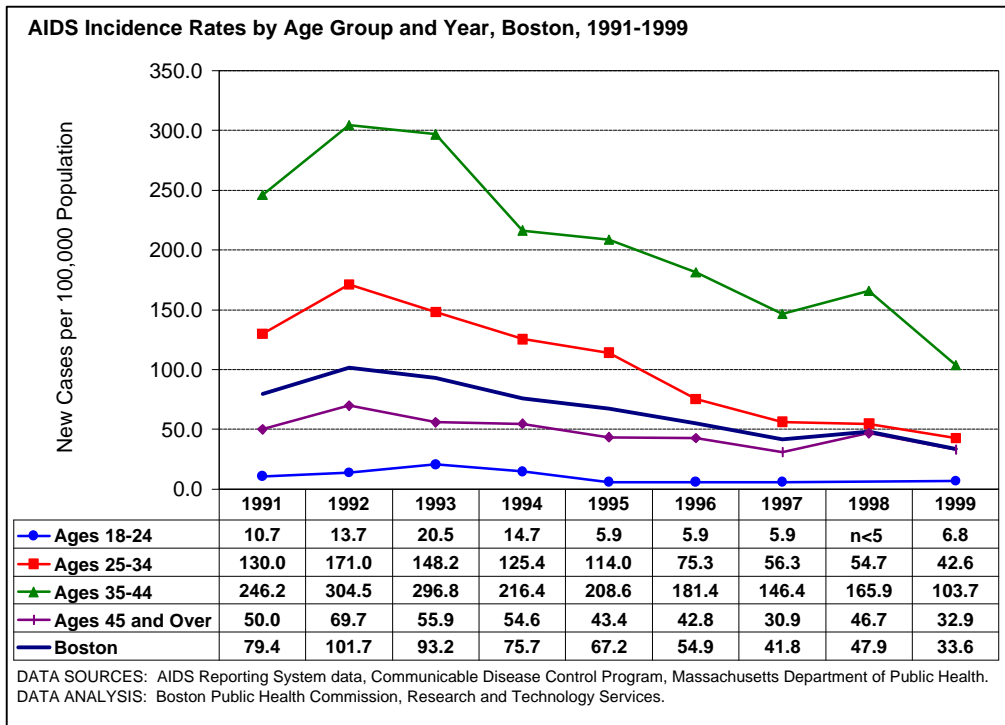
- The majority of HIV cases occur among Boston residents in their middle years, ages 30-39 and ages 40-49.
- As of January 1, 2001, men and women ages 30-39 had HIV infection at almost three times the rate for all Boston, slightly over three times the rate for ages 20-29, and seventy times the rate for residents under age 20.
- Men and women ages 40-49 had HIV infection at almost 2.5 times the Boston rate, almost three times the rate for those ages 20-29, and sixty-five times the rate for those under 20.



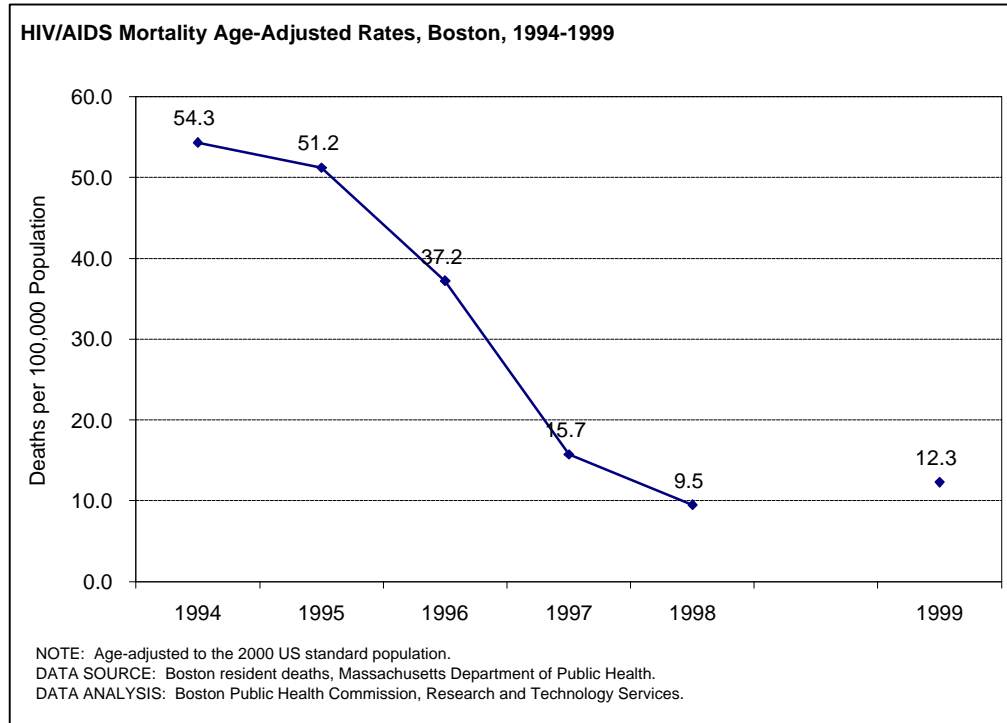
- The rate of new cases of AIDS reached its highest point in 1992. The AIDS incidence rate increased 28.1% between 1991 and 1992, and 14.6% between 1997 and 1998. However, the overall rate declined 57.4% from 1991 to 1999.



- AIDS incidence rates for White, Hispanic, and Black residents increased from 1991 to 1992 or 1993 (depending on ethnicity), and then significantly declined afterward. Over the nine-year period 1991-1999, the rate for White residents declined 75.0%, for Hispanics 8.7%, and for Blacks 39.7%.
- The AIDS incidence rate for Black residents, the highest in the city for each year of the period 1991-1999, showed more fluctuation than the rates for other races or ethnic groups.
- Only in 1993, 1994, 1996, and 1999 did Asians have sufficient number of new cases of AIDS to calculate a rate. For years when the rate was calculable, it showed virtually no change over time.
- During 1992-1999, the incidence rate for AIDS for Hispanic residents was higher than Boston's incidence rate.

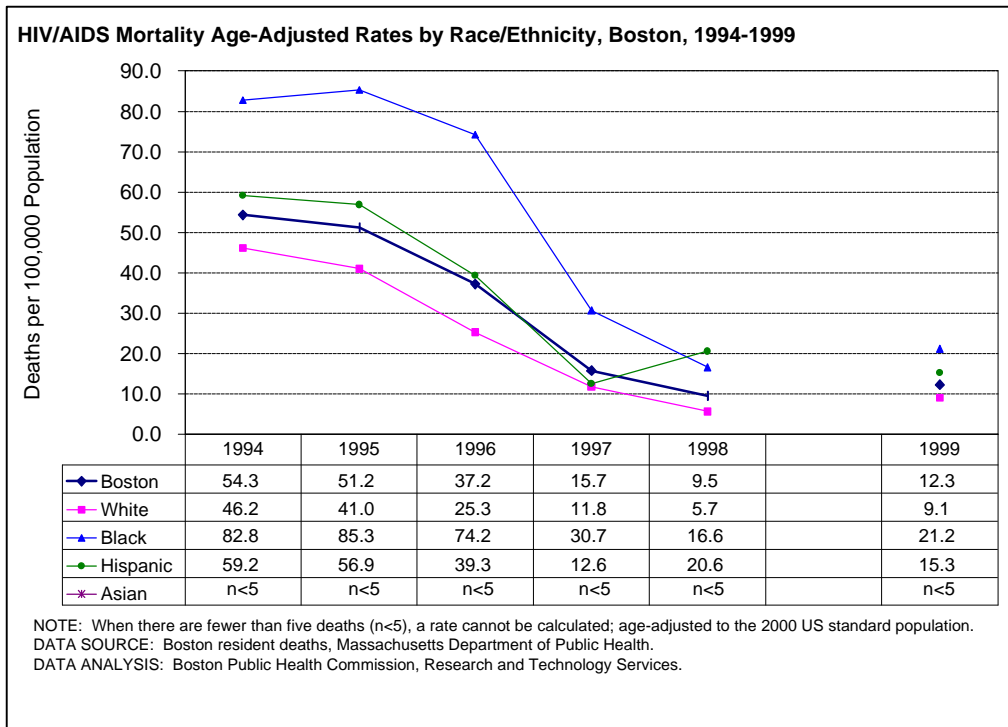


- Although all age groups experienced some increase in AIDS incidence early in the decade, throughout the decade all age groups experienced overall declines. Residents ages 25-34 showed the largest overall decline (67.2%), followed by residents ages 35-44 (57.9%).
- The AIDS incidence rate remained highest for residents age 35-44 throughout the 1990s.
- Over the nine-year period 1991-1999, the AIDS incidence rates for residents ages 25-34 and 35-44 were higher than Boston's.
- The Healthy People 2010 goal is to reduce AIDS among adolescents and adults to 1.0 new cases per 100,000 people.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Due to advances in medical treatment and HIV/AIDS prevention, HIV/AIDS is no longer among the ten leading causes of mortality for Boston residents. During 1999, there were 58 HIV/AIDS deaths.
- HIV/AIDS mortality age-adjusted rates for Boston have steeply declined since 1994. Between 1994 and 1998, they declined from 54.3 deaths per 100,000 to 9.5 deaths, a decrease of 82.5%.
- The 1999 HIV/AIDS mortality rate was 12.3 deaths per 100,000.



NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

- Similar to the declining trend seen for Boston, there has been a steep decline in deaths due to HIV/AIDS among all racial and ethnic groups since 1994. Between 1994 and 1998, the greatest decrease occurred among Whites, 87.7%. Among Blacks, the HIV/AIDS mortality rate decreased 80.0%, and among Hispanics, 65.2%. Despite the overall decline in the rate for Hispanics, between 1997 and 1998 their rate increased 63.5%. For Asians, there were fewer than five deaths from HIV/AIDS for each year; therefore a rate could not be calculated.
- In 1999, HIV/AIDS mortality rates were highest among Blacks and Hispanics. Their rates were 72.4% and 24.4% higher than the Boston rate.

APPENDIX 1
TECHNICAL NOTES

TECHNICAL NOTES

The Technical Notes provide more detailed discussion of some of the technical terms, concepts, and sources used in the *Health of Boston 2001* than can be given in the graphics or in the glossary. Readers can call the Research and Technology Services at (617) 534-4757 for information on any of the subjects addressed here.

A. Rates

B. Time Period Covered by this Report

C. Population

D. Racial and Ethnic Designations

E. Racial Designations and the 2000 Census

F. Significant Changes in the Way Age-Adjusted Mortality Data Are Presented in This Edition of the *Health of Boston*

Age-Adjusted Rates and Standard Population

Revisions of the International Classification of Disease (ICD)

Preliminary Comparability Ratios

G. Neighborhoods

H. Behavioral Risk Factor Surveillance System (BRFSS)

A. Rates

Three types of rates have been included in the *Health of Boston 2001*: *Crude Rates*, *Age-Specific Rates (ASR)*, and *Age-Adjusted Rates (AARs)*.

A *rate* is a measure of some event, disease, or condition in relation to a unit of population, along with a specification of time.

Crude Rates are used to present data pertaining to the entire population, such as Boston or Massachusetts, or to present data pertaining to an entire group within a population, such as males or females. A crude rate is calculated by dividing the number of events for the entire population by the total population. It is usually calculated on the basis of every 100,000 people or, in the case of birth rates, every 1,000 persons.

Age-Specific Rates (ASRs) are also used in this report. ASRs take into account the size and age distribution of the population. They enable the reader to compare different groups without being concerned that differences in health status are due to differences in the size of the groups or in the distribution of ages. An ASR is calculated by dividing the number of events among people in an age group by the number of people in that age group. ASRs for deaths and for communicable diseases are usually calculated on the basis of every 100,000 people.

Unless otherwise indicated, the age-specific rates provided in *Health of Boston 2001* are average annual rates. Average annual rates are calculated by dividing the age-specific rates by the number of years in the time period the data represent.

Age-Adjusted Rates (AARs) are used to present data for comparison among several populations, such as Boston neighborhoods, in which distribution of age can differ considerably. The calculation for AARs takes into account the differences in age distribution and adjusts for them.

The AAR is calculated by applying the age-specific rate in a population (for a specific event such as death) to a standard population (typically, and in this report, the 2000 US standard population). AARs are used in this report for Boston mortality data for overall Boston, for overall Boston mortality data by sex, by race/ethnicity, and by neighborhoods.

B. Time Period Covered by the Report

In general, this report presents data from the years 1994 through 1999. Data for selected indicators may include a range of years or one year only, such as 1999 or 2000. Boston-specific mortality and selected morbidity data are presented for one year only, for part of the time span, or for the entire time span, either in aggregated form or year-by-year.

The selection of time periods to use depends largely on the availability and adequacy of the data. In analyzing subgroups within the Boston population, there must be enough events or occurrences, such as deaths or births, to provide interpretable rates. The BPHC Research and Technology Services does not calculate rates for fewer than five occurrences. The notation "n<5" in charts indicates there were fewer than five occurrences of a health condition, and therefore a rate was not calculable.

C. Population

Health status reports often use population statistics for analyzing health data. These population statistics may be drawn from two sources. The first is the census of the population taken every ten years by the federal government, a literal count of all people living in the United States. The second is estimates of the population made by the US Census Bureau in the intervening years.

Each source has its own advantages, and there are distinct reasons for choosing each one. The census provides the best available actual count of the population. Another important strength of the census is that it presents data to the level of small areas called census tracts, each of which has only a few thousand residents. Census tracts can be combined to produce neighborhood-level analyses.

However, while the 1990 census is the best estimate of the population for the early years included in this report, with each passing year it becomes more remote from the population it is being used to represent and therefore less useful. Changes in the population in the years following the census cannot be taken into account when using the census data.

Population projections, or estimates, of the population, which are often used to compensate for this problem, are made by the Census Bureau using sophisticated statistical methods. They are designed to estimate the changes which are occurring in the population between the years of the actual censuses. And yet, for the purposes of this report, estimates of population changes between census years have significant drawbacks. They do not account for changes in the racial composition of a community, and they do not permit neighborhood-level analyses. Perhaps most importantly, even small errors in the accuracy of projections for neighborhoods or other population subgroups can result in large distortions in their rates.

Therefore, the BPHC bases its reports on data from the censuses and not on estimates of the population. Furthermore, it uses the Modified Age-Race-Sex File for Boston census tracts, produced by the US Census Bureau to enable reporting on Hispanics as a separate category. Readers should note that the Massachusetts Department of Public Health uses population estimates from Massachusetts Institute for Social and Economic Research (MISER) for reports on data for the years after 1990, and the federal government frequently uses population estimates in its reports, so the rates in this report may not always be comparable to those published by MDPH or the federal government.

In years like 2001, when data from the most recent census (2000) are still being analyzed and not all results have been published, it is sometimes necessary to use the previous census (1990). Statistics from the 2000 census providing age breakdowns, sex, and race or ethnicity are not yet available at the time of publication;

therefore rates in this report that require population data (such as age-adjusted mortality rates) use data from the 1990 census.

To provide data on people of Hispanic ethnicity, who may be of any race, this report uses the 1990 Modified Age-Race-Sex File for Boston census tracts, produced by the Bureau of the Census, for denominators for rate calculations that require population data. This avoids the double-counting which would result if Hispanics were included in the White and Black racial categories as well as in the Hispanic categories.

D. Racial and Ethnic Designations

Racial and ethnic designations are derived from the source of the data, including the US census, birth and death data from the Massachusetts Department of Public Health, and others. All racial or ethnic designations except death certificates are self-reported. In considering the racial or ethnic designations used in this report for Boston-specific data, several things should be kept in mind: (1) The concept of race has different meanings in different cultures. (2) Race is not a biological but a social construction. (3) The meanings of racial designations—White, Black, Asian/Pacific Islander—are subject to historical, cultural, and political forces. (4) Racial designations can be notably inaccurate in describing what they are called upon to describe. The term Black, for example, includes a variety of people who would describe themselves as African American, African, Caribbean, or Haitian.

In the charts which present data by race and ethnicity or in the text which discusses health problems among racial and ethnic populations, it should be kept in mind that, as the Centers for Disease Control and Prevention (CDC) has said, “race and ethnicity are not risk factors [for disease]—they are markers used to better understand risk factors.” Race is often a proxy for such factors as socioeconomic status, inadequate access to health care, and racial discrimination. Information on race and ethnicity is included in this report because it can assist public health efforts in recognizing disparities between groups in health outcomes.

Boston-specific data in this report are generally presented for each racial and ethnic subgroup when data are available and numbers are large enough to allow calculation of percentages or reliable rates. Some charts present data only for the largest racial and ethnic groups, such as non-Hispanic Whites, non-Hispanic Blacks, and Hispanics. Few sources provide data in large enough numbers for smaller groups such as the many ethnicities included in the category “Asian/Pacific Islander.”

The collection of racial and ethnic data varies with the data source. Some sources rely on observation and others on self-report. Race and ethnicity on death certificates are reported by the funeral director based on information provided by a relative or friend if available, while birth certificates are based on self-report by the mother.

Since Hispanics can be of any race, the federal and state data sources often report data for Blacks and Whites, including Hispanics in those categories. However, in the *Health of Boston 2001*, in the charts and in the discussions provided, where references are made to races/ethnicities, the Boston-specific data do not include Hispanics in the categories “Black” and “White.”

E. Racial Designations and the 2000 Census

The racial designations, or categories, used in the 2000 census differ from the designations used in the 1990 census and in the census documents based on it, like the 1990 Modified Age-Race-Sex File for Boston census tracts.

For a discussion of this issue and its effect on this report, see *Census 2000 and the Changing Concepts of Race*, in Demographics. See also Technical Notes and the Glossary.

F. Significant Changes in the Way Age-Adjusted Mortality Data Are Presented in This Edition of the *Health of Boston*

Age-Adjusted Rates and the Standard Population

Age-Adjusted Rates (AARs) are used to present data for comparison among several populations, such as Boston neighborhoods, in which distribution of age can differ considerably. The calculation for AARs takes into account the differences in age distribution and adjusts for them.

The AAR is calculated by applying the age-specific rate in a population (for a specific event such as death) to a standard population. A standard population is a national estimate of the population in which age, race, and sex distribution are known. Previously, the standard was typically the 1940 US standard population. However, effective with 1999 mortality data, the standard is the 2000 US population. This new standard is being used by federal, state, and local health organizations and agencies. AARs calculated with the new 2000 US standard population are used in this report for Boston mortality rates overall and for mortality rates by sex, by race/ethnicity, and by neighborhood.

The change from use of the 1940 US standard population to use of the 2000 US standard population has the effect of making rates calculated with one standard not comparable to rates calculated with the other standard. No mortality rates in this report can be compared to any mortality data in earlier reports or presentations by the BPHC. Charts in this report which present rates which are not comparable to rates from other reports are marked with the following note:

NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the *Health of Boston*. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

Revisions of the International Classification of Disease (ICD)

When this report refers to a particular disease, such as breast cancer, it assumes that all the sources of its data, and all those who read the report, understand exactly what "breast cancer" means. The International Classification of Disease (ICD) is a classification system developed by the World Health Organization (WHO) and 10 international centers so that the meaning of medical terms reported by physicians, medical examiners, and coroners on death certificates can be standardized and grouped together for statistical purposes. The purpose of the ICD and of WHO sponsorship is to promote the international comparability in the collection, classification, processing, and presentation of classification of diseases for all sorts of purposes, but specifically, in this report, for the purpose of mortality statistics. The effect of the ICD is to make Boston data, presented in this report, comparable to data from state and federal sources. New revisions of the ICD are implemented periodically so that the classification reflects advances in medical science. Nationally, in the past, International Classification of Disease codes, 9th revision (ICD-9), have been used to classify 1979-1998 data.

Mortality data for 1999, issued in the latter part of 2000 and used in the *Health of Boston 2001*, are the first release of data using the 10th revision of the ICD codes, or ICD-10. In consequence, and following the practice of the National Center for Health Statistics and the Massachusetts Department of Public Health, the Boston Public Health Commission must use the disease classification as defined by the ICD-10 codes in the presentation of mortality data for 1999.

The change from ICD-9 to ICD-10 means that causes of death classified according to the ICD-10 are not exactly comparable to causes of death classified according to ICD-9 and earlier revisions of the ICD. Mortality charts in this report present data for 1999 as a point and data from earlier years as a line and are clearly marked with the following box:

NOTE: As a result of changes adopted by federal and state agencies, the age-adjusted mortality rates for 1999 presented in this chart cannot be compared to the age-adjusted mortality rates for the years before 1999. None of the mortality rates presented in this report for any year can be compared to rates presented in earlier editions of the Health of Boston. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

Diseases presented in this report are defined in the Glossary, with both ICD-9 and ICD-10 codes appended.

Preliminary Comparability Ratios

The National Center for Health Statistics (NCHS) has developed *preliminary comparability ratios* as a method for comparing 1994 through 1998 age-adjusted mortality rates for the leading causes of death, coded by ICD-9, to 1999 mortality rates, coded by the ICD-10. The comparability ratio itself estimates the amount of change in leading causes of age-adjusted mortality rates due solely to the changes in coding from ICD-9 to ICD-10. The *Health of Boston 2001* applies these comparability ratios to 1994 through 1998 mortality rates for leading causes of death, coded by ICD-9, thereby calculating a *comparability modified rate*. The *comparability modified rate* for causes of death coded by ICD-9 can then be compared to 1999 mortality rates coded by the ICD-10. Comparability ratios can only be used for overall rates, not sex, ethnicity, and race, and cannot be applied to rates prior to 1994. An estimated comparability rate cannot be calculated for all injuries combined and for substance abuse, because comparability ratios are not available for those causes of death.

The sole chart in this report, which presents data from 1994 and 1999, and to which a comparability ratio has been applied, is entitled, *Leading Causes of Death Age-Adjusted Mortality Rates, Boston, 1994-1999. Comparability Modified Mortality Rates for Selected Causes of Death*, page 37. It is marked with the following box:

NOTE: The mortality rates for 1999 presented in this chart can be compared to the age-adjusted mortality rates for 1994 presented in this chart, since a preliminary comparability ratio has been applied to the data. For an explanation and discussion, see *Population, Racial and ethnic designations, Age-adjusted rates and standard population, Revisions of the International Classification of Disease (ICD)*, and *Preliminary comparability ratios* in Technical Notes and the Glossary.

No methodology similar to the comparability ratio has been developed to enable comparisons in the number of deaths by cause. For this reason, it is not possible to estimate whether a change in the number of deaths from a specific cause is due solely to the revision of the respective ICD coding or to an actual increase or decrease in that category.

The official mortality data which the Boston Public Health Commission uses to calculate its mortality rates is derived from death certificates.

G. Neighborhoods

Census tracts are so small that there are often not a sufficient number of health-related events—such as deaths—to calculate reliable rates, particularly for individual years. Therefore, census tracts are combined into neighborhoods for the presentation of the mortality data.

Some of Boston's neighborhoods are clearly defined. West Roxbury, for example, is bordered by the West Roxbury Parkway, the Stony Brook Reservation, and Dedham. The boundaries of most neighborhoods are less distinct for historical, political, or geographic reasons.

A goal for this report was to select geographic areas that were small enough to show the variation of health patterns throughout the city while being large enough to be statistically reliable. Neighborhood definitions were determined in consultation with residents, health care providers, and advocates throughout Boston. Where neighborhood definitions vary by data source, they are noted in the text. The definitions are the same as those used in *Health of Boston 2000* and other BPHC reports.

H. Behavioral Risk Factor Surveillance System (BRFSS)

The Behavioral Risk Factor Surveillance System is a survey developed by the Centers for Disease Control and Prevention. Participants are enrolled through random-digit-dialing and include all non-institutionalized adults ages 18 years and older in households with telephones. This survey is conducted in all 50 states as a collaboration between the CDC and State Health Departments.

The Behavioral Risk Factor Surveillance Survey includes core CDC questions and any additional questions requested by the state. The BRFSS is an annual survey; however, in order to control for seasonal bias, continuous monthly sampling is conducted. In 1999, additional surveys were administered to Boston residents. The analysis is performed for six regional clusters within Boston.

The survey included questions which address the following areas of health: cancer screening, alcohol use, mental health, health status, elder health, quality of life, heart disease, chronic disease, access to care, immunization, injury control, smoking, violence, disability, oral health, and HIV/AIDS.

The 1999 Behavioral Risk Factor Surveillance Survey included a sample size of 2,731 people. Of these 2,731 people, 58.5% or 1598 were female. The racial/ethnic distribution of the respondents included 1,590 (59.3%) White, 543 (20.3%) Black, 380 (14.2%) Hispanic, 119 (4.4%) Asian, and 49 (1.8%) Unknown.

APPENDIX 2
DATA SOURCES

DATA SOURCES

AIDS Reporting System data (ARS). Currently contains data January 1, 2001. Boston: Massachusetts Department of Public Health, Communicable Disease Control.

Acute care hospital case mix 1994-2000 [data file]. Boston: Massachusetts Division of Health Care Finance and Policy.

Acute care hospital discharge data [data file of 1994, 1995, 1996 hospitalizations]. Boston: Massachusetts Health Data Consortium, Inc.

Behavioral Risk Factor Survey, 1994-2000. Behavioral Risk Factor Surveillance System (BRFSS). Boston: Massachusetts Department of Public Health.

Boston resident births [data file, 1991-1999]. Boston: Massachusetts Department of Public Health, Bureau of Health Statistics and Research and Evaluation (BHSR), Registry of Vital Records and Statistics.

Boston resident deaths [data file, 1991-1999]. Boston: Massachusetts Department of Public Health, Bureau of Health Statistics and Research and Evaluation (BHSR), Registry of Vital Records and Statistics.

Homeless counts, 1991-2000. Boston: City of Boston, Emergency Shelter Commission.

Lead screening data, fiscal year 2000. Boston: Boston Public Health Commission, Office of Environmental Health, Boston Childhood Lead Poisoning Prevention Program.

Population data, 1990. Modified Age-Race-Sex (MARS) file for Boston census tracts [data file], 1990. Washington: US Department of Commerce, Bureau of the Census.

Restraining Orders data, 1993-1999. Research and Planning Department, Administrative Services Division, Office of Commissioner of Probation, City of Boston.

Selected STDs for Boston Report 1990-1999. Boston: Massachusetts Department of Public Health, Sexually Transmitted Disease Division.

Summary Tape File 3A, 1990 [provides estimates based on an eleven percent sample of the population]. Boston: US Department of Commerce, Bureau of the Census.

US Department of Health and Human Services. *Healthy People 2010* (Conference Edition, in Two Volumes). Washington, DC: January 2000.

Violent Crime Data, January-November 2000. Boston Police Department, Office of Research and Evaluation, City of Boston.

Weapon-related injury data, 1994-1999. Boston: Massachusetts Department of Public Health, Weapon-Related Injury Surveillance System.

Youth Risk Behavior Survey, 1999 [online database]. Boston: Boston Public School Department and Massachusetts Department of Public Health.

APPENDIX 3
GLOSSARY

GLOSSARY

The glossary includes explanations of terms, concepts, and sources used in this publication. Readers can call the Research and Technology Services at (617) 534-4757 for more information on any of the subjects addressed here.

To help the reader compare the data presented for specific health indicators in this report to data from other sources, the definitions provided below include the codes used to classify causes of hospitalization or death. The hospitalization codes are from the Diagnostic Related Grouping (DRG), based on version 8 of the Federal Grouper. The cause-of-death codes are from the International Classification of Diseases, 9th Revision, Clinical Modification, 4th Edition (ICD-9-CM), a product of the US Department of Health and Human Services.

Any terms used in a definition that are themselves defined in this section are in **boldface**.

AAR: See **Age-Adjusted Mortality Rate**

Acquired Immune Deficiency Syndrome (AIDS): See **HIV/AIDS**.

Adolescent Births: Births to females 10 to 19 years of age.

African American: All persons self-identified as being born in the US and of African descent. The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

Age-Adjusted Mortality Rate (AAR): The age-adjusted mortality rate is calculated by applying the **age-specific mortality rates** in a population to a standard population (typically, and in this report, the 2000 US population). The age-adjusted rate of one area or group can be compared to the age-adjusted rate of another area or group with confidence that differences in the rates of the two areas or groups do not stem from differences in the age structure of their populations. AARs are extensively used in the Healthy People 2010 goals. See *Technical Notes* for further information.

Age-Specific Mortality Rate (ASR): The number of deaths per year in a given age group per 100,000 people in that age group. See *Technical Notes* for further information.

Age-Specific Birth Rate: The number of live births in a population divided by the total female population for a specific age group and expressed per 1,000 persons. See *Technical Notes* for further information.

Alcohol-Related Deaths: Causes of death directly related to alcohol use/abuse, such as liver disease attributed to alcohol consumption, accidental alcohol overdose, etc. This category does *not* include deaths indirectly due to alcohol use, such as deaths due to injuries occurring while intoxicated or deaths caused by another person who was intoxicated. For pre-1999 data in this report, ICD-9 codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0-571.3, 790.3, E860; for 1999 data ICD-10 codes F10, G31.2, G62.1, I42.6, K29.2, K70, R78.0, X45, X65, Y15.

Asian: All persons self-identified as Asian or Pacific Islander (e.g., Chinese, Japanese, Hawaiians, Cambodians, Vietnamese, Asian Indians, Filipinos) who do not identify themselves as Hispanic. The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

Asthma and Bronchitis: Asthma is a chronic inflammatory condition defined by sudden periodic attacks of difficulty in breathing accompanied by wheezing caused by a spasm of the bronchial tubes. Bronchitis refers to inflammation of the mucous membrane of the bronchial tubes. DRG 96-98.

Behavioral Risk Factor Surveillance System (BRFSS): A random telephone survey of Massachusetts adults ages 18 years and older. The survey is sponsored by the Centers for Disease Control and Prevention (CDC) and is conducted annually in all 50 states. The BRFSS collects information regarding various health related issues, such as behavior, attitudes, knowledge, access to health care, and opinions on health policy issues. The responses to the survey provide

important information regarding the prevalence of risk factors that are responsible for causing premature death, illness, and disability among Massachusetts residents.

Birth Rate: The number of live births per year, per 1,000 persons.

Birthweight: The weight of an infant at the time of delivery. It may be recorded in either grams or pounds/ounces. If recorded in pounds/ounces, it is converted to grams for use in this report based on the following formula: 1 pound = 453.6 grams; 1,000 grams = 2 pounds and 3 ounces.

Black: All persons self-identified as Black (e.g., African Americans, Haitians, West Indians) who do not identify themselves as Hispanic. (See Non-Hispanic Black.) The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

Blood Cholesterol: Cholesterol is a soft, waxy substance found among the lipids (fats) in the blood stream and cells. It is an important steroid because it comprises cell membranes, hormones, and tissues. However, levels of cholesterol in the blood that are too high are a major risk factor for Coronary Heart Disease, which leads to a heart attack.

Blood Lead Levels: The amount of lead detected in the blood during the finger-stick screening or venous-confirmation blood tests. (Venous means “in or of the bloodstream or veins”.)

Body Mass Index (BMI): Calculated by dividing a person’s weight in kilograms by their height in meters squared (kg/m²), indicating whether they are underweight, overweight, or obese. This calculation is used to screen and monitor populations in order to detect risks of health or nutritional disorders. Body Mass Index compares well to body fat, but because the relation between fatness and BMI is influenced by age and gender it cannot be interpreted as a certain percentage of body fat.

BMI is used differently with children with adults and is plotted according to age and sex-specific charts. The 1995 BMI cutpoints for adults are as follows:

Overweight	BMI of 25.0 to 29.9
Obese	BMI of 30.0 or more

The Centers for Disease Control and Prevention states that a BMI of 30 is equivalent to one being approximately 30 pounds overweight.

In 1995 the World Health Organization released new guidelines adopted by Healthy People 2010 categorizing adult males and females as overweight. Standards utilized by Healthy People 2000 classified males and females separately, both of which had higher cutoffs.

Cancer: A group of diseases characterized by uncontrolled growth and spread of abnormal cells. For pre-1999 data in this report, ICD-9 codes 140-208; for 1999 data, ICD-10 C00-C97.

Specific types of cancer analyzed in this report:

Breast Cancer (Female): For pre-1999 data in this report, ICD-9 codes 174; for 1999 data, ICD-10 codes C50.

Colorectal Cancer: For pre-1999 data in this report, ICD codes 153-154; for 1999 data, ICD-10 codes C18-C21.

Lung Cancer: For pre-1999 data in this report, ICD-9 codes 162; for 1999 data, ICD-10 codes C33-C34.

Prostate Cancer: For pre-1999 data in this report, ICD-9 codes 185; for 1999 data ICD-10 codes C61.

Cardiovascular Disease (CVD): A group of diseases that affect the heart including high blood pressure, coronary heart disease, stroke, congestive heart failure, and congenital heart defects. For pre-1999 data in this

report, ICD-9 codes 390-398, 402, 404, 410-429, 430-434, 436-438, 440; for 1999 data, ICD-10 codes I00-I09, I11, I13, I20-I51, I60-I69, I70.

Cellulitis: An infection of skin or connective tissues (an infection in or close to the skin) is usually controlled by body defense mechanisms. DRG 277-279

Census 2000: The count of the population undertaken by the Census Bureau in 2000. At the time of publication of this report, national, state, and local numbers have been released. Data currently available does not provide the full details on age or sex distribution of the population. The census 2000 should not be confused with the year 2000 standard population, which is a set of population weights used to calculate age-adjusted rates.

Cerebrovascular Disease (Stroke): A set of diseases of the vascular system (which conveys blood throughout the body) that affect the supply of oxygen to the brain, thereby damaging brain cells. This category includes strokes. For pre-1999 data, ICD-9 codes 430-434, 436-438; for 1999 data, ICD-10 codes I60-I69. DRG 14 for hospitalization data.

Chlamydia: A sexually transmitted disease caused by any member of the genus *Chlamydia*.

Colon and Rectum: The two parts of the large intestine. The colon comprises the upper five or six feet of the large intestine, while the rectum comprises the remaining five to six inches. Together, they are the location of colorectal cancers.

Comparability Modified Rate: Allows the comparison of mortality data from 1994, 1995, 1996, 1997, and 1998 with 1999 mortality data. The comparability modified rate is calculated by multiplying the comparability ratio for a particular cause of death by the age-adjusted rate for a particular cause of death for the years 1994-1999.

Comparability ratios: Adjusts the causes of death data from 1994, 1995, 1996, 1997, and 1998, classified using ICD-9, so they may be compared with mortality statistics from 1999 classified by ICD-10. This ratio is calculated by dividing the number of deaths from a particular cause of death classified by ICD-10 by the number of deaths from a particular cause of death classified by ICD-9. The National Center for Health Statistics calculated these ratios and at the time of this report, they are preliminary. The final comparability ratios will be available later this year.

Coronary Heart Disease: A disease of the heart and caused by narrowing or blockage of the coronary arteries. For pre-1999 data in this report, ICD-9 codes 402, 410-417, 429.2; for 1999 data, ICD-10 codes I11, I20-I25, I26-I28, I51.6.

Colonoscopy: A visual screening examination performed to screen for colorectal cancer, of the full lining of the colon and rectum, parts of the large intestine.

Death Rate: The number of deaths per year per 100,000 population.

Demographics: The statistical study of characteristics of human populations and of population distributions such as age, sex, and race/ethnicity.

Diabetes: A chronic metabolic disease characterized by inadequate insulin production by the pancreas. ICD-9-CM codes 250.0-250.9.

Diagnostic Related Grouping (DRG) Codes: Codes used to group causes of hospitalization.

Drug-Related Deaths: Causes of death related to the use of drugs other than alcohol and tobacco, including direct physiological causes as well as some accidental deaths in which drug use/abuse is involved. Does *not* include deaths indirectly due to drug use, such as death due to injuries occurring while under the influence of drugs or deaths caused by another person under the influence of drugs. For pre-1999 data in this report, ICD-9 codes 292, 304, 305.2-305.9, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5; for 1999 data, ICD-10 codes F11.0-F11.5, F11.7-F11.9, F12.0-F12.5,

F12.7-F12.9, F13.0- F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0- F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9, X40-X44, X60-X64, X85, Y10-Y14.

E-Codes: "E-codes" refer to the supplementary classification within ICD-9-CM of the external causes of injury and poisoning, such as environmental events, circumstances and conditions. This is particularly helpful in planning intervention. E-codes are intended to be used as an addition to the main ICD code, which classifies the injury or poisoning by the biological system affected.

Gastroenteritis, Esophagitis, and Miscellaneous Digestive Disorders: Infection of the mucous membranes of the stomach and intestine.

Gonorrhea: A contagious catarrhal inflammation of the genital mucous membrane, transmitted chiefly by sexual intercourse and due to *Neisseria gonorrhoeae*; may involve the lower or upper genital tract, especially the urethra, endocervix, and Fallopian tubes, or spread to the peritoneum and rarely to the heart, joints, or other structures by way of the bloodstream.

Healthy People 2010 Goals and Objectives: Targets established by the US Public Health Service, in conjunction with the Centers for Disease Control and Prevention and the National Center for Health Statistics, to assist communities with health promotion and disease prevention efforts.

Heart Disease: A group of diseases affecting the heart, including valve and conductive disorders as well as hypertensive diseases. For pre-1999 data in this report ICD-9 codes 390-398, 402, 404, 410-429; for 1999 data, ICD-10 codes I00-I09, I11, I13, I20-I51.

Heart Failure and Shock: Heart failure occurs when the heart is unable to pump blood in an efficient manner. Shock results when the heart cannot pump blood adequately to the tissues and vital organs. DRG 127.

Hepatitis: A contagious viral disease that can be transmitted via sexual contact and/or activity. There are many strains of hepatitis, including hepatitis A, hepatitis B, hepatitis non-A non-B, hepatitis B (unknown carrier), hepatitis B (unverified carrier), hepatitis C, hepatitis D, or hepatitis unspecified.

Hispanic: Includes people of any race (Asian, Black, White, or Other) self-identified as Hispanic or Latino, such as Puerto Rican, Mexican, Cuban, Spanish, and Dominican. The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

HIV/AIDS: The Human Immunodeficiency Virus (HIV) infection, which leads to Acquired Immune Deficiency Syndrome (AIDS) or other HIV infections. For pre-1999 data in this report ICD-9 codes 042-044; for 1999 data, ICD-10 codes B20-B24.

HIV+ or HIV Infection: Having tested positive for the antibodies to Human Immunodeficiency Virus (HIV), meaning that one is infected with the virus, with or without major related conditions. DRG 700-702, 704-708, 710-714.

Homeless: The federal government defines "homeless" to mean (1) an individual who lacks a fixed, regular, and adequate night-time residence; and (2) an individual who has a primary night-time residency that is (i) a supervised publicly or privately operated shelter designed to provide temporary living accommodations (including welfare hotels, congregate shelters, and transitional housing for the mentally ill); (ii) an institution that provides a temporary residence for individuals intended to be institutionalized; or (iii) a public or private place not designed for, or ordinarily used as, a regular sleeping accommodation for human beings. This term does not include any individual imprisoned or otherwise detained under an Act of Congress or a state law.

Homicide: A death intentionally caused by a person other than the deceased. For pre-1999 data in this report, ICD-9 codes E960-E969; for 1999 data ICD-10 codes X85-Y09, Y87.1.

Hospitalization: A patient's continuous stay of one night or more in the hospital for observation, care, diagnosis, or treatment before being released by the hospital, or before death.

Human Immunodeficiency Virus (HIV): The virus that is responsible for causing AIDS.

ICD-9 Codes: Codes designed for the classification of morbidity and mortality information for statistical purposes and for the indexing of hospital records by disease and operations for data storage and retrieval. International Classification of Disease Codes, 9th Revision, Clinical Modification (ICD-9-CM) is based on the official version of the World Health Organization's 9th Revision, International Classification of Diseases (ICD-9). ICD-9 and ICD-9-CM codes were used to classify data from 1979 to 1998. ICD-9 classification has been replaced by ICD-10 classification.

ICD-10 Codes: Data from 1999 is classified according to the International Classification of Disease Codes, 10th Revision (ICD-10), released by the World Health Organization in 2000 and adopted by the United States National Center for Health Statistics (NCHS), Centers for Disease Control and Prevention. ICD-10 classification replaces ICD-9 classification. For more information on these codes and their use, see *Technical Notes* and <http://www.cdc.gov/nchs/icd9.htm#ICD-10-CM>.

IMR: See **Infant Mortality Rate**.

Incidence: The number of reported new cases of a particular disease over a period of time and in relation to the population in which it occurs.

Incident: A term used by Emergency Medical Services (EMS) to refer to an event leading to the dispatch of one or more Boston EMS units.

Infant Mortality Rate (IMR): The number of deaths per 1,000 live births among infants less than one year old.

Injury: Injury deaths include five categories: **homicides, suicides, motor vehicle-related injuries, (other) unintentional injuries,** and **“undetermined”** injuries (for which it was not determined on the death certificate whether the injury was intentional). The latter two categories are frequently presented together in this report. The determinations of intent are for purposes of medical record-keeping only. Each chart that includes data on injury deaths specifies exactly which types of injuries are included. For hospitalization-related charts and text in this report, injury is an aggregation of DRGs 280-282, MDC21, 22, and 24.

Lead Screening: The routine measurement of blood-levels in children to identify those who are lead poisoned.

Low Birthweight (LBW): Birthweight less than 2,500 grams (or 5.5 lbs).

Malignant Tumor: A tumor, classified as cancer, which has the ability to invade the surrounding tissues and to spread to other tissue and organ sites. Only **malignant tumors** are classified as cancers.

Mammogram: A test given to women to detect signs of breast cancer.

Median: Median is the middle value in a distribution. The **median** divides the total frequency into two parts. One half the cases fall below the **median** and one half fall above the **median**. This should not be confused with mean, which is the arithmetic average of a set of values.

Metabolic Disorders: A disruption in the biological process of breaking down food into a form useable by the body.

µg/dL: Micrograms per deciliter. A measurement unit for level of lead in a measured quantity of blood: a billionth of a gram in a tenth of a liter.

Moderate Physical Activity: Physical activity of 30 minutes, that does not cause sweating or hard breathing, on five or more of the seven previous days.

Morbidity: The proportion of illness, disease, or injury among a specific population in a geographical locality in a specific time period.

Mortality: The relative frequency of deaths in a specific time period; death rate.

N<5: A notation used on charts in the *Health of Boston 2001* to indicate that in this health indicator there were fewer than five occurrences (for example, births, deaths, new cases) of a disease, and that a rate could not be calculated. See Technical Notes.

Neighborhood: One of 16 distinct geographical areas in Boston.

Newborns/Neonates: Infants from the time of their birth through the first 27 days of life. DRG 602-640 and “Not Classified” Category.

Non-Hispanic Black: All persons self-identified as Black (e.g. African Americans, Haitians, West Indians) who do not identify themselves as Hispanic. The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

Non-Hispanic White: All persons self-identified as White who do not identify themselves as Hispanic. The numbers from the 2000 census used in the **Demographics** section use a different way of counting races and ethnicity and should not be compared with numbers drawn from earlier censuses.

Pap Smear Test: A screening test to detect cancerous or precancerous conditions of the cervix.

Percentage Differences in AAR to Meet Healthy People 2010 goal or target: The percentage of the age-adjusted rate (AAR) for a given cause of death that would be required to meet the Healthy People 2010 targeted AAR, i.e., percent reduction = $(AAR_1 - AAR_2)/AAR_1 \times 1000$, where

AAR₁= the age-adjusted rate, for a specific cause of death

AAR₂= the Healthy People 2010 goal or target

Pneumonia/Influenza: Bacterial or viral infections of the lungs that primarily affect the aged and persons with compromised immune systems. For pre-1999 data in this report ICD-9 codes 480-487; for 1999 data ICD-10 codes J10-J18.

Pneumonia/Pleurisy: Bacterial or viral infection of the lungs and inflammation of the pleura, the membrane that covers both lungs. DRG 89-91.

Pregnancy: The condition of carrying a developing embryo or fetus in the uterus. DRG 370-384.

Psychoses: Acute mental disorders characterized by loss of contact with reality and personality disintegration. DRG.430

Risk Factor: A characteristic or agent whose presence increases the *probability of occurrence* of a particular disease, injury, cause of death, or birth outcome. A risk factor does not necessarily cause the outcome.

Sexually Transmitted Disease: Infection spread by transfer of organisms from person to person during sexual contact.

Shock: See **Heart Failure and Shock**.

Sigmoidoscopy: A screening test for colorectal cancer to examine the rectum and lower colon, parts of the large intestine.

Socioeconomics: The statistical study of the social and economic characteristics of a population, such as education and poverty levels.

Standard Population: A national estimate of the population, in which the age, race, and sex distribution are known, resulting in a set of population weights used to calculate age-adjusted mortality rates. *Standard population* is not to be confused with population numbers from any particular census. In this report, the standard population used to calculate age-adjusted mortality rates is the year 2000 US standard population.

Stroke (Cerebrovascular Disease): A stroke occurs when a blood vessel in the brain bursts or when the blood supply to part of the brain is interrupted. For pre-1999 data in this report, ICD-9 codes 430-434, 436-438; for 1999 data, ICD-10 codes I60-I69.

Substance Use and Abuse: Use or overuse of ingested substances both legal (such as alcohol) and illegal (such as cocaine). For pre-1999 alcohol related data in this report, ICD-9 codes 291, 303, 305.0, 357.5, 425.5, 535.3, 571.0-571.3, 790.3, E860; for 1999 data, ICD-10 codes F10, G31.2, G62.1, I42.6, K29.2, K70, R78.0, X45, X65, Y15. For pre-1999 drug-related data in this report, ICD-9 codes 292, 304, 305.2-305.9, E850-E858, E950.0-E950.5, E962.0, E980.0-E980.5; for 1999 data, ICD-10 codes F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0- F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0- F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9, X40-X44, X60-X64, X85, Y10-Y14.

Suicide: The act of taking one's own life voluntarily and intentionally. ICD-9-CM codes E950.0-E959.9. For the 1999 data, ICD-10 codes X60-X84, Y87.0.

Syphilis: An acute and chronic infectious disease caused by *Treponema pallidum* and transmitted by direct contact, usually through sexual intercourse. After an incubation period of 12 to 30 days, the first symptom is a chancre, followed by slight fever and other constitutional symptoms.

Unintentional Injury: An injury that was accidental. ICD-9-CM codes E800.0-E809.9, E830.0-E949.9, E980.0-E989.9. The ICD-9-CM codes used by the Healthy People 2010 committee, and therefore used for the Boston rates for comparison with the Healthy People 2010 goals, are slightly different. They are E800.0-E949.9. For the 1999 data, ICD-10 codes V01.0, V01.1, V01.9, V05.0, V05.1, V05.9, V06.0, V06.1, V06.9, V09.1, V09.3, V09.9, V10.0, V10.1-V10.5, V10.9, V11.0-V11.5, V11.9, V15.0-V15.5, V15.9, V16.0-V16.5, V16.9, V17.0-V17.5, V17.9, V18.0-V18.5, V18.9, V19.3, V19.8, V19.9, V80.0-V80.2, V80.7-V80.9, V81.2-V81.9, V82.2-V82.9, V87.9, V88.9, V89.1, V89.3, V89.9, V90-V95, V96.0-V96.2, V96.8-V96.9, V97.0-V97.3, V97.8-V97.9, V98-V99, W00-X59, Y85.0, Y85.9, Y86.

Vigorous Physical Activity: Physical activity that causes sweating and hard breathing and promotes cardiorespiratory fitness, for at least three days per week for 20 minutes or more per occasion.

Weighted Percentage: A value determined by assigning weights to individual measurements. Each value is assigned a nonnegative coefficient (weight).

White: All persons self-identified as White who do not identify themselves as Hispanic. (See non-Hispanic White.)

Youth Risk Behavior Surveillance System (YRBSS): A surveillance system developed by the Centers for Disease Control and Prevention (CDC) to monitor the prevalence of youth behaviors that influence health. The target population consists of a representative samples of ninth- through twelfth-graders in the United States and the District of Columbia.

APPENDIX 4

HEALTHY PEOPLE 2010 GOALS AND OBJECTIVES

Healthy People 2010

Category and Objective:	Target
◆ IMR Reduce IMR in infants > 1 year old	4.5 per 1,000 live births
◆ Low Birthweight Reduce low birth rate	5.0 % of births
◆ Teen Birth Rates Reduce adolescent pregnancies	46 births per 1,000
◆ Childhood Lead Poisoning	0
◆ Childhood Asthma Reduce hospitalization for children under the age of 5	25 per 10,000
◆ STD Reduce by Type: Chlamydia Males ages 15-24 attending STD clinics Females ages 15-24 attending STD/family planning clinics Gonorrhea Primary and secondary syphilis	 3.0% 3.0% 19 new cases per 100,000 0.2 new cases per 100,000
◆ AIDS Reduce AIDS among adolescents and adults	1.0 new cases per 100,000
◆ Cancer Reduce overall cancer death rate Reduce the lung cancer death rate Reduce breast cancer death rates Reduce cancer uterine cervix cancer death rates Reduce colorectal cancer death rates Reduce oropharyngeal cancer death rates Reduce prostate cancer death rates Reduce melanoma cancer death rates	 158.7 deaths per 100,000 44.8 deaths per 100,000 22.2 deaths per 100,000 females 2.0 deaths per 100,000 females 13.9 deaths per 100,000 2.6 deaths per 100,000 28.7 deaths per 100,000 2.5 deaths per 100,000
Screening Increase percentage of females who receive a Pap test: Females 18 and over who have ever received one Females 18 and over who received one in preceding 3 years	 97% 90 %
Increase percentage of females ages 40 and over who received a mammogram within past 2 years	70 %
Increase percentage of adults with colorectal cancer screening examination: Adults over age 50 who have ever received a sigmoidoscopy Adults over age 50 who received a fecal occult blood test within past 2 years	 50 % 50%

Category and Objective:	Target
<ul style="list-style-type: none"> • Coronary Heart Disease (CHD) Reduce CHD mortality rate 	166 deaths per 100,000
<ul style="list-style-type: none"> <ul style="list-style-type: none"> ◆ Risk Factors: Reduce proportion of adults with high bp Reduce percentage of adults with high blood cholesterol 	 16 % 21%
<ul style="list-style-type: none"> ◆ Stroke Reduce stroke mortality rate 	48 deaths per 100,000
<ul style="list-style-type: none"> ◆ Diabetes Reduce diabetes mortality rate Reduce rate of lower extremity amputations among diabetics 	 45 deaths per 100,000 5 deaths per 1,000 per year
<ul style="list-style-type: none"> ◆ Substance Abuse Reduce drug mortality rate Reduce cirrhosis mortality rate Reduce cigarette smoking by adults Reduce tobacco use by adolescents Reduce binge drinking among adults ages 18 and over Reduce binge drinking among adolescents ages 12-17 	 1 per 100,000 3 deaths per 100,000 12 % 21 % 6% 3%
<ul style="list-style-type: none"> ◆ Violence Reduce homicide mortality rate Reduce suicide mortality rate Reduce rate of suicide attempts by adolescents 	 3.2 homicides per 100,000 6.0 deaths per 100,000 12 month average of 1%
<ul style="list-style-type: none"> ◆ Nutrition Increase the proportion of persons age 2 and older: Who consume at least two daily servings of fruit Who consume at least three daily servings of vegetables (at least 1/3 being dark green or deep yellow) Who consume at least 6 daily servings of grain products 	 75% 50% 50%
<ul style="list-style-type: none"> ◆ Physical Activity Reduce the percentage of adults who engage in no leisure time physical activity Increase the percentage of adults who engage in regular, moderate physical activity daily for at least 30 minutes Increase the percentage of adolescents who engage in moderate physical activity for at least 30 minutes on 5 or more of previous days 	 20% 30% 30%

