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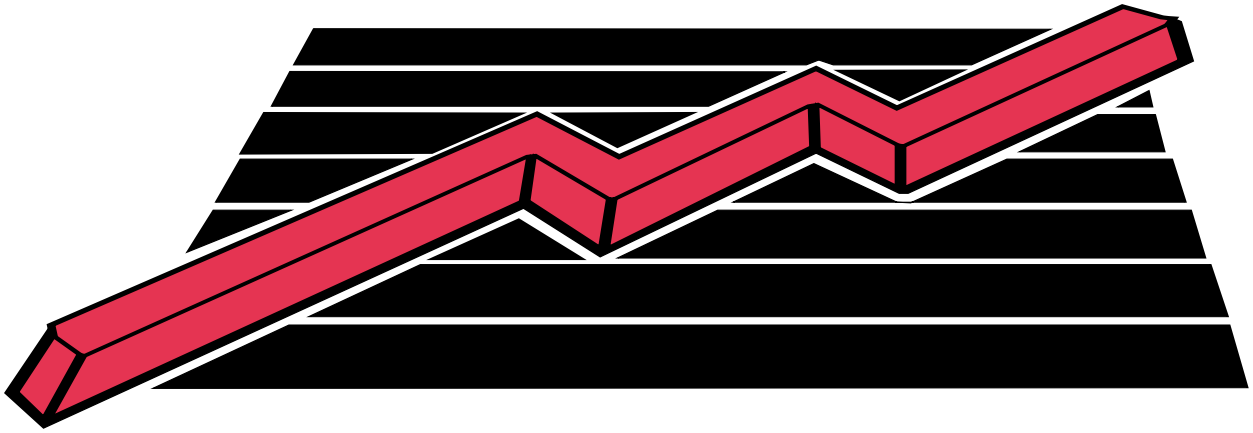

Volume I: Incidence and Mortality Trends and Projections

Missouri Department of Health,
Division of Chronic Disease Prevention and Health Promotion,
Office of Surveillance, Research and Evaluation
1999

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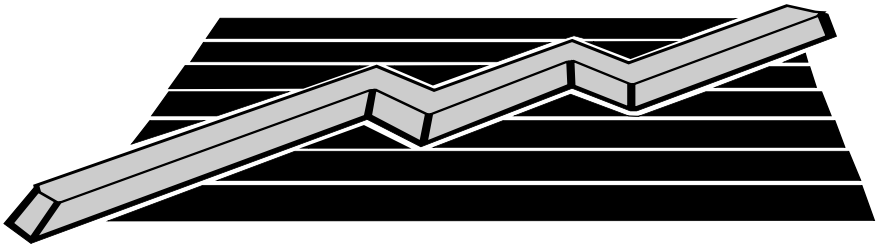

Volume I: Incidence and Mortality Trends and Projections

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1999

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PREFACE

The Division of Chronic Disease Prevention and Health Promotion is proud to share with you this report, "Chronic Disease Data for Decision Making and Planning – Volume 1: Incidence and Mortality Trends and Projections." This report provides incidence and mortality data as well as information about current disease trends and future rate projections in Missouri. It highlights areas of concern related to the human and economic burden of cancer, cardiovascular disease and other chronic diseases. It is a companion to "Chronic Disease Data for Decision Making and Planning – Volume 2: Behavioral Risk Factor Trends and Projections."

In 1997, the Division established a goal of increasing the number of chronic disease reports available to the public health community of Missouri. This concerted effort of our Office of Surveillance, Research and Evaluation aims to provide critical information to public health professionals working in the chronic disease field for the planning and implementation of health promotion and disease prevention programs in Missouri.

It is our goal to share data and other information available from health assessments and surveillance in order to direct efforts toward improvement of the health status of Missouri citizens we serve. This goal can not be achieved unless we disseminate this very meaningful information to policy makers, planners, program managers and health professionals throughout the state in a timely manner.

I am pleased to share this report with you and others in the public health community. I look forward to a continuing flow of information from this Division which will help guide and direct our efforts in reaching our vision of "Healthy Missourians in Healthy Communities."

Bernard R. Malone, M.P.A., Director
Division of Chronic Disease Prevention and Health Promotion

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INTRODUCTION AND SCOPE

Five of the seven leading causes of death in Missouri are chronic diseases. These include ischemic heart disease (IHD) and other diseases of the heart, cancer, stroke, chronic obstructive pulmonary disease (COPD) and diabetes. These diseases are responsible for 70% of all deaths in Missouri each year.

Over the past three years, a strategy for translating, communicating and disseminating chronic disease surveillance and epidemiological data has been implemented by the Division of Chronic Disease Prevention and Health Promotion, Missouri Department of Health. Missouri's current health-promoting policies and planning of chronic disease intervention programs are based on this surveillance and epidemiological information. Small portions of these data are available in scientific journal articles; however, a complete collection of chronic disease incidence, prevalence and mortality trend data so crucial for public health policy decisions and planning prevention programs in Missouri has, to date, been lacking.

The purpose of this monograph is twofold: 1) to compile and summarize, in one volume, cancer incidence trends and mortality trends for the major chronic diseases; and 2) to provide predictions, based on recent trends, of the future of the chronic disease burden on Missourians. Data from this and a companion monograph containing prevalence data on behavioral risk factors related to chronic disease should be used jointly to provide a more comprehensive perspective on disease and intervention related trends.

USING THIS PUBLICATION

This monograph is comprised of chronic disease mortality and incidence tables, their trends and future rate predictions. The first section is on cancer incidence (i.e., all new cases of cancer diagnosed in a particular year). This is followed by sections on cancer mortality (i.e., deaths in a particular year), cardiovascular disease mortality and other major chronic disease mortality. Each section has the following components:

- Estimates of Change Tables (Age-adjusted and Crude)

These tables provide an overall summary of each disease. *Mean rates of cancer incidence* provide the average rate for the entire 1985-1992 period. *Mean rates of mortality* provide the average rate for the entire 1980-1996 period. Additionally, *estimated annual percent change* tables show the annual change in rates, while the *period percent change* tables display the overall rate change for the period noted. *Projected incidence and mortality rates* for the years 2000, 2010 and 2020 are estimated based on recent trends in incidence and mortality.

- Annual Tables of Rates

Tables of rates for each year from 1985 through 1992 for cancer incidence and 1980 through 1996 for cancer, cardiovascular disease and other mortality are presented. Age-adjusted and crude rates are displayed. Tables for Pooled Race (i.e., the overall population total for all races), Whites and African Americans are provided. Additionally, incidence and mortality rates are graphed and a projection line drawn to show trends. Predicted rates through the year 2020 are included.

RATES, TRENDS AND PREDICTIONS

Crude rates are the actual rates for disease incidence and mortality. Since crude rates accurately describe the burden of disease, they should be used for planning purposes. However, there are times when crude rates should not be used. This occurs when comparing the rate of disease of one population with another (such as whites vs. African Americans) or one county or state with another. Because the age structure of the populations may differ from one another, crude incidence and mortality rates are not comparable. By using *age-adjusted rates*, the age differences in populations are eliminated. However, age-adjusted rates are artificial, meaning that they do not reflect actual disease burden. Therefore, *crude* rates are helpful for planning and determining which diseases are most important, while *age-adjusted* rates are helpful in comparing rates with those of other populations or geographic areas.

Trend analysis involves using incidence and mortality data to generate regression-based curves and determine the rate of increase, decrease or stabilization over a period of time. Chronic disease time trends are better reflected in age-adjusted rates because of population age-structure changes over time. Predictions are based on trends and are an attempt to project future disease rates.

APPLICATIONS TO PROGRAM DEVELOPMENT AND PLANNING

Data from this manual on chronic disease incidence, mortality trends and predictions can be used for prioritizing, planning and evaluating chronic disease programs.

Prioritization

The prioritization process in public health begins with an assessment of the magnitude, severity and urgency of diseases. This can be implemented through ranking of *mortality and incidence rates* and by determining *case-fatality* and *percent rate of change*. Other components of prioritization include: reviewing disease preventability (efficacy and effectiveness of intervention) and

its impact on others; the cost of the health condition; and the cost-effectiveness and cost-benefits of intervention.

Disease mortality and incidence rates can be ranked from highest to lowest and across gender and race groups to assess the magnitude of various diseases. For example, in this monograph, cardiovascular disease is presented as the leading cause of death for Missourians, followed by ischemic heart disease, all cancer, stroke, diabetes-related diseases, lung cancer and COPD (see Appendix 1, Table 2, page 197). Another possible ranking would have ischemic heart disease as the leading cause of death, followed by lung cancer, diabetes-related deaths, stroke, COPD, colon-rectal cancer and breast cancer. Other rankings are possible by gender, race and gender within race. Though not presented in this report, re-analysis of the cancer data using the same methods for standardization as other chronic diseases did not substantially change the ranking in the example presented.

The *case fatality rate*, a good measure of disease severity, is the inverse of survival. It is simply the number of deaths arising among those who developed a disease over a period of time. The case-fatality rate can be roughly estimated by dividing a disease mortality rate by the disease incidence rate in a given year. If incidence and mortality rates are similar, it implies that the case-fatality rate is high for that year. The case-fatality rate will be low if the incidence rate is much greater than the mortality rate for a given year. In Missouri, lung cancer mortality and incidence rates are very close to one another, implying that on average most persons with lung cancer die shortly after being diagnosed, usually within one year.

If the rate of a chronic disease is increasing rapidly over several years, it may be considered an urgent health problem. The *annual* and *period percent changes* in a rate are good measures of the urgency of disease occurrence. For example, in deciding which cancer is the most critical for Missouri women, one may look at the *Estimates of Change Tables* for the various cancers. The *incidence percent changes* for cervical cancer and lung cancer, both experiencing increases in incidence over the study period, are the two highest, followed by breast cancer, then oral cancer and colorectal cancer, both experiencing reductions in incidence over the study period. With regard to mortality, lung cancer, with significant and substantial increases during the study period, is highest, followed by breast cancer. Therefore, lung cancer is clearly identified as an emerging disease concern among Missouri women for the period 1980-1996.

Planning

Data presented in this report can also be used for establishing goals and measurable objectives in chronic disease prevention. This process requires a thorough understanding of program development and knowledge about available and effective interventions, as well as acceptable and scientifically sound

indicators of intervention effectiveness. Assuming these issues have been rigorously incorporated in the planning process and that the indicators of choice are those presented in this report, there are a few options for deciding on goals and objectives.

First, using *age-adjusted rates* in this report, define a population with very high rates of a specific disease (e.g., mortality rates for cervical cancer among African-American women in Missouri). Next, identify a comparable population with a rate that is theoretically achievable. For example, identify a comparable population with lower rates of this disease by using the available literature (e.g. African American women in the United States (US)) or review rates in other populations in this report (e.g., white Missouri women).

Second, using this report's *estimates of annual percent change* and the predictions in *crude rates*, set up the real limits of what is achievable for the disease occurrence in the population of interest and objective year. If rates have significantly increased during the study period and predicted rates for the objective year are higher than the comparison population, it is unlikely that any reduction in disease occurrence can be accomplished within the study period. If rates have significantly decreased during the study period and predicted rates for the objective year are similar or lower than the comparison population, it is feasible to reach disease rates that are similar to the comparison population or even lower.

The *rate of change* in an indicator may also suggest the amount of resources needed to reach a specific goal or achieve an objective. If the *crude incidence*, *prevalence* or *mortality rate* of a chronic disease is increasing at a substantial pace annually or during a period of years, an objective to reduce such a disease must be based on a statewide intervention that is both highly effective and has high population coverage. For example, between 1980 and 1996, prostate cancer mortality was greater among African-American than white men, with *average age-adjusted mortality rates* of 47.5 and 21.4 per 100,000, respectively (see page 118). Reaching a prostate cancer mortality rate similar to that in white men could be a theoretically achievable goal for African–American men. However, mortality actually increased an average 1.7% per year among African–American men but only 0.9% in white men during the same period. Consequently, an intervention to reduce prostate cancer mortality targeting African-American men would be unlikely to succeed unless a massive and effective public health intervention is implemented.

Another issue in the definition of acceptable and measurable objectives is the degree to which a goal or objective is affected by the intervention. A common reason for establishing unattainable goals and objectives is the inability to recognize that while the goal or objective is statewide, the intervention is limited to a smaller geographical area (e.g., to a few counties or a region). Additionally, although an intervention may be statewide, it may be ineffective due

to limited resources that are sparingly deployed. For example, even though the Missouri Smoking Prevention Program plans to spend $1.1 million in 2000, the Centers for Disease Control and Prevention (CDC) has estimated that an investment of $85 million annually would be needed to counteract tobacco industry marketing and produce a reduction in smoking related diseases in Missouri.

Additional information on the *efficacy* and *effectiveness* of the intervention is also important for estimating needed resources for a program and its potential effect on disease occurrence. For example, while a 30% reduction in mortality from breast cancer is a theoretical expectation from screening women ages 40-64, it does not necessarily mean that the state Breast and Cervical Cancer Control Program (BCCCP) will realize such reduction in Missouri. This *efficacy* measure is based on full compliance and complete screening coverage of women in the 40-64 age group. Thus, a screening program larger than BCCCP would be required to reach that level of *effectiveness*.

Finally, when setting up realistic objectives for chronic disease reduction, one should be aware of the long-term trends and predictions of future disease occurrence. Observed trends can also reflect the long duration of time needed between 1) exposure to the risk factor and initiation of disease and 2) initiation of the disease to death. For example, between 1990 and 1996, the lung cancer *age-adjusted mortality rate* remained stable for men (non-significant annual decrease of 1.0%) while substantially increasing for women (a *statistically significant* increase of 2.2% annually) (see page 78). During the same period, *annual age-adjusted* mortality rate reductions were observed for white (non-significant decrease of 0.7%) and African American (a statistically significant decrease of 4.0%) men, but not for women of either race (see page 78). The main reason for this difference in lung cancer mortality between genders is the trend begun in the 1960's for increased smoking among women, while men preceded them in the habit by at least twenty years. A realistic objective for an effective statewide intervention addressing tobacco-use prevention in women would be to stem the rate of increase in lung cancer *crude* mortality among women within a fifteen- to thirty-year period. For men, maintaining the observed rate of reduction in *crude* mortality would be desirable.

Evaluation

Data from this report can also be used to evaluate and monitor program performance. Expected impact of interventions on disease burden can be evaluated by looking at the observed trend for the period and comparing it to expected *predictions*, program goals and objectives. For example, the *crude mortality rate* for ischemic heart disease among African Americans is predicted to continue declining for the next ten years at an *average annual rate* of one percent and reach 146.8 per 100,000 by the year 2010 (see page 149). Reductions in ischemic heart disease mortality greater than those projected may indicate that the program was effective in meeting its goals. Likewise, reductions

that do not meet expectations may be due to one or more of the following: poor program implementation, lack of sufficient resources for adequate statewide delivery, insufficient time in delivering the intervention to impact mortality or intervention effect that is weak or nonexistent.

DATA SOURCES

The data in this report are based on cancer cases reported by hospitals to the Missouri Cancer Registry (MCR) between 1985 and 1992, estimated to be approximately 95% of all incident cases of cancer occurring during the period. Additionally, the report is based on 100% of the death records (for selected causes) from 1980 to 1996 submitted to the Missouri Department of Health's (MDOH) Center for Health Information Management and Epidemiology (CHIME).

The *incidence* and *mortality* statistics are compiled in accordance with the U.S. Department of Health and Human Services, Ninth Revision, Sixth Edition, International Classification of Diseases, Injuries, and Causes of Death (ICD-9-CM) (USDHHS 1999). The disease and death codes used in the report include the following: Cancer-All Sites (140-239), Oral Cancer (140-149), Colorectal Cancer (153-154), Lung Cancer (162), Breast Cancer (174-175), Cervical Cancer (180), Prostate Cancer (185). Cardiovascular Diseases (390-459), Ischemic Heart Disease (410-414), Cerebrovascular Disease (Stroke) (430-438). Chronic Obstructive Pulmonary Disease (490-496), and Diabetes (250).

STATISTICAL METHODS

Statistical methods used in this monograph follow those established by the National Cancer Institute (for cancer) (Shambaugh et al. 1994) and the National Center for Health Statistics (for all other diseases) (NCHS 1999).

Rate Calculation

The *incidence* and *mortality rates* presented were calculated by race and sex, using incident and death cases and the corresponding mid-year Missouri population estimates derived from the 1980 and 1990 US Census for Missouri. *Incidence* and *mortality rates* are determined by dividing the number of new cases (incidence) or deaths (mortality) in a given year by the mid-year Missouri population estimates. *Variance* and subsequent *standard error* estimates around adjusted rates use acceptable *approximated methods* as follows:

$$SE(r) = \frac{r}{\sqrt{\sum n_i / I}}$$

where, r= rate in the period = $\sum n_i / \sum d_i$, n_i = number of cases or death in year i, I =number of years cases are taken from and d_i= estimated population at mid-year of year i.

Rates are presented as *crude* and *age-adjusted*. Rates are expressed per 100,000 population. Age-adjustment of calculated rates used *direct methods of standardization*. Cancer incidence and mortality are age-adjusted to the *US 1970 standard million population*. The remaining mortality (CVD and other) is age-adjusted to the *US 1940 standard million population*. Population estimates are broken down in either nine age groups (for cancer) or eleven age groups for other chronic diseases (see Appendix 2, page 198).

Trend Analysis and Predictions

The *period percent change* (PPC) in rate was calculated by subtracting the mean rate of the last two years from the mean rate of the first two years divided by the mean rate of the first two years. The quotient was then multiplied by 100: $PPC = [(m_{\text{last 2 yrs.}} - m_{\text{first 2 yrs.}}) \div m_{\text{first 2 yrs.}}] \times 100$

Estimated annual percent change (EAPC) was derived by 1) calculating the natural logarithm of the rates for each year and regressing the logged rate onto year, then 2) subtracting 1 from the exponentiated slope and multiplying the remainder by 100: $EAPC = (e^{\beta 1} - 1) \times 100$ where $\beta 1$ is the slope of the log-transformed regression line. The null hypothesis of no change in rate ($\beta 1 = 0$) was tested using the t distribution of $\beta 1 \div SE_{\beta 1}$, with degrees of freedom equal to the number of calendar years minus two. This procedure assumes that the mean change in rate is constant from year to year.

Predicted incidence rates are based on data from 1985-1992. *Predicted mortality rates* are based on data from 1980-1996, unless a change in the trend was noted in the latter part of the study period, i.e., in the period 1990-1996. In those cases, future predicted mortality rates are based on 1990-1996 data.

LIMITATIONS

Many of the limitations of this report are related to those of registry-based incidence and death record based surveillance systems. For the years covered in this review report, the Missouri Cancer Registry had an estimated *completeness of reporting* of 95% overall (i.e., for all cancer sites). Estimates of completeness for specific cancer sites are not available. Death records have been reported to be biased (under- or over-estimated) for some diseases like diabetes and kidney failure. It is possible that some of the diseases studied will suffer from misclassification as has been reported for COPD and asthma.

Although for most diseases reported, data for all and subgroups of the population were sufficient for deriving stable rate estimates, it is possible that rates for some diseases are unstable because of a small numerator or denominator. This is particularly true for rate estimates among African Americans.

Another important limitation of this report is the use of dissimilar standard populations for *direct adjustment* of age differences in rate estimation for cancer and all other chronic diseases. Consequently, the cancer *age-adjusted rates* are not comparable to *age-adjusted rates* of other diseases in the report. However, site-specific cancer rates are comparable to each other and to the "all cancer" rates. The other chronic disease *age-adjusted rates* are also comparable to each other.

The *trend analysis* used *regression models* that are based on assumptions about underlying statistical distribution that cannot always be met. In addition, no attempt was made to test the fit of more complex models to the data, and trend analysis and estimation of *annual percent changes in rates* assumed that rate of change was constant over the study period. Also, the addition of more years to a trend analysis substantially modifies the trends with predictions for future rates being less reliable and valid as we move along the time continuum. For example, a significant and substantial *annual rate of decrease* may estimate that in 20 years there will be no deaths from a specific disease, an impossible scenario in the "real world' of public health. Likewise, the large predicted increase in prostate cancer incidence for the year 2020 is unlikely. In other words, predictions for the years 2000 and 2005 are likely to be closer to the actual rates for those years than are predictions for the year 2020. It is also possible that cancer registry reporting completeness increased between 1985 and 1992, resulting in a possible increase in cancer incidence rates. Because of these limitations, caution should be exercised in the interpretation of trend analysis results and predictions.

Finally, the mortality rates that are presented in this report by the MDOH's Division of Chronic Disease Prevention and Health Promotion (CDPHP) may not completely match those reported by the MDOH's Center for Health Information Management and Epidemiology (CHIME). This is mainly due to differences in disease classification (e.g. cardiovascular disease vs. diseases of the heart) and the use of different standard populations for standardization of rates (e.g., *1970-US standard million vs. 1940 US standard million*). Additionally, CDPHP uses delayed reports of deaths, resulting in slightly higher record counts. However, from an epidemiological perspective, these small increases are negligible.

CANCER INCIDENCE

All Cancer 3
Lung Cancer 13
Colorectal Cancer 23
Breast Cancer 33
Oral Cancer 43
Prostate Cancer* 53
Cervical Cancer* 59

*Please note a slight difference in format for Prostate and Cervical Cancer.

All Cancer Incidence

ALL CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	334.5	388.5	303.7	330.1	382.0	301.0	333.9	394.9	298.0
PROJECTED RATES[3,4]									
2000	448.6	622.8	334.1	445.2	615.6	331.2	429.4	608.8	329.4
2010	576.1	935.5	360.7	574.8	929.2	358.1	530.8	885.5	356.3
2020	739.8	1405.1	389.4	742.1	1402.6	387.1	656.2	1287.9	385.4
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	2.5 ***	4.2 ***	0.8 *	2.6 ***	4.2 **	0.8 *	2.1	3.8 **	0.8
PERIOD PERCENT CHANGE[7]	16.1	28.3	3.9	16.7	28.7	4.3	11.4	25.5	0.9

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

ALL CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	409.4	424.1	395.7	420.9	435.4	407.4	291.0	296.5	286.1
PROJECTED RATES[2,3]									
2000	569.0	704.2	457.9	592.8	733.9	475.5	370.2	436.5	318.8
2010	755.3	1095.0	517.4	796.9	1157.2	542.1	453.3	607.7	347.8
2020	1002.6	1702.4	584.8	1071.3	1824.8	618.0	555.0	845.9	379.4
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	2.9 ***	4.5 ***	1.2 **	3.0 ***	4.7 ***	1.3 ***	2.0	3.4 **	0.9
PERIOD PERCENT CHANGE[6]	18.4	31.0	6.7	19.5	32.2	7.6	10.7	22.2	1.4

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

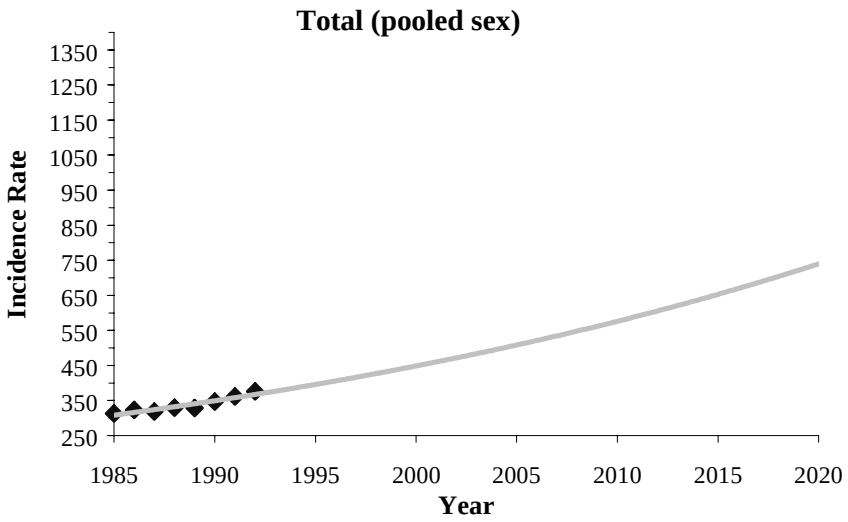
ALL CANCER AGE-ADJUSTED INCIDENCE RATES: POOLED RACE

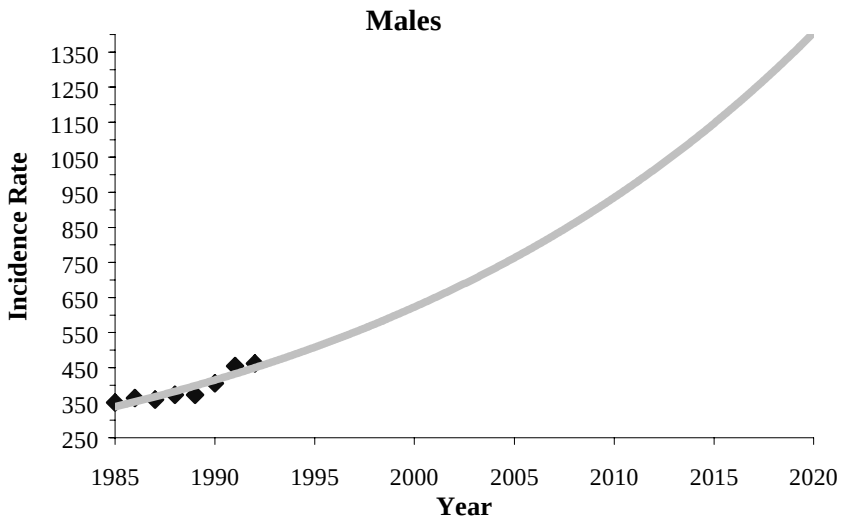
OBSERVED

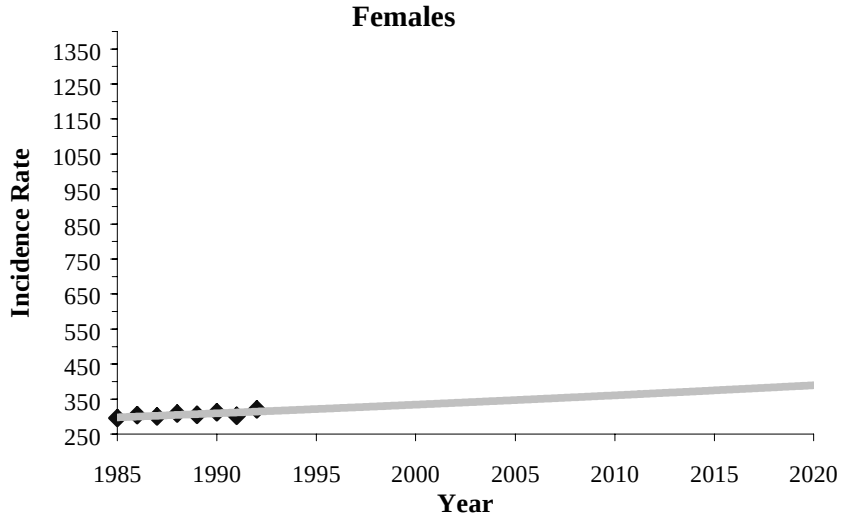
YEAR	Total	Male	Female
1985	312.9	350.3	295.5
1986	322.8	363.2	303.6
1987	318.9	358.2	300.3
1988	329.5	371.9	308.2
1989	328.2	372.7	305.3
1990	346.5	405.2	312.3
1991	361.8	454.1	302.3
1992	376.0	461.4	320.0

PREDICTED

YEAR	Total	Male	Female
1996	405.9	529.3	324.0
1997	416.2	551.2	326.5
1998	426.7	574.1	329.0
1999	437.5	598.0	331.5
2000	448.6	622.8	334.1
2001	460.0	648.7	336.6
2002	471.6	675.6	339.2
2003	483.6	703.6	341.8
2004	495.8	732.9	344.5
2005	508.4	763.3	347.1
2006	521.2	795.0	349.8
2007	534.4	828.0	352.5
2008	548.0	862.4	355.2
2009	561.9	898.2	357.9
2010	576.1	935.5	360.7
2011	590.7	974.3	363.5
2012	605.7	1014.7	366.3
2013	621.0	1056.9	369.1
2014	636.7	1100.8	371.9
2015	652.9	1146.5	374.8
2016	669.4	1194.1	377.7
2017	686.3	1243.6	380.6
2018	703.7	1295.3	383.5
2019	721.6	1349.0	386.5
2020	739.8	1405.1	389.4







Age standardized to the 1970 US population and expressed per 100,000 individuals.

ALL CANCER CRUDE INCIDENCE RATES: POOLED RACE

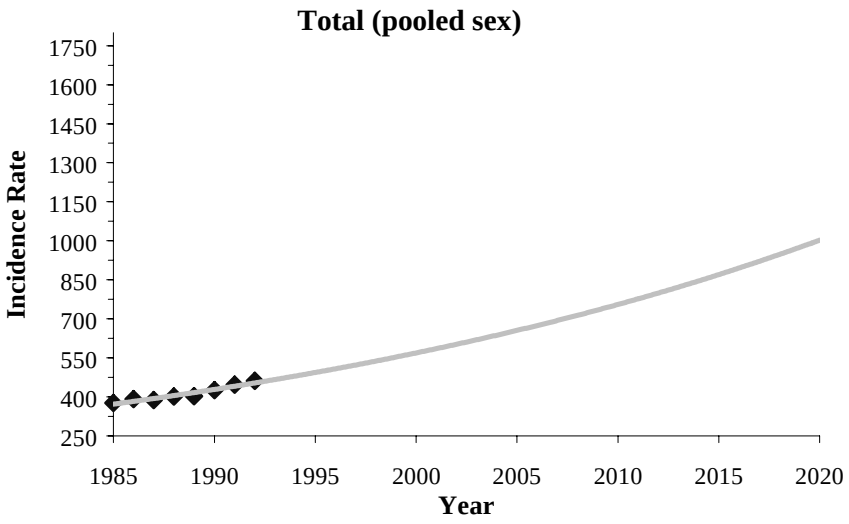
OBSERVED

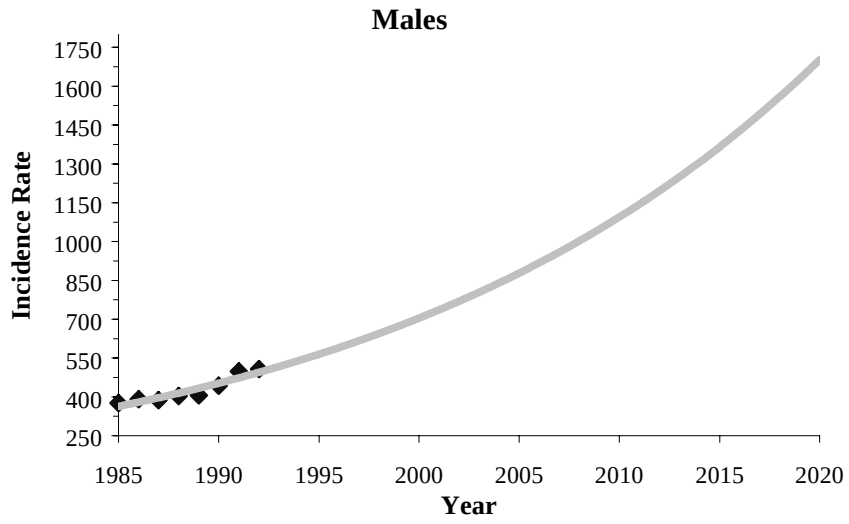
YEAR	Total	Male	Female
1985	376.8	376.2	377.2
1986	390.9	391.3	390.6
1987	387.9	387.3	387.7
1988	401.7	403.1	400.4
1989	402.0	405.6	398.6
1990	425.7	442.8	409.8
1991	446.9	498.5	398.9
1992	462.2	507.0	420.5

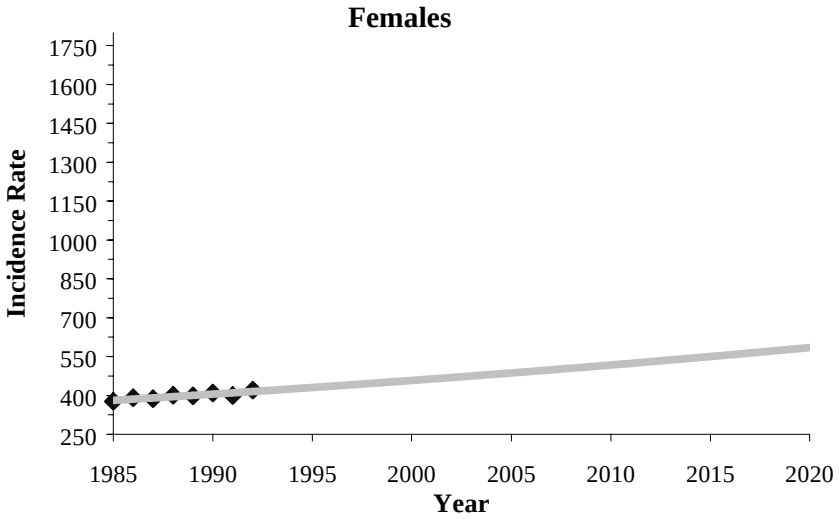
PREDICTED

YEAR	Total	Male	Female
1996	508.0	590.3	436.0
1997	522.6	616.9	441.4
1998	537.7	644.7	446.8
1999	553.1	673.8	452.3
2000	569.0	704.2	457.9
2001	585.3	736.0	463.5
2002	602.1	769.2	469.2
2003	619.4	803.9	475.0
2004	637.2	840.2	480.8
2005	655.5	878.1	486.7
2006	674.4	917.8	492.7
2007	693.8	959.2	498.8
2008	713.7	1002.4	504.9
2009	734.2	1047.7	511.1
2010	755.3	1095.0	517.4
2011	777.0	1144.4	523.8
2012	799.3	1196.0	530.3
2013	822.3	1250.0	536.8
2014	845.9	1306.4	543.4
2015	870.2	1365.3	550.1
2016	895.2	1426.9	556.8
2017	920.9	1491.3	563.7
2018	947.3	1558.6	570.6
2019	974.6	1628.9	577.7
2020	1002.6	1702.4	584.8

Rates expressed per 100,000







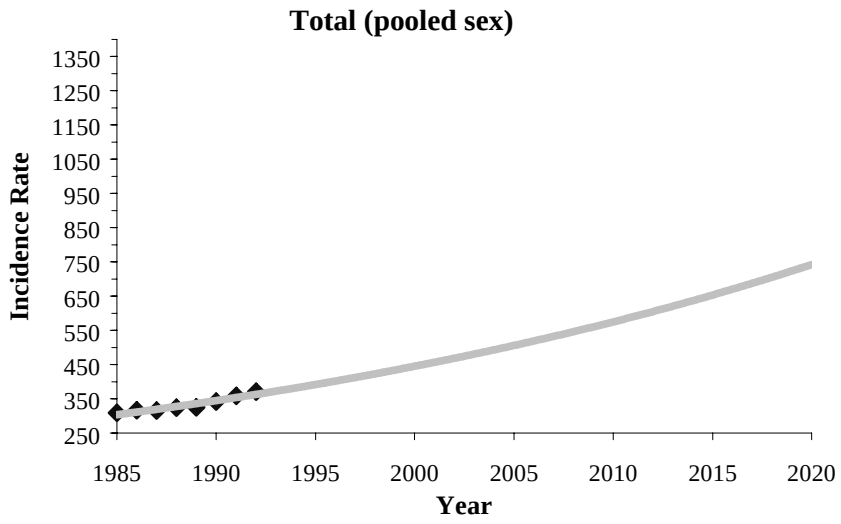
ALL CANCER AGE-ADJUSTED INCIDENCE RATES: WHITES

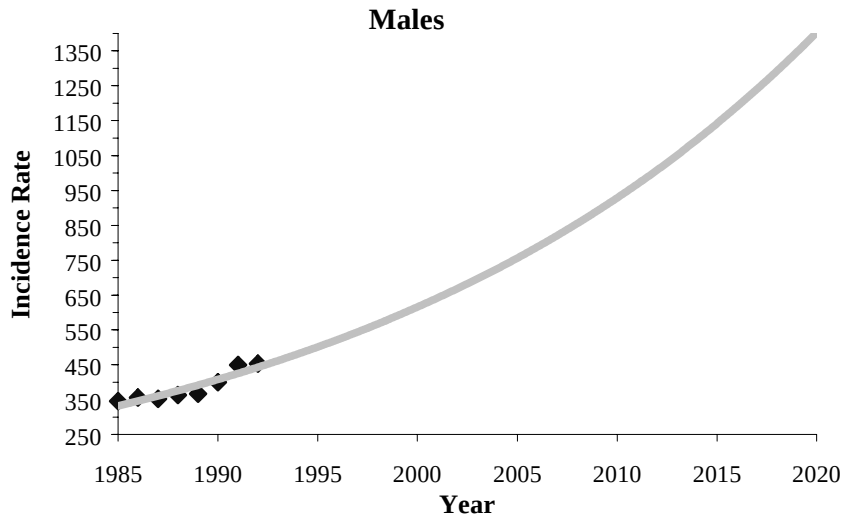
OBSERVED

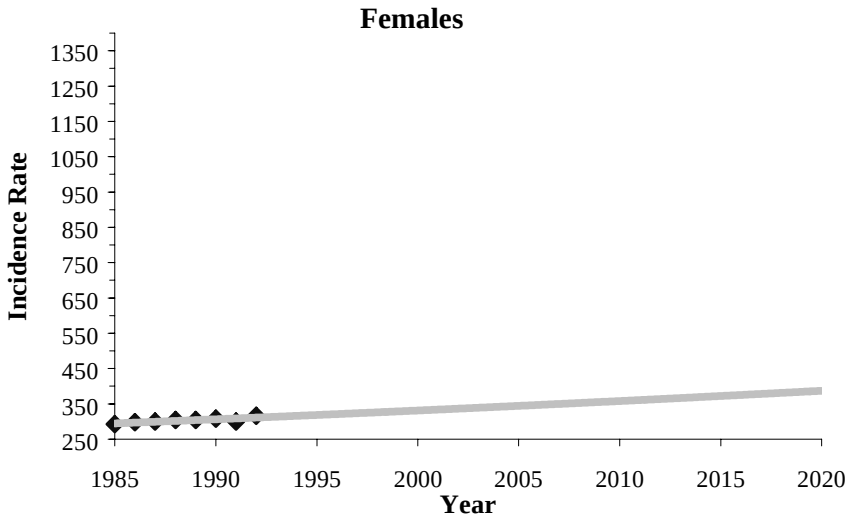
YEAR	Total	Male	Female
1985	308.8	345.7	292.2
1986	316.3	355.4	298.4
1987	315.7	351.6	300.0
1988	323.4	363.0	304.6
1989	324.5	366.3	304.0
1990	341.5	399.3	307.8
1991	358.8	449.6	299.9
1992	370.6	453.0	316.3

PREDICTED

YEAR	Total	Male	Female
1996	401.9	522.1	321.1
1997	412.3	544.1	323.6
1998	423.0	567.0	326.1
1999	433.9	590.8	328.7
2000	445.2	615.6	331.2
2001	456.7	641.5	333.8
2002	468.5	668.5	336.4
2003	480.6	696.6	339.1
2004	493.1	725.8	341.7
2005	505.8	756.3	344.4
2006	518.9	788.1	347.1
2007	532.3	821.3	349.8
2008	546.1	855.8	352.5
2009	560.3	891.7	355.3
2010	574.8	929.2	358.1
2011	589.6	968.3	360.9
2012	604.9	1009.0	363.7
2013	620.6	1051.4	366.6
2014	636.6	1095.6	369.4
2015	653.1	1141.6	372.3
2016	670.0	1189.6	375.2
2017	687.3	1239.6	378.2
2018	705.1	1291.7	381.1
2019	723.4	1346.0	384.1
2020	742.1	1402.6	387.1







Age standardized to the 1970 US population and expressed per 100,000 individuals.

ALL CANCER CRUDE INCIDENCE RATES: WHITES

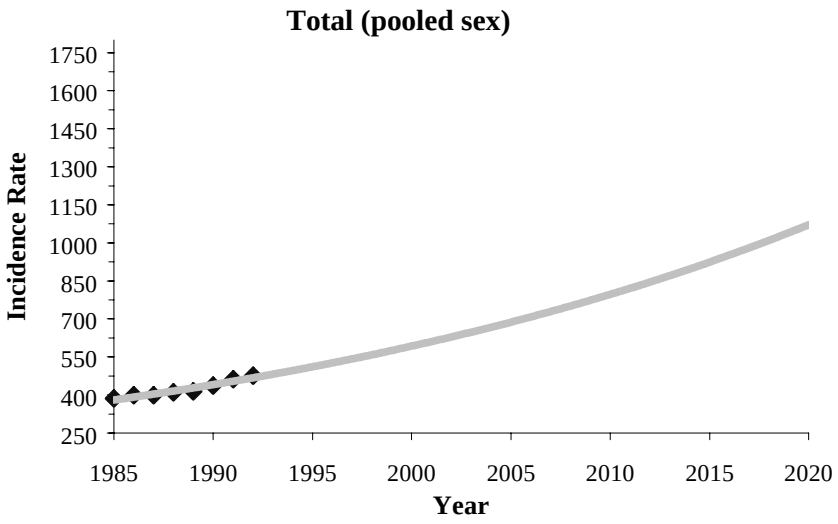
OBSERVED

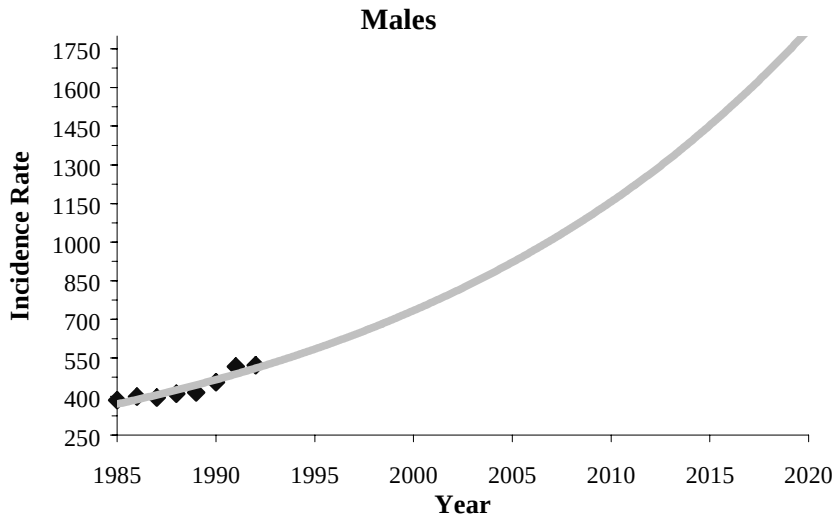
YEAR	Total	Male	Female
1985	386.4	386.0	386.8
1986	398.4	398.7	398.0
1987	398.7	395.9	401.2
1988	410.7	410.3	411.1
1989	413.7	415.9	411.6
1990	437.4	455.6	420.3
1991	462.5	516.2	411.9
1992	475.6	521.0	432.9

PREDICTED

YEAR	Total	Male	Female
1996	526.7	611.6	451.2
1997	542.5	640.1	457.2
1998	558.8	670.0	463.2
1999	575.6	701.2	469.3
2000	592.8	733.9	475.5
2001	610.6	768.1	481.8
2002	629.0	803.8	488.2
2003	647.9	841.3	494.6
2004	667.3	880.5	501.1
2005	687.3	921.5	507.7
2006	708.0	964.5	514.4
2007	729.2	1009.4	521.2
2008	751.1	1056.4	528.1
2009	773.7	1105.7	535.0
2010	796.9	1157.2	542.1
2011	820.9	1211.1	549.2
2012	845.5	1267.6	556.5
2013	870.9	1326.6	563.8
2014	897.0	1388.4	571.3
2015	924.0	1453.1	578.8
2016	951.7	1520.8	586.4
2017	980.3	1591.7	594.2
2018	1009.7	1665.9	602.0
2019	1040.0	1743.5	609.9
2020	1071.3	1824.8	618.0

Rates expressed per 100,000





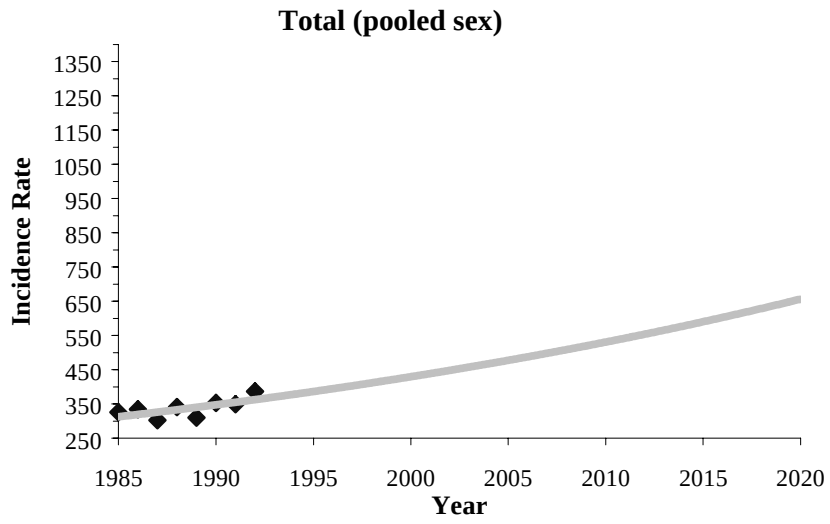
ALL CANCER AGE-ADJUSTED INCIDENCE RATES: AFRICAN AMERICANS

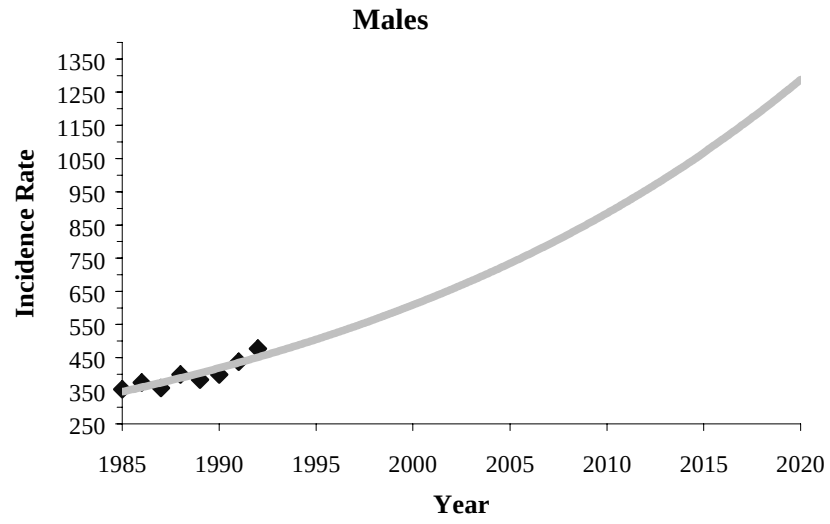
OBSERVED

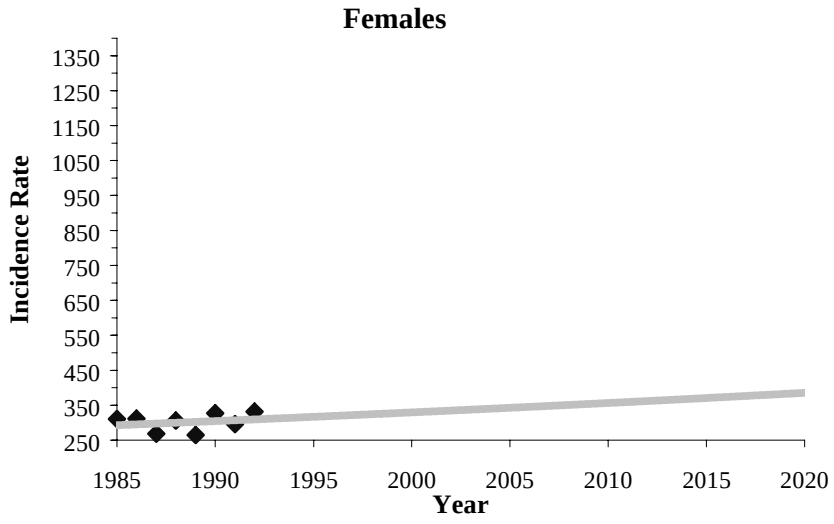
YEAR	Total	Male	Female
1985	325.4	354.1	310.2
1986	334.0	374.4	311.7
1987	302.3	357.9	268.4
1988	340.4	398.3	305.5
1989	309.9	383.0	264.6
1990	352.4	398.4	327.0
1991	348.7	437.1	296.0
1992	386.2	477.3	331.7

PREDICTED

YEAR	Total	Male	Female
1996	394.5	524.1	319.2
1997	403.0	544.1	321.8
1998	411.6	564.9	324.3
1999	420.4	586.5	326.8
2000	429.4	608.8	329.4
2001	438.6	632.1	332.0
2002	448.0	656.2	334.6
2003	457.6	681.3	337.3
2004	467.4	707.3	339.9
2005	477.4	734.2	342.6
2006	487.7	762.3	345.3
2007	498.1	791.4	348.0
2008	508.8	821.6	350.8
2009	519.7	852.9	353.5
2010	530.8	885.5	356.3
2011	542.2	919.3	359.1
2012	553.8	954.4	362.0
2013	565.7	990.8	364.8
2014	577.8	1028.6	367.7
2015	590.2	1067.9	370.6
2016	602.8	1108.7	373.5
2017	615.7	1151.0	376.4
2018	628.9	1194.9	379.4
2019	642.4	1240.5	382.4
2020	656.2	1287.9	385.4







Age standardized to the 1970 US population and expressed per 100,000 individuals.

ALL CANCER CRUDE INCIDENCE RATES: AFRICAN AMERICANS

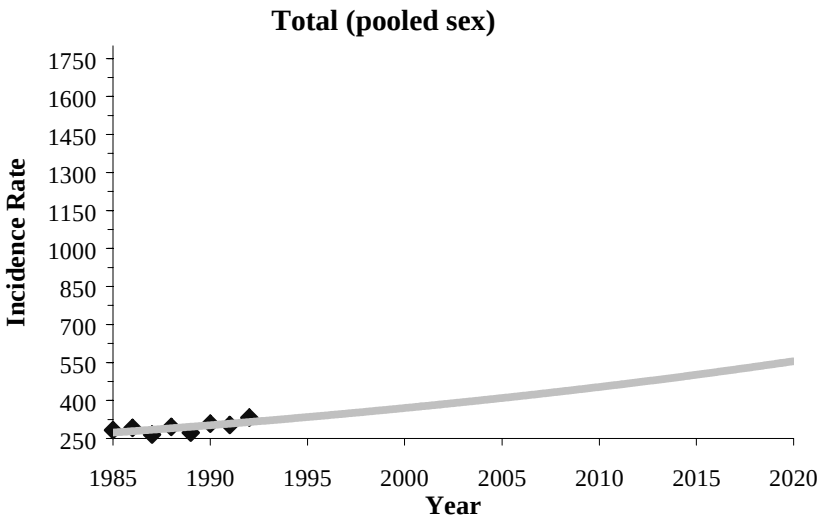
OBSERVED

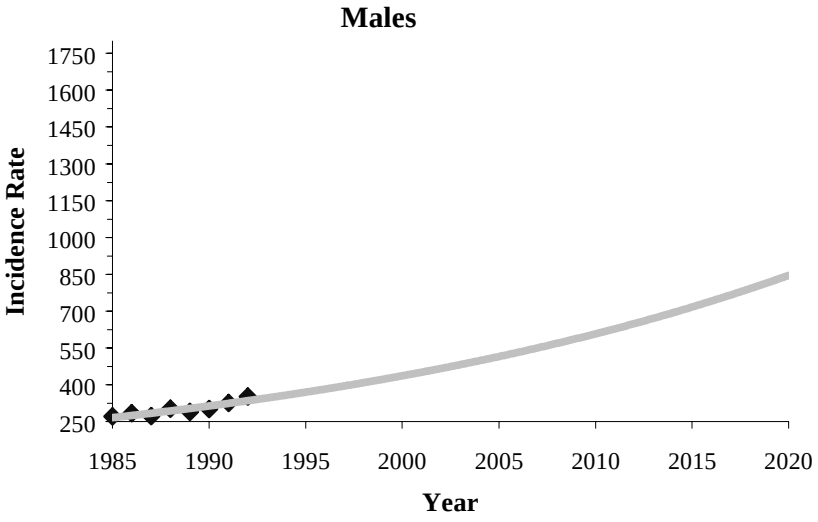
YEAR	Total	Male	Female
1985	282.5	270.7	292.8
1986	291.8	283.8	298.9
1987	265.3	272.0	259.4
1988	295.6	302.2	289.9
1989	272.7	289.1	258.4
1990	307.8	300.3	314.3
1991	303.4	325.4	284.3
1992	332.5	352.2	315.4

PREDICTED

YEAR	Total	Male	Female
1996	341.4	382.4	307.9
1997	348.4	395.3	310.6
1998	355.5	408.6	313.3
1999	362.8	422.3	316.1
2000	370.2	436.5	318.8
2001	377.8	451.2	321.6
2002	385.5	466.4	324.4
2003	393.4	482.1	327.2
2004	401.4	498.3	330.1
2005	409.6	515.0	333.0
2006	418.0	532.4	335.9
2007	426.5	550.3	338.8
2008	435.3	568.8	341.8
2009	444.2	587.9	344.8
2010	453.3	607.7	347.8
2011	462.5	628.1	350.8
2012	472.0	649.2	353.9
2013	481.6	671.1	357.0
2014	491.5	693.6	360.1
2015	501.5	717.0	363.3
2016	511.8	741.1	366.4
2017	522.3	766.0	369.6
2018	533.0	791.8	372.9
2019	543.9	818.4	376.1
2020	555.0	845.9	379.4

Rates expressed per 100,000





Lung Cancer Incidence

LUNG CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	62.2	90.4	41.4	61.5	89.5	40.8	66.6	96.9	46.0
PROJECTED RATES[3,4]									
2000	68.1	90.9	51.0	66.6	88.8	49.7	81.3	109.6	61.4
2010	73.4	90.7	61.1	71.3	87.9	59.0	96.8	122.3	79.5
2020	79.1	90.6	73.1	76.3	87.0	70.0	115.3	136.5	103.0
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	0.8	0.0	1.8 **	0.7	-0.1	1.7 *	1.8	1.1	2.6
PERIOD PERCENT CHANGE[7]	2.0	-2.8	9.2	1.7	-3.1	8.7	5.3	0.1	12.9

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

LUNG CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	73.5	97.0	51.7	75.8	100.0	53.0	55.5	71.6	41.5
PROJECTED RATES[2,3]									
2000	83.3	100.3	68.4	86.1	104.0	70.4	64.9	76.4	54.6
2010	92.6	102.9	87.1	95.9	107.2	89.9	74.3	80.7	69.9
2020	102.9	105.5	110.9	106.9	110.5	114.8	85.2	85.4	89.6
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	1.1	0.3	2.4 ***	1.1	0.3	2.5 **	1.4	0.6	2.5
PERIOD PERCENT CHANGE[6]	3.9	-1.2	13.2	4.2	-0.7	13.4	2.7	-3.4	11.6

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

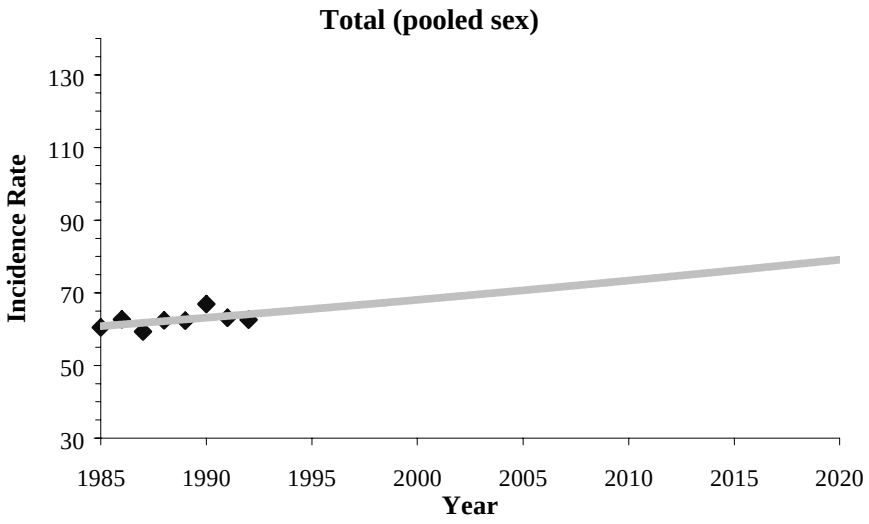
LUNG CANCER AGE-ADJUSTED INCIDENCE RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1985	60.5	90.0	39.4
1986	62.7	94.1	39.7
1987	59.3	87.1	38.8
1988	62.4	91.3	41.1
1989	62.3	89.1	42.8
1990	66.9	98.0	43.8
1991	63.1	91.3	42.2
1992	62.6	87.6	44.2

PREDICTED

YEAR	Total	Male	Female
1996	66.1	90.9	47.5
1997	66.6	90.9	48.3
1998	67.1	90.9	49.2
1999	67.6	90.9	50.1
2000	68.1	90.9	51.0
2001	68.6	90.9	51.9
2002	69.1	90.8	52.9
2003	69.6	90.8	53.8
2004	70.1	90.8	54.8
2005	70.7	90.8	55.8
2006	71.2	90.8	56.8
2007	71.7	90.8	57.9
2008	72.3	90.8	58.9
2009	72.8	90.8	60.0
2010	73.4	90.7	61.1
2011	73.9	90.7	62.2
2012	74.5	90.7	63.3
2013	75.1	90.7	64.5
2014	75.6	90.7	65.6
2015	76.2	90.7	66.8
2016	76.8	90.7	68.1
2017	77.3	90.7	69.3
2018	77.9	90.7	70.6
2019	78.5	90.6	71.8
2020	79.1	90.6	73.1



Age standardized to the 1970 US population and expressed per 100,000 individuals.

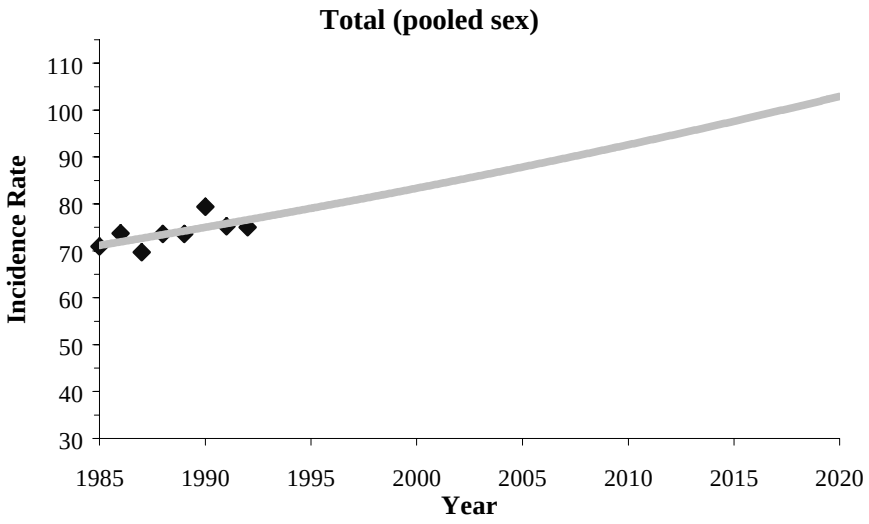
LUNG CANCER CRUDE INCIDENCE RATES: POOLED RACE

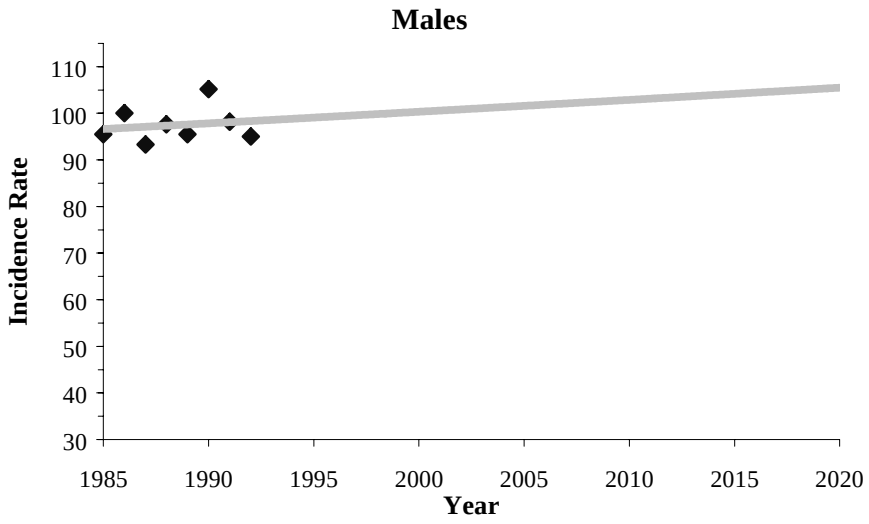
OBSERVED

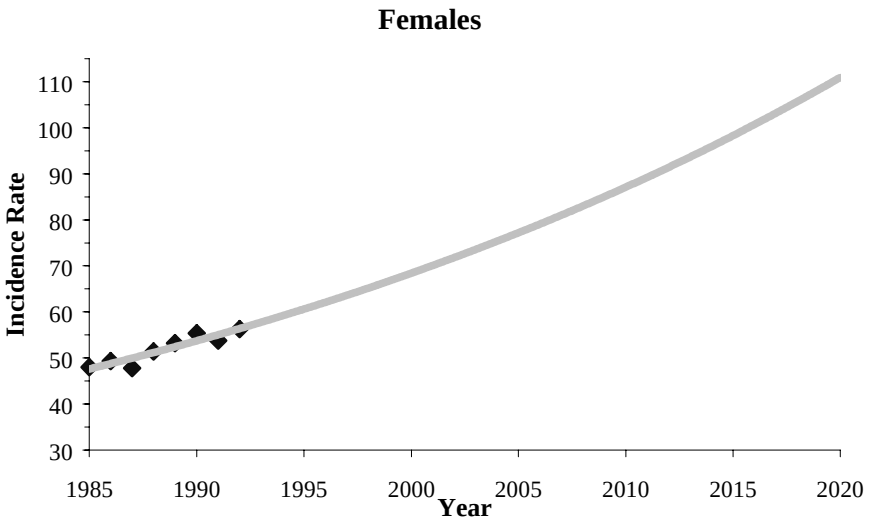
YEAR	Total	Male	Female
1985	70.9	95.5	48.0
1986	73.7	100.0	49.3
1987	69.7	93.3	47.8
1988	73.6	97.6	51.4
1989	73.6	95.5	53.2
1990	79.4	105.2	55.4
1991	75.2	98.2	53.8
1992	75.0	95.0	56.3

PREDICTED

YEAR	Total	Male	Female
1996	79.9	99.3	62.1
1997	80.8	99.6	63.6
1998	81.6	99.8	65.2
1999	82.5	100.1	66.8
2000	83.3	100.3	68.4
2001	84.2	100.6	70.1
2002	85.1	100.8	71.8
2003	86.0	101.1	73.6
2004	86.9	101.3	75.4
2005	87.9	101.6	77.2
2006	88.8	101.9	79.1
2007	89.7	102.1	81.0
2008	90.7	102.4	83.0
2009	91.6	102.6	85.0
2010	92.6	102.9	87.1
2011	93.6	103.1	89.2
2012	94.6	103.4	91.4
2013	95.6	103.7	93.7
2014	96.6	103.9	96.0
2015	97.6	104.2	98.3
2016	98.7	104.4	100.7
2017	99.7	104.7	103.2
2018	100.8	105.0	105.7
2019	101.8	105.2	108.3
2020	102.9	105.5	110.9







Rates expressed per 100,000

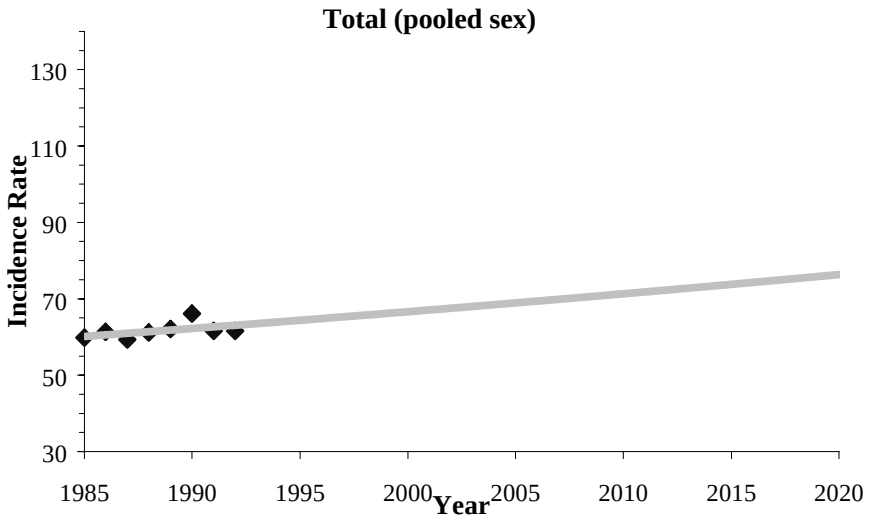
LUNG CANCER AGE-ADJUSTED INCIDENCE RATES: WHITES

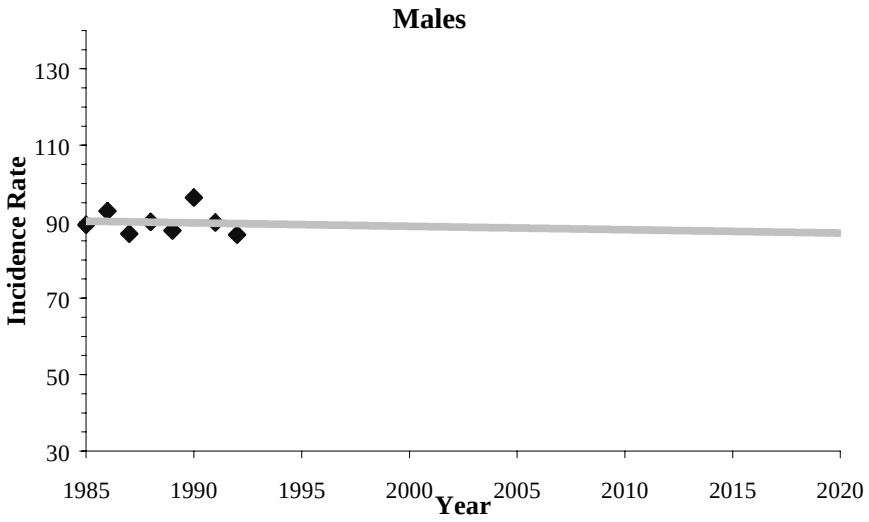
OBSERVED

YEAR	Total	Male	Female
1985	59.8	89.2	38.7
1986	61.3	92.8	38.2
1987	59.3	86.8	39.2
1988	61.2	89.9	40.1
1989	62.1	87.7	43.3
1990	66.1	96.3	43.6
1991	61.6	89.8	40.5
1992	61.6	86.6	43.1

PREDICTED

YEAR	Total	Male	Female
1996	64.8	89.2	46.4
1997	65.3	89.1	47.2
1998	65.7	89.0	48.0
1999	66.2	88.9	48.8
2000	66.6	88.8	49.7
2001	67.1	88.7	50.5
2002	67.5	88.6	51.4
2003	68.0	88.5	52.3
2004	68.5	88.4	53.2
2005	68.9	88.4	54.1
2006	69.4	88.3	55.1
2007	69.9	88.2	56.0
2008	70.3	88.1	57.0
2009	70.8	88.0	58.0
2010	71.3	87.9	59.0
2011	71.8	87.8	60.0
2012	72.3	87.7	61.1
2013	72.8	87.6	62.1
2014	73.3	87.6	63.2
2015	73.8	87.5	64.3
2016	74.3	87.4	65.4
2017	74.8	87.3	66.5
2018	75.3	87.2	67.7
2019	75.8	87.1	68.9
2020	76.3	87.0	70.0





Age standardized to the 1970 US population and expressed per 100,000 individuals.

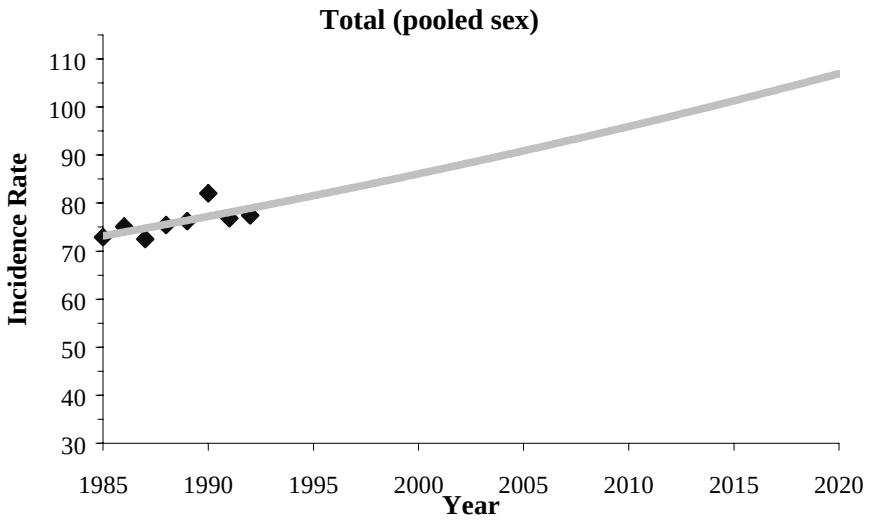
LUNG CANCER CRUDE INCIDENCE RATES: WHITES

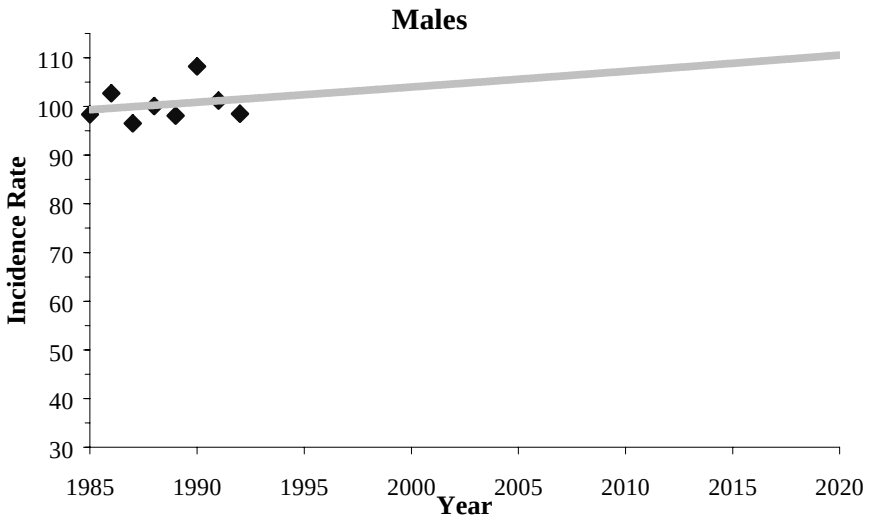
OBSERVED

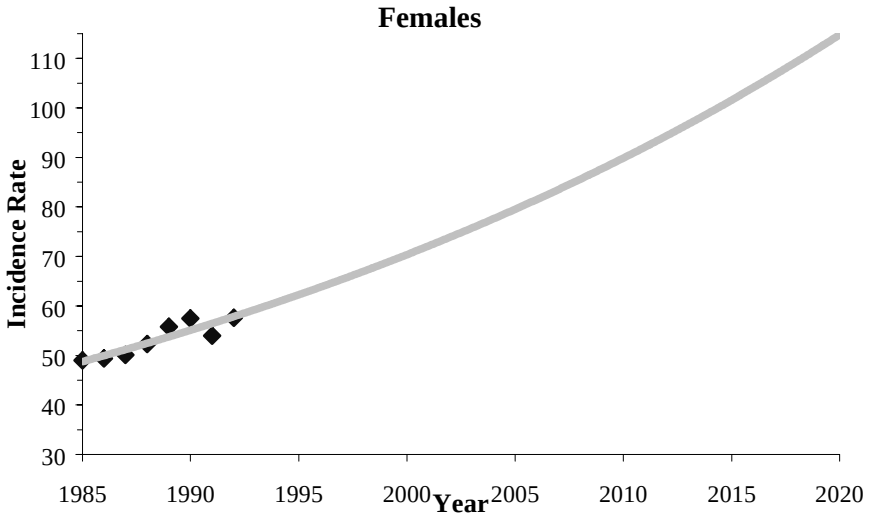
YEAR	Total	Male	Female
1985	72.9	98.4	49.0
1986	75.1	102.7	49.4
1987	72.5	96.5	50.1
1988	75.4	100.1	52.3
1989	76.2	98.1	55.8
1990	82.0	108.2	57.5
1991	76.8	101.2	54.0
1992	77.4	98.5	57.6

PREDICTED

YEAR	Total	Male	Female
1996	82.4	102.7	63.8
1997	83.3	103.0	65.4
1998	84.2	103.4	67.0
1999	85.2	103.7	68.7
2000	86.1	104.0	70.4
2001	87.0	104.3	72.1
2002	88.0	104.6	73.9
2003	88.9	105.0	75.7
2004	89.9	105.3	77.6
2005	90.9	105.6	79.5
2006	91.9	105.9	81.5
2007	92.9	106.2	83.5
2008	93.9	106.6	85.6
2009	94.9	106.9	87.7
2010	95.9	107.2	89.9
2011	97.0	107.6	92.1
2012	98.1	107.9	94.4
2013	99.1	108.2	96.7
2014	100.2	108.5	99.1
2015	101.3	108.9	101.6
2016	102.4	109.2	104.1
2017	103.5	109.5	106.7
2018	104.6	109.9	109.3
2019	105.8	110.2	112.0
2020	106.9	110.5	114.8







Rates expressed per 100,000

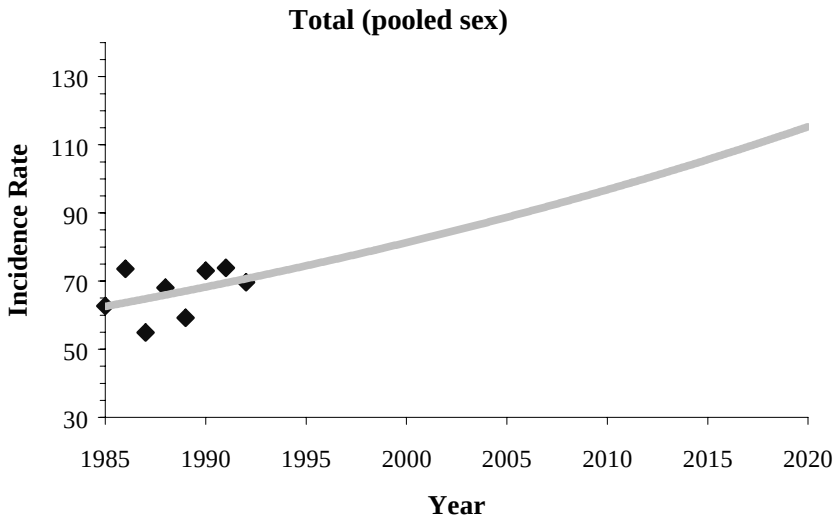
LUNG CANCER AGE-ADJUSTED INCIDENCE RATES: AFRICAN AMERICANS

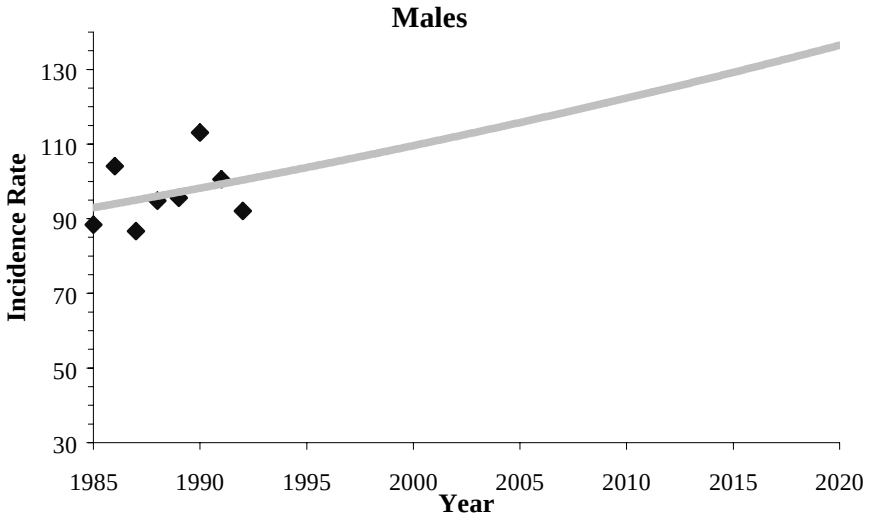
OBSERVED

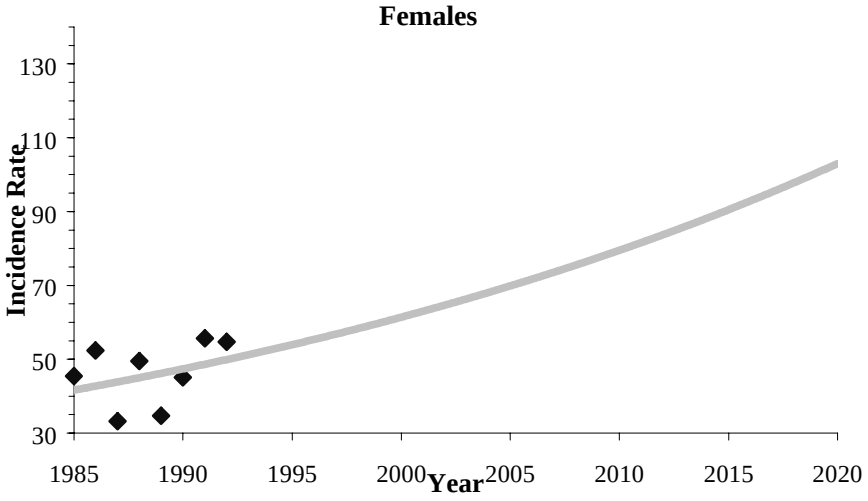
YEAR	Total	Male	Female
1985	62.7	88.4	45.4
1986	73.6	104.1	52.4
1987	54.9	86.7	33.2
1988	68	94.8	49.5
1989	59.2	95.6	34.7
1990	73	113.1	45.1
1991	73.9	100.6	55.7
1992	69.6	92.1	54.7

PREDICTED

YEAR	Total	Male	Female
1996	75.8	104.9	55.3
1997	77.2	106.0	56.8
1998	78.5	107.2	58.3
1999	79.9	108.4	59.8
2000	81.3	109.6	61.4
2001	82.7	110.8	63.0
2002	84.2	112.0	64.6
2003	85.7	113.3	66.3
2004	87.2	114.5	68.1
2005	88.7	115.8	69.9
2006	90.3	117.0	71.7
2007	91.9	118.3	73.6
2008	93.5	119.6	75.5
2009	95.2	121.0	77.5
2010	96.8	122.3	79.5
2011	98.5	123.6	81.6
2012	100.3	125.0	83.7
2013	102.0	126.4	85.9
2014	103.8	127.8	88.2
2015	105.7	129.2	90.5
2016	107.5	130.6	92.9
2017	109.4	132.1	95.3
2018	111.4	133.5	97.8
2019	113.3	135.0	100.4
2020	115.3	136.5	103.0







Age standardized to the 1970 US population and expressed per 100,000 individuals.

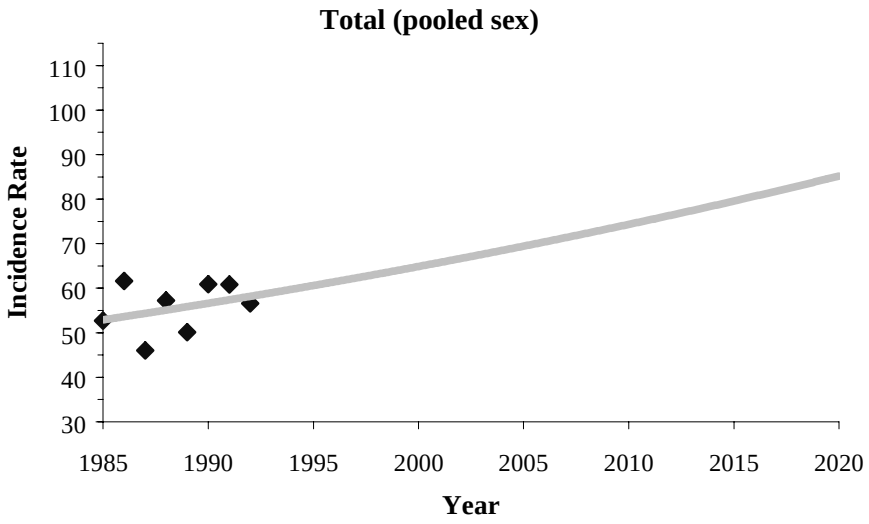
LUNG CANCER CRUDE INCIDENCE RATES: AFRICAN AMERICANS

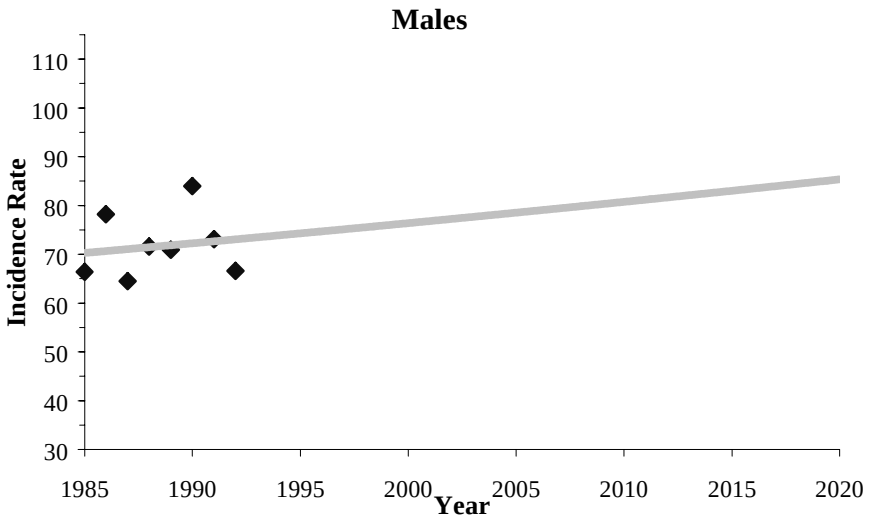
OBSERVED

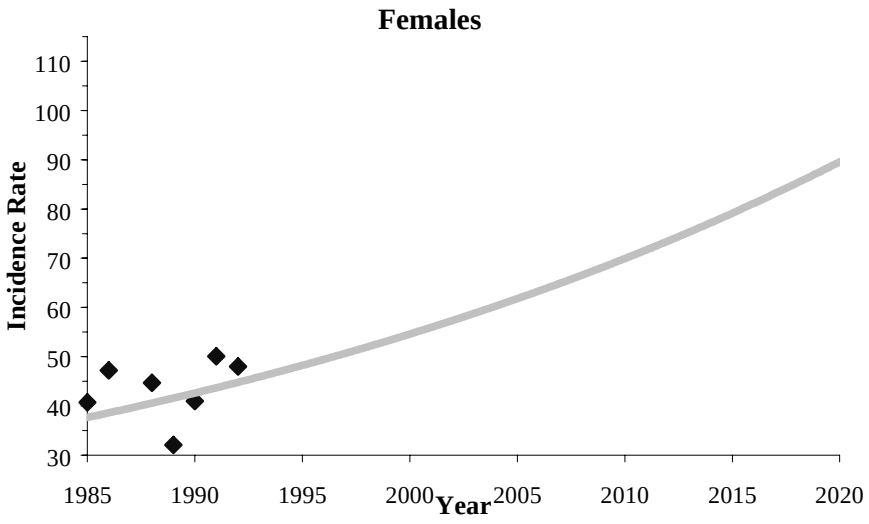
YEAR	Total	Male	Female
1985	52.7	66.4	40.7
1986	61.6	78.2	47.2
1987	46.0	64.5	29.8
1988	57.2	71.6	44.7
1989	50.1	70.9	32.1
1990	60.9	84.0	41.0
1991	60.8	73.1	50.1
1992	56.6	66.6	48.0

PREDICTED

YEAR	Total	Male	Female
1996	61.4	74.7	49.5
1997	62.3	75.1	50.7
1998	63.1	75.5	52.0
1999	64.0	76.0	53.3
2000	64.9	76.4	54.6
2001	65.8	76.8	56.0
2002	66.7	77.2	57.4
2003	67.6	77.7	58.8
2004	68.5	78.1	60.3
2005	69.4	78.5	61.8
2006	70.4	79.0	63.3
2007	71.4	79.4	64.9
2008	72.3	79.9	66.6
2009	73.3	80.3	68.2
2010	74.3	80.7	69.9
2011	75.4	81.2	71.7
2012	76.4	81.6	73.5
2013	77.4	82.1	75.3
2014	78.5	82.6	77.2
2015	79.6	83.0	79.1
2016	80.7	83.5	81.1
2017	81.8	83.9	83.2
2018	82.9	84.4	85.2
2019	84.0	84.9	87.4
2020	85.2	85.4	89.6







Rates expressed per 100,000

Colorectal Cancer Incidence

COLORECTAL CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	48.1	56.1	42.5	47.7	55.8	42.0	47.7	54.3	43.4
PROJECTED RATES[3,4]									
2000	43.2	52.4	36.9	42.0	51.6	35.5	51.5	63.4	45.4
2010	38.9	49.0	32.5	37.3	47.9	30.4	54.9	72.9	47.2
2020	35.1	45.8	28.6	33.2	44.5	26.1	58.6	83.8	49.1
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	-1.0 **	-0.7	-1.3 *	-1.2 ***	-0.7 *	-1.5 ***	0.7	1.4	0.4
PERIOD PERCENT CHANGE[7]	-6.7	-4.0	-8.6	-7.0	-4.1	-9.0	-2.9	4.8	-6.5

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

COLORECTAL CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	62.3	61.5	63.0	64.6	63.7	65.3	42.0	40.8	43.1
PROJECTED RATES[2,3]									
2000	59.4	60.7	58.3	61.1	62.9	59.5	47.7	48.7	46.4
2010	56.7	59.7	54.3	58.1	62.0	54.7	53.2	56.9	49.5
2020	54.2	58.8	50.6	55.2	61.1	50.2	59.4	66.6	52.9
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	-0.5	-0.2	-0.7	-0.5	-0.1	-0.8 *	1.1	1.6	0.7
PERIOD PERCENT CHANGE[6]	-3.3	-0.9	-5.4	-3.0	-0.4	-5.4	-0.3	6.0	-5.1

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

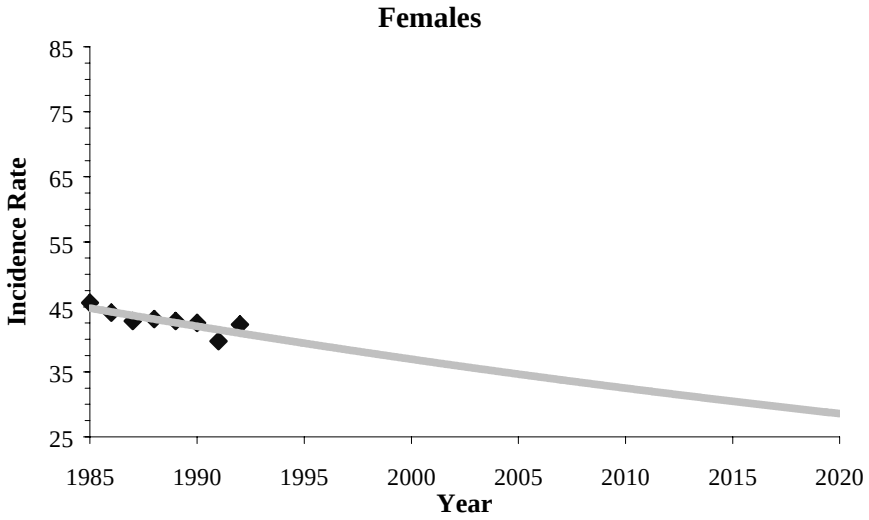
COLORECTAL CANCER AGE-ADJUSTED INCIDENCE RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1985	51.0	58.2	45.6
1986	50.3	59.0	44.1
1987	48.6	57.1	42.8
1988	47.9	55.0	43.1
1989	48.3	56.4	42.8
1990	48.0	55.5	42.5
1991	46.9	57.1	39.7
1992	47.6	55.4	42.3

PREDICTED

YEAR	Total	Male	Female
1996	45.0	53.9	38.9
1997	44.5	53.5	38.4
1998	44.0	53.2	37.9
1999	43.6	52.8	37.4
2000	43.2	52.4	36.9
2001	42.7	52.1	36.5
2002	42.3	51.7	36.0
2003	41.8	51.4	35.6
2004	41.4	51.0	35.1
2005	41.0	50.7	34.6
2006	40.6	50.4	34.2
2007	40.2	50.0	33.8
2008	39.8	49.7	33.3
2009	39.3	49.3	32.9
2010	38.9	49.0	32.5
2011	38.5	48.7	32.1
2012	38.2	48.4	31.7
2013	37.8	48.0	31.3
2014	37.4	47.7	30.9
2015	37.0	47.4	30.5
2016	36.6	47.1	30.1
2017	36.2	46.7	29.7
2018	35.9	46.4	29.3
2019	35.5	46.1	28.9
2020	35.1	45.8	28.6



Age standardized to the 1970 US population and expressed per 100,000 individuals.

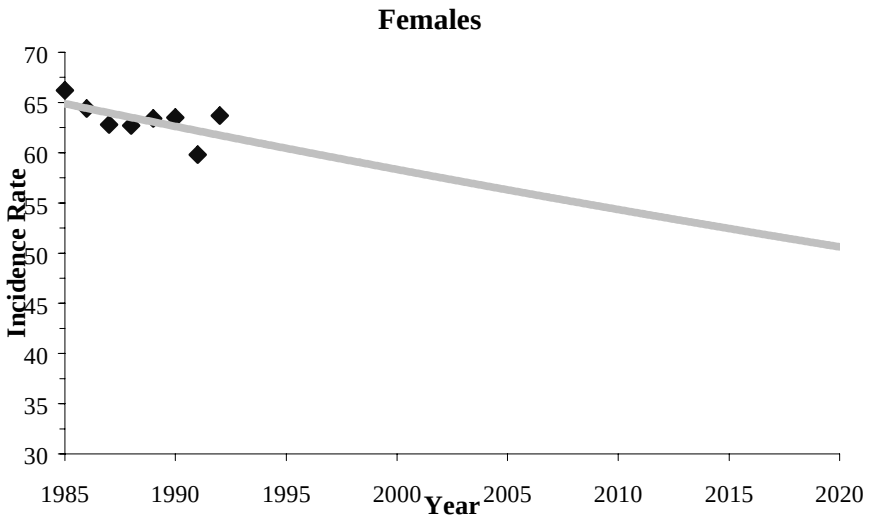
COLORECTAL CANCER CRUDE INCIDENCE RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1985	64.4	62.4	66.2
1986	64.0	63.5	64.4
1987	62.3	61.7	62.8
1988	61.3	59.9	62.7
1989	62.5	61.5	63.4
1990	62.2	60.8	63.5
1991	61.5	63.3	59.8
1992	62.6	61.5	63.7

PREDICTED

YEAR	Total	Male	Female
1996	60.5	61.1	60.0
1997	60.2	61.0	59.6
1998	59.9	60.9	59.2
1999	59.7	60.8	58.7
2000	59.4	60.7	58.3
2001	59.1	60.6	57.9
2002	58.9	60.5	57.5
2003	58.6	60.4	57.1
2004	58.3	60.3	56.7
2005	58.1	60.2	56.3
2006	57.8	60.1	55.9
2007	57.5	60.0	55.5
2008	57.3	59.9	55.1
2009	57.0	59.8	54.7
2010	56.7	59.7	54.3
2011	56.5	59.6	54.0
2012	56.2	59.5	53.6
2013	56.0	59.4	53.2
2014	55.7	59.3	52.8
2015	55.5	59.2	52.4
2016	55.2	59.1	52.1
2017	55.0	59.0	51.7
2018	54.7	58.9	51.3
2019	54.5	58.9	51.0
2020	54.2	58.8	50.6



Rates expressed per 100,000

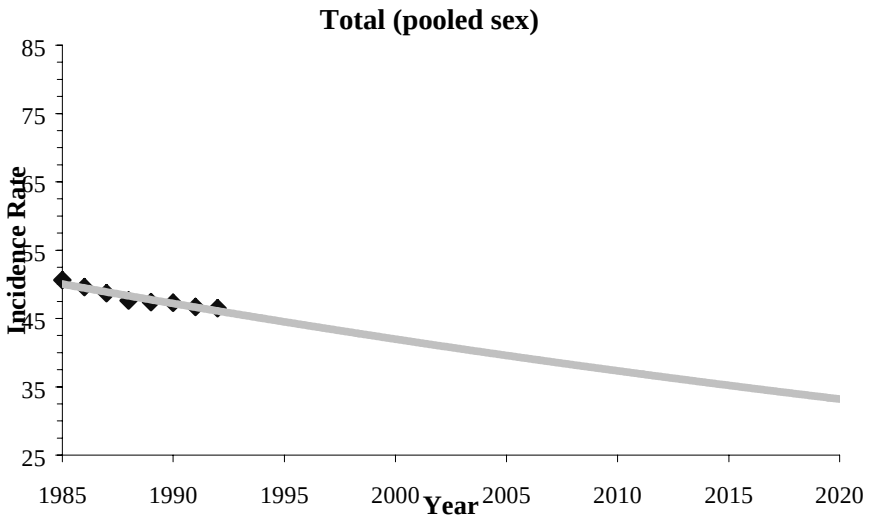
COLORECTAL CANCER AGE-ADJUSTED INCIDENCE RATES: WHITES

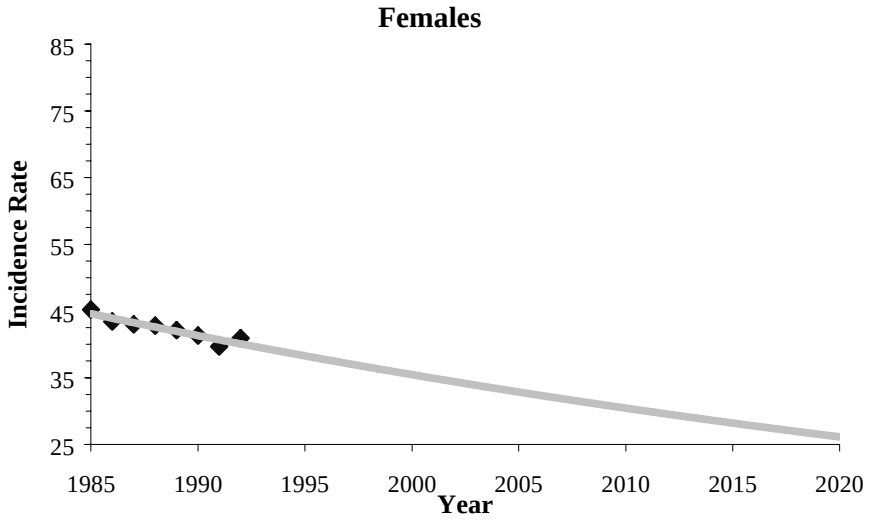
OBSERVED

YEAR	Total	Male	Female
1985	50.6	57.8	45.2
1986	49.6	58.2	43.4
1987	48.7	57.2	43.0
1988	47.6	54.8	42.8
1989	47.4	55.0	42.1
1990	47.3	55.4	41.3
1991	46.7	56.7	39.7
1992	46.5	54.6	40.9

PREDICTED

YEAR	Total	Male	Female
1996	44.0	53.2	37.7
1997	43.5	52.8	37.1
1998	43.0	52.4	36.6
1999	42.5	52.0	36.0
2000	42.0	51.6	35.5
2001	41.5	51.2	34.9
2002	41.0	50.9	34.4
2003	40.5	50.5	33.9
2004	40.1	50.1	33.4
2005	39.6	49.7	32.9
2006	39.1	49.4	32.4
2007	38.7	49.0	31.9
2008	38.2	48.6	31.4
2009	37.8	48.3	30.9
2010	37.3	47.9	30.4
2011	36.9	47.6	30.0
2012	36.5	47.2	29.5
2013	36.0	46.9	29.1
2014	35.6	46.5	28.6
2015	35.2	46.2	28.2
2016	34.8	45.9	27.8
2017	34.4	45.5	27.4
2018	34.0	45.2	26.9
2019	33.6	44.8	26.5
2020	33.2	44.5	26.1





Age standardized to the 1970 US population and expressed per 100,000 individuals.

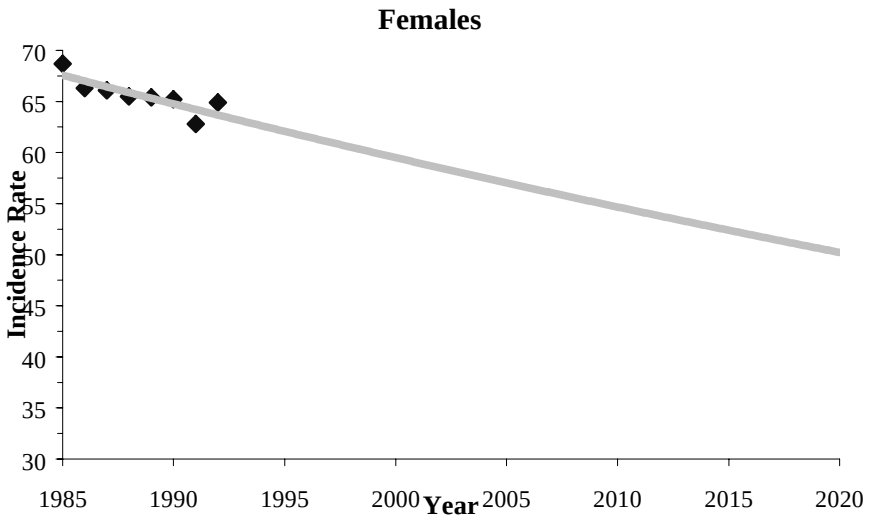
COLORECTAL CANCER CRUDE INCIDENCE RATES: WHITES

OBSERVED

YEAR	Total	Male	Female
1985	66.7	64.6	68.7
1986	65.8	65.3	66.3
1987	62.3	64.4	66.1
1988	63.9	62.3	65.5
1989	64.1	62.6	65.4
1990	64.2	63.2	65.2
1991	64.2	65.8	62.8
1992	64.3	63.6	64.9

PREDICTED

YEAR	Total	Male	Female
1996	62.4	63.3	61.6
1997	62.1	63.2	61.0
1998	61.7	63.1	60.5
1999	61.4	63.0	60.0
2000	61.1	62.9	59.5
2001	60.8	62.8	59.0
2002	60.5	62.7	58.5
2003	60.2	62.6	58.0
2004	59.9	62.5	57.5
2005	59.6	62.4	57.0
2006	59.3	62.3	56.6
2007	59.0	62.3	56.1
2008	58.7	62.2	55.6
2009	58.4	62.1	55.1
2010	58.1	62.0	54.7
2011	57.8	61.9	54.2
2012	57.5	61.8	53.7
2013	57.2	61.7	53.3
2014	56.9	61.6	52.8
2015	56.6	61.5	52.4
2016	56.3	61.4	52.0
2017	56.1	61.4	51.5
2018	55.8	61.3	51.1
2019	55.5	61.2	50.6
2020	55.2	61.1	50.2



Rates expressed per 100,000

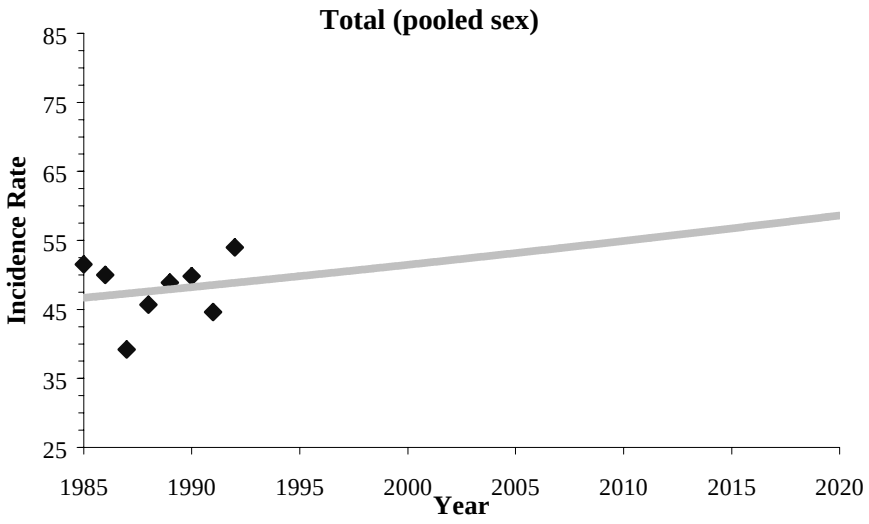
COLORECTAL CANCER AGE-ADJUSTED INCIDENCE RATES: AFRICAN AMERICANS

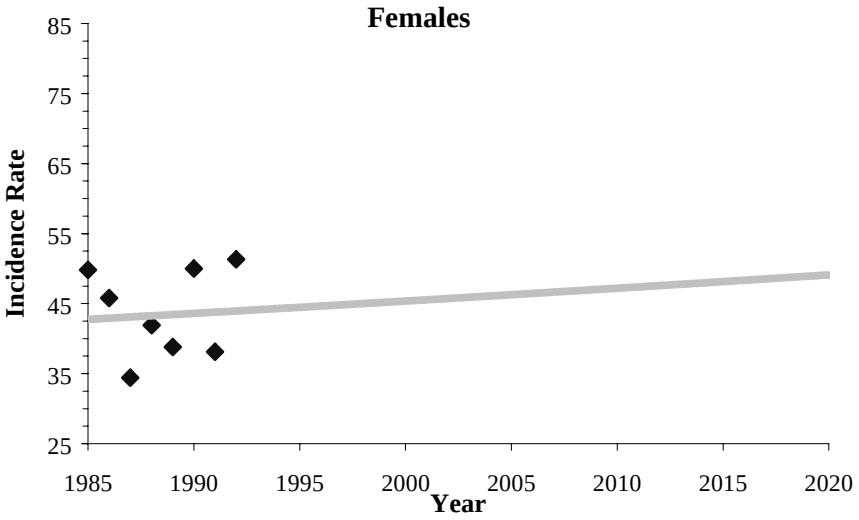
OBSERVED

YEAR	Total	Male	Female
1985	51.5	53.6	49.8
1986	50.0	55.1	45.8
1987	39.2	45.8	34.4
1988	45.7	51.1	41.9
1989	48.9	64.3	38.8
1990	49.8	50.3	50.0
1991	44.6	54.6	38.1
1992	54.0	59.3	51.3

PREDICTED

YEAR	Total	Male	Female
1996	50.1	60.0	44.7
1997	50.5	60.8	44.8
1998	50.8	61.7	45.0
1999	51.1	62.5	45.2
2000	51.5	63.4	45.4
2001	51.8	64.3	45.5
2002	52.1	65.2	45.7
2003	52.5	66.1	45.9
2004	52.8	67.1	46.1
2005	53.2	68.0	46.3
2006	53.5	69.0	46.5
2007	53.9	69.9	46.6
2008	54.2	70.9	46.8
2009	54.6	71.9	47.0
2010	54.9	72.9	47.2
2011	55.3	73.9	47.4
2012	55.6	75.0	47.6
2013	56.0	76.0	47.8
2014	56.4	77.1	48.0
2015	56.7	78.2	48.1
2016	57.1	79.3	48.3
2017	57.5	80.4	48.5
2018	57.9	81.5	48.7
2019	58.2	82.7	48.9
2020	58.6	83.8	49.1





Age standardized to the 1970 US population and expressed per 100,000 individuals.

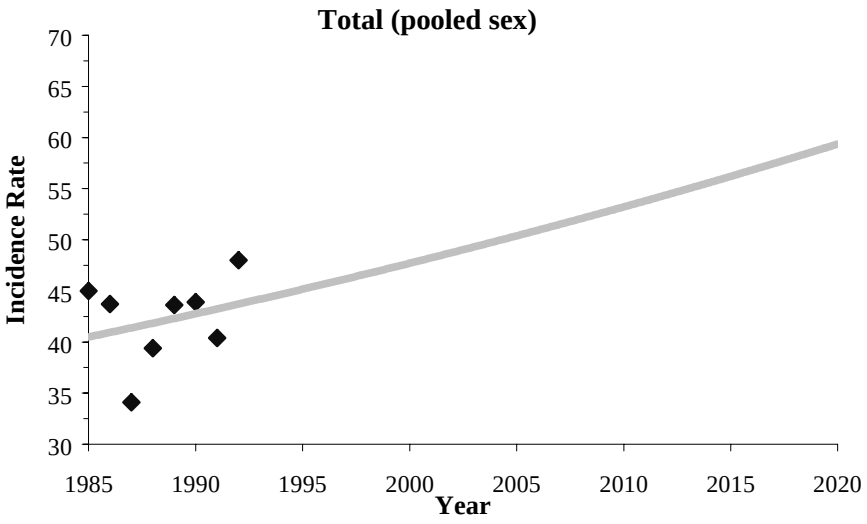
COLORECTAL CANCER CRUDE INCIDENCE RATES: AFRICAN AMERICANS

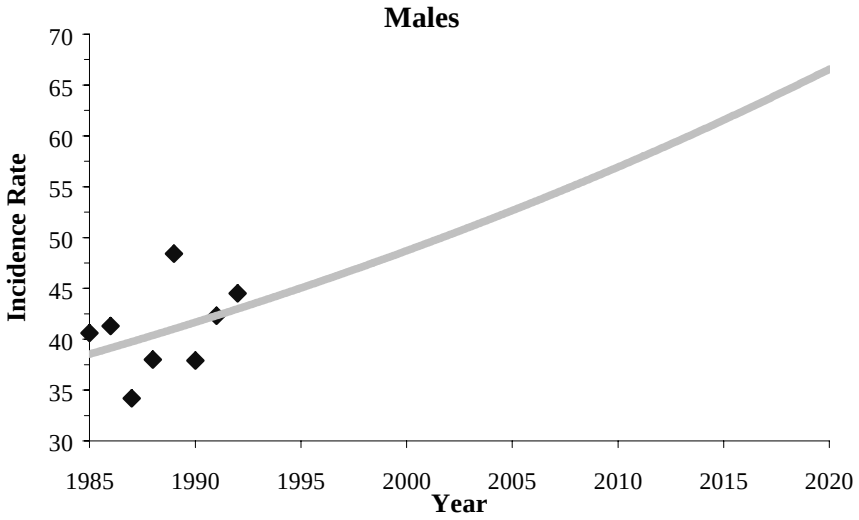
OBSERVED

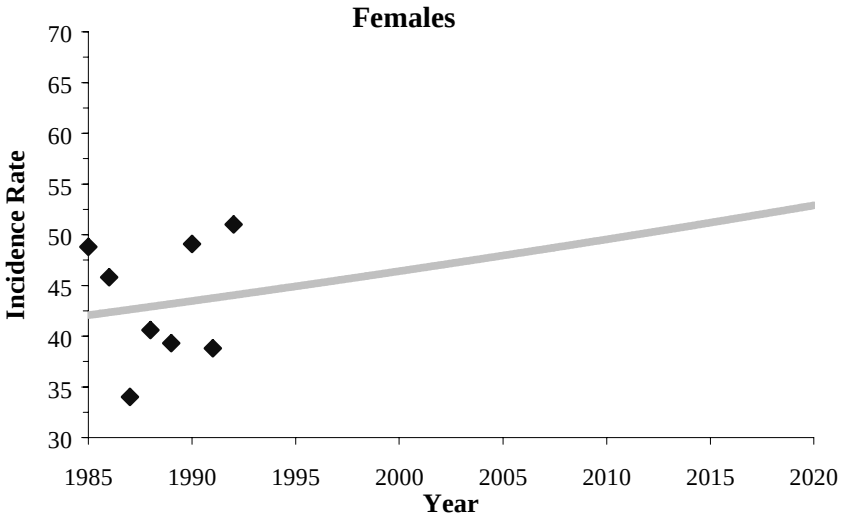
YEAR	Total	Male	Female
1985	45.0	40.6	48.8
1986	43.7	41.3	45.8
1987	34.1	34.2	34.0
1988	39.4	38.0	40.6
1989	43.6	48.4	39.3
1990	43.9	37.9	49.1
1991	40.4	42.3	38.8
1992	48.0	44.5	51.0

PREDICTED

YEAR	Total	Male	Female
1996	45.7	45.8	45.2
1997	46.2	46.5	45.5
1998	46.7	47.2	45.8
1999	47.2	47.9	46.1
2000	47.7	48.7	46.4
2001	48.2	49.5	46.7
2002	48.8	50.2	47.0
2003	49.3	51.0	47.3
2004	49.8	51.8	47.6
2005	50.4	52.7	47.9
2006	50.9	53.5	48.3
2007	51.5	54.3	48.6
2008	52.1	55.2	48.9
2009	52.6	56.1	49.2
2010	53.2	56.9	49.5
2011	53.8	57.8	49.9
2012	54.4	58.7	50.2
2013	55.0	59.7	50.5
2014	55.6	60.6	50.9
2015	56.2	61.6	51.2
2016	56.8	62.5	51.5
2017	57.4	63.5	51.9
2018	58.1	64.5	52.2
2019	58.7	65.5	52.5
2020	59.4	66.6	52.9







Rates expressed per 100,000

Breast Cancer Incidence

BREAST CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	59.7	---	109.0	59.7	---	109.7	52.9	---	91.2
PROJECTED RATES[3,4]									
2000	67.5	---	124.4	68.3	---	119.7	55.3	---	95.1
2010	74.5	---	138.6	76.4	---	127.7	57.0	---	97.6
2020	82.3	---	154.5	85.4	---	136.3	58.8	---	100.3
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	1.0	---	1.1	1.1	---	0.7	0.3	---	0.3
PERIOD PERCENT CHANGE[7]	5.4	---	6.0	6.5	---	3.6	-0.2	---	-0.6

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

BREAST CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	70.0	---	135.0	72.4	---	140.1	46.4	---	86.6
PROJECTED RATES[2,3]									
2000	83.7	---	162.0	87.6	---	170.3	48.5	---	90.2
2010	97.5	---	189.3	103.2	---	201.4	50.3	---	93.0
2020	113.5	---	221.1	121.5	---	238.1	52.1	---	95.9
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	1.5 *	---	1.6 *	1.6 *	---	1.7 *	0.4	---	0.3
PERIOD PERCENT CHANGE[6]	8.9	---	9.1	9.9	---	10.2	-0.2	---	-0.5

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

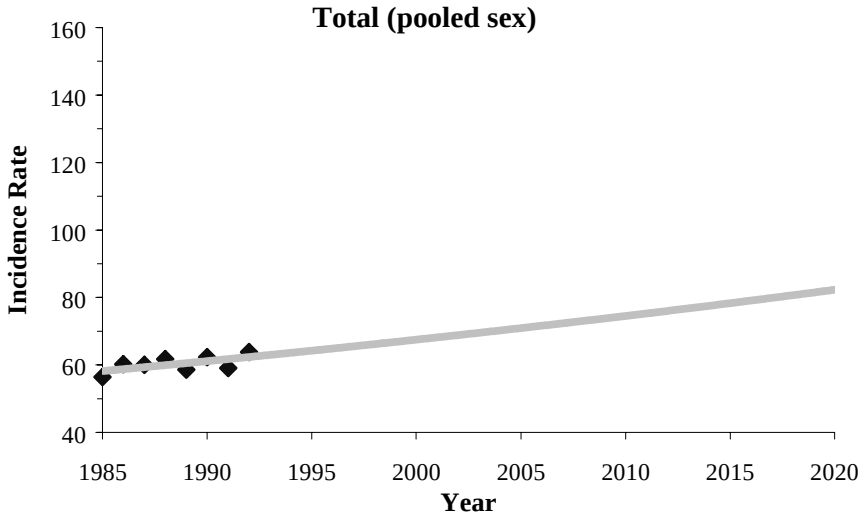
BREAST CANCER AGE-ADJUSTED INCIDENCE RATES: POOLED RACE

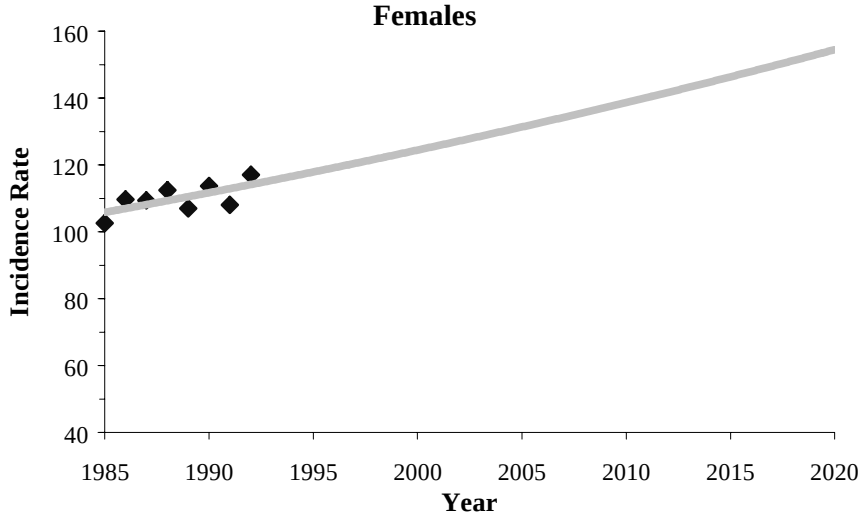
OBSERVED

YEAR	Total	Male	Female
1985	56.4	---	102.6
1986	60.2	0.0	109.7
1987	60.0	---	109.4
1988	61.7	---	112.4
1989	58.6	---	107.0
1990	62.3	0.0	113.7
1991	59.1	---	108.0
1992	63.8	---	117.0

PREDICTED

YEAR	Total	Male	Female
1996	64.9	---	119.2
1997	65.5	---	120.5
1998	66.2	---	121.8
1999	66.8	---	123.1
2000	67.5	---	124.4
2001	68.2	---	125.8
2002	68.8	---	127.2
2003	69.5	---	128.5
2004	70.2	---	129.9
2005	70.9	---	131.3
2006	71.6	---	132.8
2007	72.3	---	134.2
2008	73.1	---	135.7
2009	73.8	---	137.1
2010	74.5	---	138.6
2011	75.3	---	140.1
2012	76.0	---	141.7
2013	76.8	---	143.2
2014	77.5	---	144.8
2015	78.3	---	146.3
2016	79.1	---	147.9
2017	79.9	---	149.5
2018	80.7	---	151.2
2019	81.5	---	152.8
2020	82.3	---	154.5





Age standardized to the 1970 US population and expressed per 100,000 individuals.

BREAST CANCER CRUDE INCIDENCE RATES: POOLED RACE

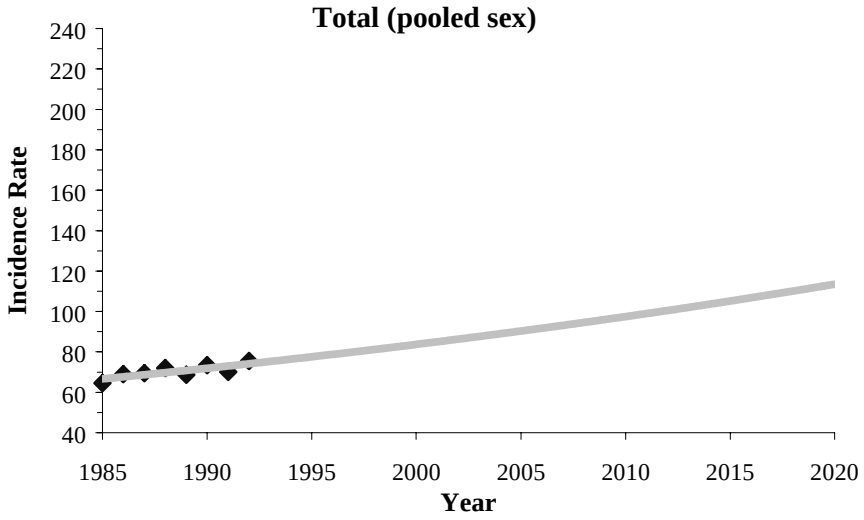
OBSERVED

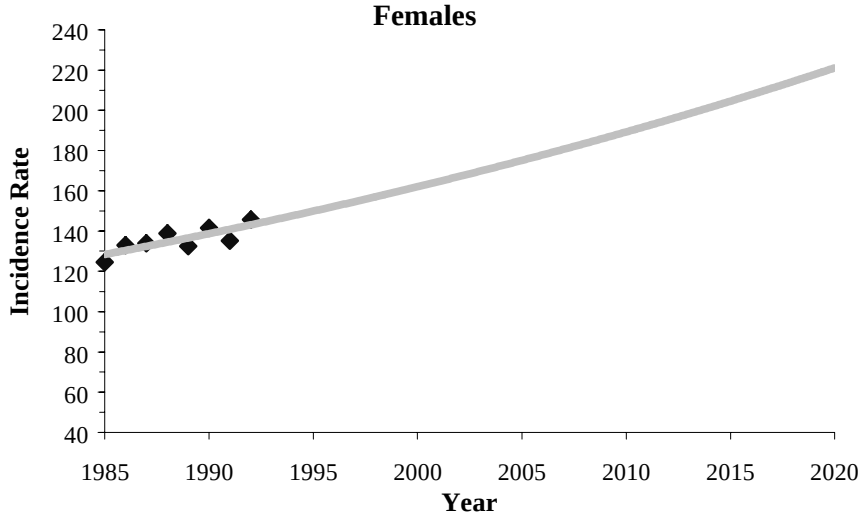
YEAR	Total	Male	Female
1985	64.6	---	124.5
1986	69.0	---	132.9
1987	69.5	---	133.9
1988	72.0	---	138.8
1989	68.7	---	132.5
1990	73.4	---	141.5
1991	70.1	---	135.2
1992	75.4	---	145.7

PREDICTED

YEAR	Total	Male	Female
1996	78.8	---	152.2
1997	80.0	---	154.6
1998	81.2	---	157.1
1999	82.4	---	159.5
2000	83.7	---	162.0
2001	85.0	---	164.5
2002	86.3	---	167.1
2003	87.6	---	169.7
2004	89.0	---	172.4
2005	90.3	---	175.1
2006	91.7	---	177.8
2007	93.1	---	180.6
2008	94.5	---	183.5
2009	96.0	---	186.3
2010	97.5	---	189.3
2011	99.0	---	192.2
2012	100.5	---	195.2
2013	102.0	---	198.3
2014	103.6	---	201.4
2015	105.2	---	204.5
2016	106.8	---	207.8
2017	108.4	---	211.0
2018	110.1	---	214.3
2019	111.8	---	217.7
2020	113.5	---	221.1

Rates expressed per 100,000





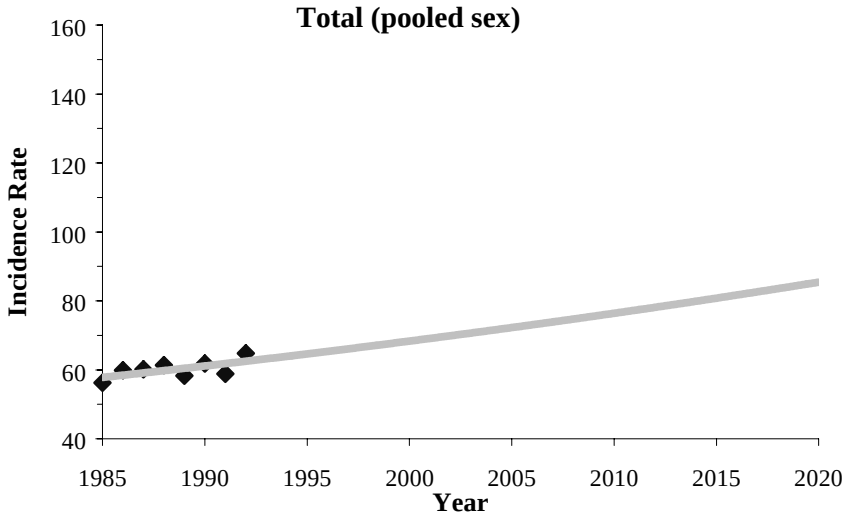
BREAST CANCER AGE-ADJUSTED INCIDENCE RATES: WHITES

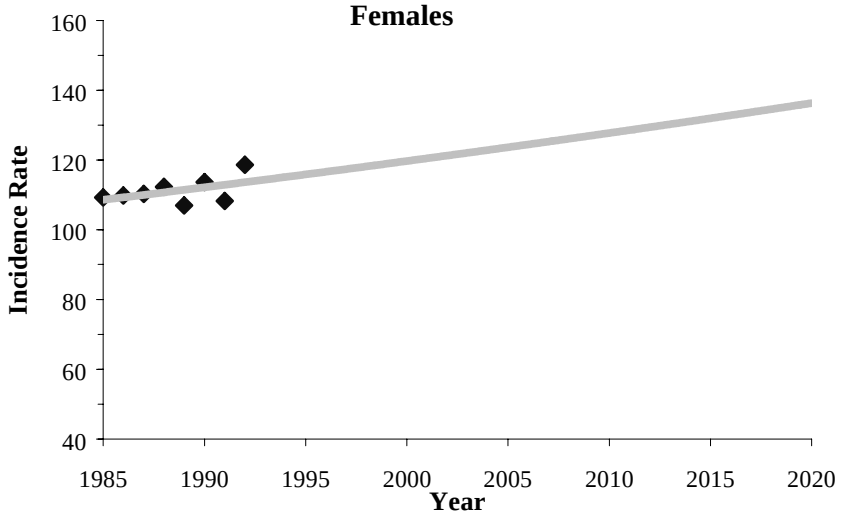
OBSERVED

YEAR	Total	Male	Female
1985	56.2	---	109.2
1986	59.9	0.0	109.8
1987	60.1	---	110.2
1988	61.3	---	112.3
1989	58.3	---	106.9
1990	61.8	0.0	113.6
1991	58.8	---	108.2
1992	64.8	---	118.6

PREDICTED

YEAR	Total	Male	Female
1996	65.3	---	116.6
1997	66.1	---	117.4
1998	66.8	---	118.1
1999	67.6	---	118.9
2000	68.3	---	119.7
2001	69.1	---	120.5
2002	69.9	---	121.2
2003	70.7	---	122.0
2004	71.5	---	122.8
2005	72.3	---	123.6
2006	73.1	---	124.4
2007	73.9	---	125.3
2008	74.7	---	126.1
2009	75.6	---	126.9
2010	76.4	---	127.7
2011	77.3	---	128.6
2012	78.1	---	129.4
2013	79.0	---	130.2
2014	79.9	---	131.1
2015	80.8	---	131.9
2016	81.7	---	132.8
2017	82.6	---	133.7
2018	83.5	---	134.5
2019	84.5	---	135.4
2020	85.4	---	136.3





Age standardized to the 1970 US population and expressed per 100,000 individuals.

BREAST CANCER CRUDE INCIDENCE RATES: WHITES

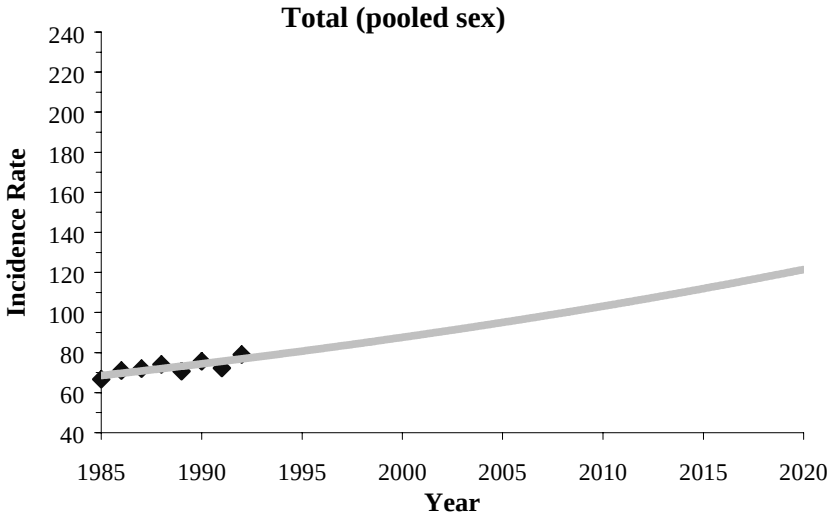
OBSERVED

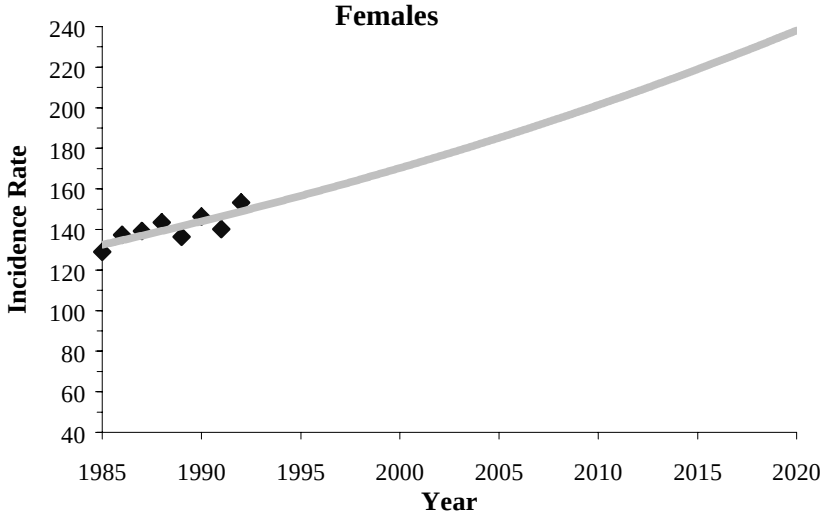
YEAR	Total	Male	Female
1985	66.7	---	128.9
1986	71.0	---	137.3
1987	72.0	---	139.2
1988	74.1	---	143.5
1989	70.6	---	136.3
1990	75.6	---	146.3
1991	72.3	---	140.1
1992	79.0	---	153.2

PREDICTED

YEAR	Total	Male	Female
1996	82.1	---	159.2
1997	83.4	---	161.9
1998	84.8	---	164.7
1999	86.2	---	167.5
2000	87.6	---	170.3
2001	89.0	---	173.2
2002	90.5	---	176.1
2003	92.0	---	179.1
2004	93.5	---	182.1
2005	95.1	---	185.2
2006	96.6	---	188.3
2007	98.2	---	191.5
2008	99.8	---	194.7
2009	101.5	---	198.0
2010	103.2	---	201.4
2011	104.9	---	204.8
2012	106.6	---	208.2
2013	108.3	---	211.7
2014	110.1	---	215.3
2015	111.9	---	218.9
2016	113.8	---	222.6
2017	115.7	---	226.4
2018	117.6	---	230.2
2019	119.5	---	234.1
2020	121.5	---	238.1

Rates expressed per 100,000





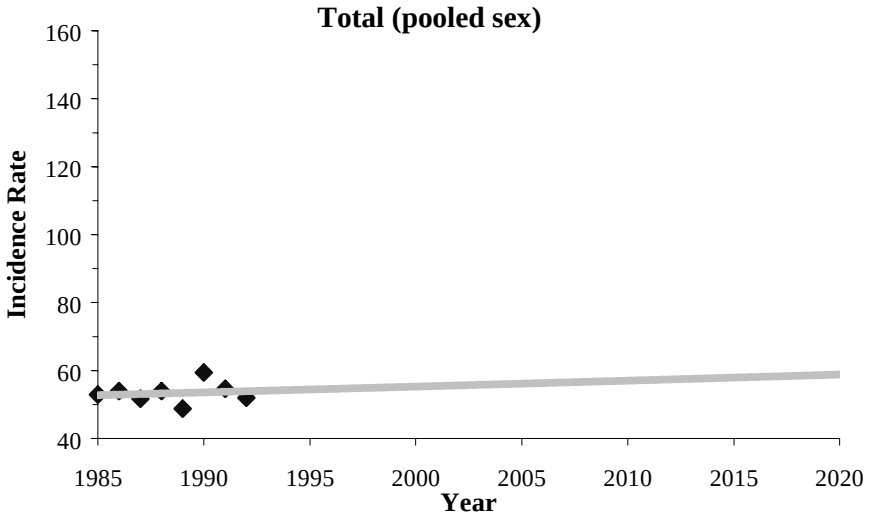
BREAST CANCER AGE-ADJUSTED INCIDENCE RATES: AFRICAN AMERICANS

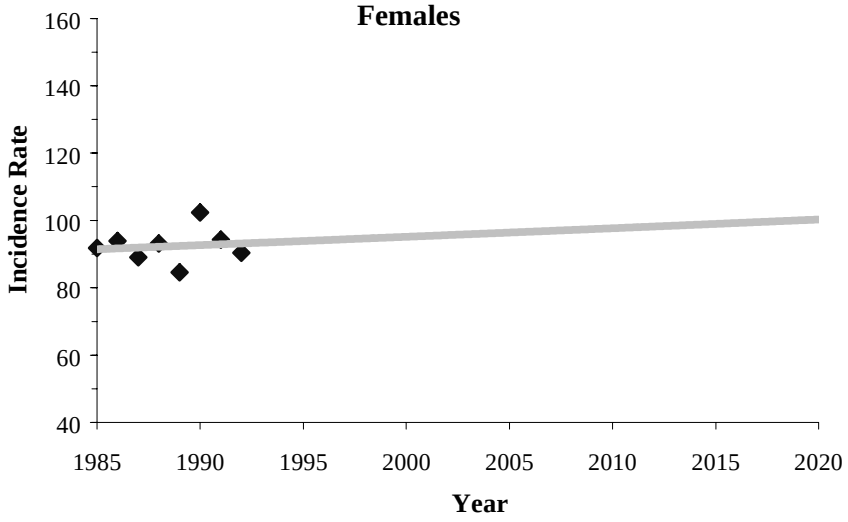
OBSERVED

YEAR	Total	Male	Female
1985	52.9	---	91.8
1986	53.9	---	93.9
1987	51.7	---	89.0
1988	53.9	---	93.1
1989	48.8	---	84.5
1990	59.4	---	102.3
1991	54.6	---	94.2
1992	52.0	---	90.3

PREDICTED

YEAR	Total	Male	Female
1996	54.6	---	94.1
1997	54.8	---	94.4
1998	54.9	---	94.6
1999	55.1	---	94.9
2000	55.3	---	95.1
2001	55.4	---	95.4
2002	55.6	---	95.6
2003	55.8	---	95.9
2004	56.0	---	96.1
2005	56.1	---	96.4
2006	56.3	---	96.6
2007	56.5	---	96.9
2008	56.7	---	97.1
2009	56.8	---	97.4
2010	57.0	---	97.6
2011	57.2	---	97.9
2012	57.4	---	98.2
2013	57.6	---	98.4
2014	57.7	---	98.7
2015	57.9	---	98.9
2016	58.1	---	99.2
2017	58.3	---	99.5
2018	58.5	---	99.7
2019	58.6	---	100.0
2020	58.8	---	100.3





Age standardized to the 1970 US population and expressed per 100,000 individuals.

BREAST CANCER CRUDE INCIDENCE RATES: AFRICAN AMERICANS

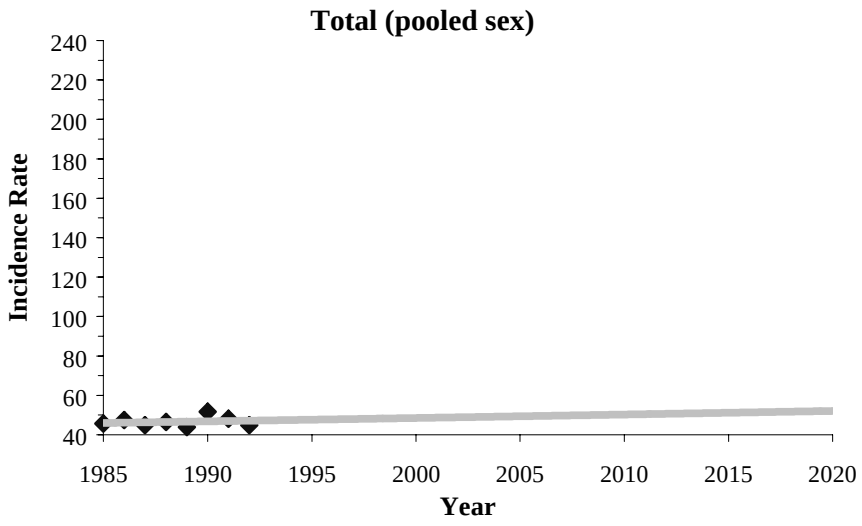
OBSERVED

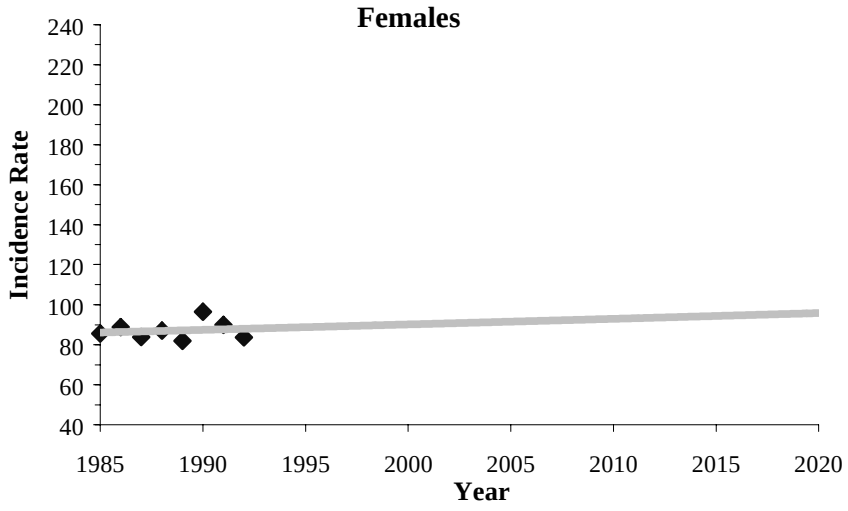
YEAR	Total	Male	Female
1985	45.7	---	85.7
1986	47.4	---	88.8
1987	44.9	---	83.9
1988	46.5	---	87.0
1989	43.9	---	82.0
1990	51.7	---	96.5
1991	48.1	---	89.9
1992	44.8	---	83.7

PREDICTED

YEAR	Total	Male	Female
1996	47.8	---	89.1
1997	48.0	---	89.4
1998	48.2	---	89.7
1999	48.3	---	89.9
2000	48.5	---	90.2
2001	48.7	---	90.5
2002	48.9	---	90.8
2003	49.0	---	91.0
2004	49.2	---	91.3
2005	49.4	---	91.6
2006	49.6	---	91.9
2007	49.7	---	92.2
2008	49.9	---	92.4
2009	50.1	---	92.7
2010	50.3	---	93.0
2011	50.5	---	93.3
2012	50.6	---	93.6
2013	50.8	---	93.9
2014	51.0	---	94.1
2015	51.2	---	94.4
2016	51.4	---	94.7
2017	51.6	---	95.0
2018	51.7	---	95.3
2019	51.9	---	95.6
2020	52.1	---	95.9

Rates expressed per 100,000





Oral Cancer Incidence

ORAL CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	9.1	13.8	5.4	8.7	13.2	5.2	11.4	17.9	6.6
PROJECTED RATES[3,4]									
2000	10.0	16.1	4.9	10.2	16.6	4.9	11.0	16.5	6.4
2010	10.9	18.4	4.4	11.6	20.4	4.8	10.6	15.4	6.4
2020	11.8	21.0	4.0	13.3	25.0	4.6	10.3	14.4	6.4
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	0.8	1.3	-0.9	1.4	2.1	-0.4	-0.3	-0.7	0.0
PERIOD PERCENT CHANGE[7]	5.6	8.2	-2.7	8.1	11.9	0.0	2.5	0.6	1.8

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

ORAL CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	10.7	14.7	6.9	10.6	14.5	6.9	9.5	13.5	5.9
PROJECTED RATES[2,3]									
2000	11.8	17.3	6.7	12.6	18.5	6.9	9.0	12.2	6.4
2010	12.8	19.9	6.4	14.7	23.0	6.8	8.7	11.3	7.0
2020	14.0	23.0	6.2	17.1	28.5	6.7	8.4	10.4	7.6
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	0.8	1.4	-0.4	1.5	2.2	-0.1	-0.3	-0.8	0.8
PERIOD PERCENT CHANGE[6]	6.2	8.9	0.7	9.7	13.0	1.4	1.2	-1.6	8.2

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

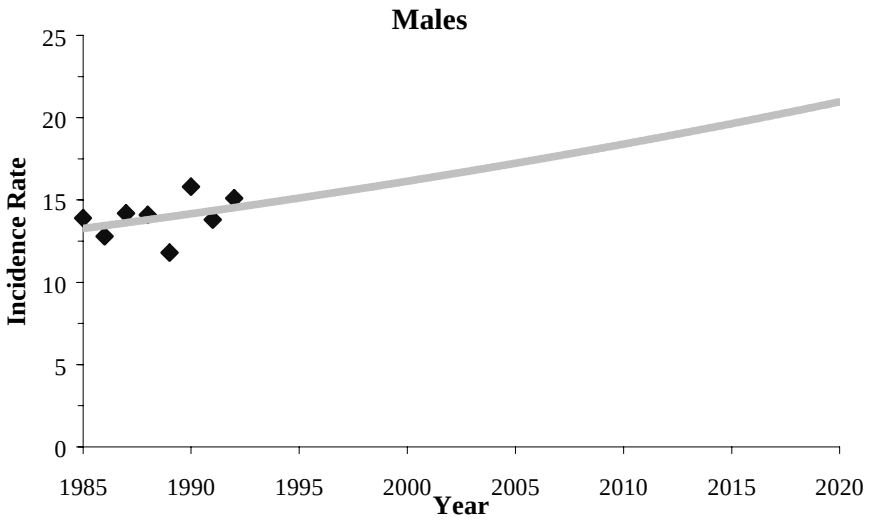
ORAL CANCER AGE-ADJUSTED INCIDENCE RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1985	9.3	13.9	5.7
1986	8.7	12.8	5.6
1987	9.3	14.2	5.6
1988	9.2	14.1	5.4
1989	8.0	11.8	4.9
1990	9.9	15.8	5.2
1991	9.3	13.8	5.8
1992	9.7	15.1	5.2

PREDICTED

YEAR	Total	Male	Female
1996	9.7	15.3	5.0
1997	9.8	15.5	5.0
1998	9.9	15.7	5.0
1999	10.0	15.9	4.9
2000	10.0	16.1	4.9
2001	10.1	16.4	4.8
2002	10.2	16.6	4.8
2003	10.3	16.8	4.7
2004	10.4	17.0	4.7
2005	10.5	17.2	4.6
2006	10.5	17.5	4.6
2007	10.6	17.7	4.6
2008	10.7	17.9	4.5
2009	10.8	18.2	4.5
2010	10.9	18.4	4.4
2011	11.0	18.6	4.4
2012	11.1	18.9	4.3
2013	11.2	19.1	4.3
2014	11.2	19.4	4.3
2015	11.3	19.6	4.2
2016	11.4	19.9	4.2
2017	11.5	20.2	4.1
2018	11.6	20.4	4.1
2019	11.7	20.7	4.1
2020	11.8	21.0	4.0



Age standardized to the 1970 US population and expressed per 100,000 individuals.

ORAL CANCER CRUDE INCIDENCE RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1985	10.8	14.7	7.2
1986	10.1	13.4	7.0
1987	11.0	15.0	7.2
1988	10.8	14.9	6.9
1989	9.3	12.4	6.4
1990	11.6	16.9	6.7
1991	10.9	14.6	7.4
1992	11.3	16.0	6.9

PREDICTED

YEAR	Total	Male	Female
1996	11.4	16.3	6.8
1997	11.5	16.6	6.7
1998	11.6	16.8	6.7
1999	11.7	17.0	6.7
2000	11.8	17.3	6.7
2001	11.9	17.5	6.6
2002	12.0	17.8	6.6
2003	12.1	18.0	6.6
2004	12.2	18.3	6.6
2005	12.3	18.6	6.5
2006	12.4	18.8	6.5
2007	12.5	19.1	6.5
2008	12.6	19.4	6.5
2009	12.7	19.7	6.4
2010	12.8	19.9	6.4
2011	12.9	20.2	6.4
2012	13.0	20.5	6.4
2013	13.2	20.8	6.4
2014	13.3	21.1	6.3
2015	13.4	21.4	6.3
2016	13.5	21.7	6.3
2017	13.6	22.0	6.3
2018	13.7	22.3	6.2
2019	13.8	22.7	6.2
2020	14.0	23.0	6.2

Rates expressed per 100,000

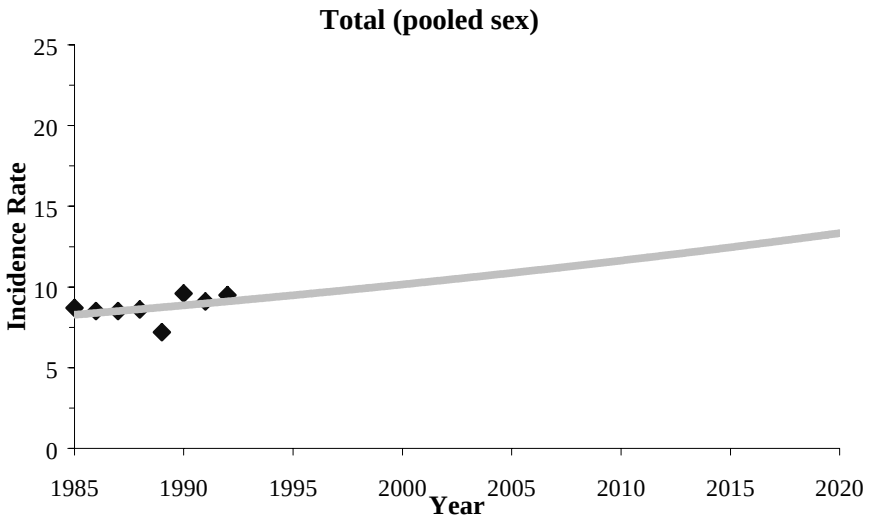
ORAL CANCER AGE-ADJUSTED INCIDENCE RATES: WHITES

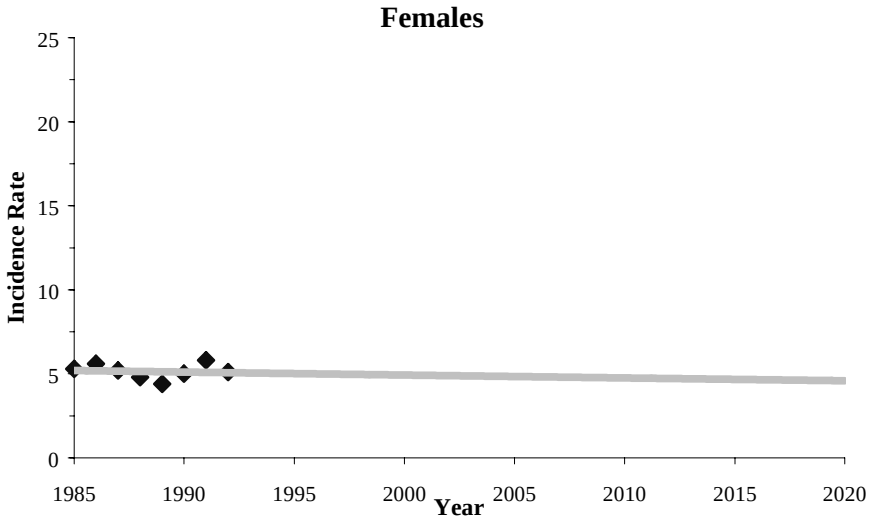
OBSERVED

YEAR	Total	Male	Female
1985	8.7	13.0	5.3
1986	8.5	12.2	5.6
1987	8.5	12.8	5.2
1988	8.6	13.4	4.8
1989	7.2	10.8	4.4
1990	9.6	15.4	5.0
1991	9.1	13.4	5.8
1992	9.5	14.8	5.1

PREDICTED

YEAR	Total	Male	Female
1996	9.6	15.3	5.0
1997	9.7	15.7	5.0
1998	9.9	16.0	5.0
1999	10.0	16.3	4.9
2000	10.2	16.6	4.9
2001	10.3	17.0	4.9
2002	10.4	17.3	4.9
2003	10.6	17.7	4.9
2004	10.7	18.1	4.9
2005	10.9	18.4	4.8
2006	11.0	18.8	4.8
2007	11.2	19.2	4.8
2008	11.3	19.6	4.8
2009	11.5	20.0	4.8
2010	11.6	20.4	4.8
2011	11.8	20.8	4.7
2012	12.0	21.3	4.7
2013	12.1	21.7	4.7
2014	12.3	22.1	4.7
2015	12.5	22.6	4.7
2016	12.6	23.1	4.7
2017	12.8	23.5	4.6
2018	13.0	24.0	4.6
2019	13.2	24.5	4.6
2020	13.3	25.0	4.6





Age standardized to the 1970 US population and expressed per 100,000 individuals.

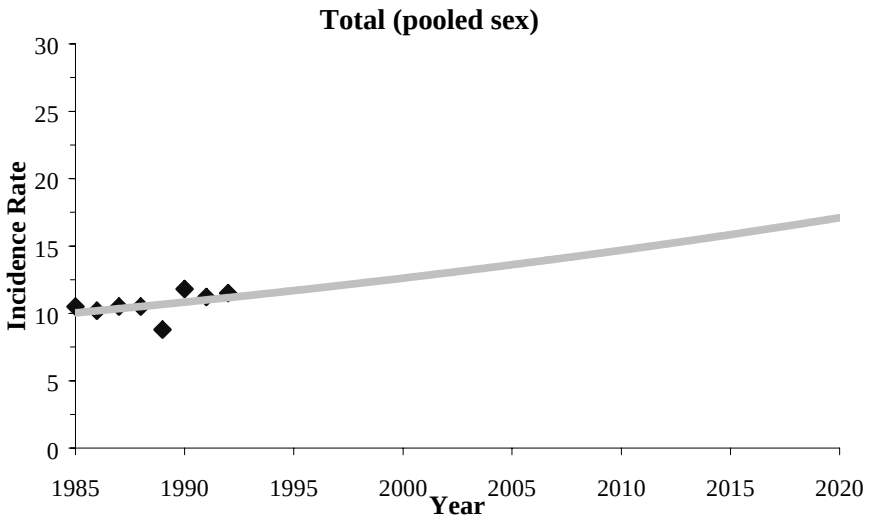
ORAL CANCER CRUDE INCIDENCE RATES: WHITES

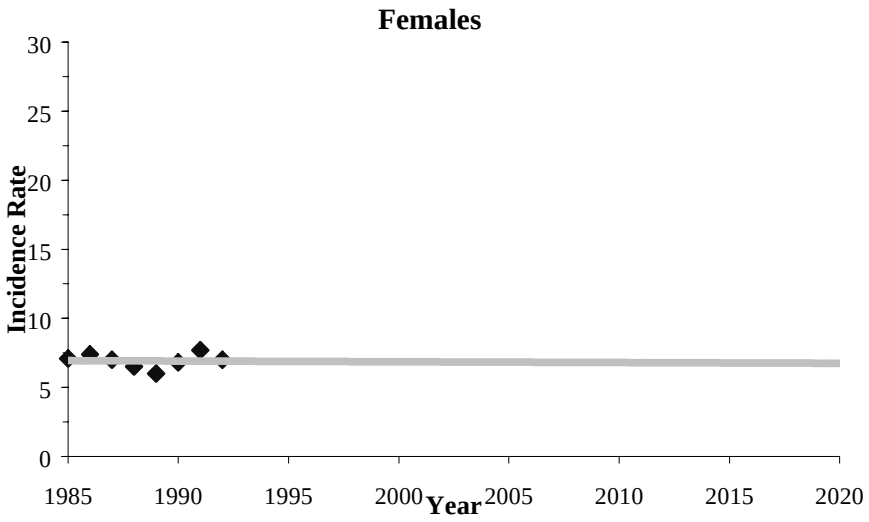
OBSERVED

YEAR	Total	Male	Female
1985	10.5	14.3	7.1
1986	10.2	13.3	7.4
1987	10.5	14.2	7.0
1988	10.5	14.7	6.5
1989	8.8	11.8	6.0
1990	11.8	17.0	6.8
1991	11.2	14.9	7.7
1992	11.5	16.3	7.0

PREDICTED

YEAR	Total	Male	Female
1996	11.9	17.0	6.9
1997	12.0	17.4	6.9
1998	12.2	17.8	6.9
1999	12.4	18.1	6.9
2000	12.6	18.5	6.9
2001	12.8	18.9	6.9
2002	13.0	19.4	6.8
2003	13.2	19.8	6.8
2004	13.4	20.2	6.8
2005	13.6	20.6	6.8
2006	13.8	21.1	6.8
2007	14.0	21.5	6.8
2008	14.2	22.0	6.8
2009	14.5	22.5	6.8
2010	14.7	23.0	6.8
2011	14.9	23.5	6.8
2012	15.1	24.0	6.8
2013	15.4	24.5	6.8
2014	15.6	25.0	6.8
2015	15.8	25.6	6.8
2016	16.1	26.1	6.8
2017	16.3	26.7	6.8
2018	16.6	27.3	6.8
2019	16.8	27.9	6.8
2020	17.1	28.5	6.7





Rates expressed per 100,000

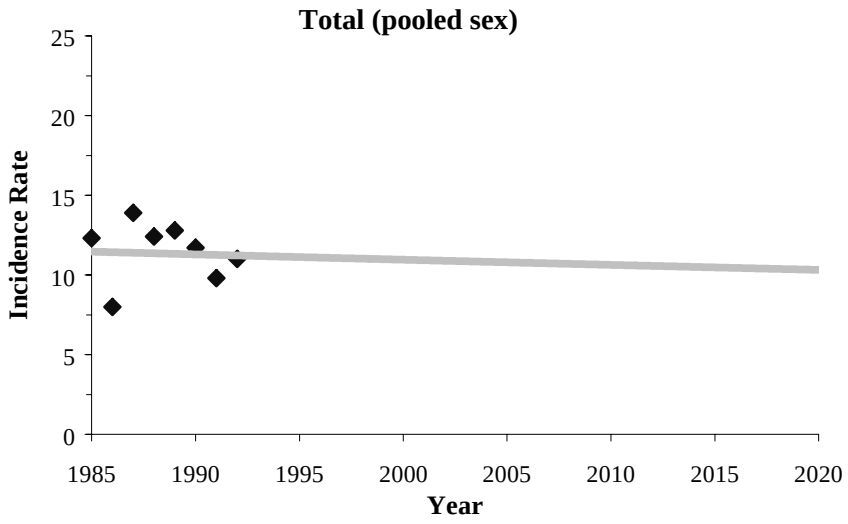
ORAL CANCER AGE-ADJUSTED INCIDENCE RATES: AFRICAN AMERICANS

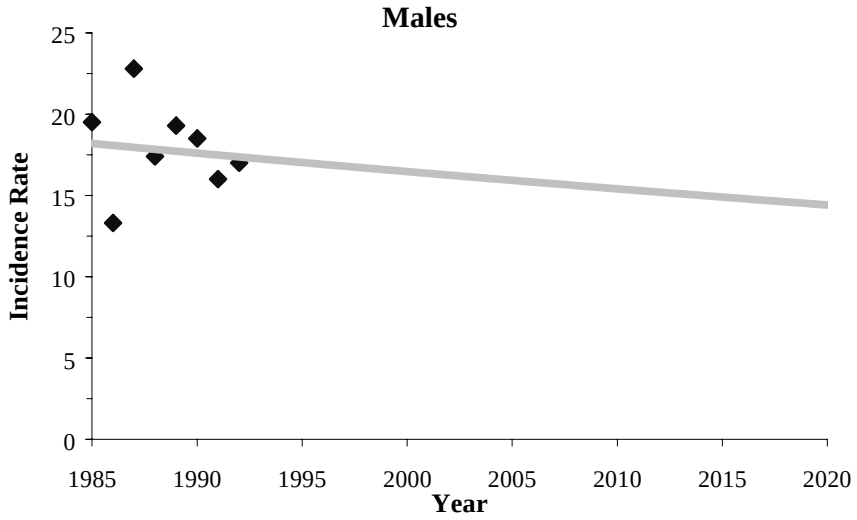
OBSERVED

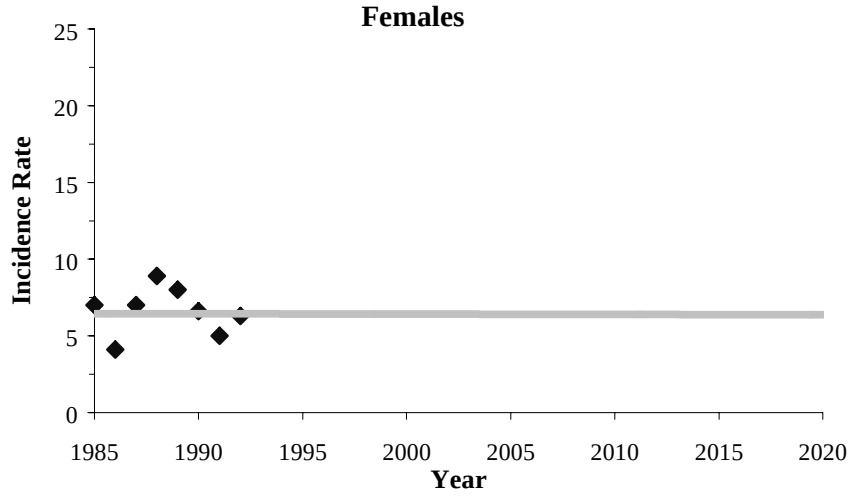
YEAR	Total	Male	Female
1985	12.3	19.5	7.0
1986	8.0	13.3	4.1
1987	13.9	22.8	7.0
1988	12.4	17.4	8.9
1989	12.8	19.3	8.0
1990	11.7	18.5	6.6
1991	9.8	16.0	5.0
1992	11.0	17.0	6.3

PREDICTED

YEAR	Total	Male	Female
1996	11.1	16.9	6.4
1997	11.1	16.8	6.4
1998	11.0	16.7	6.4
1999	11.0	16.6	6.4
2000	11.0	16.5	6.4
2001	10.9	16.4	6.4
2002	10.9	16.3	6.4
2003	10.9	16.1	6.4
2004	10.8	16.0	6.4
2005	10.8	15.9	6.4
2006	10.8	15.8	6.4
2007	10.7	15.7	6.4
2008	10.7	15.6	6.4
2009	10.7	15.5	6.4
2010	10.6	15.4	6.4
2011	10.6	15.3	6.4
2012	10.6	15.2	6.4
2013	10.5	15.1	6.4
2014	10.5	15.0	6.4
2015	10.5	14.9	6.4
2016	10.4	14.8	6.4
2017	10.4	14.7	6.4
2018	10.4	14.6	6.4
2019	10.3	14.5	6.4
2020	10.3	14.4	6.4







Age standardized to the 1970 US population and expressed per 100,000 individuals.

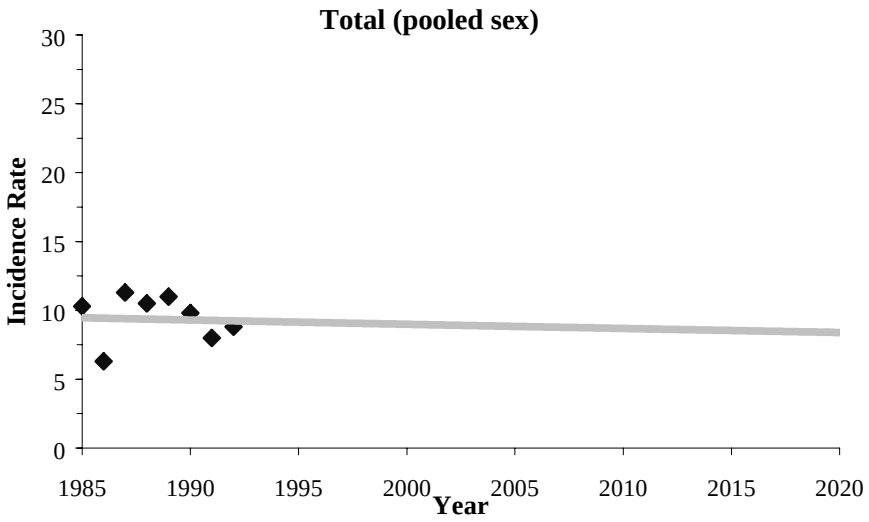
ORAL CANCER CRUDE INCIDENCE RATES: AFRICAN AMERICANS

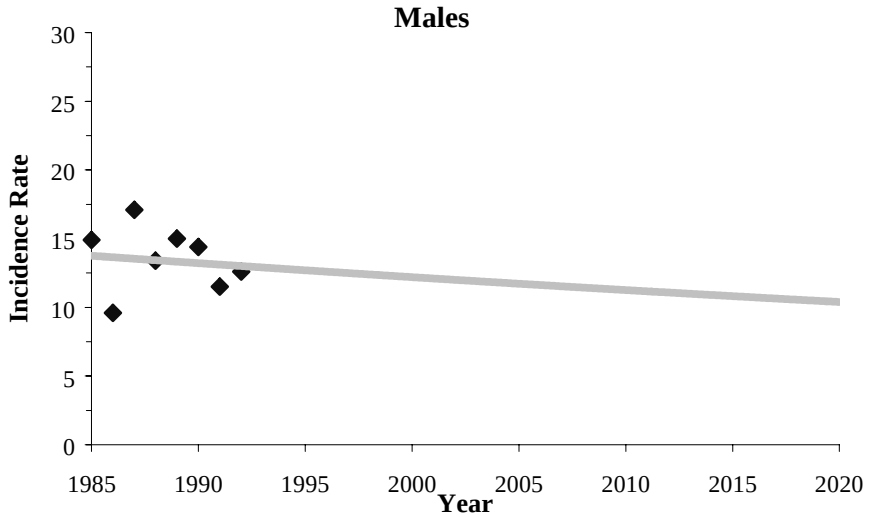
OBSERVED

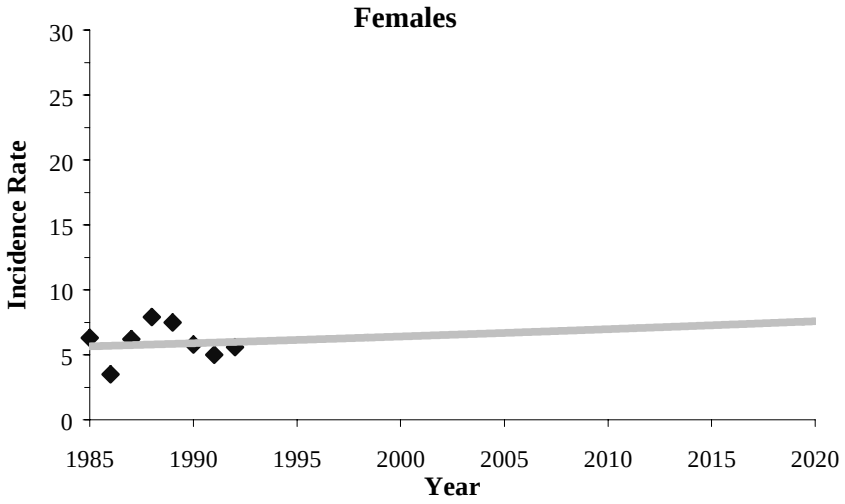
YEAR	Total	Male	Female
1985	10.3	14.9	6.3
1986	6.3	9.6	3.5
1987	11.3	17.1	6.2
1988	10.5	13.4	7.9
1989	11.0	15.0	7.5
1990	9.8	14.4	5.8
1991	8.0	11.5	5.0
1992	8.8	12.6	5.6

PREDICTED

YEAR	Total	Male	Female
1996	9.1	12.6	6.2
1997	9.1	12.5	6.3
1998	9.1	12.4	6.3
1999	9.0	12.3	6.4
2000	9.0	12.2	6.4
2001	9.0	12.1	6.5
2002	8.9	12.0	6.5
2003	8.9	11.9	6.6
2004	8.9	11.8	6.6
2005	8.8	11.7	6.7
2006	8.8	11.6	6.7
2007	8.8	11.5	6.8
2008	8.7	11.4	6.9
2009	8.7	11.4	6.9
2010	8.7	11.3	7.0
2011	8.7	11.2	7.0
2012	8.6	11.1	7.1
2013	8.6	11.0	7.2
2014	8.6	10.9	7.2
2015	8.5	10.8	7.3
2016	8.5	10.7	7.3
2017	8.5	10.6	7.4
2018	8.5	10.6	7.5
2019	8.4	10.5	7.5
2020	8.4	10.4	7.6







Rates expressed per 100,000

Prostate Cancer Incidence*

*Please note a slight difference in format for Prostate and Cervical Cancer.

PROSTATE CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	---	100.1	---	---	97.1	---	---	112.3	---
PROJECTED RATES[3,4]									
2000	---	420.5	---	---	413.7	---	---	310.0	---
2010	---	1532.1	---	---	1529.9	---	---	782.7	---
2020	---	5582.8	---	---	5658.3	---	---	1976.2	---
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	---	13.8 **	---	---	14.0 **	---	---	9.7 *	---
PERIOD PERCENT CHANGE[7]	---	124.4	---	---	126.1	---	---	83.1	---

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

PROSTATE CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	---	112.0	---	---	113.6	---	---	83.2	---
PROJECTED RATES[2,3]									
2000	---	475.8	---	---	494.4	---	---	216.8	---
2010	---	1759.5	---	---	1869.2	---	---	517.8	---
2020	---	6506.6	---	---	7067.2	---	---	1236.9	---
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	---	14.0 **	---	---	14.2 **	---	---	9.1 *	---
PERIOD PERCENT CHANGE[6]	---	126.4	---	---	129.2	---	---	77.3	---

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

PROSTATE CANCER AGE-ADJUSTED INCIDENCE RATES AMONG MEN

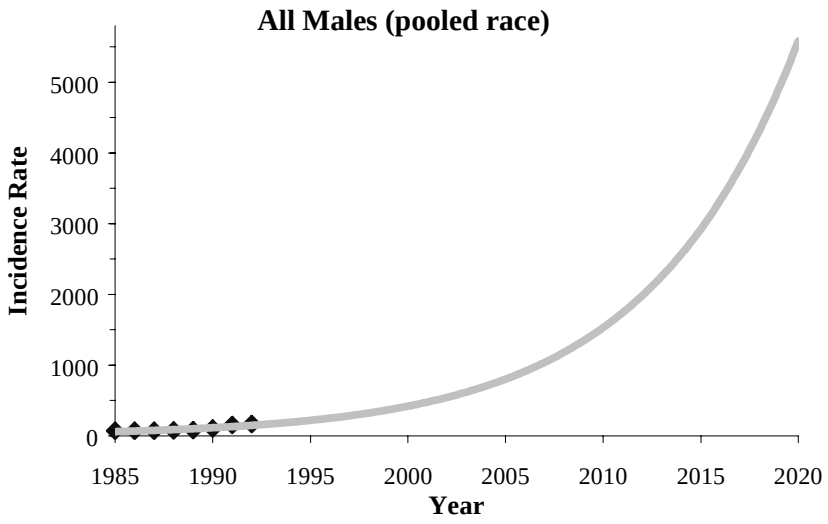
OBSERVED

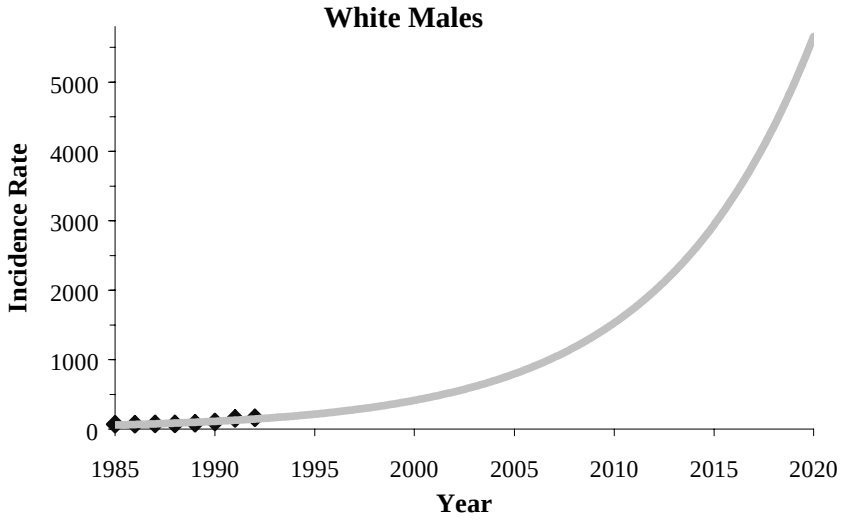
YEAR	Total	Whites	AA[1]
1985	71.5	68.8	94.7
1986	72.4	69.7	93.4
1987	74.1	71.6	81.0
1988	77.6	73.9	101.4
1989	82.7	81.1	81.6
1990	104.0	101.1	98.5
1991	155.1	152.0	148.5
1992	167.8	161.2	196.0

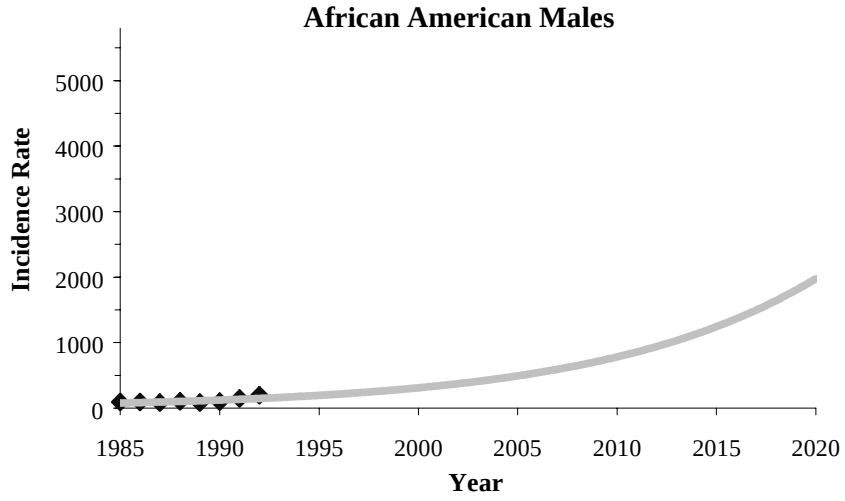
PREDICTED

YEAR	Total	Whites	AA[1]
1996	250.7	245.2	214.0
1997	285.3	279.4	234.8
1998	324.7	318.4	257.6
1999	369.5	362.9	282.6
2000	420.5	413.7	310.0
2001	478.5	471.5	340.1
2002	544.6	537.3	373.1
2003	619.7	612.4	409.3
2004	705.3	698.0	449.0
2005	802.6	795.5	492.6
2006	913.4	906.7	540.4
2007	1039.5	1033.4	592.8
2008	1183.0	1177.8	650.3
2009	1346.3	1342.3	713.5
2010	1532.1	1529.9	782.7
2011	1743.6	1743.7	858.6
2012	1984.3	1987.3	942.0
2013	2258.2	2265.0	1033.4
2014	2569.9	2581.5	1133.7
2015	2924.7	2942.2	1243.7
2016	3328.4	3353.4	1364.4
2017	3787.8	3821.9	1496.8
2018	4310.7	4356.0	1642.0
2019	4905.7	4964.6	1801.3
2020	5582.8	5658.3	1976.2

[1] AA = African Americans







Age standardized to the 1970 US population and expressed per 100,000 individuals.

PROSTATE CANCER CRUDE INCIDENCE RATES AMONG MEN

OBSERVED

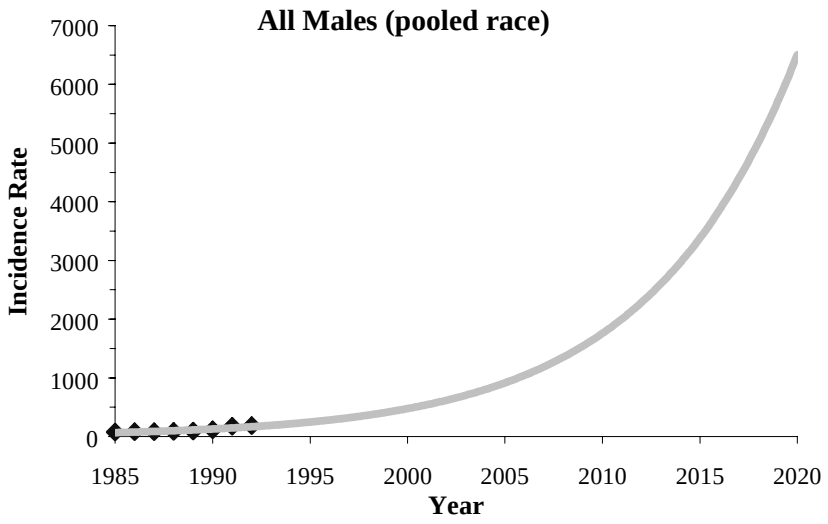
YEAR	Total	Whites	AA[1]
1985	78.7	79.1	71.6
1986	80.1	80.6	70.5
1987	82.5	83.4	61.3
1988	86.5	86.3	75.9
1989	92.6	95.2	60.6
1990	116.2	118.5	73.0
1991	173.4	178.2	109.3
1992	186.2	187.8	142.6

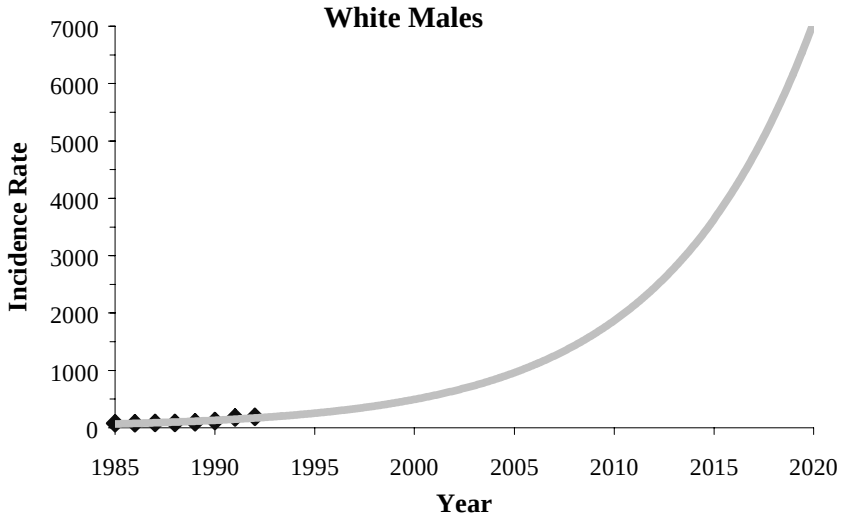
PREDICTED

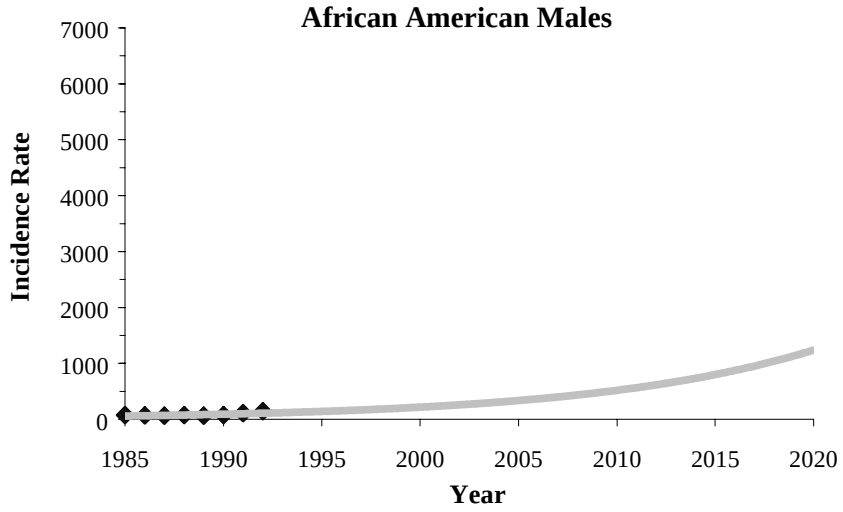
YEAR	Total	Whites	AA[1]
1996	282.0	290.4	153.0
1997	321.4	331.7	167.0
1998	366.3	378.9	182.1
1999	417.5	432.8	198.7
2000	475.8	494.4	216.8
2001	542.3	564.7	236.5
2002	618.0	645.0	258.0
2003	704.4	736.8	281.5
2004	802.8	841.6	307.1
2005	914.9	961.3	335.0
2006	1042.8	1098.0	365.5
2007	1188.5	1254.2	398.8
2008	1354.5	1432.6	435.1
2009	1543.8	1636.4	474.6
2010	1759.5	1869.2	517.8
2011	2005.3	2135.1	564.9
2012	2285.5	2438.8	616.3
2013	2604.8	2785.7	672.4
2014	2968.7	3181.9	733.6
2015	3383.5	3634.6	800.3
2016	3856.2	4151.6	873.1
2017	4395.0	4742.1	952.5
2018	5009.1	5416.6	1039.2
2019	5709.0	6187.1	1133.7
2020	6506.6	7067.2	1236.9

[1] AA = African Americans

Rates expressed per 100,000







Cervical Cancer Incidence*

*Please note a slight difference in format for Prostate and Cervical Cancer.

CERVICAL CANCER AGE-ADJUSTED INCIDENCE RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	---	---	31.7	---	---	30.3	---	---	40.5
PROJECTED RATES[3,4]									
2000	---	---	40.1	---	---	36.4	---	---	62.8
2010	---	---	49.0	---	---	42.7	---	---	91.2
2020	---	---	59.9	---	---	50.1	---	---	132.7
ESTIMATED ANNUAL PERCENT CHANGE[5,6]	---	---	2.0 *	---	---	1.6	---	---	3.8 *
PERIOD PERCENT CHANGE[7]	---	---	10.6	---	---	8.3	---	---	19.7

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using incidence data pooled over the 1985-1992 period.

[3] Calculated from least squares regression of logged incidence rates.

[4] Projection based on 1985-1992 incidence data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

CERVICAL CANCER CRUDE INCIDENCE RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	---	---	36.6	---	---	35.1	---	---	43.5
PROJECTED RATES[2,3]									
2000	---	---	45.1	---	---	41.3	---	---	70.1
2010	---	---	53.9	---	---	47.6	---	---	106.5
2020	---	---	64.4	---	---	54.8	---	---	161.7
ESTIMATED ANNUAL PERCENT CHANGE[4,5]	---	---	1.8	---	---	1.4	---	---	4.3 *
PERIOD PERCENT CHANGE[6]	---	---	9.3	---	---	7.3	---	---	22.5

[1] Calculated using incidence data pooled over the 1985-1992 period.

[2] Calculated from least squares regression of logged incidence rates.

[3] Projection based on 1985-1992 incidence data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

CERVICAL CANCER AGE-ADJUSTED INCIDENCE RATES AMONG WOMEN

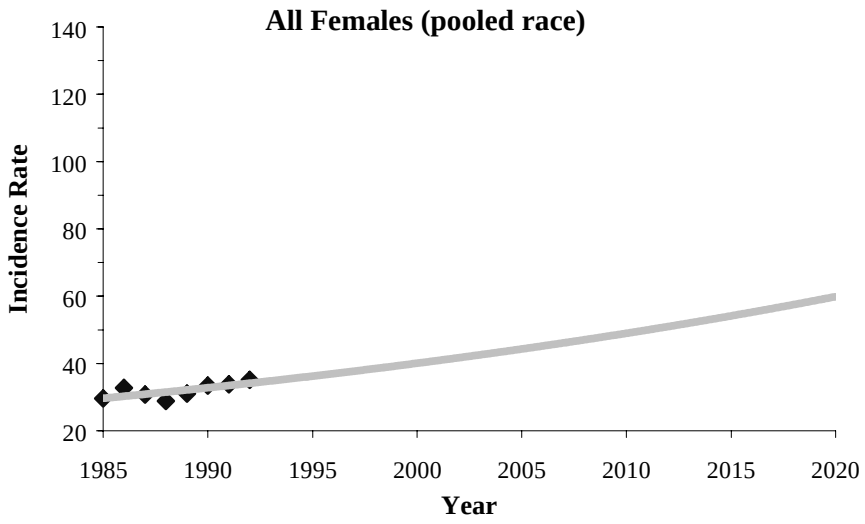
OBSERVED

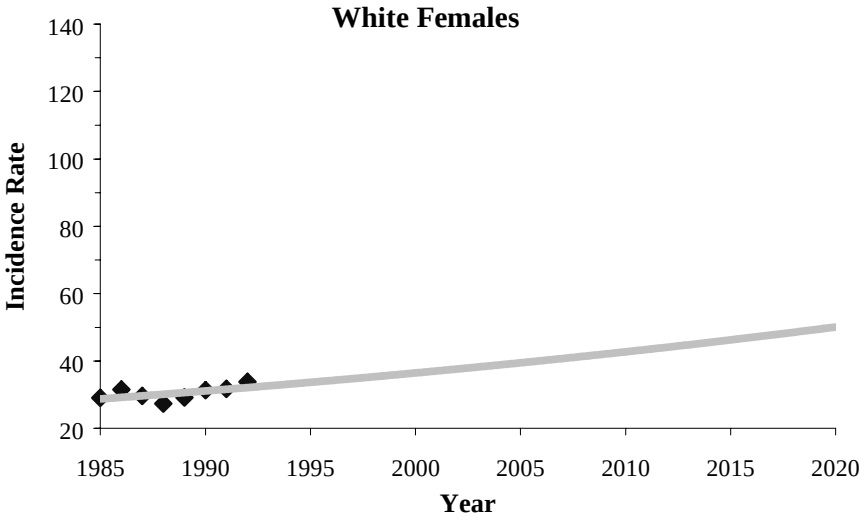
YEAR	Total	Whites	AA[1]
1985	29.6	29.0	34.9
1986	32.7	31.5	42.1
1987	30.7	29.6	36.0
1988	28.8	27.3	38.0
1989	31.0	29.1	38.5
1990	33.4	31.3	46.7
1991	33.8	31.7	47.2
1992	35.1	33.8	45.0

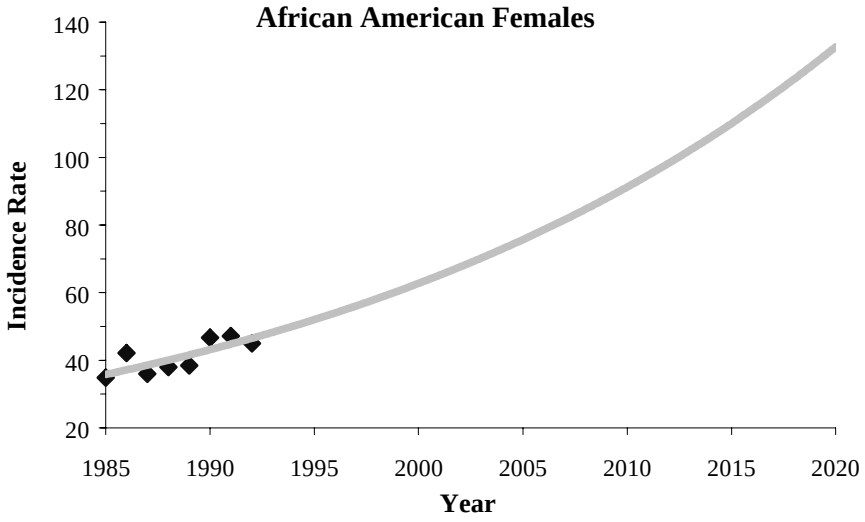
PREDICTED

YEAR	Total	Whites	AA[1]
1996	37.0	34.2	54.0
1997	37.7	34.7	56.1
1998	38.5	35.3	58.2
1999	39.3	35.9	60.4
2000	40.1	36.4	62.8
2001	40.9	37.0	65.1
2002	41.7	37.6	67.6
2003	42.6	38.2	70.2
2004	43.4	38.8	72.9
2005	44.3	39.5	75.7
2006	45.2	40.1	78.6
2007	46.1	40.7	81.6
2008	47.1	41.4	84.7
2009	48.0	42.0	87.9
2010	49.0	42.7	91.2
2011	50.0	43.4	94.7
2012	51.0	44.1	98.3
2013	52.0	44.8	102.1
2014	53.1	45.5	106.0
2015	54.1	46.3	110.0
2016	55.2	47.0	114.2
2017	56.4	47.7	118.6
2018	57.5	48.5	123.1
2019	58.7	49.3	127.8
2020	59.9	50.1	132.7

[1] AA = African Americans







Age standardized to the 1970 US population and expressed per 100,000 individuals.

CERVICAL CANCER CRUDE INCIDENCE RATES AMONG WOMEN

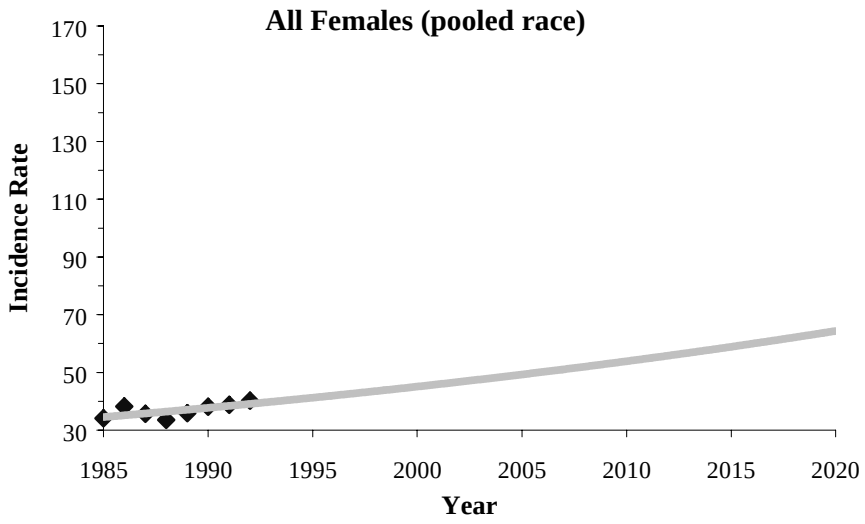
OBSERVED

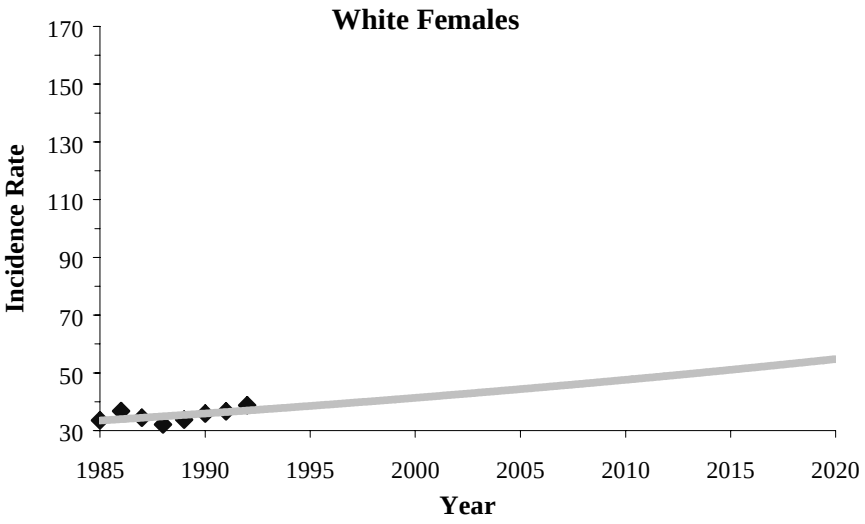
YEAR	Total	Whites	AA[1]
1985	34.1	33.5	35.8
1986	38.2	36.8	45.1
1987	35.7	34.4	39.2
1988	33.5	32.1	38.5
1989	35.9	33.8	41.4
1990	38.1	35.9	50.5
1991	38.8	36.6	51.1
1992	40.2	38.8	48.0

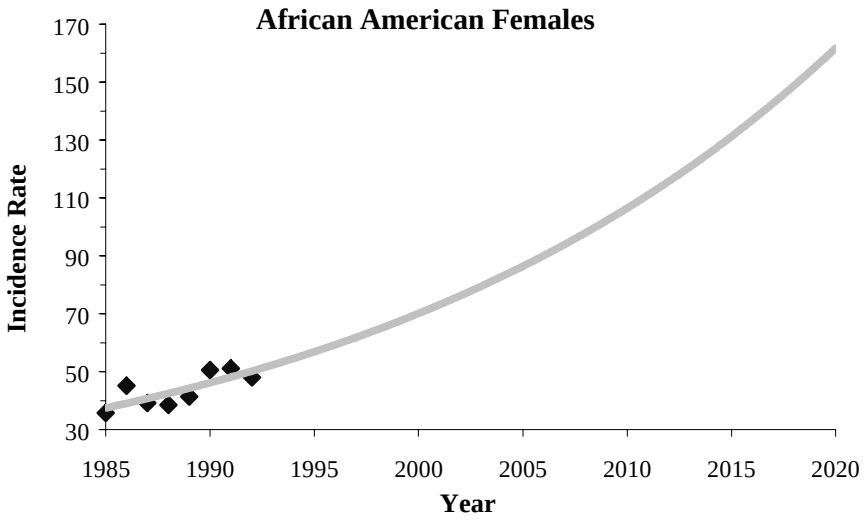
PREDICTED

YEAR	Total	Whites	AA[1]
1996	42.0	39.1	59.3
1997	42.7	39.6	61.8
1998	43.5	40.2	64.5
1999	44.3	40.8	67.2
2000	45.1	41.3	70.1
2001	45.9	41.9	73.1
2002	46.7	42.5	76.2
2003	47.6	43.1	79.5
2004	48.4	43.7	82.9
2005	49.3	44.4	86.4
2006	50.2	45.0	90.1
2007	51.1	45.6	93.9
2008	52.0	46.3	97.9
2009	52.9	46.9	102.1
2010	53.9	47.6	106.5
2011	54.8	48.3	111.0
2012	55.8	48.9	115.8
2013	56.8	49.6	120.7
2014	57.8	50.3	125.8
2015	58.9	51.1	131.2
2016	59.9	51.8	136.8
2017	61.0	52.5	142.6
2018	62.1	53.3	148.7
2019	63.2	54.0	155.1
2020	64.4	54.8	161.7

[1] AA = African Americans







Rates expressed per 100,000

CANCER MORTALITY

All Cancer 67
Lung Cancer 77
Colorectal Cancer 87
Breast Cancer 97
Oral Cancer 107
Prostate Cancer* 117
Cervical Cancer* 123

*Please note a slight difference in format for Prostate and Cervical Cancer.

All Cancer Mortality

ALL CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	174.6	224.3	141.2	168.9	215.7	137.4	242.2	330.9	183.6
1980-1990	168.5	223.6	139.4	167.2	214.9	135.4	242.6	331.6	183
1990-1996	177.4	225.6	144.5	172.4	218.1	141.3	244.7	333.9	187.2
PROJECTED RATES[3]									
2000	180.5 [4]	226.8 [4]	148.8 [4]	175.6 [4]	219.4 [4]	145.9 [4]	213.6 [5]	273.0 [5]	189.8 [4]
2010	185.6 [4]	229.0 [4]	155.5 [4]	180.7 [4]	221.9 [4]	153.1 [4]	175.8 [5]	204.7 [5]	194.5 [4]
2020	190.8 [4]	231.2 [4]	162.6 [4]	186.1 [4]	224.5 [4]	160.6 [4]	144.7 [5]	153.5 [5]	199.2 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	0.3 **	0.1	0.4 ***	0.3 **	0.1	0.5 ***	0.1	0.2	0.2
1980-1990	0.4 *	0.3	0.5 *	0.3	0.2	0.5 *	0.8 *	1.2 *	0.7
1990-1996	-0.4	-0.8	0.1	-0.2	-0.6	0.2	-1.9 **	-2.8 *	-1.0
PERIOD PERCENT CHANGE[8]									
1980-1996	3.6	-0.4	7.8	4.2	0.1	8.4	1.3	-0.6	6.3
1980-1990	5.4	3.7	7.5	4.9	2.7	7.5	11.1	15.5	9.4
1990-1996	-1.6	-3.3	-0.1	-0.6	-2.0	0.7	-9.0	-13.2	-4.5

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: $EAPC = (e^{\beta_1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: $PPC = [(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

ALL CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	220.5	243.7	199.0	223.4	245.1	203.0	211.4	248.1	179.3
1980-1990	211.2	240.1	193.2	217.8	240.5	196.6	211.4	251.2	176.7
1990-1996	228.6	249.8	208.8	233.2	253.4	214.3	214.3	246.7	186.0
PROJECTED RATES[2]									
2000	240.0 [3]	257.7 [3]	223.5 [3]	246.7 [3]	263.5 [3]	230.9 [3]	186.6 [4]	197.9 [4]	194.3 [3]
2010	257.9 [3]	270.2 [3]	246.8 [3]	268.0 [3]	279.6 [3]	257.2 [3]	153.2 [4]	144.5 [4]	207.5 [3]
2020	277.2 [3]	283.2 [3]	272.5 [3]	291.0 [3]	296.6 [3]	286.6 [3]	125.7 [4]	105.5 [4]	221.5 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	0.7 ***	0.5 ***	1.0 ***	0.8 ***	0.6 ***	1.1 ***	0.2	-0.1	0.7 **
1980-1990	0.9 ***	0.7 **	1.2 ***	1.0 ***	0.7 ***	1.3 ***	1.1 **	1.0 *	1.2 **
1990-1996	-0.1	-0.5	0.3	0.2	-0.1	0.5	-2.0 ***	-3.1 **	-0.7
PERIOD PERCENT CHANGE[7]									
1980-1996	10.4	4.9	16.9	12.3	7.0	18.4	3.2	-4.7	13.2
1980-1990	10.4	6.9	14.6	10.7	6.9	15.4	13.4	12.8	14.3
1990-1996	-0.2	-1.6	1.3	1.1	0.1	2.1	-9.1	-14.5	-2.9

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates Expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

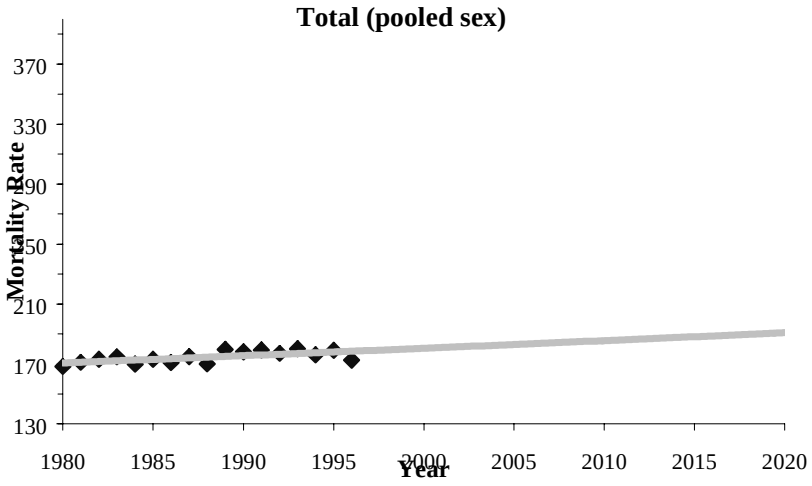
ALL CANCER AGE-ADJUSTED MORTALITY RATES: POOLED RACE

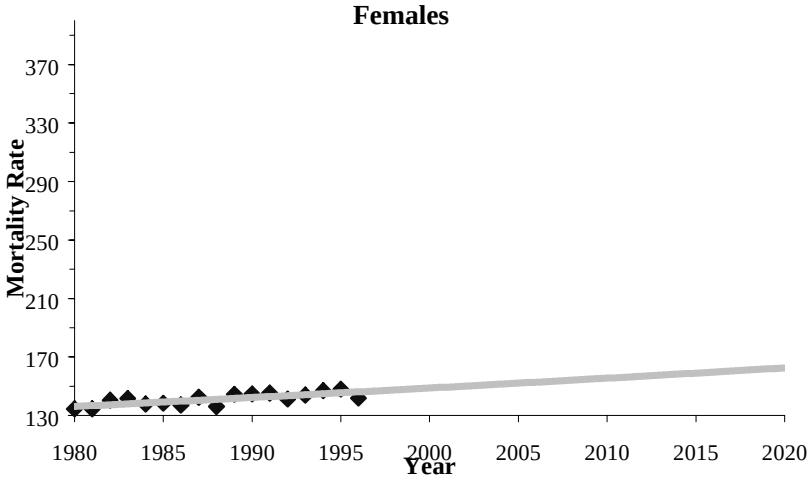
OBSERVED

YEAR	Total	Male	Female
1980	168.3	218.7	134.4
1981	171.1	224.5	134.5
1982	173.1	221.9	140.5
1983	174.7	224.3	141.7
1984	170.0	218.2	137.8
1985	173.2	224.8	138.4
1986	171.0	221.9	137.1
1987	174.9	224.1	142.5
1988	170.1	221.4	136.2
1989	179.6	232.2	144.5
1990	178.1	227.3	144.7
1991	179.2	229.1	145.3
1992	177.0	230.4	141.2
1993	180.1	232.8	143.9
1994	176.0	218.8	146.9
1995	179.0	224.2	147.9
1996	172.5	217.1	141.9

PREDICTED

YEAR	Total	Male	Female
1996	178.5	225.9	146.2
1997	179.0	226.1	146.8
1998	179.5	226.3	147.5
1999	180.0	226.5	148.1
2000	180.5	226.8	148.8
2001	181.0	227.0	149.5
2002	181.5	227.2	150.1
2003	182.0	227.4	150.8
2004	182.5	227.6	151.5
2005	183.0	227.9	152.1
2006	183.5	228.1	152.8
2007	184.0	228.3	153.5
2008	184.5	228.5	154.2
2009	185.1	228.7	154.8
2010	185.6	229.0	155.5
2011	186.1	229.2	156.2
2012	186.6	229.4	156.9
2013	187.1	229.6	157.6
2014	187.7	229.8	158.3
2015	188.2	230.1	159.0
2016	188.7	230.3	159.7
2017	189.2	230.5	160.4
2018	189.8	230.7	161.2
2019	190.3	230.9	161.9
2020	190.8	231.2	162.6





Age standardized to the 1970 US population and expressed per 100,000 individuals.

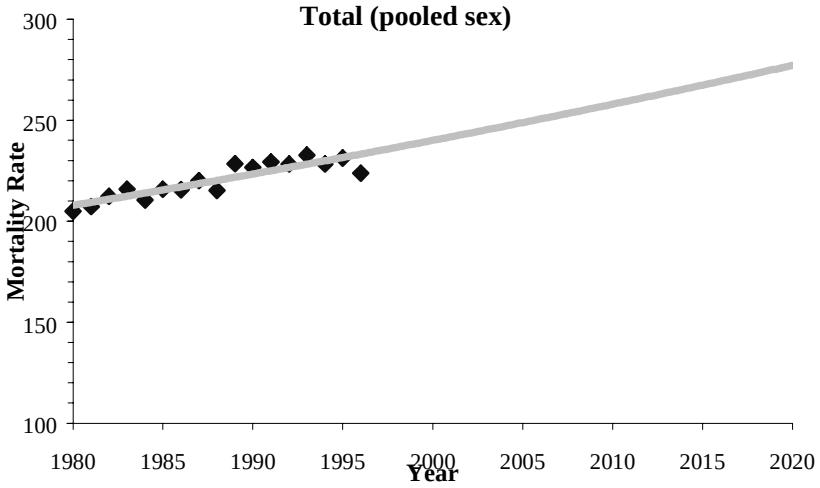
ALL CANCER CRUDE MORTALITY RATES: POOLED RACE

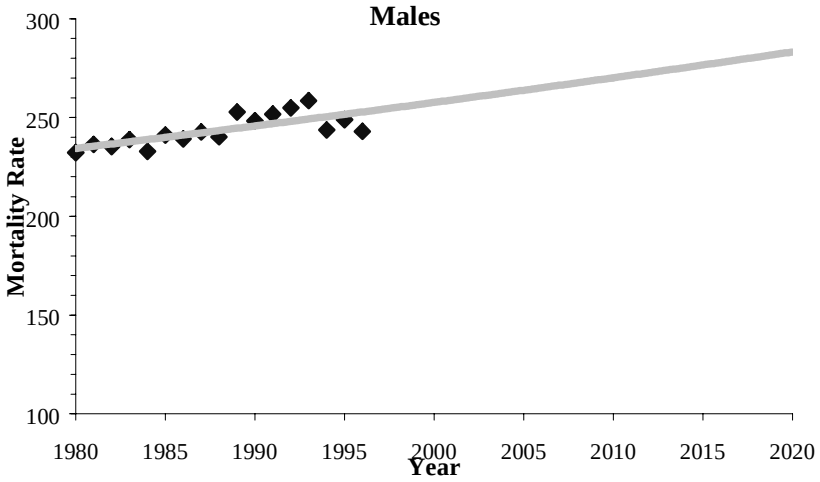
OBSERVED

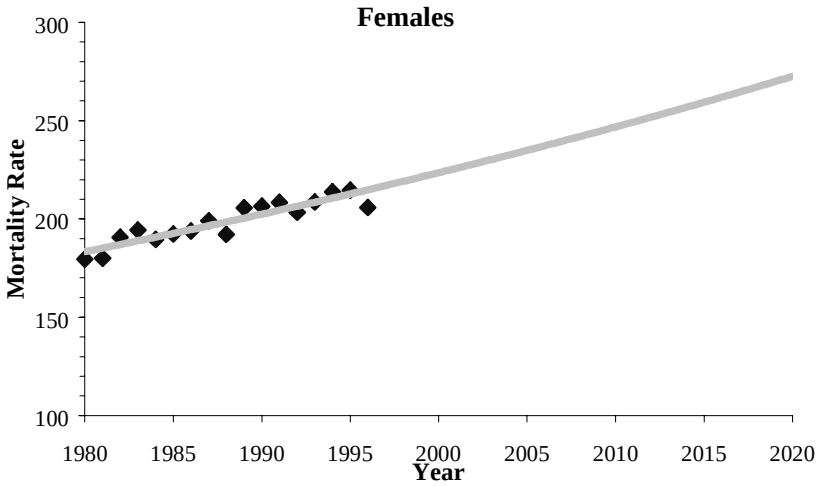
YEAR	Total	Male	Female
1980	204.9	232.3	179.6
1981	207.2	236.4	180.1
1982	212.2	235.3	190.7
1983	215.8	238.9	194.3
1984	210.4	232.9	189.6
1985	215.8	241.1	192.3
1986	215.6	239.1	193.8
1987	220.0	242.6	199.1
1988	215.3	240.2	192.2
1989	228.4	252.7	205.7
1990	226.6	248.3	206.5
1991	229.3	251.7	208.5
1992	228.3	254.9	203.4
1993	232.7	258.6	208.6
1994	228.3	243.7	213.9
1995	231.2	248.9	214.6
1996	223.8	242.9	205.8

PREDICTED

YEAR	Total	Male	Female
1996	233.2	252.8	214.8
1997	234.9	254.0	217.0
1998	236.6	255.2	219.1
1999	238.3	256.4	221.3
2000	240.0	257.7	223.5
2001	241.8	258.9	225.8
2002	243.5	260.1	228.0
2003	245.3	261.3	230.3
2004	247.0	262.6	232.6
2005	248.8	263.8	234.9
2006	250.6	265.1	237.2
2007	252.4	266.3	239.6
2008	254.2	267.6	242.0
2009	256.1	268.9	244.4
2010	257.9	270.2	246.8
2011	259.8	271.4	249.3
2012	261.7	272.7	251.8
2013	263.5	274.0	254.3
2014	265.4	275.3	256.8
2015	267.4	276.6	259.4
2016	269.3	277.9	261.9
2017	271.2	279.3	264.6
2018	273.2	280.6	267.2
2019	275.2	281.9	269.8
2020	277.2	283.2	272.5







Rates Expressed per 100,000

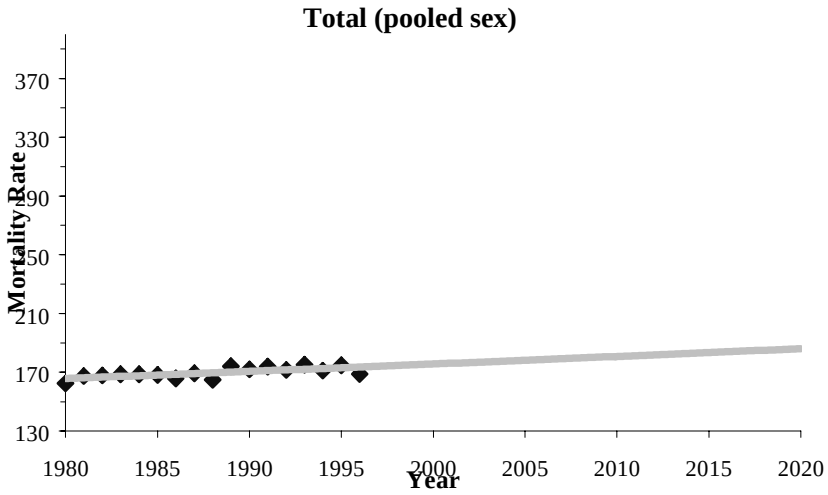
ALL CANCER AGE-ADJUSTED MORTALITY RATES: WHITES

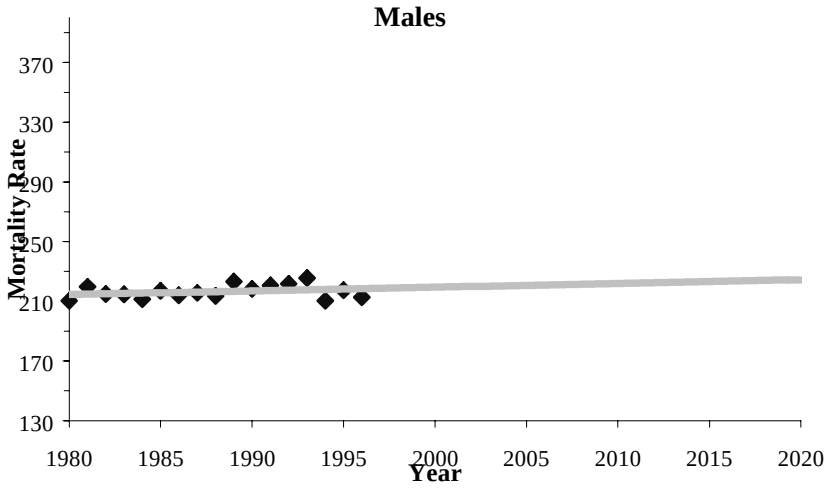
OBSERVED

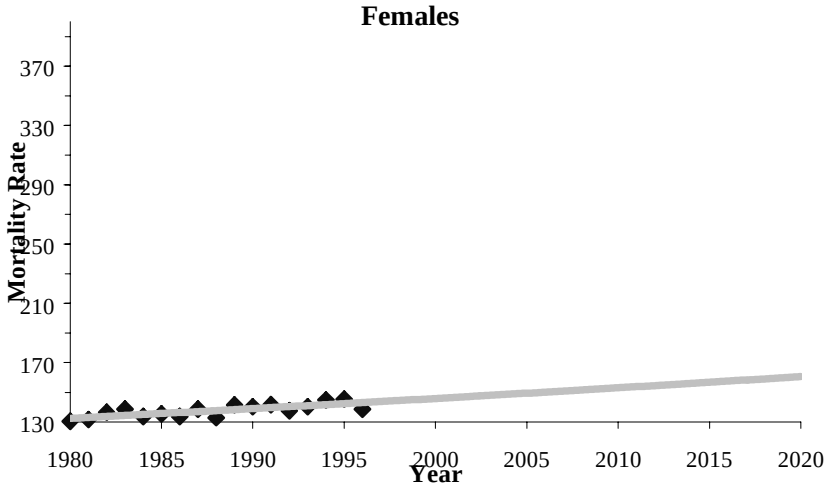
YEAR	Total	Male	Female
1980	162.4	210.2	130.4
1981	167.3	219.7	131.7
1982	167.8	214.7	136.6
1983	168.7	214.6	138.7
1984	168.7	211.2	133.7
1985	168.1	217.1	135.3
1986	165.7	214.0	133.7
1987	169.2	215.6	138.7
1988	164.8	213.5	132.8
1989	174.1	223.1	141.5
1990	171.9	218.3	140.2
1991	173.8	220.6	141.8
1992	171.5	221.8	137.7
1993	175.0	225.5	140.2
1994	171.0	210.2	144.8
1995	174.7	217.4	145.4
1996	168.9	212.8	138.7

PREDICTED

YEAR	Total	Male	Female
1996	173.6	218.4	143.1
1997	174.1	218.7	143.8
1998	174.6	218.9	144.5
1999	175.1	219.2	145.2
2000	175.6	219.4	145.9
2001	176.1	219.7	146.6
2002	176.6	219.9	147.3
2003	177.1	220.2	148.0
2004	177.6	220.4	148.7
2005	178.1	220.7	149.4
2006	178.7	220.9	150.2
2007	179.2	221.2	150.9
2008	179.7	221.4	151.6
2009	180.2	221.7	152.3
2010	180.7	221.9	153.1
2011	181.3	222.2	153.8
2012	181.8	222.4	154.6
2013	182.3	222.7	155.3
2014	182.8	222.9	156.0
2015	183.4	223.2	156.8
2016	183.9	223.4	157.6
2017	184.4	223.7	158.3
2018	185.0	223.9	159.1
2019	185.5	224.2	159.8
2020	186.1	224.5	160.6







Age standardized to the 1970 US population and expressed per 100,000 individuals.

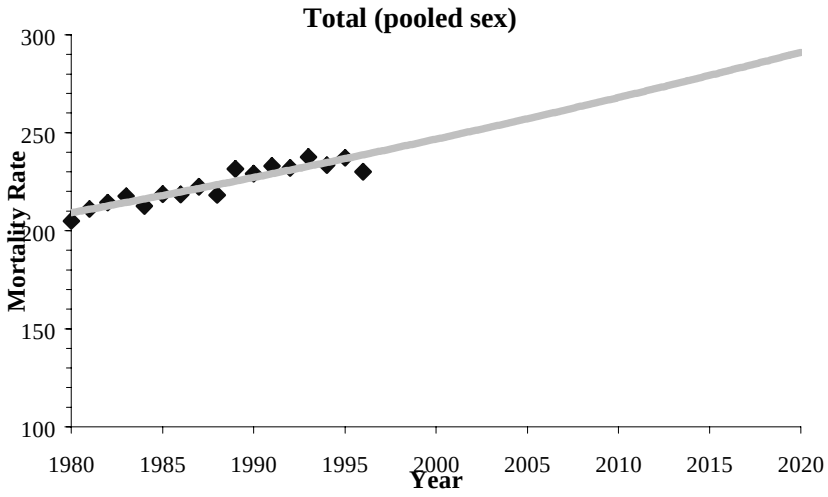
ALL CANCER CRUDE MORTALITY RATES: WHITES

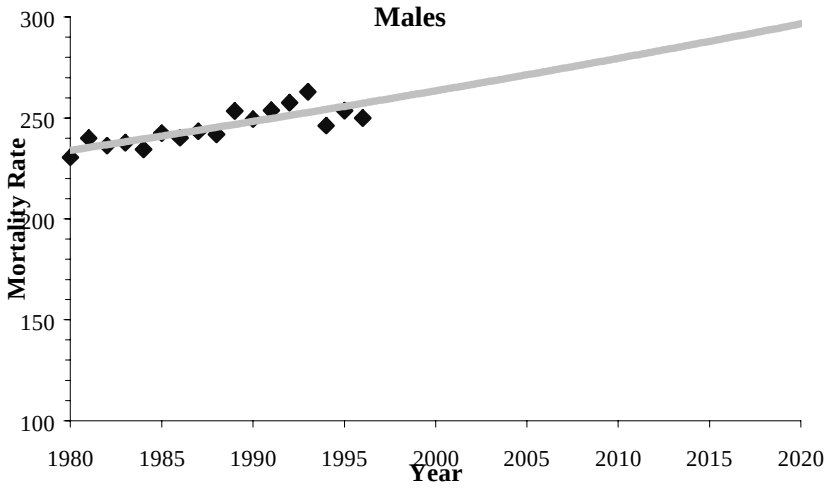
OBSERVED

YEAR	Total	Male	Female
1980	205.0	230.5	181.2
1981	211.0	240.0	183.9
1982	214.3	236.2	193.8
1983	217.5	237.7	198.7
1984	212.6	234.4	192.2
1985	218.7	242.4	196.7
1986	218.5	240.2	198.2
1987	222.4	243.4	202.8
1988	218.2	241.9	196.1
1989	231.6	253.5	211.2
1990	229.1	249.4	210.1
1991	233.0	253.8	213.5
1992	232.1	257.5	208.2
1993	237.7	263.0	213.9
1994	233.4	246.2	221.3
1995	237.1	253.6	221.4
1996	230.0	250.0	211.0

PREDICTED

YEAR	Total	Male	Female
1996	238.7	257.3	221.2
1997	240.7	258.8	223.6
1998	242.7	260.4	226.0
1999	244.7	261.9	228.4
2000	246.7	263.5	230.9
2001	248.8	265.0	233.4
2002	250.8	266.6	236.0
2003	252.9	268.2	238.5
2004	255.0	269.8	241.1
2005	257.1	271.4	243.7
2006	259.3	273.0	246.4
2007	261.4	274.6	249.0
2008	263.6	276.3	251.7
2009	265.8	277.9	254.5
2010	268.0	279.6	257.2
2011	270.2	281.2	260.0
2012	272.4	282.9	262.9
2013	274.7	284.6	265.7
2014	277.0	286.3	268.6
2015	279.3	288.0	271.5
2016	281.6	289.7	274.5
2017	283.9	291.4	277.4
2018	286.3	293.1	280.4
2019	288.6	294.9	283.5
2020	291.0	296.6	286.6





Rates Expressed per 100,000

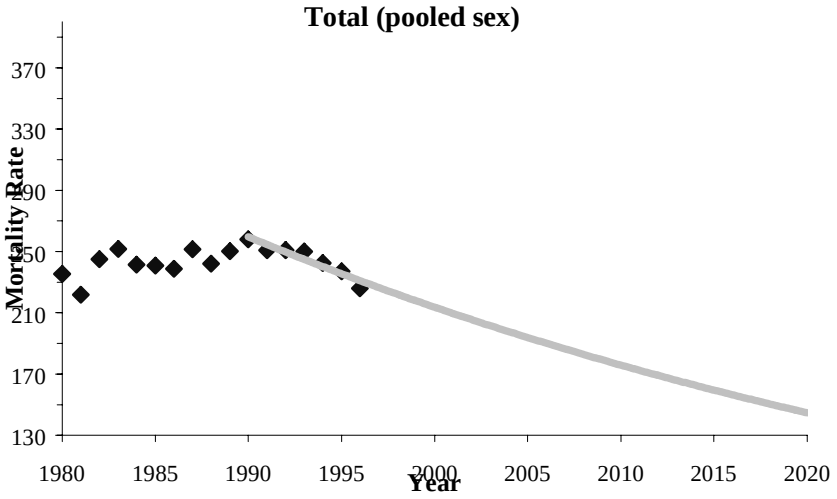
ALL CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

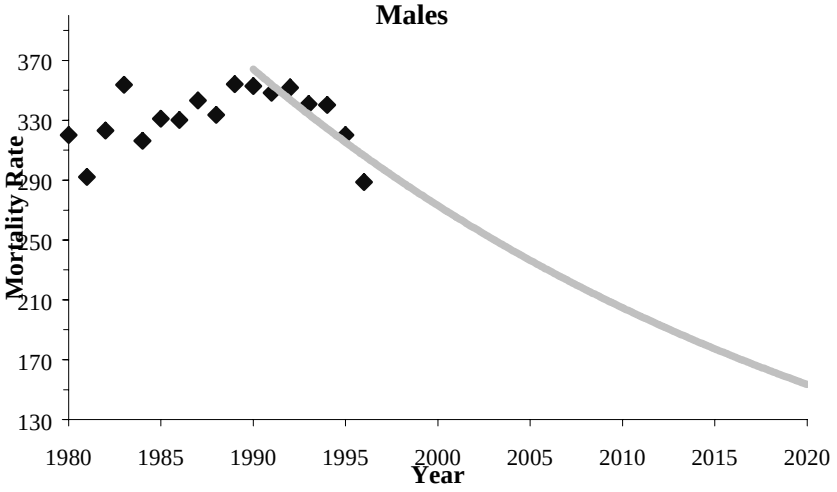
OBSERVED

YEAR	Total	Male	Female
1980	235.5	320.1	175.7
1981	221.8	292.2	171.5
1982	244.8	323.0	190.8
1983	251.8	353.7	181.0
1984	241.5	316.2	190.6
1985	240.8	331.1	179.6
1986	238.6	330.3	178.9
1987	251.5	343.2	192.5
1988	242.1	333.5	181.4
1989	250.2	354.2	182.6
1990	258.0	352.9	197.2
1991	251.0	348.4	189.0
1992	250.9	351.9	186.5
1993	250.0	340.7	192.3
1994	242.4	340.2	177.5
1995	237.1	320.2	182.5
1996	226.0	288.6	186.5

PREDICTED

YEAR	Total	Male	Female
1996	230.9	306.3	188.0
1997	226.5	297.6	188.4
1998	222.1	289.2	188.9
1999	217.8	281.0	189.3
2000	213.6	273.0	189.8
2001	209.5	265.3	190.3
2002	205.5	257.7	190.7
2003	201.5	250.4	191.2
2004	197.6	243.3	191.6
2005	193.8	236.4	192.1
2006	190.1	229.7	192.6
2007	186.4	223.2	193.0
2008	182.8	216.9	193.5
2009	179.3	210.7	194.0
2010	175.8	204.7	194.5
2011	172.4	198.9	194.9
2012	169.1	193.3	195.4
2013	165.8	187.8	195.9
2014	162.6	182.5	196.4
2015	159.5	177.3	196.8
2016	156.4	172.2	197.3
2017	153.4	167.4	197.8
2018	150.4	162.6	198.3
2019	147.5	158.0	198.8
2020	144.7	153.5	199.2





Age standardized to the 1970 US population and expressed per 100,000 individuals.

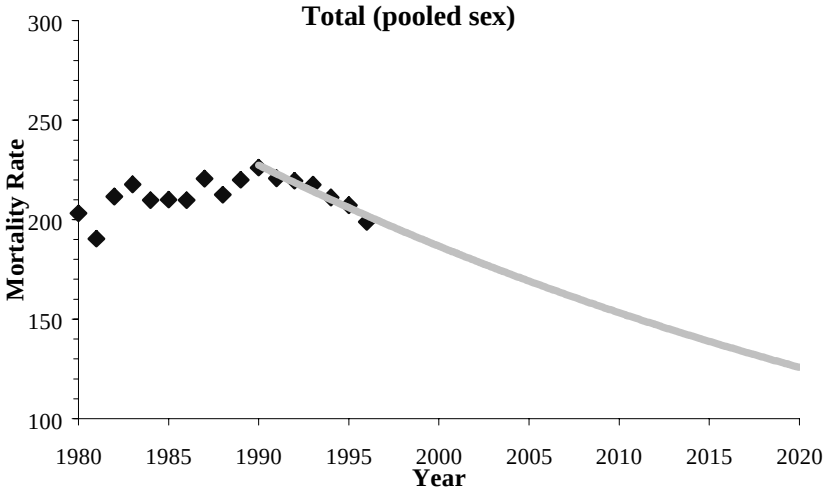
ALL CANCER CRUDE MORTALITY RATES: AFRICAN AMERICANS

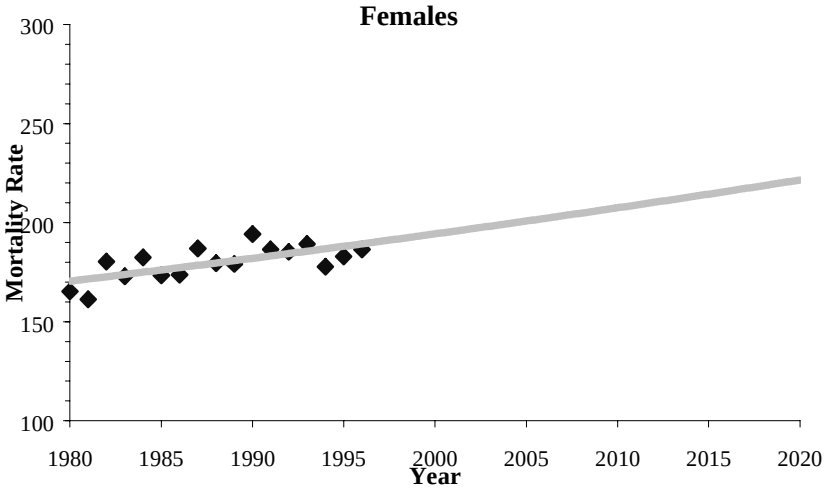
OBSERVED

YEAR	Total	Male	Female
1980	203.2	246.3	165.2
1981	190.4	223.6	161.2
1982	211.6	247.2	180.3
1983	217.7	268.8	172.9
1984	209.7	240.8	182.5
1985	210.0	251.8	173.4
1986	209.7	250.9	173.7
1987	220.6	259.3	186.9
1988	212.5	250.4	179.5
1989	220.0	267.0	179.1
1990	226.2	263.2	194.1
1991	220.8	260.4	186.4
1992	219.6	259.0	185.3
1993	217.6	250.4	189.2
1994	211.1	249.2	177.7
1995	207.3	235.0	183.0
1996	198.8	212.9	186.4

PREDICTED

YEAR	Total	Male	Female
1996	202.0	224.4	189.3
1997	198.0	217.4	190.5
1998	194.2	210.7	191.8
1999	190.4	204.2	193.0
2000	186.6	197.9	194.3
2001	183.0	191.8	195.6
2002	179.4	185.8	196.9
2003	175.9	180.1	198.2
2004	172.5	174.5	199.5
2005	169.1	169.1	200.8
2006	165.8	163.9	202.1
2007	162.5	158.8	203.4
2008	159.4	153.9	204.8
2009	156.2	149.1	206.1
2010	153.2	144.5	207.5
2011	150.2	140.0	208.8
2012	147.3	135.7	210.2
2013	144.4	131.5	211.6
2014	141.6	127.4	213.0
2015	138.8	123.5	214.4
2016	136.1	119.7	215.8
2017	133.4	116.0	217.2
2018	130.8	112.4	218.6
2019	128.2	108.9	220.1
2020	125.7	105.5	221.5





Rates Expressed per 100,000

Lung Cancer Mortality

LUNG CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	52.4	82.3	30.5	51.2	80.0	30.0	67.4	111.3	37.2
1980-1990	49.2	81.8	27.3	49.0	79.4	26.8	65.1	111.9	33.1
1990-1996	56.2	83.7	35.9	55.0	81.5	35.3	72.9	115.2	44.3
PROJECTED RATES[3]									
2000	62.1 [4]	77.8 [5]	46.5 [4]	61.0 [4]	83.5 [4]	45.8 [4]	60.5 [5]	86.7 [5]	56.2 [4]
2010	71.9 [4]	70.0 [5]	67.0 [4]	70.8 [4]	86.3 [4]	66.3 [4]	46.3 [5]	57.9 [5]	80.7 [4]
2020	83.1 [4]	63.0 [5]	96.6 [4]	82.1 [4]	89.2 [4]	95.9 [4]	35.5 [5]	38.6 [5]	116.0 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	1.5 ***	0.3 *	3.7 ***	1.5 ***	0.3 *	3.8 ***	1.4 **	0.6	3.7 ***
1980-1990	1.9 ***	0.8 **	4.4 ***	1.8 ***	0.7 **	4.4 ***	2.6 ***	2.2 **	4.6 ***
1990-1996	0.2	-1.0	2.2 *	0.5	-0.7	2.5 **	-2.6 *	-4.0 **	0.0
PERIOD PERCENT CHANGE[8]									
1980-1996	21.7	4.6	66.5	22.9	5.0	69.0	15.4	3.3	55.7
1980-1990	19.3	9.0	47.9	18.4	7.1	49.2	28.9	27.5	42.5
1990-1996	1.6	-3.6	10.6	3.2	-1.6	11.5	-10.7	-18.3	5.9

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: $EAPC = (e^{\beta_1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: $PPC = [(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

LUNG CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	63.6	88.7	40.2	64.9	90.2	41.2	56.9	82.6	34.5
1980-1990	59.0	87.3	35.2	61.4	88.4	36.1	55.0	83.2	30.4
1990-1996	69.1	91.4	48.2	70.9	93.4	49.6	61.4	84.1	41.6
PROJECTED RATES[2]									
2000	78.0 [3]	86.5 [4]	64.5 [3]	80.7 [3]	98.1 [3]	66.8 [3]	50.1 [4]	61.3 [4]	53.7 [3]
2010	93.0 [3]	79.9 [4]	97.7 [3]	97.1 [3]	105.1 [3]	102.0 [3]	37.6 [4]	39.1 [4]	79.4 [3]
2020	110.8 [3]	73.8 [4]	148.0 [3]	116.8 [3]	112.7 [3]	155.6 [3]	28.2 [4]	24.9 [4]	117.4 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	1.8 ***	0.6 **	4.2 ***	1.9 ***	0.7 ***	4.3 ***	1.4 **	0.2	4.0 ***
1980-1990	2.2 ***	1.1 ***	5.0 ***	2.2 ***	1.1 ***	5.0 ***	2.7 ***	1.9 *	4.9 ***
1990-1996	0.4	-0.8	2.5 **	0.8 *	-0.4	2.8 **	-2.8 *	-4.4 ***	0.1
PERIOD PERCENT CHANGE[7]									
1980-1996	27.1	8.4	77.7	29.7	10.5	81.0	15.0	-2.3	63.3
1980-1990	23.2	11.3	55.0	23.1	10.6	56.9	30.2	24.2	48.6
1990-1996	2.6	-2.4	12.1	4.6	-0.2	13.2	-11.9	-20.3	6.1

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

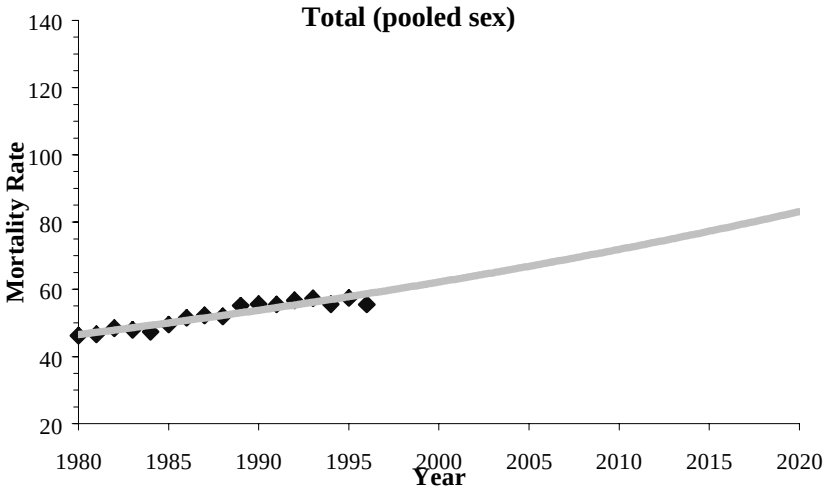
LUNG CANCER AGE-ADJUSTED MORTALITY RATES: POOLED RACE

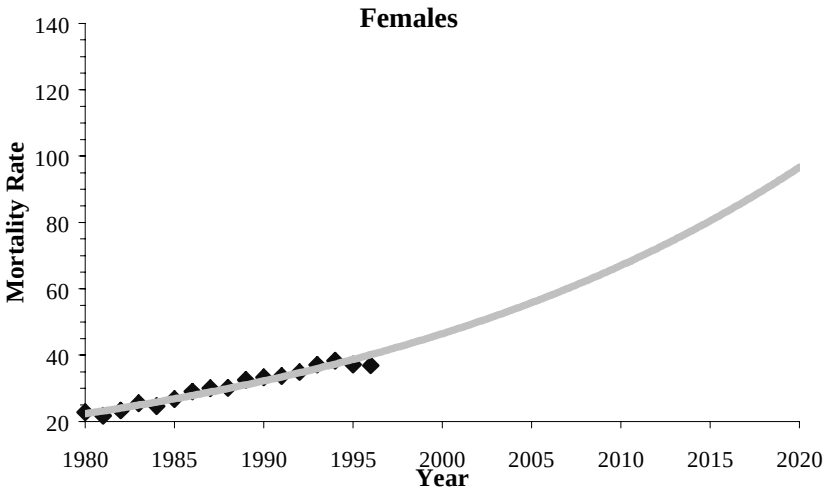
OBSERVED

YEAR	Total	Male	Female
1980	46.2	77.9	22.8
1981	46.6	80.0	21.7
1982	48.4	82.6	23.3
1983	47.9	78.9	25.5
1984	47.3	78.4	24.6
1985	49.5	81.0	26.7
1986	51.5	83.3	29.0
1987	52.2	82.7	30.0
1988	51.9	82.1	30.1
1989	55.1	86.2	32.5
1990	55.6	85.9	33.3
1991	55.5	85.3	33.7
1992	56.6	86.2	34.9
1993	57.3	84.8	37.1
1994	55.6	79.0	38.3
1995	57.4	84.3	37.2
1996	55.5	80.8	36.9

PREDICTED

YEAR	Total	Male	Female
1996	58.6	81.1	40.1
1997	59.5	80.3	41.6
1998	60.4	79.4	43.2
1999	61.3	78.6	44.8
2000	62.1	77.8	46.5
2001	63.1	77.0	48.2
2002	64.0	76.2	50.0
2003	64.9	75.4	51.9
2004	65.9	74.6	53.8
2005	66.8	73.8	55.8
2006	67.8	73.0	57.9
2007	68.8	72.3	60.0
2008	69.8	71.5	62.3
2009	70.8	70.8	64.6
2010	71.9	70.0	67.0
2011	72.9	69.3	69.5
2012	74.0	68.6	72.1
2013	75.1	67.8	74.8
2014	76.2	67.1	77.6
2015	77.3	66.4	80.5
2016	78.4	65.7	83.5
2017	79.5	65.0	86.6
2018	80.7	64.4	89.8
2019	81.9	63.7	93.2
2020	83.1	63.0	96.6





Age standardized to the 1970 US population and expressed per 100,000 individuals.

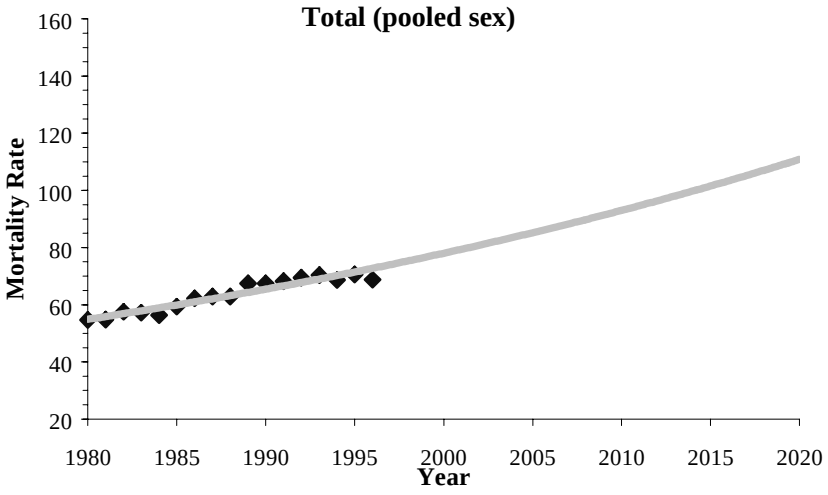
LUNG CANCER CRUDE MORTALITY RATES: POOLED RACE

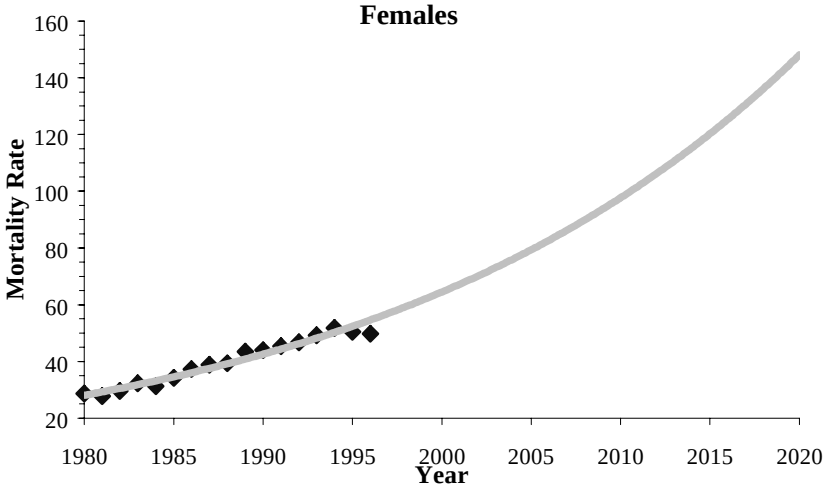
OBSERVED

YEAR	Total	Male	Female
1980	54.7	82.9	28.7
1981	54.8	84.0	27.7
1982	57.5	87.5	29.6
1983	57.2	84.0	32.3
1984	56.4	83.4	31.3
1985	59.3	86.3	34.2
1986	62.2	89.2	37.3
1987	62.9	88.8	38.8
1988	62.9	88.2	39.3
1989	67.4	93.1	43.4
1990	67.5	92.7	44.0
1991	68.2	92.7	45.4
1992	69.5	94.0	46.7
1993	70.3	92.9	49.2
1994	68.6	86.7	51.8
1995	70.5	92.0	50.4
1996	68.7	88.9	49.8

PREDICTED

YEAR	Total	Male	Female
1996	72.7	89.2	54.6
1997	74.0	88.5	56.9
1998	75.3	87.8	59.3
1999	76.7	87.1	61.9
2000	78.0	86.5	64.5
2001	79.4	85.8	67.2
2002	80.8	85.1	70.1
2003	82.2	84.4	73.0
2004	83.7	83.8	76.1
2005	85.2	83.1	79.4
2006	86.7	82.4	82.7
2007	88.2	81.8	86.2
2008	89.8	81.2	89.9
2009	91.4	80.5	93.7
2010	93.0	79.9	97.7
2011	94.6	79.2	101.8
2012	96.3	78.6	106.2
2013	98.0	78.0	110.7
2014	99.8	77.4	115.4
2015	101.5	76.8	120.3
2016	103.3	76.2	125.4
2017	105.2	75.6	130.7
2018	107.0	75.0	136.2
2019	108.9	74.4	142.0
2020	110.8	73.8	148.0





Rates expressed per 100,000

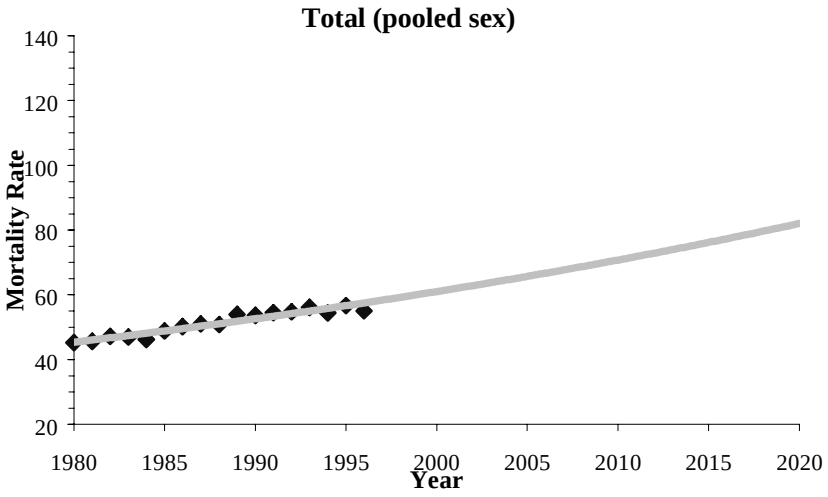
LUNG CANCER AGE-ADJUSTED MORTALITY RATES: WHITES

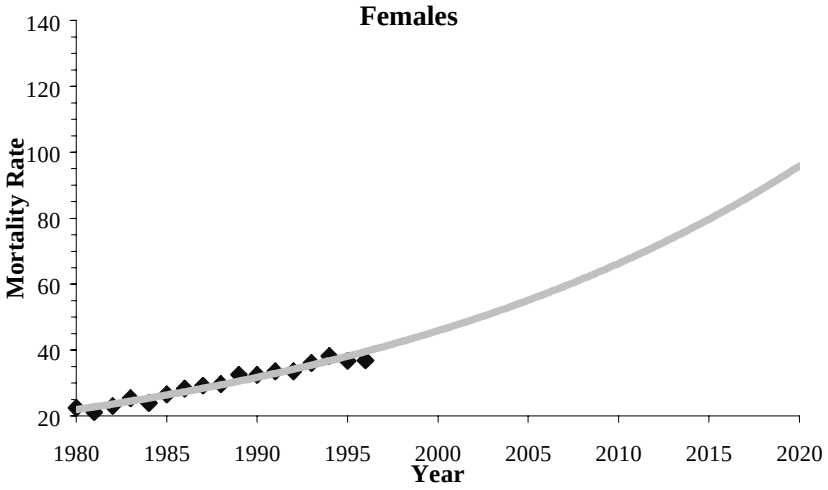
OBSERVED

YEAR	Total	Male	Female
1980	45.2	76.2	22.4
1981	45.6	78.4	21.1
1982	47.1	80.2	23.0
1983	46.9	76.8	25.4
1984	46.2	77.2	23.9
1985	48.8	79.5	26.5
1986	50.1	81.0	28.2
1987	51.0	81.0	29.2
1988	50.8	79.9	29.6
1989	53.9	83.3	32.5
1990	53.6	82.3	32.4
1991	54.5	82.8	33.5
1992	54.8	83.6	33.5
1993	56.1	83.2	36.0
1994	54.4	76.5	38.1
1995	56.6	82.9	36.7
1996	55.0	79.5	36.8

PREDICTED

YEAR	Total	Male	Female
1996	57.5	82.4	39.5
1997	58.4	82.6	41.0
1998	59.2	82.9	42.6
1999	60.1	83.2	44.2
2000	61.0	83.5	45.8
2001	61.9	83.7	47.6
2002	62.8	84.0	49.3
2003	63.8	84.3	51.2
2004	64.7	84.6	53.1
2005	65.7	84.8	55.1
2006	66.7	85.1	57.2
2007	67.7	85.4	59.3
2008	68.7	85.7	61.6
2009	69.7	86.0	63.9
2010	70.8	86.3	66.3
2011	71.8	86.5	68.8
2012	72.9	86.8	71.4
2013	74.0	87.1	74.0
2014	75.1	87.4	76.8
2015	76.2	87.7	79.7
2016	77.3	88.0	82.7
2017	78.5	88.3	85.8
2018	79.7	88.6	89.1
2019	80.9	88.9	92.4
2020	82.1	89.2	95.9





Age standardized to the 1970 US population and expressed per 100,000 individuals.

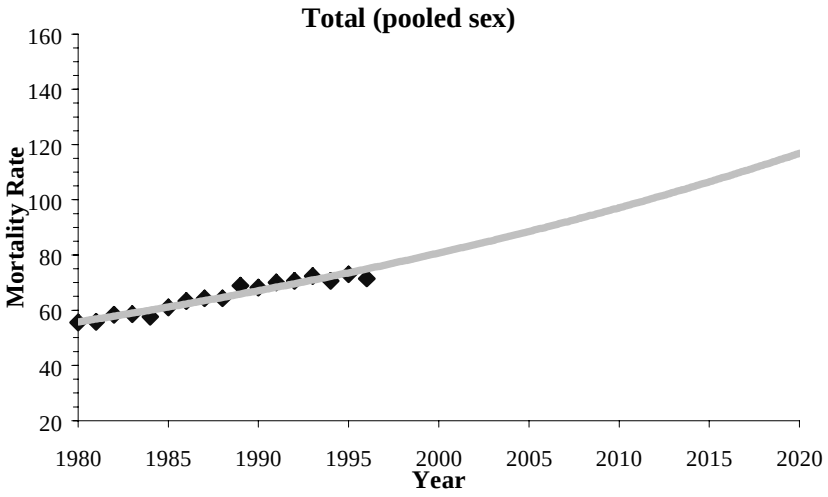
LUNG CANCER CRUDE MORTALITY RATES: WHITES

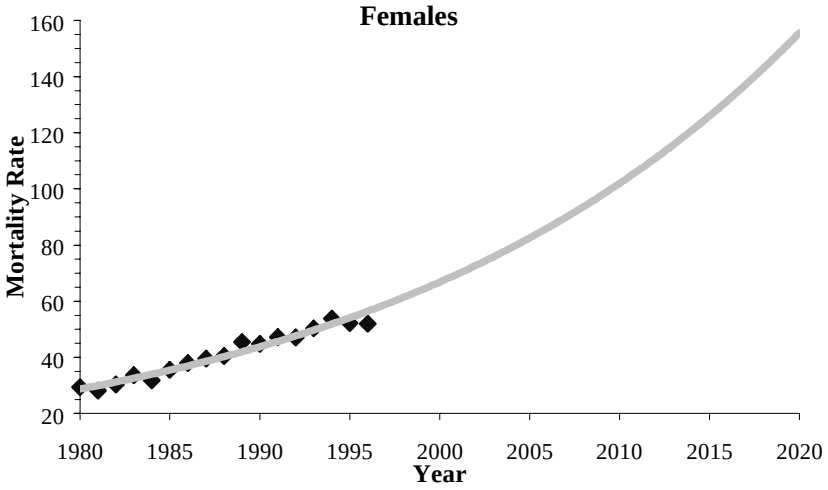
OBSERVED

YEAR	Total	Male	Female
1980	55.5	83.7	29.3
1981	55.8	85.4	28.2
1982	58.3	88.2	30.3
1983	58.5	85.1	33.6
1984	57.6	85.5	31.7
1985	61.0	88.2	35.5
1986	63.3	90.4	37.9
1987	64.3	90.7	39.5
1988	64.3	89.8	40.4
1989	68.9	94.0	45.4
1990	68.1	93.1	44.8
1991	70.0	94.2	47.2
1992	70.6	95.7	47.0
1993	72.3	95.8	50.3
1994	70.6	88.3	53.8
1995	73.0	95.0	52.2
1996	71.4	91.9	51.9

PREDICTED

YEAR	Total	Male	Female
1996	74.9	95.4	56.4
1997	76.3	96.0	58.9
1998	77.8	96.7	61.4
1999	79.2	97.4	64.1
2000	80.7	98.1	66.8
2001	82.2	98.7	69.7
2002	83.7	99.4	72.7
2003	85.3	100.1	75.9
2004	86.9	100.8	79.1
2005	88.5	101.5	82.5
2006	90.2	102.2	86.1
2007	91.8	102.9	89.8
2008	93.6	103.7	93.7
2009	95.3	104.4	97.8
2010	97.1	105.1	102.0
2011	98.9	105.8	106.4
2012	100.7	106.6	111.0
2013	102.6	107.3	115.8
2014	104.5	108.1	120.8
2015	106.5	108.8	126.0
2016	108.5	109.6	131.4
2017	110.5	110.4	137.1
2018	112.6	111.1	143.0
2019	114.7	111.9	149.2
2020	116.8	112.7	155.6





Rates expressed per 100,000

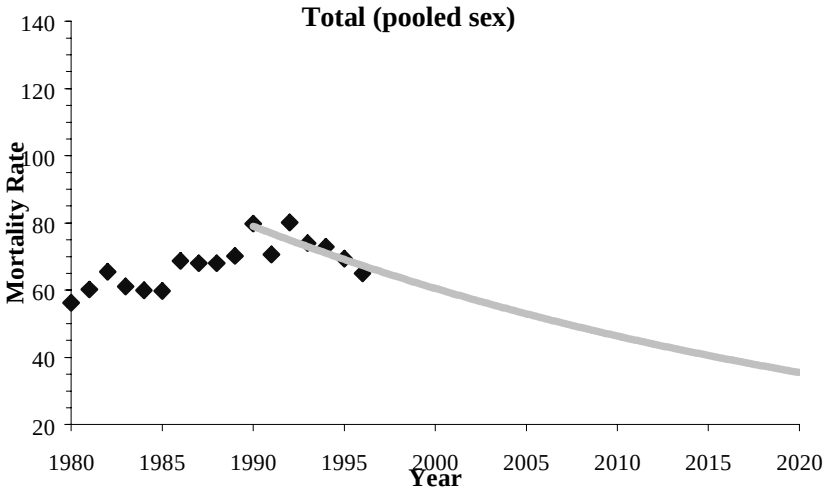
LUNG CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

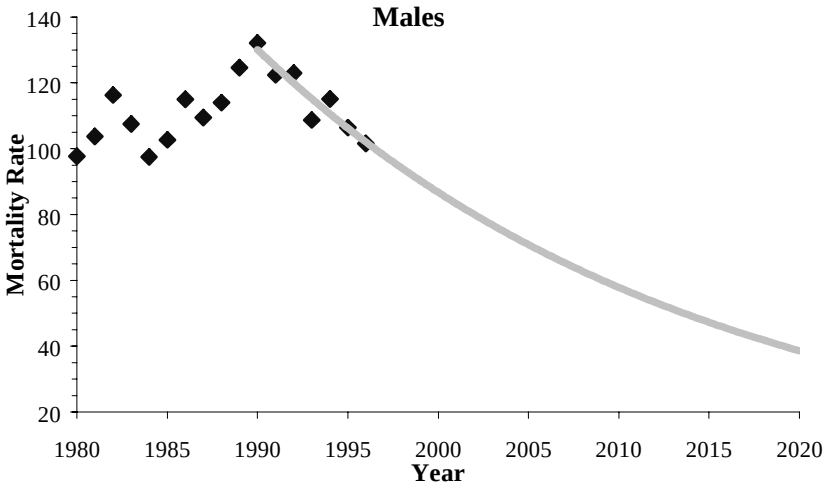
OBSERVED

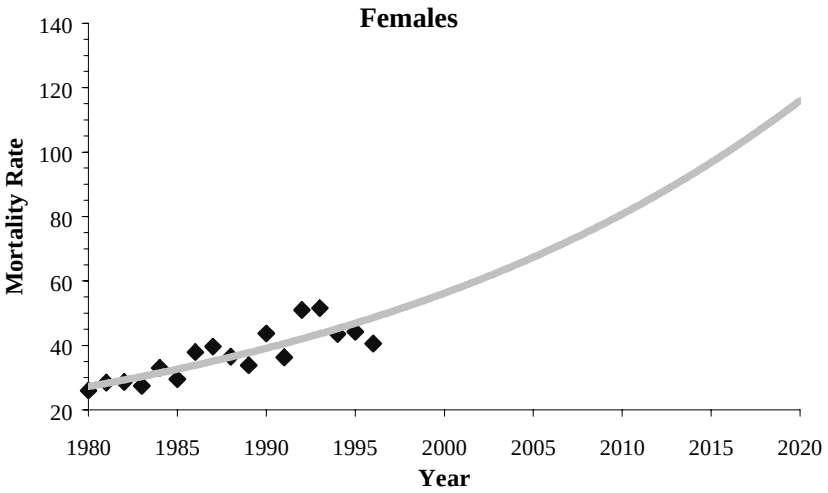
YEAR	Total	Male	Female
1980	56.2	97.7	26.0
1981	60.2	103.7	28.4
1982	65.4	116.3	28.6
1983	61.1	107.5	27.4
1984	59.9	97.5	33.0
1985	59.7	102.7	29.5
1986	68.7	115.0	37.9
1987	68.0	109.4	39.6
1988	68.0	114.0	36.5
1989	70.2	124.6	33.8
1990	79.8	132.1	43.7
1991	70.6	122.4	36.3
1992	80.1	123.0	50.9
1993	74.0	108.7	51.5
1994	72.9	115.1	43.5
1995	69.3	106.4	44.2
1996	65.0	101.6	40.5

PREDICTED

YEAR	Total	Male	Female
1996	67.3	102.0	48.6
1997	65.5	98.0	50.4
1998	63.8	94.1	52.2
1999	62.1	90.3	54.2
2000	60.5	86.7	56.2
2001	58.9	83.3	58.2
2002	57.4	80.0	60.4
2003	55.9	76.8	62.6
2004	54.4	73.8	64.9
2005	53.0	70.8	67.3
2006	51.6	68.0	69.8
2007	50.2	65.3	72.4
2008	48.9	62.7	75.1
2009	47.6	60.2	77.8
2010	46.3	57.9	80.7
2011	45.1	55.6	83.7
2012	43.9	53.4	86.8
2013	42.8	51.2	90.0
2014	41.7	49.2	93.3
2015	40.6	47.2	96.8
2016	39.5	45.4	100.3
2017	38.4	43.6	104.0
2018	37.4	41.8	107.9
2019	36.5	40.2	111.9
2020	35.5	38.6	116.0







Age standardized to the 1970 US population and expressed per 100,000 individuals.

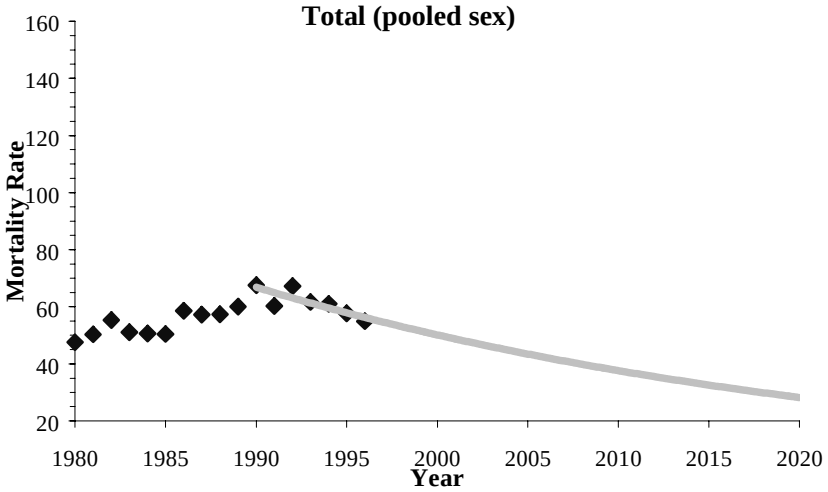
LUNG CANCER CRUDE MORTALITY RATES: AFRICAN AMERICANS

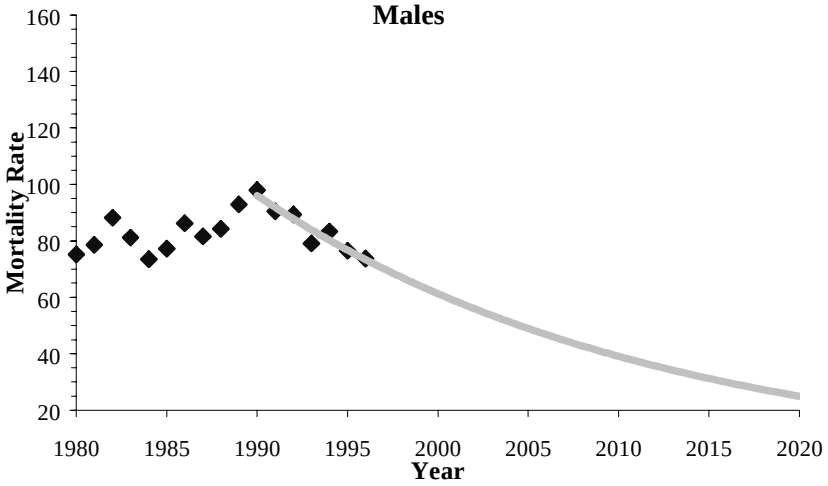
OBSERVED

YEAR	Total	Male	Female
1980	47.6	75.2	23.4
1981	50.3	78.5	25.4
1982	55.3	88.2	26.4
1983	51.1	81.1	24.8
1984	50.6	73.5	30.5
1985	50.4	77.2	27.0
1986	58.6	86.2	34.6
1987	57.3	81.6	36.1
1988	57.4	84.3	34.0
1989	60.0	92.9	31.5
1990	67.5	98.0	41.0
1991	60.3	90.4	34.1
1992	67.2	89.4	48.0
1993	61.7	79.1	46.6
1994	61.0	83.3	41.5
1995	57.7	76.5	41.3
1996	54.9	73.7	38.4

PREDICTED

YEAR	Total	Male	Female
1996	56.3	73.4	45.9
1997	54.7	70.1	47.8
1998	53.1	67.1	49.7
1999	51.6	64.1	51.6
2000	50.1	61.3	53.7
2001	48.7	58.6	55.8
2002	47.3	56.0	58.1
2003	46.0	53.5	60.4
2004	44.7	51.2	62.8
2005	43.4	48.9	65.3
2006	42.2	46.8	67.9
2007	41.0	44.7	70.6
2008	39.8	42.8	73.4
2009	38.7	40.9	76.3
2010	37.6	39.1	79.4
2011	36.6	37.4	82.6
2012	35.5	35.7	85.8
2013	34.5	34.2	89.3
2014	33.5	32.6	92.8
2015	32.6	31.2	96.5
2016	31.7	29.8	100.4
2017	30.8	28.5	104.4
2018	29.9	27.3	108.5
2019	29.0	26.1	112.9
2020	28.2	24.9	117.4





Rates expressed per 100,000

Colorectal Cancer Mortality

COLORECTAL CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	19.6	24.0	16.6	19.0	23.3	16.0	26.8	33.3	22.5
1980-1990	19.7	24.7	17.3	19.7	24.0	16.7	27.8	34.0	23.8
1990-1996	18.5	22.8	15.4	18.0	22.1	15.1	25.5	33.3	20.3
PROJECTED RATES[3]									
2000	16.8 [4]	20.9 [4]	13.9 [4]	16.4 [4]	20.3 [4]	13.6 [4]	23.2 [4]	30.2 [4]	18.1 [4]
2010	14.8 [4]	18.7 [4]	12.0 [4]	14.5 [4]	18.1 [4]	11.8 [4]	20.6 [4]	27.9 [4]	15.2 [4]
2020	13.1 [4]	16.6 [4]	10.4 [4]	12.8 [4]	16.1 [4]	10.3 [4]	18.3 [4]	25.7 [4]	12.7 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-1.3 ***	-1.1 ***	-1.5 ***	-1.2 ***	-1.2 ***	-1.4 ***	-1.2 *	-0.8	-1.7 *
1980-1990	-1.6 ***	-1.4 **	-1.9 **	-1.6 ***	-1.5 **	-1.7 **	-1.3	-0.5	-2.2 **
1990-1996	-0.9	-1.5	-0.6	-0.8	-0.9	-1.1	-0.9	-5.7 *	3.3
PERIOD PERCENT CHANGE[8]									
1980-1996	-15.8	-18.0	-15.5	-16.0	-17.5	-16.1	-11.0	-19.1	-6.0
1980-1990	-11.4	-12.4	-11.1	-11.7	-13.8	-9.5	-6.3	5.2	-16.9
1990-1996	-4.0	-6.2	-3.2	-3.6	-3.4	-5.5	-6.1	-26.0	14.2

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

COLORECTAL CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	26.2	26.3	26.0	26.7	26.7	26.7	23.8	24.9	22.8
1980-1990	26.1	26.7	26.6	27.1	27.1	27.2	24.6	25.7	23.7
1990-1996	25.4	25.6	25.2	26.0	26.1	26.0	22.9	24.5	21.5
PROJECTED RATES[2]									
2000	24.1 [3]	24.2 [3]	24.0 [3]	24.9 [3]	24.9 [3]	24.8 [3]	21.2 [3]	21.7 [3]	20.4 [3]
2010	22.5 [3]	22.5 [3]	22.4 [3]	23.4 [3]	23.4 [3]	23.3 [3]	19.3 [3]	19.3 [3]	18.5 [3]
2020	21.0 [3]	21.0 [3]	20.9 [3]	22.0 [3]	22.0 [3]	21.9 [3]	17.5 [3]	17.3 [3]	16.9 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	-0.7 ***	-0.7 **	-0.7 **	-0.6 **	-0.6 *	-0.6 *	-1.0 *	-1.1	-0.9
1980-1990	-0.8 *	-1.0 *	-0.6	-0.7 *	-0.9 *	-0.5	-0.9	-0.7	-1.0
1990-1996	-0.9	-1.2	-0.6	-0.9	-0.6	-1.1	-1.2	-6.2 *	3.5
PERIOD PERCENT CHANGE[7]									
1980-1996	-9.4	-13.3	-5.7	-8.7	-11.4	-6.2	-7.9	-22.6	6.4
1980-1990	-5.1	-9.0	-1.7	-4.7	-9.4	-0.2	-2.2	2.9	-7.3
1990-1996	-4.3	-5.0	-3.1	-3.8	-1.9	-5.3	-7.2	-27.7	16.2

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

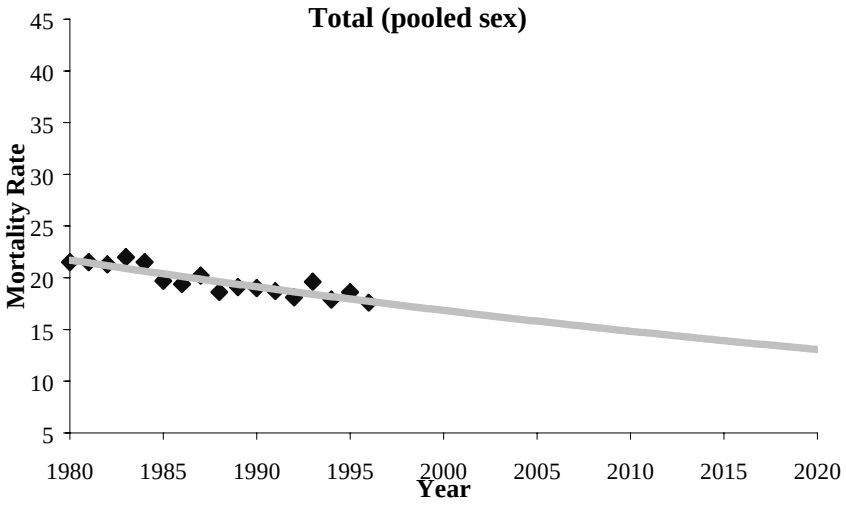
COLORECTAL CANCER AGE-ADJUSTED MORTALITY RATES: POOLED RACE

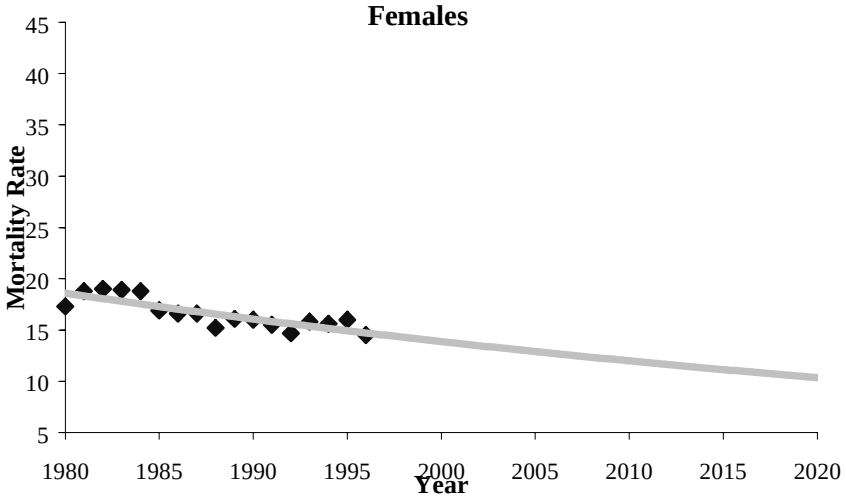
OBSERVED

YEAR	Total	Male	Female
1980	21.5	27.8	17.3
1981	21.5	25.4	18.8
1982	21.3	24.8	19.0
1983	22.0	26.6	18.9
1984	21.5	25.4	18.8
1985	19.7	23.8	16.9
1986	19.4	23.2	16.6
1987	20.2	25.1	16.6
1988	18.6	23.6	15.2
1989	19.1	23.5	16.1
1990	19.0	23.1	16.0
1991	18.7	23.4	15.5
1992	18.1	23.3	14.7
1993	19.6	25.1	15.8
1994	17.9	21.4	15.6
1995	18.6	22.0	16.0
1996	17.6	21.6	14.5

PREDICTED

YEAR	Total	Male	Female
1996	17.7	21.9	14.7
1997	17.5	21.7	14.5
1998	17.3	21.4	14.3
1999	17.1	21.2	14.1
2000	16.8	20.9	13.9
2001	16.6	20.7	13.7
2002	16.4	20.5	13.5
2003	16.2	20.2	13.3
2004	16.0	20.0	13.1
2005	15.8	19.8	12.9
2006	15.6	19.5	12.7
2007	15.4	19.3	12.5
2008	15.2	19.1	12.3
2009	15.0	18.9	12.2
2010	14.8	18.7	12.0
2011	14.6	18.5	11.8
2012	14.5	18.2	11.6
2013	14.3	18.0	11.5
2014	14.1	17.8	11.3
2015	13.9	17.6	11.1
2016	13.7	17.4	11.0
2017	13.6	17.2	10.8
2018	13.4	17.0	10.7
2019	13.2	16.8	10.5
2020	13.1	16.6	10.4





Age standardized to the 1970 US population and expressed per 100,000 individuals.

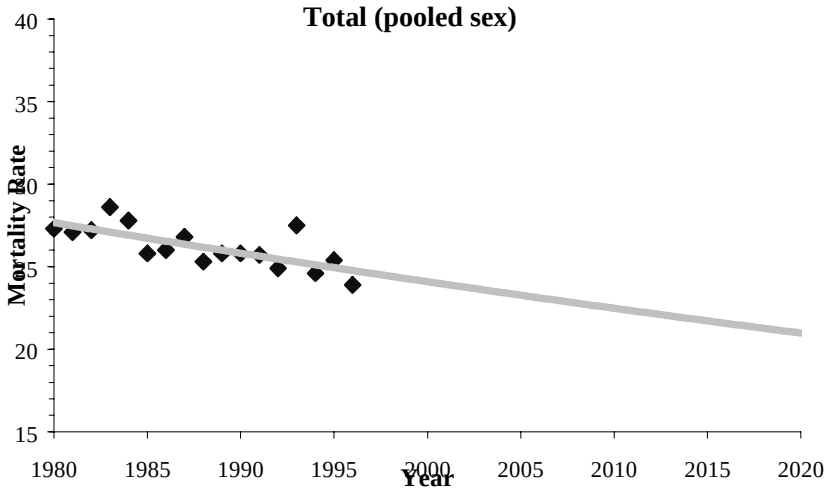
COLORECTAL CANCER CRUDE MORTALITY RATES: POOLED RACE

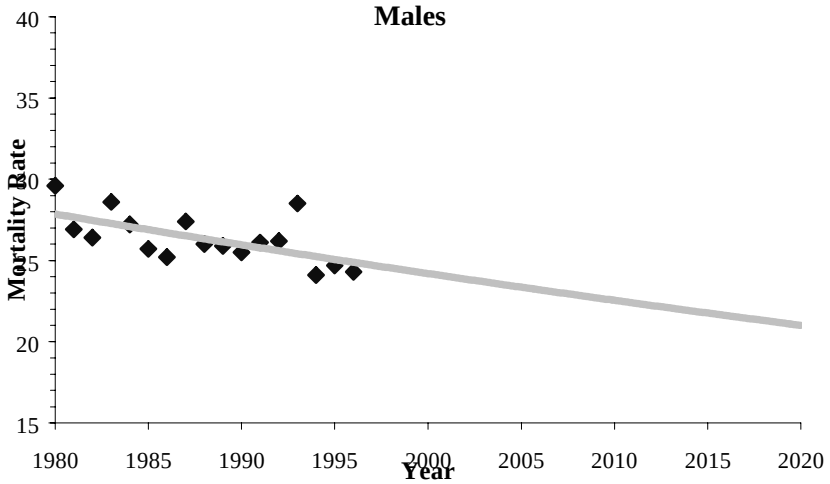
OBSERVED

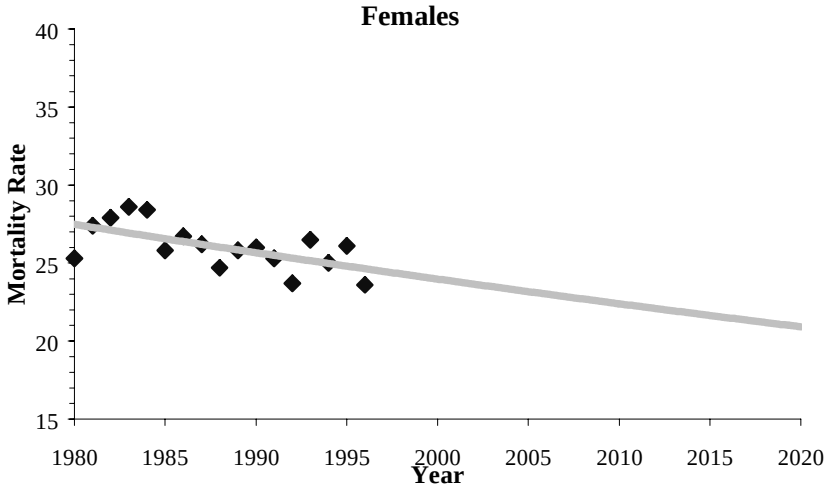
YEAR	Total	Male	Female
1980	27.3	29.6	25.3
1981	27.1	26.9	27.4
1982	27.2	26.4	27.9
1983	28.6	28.6	28.6
1984	27.8	27.2	28.4
1985	25.8	25.7	25.8
1986	26.0	25.2	26.7
1987	26.8	27.4	26.2
1988	25.3	26.0	24.7
1989	25.8	25.9	25.8
1990	25.8	25.5	26.0
1991	25.7	26.1	25.3
1992	24.9	26.2	23.7
1993	27.5	28.5	26.5
1994	24.6	24.1	25.0
1995	25.4	24.7	26.1
1996	23.9	24.3	23.6

PREDICTED

YEAR	Total	Male	Female
1996	24.8	24.9	24.6
1997	24.6	24.7	24.5
1998	24.4	24.5	24.3
1999	24.3	24.4	24.1
2000	24.1	24.2	24.0
2001	23.9	24.0	23.8
2002	23.8	23.9	23.6
2003	23.6	23.7	23.5
2004	23.4	23.5	23.3
2005	23.3	23.4	23.2
2006	23.1	23.2	23.0
2007	23.0	23.0	22.9
2008	22.8	22.9	22.7
2009	22.6	22.7	22.5
2010	22.5	22.5	22.4
2011	22.3	22.4	22.2
2012	22.2	22.2	22.1
2013	22.0	22.1	21.9
2014	21.9	21.9	21.8
2015	21.7	21.8	21.6
2016	21.6	21.6	21.5
2017	21.4	21.5	21.3
2018	21.3	21.3	21.2
2019	21.1	21.2	21.1
2020	21.0	21.0	20.9







Rates expressed per 100,000

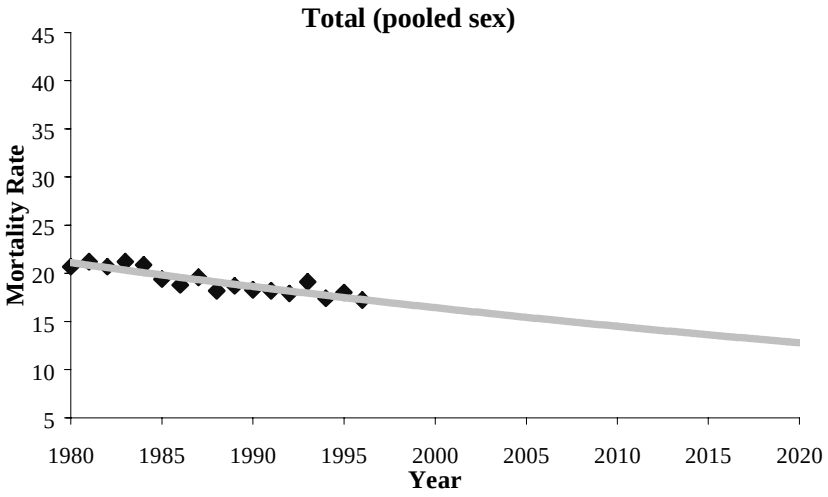
COLORECTAL CANCER AGE-ADJUSTED MORTALITY RATES: WHITES

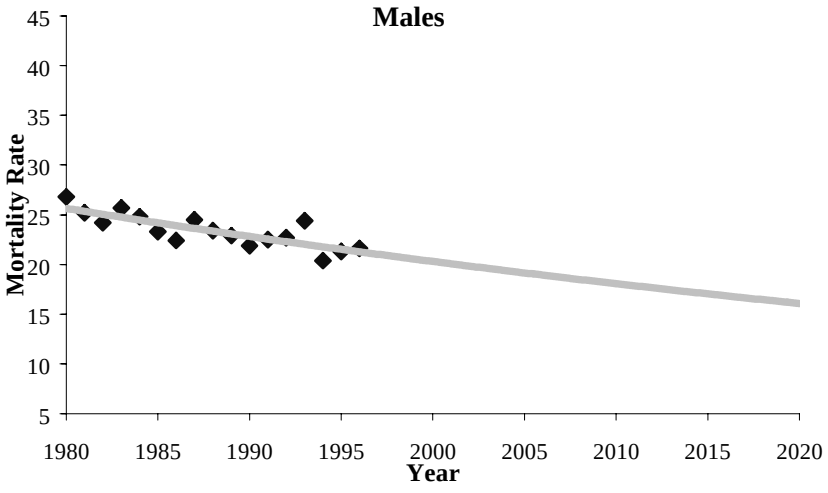
OBSERVED

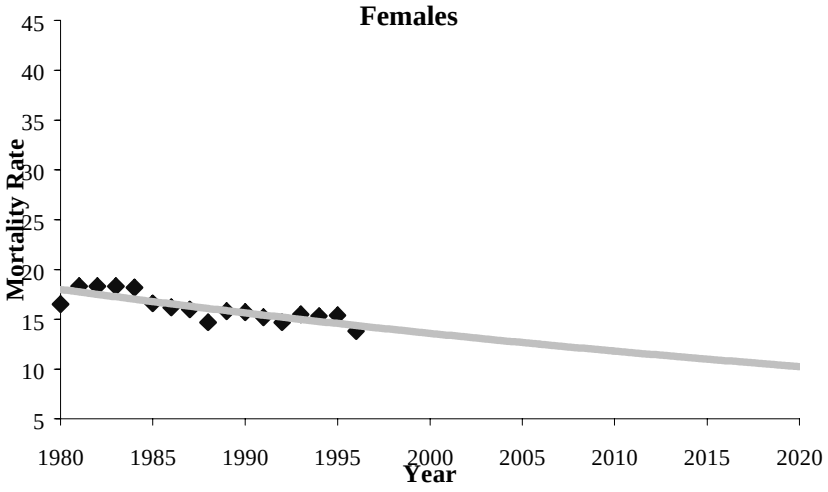
YEAR	Total	Male	Female
1980	20.7	26.8	16.5
1981	21.2	25.2	18.3
1982	20.7	24.2	18.3
1983	21.2	25.7	18.3
1984	20.9	24.8	18.2
1985	19.4	23.3	16.6
1986	18.8	22.4	16.2
1987	19.6	24.5	16.0
1988	18.2	23.4	14.7
1989	18.7	22.9	15.8
1990	18.3	21.9	15.7
1991	18.2	22.5	15.2
1992	17.9	22.7	14.7
1993	19.1	24.4	15.5
1994	17.4	20.4	15.3
1995	18.0	21.3	15.4
1996	17.2	21.6	13.8

PREDICTED

YEAR	Total	Male	Female
1996	17.3	21.3	14.4
1997	17.1	21.0	14.2
1998	16.9	20.8	14.0
1999	16.6	20.5	13.8
2000	16.4	20.3	13.6
2001	16.2	20.1	13.4
2002	16.0	19.8	13.2
2003	15.8	19.6	13.0
2004	15.6	19.4	12.9
2005	15.4	19.2	12.7
2006	15.3	18.9	12.5
2007	15.1	18.7	12.3
2008	14.9	18.5	12.1
2009	14.7	18.3	12.0
2010	14.5	18.1	11.8
2011	14.3	17.9	11.6
2012	14.1	17.7	11.5
2013	14.0	17.4	11.3
2014	13.8	17.2	11.2
2015	13.6	17.0	11.0
2016	13.5	16.8	10.9
2017	13.3	16.7	10.7
2018	13.1	16.5	10.6
2019	13.0	16.3	10.4
2020	12.8	16.1	10.3







Age standardized to the 1970 US population and expressed per 100,000 individuals.

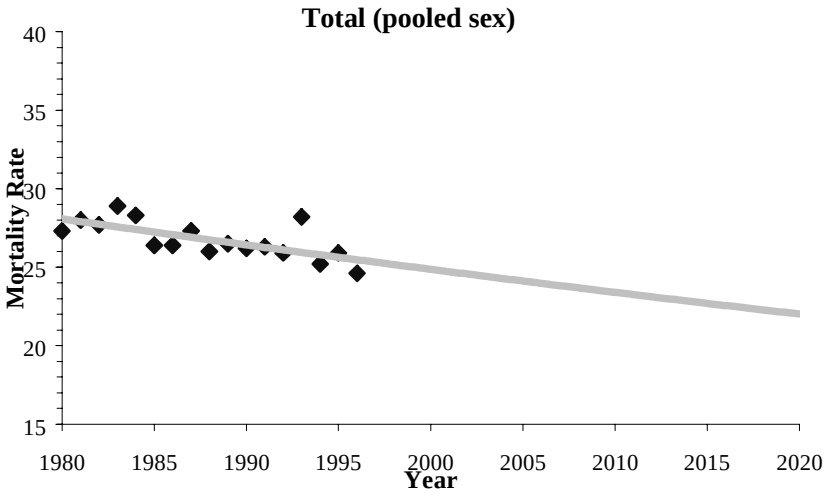
COLORECTAL CANCER CRUDE MORTALITY RATES: WHITES

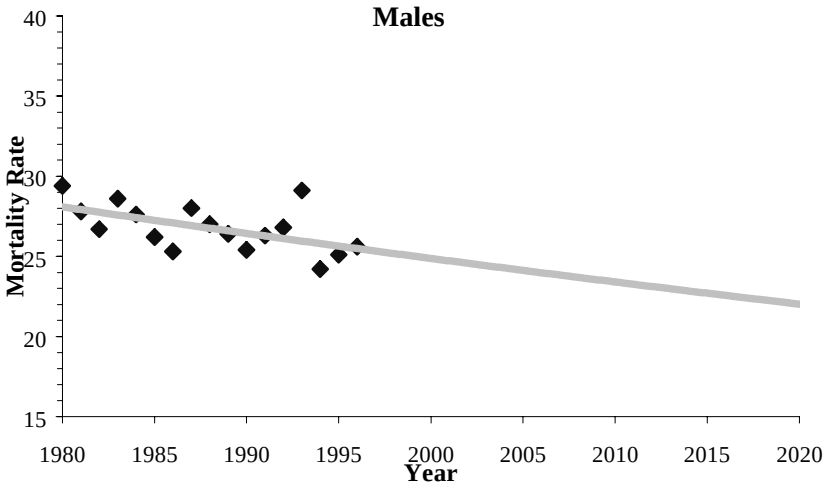
OBSERVED

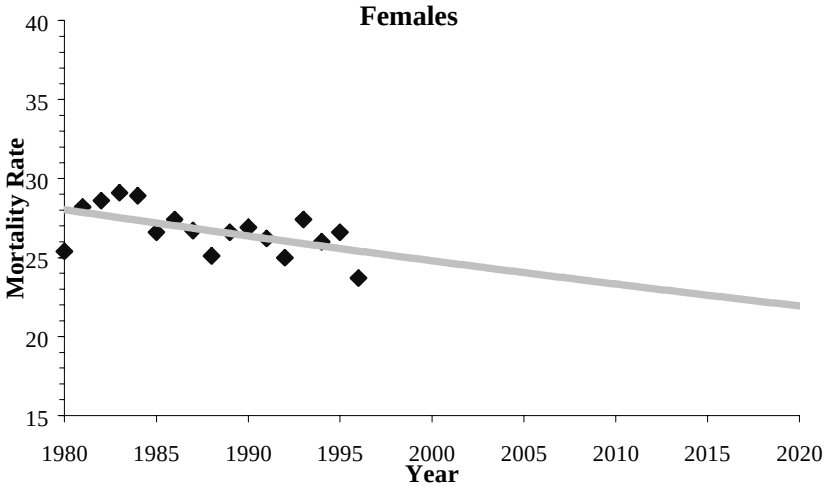
YEAR	Total	Male	Female
1980	27.3	29.4	25.4
1981	28.0	27.8	28.2
1982	27.7	26.7	28.6
1983	28.9	28.6	29.1
1984	28.3	27.6	28.9
1985	26.4	26.2	26.6
1986	26.4	25.3	27.4
1987	27.3	28.0	26.7
1988	26.0	27.0	25.1
1989	26.5	26.4	26.6
1990	26.2	25.4	26.9
1991	26.3	26.3	26.2
1992	25.9	26.8	25.0
1993	28.2	29.1	27.4
1994	25.2	24.2	26.0
1995	25.9	25.1	26.6
1996	24.6	25.6	23.7

PREDICTED

YEAR	Total	Male	Female
1996	25.5	25.5	25.4
1997	25.3	25.3	25.3
1998	25.2	25.2	25.1
1999	25.0	25.0	25.0
2000	24.9	24.9	24.8
2001	24.7	24.7	24.6
2002	24.6	24.6	24.5
2003	24.4	24.4	24.3
2004	24.3	24.3	24.2
2005	24.1	24.1	24.0
2006	24.0	24.0	23.9
2007	23.8	23.8	23.8
2008	23.7	23.7	23.6
2009	23.5	23.5	23.5
2010	23.4	23.4	23.3
2011	23.3	23.3	23.2
2012	23.1	23.1	23.0
2013	23.0	23.0	22.9
2014	22.8	22.8	22.8
2015	22.7	22.7	22.6
2016	22.6	22.6	22.5
2017	22.4	22.4	22.3
2018	22.3	22.3	22.2
2019	22.2	22.2	22.1
2020	22.0	22.0	21.9







Rates expressed per 100,000

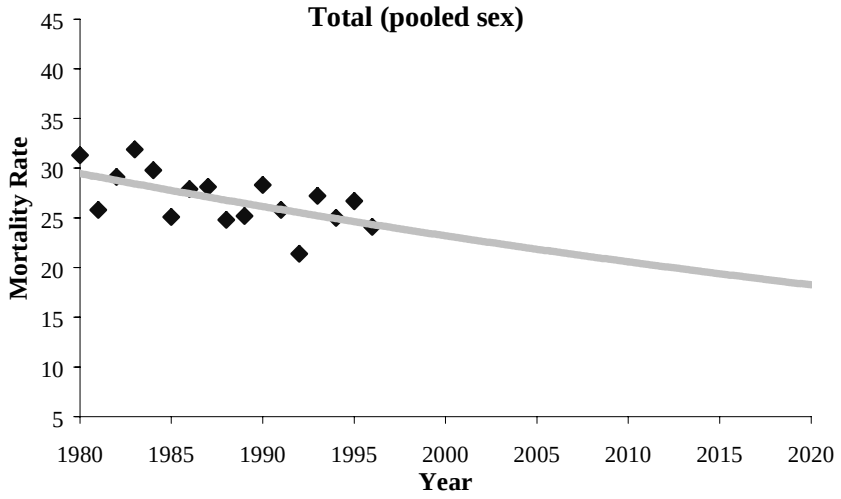
COLORECTAL CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

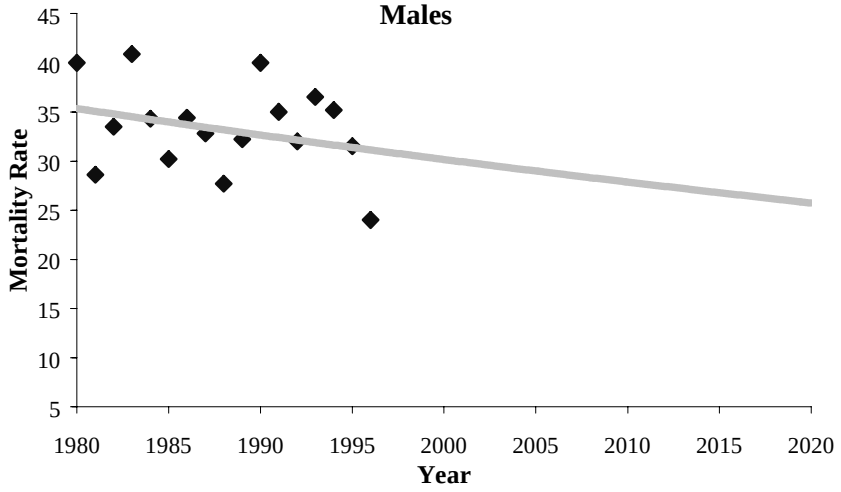
OBSERVED

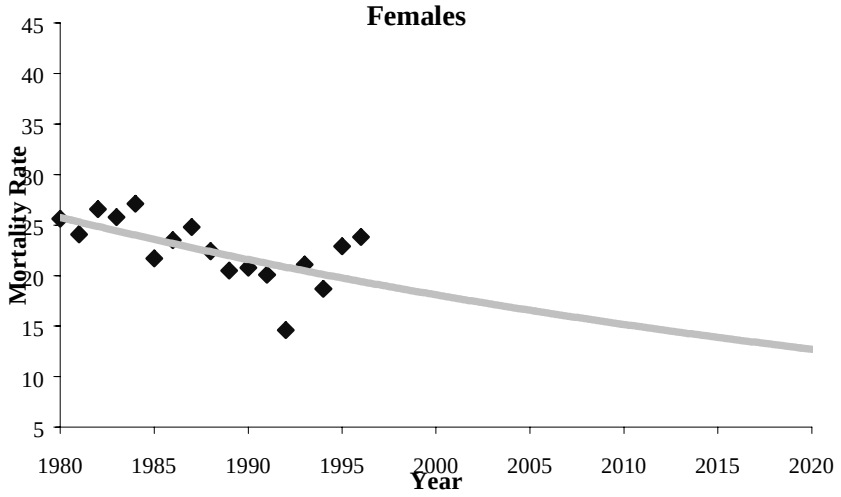
YEAR	Total	Male	Female
1980	31.3	40.0	25.6
1981	25.8	28.6	24.1
1982	29.1	33.5	26.6
1983	31.9	40.9	25.8
1984	29.8	34.3	27.1
1985	25.1	30.2	21.7
1986	27.9	34.4	23.5
1987	28.1	32.8	24.8
1988	24.8	27.7	22.4
1989	25.2	32.2	20.5
1990	28.3	40.0	20.8
1991	25.8	35.0	20.1
1992	21.4	32.0	14.6
1993	27.2	36.5	21.1
1994	25.0	35.2	18.7
1995	26.7	31.5	22.9
1996	24.1	24.0	23.8

PREDICTED

YEAR	Total	Male	Female
1996	24.3	31.1	19.4
1997	24.0	30.9	19.1
1998	23.8	30.6	18.7
1999	23.5	30.4	18.4
2000	23.2	30.2	18.1
2001	22.9	29.9	17.8
2002	22.7	29.7	17.5
2003	22.4	29.4	17.2
2004	22.1	29.2	16.9
2005	21.9	29.0	16.6
2006	21.6	28.8	16.3
2007	21.3	28.5	16.0
2008	21.1	28.3	15.7
2009	20.8	28.1	15.4
2010	20.6	27.9	15.2
2011	20.3	27.6	14.9
2012	20.1	27.4	14.6
2013	19.9	27.2	14.4
2014	19.6	27.0	14.1
2015	19.4	26.8	13.9
2016	19.2	26.6	13.6
2017	18.9	26.4	13.4
2018	18.7	26.1	13.2
2019	18.5	25.9	12.9
2020	18.3	25.7	12.7







Age standardized to the 1970 US population and expressed per 100,000 individuals.

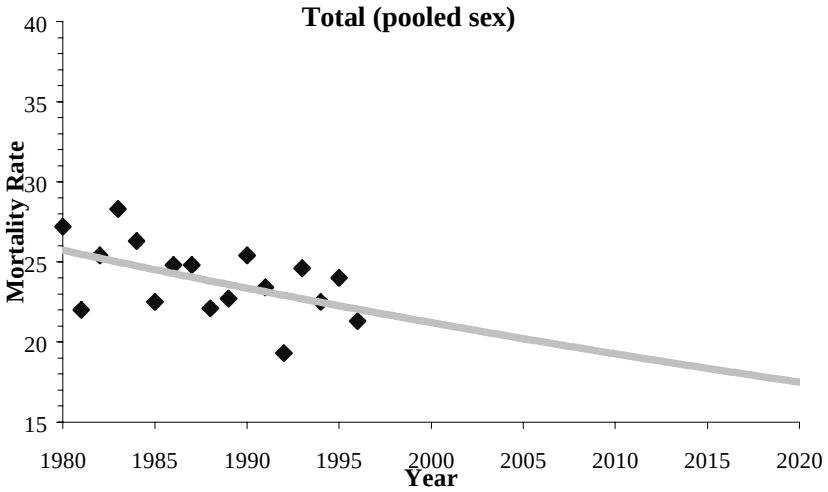
COLORECTAL CANCER CRUDE MORTALITY RATES: AFRICAN AMERICANS

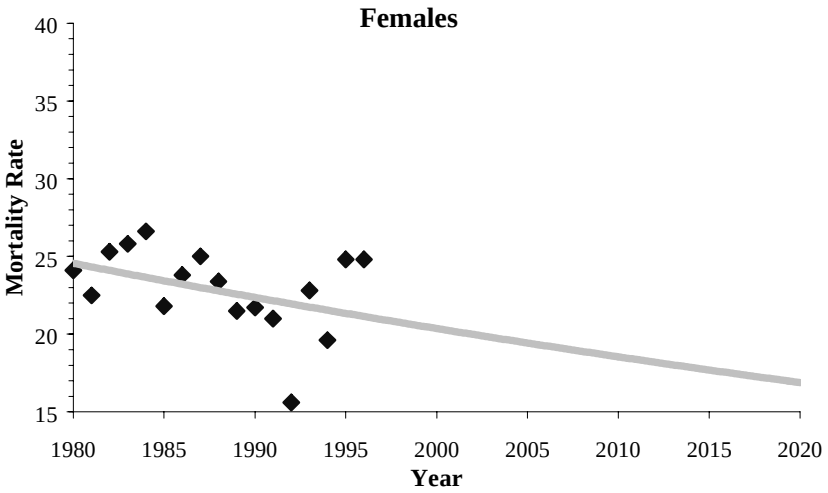
OBSERVED

YEAR	Total	Male	Female
1980	27.2	30.7	24.1
1981	22.0	21.5	22.5
1982	25.4	25.5	25.3
1983	28.3	31.1	25.8
1984	26.3	26.0	26.6
1985	22.5	23.3	21.8
1986	24.8	26.1	23.8
1987	24.8	24.7	25.0
1988	22.1	20.6	23.4
1989	22.7	24.0	21.5
1990	25.4	29.7	21.7
1991	23.4	26.2	21.0
1992	19.3	23.6	15.6
1993	24.6	26.6	22.8
1994	22.5	25.8	19.6
1995	24.0	23.2	24.8
1996	21.3	17.2	24.8

PREDICTED

YEAR	Total	Male	Female
1996	22.0	22.7	21.1
1997	21.8	22.4	20.9
1998	21.6	22.1	20.7
1999	21.4	21.9	20.6
2000	21.2	21.7	20.4
2001	21.0	21.4	20.2
2002	20.8	21.2	20.0
2003	20.6	20.9	19.8
2004	20.4	20.7	19.6
2005	20.2	20.5	19.4
2006	20.0	20.2	19.2
2007	19.8	20.0	19.1
2008	19.6	19.8	18.9
2009	19.4	19.6	18.7
2010	19.3	19.3	18.5
2011	19.1	19.1	18.4
2012	18.9	18.9	18.2
2013	18.7	18.7	18.0
2014	18.5	18.5	17.9
2015	18.4	18.3	17.7
2016	18.2	18.1	17.5
2017	18.0	17.9	17.4
2018	17.8	17.7	17.2
2019	17.7	17.5	17.0
2020	17.5	17.3	16.9





Rates expressed per 100,000

Breast Cancer Mortality

BREAST CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	14.6	---	26.1	14.3	---	25.7	18.4	---	31.4
1980-1990	14.4	---	26.6	14.6	---	26.2	17.9	---	30.8
1990-1996	14.4	---	25.7	14.0	---	25.1	19.7	---	32.9
PROJECTED RATES[3]									
2000	14.2 [4]	---	25.5 [4]	13.6 [4]	---	24.7 [4]	21.4 [4]	---	35.7 [4]
2010	13.9 [4]	---	24.9 [4]	13.1 [4]	---	23.9 [4]	24.4 [4]	---	39.9 [4]
2020	13.5 [4]	---	24.4 [4]	12.5 [4]	---	23.1 [4]	27.8 [4]	---	44.6 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-0.2	---	-0.2	-0.4	---	-0.3	1.3	---	1.1
1980-1990	0.9 *	---	0.9	0.7	---	0.7	2.5	---	2.3
1990-1996	-1.8	---	-1.7	-2.1	---	-1.9	0.1	---	0.2
PERIOD PERCENT CHANGE[8]									
1980-1996	-0.7	---	-0.2	-5.3	---	-4.1	50.0	---	46.2
1980-1990	10.6	---	9.8	7.7	---	7.6	38.5	---	35.9
1990-1996	-9.1	---	-8.3	-10.3	---	-9.3	0.5	---	0.6

[1] Age standardized to the 1970 US population, and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calcuated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

BREAST CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	17.9	0.0	34.5	18.2	0.0	35.3	16.1	0.0	30.2
1980-1990	17.5	0.0	34.5	18.3	0.0	35.4	15.5	---	29.1
1990-1996	18.1	0.3	34.8	18.4	0.3	35.5	17.5	0.5	32.3
PROJECTED RATES[2]									
2000	18.6 [3]	---	36.2 [3]	18.9 [3]	---	36.8 [3]	19.3 [3]	---	36.0 [3]
2010	19.3 [3]	---	37.7 [3]	19.5 [3]	---	38.1 [3]	22.5 [3]	---	42.1 [3]
2020	20.1 [3]	---	39.2 [3]	20.0 [3]	---	39.4 [3]	26.3 [3]	---	49.2 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	0.4	---	0.4	0.3	---	0.3	1.6 *	---	1.6 *
1980-1990	1.6 **	---	1.6 **	1.6 ***	---	1.6 ***	2.4	---	2.4
1990-1996	-1.3	---	-1.2	-1.5	---	-1.3	0.9	---	1.0
PERIOD PERCENT CHANGE[7]									
1980-1996	8.5	---	9.4	5.6	---	6.4	54.7	---	54.9
1980-1990	17.4	---	17.9	17.1	---	17.1	37.4	---	36.9
1990-1996	-6.6	---	-6.2	-7.7	---	-7.1	4.4	---	4.8

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calcuated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

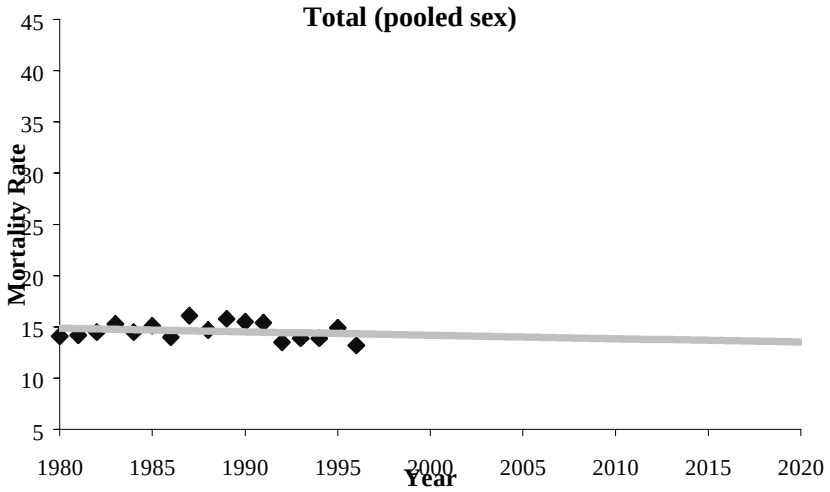
BREAST CANCER AGE-ADJUSTED MORTALITY RATES: POOLED RACE

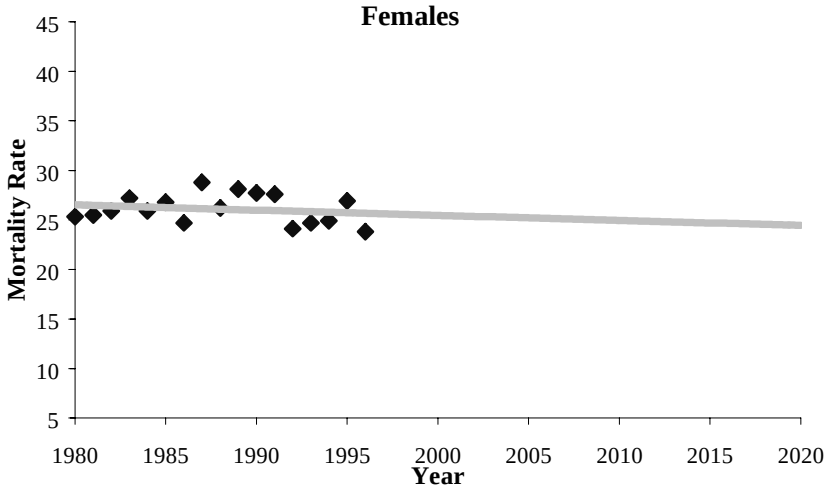
OBSERVED

YEAR	Total	Male	Female
1980	14.1	---	25.3
1981	14.2	---	25.5
1982	14.5	---	25.9
1983	15.3	---	27.2
1984	14.5	---	25.9
1985	15.1	---	26.8
1986	14.0	---	24.7
1987	16.1	---	28.8
1988	14.7	---	26.2
1989	15.8	---	28.1
1990	15.5	---	27.7
1991	15.4	---	27.6
1992	13.5	---	24.1
1993	13.9	---	24.7
1994	13.9	---	24.9
1995	14.9	---	26.9
1996	13.2	---	23.8

PREDICTED

YEAR	Total	Male	Female
1996	14.3	---	25.7
1997	14.3	---	25.6
1998	14.3	---	25.6
1999	14.2	---	25.5
2000	14.2	---	25.5
2001	14.2	---	25.4
2002	14.1	---	25.4
2003	14.1	---	25.3
2004	14.1	---	25.3
2005	14.0	---	25.2
2006	14.0	---	25.1
2007	14.0	---	25.1
2008	13.9	---	25.0
2009	13.9	---	25.0
2010	13.9	---	24.9
2011	13.8	---	24.9
2012	13.8	---	24.8
2013	13.8	---	24.8
2014	13.7	---	24.7
2015	13.7	---	24.7
2016	13.7	---	24.6
2017	13.6	---	24.6
2018	13.6	---	24.5
2019	13.6	---	24.5
2020	13.5	---	24.4





Age standardized to the 1970 US population and expressed per 100,000 individuals.

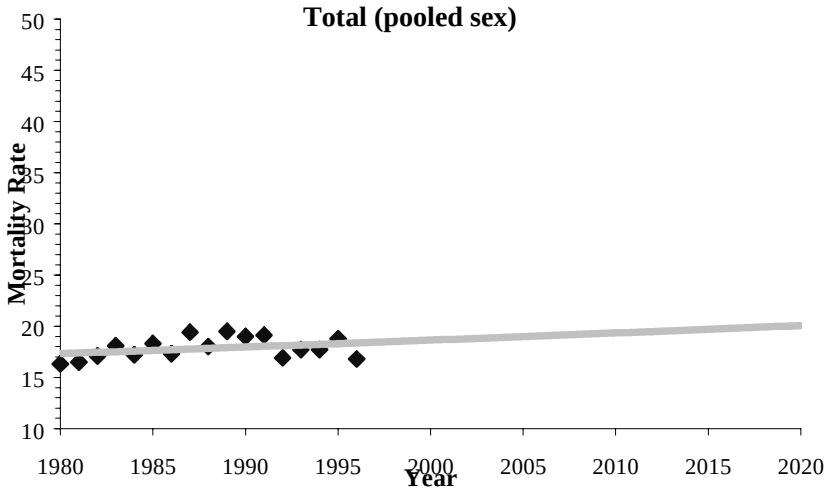
BREAST CANCER CRUDE MORTALITY RATES: POOLED RACE

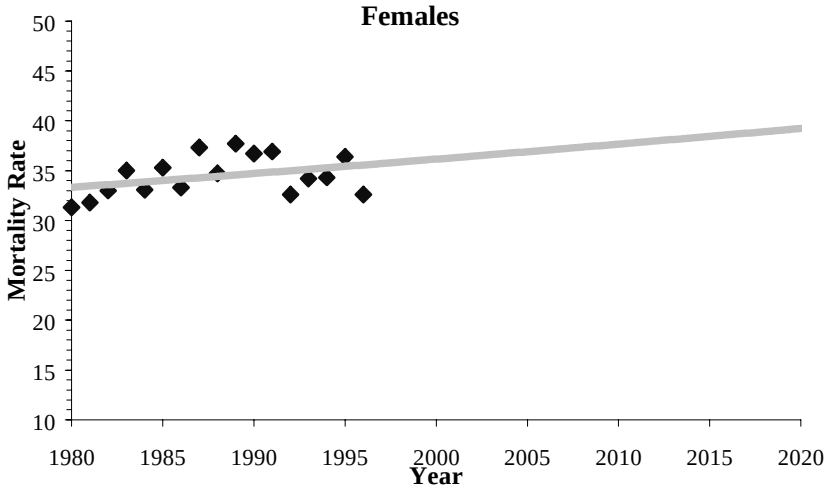
OBSERVED

YEAR	Total	Male	Female
1980	16.3	0.0	31.3
1981	16.5	---	31.8
1982	17.1	---	33.0
1983	18.1	---	35.0
1984	17.2	---	33.1
1985	18.3	---	35.3
1986	17.3	---	33.3
1987	19.4	---	37.3
1988	18.0	0.0	34.7
1989	19.5	---	37.7
1990	19.0	---	36.7
1991	19.1	---	36.9
1992	16.9	---	32.6
1993	17.7	0.0	34.2
1994	17.7	---	34.3
1995	18.8	---	36.4
1996	16.8	---	32.6

PREDICTED

YEAR	Total	Male	Female
1996	18.4	---	35.6
1997	18.4	---	35.7
1998	18.5	---	35.9
1999	18.6	---	36.0
2000	18.6	---	36.2
2001	18.7	---	36.3
2002	18.8	---	36.5
2003	18.8	---	36.6
2004	18.9	---	36.8
2005	19.0	---	36.9
2006	19.1	---	37.1
2007	19.1	---	37.2
2008	19.2	---	37.4
2009	19.3	---	37.5
2010	19.3	---	37.7
2011	19.4	---	37.8
2012	19.5	---	38.0
2013	19.6	---	38.1
2014	19.6	---	38.3
2015	19.7	---	38.4
2016	19.8	---	38.6
2017	19.8	---	38.8
2018	19.9	---	38.9
2019	20.0	---	39.1
2020	20.1	---	39.2





Rates expressed per 100,000

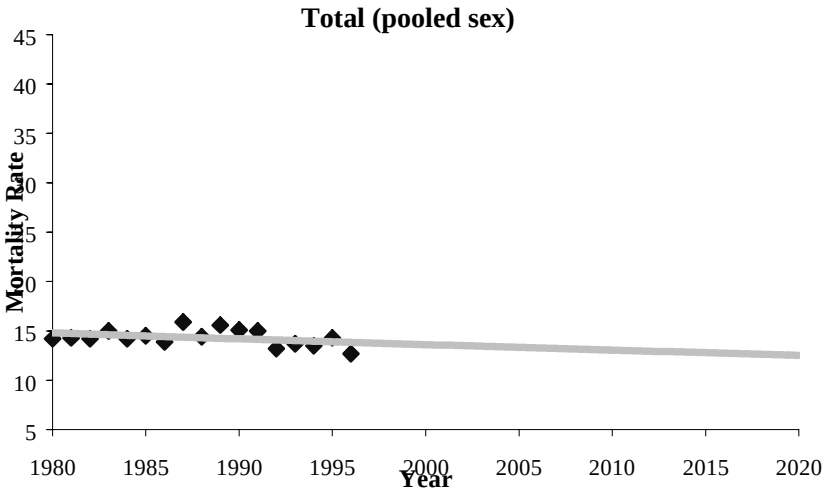
BREAST CANCER AGE-ADJUSTED MORTALITY RATES: WHITES

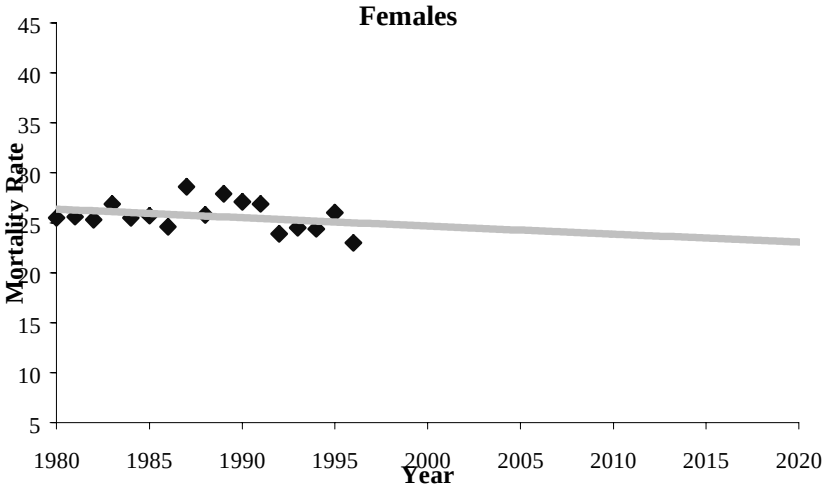
OBSERVED

YEAR	Total	Male	Female
1980	14.2	---	25.5
1981	14.3	---	25.6
1982	14.2	---	25.3
1983	15.0	---	26.9
1984	14.2	---	25.5
1985	14.5	---	25.7
1986	13.9	---	24.6
1987	15.9	---	28.6
1988	14.4	---	25.8
1989	15.6	---	27.9
1990	15.1	---	27.1
1991	15.0	---	26.9
1992	13.2	---	23.9
1993	13.7	---	24.5
1994	13.5	---	24.4
1995	14.3	---	26.0
1996	12.7	---	23.0

PREDICTED

YEAR	Total	Male	Female
1996	13.8	---	25.0
1997	13.8	---	24.9
1998	13.7	---	24.8
1999	13.7	---	24.8
2000	13.6	---	24.7
2001	13.6	---	24.6
2002	13.5	---	24.5
2003	13.4	---	24.4
2004	13.4	---	24.4
2005	13.3	---	24.3
2006	13.3	---	24.2
2007	13.2	---	24.1
2008	13.2	---	24.0
2009	13.1	---	23.9
2010	13.1	---	23.9
2011	13.0	---	23.8
2012	13.0	---	23.7
2013	12.9	---	23.6
2014	12.8	---	23.6
2015	12.8	---	23.5
2016	12.7	---	23.4
2017	12.7	---	23.3
2018	12.6	---	23.2
2019	12.6	---	23.2
2020	12.5	---	23.1





Age standardized to the 1970 US population and expressed per 100,000 individuals.

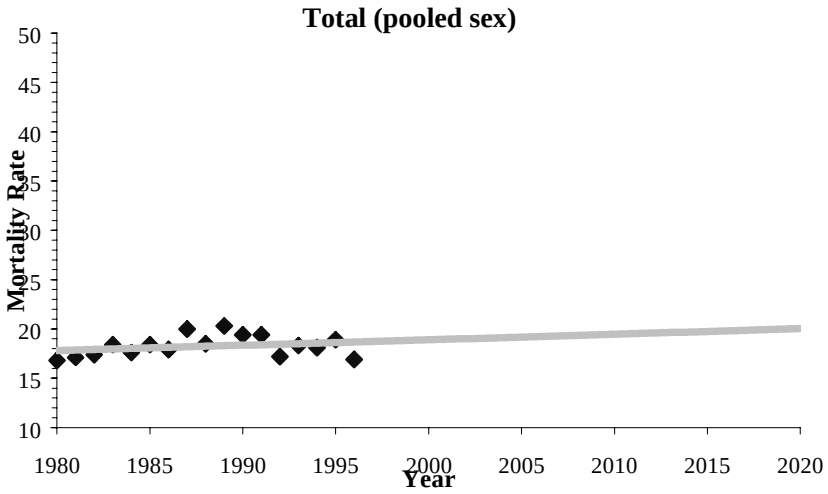
BREAST CANCER CRUDE MORTALITY RATES: WHITES

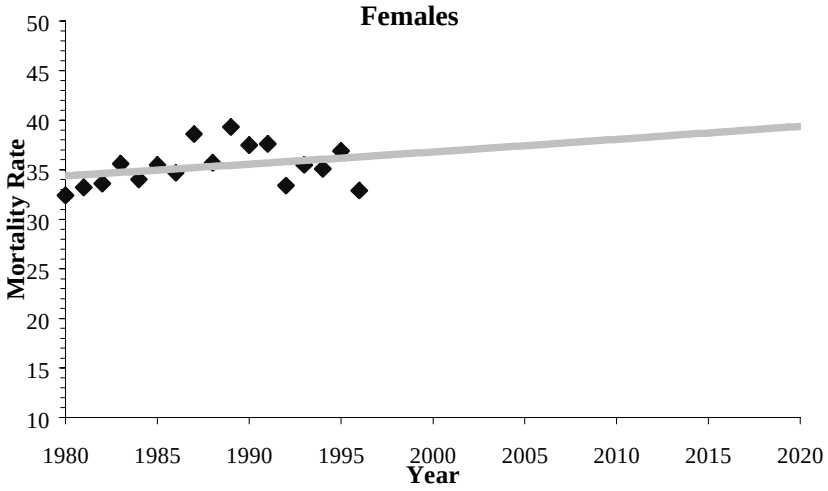
OBSERVED

YEAR	Total	Male	Female
1980	16.8	0.0	32.4
1981	17.1	---	33.2
1982	17.4	---	33.6
1983	18.4	---	35.6
1984	17.6	---	34.0
1985	18.4	---	35.5
1986	17.9	---	34.7
1987	20.0	---	38.6
1988	18.5	0.0	35.7
1989	20.3	---	39.3
1990	19.4	---	37.5
1991	19.4	---	37.6
1992	17.2	---	33.4
1993	18.3	0.0	35.5
1994	18.1	---	35.1
1995	18.9	---	36.9
1996	16.9	---	32.9

PREDICTED

YEAR	Total	Male	Female
1996	18.7	---	36.3
1997	18.7	---	36.4
1998	18.8	---	36.5
1999	18.8	---	36.7
2000	18.9	---	36.8
2001	19.0	---	36.9
2002	19.0	---	37.0
2003	19.1	---	37.2
2004	19.1	---	37.3
2005	19.2	---	37.4
2006	19.2	---	37.6
2007	19.3	---	37.7
2008	19.3	---	37.8
2009	19.4	---	37.9
2010	19.5	---	38.1
2011	19.5	---	38.2
2012	19.6	---	38.3
2013	19.6	---	38.5
2014	19.7	---	38.6
2015	19.7	---	38.7
2016	19.8	---	38.8
2017	19.9	---	39.0
2018	19.9	---	39.1
2019	20.0	---	39.2
2020	20.0	---	39.4





Rates expressed per 100,000

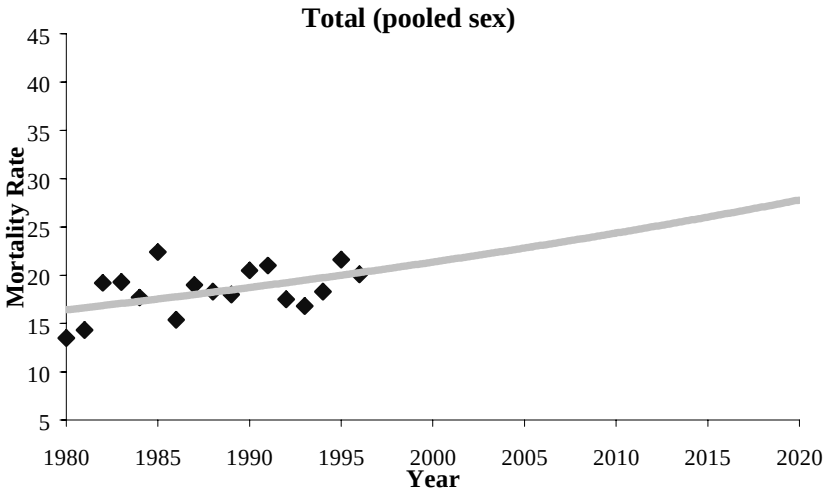
BREAST CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

OBSERVED

YEAR	Total	Male	Female
1980	13.5	---	23.6
1981	14.3	---	24.9
1982	19.2	---	33.4
1983	19.3	---	33.1
1984	17.7	---	30.7
1985	22.4	---	38.6
1986	15.4	---	26.5
1987	19.0	---	32.6
1988	18.3	---	31.4
1989	18.0	---	30.9
1990	20.5	---	35.0
1991	21.0	---	35.5
1992	17.5	---	29.4
1993	16.8	---	28.2
1994	18.3	---	31.1
1995	21.6	---	36.9
1996	20.1	---	34.0

PREDICTED

YEAR	Total	Male	Female
1996	20.3	---	34.2
1997	20.5	---	34.5
1998	20.8	---	34.9
1999	21.1	---	35.3
2000	21.4	---	35.7
2001	21.6	---	36.1
2002	21.9	---	36.5
2003	22.2	---	36.9
2004	22.5	---	37.3
2005	22.8	---	37.7
2006	23.1	---	38.2
2007	23.4	---	38.6
2008	23.7	---	39.0
2009	24.1	---	39.5
2010	24.4	---	39.9
2011	24.7	---	40.3
2012	25.0	---	40.8
2013	25.4	---	41.2
2014	25.7	---	41.7
2015	26.0	---	42.2
2016	26.4	---	42.6
2017	26.7	---	43.1
2018	27.1	---	43.6
2019	27.4	---	44.1
2020	27.8	---	44.6



Age standardized to the 1970 US population and expressed per 100,000 individuals.

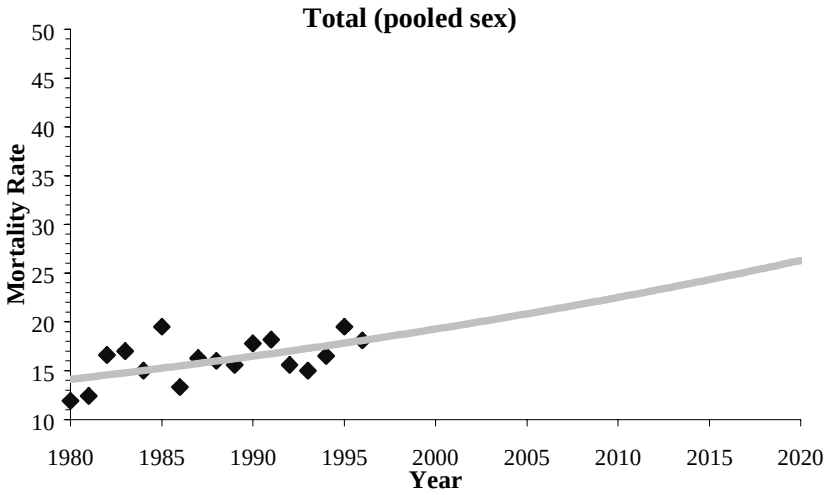
BREAST CANCER CRUDE MORTALITY RATES: AFRICAN AMERICANS

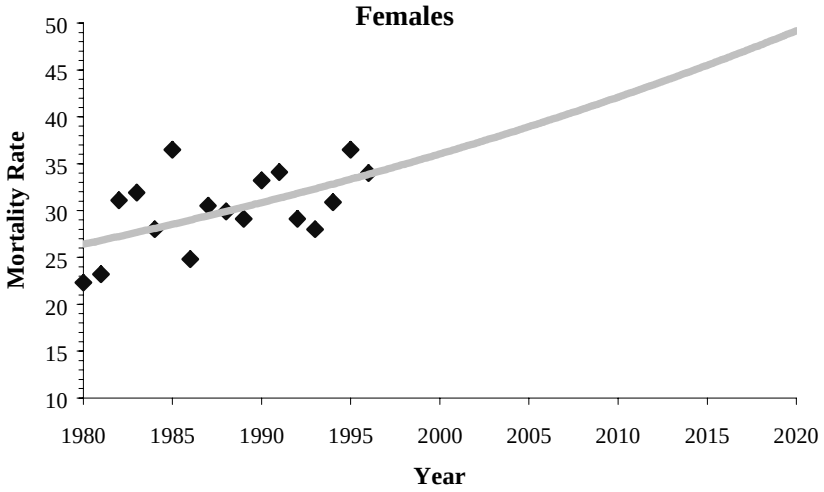
OBSERVED

YEAR	Total	Male	Female
1980	11.9	---	22.3
1981	12.4	---	23.2
1982	16.6	---	31.1
1983	17.0	---	31.9
1984	15.0	---	28.0
1985	19.5	---	36.5
1986	13.3	---	24.8
1987	16.3	---	30.5
1988	16.0	---	29.9
1989	15.6	---	29.1
1990	17.8	---	33.2
1991	18.2	---	34.1
1992	15.6	---	29.1
1993	15.0	---	28.0
1994	16.5	---	30.9
1995	19.5	---	36.5
1996	18.1	---	34.0

PREDICTED

YEAR	Total	Male	Female
1996	18.1	---	33.9
1997	18.4	---	34.4
1998	18.7	---	34.9
1999	19.0	---	35.5
2000	19.3	---	36.0
2001	19.6	---	36.6
2002	19.9	---	37.2
2003	20.2	---	37.8
2004	20.5	---	38.3
2005	20.8	---	38.9
2006	21.2	---	39.6
2007	21.5	---	40.2
2008	21.8	---	40.8
2009	22.2	---	41.4
2010	22.5	---	42.1
2011	22.9	---	42.8
2012	23.2	---	43.4
2013	23.6	---	44.1
2014	24.0	---	44.8
2015	24.3	---	45.5
2016	24.7	---	46.2
2017	25.1	---	46.9
2018	25.5	---	47.7
2019	25.9	---	48.4
2020	26.3	---	49.2





Rates expressed per 100,000

Oral Cancer Mortality

ORAL CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	2.6	4.2	1.4	2.4	3.7	1.4	5.1	9.4	1.9
1980-1990	2.7	4.4	1.5	2.5	4.0	1.5	5.4	9.8	2.0
1990-1996	2.4	3.8	1.3	2.2	3.4	1.2	4.7	8.9	1.7
PROJECTED RATES[3]									
2000	2.0 [4]	3.0 [4]	1.1 [4]	1.8 [4]	2.7 [4]	1.1 [4]	3.8 [4]	6.7 [4]	1.5 [4]
2010	1.6 [4]	2.3 [4]	0.9 [4]	1.4 [4]	2.1 [4]	0.9 [4]	3.0 [4]	5.1 [4]	1.4 [4]
2020	1.2 [4]	1.8 [4]	0.8 [4]	1.2 [4]	1.6 [4]	0.7 [4]	2.3 [4]	3.9 [4]	1.3 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-2.3 ***	-2.6 ***	-1.9 **	-2.2 ***	-2.5 ***	-2.1 **	-2.4 **	-2.7 *	-0.9
1980-1990	-3.4 **	-4.1 **	-2.3	-3.1 **	-3.4 **	-2.9 *	-4.2 *	-6.2 *	4.1
1990-1996	-2.5	-3.8	1.5	-1.8	-3.9	1.6	-3.9 *	-5.5 *	-0.5
PERIOD PERCENT CHANGE[8]									
1980-1996	-30.6	-35.0	-18.8	-27.8	-32.9	-22.6	-33.6	-43.4	32.4
1980-1990	-21.0	-23.0	-21.9	-18.5	-17.6	-22.6	-26.1	-36.6	35.3
1990-1996	-17.3	-21.7	0.0	-15.2	-23.0	0.0	-16.8	-23.1	9.8

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

ORAL CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	3.2	4.4	2.0	3.1	4.2	2.0	4.2	7.0	1.7
1980-1990	3.2	4.7	2.0	3.2	4.4	2.1	4.4	7.4	1.8
1990-1996	2.9	4.1	1.9	2.8	3.8	1.9	3.9	6.5	1.6
PROJECTED RATES[2]									
2000	2.5 [3]	3.3 [3]	1.8 [3]	2.5 [3]	3.2 [3]	1.8 [3]	3.2 [3]	4.8 [3]	1.6 [3]
2010	2.1 [3]	2.6 [3]	1.6 [3]	2.1 [3]	2.6 [3]	1.6 [3]	2.5 [3]	3.6 [3]	1.6 [3]
2020	1.7 [3]	2.1 [3]	1.4 [3]	1.7 [3]	2.1 [3]	1.4 [3]	2.0 [3]	2.7 [3]	1.6 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	-1.9 **	-2.3 **	-1.0	-1.8 **	-2.1 **	-1.1	-2.2 *	-2.9 *	0.0
1980-1990	-2.9 *	-3.7 **	-1.0	-2.7 *	-3.2 *	-1.6	-3.8	-6.3 *	4.7
1990-1996	-2.1	-3.6	0.9	-1.1	-2.7	1.6	-4.5 *	-5.9 *	-1.0
PERIOD PERCENT CHANGE[7]									
1980-1996	-25.4	-32.7	-9.8	-22.4	-28.0	-11.6	-33.3	-45.2	36.7
1980-1990	-16.9	-21.2	-9.8	-16.4	-16.1	-14.0	-25.0	-37.2	36.7
1990-1996	-14.5	-20.5	-2.6	-11.9	-18.3	0.0	-19.1	-23.8	2.5

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

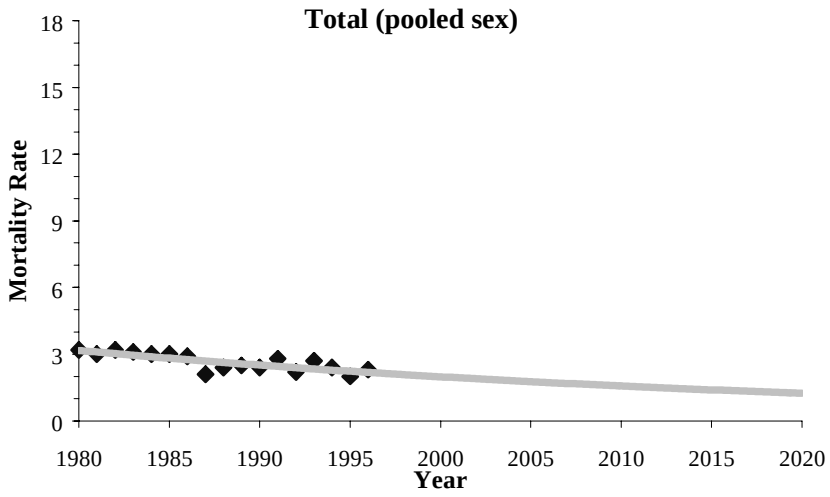
ORAL CANCER AGE-ADJUSTED MORTALITY RATES: POOLED RACE

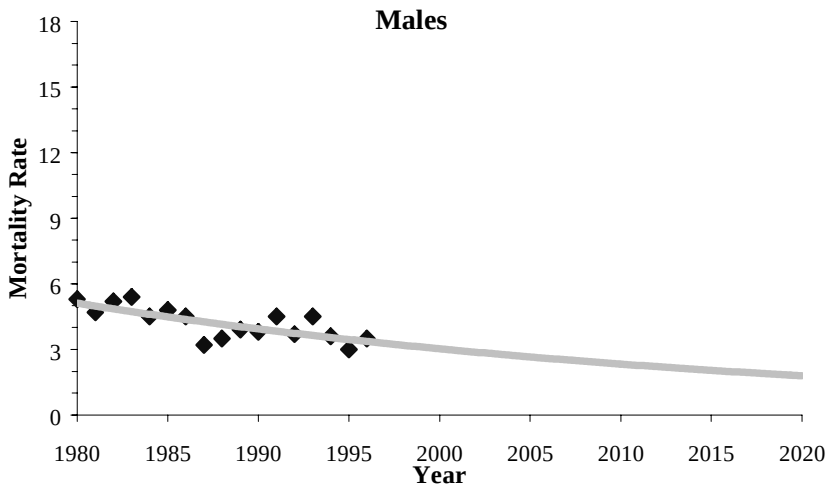
OBSERVED

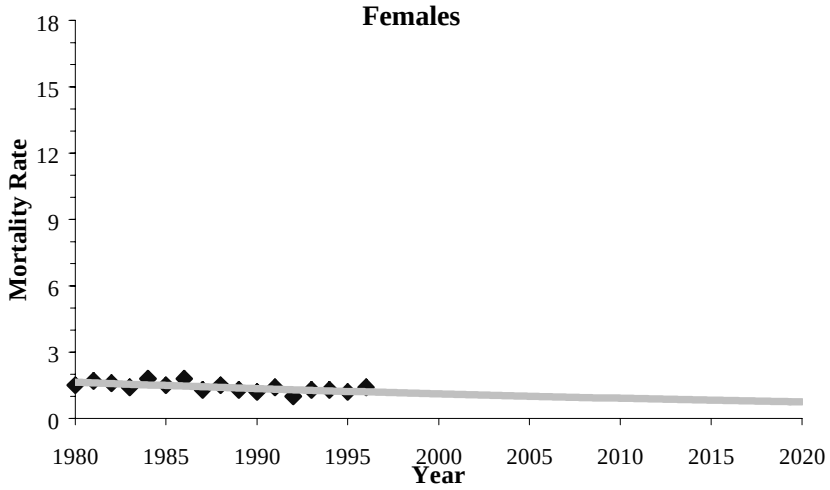
YEAR	Total	Male	Female
1980	3.2	5.3	1.5
1981	3.0	4.7	1.7
1982	3.2	5.2	1.6
1983	3.1	5.4	1.4
1984	3.0	4.5	1.8
1985	3.0	4.8	1.5
1986	2.9	4.5	1.8
1987	2.1	3.2	1.3
1988	2.4	3.5	1.5
1989	2.5	3.9	1.3
1990	2.4	3.8	1.2
1991	2.8	4.5	1.4
1992	2.2	3.7	1.0
1993	2.7	4.5	1.3
1994	2.4	3.6	1.3
1995	2.0	3.0	1.2
1996	2.3	3.5	1.4

PREDICTED

YEAR	Total	Male	Female
1996	2.2	3.4	1.2
1997	2.1	3.3	1.2
1998	2.1	3.2	1.2
1999	2.0	3.1	1.1
2000	2.0	3.0	1.1
2001	1.9	3.0	1.1
2002	1.9	2.9	1.1
2003	1.9	2.8	1.1
2004	1.8	2.7	1.0
2005	1.8	2.7	1.0
2006	1.7	2.6	1.0
2007	1.7	2.5	1.0
2008	1.6	2.5	1.0
2009	1.6	2.4	0.9
2010	1.6	2.3	0.9
2011	1.5	2.3	0.9
2012	1.5	2.2	0.9
2013	1.5	2.2	0.9
2014	1.4	2.1	0.8
2015	1.4	2.0	0.8
2016	1.4	2.0	0.8
2017	1.3	1.9	0.8
2018	1.3	1.9	0.8
2019	1.3	1.8	0.8
2020	1.2	1.8	0.8







Age standardized to the 1970 US population and expressed per 100,000 individuals.

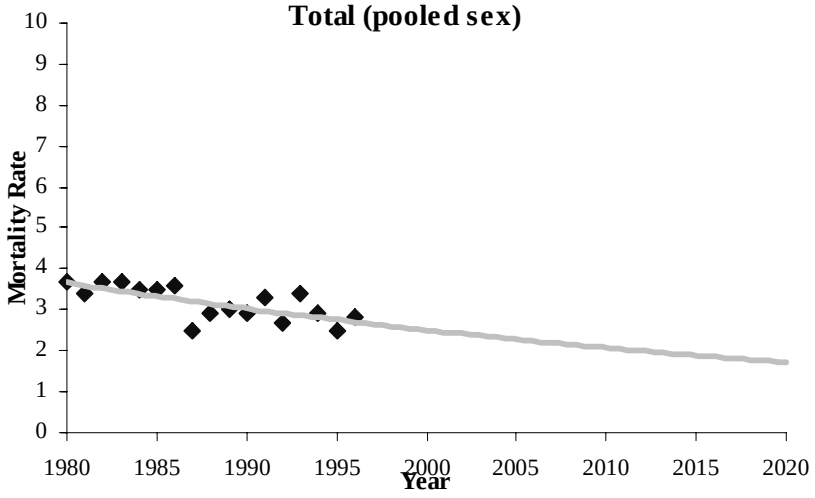
ORAL CANCER CRUDE MORTALITY RATES: POOLED RACE

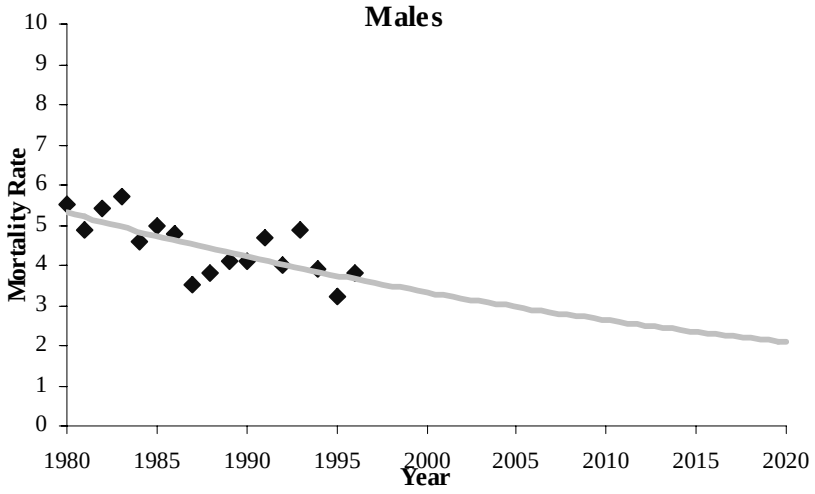
OBSERVED

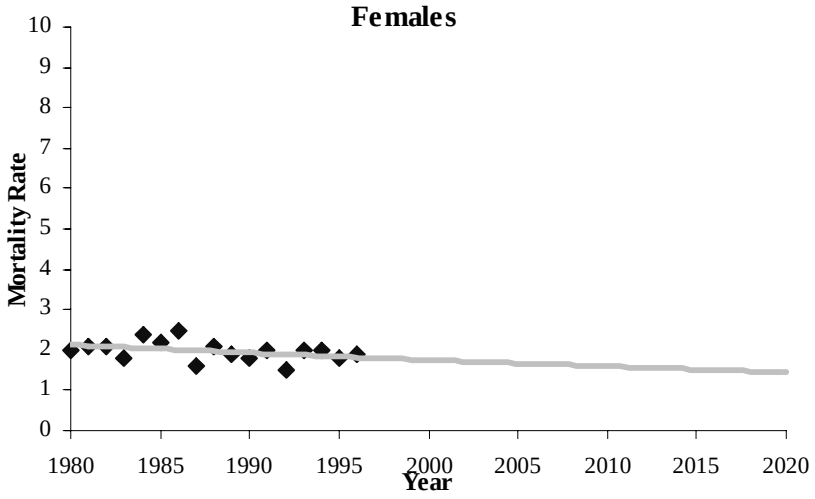
YEAR	Total	Male	Female
1980	3.7	5.5	2.0
1981	3.4	4.9	2.1
1982	3.7	5.4	2.1
1983	3.7	5.7	1.8
1984	3.5	4.6	2.4
1985	3.5	5.0	2.2
1986	3.6	4.8	2.5
1987	2.5	3.5	1.6
1988	2.9	3.8	2.1
1989	3.0	4.1	1.9
1990	2.9	4.1	1.8
1991	3.3	4.7	2.0
1992	2.7	4.0	1.5
1993	3.4	4.9	2.0
1994	2.9	3.9	2.0
1995	2.5	3.2	1.8
1996	2.8	3.8	1.9

PREDICTED

YEAR	Total	Male	Female
1996	2.7	3.7	1.8
1997	2.7	3.6	1.8
1998	2.6	3.5	1.8
1999	2.6	3.4	1.8
2000	2.5	3.3	1.8
2001	2.5	3.3	1.7
2002	2.4	3.2	1.7
2003	2.4	3.1	1.7
2004	2.3	3.0	1.7
2005	2.3	3.0	1.7
2006	2.2	2.9	1.7
2007	2.2	2.8	1.6
2008	2.2	2.8	1.6
2009	2.1	2.7	1.6
2010	2.1	2.6	1.6
2011	2.0	2.6	1.6
2012	2.0	2.5	1.6
2013	2.0	2.5	1.5
2014	1.9	2.4	1.5
2015	1.9	2.3	1.5
2016	1.9	2.3	1.5
2017	1.8	2.2	1.5
2018	1.8	2.2	1.5
2019	1.8	2.1	1.5
2020	1.7	2.1	1.4







Rates expressed per 100,000

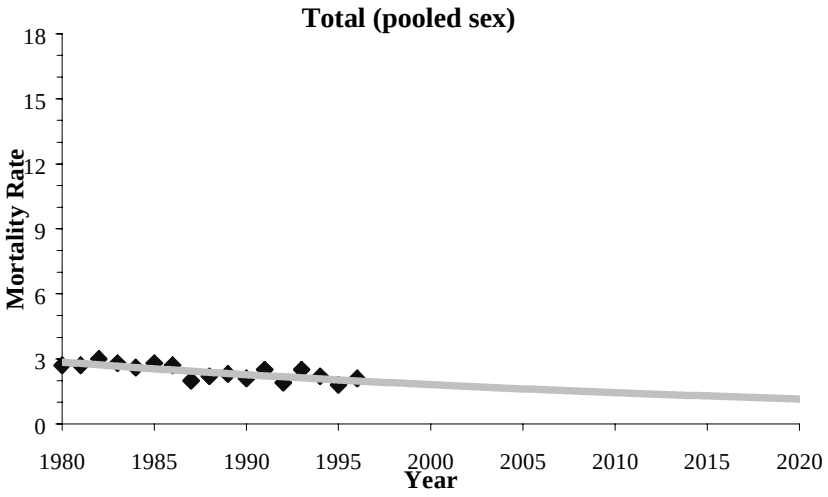
ORAL CANCER AGE-ADJUSTED MORTALITY RATES: WHITES

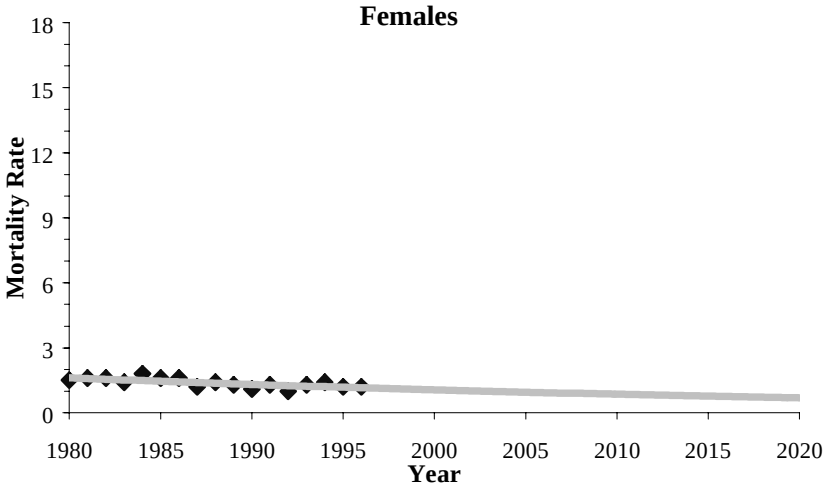
OBSERVED

YEAR	Total	Male	Female
1980	2.7	4.3	1.5
1981	2.7	4.2	1.6
1982	3.0	4.9	1.6
1983	2.8	4.7	1.4
1984	2.6	3.8	1.8
1985	2.8	4.3	1.6
1986	2.7	4.2	1.6
1987	2.0	3.0	1.2
1988	2.2	3.3	1.4
1989	2.3	3.6	1.3
1990	2.1	3.4	1.1
1991	2.5	4.0	1.3
1992	1.9	3.2	1.0
1993	2.5	4.0	1.3
1994	2.2	3.2	1.4
1995	1.8	2.5	1.2
1996	2.1	3.2	1.2

PREDICTED

YEAR	Total	Male	Female
1996	2.0	3.0	1.2
1997	1.9	2.9	1.1
1998	1.9	2.9	1.1
1999	1.9	2.8	1.1
2000	1.8	2.7	1.1
2001	1.8	2.6	1.0
2002	1.7	2.6	1.0
2003	1.7	2.5	1.0
2004	1.7	2.4	1.0
2005	1.6	2.4	1.0
2006	1.6	2.3	0.9
2007	1.5	2.3	0.9
2008	1.5	2.2	0.9
2009	1.5	2.2	0.9
2010	1.4	2.1	0.9
2011	1.4	2.0	0.8
2012	1.4	2.0	0.8
2013	1.4	1.9	0.8
2014	1.3	1.9	0.8
2015	1.3	1.8	0.8
2016	1.3	1.8	0.8
2017	1.2	1.8	0.7
2018	1.2	1.7	0.7
2019	1.2	1.7	0.7
2020	1.2	1.6	0.7





Age standardized to the 1970 US population and expressed per 100,000 individuals.

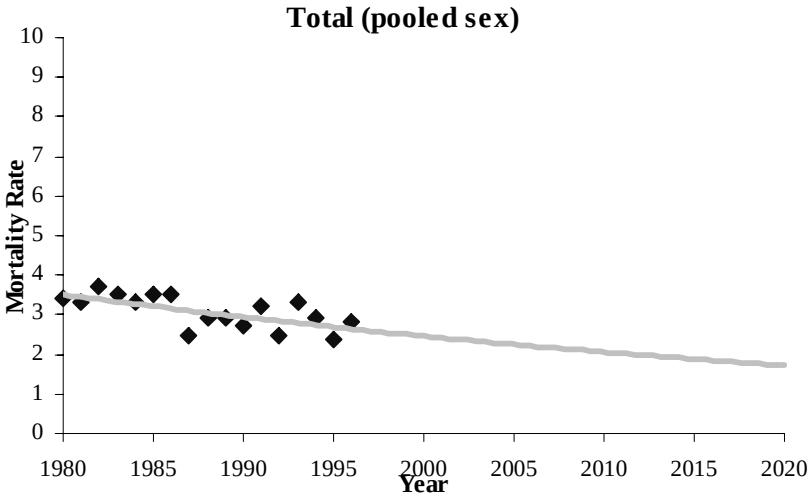
ORAL CANCER CRUDE MORTALITY RATES: WHITES

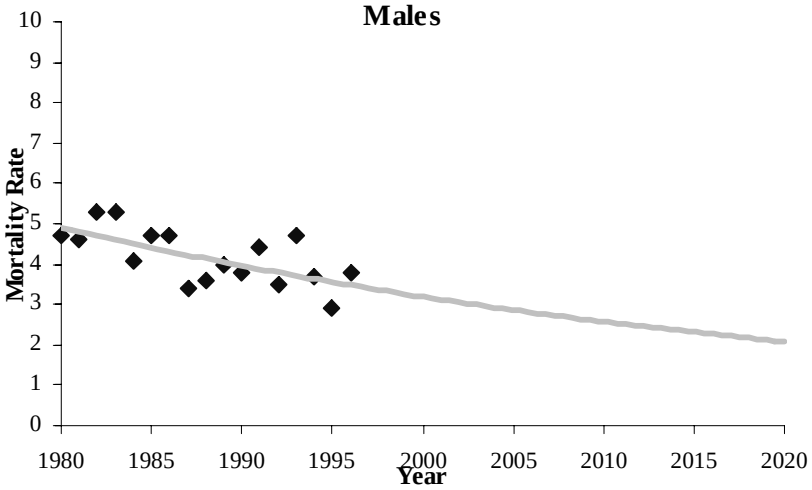
OBSERVED

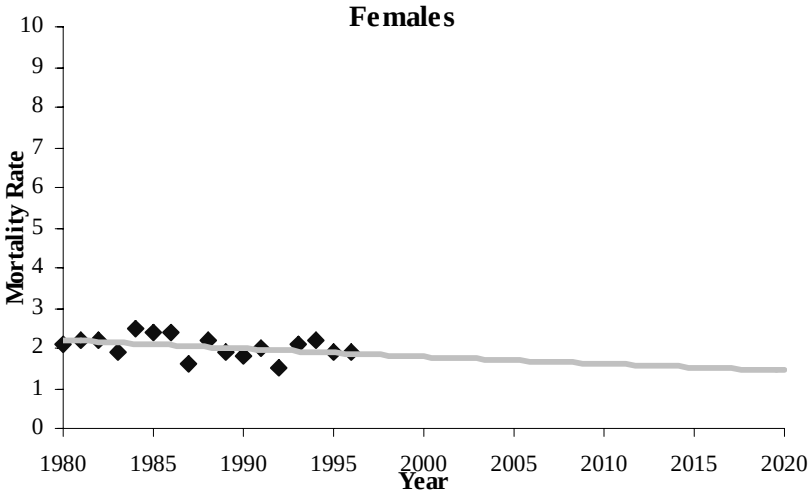
YEAR	Total	Male	Female
1980	3.4	4.7	2.1
1981	3.3	4.6	2.2
1982	3.7	5.3	2.2
1983	3.5	5.3	1.9
1984	3.3	4.1	2.5
1985	3.5	4.7	2.4
1986	3.5	4.7	2.4
1987	2.5	3.4	1.6
1988	2.9	3.6	2.2
1989	2.9	4.0	1.9
1990	2.7	3.8	1.8
1991	3.2	4.4	2.0
1992	2.5	3.5	1.5
1993	3.3	4.7	2.1
1994	2.9	3.7	2.2
1995	2.4	2.9	1.9
1996	2.8	3.8	1.9

PREDICTED

YEAR	Total	Male	Female
1996	2.6	3.5	1.9
1997	2.6	3.4	1.8
1998	2.6	3.3	1.8
1999	2.5	3.3	1.8
2000	2.5	3.2	1.8
2001	2.4	3.1	1.8
2002	2.4	3.1	1.7
2003	2.3	3.0	1.7
2004	2.3	2.9	1.7
2005	2.3	2.9	1.7
2006	2.2	2.8	1.7
2007	2.2	2.7	1.7
2008	2.1	2.7	1.6
2009	2.1	2.6	1.6
2010	2.1	2.6	1.6
2011	2.0	2.5	1.6
2012	2.0	2.5	1.6
2013	2.0	2.4	1.6
2014	1.9	2.4	1.5
2015	1.9	2.3	1.5
2016	1.8	2.3	1.5
2017	1.8	2.2	1.5
2018	1.8	2.2	1.5
2019	1.8	2.1	1.5
2020	1.7	2.1	1.4







Rates expressed per 100,000

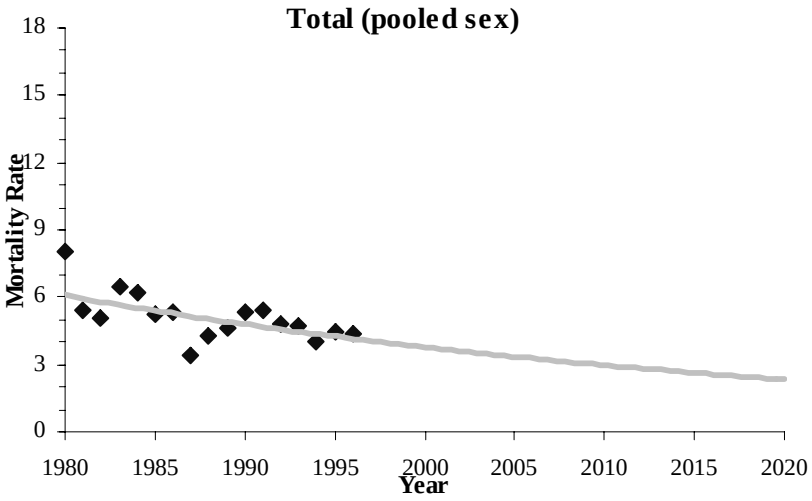
ORAL CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

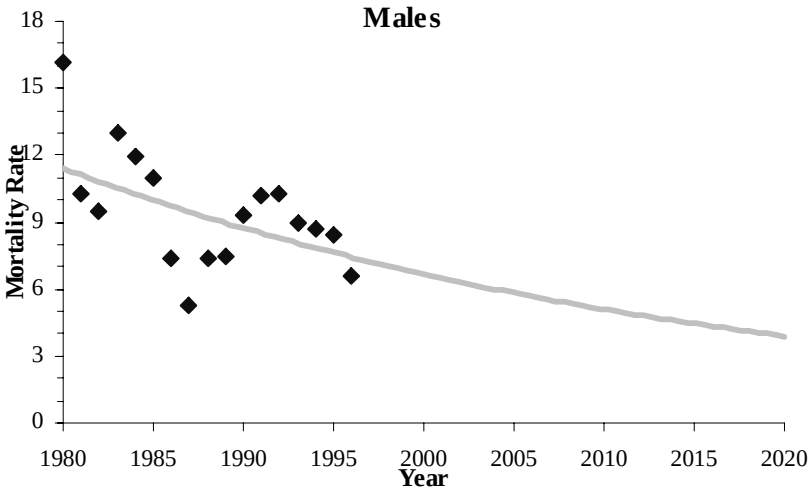
OBSERVED

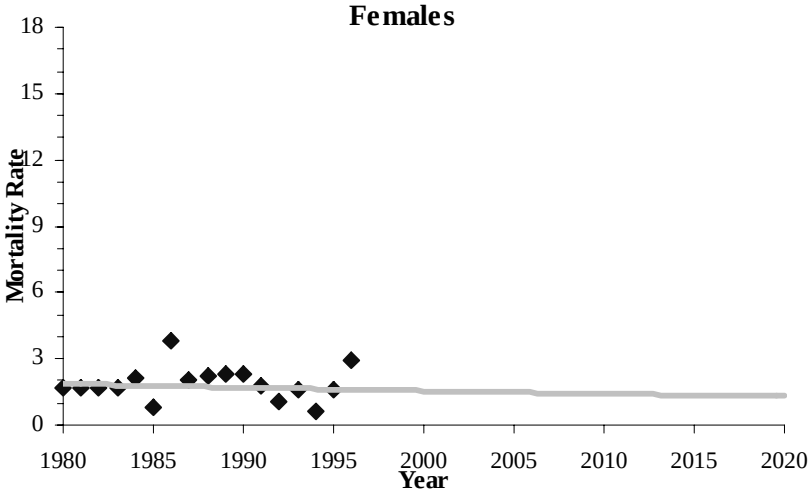
YEAR	Total	Male	Female
1980	8.0	16.2	1.7
1981	5.4	10.3	1.7
1982	5.1	9.5	1.7
1983	6.5	13.0	1.7
1984	6.2	11.9	2.1
1985	5.2	11.0	0.8
1986	5.3	7.4	3.8
1987	3.4	5.3	2.0
1988	4.3	7.4	2.2
1989	4.6	7.5	2.3
1990	5.3	9.3	2.3
1991	5.4	10.2	1.8
1992	4.8	10.3	1.1
1993	4.7	9.0	1.6
1994	4.0	8.7	0.6
1995	4.5	8.4	1.6
1996	4.4	6.6	2.9

PREDICTED

YEAR	Total	Male	Female
1996	4.2	7.4	1.6
1997	4.1	7.2	1.6
1998	4.0	7.0	1.6
1999	3.9	6.9	1.6
2000	3.8	6.7	1.5
2001	3.7	6.5	1.5
2002	3.6	6.3	1.5
2003	3.5	6.2	1.5
2004	3.4	6.0	1.5
2005	3.4	5.8	1.5
2006	3.3	5.7	1.5
2007	3.2	5.5	1.5
2008	3.1	5.4	1.4
2009	3.0	5.2	1.4
2010	3.0	5.1	1.4
2011	2.9	5.0	1.4
2012	2.8	4.8	1.4
2013	2.8	4.7	1.4
2014	2.7	4.6	1.4
2015	2.6	4.5	1.4
2016	2.6	4.3	1.3
2017	2.5	4.2	1.3
2018	2.5	4.1	1.3
2019	2.4	4.0	1.3
2020	2.3	3.9	1.3







Age standardized to the 1970 US population and expressed per 100,000 individuals.

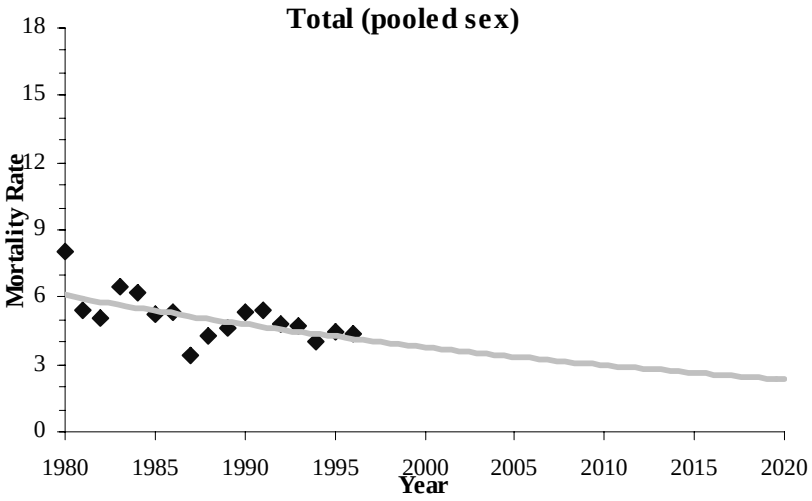
ORAL CANCER AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

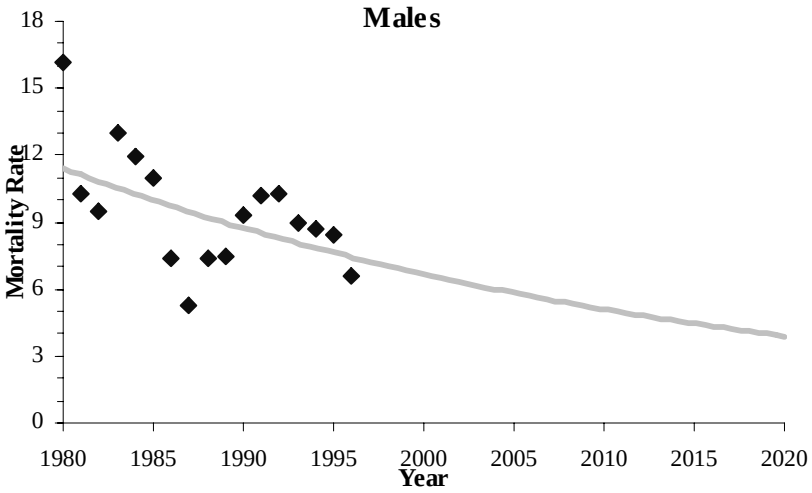
OBSERVED

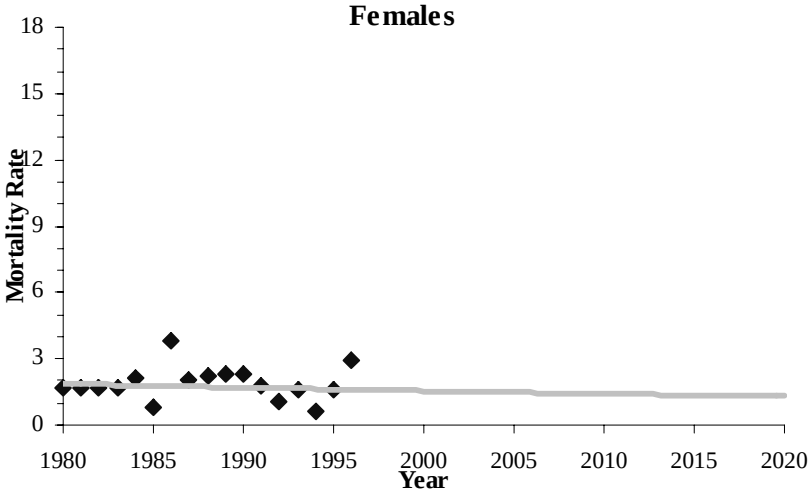
YEAR	Total	Male	Female
1980	8.0	16.2	1.7
1981	5.4	10.3	1.7
1982	5.1	9.5	1.7
1983	6.5	13.0	1.7
1984	6.2	11.9	2.1
1985	5.2	11.0	0.8
1986	5.3	7.4	3.8
1987	3.4	5.3	2.0
1988	4.3	7.4	2.2
1989	4.6	7.5	2.3
1990	5.3	9.3	2.3
1991	5.4	10.2	1.8
1992	4.8	10.3	1.1
1993	4.7	9.0	1.6
1994	4.0	8.7	0.6
1995	4.5	8.4	1.6
1996	4.4	6.6	2.9

PREDICTED

YEAR	Total	Male	Female
1996	4.2	7.4	1.6
1997	4.1	7.2	1.6
1998	4.0	7.0	1.6
1999	3.9	6.9	1.6
2000	3.8	6.7	1.5
2001	3.7	6.5	1.5
2002	3.6	6.3	1.5
2003	3.5	6.2	1.5
2004	3.4	6.0	1.5
2005	3.4	5.8	1.5
2006	3.3	5.7	1.5
2007	3.2	5.5	1.5
2008	3.1	5.4	1.4
2009	3.0	5.2	1.4
2010	3.0	5.1	1.4
2011	2.9	5.0	1.4
2012	2.8	4.8	1.4
2013	2.8	4.7	1.4
2014	2.7	4.6	1.4
2015	2.6	4.5	1.4
2016	2.6	4.3	1.3
2017	2.5	4.2	1.3
2018	2.5	4.1	1.3
2019	2.4	4.0	1.3
2020	2.3	3.9	1.3







Age standardized to the 1970 US population and expressed per 100,000 individuals.

Prostate Cancer Mortality*

*Please note a slight difference in format for Prostate and Cervical Cancer.

PROSTATE CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	---	23.3	---	---	21.4	---	---	47.5	---
1980-1990	---	22.5	---	---	20.7	---	---	44.8	---
1990-1996	---	24.5	---	---	22.6	---	---	51.4	---
PROJECTED RATES[3]									
2000	---	25.8 [4]	---	---	23.7 [4]	---	---	57.8 [4]	---
2010	---	28.3 [4]	---	---	25.9 [4]	---	---	68.6 [4]	---
2020	---	31.1 [4]	---	---	28.2 [4]	---	---	81.3 [4]	---
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	---	0.9 **	---	---	0.9 *	---	---	1.7 **	---
1980-1990	---	1.1	---	---	1.0	---	---	1.9	---
1990-1996	---	-1.0	---	---	-1.0	---	---	0.1	---
PERIOD PERCENT CHANGE[8]									
1980-1996	---	7.3	---	---	7.2	---	---	17.2	---
1980-1990	---	11.2	---	---	10.9	---	---	16.8	---
1990-1996	---	-1.7	---	---	-1.6	---	---	3.1	---

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta_1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

PROSTATE CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	---	26.3	---	---	25.4	---	---	35.6	---
1980-1990	---	24.9	---	---	24.0	---	---	33.9	---
1990-1996	---	28.6	---	---	27.9	---	---	37.9	---
PROJECTED RATES[2]									
2000	---	31.7 [3]	---	---	31.0 [3]	---	---	41.7 [3]	---
2010	---	37.2 [3]	---	---	36.8 [3]	---	---	47.7 [3]	---
2020	---	43.7 [3]	---	---	43.5 [3]	---	---	54.7 [3]	---
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	---	1.6 ***	---	---	1.7 ***	---	---	1.4 *	---
1980-1990	---	1.8 **	---	---	1.9 **	---	---	1.6	---
1990-1996	---	-0.4	---	---	-0.4	---	---	-0.3	---
PERIOD PERCENT CHANGE[7]									
1980-1996	---	18.1	---	---	20.3	---	---	12.2	---
1980-1990	---	17.9	---	---	19.4	---	---	14.5	---
1990-1996	---	1.1	---	---	1.1	---	---	1.4	---

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

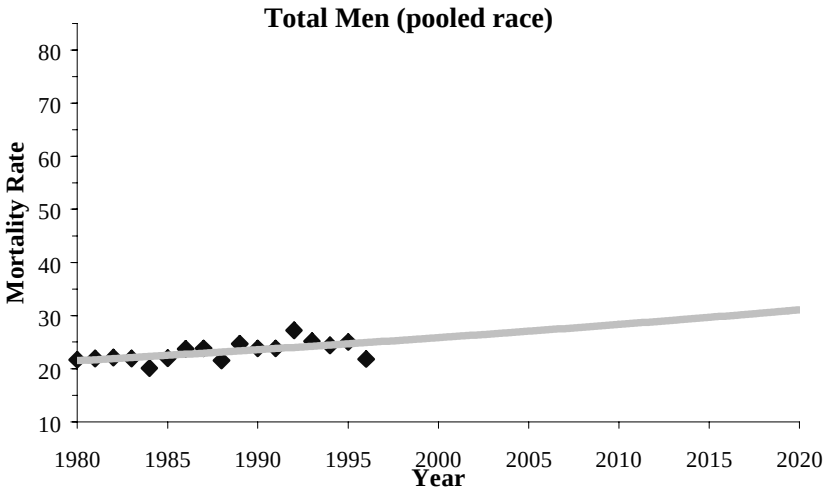
PROSTATE CANCER AGE-ADJUSTED MORTALITY RATES AMONG MEN

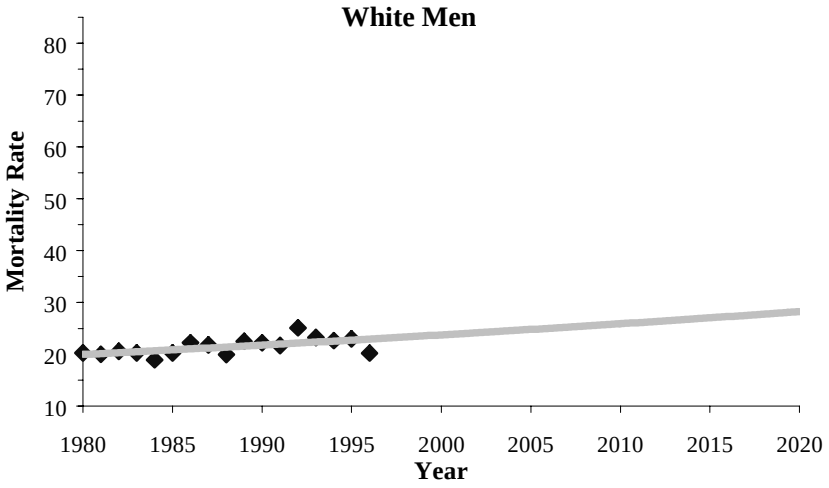
OBSERVED

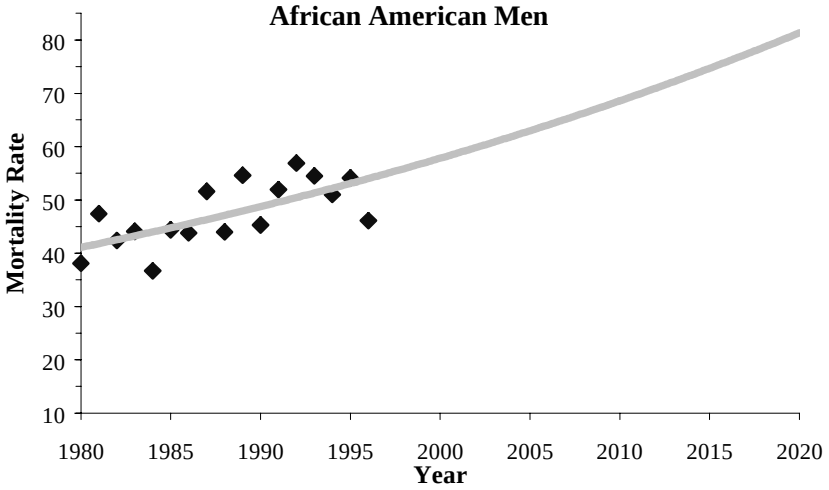
YEAR	All	White	AA[1]
1980	21.7	20.3	38.1
1981	21.9	20.0	47.4
1982	22.1	20.6	42.4
1983	21.9	20.3	44.1
1984	20.1	18.9	36.7
1985	22.0	20.3	44.4
1986	23.7	22.2	43.8
1987	23.8	21.8	51.6
1988	21.5	19.9	44.0
1989	24.7	22.5	54.6
1990	23.8	22.2	45.3
1991	23.8	21.7	51.9
1992	27.2	25.1	56.9
1993	25.2	23.2	54.5
1994	24.4	22.6	51.0
1995	25.0	23.0	54.1
1996	21.8	20.2	46.1

PREDICTED

YEAR	All	White	AA[1]
1996	24.9	22.9	54.0
1997	25.1	23.1	54.9
1998	25.4	23.3	55.9
1999	25.6	23.5	56.8
2000	25.8	23.7	57.8
2001	26.1	24.0	58.8
2002	26.3	24.2	59.8
2003	26.6	24.4	60.9
2004	26.8	24.6	61.9
2005	27.1	24.8	63.0
2006	27.3	25.0	64.0
2007	27.6	25.2	65.2
2008	27.8	25.4	66.3
2009	28.1	25.7	67.4
2010	28.3	25.9	68.6
2011	28.6	26.1	69.8
2012	28.9	26.3	71.0
2013	29.1	26.6	72.2
2014	29.4	26.8	73.4
2015	29.7	27.0	74.7
2016	29.9	27.3	76.0
2017	30.2	27.5	77.3
2018	30.5	27.7	78.6
2019	30.8	28.0	80.0
2020	31.1	28.2	81.3







[1] AA = African Americans

Age standardized to the 1970 US population and expressed per 100,000 individuals.

PROSTATE CANCER CRUDE MORTALITY RATES AMONG MEN

OBSERVED

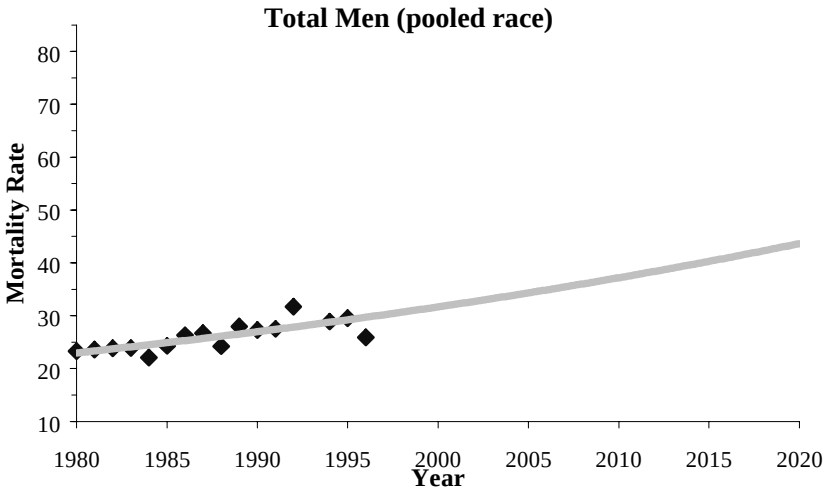
YEAR	All	White	AA[1]
1980	23.3	22.6	29.1
1981	23.6	22.3	36.4
1982	23.8	23.1	32.6
1983	23.9	23.1	33.6
1984	22.1	21.6	28.0
1985	24.3	23.4	33.8
1986	26.3	25.8	33.3
1987	26.7	25.6	39.0
1988	24.2	23.5	33.2
1989	28.0	26.8	41.0
1990	27.3	26.8	34.0
1991	27.5	26.6	38.5
1992	31.7	30.8	42.6
119	29.4	28.6	39.7
1994	28.9	28.4	36.9
1995	29.5	28.7	39.5
1996	25.9	25.3	34.0

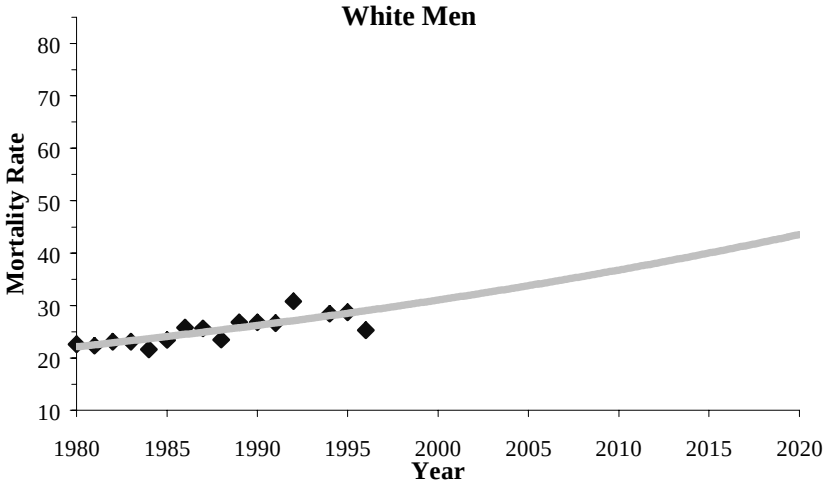
PREDICTED

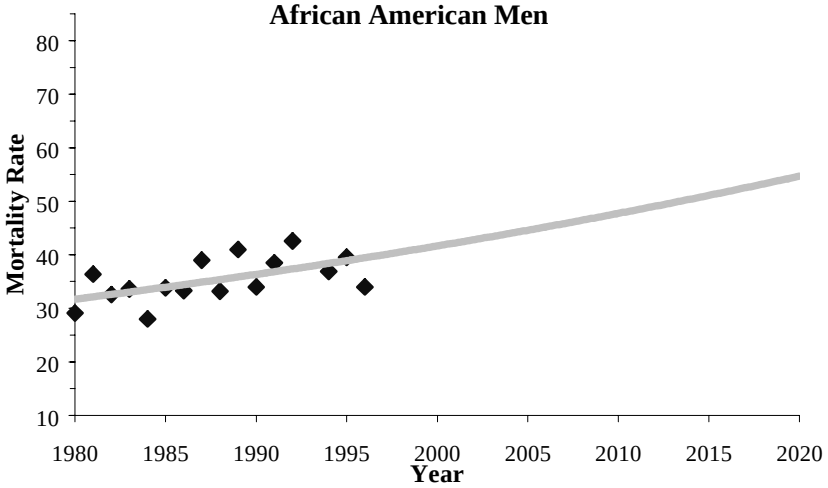
YEAR	All	White	AA[1]
1996	29.7	29.0	39.4
1997	30.2	29.5	40.0
1998	30.7	30.0	40.5
1999	31.2	30.5	41.1
2000	31.7	31.0	41.7
2001	32.2	31.6	42.2
2002	32.7	32.1	42.8
2003	33.2	32.7	43.4
2004	33.8	33.2	44.0
2005	34.3	33.8	44.6
2006	34.9	34.4	45.2
2007	35.4	34.9	45.8
2008	36.0	35.5	46.5
2009	36.6	36.1	47.1
2010	37.2	36.8	47.7
2011	37.8	37.4	48.4
2012	38.4	38.0	49.1
2013	39.0	38.7	49.7
2014	39.7	39.3	50.4
2015	40.3	40.0	51.1
2016	40.9	40.7	51.8
2017	41.6	41.4	52.5
2018	42.3	42.1	53.2
2019	43.0	42.8	54.0
2020	43.7	43.5	54.7

[1] AA = African Americans

Rates expressed per 100,000







Cervical Cancer Mortality

*Please note a slight difference in format for Prostate and Cervical Cancer.

CERVICAL CANCER AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	---	---	3.1	---	---	2.8	---	---	6.9
1980-1990	---	---	3.3	---	---	2.9	---	---	8.0
1990-1996	---	---	2.8	---	---	2.5	---	---	5.4
PROJECTED RATES[3]									
2000	---	---	2.8 [5]	---	---	2.6 [5]	---	---	3.9 [4]
2010	---	---	2.8 [5]	---	---	2.7 [5]	---	---	2.4 [4]
2020	---	---	2.8 [5]	---	---	2.8 [5]	---	---	1.5 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	---	---	-2.5 **	---	---	-1.9 *	---	---	-4.5 **
1980-1990	---	---	-3.9 *	---	---	-3.4 *	---	---	-4.6
1990-1996	---	---	0.1	---	---	0.5	---	---	0.0
PERIOD PERCENT CHANGE[8]									
1980-1996	---	---	-33.7	---	---	-27.4	---	---	-51.8
1980-1990	---	---	-32.6	---	---	-31.5	---	---	-29.8
1990-1996	---	---	0.0	---	---	1.9	---	---	-1.9

[1] Age standardized to the 1970 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

CERVICAL CANCER CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	---	---	3.9	---	---	3.6	---	---	6.8
1980-1990	---	---	4.1	---	---	3.7	---	---	7.6
1990-1996	---	---	3.6	---	---	3.4	---	---	5.5
PROJECTED RATES[2]									
2000	---	---	3.6 [4]	---	---	3.4 [4]	---	---	4.2 [3]
2010	---	---	3.7 [4]	---	---	3.4 [4]	---	---	2.9 [3]
2020	---	---	3.7 [4]	---	---	3.5 [4]	---	---	2.0 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	---	---	-2.0 **	---	---	-1.6 *	---	---	-3.7 **
1980-1990	---	---	-3.2 *	---	---	-2.9 *	---	---	-4.0
1990-1996	---	---	0.2	---	---	0.1	---	---	-0.5
PERIOD PERCENT CHANGE[7]									
1980-1996	---	---	-26.0	---	---	-20.5	---	---	-46.9
1980-1990	---	---	-25.0	---	---	-23.9	---	---	-25.0
1990-1996	---	---	0.0	---	---	0.0	---	---	-3.7

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{b1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

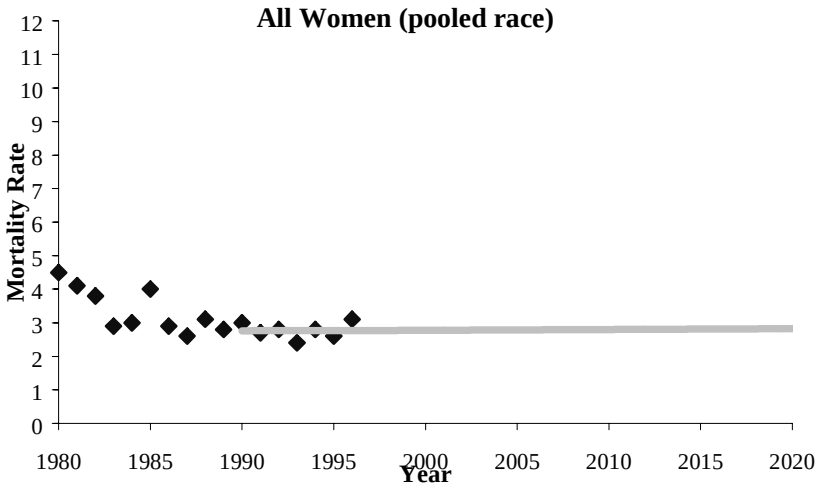
CERVICAL CANCER AGE-ADJUSTED MORTALITY RATES AMONG WOMEN

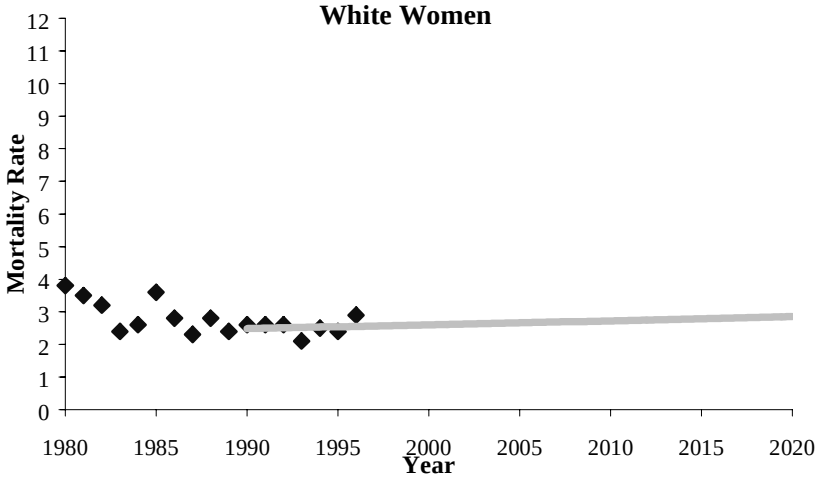
OBSERVED

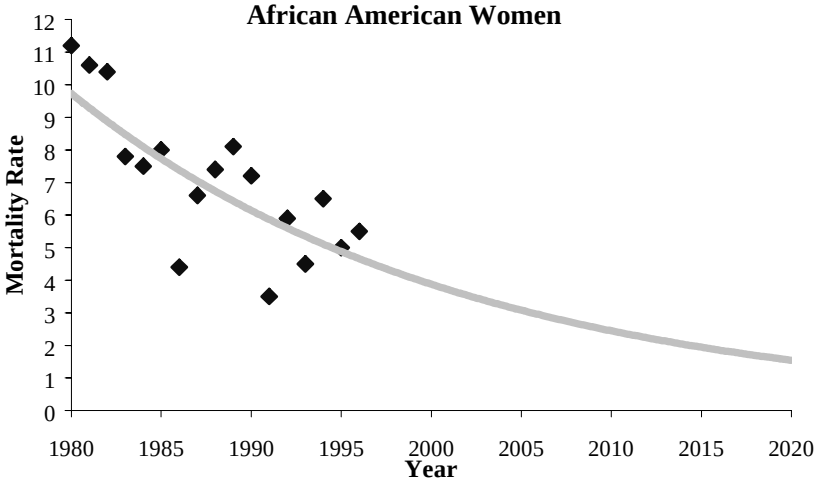
YEAR	All	White	AA[1]
1980	4.5	3.8	11.2
1981	4.1	3.5	10.6
1982	3.8	3.2	10.4
1983	2.9	2.4	7.8
1984	3.0	2.6	7.5
1985	4.0	3.6	8.0
1986	2.9	2.8	4.4
1987	2.6	2.3	6.6
1988	3.1	2.8	7.4
1989	2.8	2.4	8.1
1990	3.0	2.6	7.2
1991	2.7	2.6	3.5
1992	2.8	2.6	5.9
1993	2.4	2.1	4.5
1994	2.8	2.5	6.5
1995	2.6	2.4	5.0
1996	3.1	2.9	5.5

PREDICTED

YEAR	All	White	AA[1]
1996	2.8	2.6	4.7
1997	2.8	2.6	4.5
1998	2.8	2.6	4.3
1999	2.8	2.6	4.1
2000	2.8	2.6	3.9
2001	2.8	2.6	3.7
2002	2.8	2.6	3.5
2003	2.8	2.6	3.4
2004	2.8	2.6	3.2
2005	2.8	2.7	3.1
2006	2.8	2.7	2.9
2007	2.8	2.7	2.8
2008	2.8	2.7	2.7
2009	2.8	2.7	2.6
2010	2.8	2.7	2.4
2011	2.8	2.7	2.3
2012	2.8	2.7	2.2
2013	2.8	2.8	2.1
2014	2.8	2.8	2.0
2015	2.8	2.8	1.9
2016	2.8	2.8	1.9
2017	2.8	2.8	1.8
2018	2.8	2.8	1.7
2019	2.8	2.8	1.6
2020	2.8	2.8	1.5







[1] AA = African Americans

Age standardized to the 1970 US population and expressed per 100,000 individuals.

CERVICAL CANCER CRUDE MORTALITY RATES AMONG WOMEN

OBSERVED

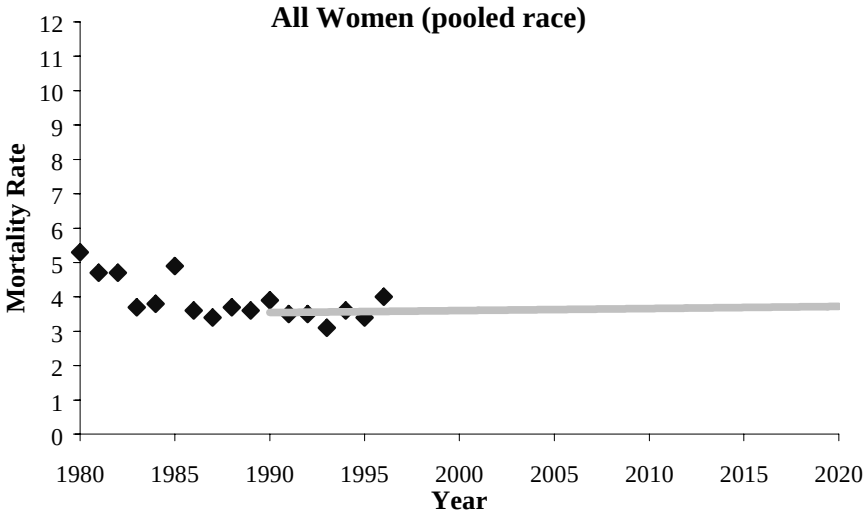
YEAR	All	White	AA[1]
1980	5.3	4.7	10.2
1981	4.7	4.1	9.4
1982	4.7	4.1	10.1
1983	3.7	3.3	7.5
1984	3.8	3.4	6.7
1985	4.9	4.6	7.7
1986	3.6	3.6	4.2
1987	3.4	3.0	6.6
1988	3.7	3.3	7.2
1989	3.6	3.1	7.9
1990	3.9	3.6	6.8
1991	3.5	3.4	4.0
1992	3.5	3.3	6.0
1993	3.1	2.9	4.9
1994	3.6	3.3	6.8
1995	3.4	3.2	5.1
1996	4.0	3.8	5.3

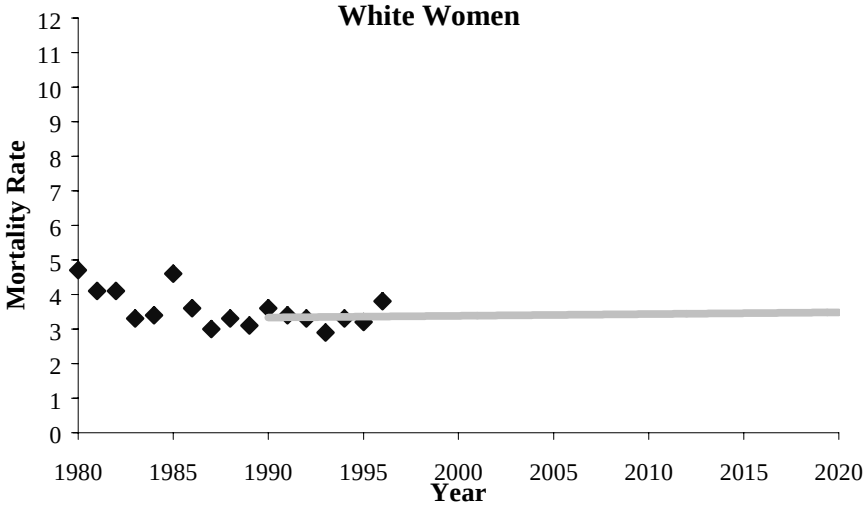
PREDICTED

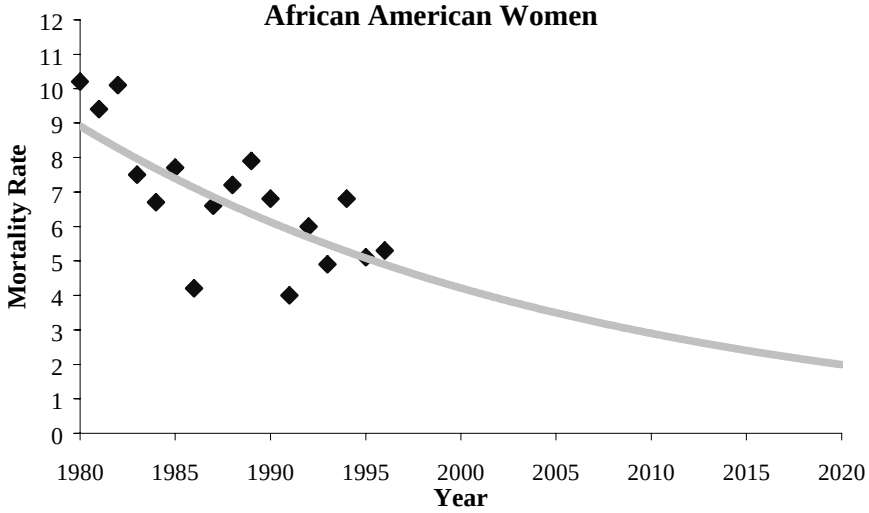
YEAR	All	White	AA[1]
1996	3.6	3.4	4.9
1997	3.6	3.4	4.7
1998	3.6	3.4	4.5
1999	3.6	3.4	4.4
2000	3.6	3.4	4.2
2001	3.6	3.4	4.1
2002	3.6	3.4	3.9
2003	3.6	3.4	3.8
2004	3.6	3.4	3.6
2005	3.6	3.4	3.5
2006	3.6	3.4	3.4
2007	3.6	3.4	3.2
2008	3.6	3.4	3.1
2009	3.7	3.4	3.0
2010	3.7	3.4	2.9
2011	3.7	3.4	2.8
2012	3.7	3.4	2.7
2013	3.7	3.4	2.6
2014	3.7	3.5	2.5
2015	3.7	3.5	2.4
2016	3.7	3.5	2.3
2017	3.7	3.5	2.2
2018	3.7	3.5	2.1
2019	3.7	3.5	2.1
2020	3.7	3.5	2.0

[1] AA = African Americans

Rates expressed per 100,000







CARDIOVASCULAR DISEASE MORTALITY

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Cardiovascular Disease (CVD) Mortality

CARDIOVASCULAR DISEASE (CVD) AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	213.9	281.3	163.0	206.4	273.5	155.4	293.5	368.2	240.0
1980-1990	217.6	299.8	168.9	217.1	292.2	160.7	306.7	384.7	249.4
1990-1996	195.7	251.9	152.7	189.3	244.9	146.5	275.1	346.0	224.9
PROJECTED RATES[3]									
2000	172.5 [4]	216.0 [4]	138.9 [4]	166.6 [4]	209.1 [4]	133.6 [4]	247.1 [4]	311.6 [4]	202.5 [4]
2010	144.1 [4]	173.5 [4]	121.4 [4]	138.9 [4]	166.7 [4]	117.3 [4]	213.4 [4]	270.6 [4]	175.0 [4]
2020	120.4 [4]	139.4 [4]	106.2 [4]	115.8 [4]	133.0 [4]	103.0 [4]	184.3 [4]	235.0 [4]	151.2 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-1.8 ***	-2.2 ***	-1.3 ***	-1.8 ***	-2.2 ***	-1.3 ***	-1.5 ***	-1.4 ***	-1.4 ***
1980-1990	-2.3 ***	-2.5 ***	-2.1 ***	-2.4 ***	-2.6 ***	-2.1 ***	-1.7 ***	-1.3 **	-2.0 **
1990-1996	-0.4	-1.4 *	0.5	-0.3	-1.3 *	0.7	-1.3 **	-2.2 *	-0.3
PERIOD PERCENT CHANGE[8]									
1980-1996	-22.6	-27.3	-16.7	-22.5	-27.8	-15.7	-21.3	-20.6	-21.2
1980-1990	-20.1	-21.1	-18.2	-20.5	-22.1	-18.1	-14.6	-10.5	-18.0
1990-1996	-2.2	-6.4	2.2	-1.5	-6.0	3.2	-6.7	-10.0	-3.2

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

CARDIOVASCULAR DISEASE (CVD) CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	461.4	454.4	467.8	476.7	467.6	485.3	367.4	374.5	361.1
1980-1990	463.9	475.3	472.5	488.8	488.4	489.2	378.4	392.3	366.3
1990-1996	439.7	420.1	457.9	456.2	433.8	477.4	352.5	350.8	353.9
PROJECTED RATES[2]									
2000	410.3 [3]	376.0 [3]	443.8 [3]	427.9 [3]	389.8 [3]	464.9 [3]	327.9 [3]	314.7 [3]	339.7 [3]
2010	372.2 [3]	321.3 [3]	424.7 [3]	390.4 [3]	334.6 [3]	448.2 [3]	297.1 [3]	271.4 [3]	321.7 [3]
2020	337.5 [3]	274.6 [3]	406.5 [3]	356.3 [3]	287.3 [3]	432.1 [3]	269.2 [3]	234.0 [3]	304.7 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	-1.0 ***	-1.6 ***	-0.4 **	-0.9 ***	-1.5 ***	-0.4 *	-1.0 ***	-1.5 ***	-0.5 *
1980-1990	-1.4 ***	-1.9 ***	-0.9 ***	-1.3 ***	-1.9 ***	-0.9 **	-1.1 *	-1.4 **	-0.9
1990-1996	0.0	-0.8	0.8	0.2	-0.7	1.0 *	-1.1 *	-2.2 *	-0.1
PERIOD PERCENT CHANGE[7]									
1980-1996	-13.2	-20.8	-5.7	-12.0	-20.0	-4.0	-15.7	-20.9	-10.7
1980-1990	-12.9	-16.5	-9.4	-12.6	-16.4	-9.3	-9.7	-10.9	-8.5
1990-1996	0.1	-4.2	4.1	1.0	-3.5	5.0	-5.5	-10.1	-1.4

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

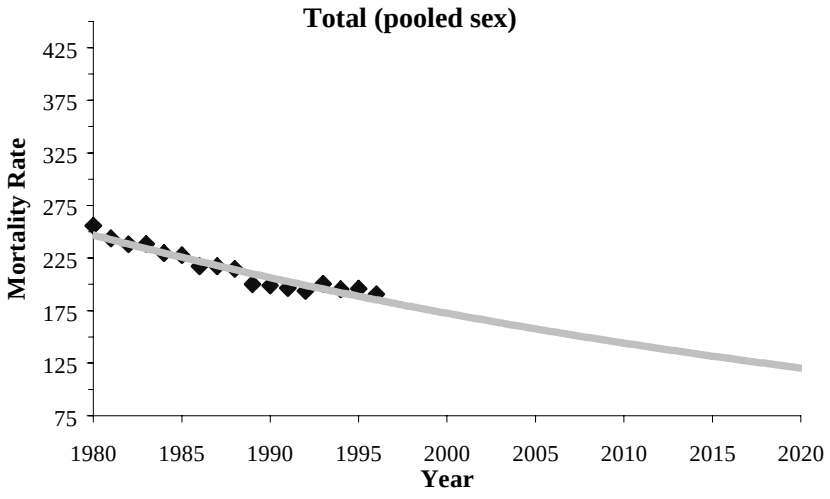
CVD AGE-ADJUSTED MORTALITY RATES: POOLED RACE

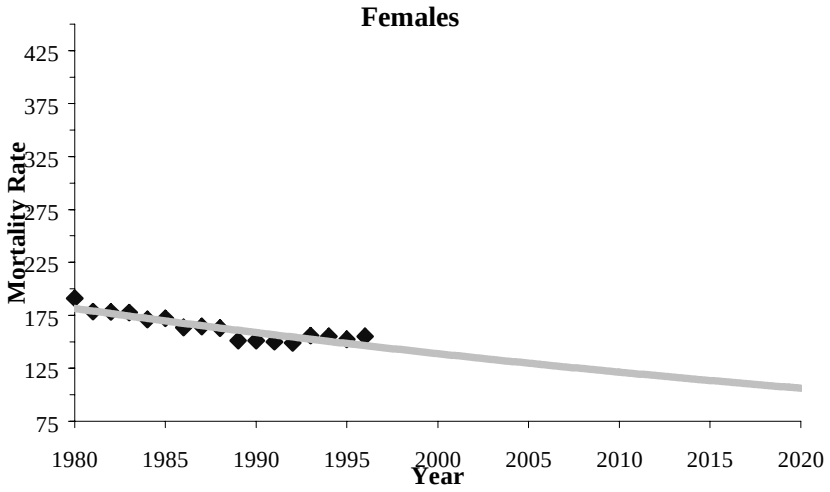
OBSERVED

YEAR	Total	Male	Female
1980	255.6	340.4	191.1
1981	243.4	329.3	178.6
1982	237.9	318.0	178.3
1983	238.2	318.9	177.8
1984	229.5	307.9	171.1
1985	227.7	301.6	172.2
1986	217.1	288.3	163.6
1987	217.3	288.6	164.3
1988	214.5	283.0	163.1
1989	200.1	265.7	151.2
1990	198.8	262.4	151.1
1991	196.2	257.6	150.2
1992	193.6	251.5	149.0
1993	200.3	258.8	155.7
1994	195.1	247.6	155.1
1995	195.8	250.7	152.5
1996	190.4	235.9	155.3

PREDICTED

YEAR	Total	Male	Female
1996	185.3	235.8	146.5
1997	182.0	230.7	144.6
1998	178.8	225.7	142.6
1999	175.6	220.8	140.7
2000	172.5	216.0	138.9
2001	169.4	211.4	137.0
2002	166.4	206.8	135.2
2003	163.4	202.3	133.4
2004	160.5	197.9	131.6
2005	157.7	193.6	129.8
2006	154.8	189.4	128.1
2007	152.1	185.3	126.4
2008	149.4	181.3	124.7
2009	146.7	177.4	123.1
2010	144.1	173.5	121.4
2011	141.6	169.8	119.8
2012	139.0	166.1	118.2
2013	136.6	162.5	116.6
2014	134.1	159.0	115.1
2015	131.8	155.5	113.6
2016	129.4	152.1	112.0
2017	127.1	148.8	110.5
2018	124.9	145.6	109.1
2019	122.6	142.5	107.6
2020	120.4	139.4	106.2





Age standardized to the 1940 US population and expressed per 100,000 individuals.

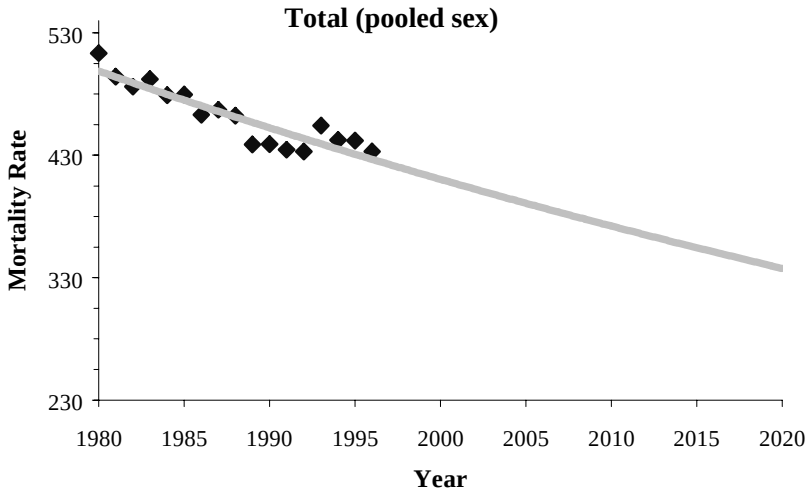
CVD CRUDE MORTALITY RATES: POOLED RACE

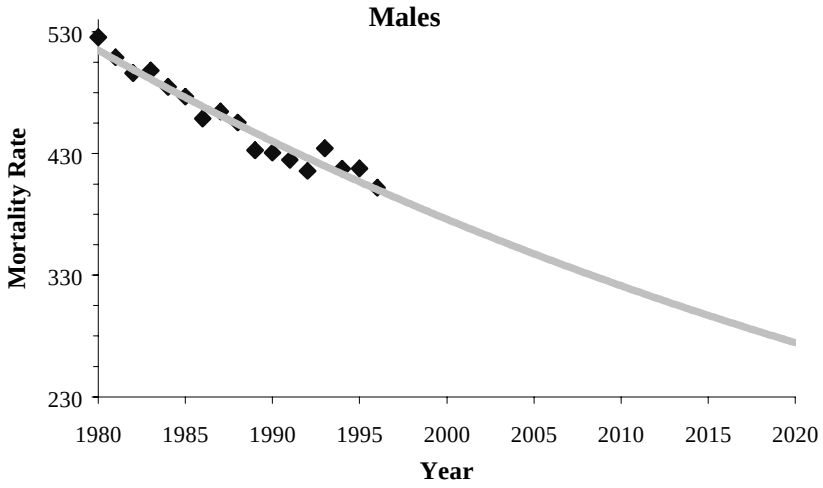
OBSERVED

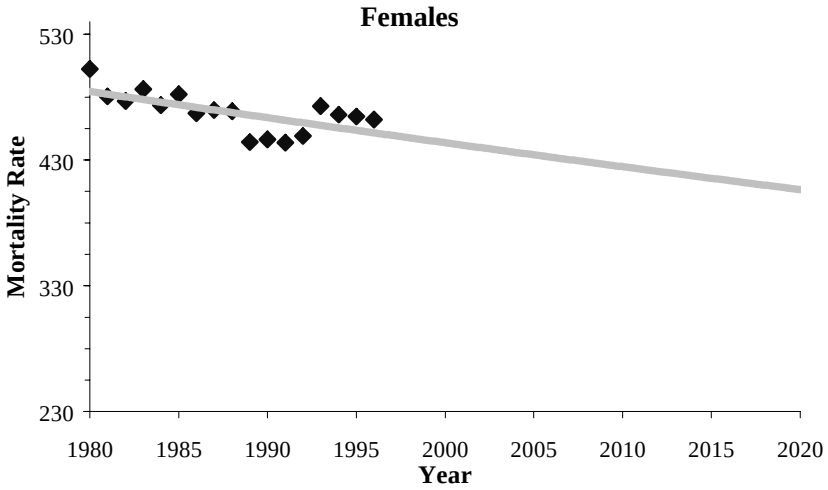
YEAR	Total	Male	Female
1980	513.5	525.4	502.4
1981	494.1	508.9	480.5
1982	486.0	495.9	476.9
1983	492.2	498.3	486.5
1984	479.0	484.7	473.7
1985	479.6	476.8	482.2
1986	463.1	458.8	467.2
1987	467.1	464.4	469.7
1988	462.4	455.5	468.7
1989	438.7	432.6	444.3
1990	438.9	430.7	446.4
1991	434.6	424.7	443.8
1992	432.9	415.6	449.0
1993	454.1	434.1	472.8
1994	442.5	417.3	466.0
1995	441.9	417.7	464.6
1996	432.9	401.8	462.3

PREDICTED

YEAR	Total	Male	Female
1996	426.7	400.4	451.6
1997	422.5	394.2	449.7
1998	418.4	388.0	447.7
1999	414.4	382.0	445.7
2000	410.3	376.0	443.8
2001	406.3	370.1	441.8
2002	402.4	364.4	439.9
2003	398.5	358.7	438.0
2004	394.6	353.1	436.1
2005	390.8	347.6	434.1
2006	387.0	342.2	432.2
2007	383.2	336.8	430.3
2008	379.5	331.6	428.5
2009	375.8	326.4	426.6
2010	372.2	321.3	424.7
2011	368.5	316.3	422.8
2012	365.0	311.4	421.0
2013	361.4	306.5	419.1
2014	357.9	301.7	417.3
2015	354.4	297.0	415.5
2016	351.0	292.4	413.7
2017	347.6	287.8	411.8
2018	344.2	283.3	410.0
2019	340.9	278.9	408.2
2020	337.5	274.6	406.5







Rates expressed per 100,000

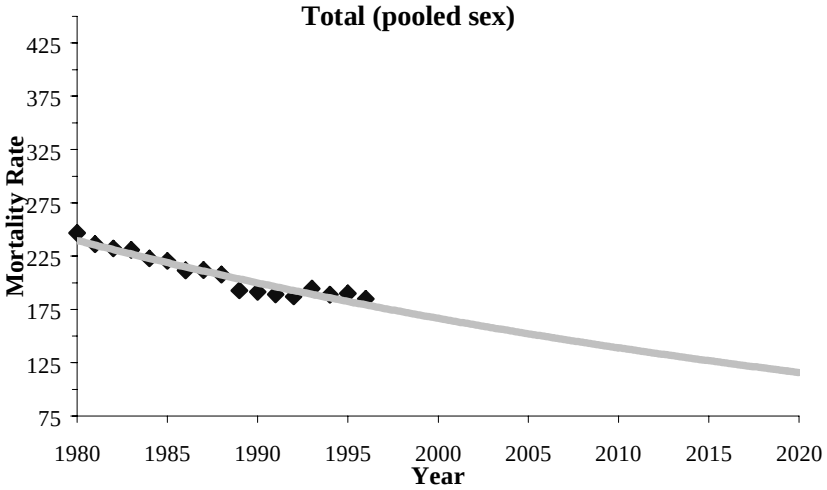
CVD AGE-ADJUSTED MORTALITY RATES: WHITES

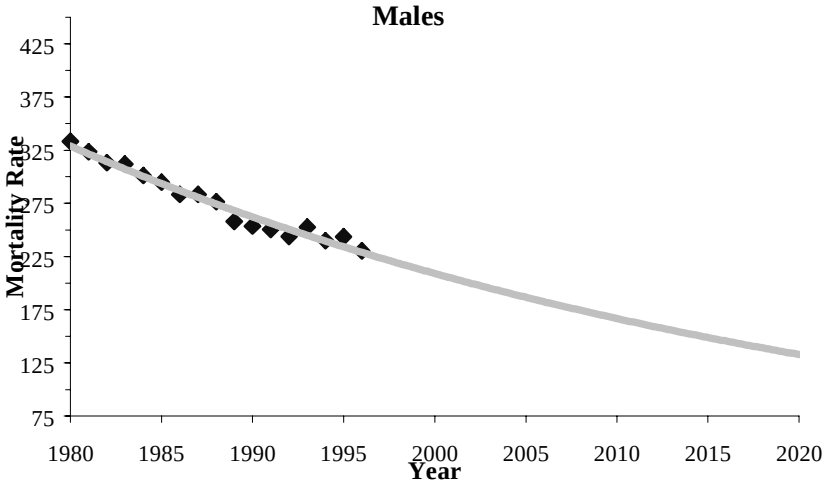
OBSERVED

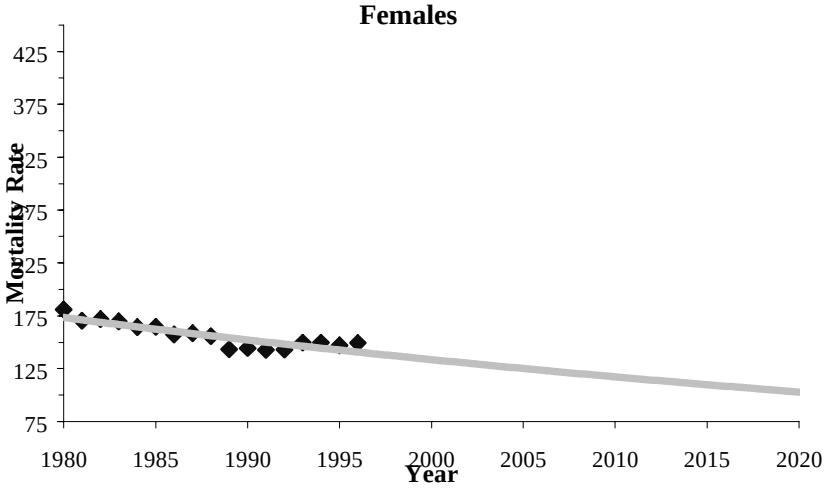
YEAR	Total	Male	Female
1980	246.8	333.2	181.1
1981	236.3	323.6	170.4
1982	232.2	313.1	171.9
1983	230.9	312.0	169.9
1984	222.8	301.2	164.4
1985	220.6	294.9	164.7
1986	211.6	283.3	157.5
1987	211.8	283.5	158.4
1988	207.6	276.5	155.7
1989	192.9	258.0	143.3
1990	191.2	253.5	144.5
1991	189.1	250.6	142.6
1992	187.0	243.8	143.0
1993	194.4	252.8	149.6
1994	188.7	239.9	149.5
1995	189.8	243.6	147.1
1996	184.7	230.5	149.2

PREDICTED

YEAR	Total	Male	Female
1996	179.2	228.9	140.8
1997	176.0	223.8	138.9
1998	172.8	218.8	137.1
1999	169.7	213.9	135.4
2000	166.6	209.1	133.6
2001	163.6	204.4	131.9
2002	160.7	199.8	130.2
2003	157.8	195.4	128.5
2004	154.9	191.0	126.8
2005	152.1	186.7	125.2
2006	149.4	182.5	123.6
2007	146.7	178.5	122.0
2008	144.1	174.5	120.4
2009	141.5	170.6	118.8
2010	138.9	166.7	117.3
2011	136.4	163.0	115.8
2012	134.0	159.4	114.3
2013	131.6	155.8	112.8
2014	129.2	152.3	111.3
2015	126.9	148.9	109.9
2016	124.6	145.6	108.5
2017	122.3	142.3	107.1
2018	120.1	139.1	105.7
2019	118.0	136.0	104.3
2020	115.8	133.0	103.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

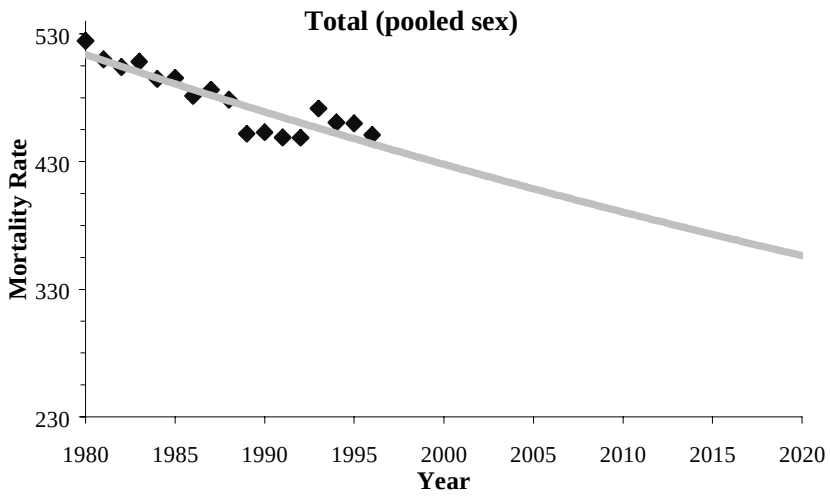
CVD CRUDE MORTALITY RATES: WHITES

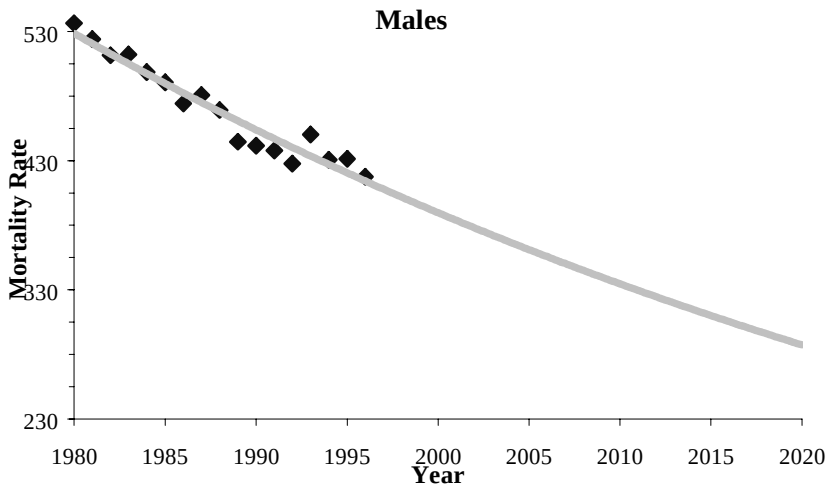
OBSERVED

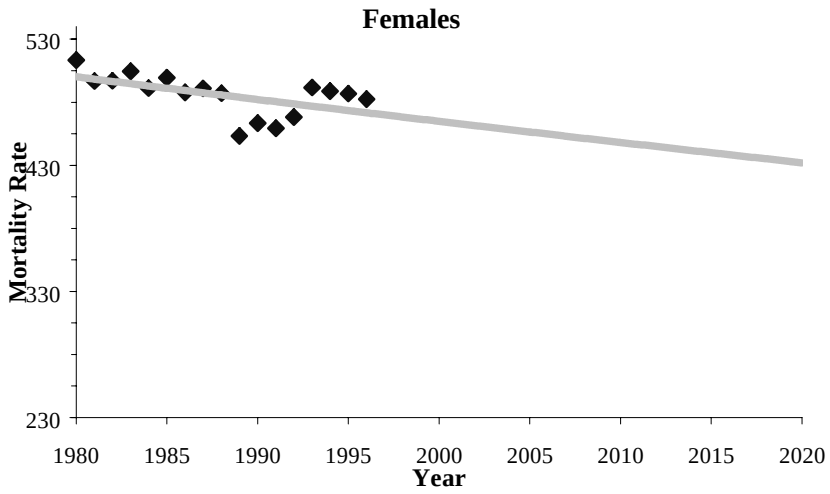
YEAR	Total	Male	Female
1980	524.6	536.4	513.5
1981	510.0	524.2	496.8
1982	504.1	511.7	497.0
1983	508.3	512.3	504.5
1984	494.8	498.6	491.3
1985	495.3	490.8	499.5
1986	481.4	474.3	487.9
1987	486.1	480.9	490.9
1988	478.5	469.3	487.1
1989	451.7	444.7	453.3
1990	452.9	441.6	463.5
1991	448.9	437.8	459.3
1992	448.6	427.8	468.2
1993	471.6	450.3	491.7
1994	460.6	430.7	488.8
1995	459.9	431.5	486.8
1996	450.9	417.5	482.6

PREDICTED

YEAR	Total	Male	Female
1996	443.8	414.3	471.8
1997	439.8	408.0	470.0
1998	435.8	401.8	468.3
1999	431.8	395.7	466.6
2000	427.9	389.8	464.9
2001	424.0	383.9	463.2
2002	420.1	378.0	461.5
2003	416.3	372.3	459.8
2004	412.5	366.7	458.1
2005	408.7	361.1	456.5
2006	405.0	355.7	454.8
2007	401.3	350.3	453.1
2008	397.7	345.0	451.5
2009	394.0	339.8	449.8
2010	390.4	334.6	448.2
2011	386.9	329.6	446.5
2012	383.4	324.6	444.9
2013	379.9	319.7	443.3
2014	376.4	314.8	441.7
2015	373.0	310.1	440.1
2016	369.6	305.4	438.4
2017	366.2	300.7	436.8
2018	362.9	296.2	435.3
2019	359.6	291.7	433.7
2020	356.3	287.3	432.1







Rates expressed per 100,000

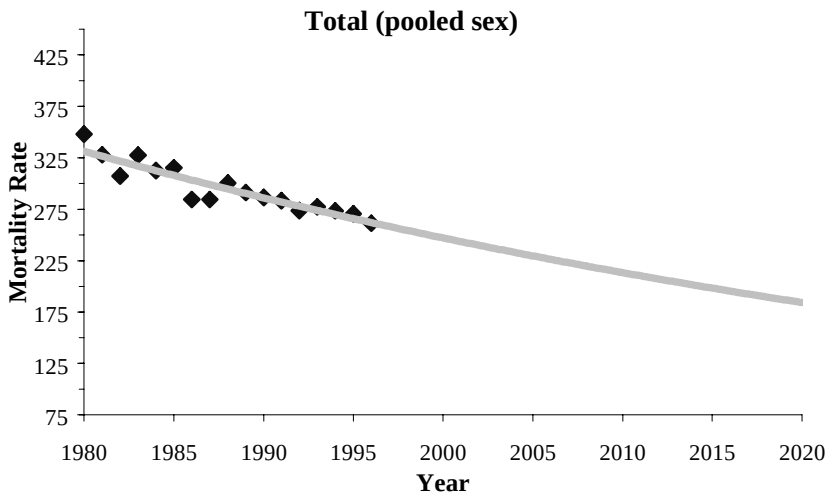
CVD AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

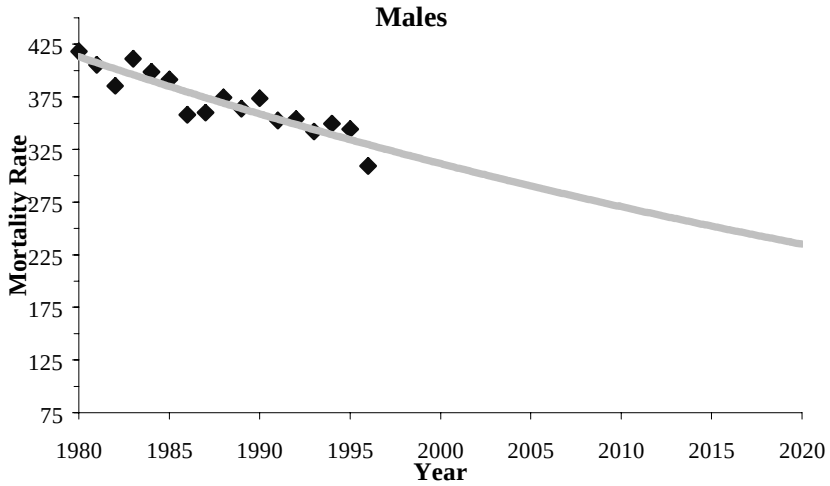
OBSERVED

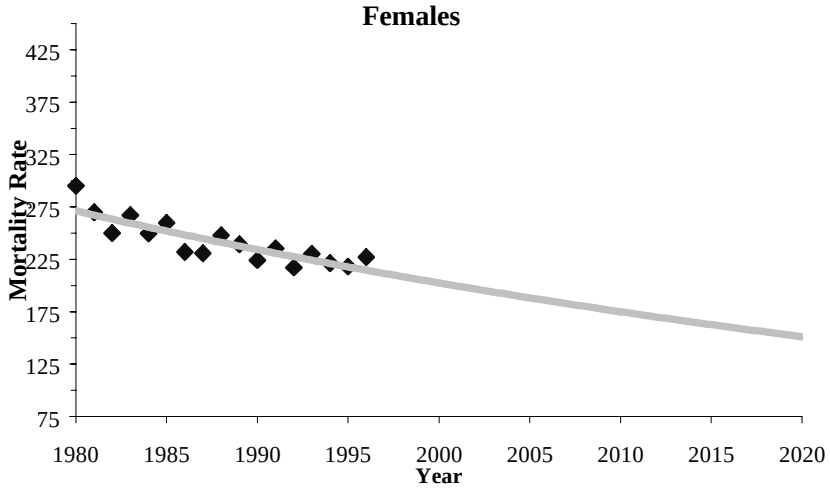
YEAR	Total	Male	Female
1980	348.1	418.1	295.2
1981	327.9	405.5	269.7
1982	307.1	385.5	250.1
1983	327.7	411.1	267.1
1984	312.5	398.7	249.6
1985	315.3	391.5	259.8
1986	284.4	357.9	232.1
1987	284.4	359.9	230.7
1988	300.3	374.6	248.1
1989	291.1	363.7	239.2
1990	286.5	373.5	224.2
1991	283.3	352.6	235.5
1992	273.9	354.0	217.1
1993	277.3	342.2	230.2
1994	273.4	349.5	221.2
1995	270.5	344.3	218.1
1996	261.2	309.4	227.0

PREDICTED

YEAR	Total	Male	Female
1996	262.0	329.7	214.6
1997	258.2	325.1	211.5
1998	254.5	320.5	208.5
1999	250.8	316.0	205.4
2000	247.1	311.6	202.5
2001	243.5	307.2	199.5
2002	240.0	302.9	196.6
2003	236.5	298.7	193.8
2004	233.0	294.5	191.0
2005	229.6	290.4	188.2
2006	226.3	286.3	185.5
2007	223.0	282.3	182.8
2008	219.7	278.4	180.2
2009	216.5	274.5	177.5
2010	213.4	270.6	175.0
2011	210.3	266.8	172.4
2012	207.2	263.1	169.9
2013	204.2	259.4	167.5
2014	201.2	255.8	165.0
2015	198.3	252.2	162.7
2016	195.4	248.7	160.3
2017	192.5	245.2	158.0
2018	189.7	241.8	155.7
2019	187.0	238.4	153.4
2020	184.3	235.0	151.2







Age standardized to the 1940 US population and expressed per 100,000 individuals.

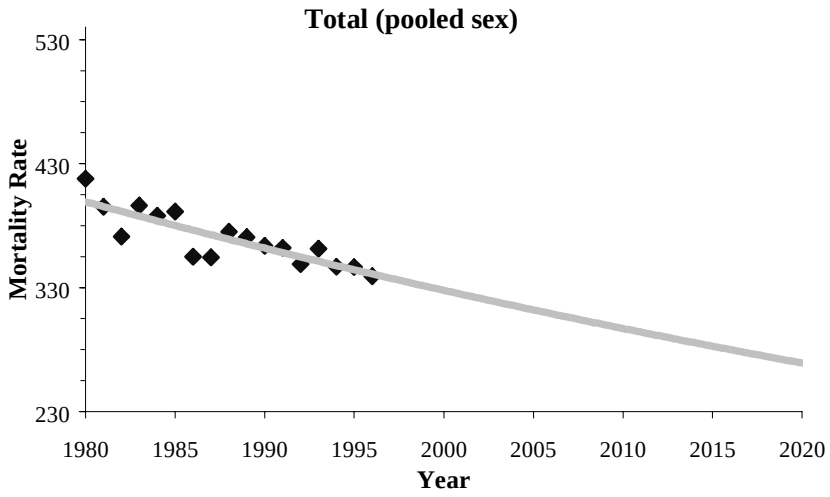
CVD CRUDE MORTALITY RATES: AFRICAN AMERICANS

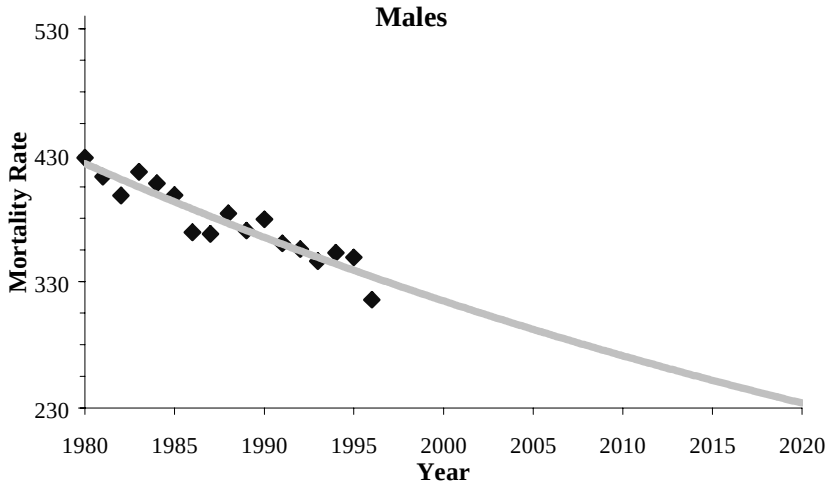
OBSERVED

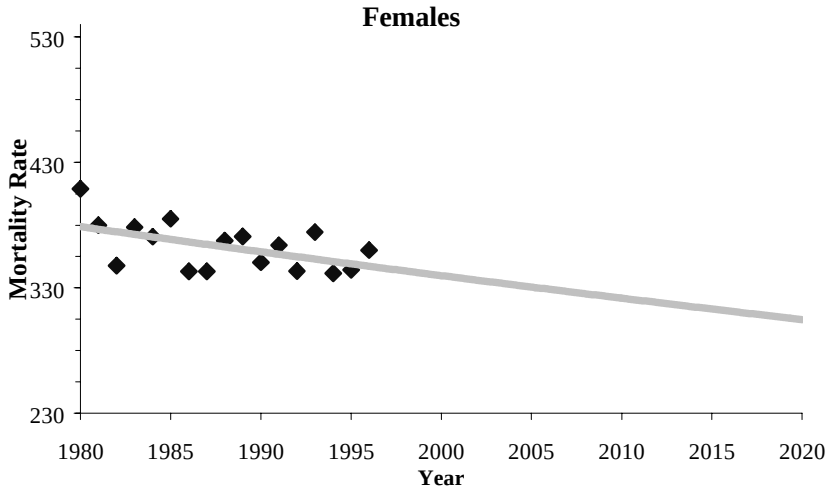
YEAR	Total	Male	Female
1980	417.7	427.9	408.7
1981	395.3	412.9	379.8
1982	371.2	398.1	347.6
1983	396.2	416.8	378.2
1984	388.0	407.7	370.7
1985	391.2	398.2	385.1
1986	355.0	368.8	342.9
1987	354.4	367.6	343.0
1988	375.1	383.7	367.6
1989	370.6	370.2	370.9
1990	363.7	379.2	350.2
1991	362.1	360.1	363.8
1992	349.0	355.6	343.2
1993	361.3	346.3	374.4
1994	346.8	352.8	341.6
1995	346.5	349.2	344.1
1996	339.2	315.6	360.0

PREDICTED

YEAR	Total	Male	Female
1996	341.1	333.9	347.1
1997	337.7	329.0	345.3
1998	334.4	324.2	343.4
1999	331.1	319.4	341.5
2000	327.9	314.7	339.7
2001	324.7	310.1	337.8
2002	321.5	305.5	336.0
2003	318.3	301.0	334.2
2004	315.2	296.6	332.4
2005	312.1	292.3	330.6
2006	309.1	288.0	328.8
2007	306.0	283.7	327.0
2008	303.0	279.5	325.2
2009	300.1	275.4	323.4
2010	297.1	271.4	321.7
2011	294.2	267.4	319.9
2012	291.3	263.5	318.2
2013	288.5	259.6	316.5
2014	285.6	255.8	314.8
2015	282.8	252.0	313.1
2016	280.1	248.3	311.4
2017	277.3	244.6	309.7
2018	274.6	241.0	308.0
2019	271.9	237.5	306.3
2020	269.2	234.0	304.7







Rates expressed per 100,000

Ischemic Heart Disease (IHD) Mortality

ISCHEMIC HEART DISEASE (IHD) AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	123.7	173.3	85.9	121.9	171.9	83.4	142.9	187.1	111.4
1980-1990	127.1	186.1	89.6	129.3	184.8	87.0	149.9	198.8	114.7
1990-1996	111.6	153.2	79.6	110.2	152.2	77.6	133.3	172.8	105.9
PROJECTED RATES[3]									
2000	94.7 [4]	126.8 [4]	69.8 [4]	93.3 [4]	125.7 [4]	68.0 [4]	117.3 [4]	148.8 [4]	96.2 [4]
2010	75.9 [4]	97.9 [4]	58.8 [4]	74.6 [4]	96.7 [4]	57.1 [4]	99.2 [4]	122.8 [4]	84.9 [4]
2020	60.8 [4]	75.7 [4]	49.5 [4]	59.6 [4]	74.4 [4]	48.0 [4]	84.0 [4]	101.4 [4]	75.0 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-2.2 ***	-2.5 ***	-1.7 ***	-2.2 ***	-2.6 ***	-1.7 ***	-1.7 ***	-1.9 ***	-1.2 **
1980-1990	-3.0 ***	-3.2 ***	-2.7 ***	-3.1 ***	-3.3 ***	-2.7 ***	-1.9 **	-1.6 *	-2.1 *
1990-1996	-1.2 **	-1.9 **	-0.4	-1.1 *	-1.7 *	-0.4	-2.0 **	-3.5 *	-0.1
PERIOD PERCENT CHANGE[8]									
1980-1996	-28.6	-32.3	-23.3	-28.6	-32.6	-23.1	-24.0	-25.4	-21.1
1980-1990	-23.5	-24.6	-21.6	-24.2	-25.7	-21.5	-14.3	-8.5	-19.6
1990-1996	-5.6	-8.1	-2.8	-5.2	-7.4	-2.9	-8.6	-14.6	-1.4

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

ISCHEMIC HEART DISEASE (IHD) CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	260.4	275.1	246.7	272.1	287.2	258.0	182.6	191.9	174.4
1980-1990	264.1	289.7	251.1	281.5	301.9	262.5	188.0	203.4	174.7
1990-1996	245.1	251.5	239.1	256.9	263.5	250.6	176.1	178.1	174.3
PROJECTED RATES[2]									
2000	220.8 [3]	217.7 [3]	224.5 [3]	232.1 [3]	229.0 [3]	235.7 [3]	162.4 [3]	154.6 [3]	170.3 [3]
2010	192.5 [3]	179.4 [3]	207.6 [3]	203.1 [3]	189.7 [3]	218.4 [3]	146.8 [3]	128.8 [3]	166.6 [3]
2020	167.9 [3]	147.9 [3]	191.9 [3]	177.7 [3]	157.2 [3]	202.3 [3]	132.7 [3]	107.4 [3]	163.0 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	-1.4 ***	-1.9 ***	-0.8 ***	-1.3 ***	-1.9 ***	-0.8 ***	-1.0 ***	-1.8 ***	-0.2
1980-1990	-2.0 ***	-2.6 ***	-1.4 ***	-2.0 ***	-2.5 ***	-1.4 ***	-1.2 *	-1.6 *	-0.8
1990-1996	-0.8	-1.3 *	-0.3	-0.7	-1.1 *	-0.2	-1.5 **	-3.3 *	0.1
PERIOD PERCENT CHANGE[7]									
1980-1996	-19.6	-25.9	-12.4	-18.9	-25.3	-11.7	-16.0	-23.5	-8.4
1980-1990	-16.0	-19.9	-11.5	-16.0	-20.2	-11.2	-7.6	-7.6	-7.6
1990-1996	-3.7	-5.8	-1.7	-3.2	-4.9	-1.5	-6.7	-13.8	0.2

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

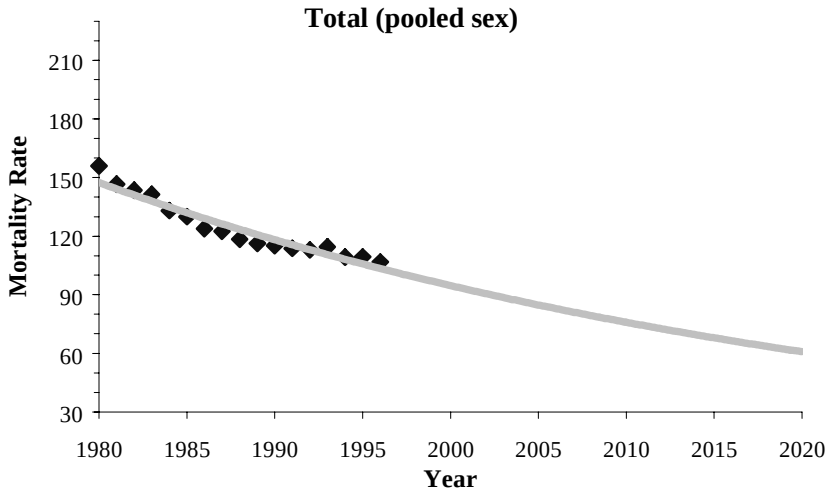
IHD AGE-ADJUSTED MORTALITY: POOLED RACES

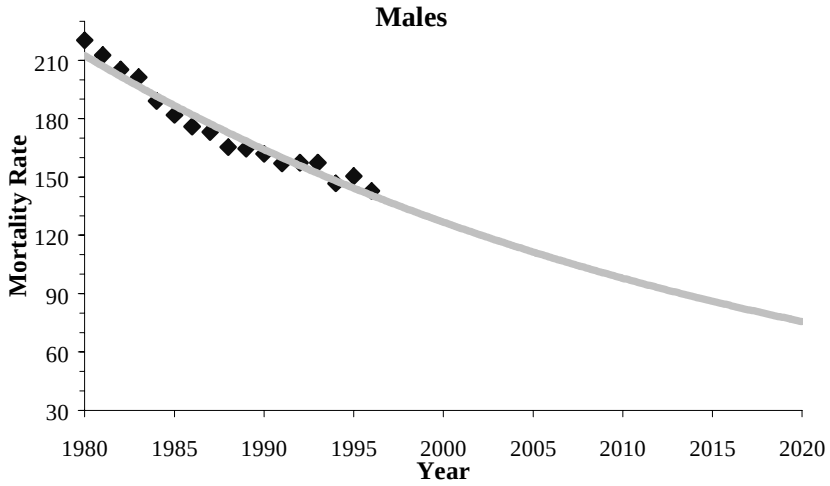
OBSERVED

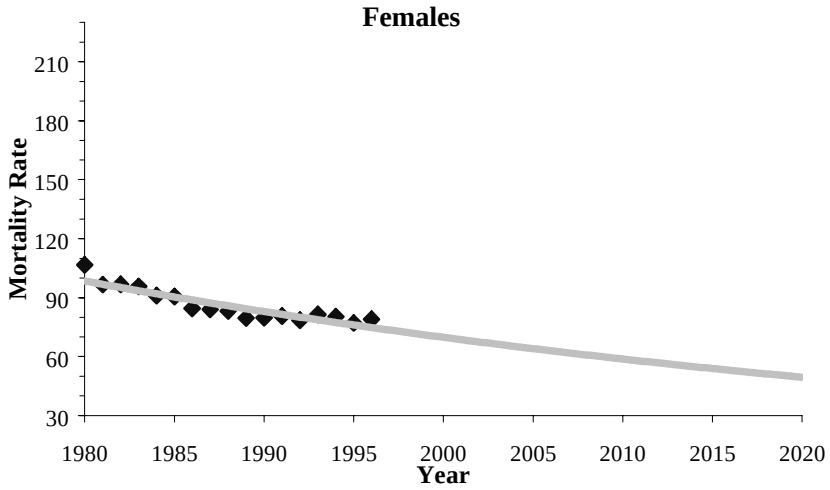
YEAR	Total	Male	Female
1980	155.9	220.3	106.7
1981	146.6	212.6	96.6
1982	143.5	205.3	96.7
1983	141.3	201.3	95.7
1984	133.1	189.1	91.0
1985	130.0	181.9	90.6
1986	123.8	176.0	84.5
1987	122.5	173.2	84.1
1988	118.4	165.3	83.1
1989	116.2	164.6	79.6
1990	115.1	161.9	79.8
1991	113.7	157.0	80.7
1992	112.9	157.4	78.5
1993	114.5	157.4	81.4
1994	109.2	146.7	80.4
1995	109.4	150.5	77.1
1996	106.7	142.7	78.9

PREDICTED

YEAR	Total	Male	Female
1996	103.4	140.6	74.8
1997	101.2	137.0	73.5
1998	99.0	133.5	72.3
1999	96.8	130.1	71.0
2000	94.7	126.8	69.8
2001	92.6	123.6	68.6
2002	90.6	120.4	67.5
2003	88.6	117.3	66.3
2004	86.7	114.4	65.2
2005	84.8	111.4	64.1
2006	82.9	108.6	63.0
2007	81.1	105.8	61.9
2008	79.3	103.1	60.8
2009	77.6	100.5	59.8
2010	75.9	97.9	58.8
2011	74.2	95.4	57.8
2012	72.6	93.0	56.8
2013	71.0	90.6	55.8
2014	69.4	88.3	54.9
2015	67.9	86.1	53.9
2016	66.4	83.9	53.0
2017	65.0	81.8	52.1
2018	63.6	79.7	51.2
2019	62.2	77.6	50.4
2020	60.8	75.7	49.5







Age standardized to the 1940 US population and expressed per 100,000 individuals.

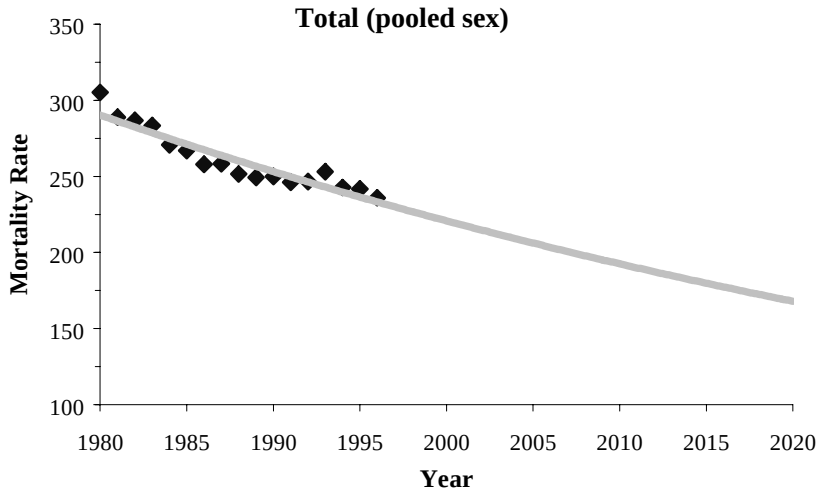
IHD CRUDE MORTALITY RATES: POOLED RACE

OBSERVED

YEAR	Total	Male	Female
1980	305.1	334.4	277.9
1981	288.9	322.2	258.0
1982	286.8	313.7	261.8
1983	283.3	307.6	260.7
1984	270.8	292.1	251.0
1985	267.0	282.4	252.7
1986	258.0	275.5	241.7
1987	258.3	273.7	243.9
1988	251.5	262.5	241.3
1989	249.3	263.9	235.7
1990	249.9	262.1	238.5
1991	246.2	254.1	238.9
1992	246.5	255.9	237.7
1993	253.2	259.3	247.6
1994	242.8	243.9	241.7
1995	241.7	247.6	236.2
1996	235.9	238.7	233.3

PREDICTED

YEAR	Total	Male	Female
1996	233.2	235.2	231.7
1997	230.1	230.7	229.9
1998	226.9	226.3	228.1
1999	223.8	221.9	226.3
2000	220.8	217.7	224.5
2001	217.8	213.5	222.8
2002	214.8	209.4	221.0
2003	211.9	205.4	219.3
2004	209.0	201.5	217.6
2005	206.2	197.6	215.9
2006	203.4	193.8	214.2
2007	200.6	190.1	212.5
2008	197.9	186.5	210.9
2009	195.2	182.9	209.2
2010	192.5	179.4	207.6
2011	189.9	176.0	206.0
2012	187.3	172.6	204.4
2013	184.8	169.3	202.8
2014	182.3	166.1	201.2
2015	179.8	162.9	199.6
2016	177.4	159.8	198.0
2017	174.9	156.7	196.5
2018	172.6	153.7	195.0
2019	170.2	150.8	193.4
2020	167.9	147.9	191.9



Rates expressed per 100,000

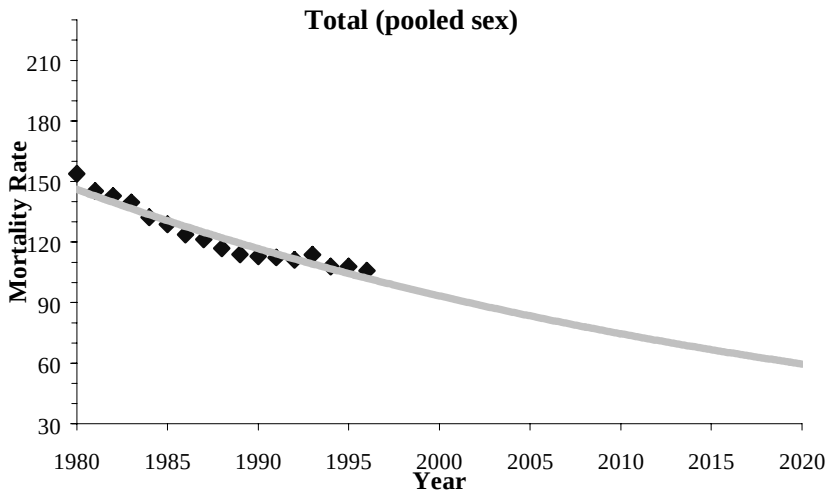
IHD AGE-ADJUSTED MORTALITY: WHITES

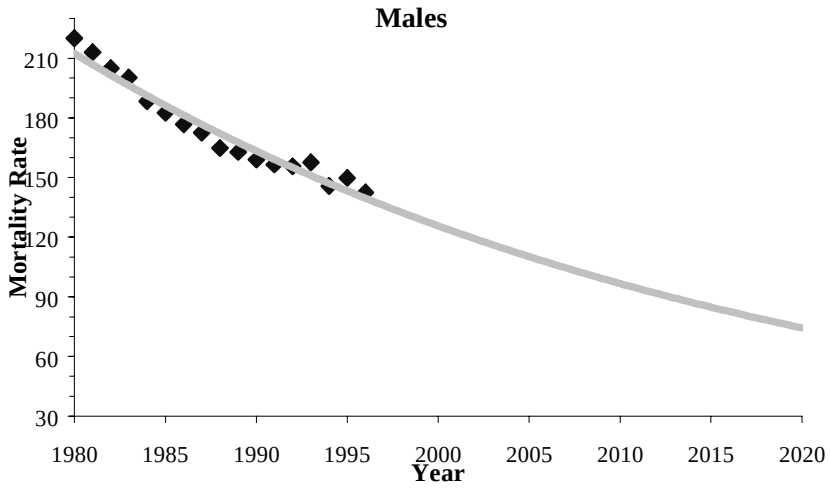
OBSERVED

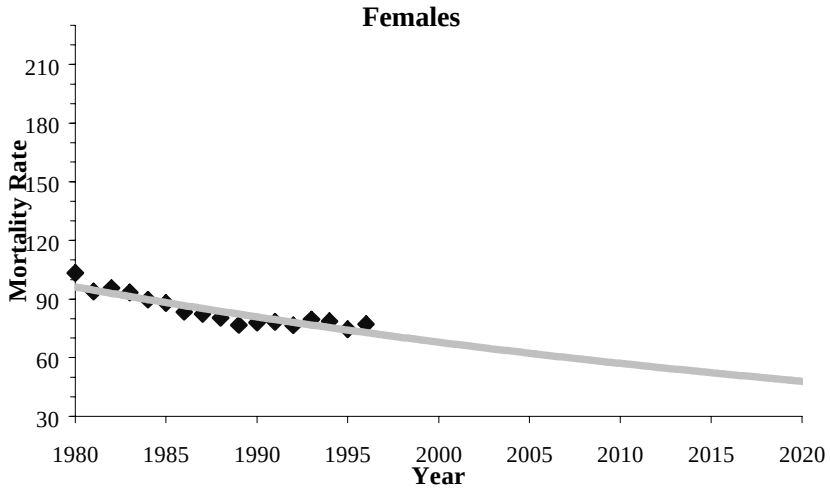
YEAR	Total	Male	Female
1980	153.9	220.1	103.4
1981	145.2	213.0	93.9
1982	142.8	204.9	95.5
1983	139.7	200.3	93.4
1984	132.2	188.4	89.6
1985	128.8	182.5	88.0
1986	123.6	176.7	83.4
1987	121.2	172.5	82.3
1988	116.9	164.7	80.4
1989	113.9	162.7	76.8
1990	112.9	158.9	78.0
1991	112.3	156.5	78.3
1992	111.2	155.6	76.6
1993	113.7	157.5	79.6
1994	107.9	145.6	78.6
1995	107.8	149.7	74.6
1996	105.8	142.4	77.2

PREDICTED

YEAR	Total	Male	Female
1996	102.1	139.5	72.8
1997	99.8	135.9	71.6
1998	97.6	132.4	70.4
1999	95.4	129.0	69.1
2000	93.3	125.7	68.0
2001	91.3	122.4	66.8
2002	89.2	119.2	65.6
2003	87.3	116.1	64.5
2004	85.3	113.1	63.4
2005	83.4	110.2	62.3
2006	81.6	107.4	61.2
2007	79.8	104.6	60.2
2008	78.0	101.9	59.1
2009	76.3	99.2	58.1
2010	74.6	96.7	57.1
2011	72.9	94.2	56.1
2012	71.3	91.7	55.1
2013	69.7	89.3	54.2
2014	68.2	87.0	53.3
2015	66.7	84.8	52.3
2016	65.2	82.6	51.4
2017	63.8	80.4	50.6
2018	62.4	78.4	49.7
2019	61.0	76.3	48.8
2020	59.6	74.4	48.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

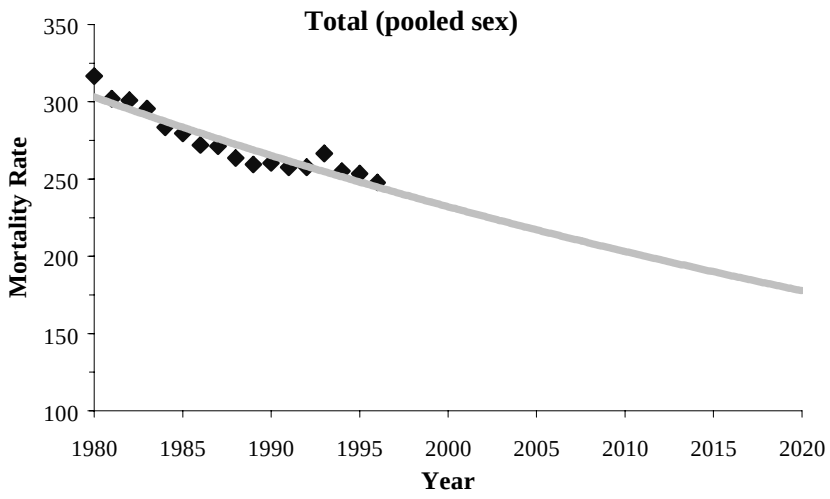
IHD CRUDE MORTALITY RATES: WHITES

OBSERVED

YEAR	Total	Male	Female
1980	316.5	347.4	287.7
1981	301.9	337.0	269.1
1982	300.9	326.8	276.7
1983	295.4	319.7	272.8
1984	283.4	304.5	263.6
1985	279.5	296.7	263.5
1986	271.9	289.8	255.2
1987	271.1	286.5	256.6
1988	263.5	274.7	253.0
1989	259.4	274.8	244.9
1990	260.3	271.4	249.8
1991	257.7	266.4	249.5
1992	257.7	267.0	249.0
1993	266.4	273.6	259.7
1994	255.1	255.7	254.6
1995	253.5	259.7	247.6
1996	247.8	251.5	244.2

PREDICTED

YEAR	Total	Male	Female
1996	244.8	246.9	243.1
1997	241.6	242.3	241.2
1998	238.4	237.8	239.4
1999	235.2	233.4	237.6
2000	232.1	229.0	235.7
2001	229.0	224.8	234.0
2002	226.0	220.6	232.2
2003	223.0	216.5	230.4
2004	220.0	212.4	228.6
2005	217.1	208.5	226.9
2006	214.2	204.6	225.2
2007	211.4	200.8	223.5
2008	208.6	197.0	221.8
2009	205.8	193.3	220.1
2010	203.1	189.7	218.4
2011	200.4	186.2	216.7
2012	197.8	182.7	215.1
2013	195.1	179.3	213.4
2014	192.5	176.0	211.8
2015	190.0	172.7	210.2
2016	187.5	169.5	208.6
2017	185.0	166.3	207.0
2018	182.5	163.2	205.4
2019	180.1	160.2	203.9
2020	177.7	157.2	202.3



Rates expressed per 100,000

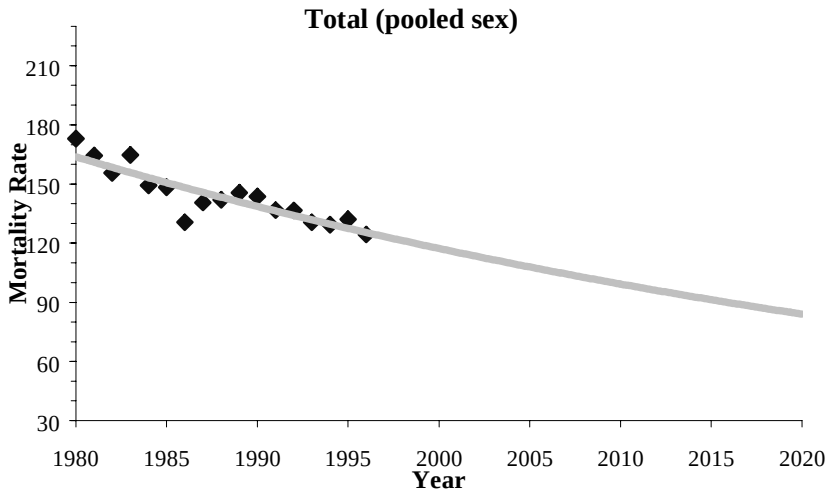
IHD AGE-ADJUSTED MORTALITY: AFRICAN AMERICANS

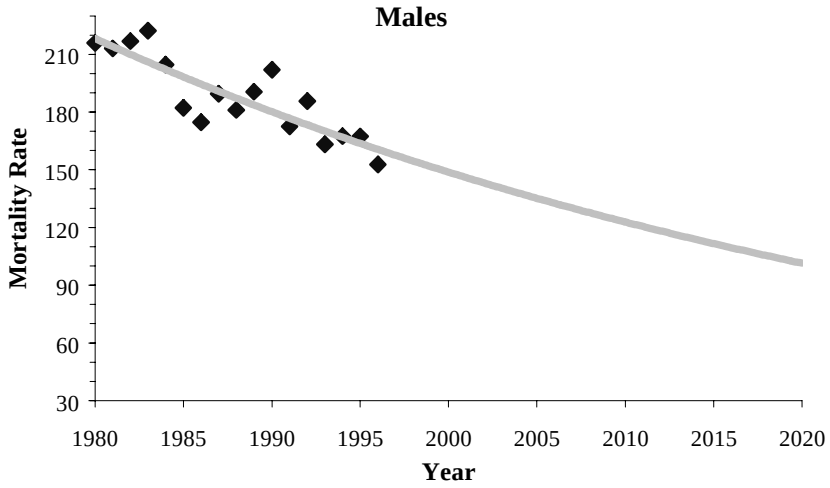
OBSERVED

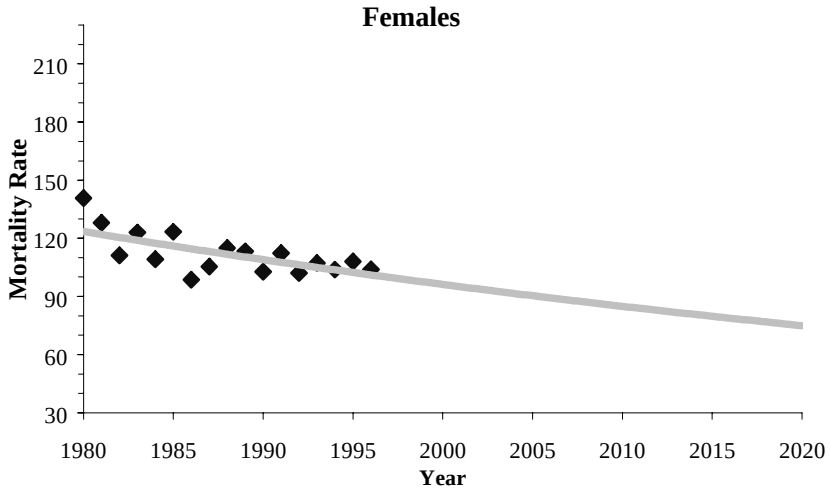
YEAR	Total	Male	Female
1980	173.0	215.9	140.7
1981	164.4	213.0	128.0
1982	155.5	216.9	111.2
1983	164.6	222.2	123.0
1984	149.2	204.7	109.2
1985	148.3	182.1	123.3
1986	130.5	174.8	98.7
1987	140.6	189.4	105.4
1988	141.9	181.1	115.0
1989	145.5	190.6	113.2
1990	143.7	202.0	102.8
1991	136.7	172.5	112.3
1992	136.5	185.6	102.1
1993	130.6	163.2	107.3
1994	129.3	167.4	103.8
1995	132.1	167.3	108.1
1996	124.3	152.7	104.0

PREDICTED

YEAR	Total	Male	Female
1996	125.4	160.6	101.1
1997	123.3	157.6	99.9
1998	121.3	154.6	98.7
1999	119.3	151.6	97.4
2000	117.3	148.8	96.2
2001	115.3	145.9	95.0
2002	113.4	143.2	93.8
2003	111.6	140.4	92.7
2004	109.7	137.8	91.5
2005	107.9	135.2	90.4
2006	106.1	132.6	89.3
2007	104.3	130.1	88.2
2008	102.6	127.6	87.1
2009	100.9	125.2	86.0
2010	99.2	122.8	84.9
2011	97.6	120.5	83.9
2012	96.0	118.2	82.8
2013	94.4	116.0	81.8
2014	92.8	113.8	80.8
2015	91.3	111.6	79.8
2016	89.8	109.5	78.8
2017	88.3	107.4	77.8
2018	86.8	105.4	76.9
2019	85.4	103.4	75.9
2020	84.0	101.4	75.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

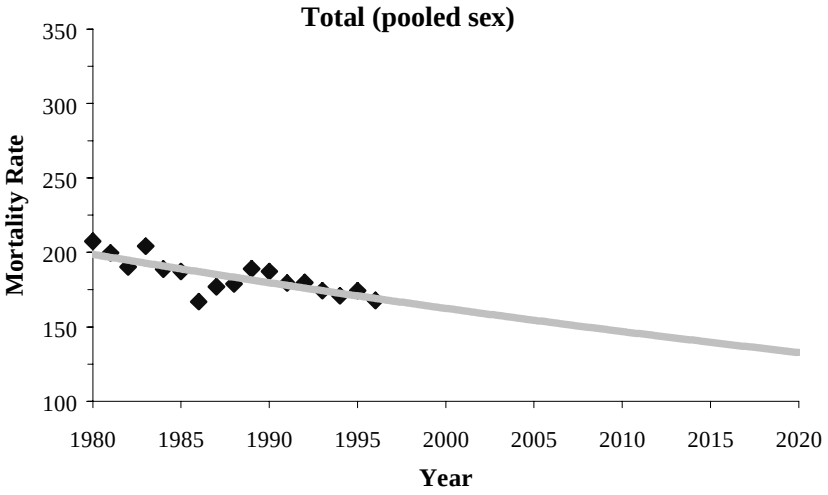
IHD CRUDE MORTALITY RATES: AFRICAN AMERICANS

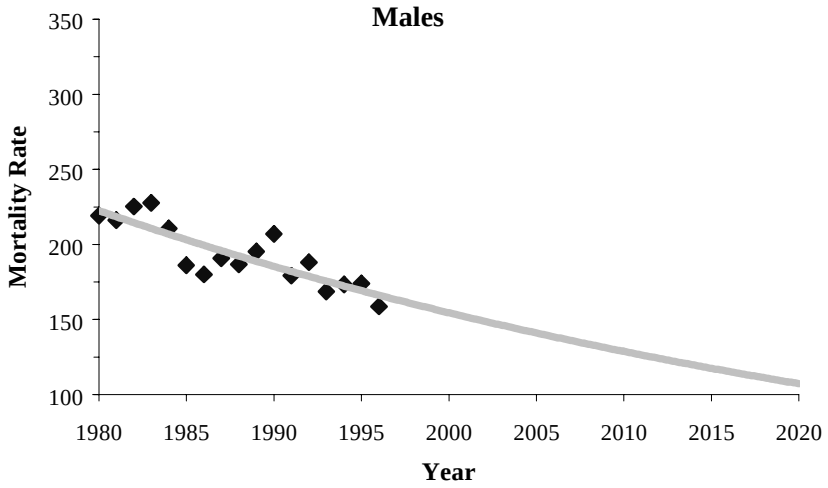
OBSERVED

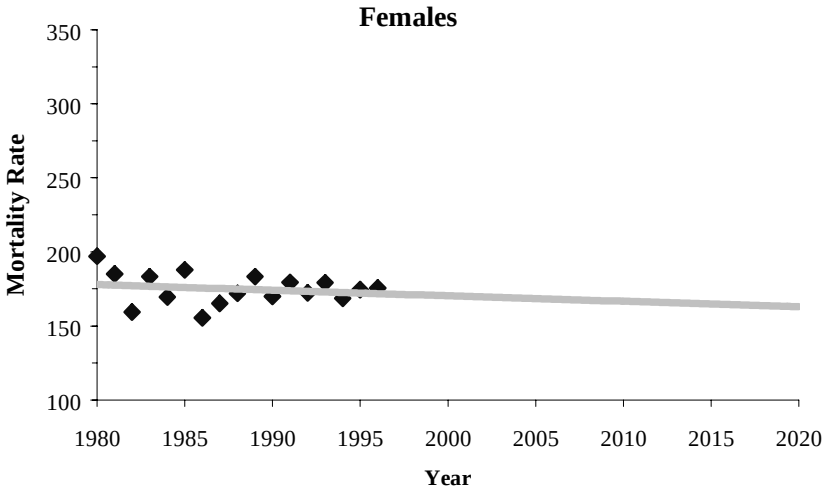
YEAR	Total	Male	Female
1980	207.5	219.3	197.0
1981	199.7	216.2	185.2
1982	190.2	225.4	159.4
1983	204.1	227.8	183.3
1984	188.7	210.8	169.4
1985	187.1	186.2	187.8
1986	166.9	180.0	155.5
1987	177.0	190.8	165.1
1988	178.8	186.7	172.0
1989	188.9	195.3	183.2
1990	187.2	207.0	170.0
1991	179.3	179.3	179.4
1992	179.8	188.3	172.4
1993	174.2	168.7	179.1
1994	170.8	173.3	168.7
1995	174.3	174.1	174.5
1996	167.8	158.9	175.7

PREDICTED

YEAR	Total	Male	Female
1996	169.1	166.3	171.8
1997	167.4	163.3	171.5
1998	165.7	160.3	171.1
1999	164.0	157.4	170.7
2000	162.4	154.6	170.3
2001	160.8	151.8	170.0
2002	159.2	149.1	169.6
2003	157.6	146.4	169.2
2004	156.0	143.7	168.8
2005	154.4	141.1	168.5
2006	152.9	138.6	168.1
2007	151.3	136.1	167.7
2008	149.8	133.6	167.4
2009	148.3	131.2	167.0
2010	146.8	128.8	166.6
2011	145.3	126.5	166.3
2012	143.9	124.2	165.9
2013	142.4	122.0	165.6
2014	141.0	119.8	165.2
2015	139.6	117.6	164.8
2016	138.2	115.5	164.5
2017	136.8	113.4	164.1
2018	135.4	111.4	163.8
2019	134.1	109.3	163.4
2020	132.7	107.4	163.0







Rates expressed per 100,000

Stroke Mortality

STROKE AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	31.8	34.7	29.8	30.1	32.9	28.2	49.3	55.6	44.8
1980-1990	32.5	37.3	31.4	31.9	35.5	29.6	52.6	57.5	48.9
1990-1996	28.4	30.4	27.0	27.0	28.7	26.0	43.8	52.1	37.9
PROJECTED RATES[3]									
2000	30.3 [5]	30.6 [5]	29.9 [5]	29.2 [5]	29.1 [5]	29.2 [5]	44.2 [5]	49.6 [5]	39.0 [5]
2010	33.2 [5]	30.8 [5]	34.6 [5]	32.7 [5]	29.7 [5]	34.4 [5]	44.9 [5]	46.4 [5]	41.6 [5]
2020	36.5 [5]	31.0 [5]	40.1 [5]	36.6 [5]	30.2 [5]	40.6 [5]	45.5 [5]	43.4 [5]	44.4 [5]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	-2.3 ***	-2.7 ***	-2.0 ***	-2.3 ***	-2.9 ***	-1.9 ***	-2.3 ***	-1.5 **	-3.1 ***
1980-1990	-3.8 ***	-4.2 ***	-3.4 ***	-3.9 ***	-4.4 ***	-3.4 ***	-3.0 ***	-2.5 *	-3.4 ***
1990-1996	0.9	0.1	1.5	1.1	0.2	1.7	0.1	-0.7	0.7
PERIOD PERCENT CHANGE[8]									
1980-1996	-27.7	-32.5	-23.5	-27.5	-33.6	-22.2	-26.2	-21.7	-29.8
1980-1990	-29.8	-32.5	-26.7	-30.6	-34.1	-26.6	-22.7	-18.8	-25.1
1990-1996	4.7	-0.5	8.1	5.7	0.0	9.0	0.5	-3.9	3.2

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

STROKE CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	75.5	60.9	89.1	77.7	61.9	92.6	62.7	57.2	67.5
1980-1990	76.5	64.1	91.2	80.2	65.1	94.3	65.8	59.3	71.5
1990-1996	70.6	55.3	84.8	73.1	56.2	89.0	57.4	53.5	60.8
PROJECTED RATES[2]									
2000	79.0 [4]	57.5 [4]	99.6 [4]	82.8 [4]	58.8 [4]	106.0 [4]	60.1 [4]	52.5 [4]	66.6 [4]
2010	93.1 [4]	60.9 [4]	125.7 [4]	99.0 [4]	62.8 [4]	136.5 [4]	64.4 [4]	51.3 [4]	76.1 [4]
2020	109.7 [4]	64.5 [4]	158.7 [4]	118.4 [4]	67.1 [4]	175.6 [4]	68.9 [4]	50.2 [4]	87.0 [4]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	-1.5 ***	-2.0 ***	-1.1 **	-1.4 ***	-2.0 ***	-0.9 *	-1.8 ***	-1.6 **	-2.0 ***
1980-1990	-2.9 ***	-3.5 ***	-2.5 ***	-2.8 ***	-3.5 ***	-2.4 ***	-2.7 ***	-2.7 **	-2.7 ***
1990-1996	1.7 *	0.6	2.4 **	1.8 *	0.7	2.6 **	0.7	-0.2	1.3
PERIOD PERCENT CHANGE[7]									
1980-1996	-17.9	-25.9	-12.3	-16.8	-25.6	-10.5	-20.0	-22.1	-18.3
1980-1990	-23.7	-27.6	-20.9	-23.5	-27.7	-20.5	-19.8	-20.6	-19.2
1990-1996	8.1	1.6	12.5	8.9	2.1	13.5	3.5	-2.2	8.2

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

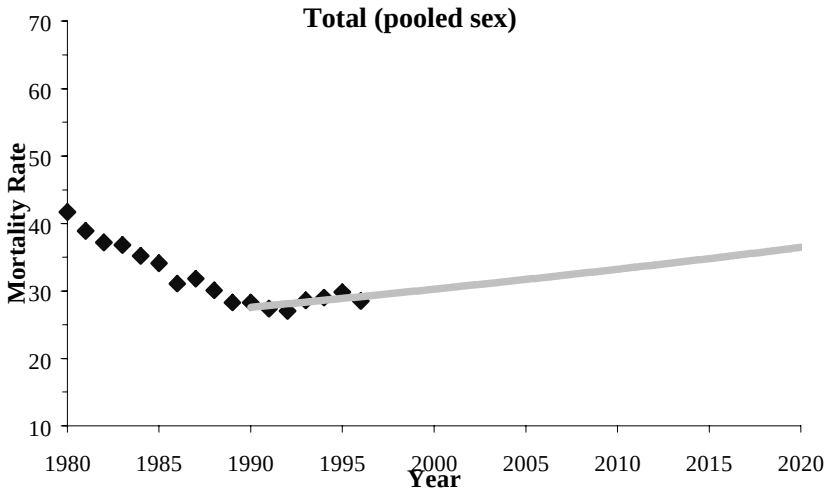
STROKE AGE-ADJUSTED MORTALITY RATES: POOLED RACE

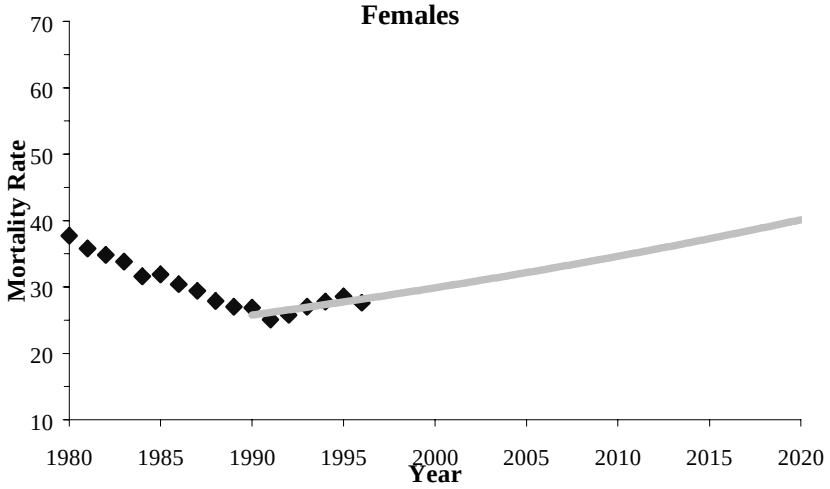
OBSERVED

YEAR	Total	Male	Female
1980	41.7	47.2	37.7
1981	38.9	43.2	35.8
1982	37.2	40.8	34.8
1983	36.8	40.9	33.8
1984	35.2	40.5	31.6
1985	34.1	37.5	31.9
1986	31.1	32.3	30.4
1987	31.8	35.1	29.4
1988	30.1	33.2	27.9
1989	28.3	30.5	27.0
1990	28.3	30.5	26.9
1991	27.4	30.8	25.1
1992	27.0	28.8	25.8
1993	28.6	31.0	27.0
1994	29.0	30.8	27.8
1995	29.8	31.3	28.6
1996	28.5	29.7	27.6

PREDICTED

YEAR	Total	Male	Female
1996	29.2	30.5	28.2
1997	29.4	30.5	28.6
1998	29.7	30.5	29.0
1999	30.0	30.5	29.4
2000	30.3	30.6	29.9
2001	30.5	30.6	30.3
2002	30.8	30.6	30.8
2003	31.1	30.6	31.2
2004	31.4	30.6	31.7
2005	31.7	30.7	32.2
2006	32.0	30.7	32.6
2007	32.3	30.7	33.1
2008	32.6	30.7	33.6
2009	32.9	30.7	34.1
2010	33.2	30.8	34.6
2011	33.5	30.8	35.1
2012	33.8	30.8	35.7
2013	34.2	30.8	36.2
2014	34.5	30.9	36.7
2015	34.8	30.9	37.3
2016	35.1	30.9	37.8
2017	35.5	30.9	38.4
2018	35.8	30.9	39.0
2019	36.1	31.0	39.5
2020	36.5	31.0	40.1





Age standardized to the 1940 US population and expressed per 100,000 individuals.

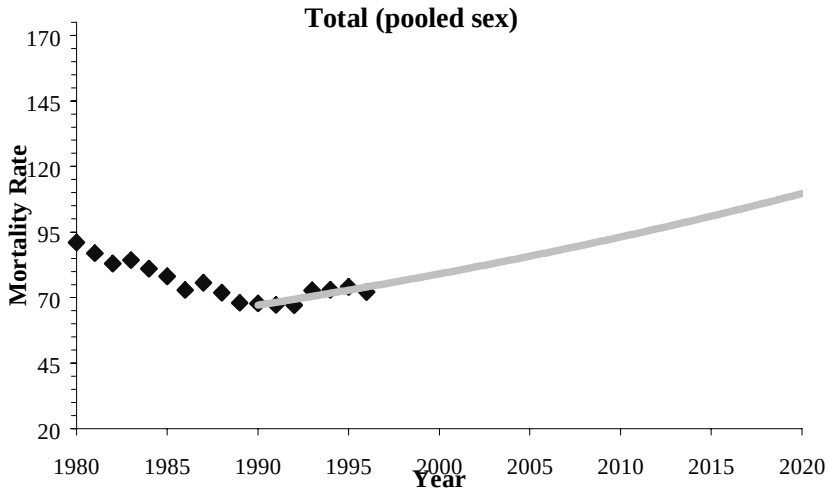
STROKE CRUDE MORTALITY RATES: POOLED RACE

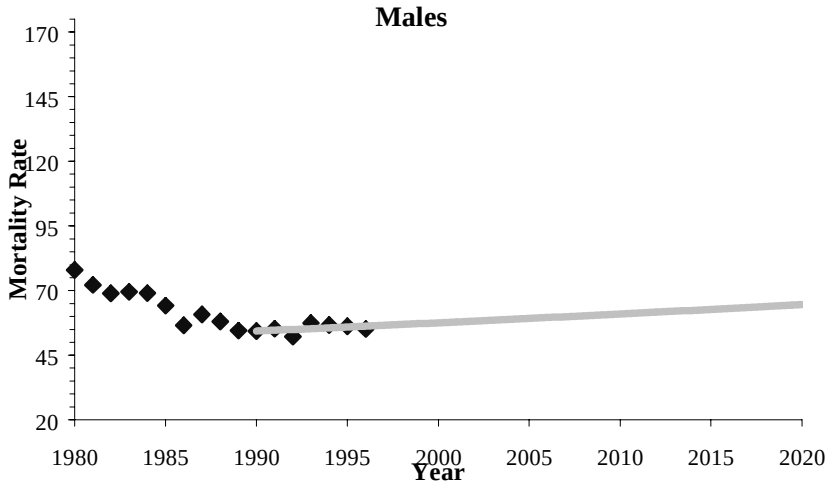
OBSERVED

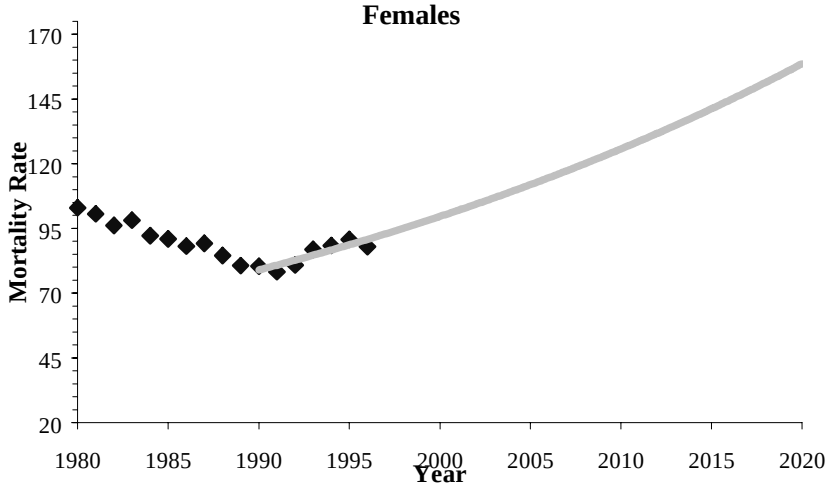
YEAR	Total	Male	Female
1980	91.0	78.0	103.0
1981	86.9	72.2	100.6
1982	83.0	68.9	96.1
1983	84.3	69.5	98.1
1984	81.0	69.0	92.1
1985	78.1	64.2	91.0
1986	72.9	56.5	88.1
1987	75.6	60.8	89.2
1988	71.8	58.1	84.5
1989	68.0	54.5	80.6
1990	67.8	54.3	80.4
1991	67.2	55.2	78.3
1992	67.0	52.2	80.8
1993	72.7	57.5	86.9
1994	73.0	56.6	88.4
1995	74.0	56.2	90.7
1996	72.0	55.1	87.9

PREDICTED

YEAR	Total	Male	Female
1996	74.0	56.2	90.8
1997	75.2	56.6	92.9
1998	76.5	56.9	95.1
1999	77.8	57.2	97.3
2000	79.0	57.5	99.6
2001	80.3	57.9	102.0
2002	81.7	58.2	104.4
2003	83.0	58.5	106.8
2004	84.4	58.9	109.3
2005	85.8	59.2	111.9
2006	87.2	59.6	114.6
2007	88.6	59.9	117.2
2008	90.1	60.2	120.0
2009	91.6	60.6	122.8
2010	93.1	60.9	125.7
2011	94.7	61.3	128.7
2012	96.2	61.6	131.7
2013	97.8	62.0	134.8
2014	99.4	62.4	138.0
2015	101.1	62.7	141.2
2016	102.7	63.1	144.6
2017	104.4	63.4	148.0
2018	106.2	63.8	151.4
2019	107.9	64.2	155.0
2020	109.7	64.5	158.7







Rates expressed per 100,000

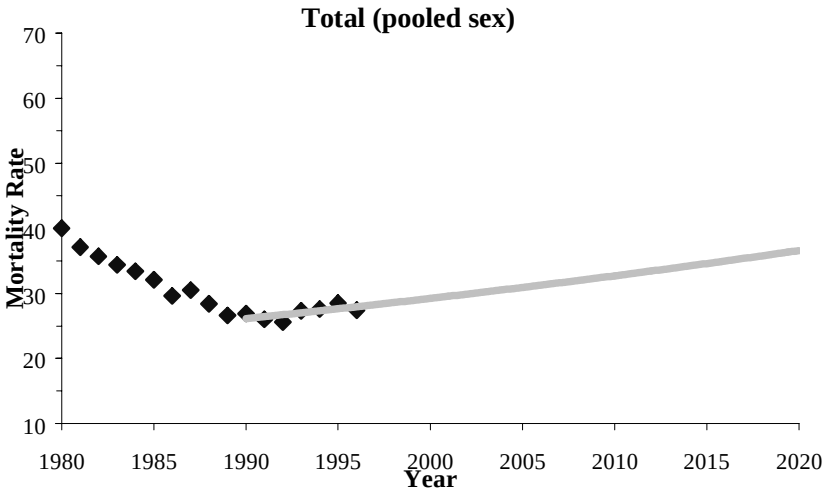
STROKE AGE-ADJUSTED MORTALITY RATES: WHITES

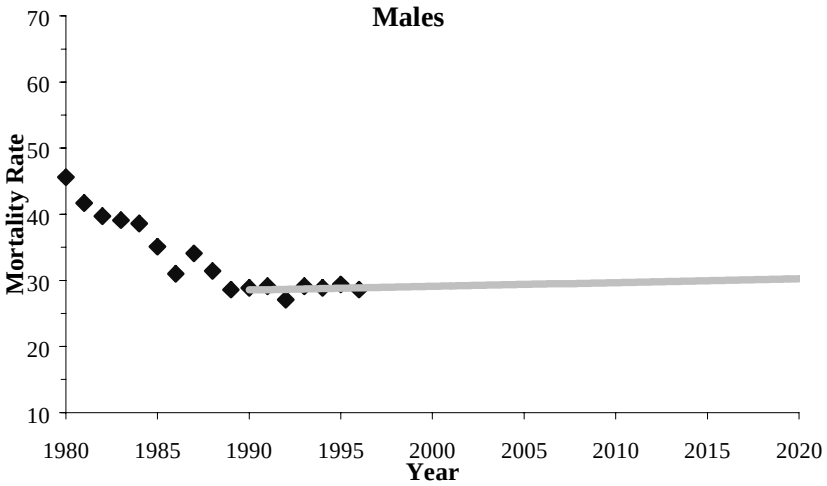
OBSERVED

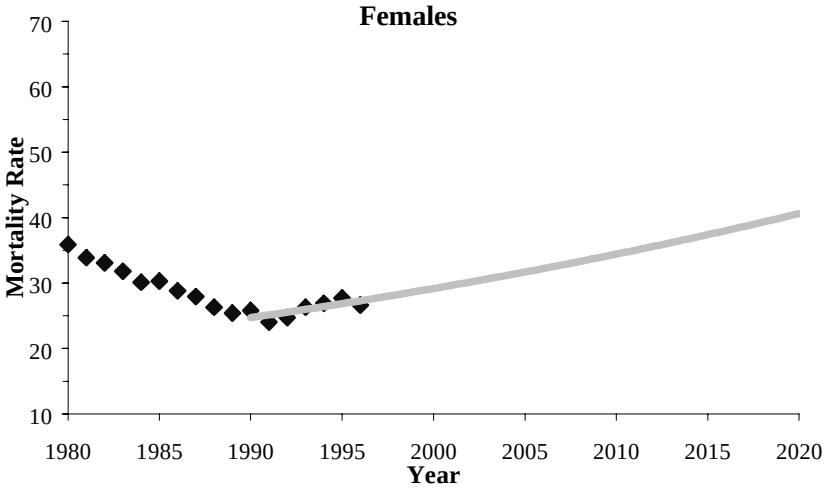
YEAR	Total	Male	Female
1980	40.0	45.6	35.9
1981	37.1	41.7	33.9
1982	35.7	39.7	33.1
1983	34.4	39.1	31.8
1984	33.4	38.6	30.1
1985	32.1	35.1	30.3
1986	29.6	31.0	28.8
1987	30.5	34.1	27.9
1988	28.4	31.4	26.3
1989	26.6	28.6	25.4
1990	26.9	28.9	25.8
1991	26.0	29.1	24.0
1992	25.6	27.1	24.7
1993	27.3	29.1	26.3
1994	27.6	28.9	26.9
1995	28.5	29.4	27.7
1996	27.4	28.6	26.6

PREDICTED

YEAR	Total	Male	Female
1996	28.0	28.9	27.3
1997	28.3	28.9	27.8
1998	28.6	29.0	28.2
1999	28.9	29.1	28.7
2000	29.2	29.1	29.2
2001	29.6	29.2	29.7
2002	29.9	29.2	30.1
2003	30.2	29.3	30.7
2004	30.6	29.3	31.2
2005	30.9	29.4	31.7
2006	31.3	29.4	32.2
2007	31.6	29.5	32.7
2008	32.0	29.6	33.3
2009	32.3	29.6	33.9
2010	32.7	29.7	34.4
2011	33.1	29.7	35.0
2012	33.4	29.8	35.6
2013	33.8	29.8	36.2
2014	34.2	29.9	36.8
2015	34.6	30.0	37.4
2016	35.0	30.0	38.0
2017	35.4	30.1	38.6
2018	35.8	30.1	39.3
2019	36.2	30.2	39.9
2020	36.6	30.2	40.6







Age standardized to the 1940 US population and expressed per 100,000 individuals.

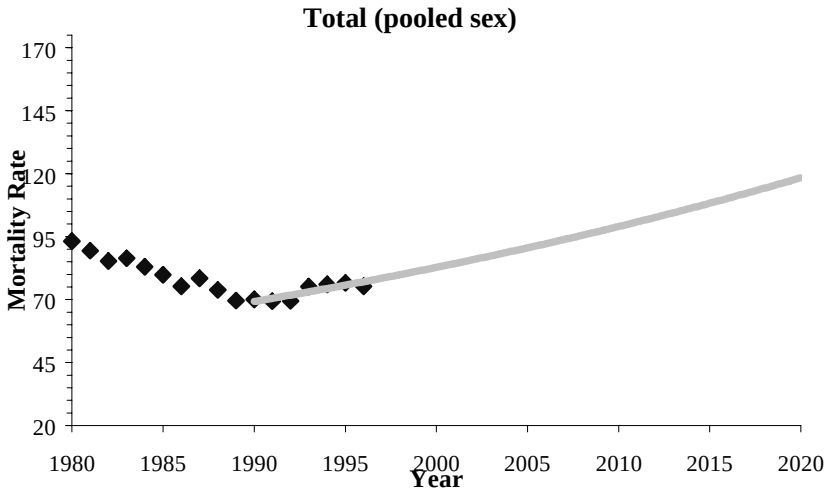
STROKE CRUDE MORTALITY RATES: WHITES

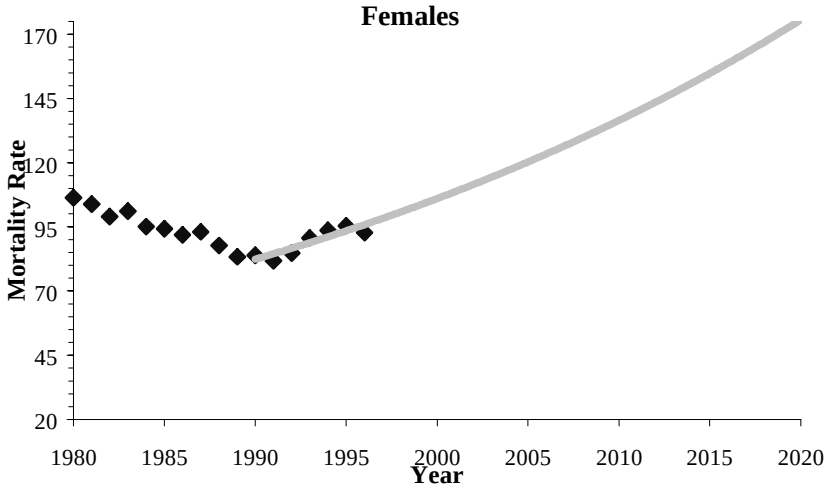
OBSERVED

YEAR	Total	Male	Female
1980	93.1	78.9	106.3
1981	89.4	73.7	103.9
1982	85.3	70.6	99.0
1983	86.4	70.6	101.1
1984	83.0	70.0	95.1
1985	79.9	64.6	94.2
1986	75.3	57.6	91.9
1987	78.4	62.7	93.1
1988	73.8	59.0	87.7
1989	69.6	55.0	83.3
1990	70.1	55.3	83.9
1991	69.3	55.9	81.8
1992	69.5	53.1	84.8
1993	75.1	58.5	90.7
1994	76.0	57.3	93.7
1995	76.6	56.8	95.4
1996	75.2	56.7	92.7

PREDICTED

YEAR	Total	Male	Female
1996	77.1	57.3	95.8
1997	78.5	57.7	98.3
1998	79.9	58.1	100.8
1999	81.3	58.5	103.4
2000	82.8	58.8	106.0
2001	84.3	59.2	108.7
2002	85.8	59.6	111.5
2003	87.3	60.0	114.4
2004	88.9	60.4	117.3
2005	90.5	60.8	120.3
2006	92.2	61.2	123.4
2007	93.8	61.6	126.5
2008	95.5	62.0	129.7
2009	97.2	62.4	133.1
2010	99.0	62.8	136.5
2011	100.8	63.2	140.0
2012	102.6	63.6	143.5
2013	104.4	64.1	147.2
2014	106.3	64.5	151.0
2015	108.2	64.9	154.8
2016	110.2	65.3	158.8
2017	112.2	65.8	162.8
2018	114.2	66.2	167.0
2019	116.3	66.6	171.3
2020	118.4	67.1	175.6





Rates expressed per 100,000

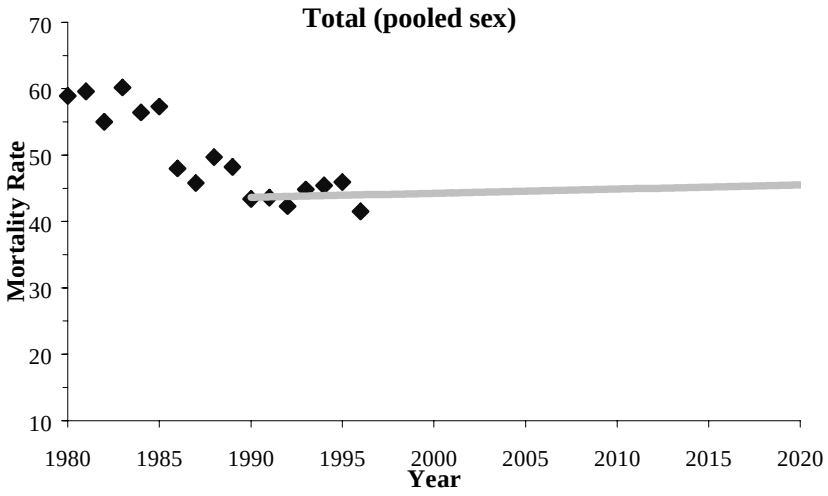
STROKE AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

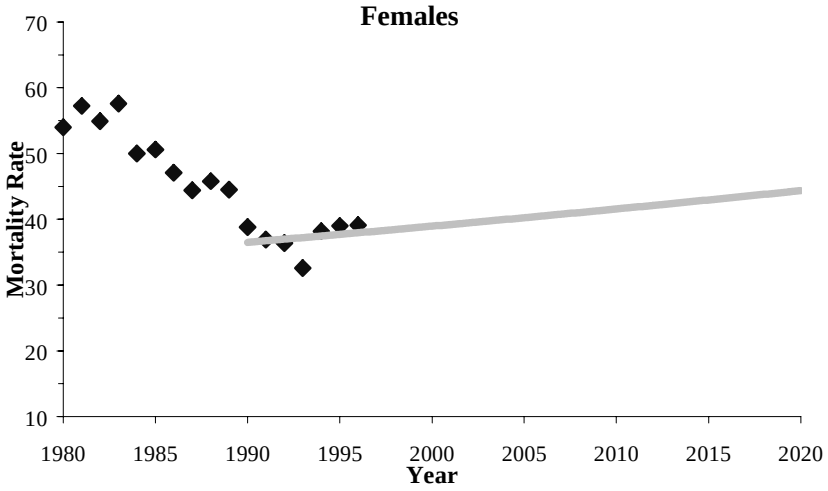
OBSERVED

YEAR	Total	Male	Female
1980	58.9	65.7	54.0
1981	59.6	62.4	57.2
1982	55.0	54.7	54.9
1983	60.2	63.4	57.6
1984	56.4	64.3	50.0
1985	57.3	66.3	50.6
1986	48.0	49.5	47.1
1987	45.8	48.0	44.4
1988	49.7	55.1	45.8
1989	48.2	53.7	44.5
1990	43.4	50.3	38.8
1991	43.6	54.1	36.9
1992	42.3	50.3	36.4
1993	44.8	54.2	32.6
1994	45.4	56.0	38.2
1995	45.9	55.5	39.0
1996	41.5	44.8	39.1

PREDICTED

YEAR	Total	Male	Female
1996	44.0	51.0	38.0
1997	44.1	50.6	38.2
1998	44.1	50.3	38.5
1999	44.2	50.0	38.7
2000	44.2	49.6	39.0
2001	44.3	49.3	39.2
2002	44.4	49.0	39.5
2003	44.4	48.6	39.7
2004	44.5	48.3	40.0
2005	44.6	48.0	40.2
2006	44.6	47.7	40.5
2007	44.7	47.3	40.8
2008	44.7	47.0	41.0
2009	44.8	46.7	41.3
2010	44.9	46.4	41.6
2011	44.9	46.1	41.8
2012	45.0	45.8	42.1
2013	45.1	45.5	42.4
2014	45.1	45.2	42.7
2015	45.2	44.9	42.9
2016	45.3	44.6	43.2
2017	45.3	44.3	43.5
2018	45.4	44.0	43.8
2019	45.4	43.7	44.1
2020	45.5	43.4	44.4





Age standardized to the 1940 US population and expressed per 100,000 individuals.

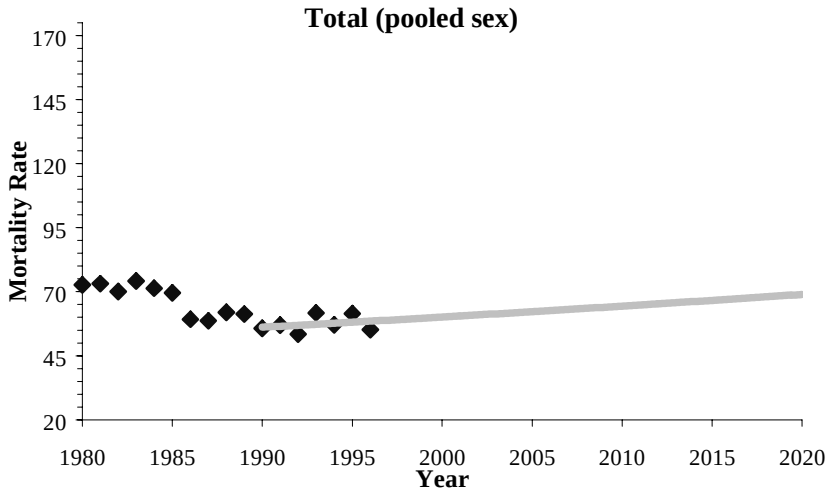
STROKE CRUDE MORTALITY RATES: AFRICAN AMERICANS

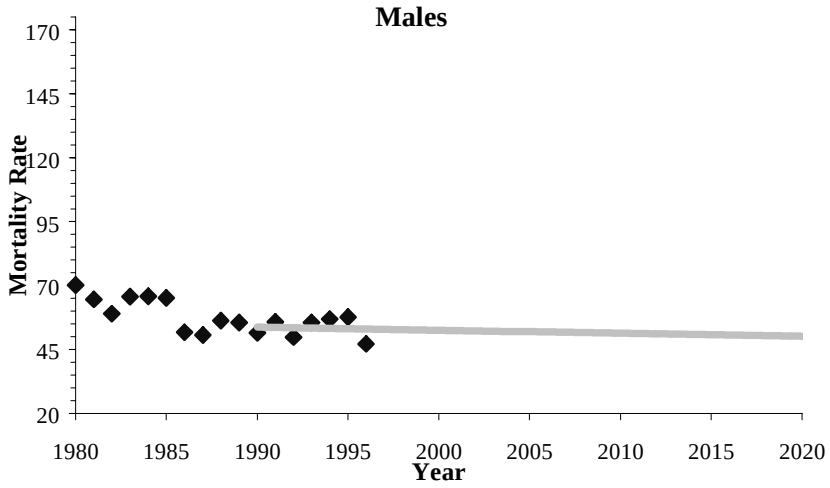
OBSERVED

YEAR	Total	Male	Female
1980	72.7	70.2	74.9
1981	73.1	64.5	80.6
1982	70.1	58.9	79.9
1983	74.2	65.6	81.8
1984	71.4	65.8	76.3
1985	69.6	65.2	73.4
1986	59.2	51.7	65.7
1987	58.6	50.6	65.5
1988	62.0	56.2	67.1
1989	61.3	55.5	66.3
1990	55.7	51.5	59.3
1991	57.0	55.8	58.1
1992	53.4	49.8	56.6
1993	61.7	55.5	67.2
1994	57.1	56.8	57.3
1995	61.5	57.7	64.8
1996	55.2	47.2	62.2

PREDICTED

YEAR	Total	Male	Female
1996	58.5	53.0	63.2
1997	58.9	52.9	64.0
1998	59.3	52.7	64.9
1999	59.7	52.6	65.7
2000	60.1	52.5	66.6
2001	60.5	52.4	67.5
2002	60.9	52.3	68.4
2003	61.4	52.2	69.3
2004	61.8	52.0	70.3
2005	62.2	51.9	71.2
2006	62.6	51.8	72.2
2007	63.1	51.7	73.1
2008	63.5	51.6	74.1
2009	63.9	51.5	75.1
2010	64.4	51.3	76.1
2011	64.8	51.2	77.2
2012	65.3	51.1	78.2
2013	65.7	51.0	79.2
2014	66.2	50.9	80.3
2015	66.6	50.8	81.4
2016	67.1	50.6	82.5
2017	67.5	50.5	83.6
2018	68.0	50.4	84.7
2019	68.5	50.3	85.8
2020	68.9	50.2	87.0





Rates expressed per 100,000

OTHER MORTALITY

Chronic Obstructive Pulmonary Disease (COPD) 163
Diabetes 173
Diabetes-Related Diseases 183

Chronic Obstructive Pulmonary Disease (COPD) Mortality

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[2]									
1980-1996	20.8	30.2	14.5	21.1	30.6	14.7	17.0	25.1	11.7
1980-1990	19.2	30.3	12.7	20.0	30.7	12.8	15.4	23.5	9.9
1990-1996	22.6	30.4	17.5	22.8	30.6	17.8	19.4	27.6	14.1
PROJECTED RATES[3]									
2000	26.7 [4]	31.8 [4]	25.1 [4]	26.8 [4]	31.7 [4]	25.3 [4]	26.4 [4]	33.0 [4]	23.9 [4]
2010	33.2 [4]	33.1 [4]	40.7 [4]	32.8 [4]	32.6 [4]	40.8 [4]	39.1 [4]	42.0 [4]	46.4 [4]
2020	41.2 [4]	34.4 [4]	66.0 [4]	40.3 [4]	33.6 [4]	65.7 [4]	57.7 [4]	53.6 [4]	90.0 [4]
ESTIMATED ANNUAL PERCENT CHANGE[6,7]									
1980-1996	2.2 ***	0.4	5.0 ***	2.1 ***	0.3	4.9 ***	4.0 ***	2.5 **	6.9 ***
1980-1990	3.1 ***	1.4 **	6.4 ***	3.0 ***	1.3 *	6.3 ***	6.1 **	3.8 *	10.3 **
1990-1996	1.9 *	-0.3	4.5 **	1.8 *	-0.3	4.3 **	2.9	-0.5	7.0 *
PERIOD PERCENT CHANGE[8]									
1980-1996	40.6	6.9	117.4	38.1	4.8	114.8	96.2	54.1	197.4
1980-1990	30.9	12.8	74.7	29.2	11.2	73.1	72.2	46.5	137.7
1990-1996	9.2	-1.0	22.5	8.8	-1.0	21.1	13.3	-2.8	36.7

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the entire period indicated.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1980-1996 mortality data.

[5] Projection based on 1990-1996 mortality data.

[6] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[7] Assumes that the mean change in rate is constant from year to year.

[8] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATES[1]									
1980-1996	39.8	49.7	30.5	42.6	53.1	32.8	20.2	26.1	15.0
1980-1990	36.0	48.7	25.8	39.3	51.9	27.6	18.1	24.6	12.5
1990-1996	44.7	51.6	38.3	48.0	55.1	41.3	23.0	28.5	18.3
PROJECTED RATES[2]									
2000	56.2 [3]	57.1 [3]	58.6 [3]	60.2 [3]	61.0 [3]	63.1 [3]	32.7 [3]	34.4 [3]	33.3 [3]
2010	75.6 [3]	64.1 [3]	104.6 [3]	81.1 [3]	68.6 [3]	112.6 [3]	50.3 [3]	43.9 [3]	70.0 [3]
2020	101.9 [3]	72.0 [3]	186.7 [3]	109.2 [3]	77.2 [3]	201.1 [3]	77.4 [3]	56.0 [3]	147.0 [3]
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	3.0 ***	1.2 **	6.0 ***	3.0 ***	1.2 **	6.0 ***	4.4 ***	2.5 **	7.7 ***
1980-1990	4.2 ***	2.4 **	7.7 ***	4.2 ***	2.4 **	7.6 ***	7.1 **	4.3 *	12.0 ***
1990-1996	2.5 **	0.4	5.0 ***	2.5 *	0.6	4.9 **	3.0	-0.7	8.0 *
PERIOD PERCENT CHANGE[7]									
1980-1996	59.8	20.9	146.7	59.3	20.9	145.6	117.9	59.8	257.3
1980-1990	45.2	23.0	94.8	44.3	22.6	93.3	94.6	56.5	185.5
1990-1996	12.6	2.4	26.4	13.0	3.2	25.8	13.3	-4.4	42.0

[1] Calculated using mortality data pooled over the entire period indicated.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1980-1996 mortality data.

[4] Projection based on 1990-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

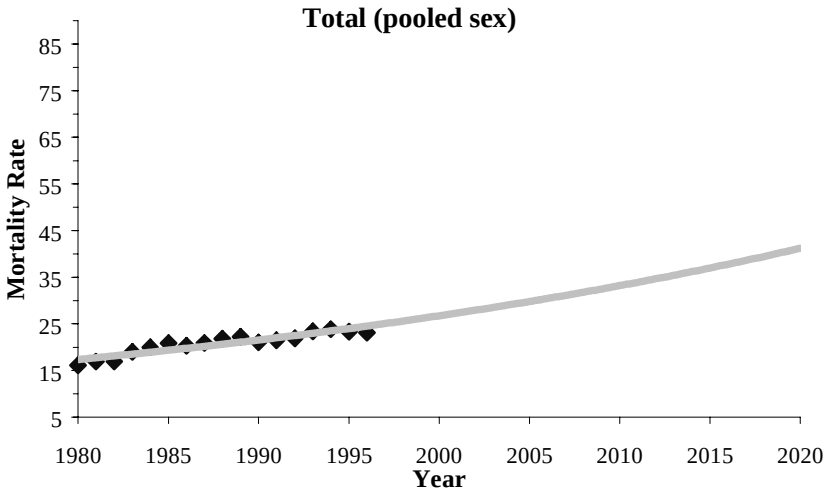
COPD AGE-ADJUSTED MORTALITY RATES: POOLED RACE

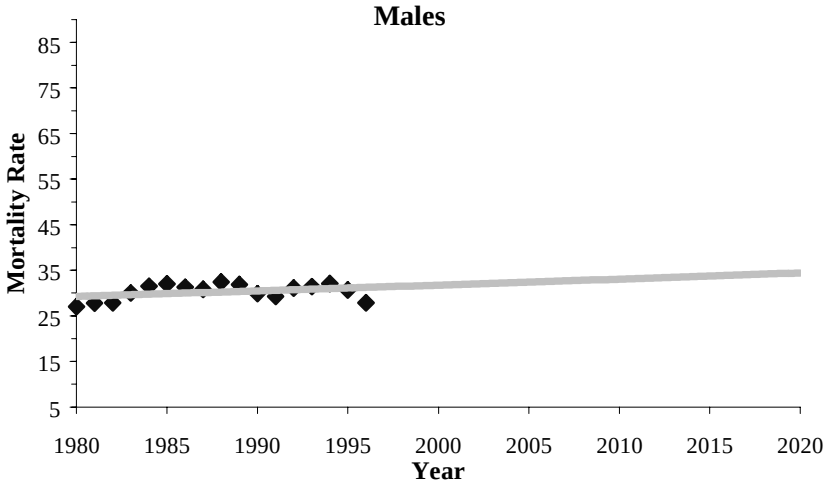
OBSERVED

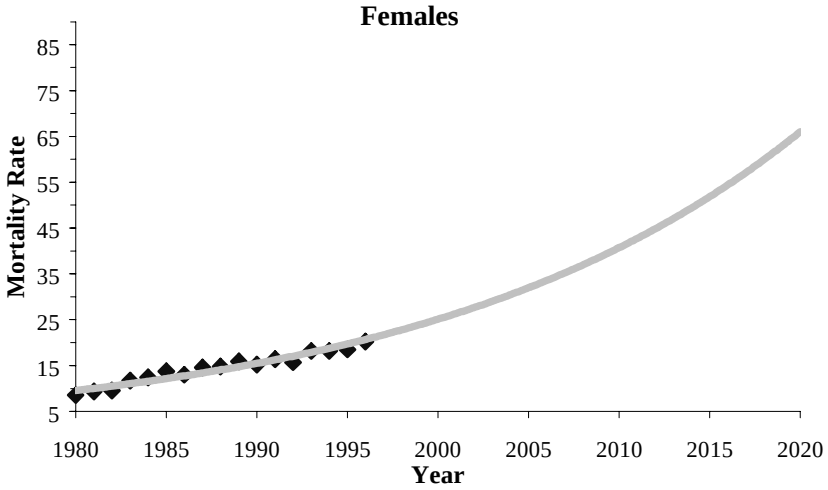
YEAR	Total	Male	Female
1980	16.1	27.0	8.5
1981	16.9	27.8	9.3
1982	16.9	27.9	9.5
1983	19.0	30.0	11.7
1984	20.0	31.5	12.4
1985	20.8	32.0	13.7
1986	20.3	31.3	13.0
1987	20.9	30.8	14.6
1988	21.8	32.4	14.8
1989	22.2	31.9	15.9
1990	21.0	29.9	15.2
1991	21.5	29.3	16.4
1992	21.9	31.1	15.7
1993	23.4	31.4	18.2
1994	23.8	32.1	18.2
1995	23.3	30.7	18.5
1996	23.1	27.9	20.2

PREDICTED

YEAR	Total	Male	Female
1996	24.5	31.2	20.7
1997	25.1	31.4	21.7
1998	25.6	31.5	22.8
1999	26.2	31.6	23.9
2000	26.7	31.8	25.1
2001	27.3	31.9	26.3
2002	27.9	32.0	27.6
2003	28.5	32.1	29.0
2004	29.2	32.3	30.5
2005	29.8	32.4	32.0
2006	30.4	32.5	33.5
2007	31.1	32.7	35.2
2008	31.8	32.8	37.0
2009	32.5	32.9	38.8
2010	33.2	33.1	40.7
2011	33.9	33.2	42.7
2012	34.7	33.3	44.8
2013	35.4	33.5	47.1
2014	36.2	33.6	49.4
2015	37.0	33.7	51.8
2016	37.8	33.9	54.4
2017	38.6	34.0	57.1
2018	39.5	34.2	59.9
2019	40.3	34.3	62.9
2020	41.2	34.4	66.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

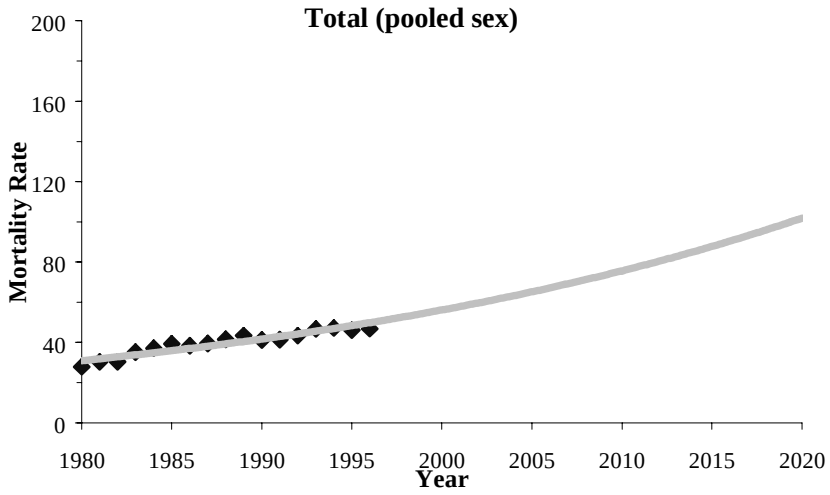
COPD CRUDE MORTALITY RATES: POOLED RACE

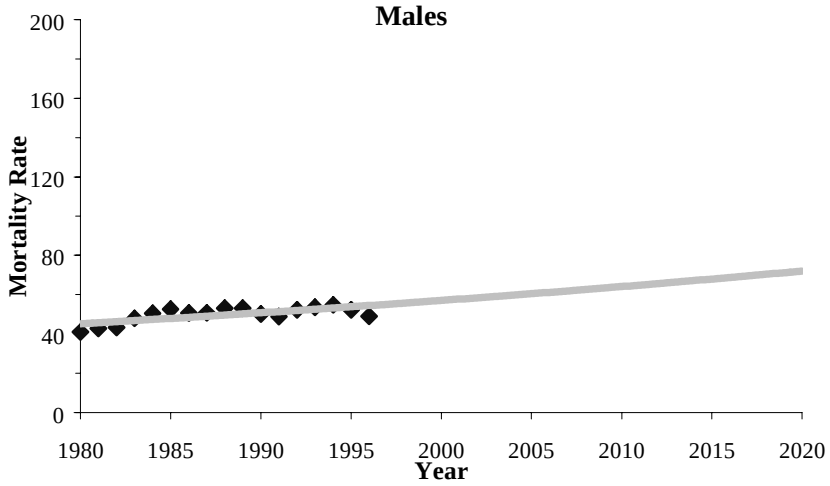
OBSERVED

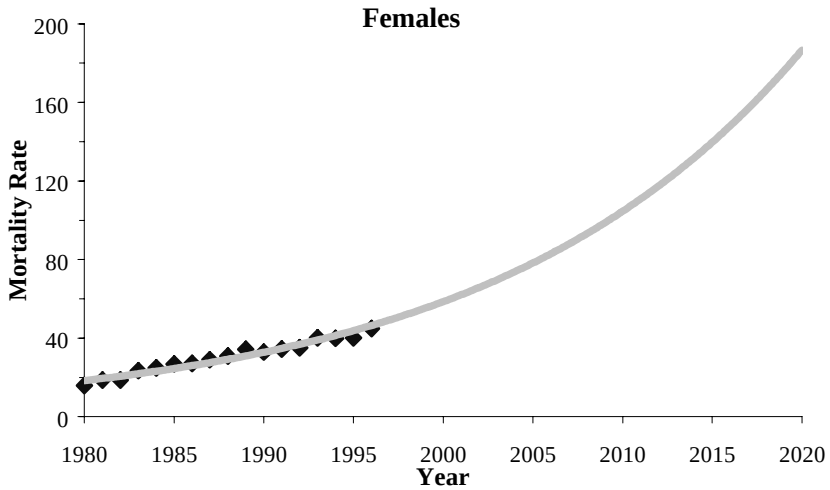
YEAR	Total	Male	Female
1980	27.9	41.0	15.9
1981	30.3	42.8	18.6
1982	30.4	43.3	18.6
1983	35.2	47.9	23.4
1984	37.2	50.4	24.9
1985	39.2	52.6	26.8
1986	38.4	50.6	27.1
1987	39.4	50.7	29.0
1988	41.5	53.0	30.9
1989	43.3	53.0	34.3
1990	41.2	50.1	32.9
1991	41.4	48.8	34.4
1992	43.4	52.3	35.0
1993	46.7	53.6	40.2
1994	47.1	54.8	39.9
1995	46.1	52.3	40.2
1996	46.9	49.0	44.9

PREDICTED

YEAR	Total	Male	Female
1996	49.8	54.5	46.4
1997	51.4	55.1	49.2
1998	52.9	55.7	52.2
1999	54.5	56.4	55.3
2000	56.2	57.1	58.6
2001	57.9	57.7	62.1
2002	59.6	58.4	65.8
2003	61.4	59.1	69.7
2004	63.3	59.8	73.8
2005	65.2	60.5	78.3
2006	67.1	61.2	82.9
2007	69.2	61.9	87.9
2008	71.3	62.6	93.1
2009	73.4	63.4	98.7
2010	75.6	64.1	104.6
2011	77.9	64.9	110.8
2012	80.3	65.6	117.4
2013	82.7	66.4	124.4
2014	85.2	67.2	131.9
2015	87.8	68.0	139.7
2016	90.4	68.7	148.1
2017	93.2	69.6	156.9
2018	96.0	70.4	166.3
2019	98.9	71.2	176.2
2020	101.9	72.0	186.7







Rates expressed per 100,000

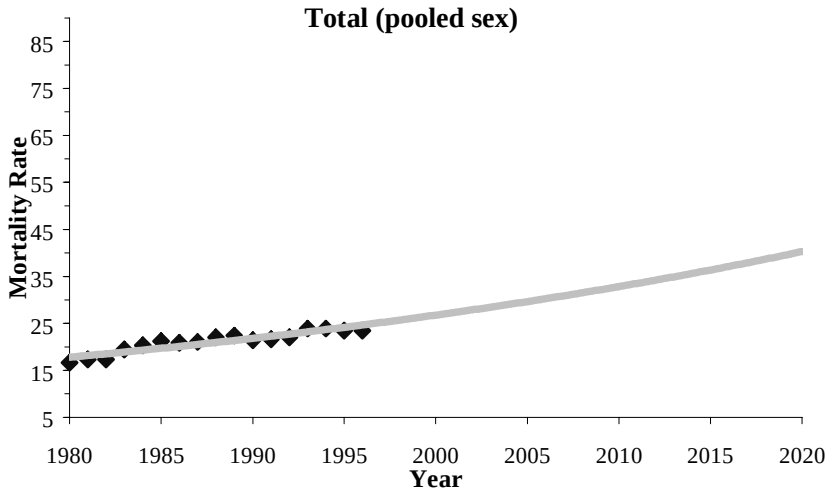
COPD AGE-ADJUSTED MORTALITY RATES: WHITES

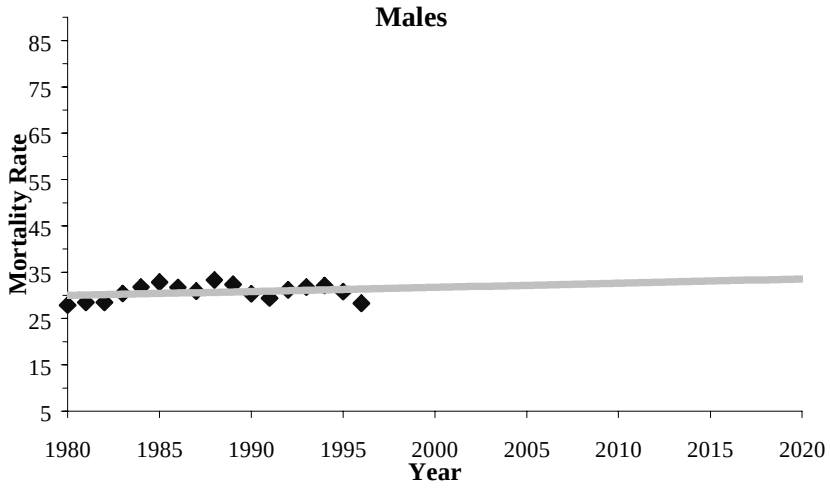
OBSERVED

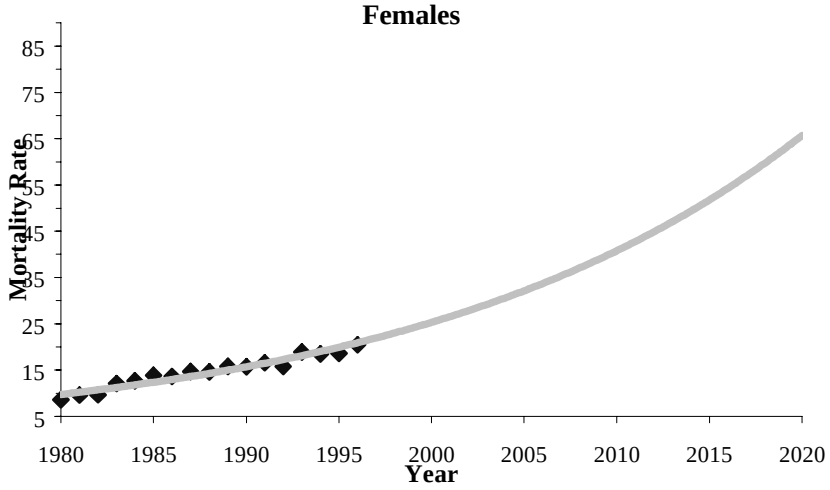
YEAR	Total	Male	Female
1980	16.6	27.9	8.6
1981	17.3	28.5	9.6
1982	17.3	28.5	9.7
1983	19.4	30.4	12.1
1984	20.3	31.8	12.7
1985	21.2	32.8	13.9
1986	20.8	31.7	13.6
1987	21.0	30.9	14.7
1988	22.0	33.3	14.6
1989	22.4	32.4	15.8
1990	21.4	30.3	15.7
1991	21.6	29.4	16.6
1992	22.0	31.2	15.8
1993	23.9	31.8	18.9
1994	23.9	32.1	18.5
1995	23.4	30.8	18.6
1996	23.4	28.3	20.5

PREDICTED

YEAR	Total	Male	Female
1996	24.7	31.4	20.9
1997	25.2	31.5	21.9
1998	25.7	31.5	23.0
1999	26.2	31.6	24.1
2000	26.8	31.7	25.3
2001	27.3	31.8	26.6
2002	27.9	31.9	27.9
2003	28.4	32.0	29.2
2004	29.0	32.1	30.6
2005	29.6	32.2	32.1
2006	30.2	32.3	33.7
2007	30.9	32.4	35.4
2008	31.5	32.4	37.1
2009	32.2	32.5	38.9
2010	32.8	32.6	40.8
2011	33.5	32.7	42.8
2012	34.2	32.8	44.9
2013	34.9	32.9	47.1
2014	35.6	33.0	49.4
2015	36.4	33.1	51.8
2016	37.1	33.2	54.3
2017	37.9	33.3	56.9
2018	38.7	33.4	59.7
2019	39.5	33.5	62.6
2020	40.3	33.6	65.7







Age standardized to the 1940 US population and expressed per 100,000 individuals.

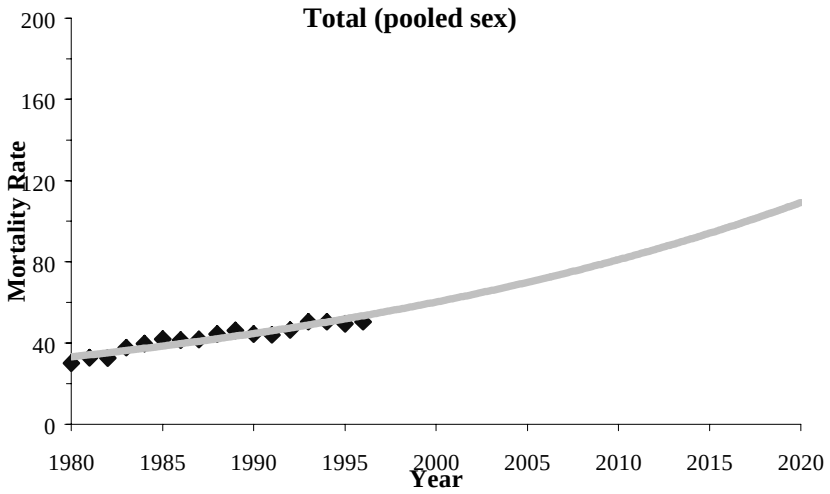
COPD CRUDE MORTALITY RATES: WHITES

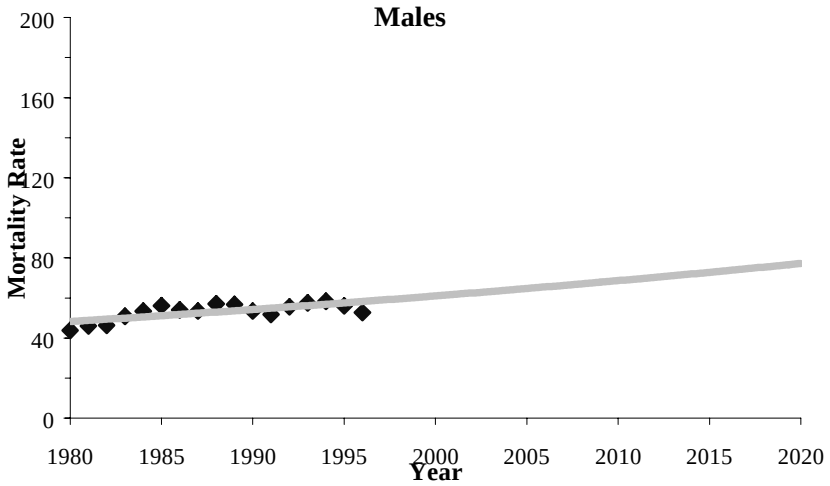
OBSERVED

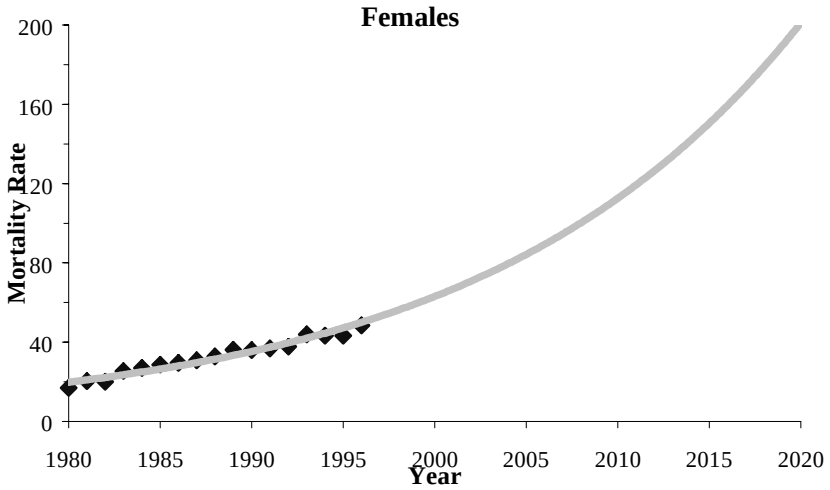
YEAR	Total	Male	Female
1980	30.0	43.9	17.0
1981	32.7	46.0	20.3
1982	32.6	46.2	20.0
1983	37.7	50.9	25.4
1984	39.7	53.4	26.9
1985	41.9	56.2	28.6
1986	41.4	54.1	29.5
1987	41.7	53.5	30.8
1988	44.5	57.1	32.7
1989	46.1	56.7	36.1
1990	44.4	53.5	36.0
1991	44.0	51.8	36.8
1992	46.4	55.6	37.7
1993	50.5	57.6	43.8
1994	50.5	58.3	43.2
1995	49.4	56.0	43.2
1996	50.5	52.7	48.4

PREDICTED

YEAR	Total	Male	Female
1996	53.4	58.2	50.0
1997	55.0	58.9	53.0
1998	56.7	59.6	56.1
1999	58.4	60.3	59.5
2000	60.2	61.0	63.1
2001	62.0	61.7	66.8
2002	63.9	62.5	70.8
2003	65.8	63.2	75.0
2004	67.8	64.0	79.5
2005	69.8	64.7	84.3
2006	72.0	65.5	89.3
2007	74.1	66.3	94.6
2008	76.4	67.0	100.3
2009	78.7	67.8	106.3
2010	81.1	68.6	112.6
2011	83.5	69.5	119.3
2012	86.0	70.3	126.5
2013	88.6	71.1	134.0
2014	91.3	72.0	142.0
2015	94.1	72.8	150.5
2016	96.9	73.7	159.5
2017	99.9	74.5	169.0
2018	102.9	75.4	179.1
2019	106.0	76.3	189.8
2020	109.2	77.2	201.1







Rates expressed per 100,000

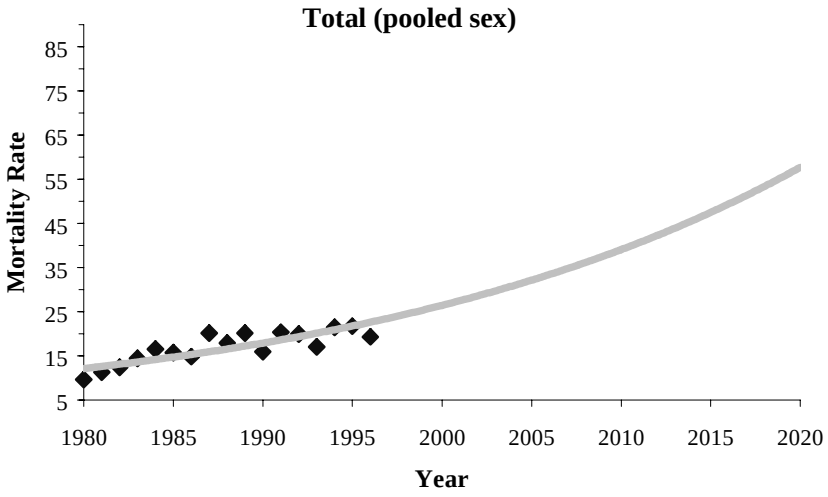
COPD AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

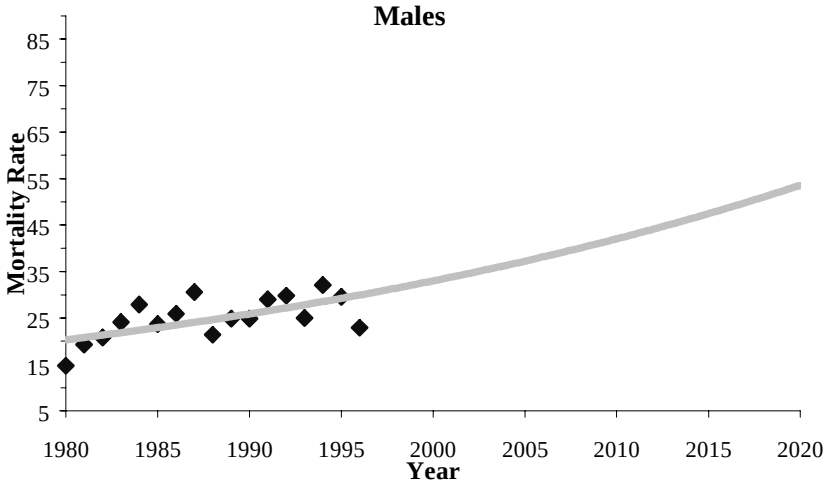
OBSERVED

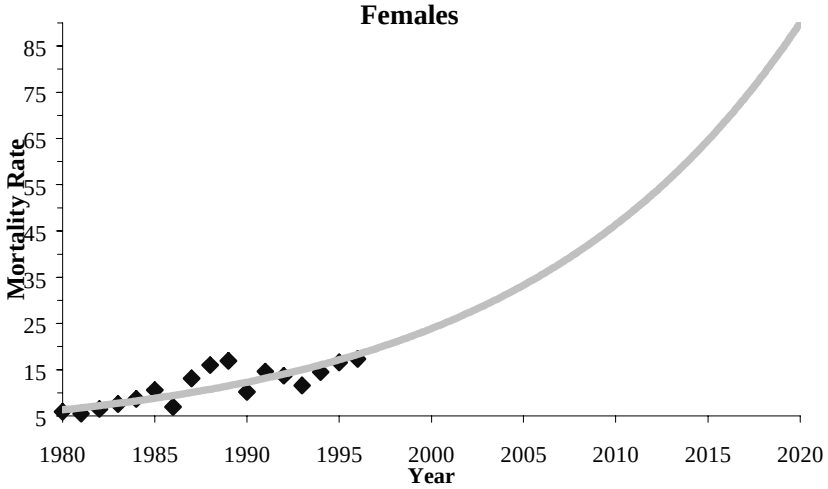
YEAR	Total	Male	Female
1980	9.6	14.7	5.9
1981	11.3	19.3	5.5
1982	12.4	20.8	6.5
1983	14.4	24.1	7.6
1984	16.5	27.9	8.7
1985	15.7	23.7	10.6
1986	14.8	25.9	7.0
1987	20.1	30.6	13.1
1988	17.9	21.4	16.0
1989	20.1	24.9	16.9
1990	15.9	24.9	10.2
1991	20.3	29.0	14.6
1992	19.9	29.8	13.7
1993	17.0	25.0	11.6
1994	21.4	32.1	14.5
1995	21.7	29.5	16.6
1996	19.3	22.9	17.3

PREDICTED

YEAR	Total	Male	Female
1996	22.6	29.9	18.3
1997	23.5	30.7	19.6
1998	24.5	31.4	20.9
1999	25.4	32.2	22.4
2000	26.4	33.0	23.9
2001	27.5	33.8	25.5
2002	28.6	34.6	27.3
2003	29.7	35.5	29.2
2004	30.9	36.3	31.2
2005	32.1	37.2	33.3
2006	33.4	38.2	35.6
2007	34.7	39.1	38.0
2008	36.1	40.0	40.6
2009	37.6	41.0	43.4
2010	39.1	42.0	46.4
2011	40.6	43.1	49.6
2012	42.2	44.1	53.0
2013	43.9	45.2	56.6
2014	45.7	46.3	60.5
2015	47.5	47.5	64.6
2016	49.4	48.6	69.0
2017	51.3	49.8	73.8
2018	53.4	51.0	78.8
2019	55.5	52.3	84.2
2020	57.7	53.6	90.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

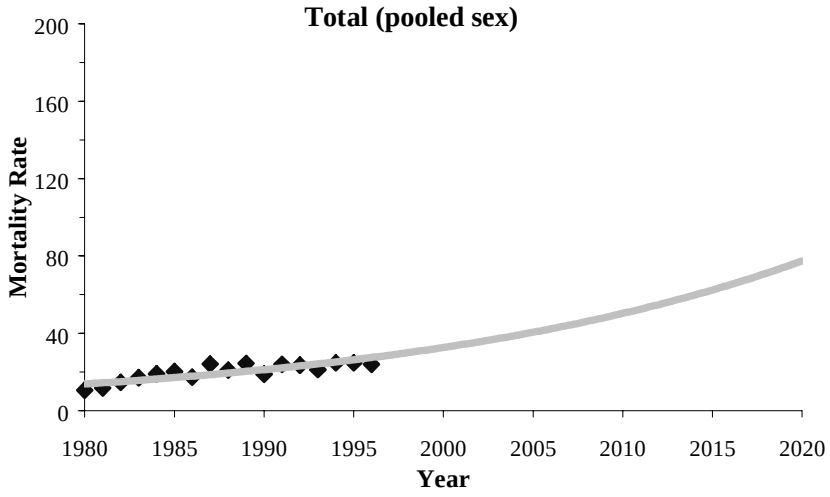
COPD CRUDE MORTALITY RATES: AFRICAN AMERICANS

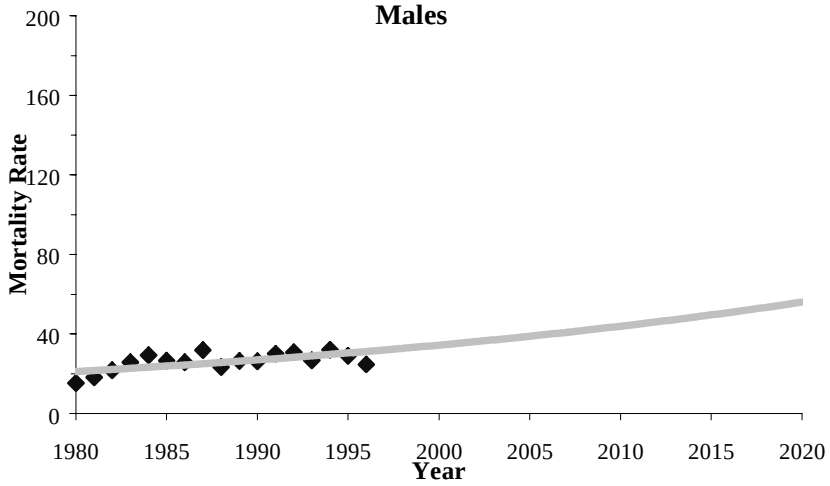
OBSERVED

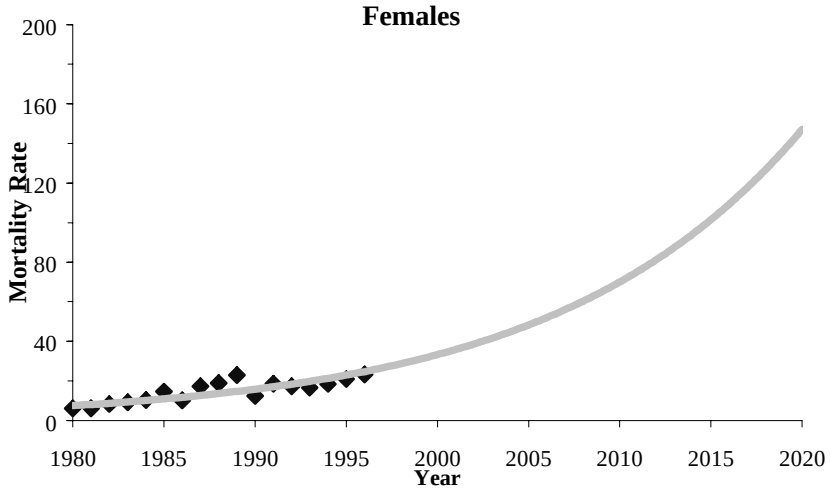
YEAR	Total	Male	Female
1980	10.5	15.4	6.2
1981	11.8	18.2	6.2
1982	14.6	21.8	8.3
1983	17.0	25.8	9.3
1984	19.1	29.2	10.3
1985	20.2	26.5	14.7
1986	17.4	25.7	10.1
1987	24.1	31.9	17.3
1988	21.0	23.3	18.9
1989	24.5	26.4	22.9
1990	18.9	26.2	12.5
1991	24.0	30.0	18.7
1992	23.5	30.8	17.2
1993	21.3	26.6	16.6
1994	24.8	32.1	18.4
1995	24.7	29.0	21.0
1996	23.9	24.7	23.3

PREDICTED

YEAR	Total	Male	Female
1996	27.5	31.2	24.8
1997	28.7	32.0	26.7
1998	30.0	32.8	28.7
1999	31.3	33.6	30.9
2000	32.7	34.4	33.3
2001	34.1	35.2	35.9
2002	35.6	36.1	38.7
2003	37.2	37.0	41.6
2004	38.9	37.9	44.8
2005	40.6	38.9	48.3
2006	42.4	39.8	52.0
2007	44.2	40.8	56.0
2008	46.2	41.8	60.3
2009	48.2	42.8	65.0
2010	50.3	43.9	70.0
2011	52.5	45.0	75.4
2012	54.9	46.1	81.2
2013	57.3	47.2	87.5
2014	59.8	48.4	94.2
2015	62.4	49.6	101.5
2016	65.2	50.8	109.3
2017	68.1	52.1	117.7
2018	71.0	53.3	126.8
2019	74.2	54.7	136.5
2020	77.4	56.0	147.0







Rates expressed per 100,000

Diabetes Mortality*

DIABETES AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	12.0	12.8	11.3	10.8	11.7	10.0	26.2	27.4	25.3
PROJECTED RATES[3,4]									
2000	14.1	15.3	12.9	13.2	14.4	12.1	24.3	26.6	22.2
2010	17.6	19.4	15.4	17.4	19.0	15.5	21.8	25.7	18.6
2020	21.9	24.5	18.3	22.8	25.1	19.9	19.5	24.8	15.5
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	3.1 ***	3.6 ***	2.6 ***	2.9 ***	3.3 ***	2.6 ***	4.0 ***	5.7 ***	2.9 **
1980-1989	1.9 *	2.6 *	1.4	1.2	1.6	1.2	5.3 **	9.1 **	2.9
1989-1996	2.2 ***	2.4 *	1.8 *	2.8 **	2.8 *	2.5 *	-1.1	-0.4	-1.8
PERIOD PERCENT CHANGE[7]									
1980-1996	50.9	58.7	43.5	51.3	53.0	49.7	49.8	99.6	22.6
1980-1989	18.1	27.3	11.8	15.2	19.9	13.2	39.6	87.7	13.2
1989-1996	14.2	11.9	14.6	18.9	14.9	21.5	-9.6	-6.0	-13.0

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the 1989-1996 period.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1989-1996 mortality data.

[5] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

DIABETES CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	22.2	19.4	24.7	21.4	18.8	23.9	30.2	26.3	33.6
PROJECTED RATES[2,3]									
2000	25.5	22.5	28.4	25.6	22.5	28.5	28.1	25.5	30.4
2010	30.7	27.5	33.9	32.2	28.6	35.9	25.5	24.4	26.3
2020	37.0	33.6	40.4	40.7	36.4	45.3	23.0	23.4	22.8
ESTIMATED ANNUAL PERCENT CHANGE[4,5]									
1980-1996	3.5 ***	4.0 ***	3.2 ***	3.5 ***	3.9 ***	3.2 ***	4.2 ***	5.4 ***	3.5 ***
1980-1989	2.9 **	3.5 **	2.5 *	2.5 *	2.9 *	2.2	6.1 **	8.9 **	4.6 *
1989-1996	1.9 **	2.0 *	1.8 *	2.3 **	2.4 *	2.3 **	-1.0	-0.4	-1.4
PERIOD PERCENT CHANGE[6]									
1980-1996	60.1	68.2	55.6	61.0	65.4	57.8	66.5	105.8	47.0
1980-1989	27.7	36.7	22.2	25.2	31.3	20.5	55.7	92.5	37.3
1989-1996	11.5	10.2	12.7	15.0	12.7	17.2	-8.3	-5.4	-10.3

[1] Calculated using mortality data pooled over the 1989-1996 period.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1989-1996 mortality data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

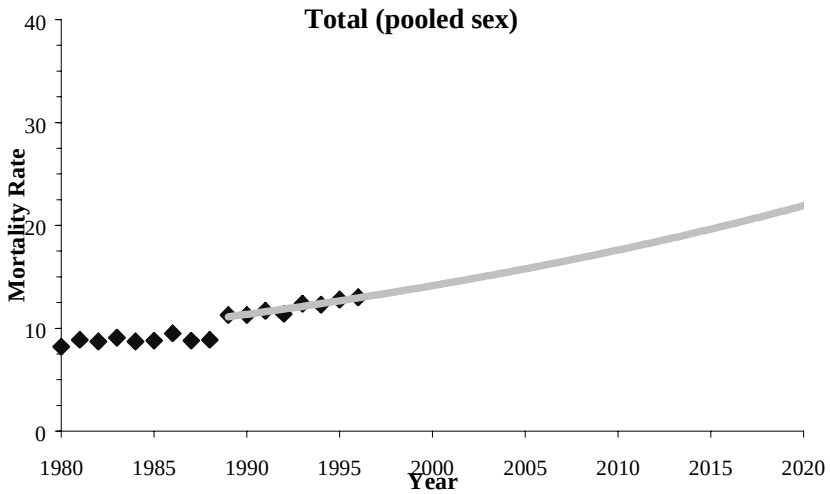
DIABETES AGE-ADJUSTED MORTALITY RATES: POOLED RACE

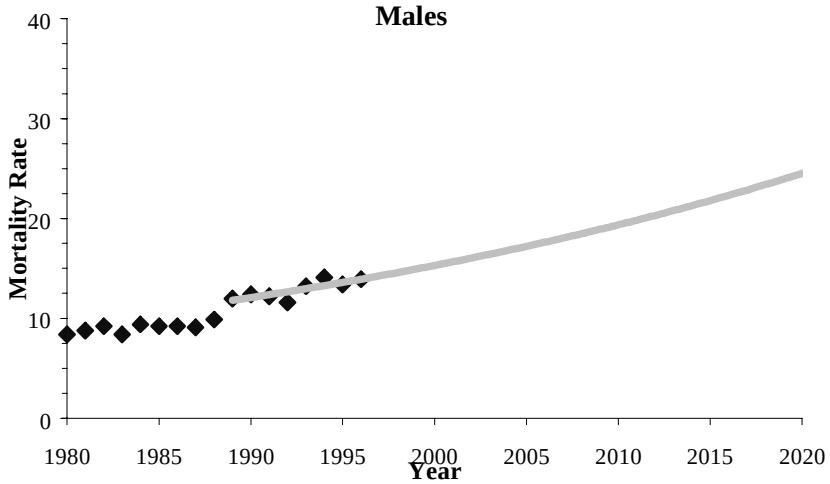
OBSERVED

YEAR	Total	Male	Female
1980	8.2	8.4	8.1
1981	8.9	8.8	8.9
1982	8.7	9.2	8.3
1983	9.1	8.4	9.6
1984	8.7	9.4	8.2
1985	8.8	9.2	8.5
1986	9.5	9.2	9.8
1987	8.8	9.1	8.5
1988	8.9	9.9	8.2
1989	11.3	12.0	10.8
1990	11.3	12.4	10.5
1991	11.7	12.2	11.5
1992	11.4	11.6	11.2
1993	12.4	13.2	11.7
1994	12.3	14.1	10.8
1995	12.8	13.4	12.2
1996	13.0	13.9	12.2

PREDICTED

YEAR	Total	Male	Female
1996	13.0	13.9	12.1
1997	13.3	14.3	12.3
1998	13.5	14.6	12.5
1999	13.8	14.9	12.7
2000	14.1	15.3	12.9
2001	14.5	15.7	13.2
2002	14.8	16.0	13.4
2003	15.1	16.4	13.6
2004	15.4	16.8	13.9
2005	15.8	17.2	14.1
2006	16.1	17.6	14.3
2007	16.5	18.0	14.6
2008	16.9	18.5	14.9
2009	17.2	18.9	15.1
2010	17.6	19.4	15.4
2011	18.0	19.8	15.6
2012	18.4	20.3	15.9
2013	18.8	20.8	16.2
2014	19.2	21.3	16.5
2015	19.6	21.8	16.8
2016	20.1	22.3	17.1
2017	20.5	22.8	17.4
2018	21.0	23.4	17.7
2019	21.4	23.9	18.0
2020	21.9	24.5	18.3





Age standardized to the 1940 US population and expressed per 100,000 individuals.

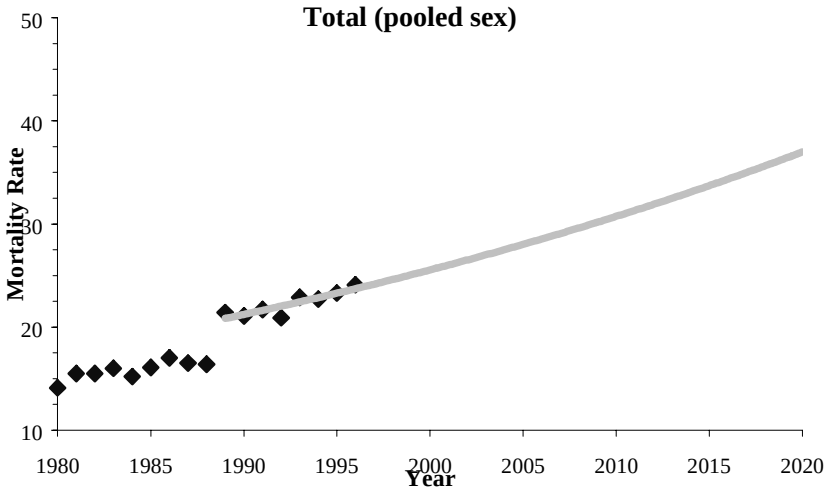
DIABETES CRUDE MORTALITY RATES: POOLED RACE

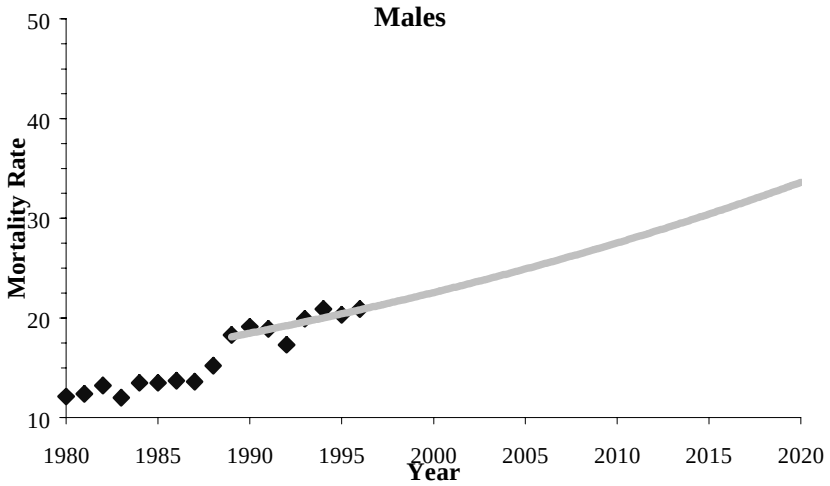
OBSERVED

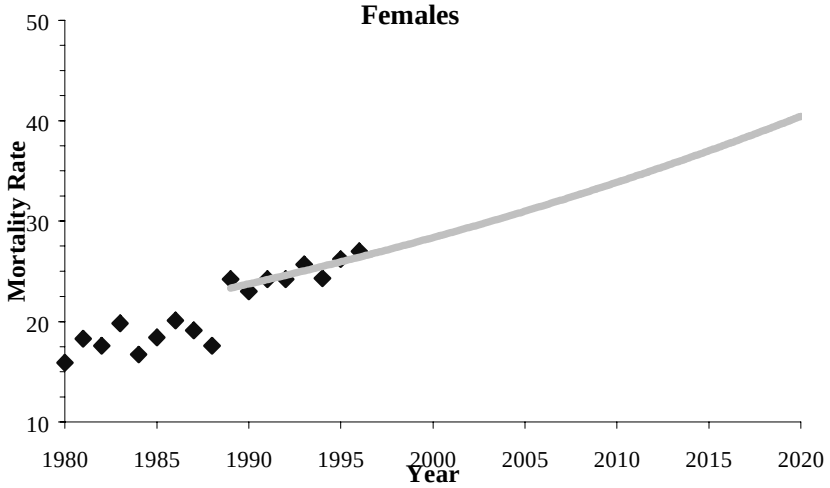
YEAR	Total	Male	Female
1980	14.1	12.1	15.9
1981	15.5	12.4	18.3
1982	15.5	13.2	17.6
1983	16.0	12.0	19.8
1984	15.2	13.5	16.7
1985	16.1	13.5	18.4
1986	17.0	13.7	20.1
1987	16.5	13.6	19.1
1988	16.4	15.2	17.6
1989	21.4	18.3	24.2
1990	21.1	19.1	23.0
1991	21.7	18.9	24.2
1992	20.9	17.3	24.2
1993	22.9	19.9	25.7
1994	22.7	20.9	24.3
1995	23.3	20.3	26.2
1996	24.1	20.9	27.0

PREDICTED

YEAR	Total	Male	Female
1996	23.7	20.8	26.4
1997	24.2	21.2	26.9
1998	24.6	21.7	27.4
1999	25.1	22.1	27.9
2000	25.5	22.5	28.4
2001	26.0	23.0	28.9
2002	26.5	23.5	29.4
2003	27.0	23.9	29.9
2004	27.5	24.4	30.4
2005	28.0	24.9	31.0
2006	28.5	25.4	31.5
2007	29.1	25.9	32.1
2008	29.6	26.4	32.7
2009	30.2	27.0	33.3
2010	30.7	27.5	33.9
2011	31.3	28.1	34.5
2012	31.9	28.6	35.1
2013	32.5	29.2	35.7
2014	33.1	29.8	36.3
2015	33.7	30.4	37.0
2016	34.3	31.0	37.7
2017	35.0	31.7	38.3
2018	35.6	32.3	39.0
2019	36.3	32.9	39.7
2020	37.0	33.6	40.4







Rates expressed per 100,000

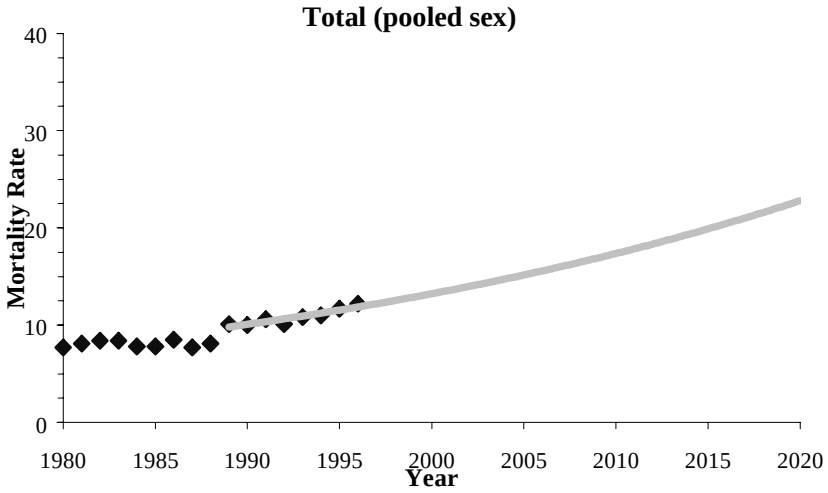
DIABETES AGE-ADJUSTED MORTALITY RATES: WHITES

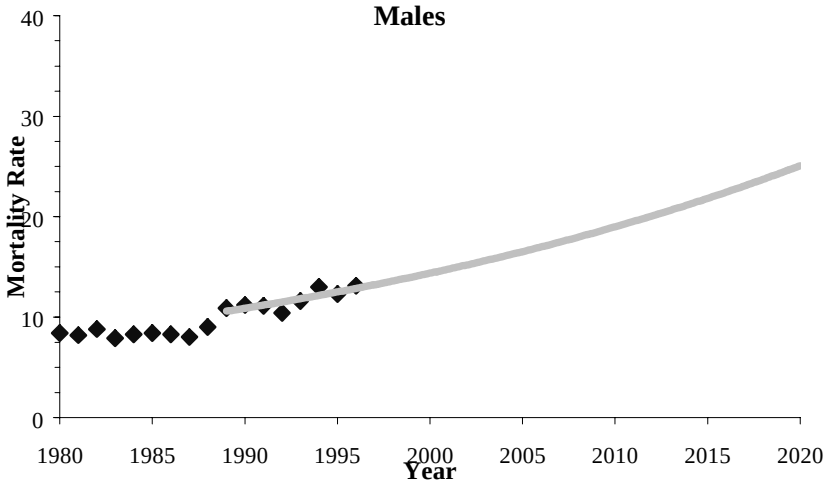
OBSERVED

YEAR	Total	Male	Female
1980	7.7	8.4	7.1
1981	8.1	8.2	8.0
1982	8.4	8.8	7.9
1983	8.4	7.9	8.6
1984	7.8	8.3	7.4
1985	7.8	8.4	7.4
1986	8.5	8.3	8.6
1987	7.7	8.0	7.5
1988	8.1	9.0	7.6
1989	10.1	10.9	9.5
1990	10.0	11.2	9.1
1991	10.6	11.1	10.2
1992	10.1	10.4	9.7
1993	10.8	11.6	10.2
1994	11.0	13.0	9.3
1995	11.7	12.3	11.2
1996	12.2	13.1	11.4

PREDICTED

YEAR	Total	Male	Female
1996	11.9	12.9	11.0
1997	12.2	13.2	11.2
1998	12.5	13.6	11.5
1999	12.9	14.0	11.8
2000	13.2	14.4	12.1
2001	13.6	14.8	12.4
2002	14.0	15.2	12.7
2003	14.4	15.6	13.0
2004	14.8	16.1	13.4
2005	15.2	16.5	13.7
2006	15.6	17.0	14.0
2007	16.0	17.5	14.4
2008	16.4	18.0	14.8
2009	16.9	18.5	15.1
2010	17.4	19.0	15.5
2011	17.8	19.5	15.9
2012	18.3	20.1	16.3
2013	18.8	20.6	16.7
2014	19.4	21.2	17.1
2015	19.9	21.8	17.6
2016	20.4	22.4	18.0
2017	21.0	23.1	18.5
2018	21.6	23.7	18.9
2019	22.2	24.4	19.4
2020	22.8	25.1	19.9





Age standardized to the 1940 US population and expressed per 100,000 individuals.

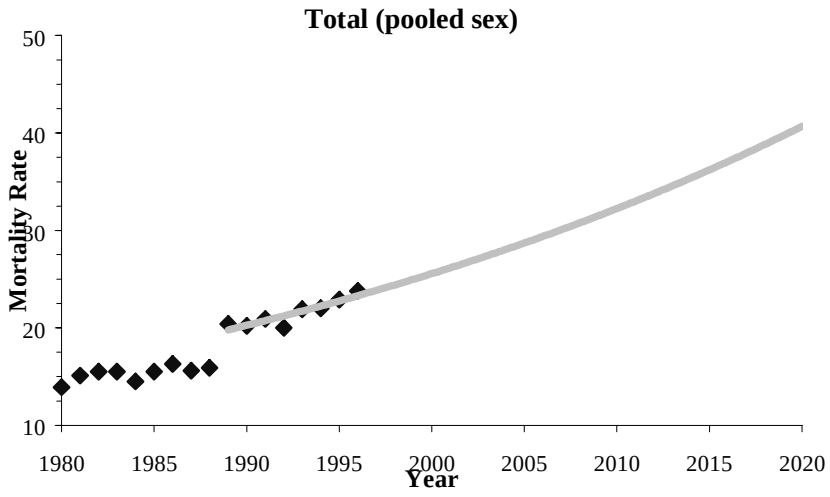
DIABETES CRUDE MORTALITY RATES: WHITES

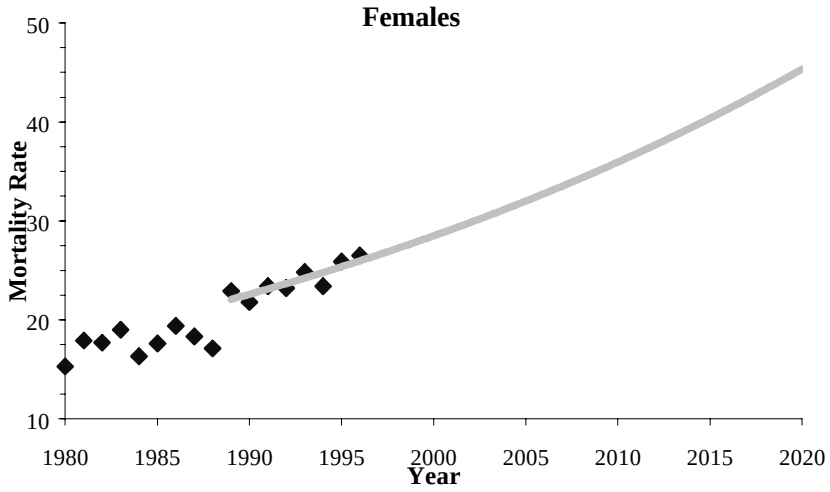
OBSERVED

YEAR	Total	Male	Female
1980	13.9	12.5	15.3
1981	15.1	12.1	17.9
1982	15.5	13.1	17.7
1983	15.5	11.6	19.0
1984	14.5	12.7	16.3
1985	15.5	13.2	17.6
1986	16.3	13.1	19.4
1987	15.6	12.7	18.3
1988	15.9	14.7	17.1
1989	20.4	17.6	22.9
1990	20.2	18.5	21.8
1991	20.9	18.2	23.4
1992	20.0	16.6	23.2
1993	21.9	18.9	24.8
1994	22.0	20.4	23.4
1995	22.9	19.8	25.9
1996	23.8	20.9	26.5

PREDICTED

YEAR	Total	Male	Female
1996	23.3	20.5	26.0
1997	23.8	21.0	26.6
1998	24.4	21.5	27.2
1999	25.0	22.0	27.8
2000	25.6	22.5	28.5
2001	26.2	23.1	29.2
2002	26.8	23.6	29.9
2003	27.4	24.2	30.6
2004	28.0	24.8	31.3
2005	28.7	25.4	32.0
2006	29.4	26.0	32.8
2007	30.1	26.6	33.5
2008	30.8	27.3	34.3
2009	31.5	27.9	35.1
2010	32.2	28.6	35.9
2011	33.0	29.3	36.8
2012	33.8	30.0	37.7
2013	34.6	30.8	38.5
2014	35.4	31.5	39.4
2015	36.2	32.3	40.4
2016	37.1	33.1	41.3
2017	37.9	33.9	42.3
2018	38.8	34.7	43.3
2019	39.7	35.5	44.3
2020	40.7	36.4	45.3





Rates expressed per 100,000

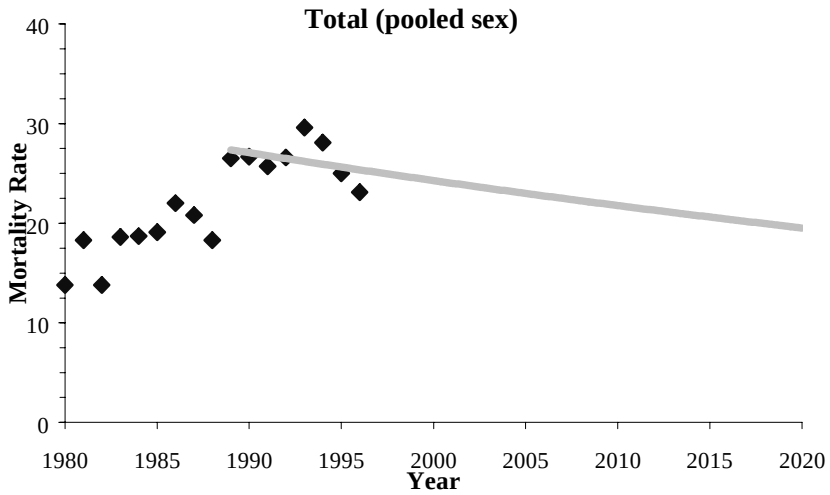
DIABETES AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

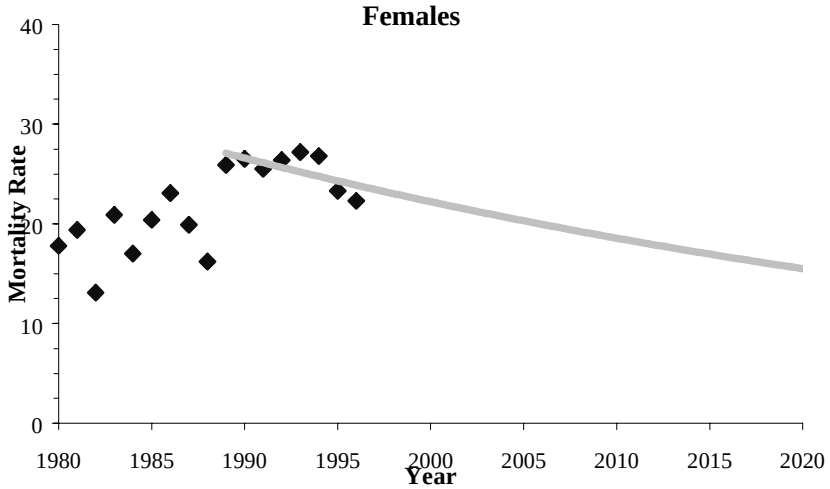
OBSERVED

YEAR	Total	Male	Female
1980	13.8	8.5	17.8
1981	18.3	16.8	19.4
1982	13.8	14.6	13.1
1983	18.6	15.4	20.9
1984	18.7	20.9	17.0
1985	19.1	16.9	20.4
1986	22.0	20.8	23.1
1987	20.8	21.6	19.9
1988	18.3	20.9	16.2
1989	26.5	26.6	25.9
1990	26.7	27.1	26.5
1991	25.7	26.2	25.5
1992	26.6	26.7	26.4
1993	29.6	32.7	27.2
1994	28.1	29.8	26.8
1995	25.0	27.0	23.3
1996	23.1	23.5	22.3

PREDICTED

YEAR	Total	Male	Female
1996	25.4	27.0	23.9
1997	25.1	26.9	23.5
1998	24.8	26.8	23.0
1999	24.5	26.7	22.6
2000	24.3	26.6	22.2
2001	24.0	26.5	21.8
2002	23.8	26.4	21.4
2003	23.5	26.3	21.1
2004	23.2	26.2	20.7
2005	23.0	26.2	20.3
2006	22.7	26.1	19.9
2007	22.5	26.0	19.6
2008	22.3	25.9	19.2
2009	22.0	25.8	18.9
2010	21.8	25.7	18.6
2011	21.5	25.6	18.2
2012	21.3	25.5	17.9
2013	21.1	25.4	17.6
2014	20.8	25.3	17.3
2015	20.6	25.2	17.0
2016	20.4	25.2	16.7
2017	20.2	25.1	16.4
2018	20.0	25.0	16.1
2019	19.7	24.9	15.8
2020	19.5	24.8	15.5





Age standardized to the 1940 US population and expressed per 100,000 individuals.

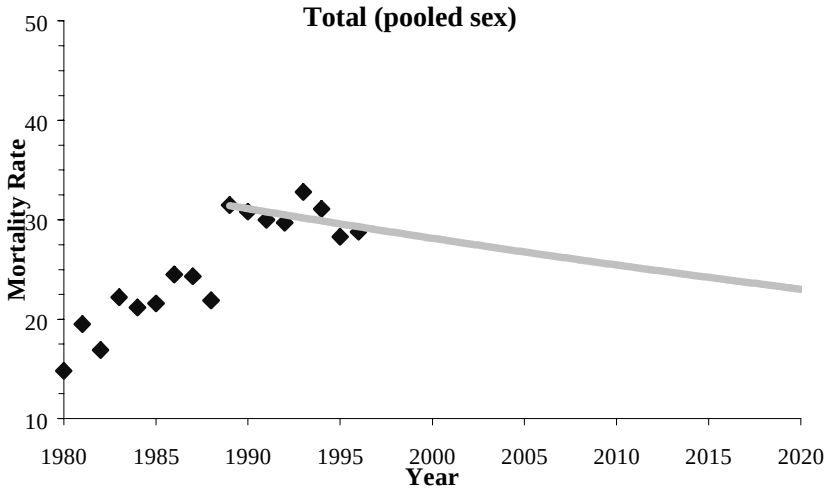
DIABETES CRUDE MORTALITY RATES: AFRICAN AMERICANS

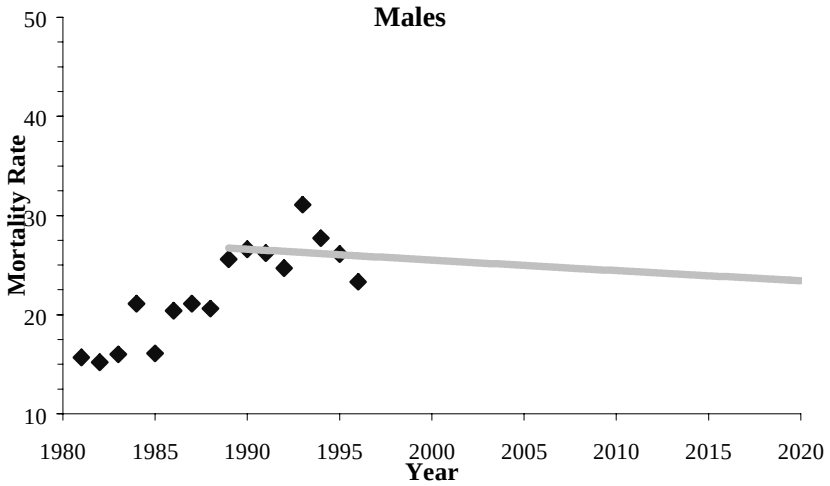
OBSERVED

YEAR	Total	Male	Female
1980	14.8	8.3	20.5
1981	19.5	15.7	22.9
1982	16.9	15.2	18.4
1983	22.2	16.0	27.6
1984	21.2	21.1	21.3
1985	21.6	16.1	26.3
1986	24.5	20.4	28.0
1987	24.3	21.1	27.0
1988	21.9	20.6	23.0
1989	31.5	25.6	36.6
1990	30.8	26.6	34.5
1991	30.0	26.2	33.4
1992	29.7	24.7	34.1
1993	32.8	31.1	34.2
1994	31.1	27.7	34.1
1995	28.3	26.1	30.2
1996	28.8	23.3	33.6

PREDICTED

YEAR	Total	Male	Female
1996	29.3	25.9	32.1
1997	29.0	25.8	31.7
1998	28.7	25.7	31.2
1999	28.4	25.6	30.8
2000	28.1	25.5	30.4
2001	27.9	25.4	29.9
2002	27.6	25.3	29.5
2003	27.3	25.2	29.1
2004	27.0	25.1	28.7
2005	26.8	25.0	28.3
2006	26.5	24.9	27.9
2007	26.2	24.8	27.5
2008	26.0	24.7	27.1
2009	25.7	24.5	26.7
2010	25.5	24.4	26.3
2011	25.2	24.3	26.0
2012	24.9	24.2	25.6
2013	24.7	24.1	25.2
2014	24.5	24.0	24.9
2015	24.2	23.9	24.5
2016	24.0	23.8	24.2
2017	23.7	23.7	23.8
2018	23.5	23.6	23.5
2019	23.3	23.5	23.2
2020	23.0	23.4	22.8





Rates expressed per 100,000

Diabetes Related Mortality*

DIABETES-RELATED AGE-ADJUSTED MORTALITY RATES:[1] ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[2]	38.0	42.9	34.3	34.8	40.1	30.7	76.1	78.7	73.7
PROJECTED RATES[3,4]									
2000	44.5	51.0	39.2	41.2	48.1	35.7	81.7	86.8	77.1
2010	55.2	64.6	46.8	51.9	61.7	43.7	89.9	99.3	81.8
2020	68.3	81.8	56.0	65.3	79.1	53.4	99.1	113.7	86.9
ESTIMATED ANNUAL PERCENT CHANGE[5,6]									
1980-1996	1.4 ***	1.7 ***	1.0 ***	1.1 ***	1.5 ***	0.8 *	2.8 ***	3.5 ***	2.3 ***
1980-1989	-0.1	0.2	-0.4	-0.6 *	-0.4	-0.8 *	3.2 **	5.1 **	1.9
1989-1996	2.2 ***	2.4 ***	1.8 **	2.3 ***	2.5 ***	2.0 **	1.0	1.4	0.6
PERIOD PERCENT CHANGE[7]									
1980-1996	19.6	24.6	14.9	16.0	19.9	12.0	45.6	69.1	30.7
1980-1989	-1.2	1.9	-3.7	-4.6	-2.5	-6.2	25.7	43.9	14.2
1989-1996	13.7	14.4	12.1	14.6	15.1	13.6	6.4	9.4	3.8

[1] Age standardized to the 1940 US population and expressed per 100,000 individuals.

[2] Calculated using mortality data pooled over the 1989-1996 period.

[3] Calculated from least squares regression of logged mortality rates.

[4] Projection based on 1989-1996 mortality data.

[5] Calculated from the following equation: $EAPC = (e^{\beta 1} - 1) \times 100$.

[6] Assumes that the mean change in rate is constant from year to year.

[7] Calculated from the following equation: $PPC = [(\mu_{last\ 2\ yrs.} - \mu_{first\ 2\ yrs.}) \div \mu_{last\ 2\ yrs.}] \times 100$.

* $p < .05$

** $p < .01$

*** $p < .001$

DIABETES-RELATED CRUDE MORTALITY RATES: ESTIMATES OF CHANGE

Variable	All Races			Whites			African Americans		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
MEAN RATE[1]	73.4	67.1	79.3	72.3	66.8	77.5	89.0	75.7	100.6
PROJECTED RATES[2,3]									
2000	87.0	81.6	92.1	86.8	82.4	91.3	96.6	83.1	108.7
2010	109.4	106.3	112.7	111.2	109.4	113.8	108.0	94.5	120.7
2020	137.6	138.5	137.8	142.5	145.4	141.9	120.7	107.5	134.0
ESTIMATED ANNUAL PERCENT CHANGE[4,5]									
1980-1996	1.8 ***	2.2 ***	1.6 ***	1.7 ***	2.1 ***	1.4 ***	3.1 ***	3.4 ***	2.9 ***
1980-1989	0.5	0.7	0.4	0.2	0.3	0.2	3.6 **	4.9 **	2.9 *
1989-1996	2.3 ***	2.7 ***	2.0 **	2.5 ***	2.9 ***	2.2 **	1.1	1.3	1.1
PERIOD PERCENT CHANGE[6]									
1980-1996	27.8	33.0	24.1	25.3	30.2	21.9	55.7	71.1	47.0
1980-1989	4.9	6.3	3.7	2.1	3.3	1.4	33.3	46.1	25.8
1989-1996	14.3	16.3	12.8	15.3	17.3	13.9	7.4	9.3	6.4

[1] Calculated using mortality data pooled over the 1989-1996 period.

[2] Calculated from least squares regression of logged mortality rates.

[3] Projection based on 1989-1996 mortality data.

[4] Calculated from the following equation: EAPC = $(e^{\beta 1} - 1) \times 100$.

[5] Assumes that the mean change in rate is constant from year to year.

[6] Calculated from the following equation: PPC = $[(\mu_{\text{last 2 yrs.}} - \mu_{\text{first 2 yrs.}}) \div \mu_{\text{last 2 yrs.}}] \times 100$.

Rates expressed per 100,000

* $p < .05$

** $p < .01$

*** $p < .001$

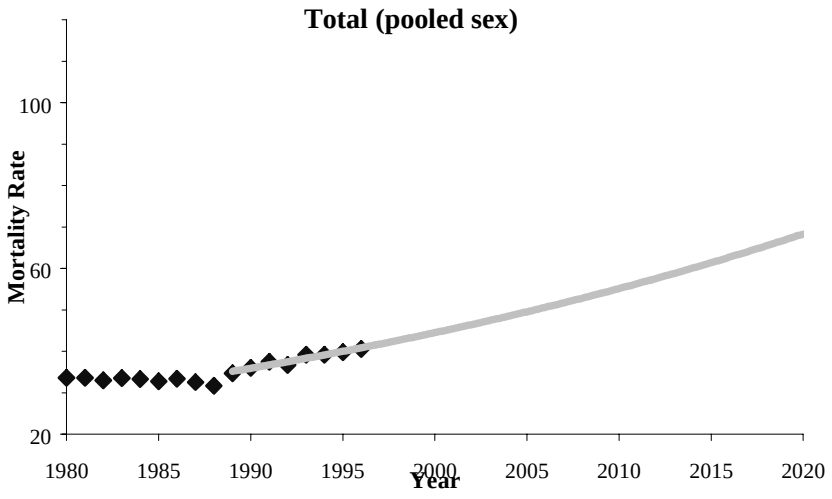
DIABETES-RELATED AGE-ADJUSTED MORTALITY RATES: POOLED RACE

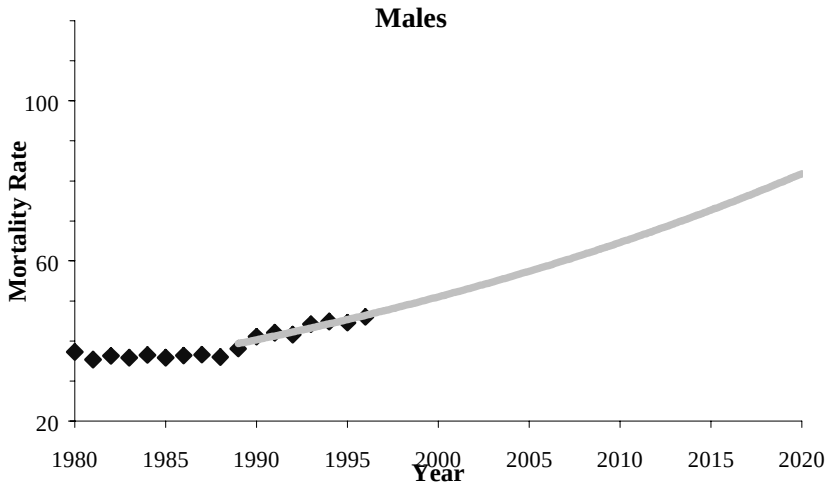
OBSERVED

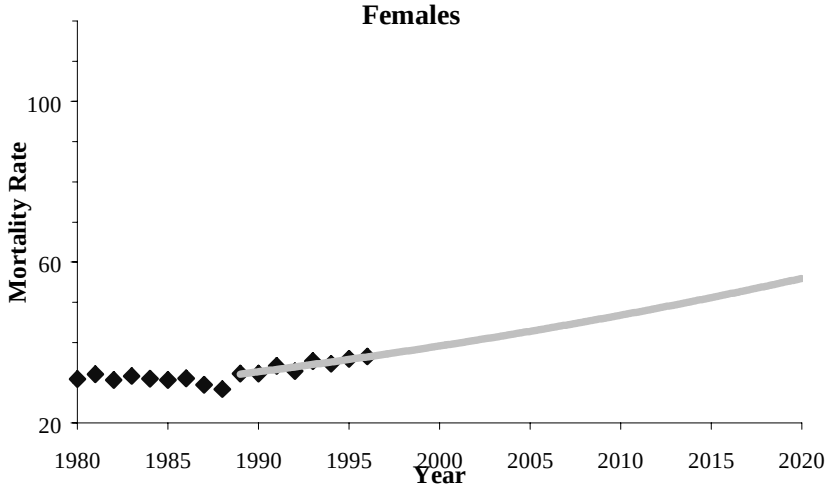
YEAR	Total	Male	Female
1980	33.6	37.3	30.9
1981	33.6	35.4	32.1
1982	33.0	36.3	30.7
1983	33.5	35.8	31.7
1984	33.3	36.5	31.0
1985	32.8	35.8	30.7
1986	33.4	36.4	31.1
1987	32.6	36.6	29.5
1988	31.7	36.0	28.4
1989	34.7	38.1	32.3
1990	36.0	41.1	32.3
1991	37.5	42.1	34.2
1992	36.7	41.6	32.9
1993	39.2	44.2	35.4
1994	39.2	44.9	34.7
1995	39.8	44.6	35.9
1996	40.6	46.0	36.5

PREDICTED

YEAR	Total	Male	Female
1996	40.9	46.4	36.5
1997	41.8	47.5	37.1
1998	42.7	48.7	37.8
1999	43.6	49.8	38.5
2000	44.5	51.0	39.2
2001	45.5	52.2	39.9
2002	46.5	53.5	40.6
2003	47.5	54.8	41.3
2004	48.5	56.1	42.1
2005	49.6	57.4	42.8
2006	50.6	58.8	43.6
2007	51.7	60.2	44.4
2008	52.8	61.6	45.2
2009	54.0	63.1	46.0
2010	55.2	64.6	46.8
2011	56.4	66.1	47.7
2012	57.6	67.7	48.5
2013	58.8	69.3	49.4
2014	60.1	71.0	50.3
2015	61.4	72.7	51.2
2016	62.7	74.4	52.1
2017	64.1	76.2	53.0
2018	65.5	78.0	54.0
2019	66.9	79.9	55.0
2020	68.3	81.8	56.0







Age standardized to the 1940 US population and expressed per 100,000 individuals.

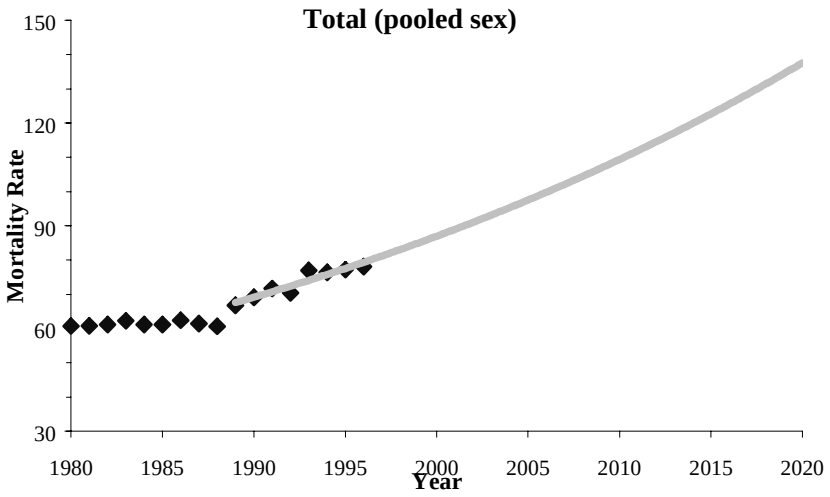
DIABETES-RELATED CRUDE MORTALITY RATES: POOLED RACE

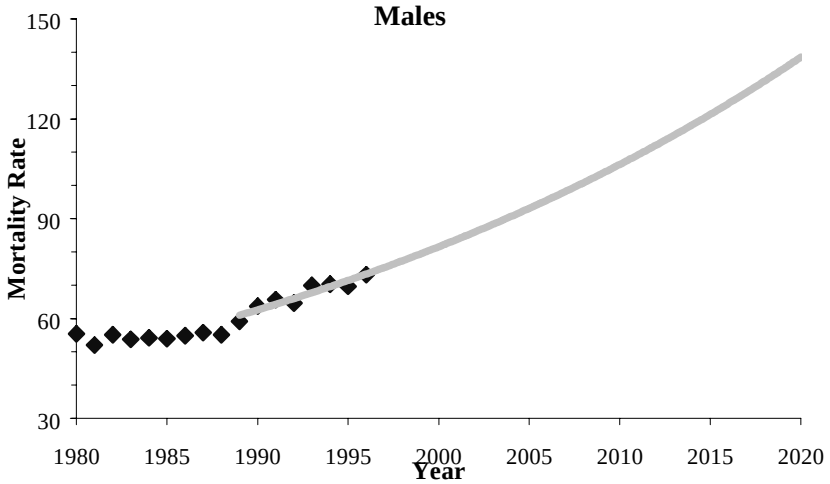
OBSERVED

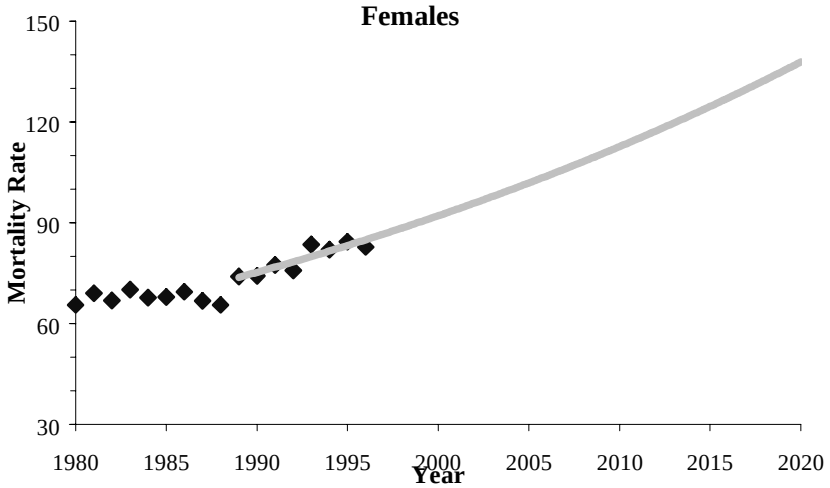
YEAR	Total	Male	Female
1980	60.7	55.4	65.6
1981	60.8	52.0	69.0
1982	61.2	55.1	66.8
1983	62.2	53.7	70.1
1984	61.2	54.2	67.7
1985	61.2	53.9	67.9
1986	62.4	54.8	69.5
1987	61.4	55.7	66.7
1988	60.6	55.1	65.6
1989	66.8	59.1	74.0
1990	69.1	63.7	74.2
1991	71.7	65.6	77.4
1992	70.4	64.6	75.8
1993	76.9	69.9	83.5
1994	76.4	70.3	82.0
1995	77.2	69.7	84.3
1996	78.1	73.1	82.8

PREDICTED

YEAR	Total	Male	Female
1996	79.3	73.4	84.9
1997	81.2	75.3	86.7
1998	83.1	77.3	88.4
1999	85.0	79.4	90.2
2000	87.0	81.6	92.1
2001	89.0	83.7	93.9
2002	91.0	86.0	95.9
2003	93.2	88.3	97.8
2004	95.3	90.7	99.8
2005	97.5	93.1	101.8
2006	99.8	95.6	103.9
2007	102.1	98.2	106.0
2008	104.5	100.8	108.2
2009	106.9	103.5	110.4
2010	109.4	106.3	112.7
2011	111.9	109.1	114.9
2012	114.5	112.1	117.3
2013	117.2	115.1	119.7
2014	119.9	118.2	122.1
2015	122.7	121.3	124.6
2016	125.5	124.6	127.1
2017	128.4	127.9	129.7
2018	131.4	131.4	132.4
2019	134.5	134.9	135.1
2020	137.6	138.5	137.8







Rates expressed per 100,000

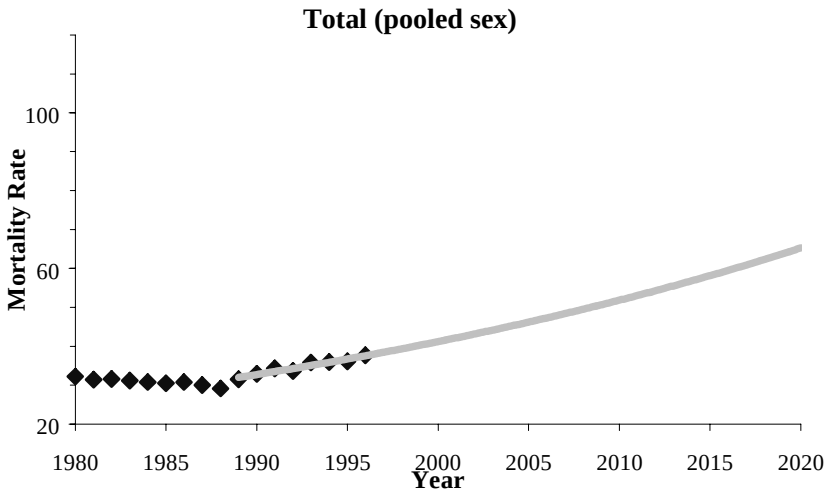
DIABETES-RELATED AGE-ADJUSTED MORTALITY RATES: WHITES

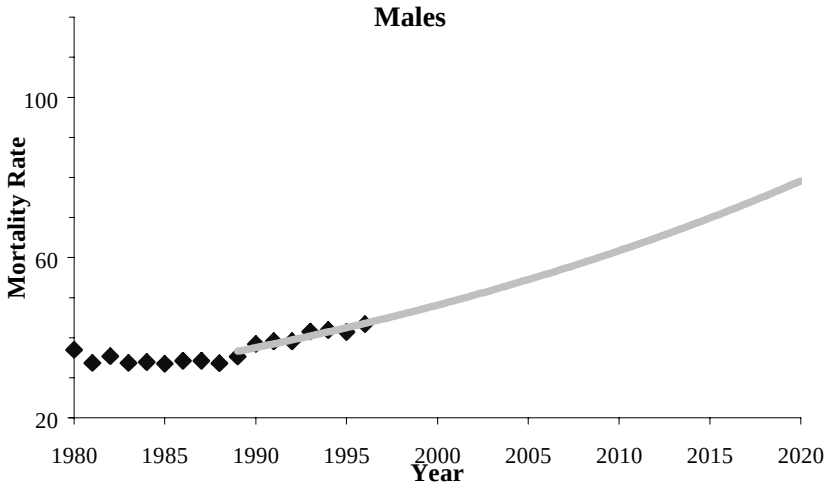
OBSERVED

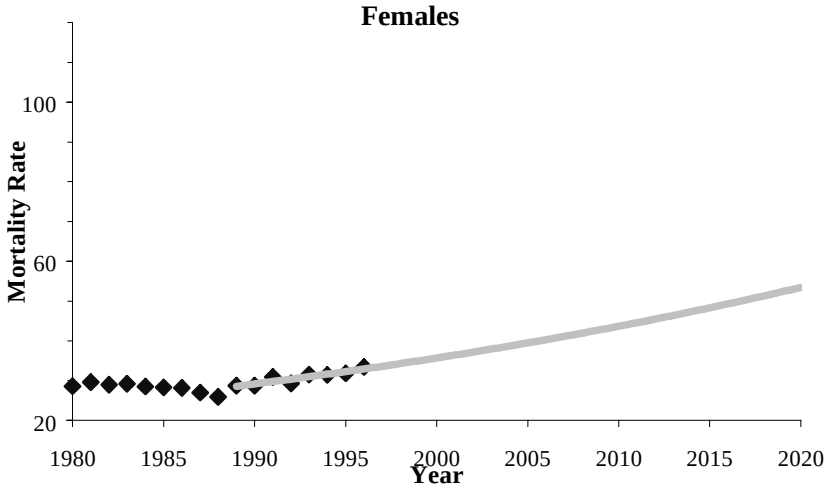
YEAR	Total	Male	Female
1980	32.2	37.0	28.6
1981	31.4	33.7	29.6
1982	31.6	35.4	29.0
1983	31.2	33.7	29.2
1984	30.8	33.9	28.5
1985	30.5	33.5	28.3
1986	30.8	34.2	28.1
1987	30.0	34.2	27.0
1988	29.2	33.6	25.9
1989	31.5	35.3	28.7
1990	32.9	38.4	28.7
1991	34.3	39.1	30.9
1992	33.6	39.1	29.3
1993	35.8	41.5	31.5
1994	36.0	41.9	31.4
1995	36.1	41.4	31.8
1996	37.7	43.4	33.4

PREDICTED

YEAR	Total	Male	Female
1996	37.6	43.6	32.9
1997	38.5	44.7	33.6
1998	39.4	45.8	34.3
1999	40.3	46.9	35.0
2000	41.2	48.1	35.7
2001	42.2	49.3	36.4
2002	43.1	50.6	37.2
2003	44.2	51.9	37.9
2004	45.2	53.2	38.7
2005	46.2	54.5	39.5
2006	47.3	55.9	40.3
2007	48.4	57.3	41.1
2008	49.5	58.7	41.9
2009	50.7	60.2	42.8
2010	51.9	61.7	43.7
2011	53.1	63.3	44.6
2012	54.3	64.9	45.5
2013	55.6	66.5	46.4
2014	56.8	68.2	47.3
2015	58.2	69.9	48.3
2016	59.5	71.7	49.3
2017	60.9	73.5	50.3
2018	62.3	75.3	51.3
2019	63.8	77.2	52.4
2020	65.3	79.1	53.4







Age standardized to the 1940 US population and expressed per 100,000 individuals.

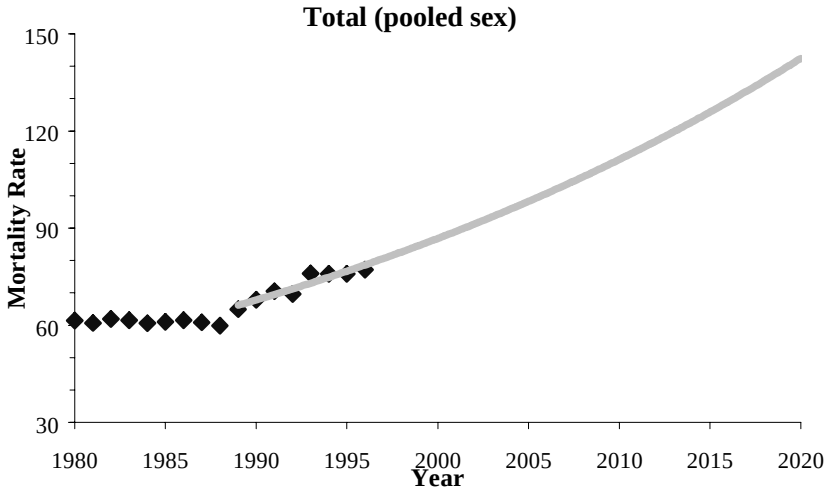
DIABETES-RELATED CRUDE MORTALITY RATES: WHITES

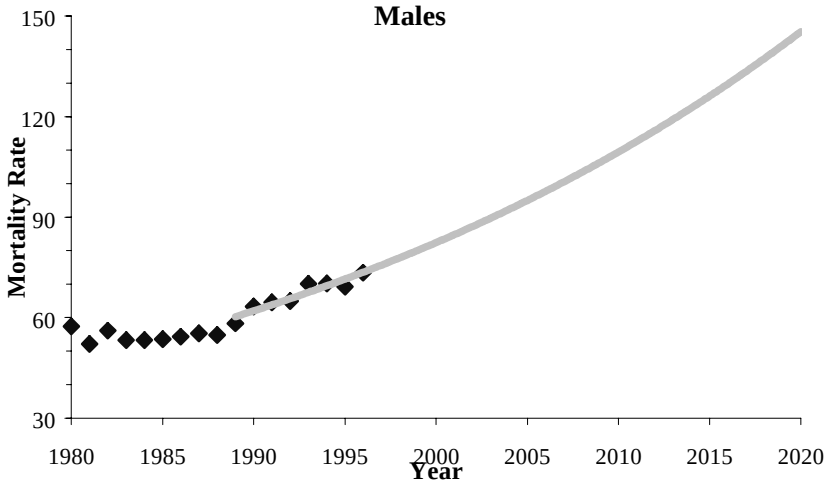
OBSERVED

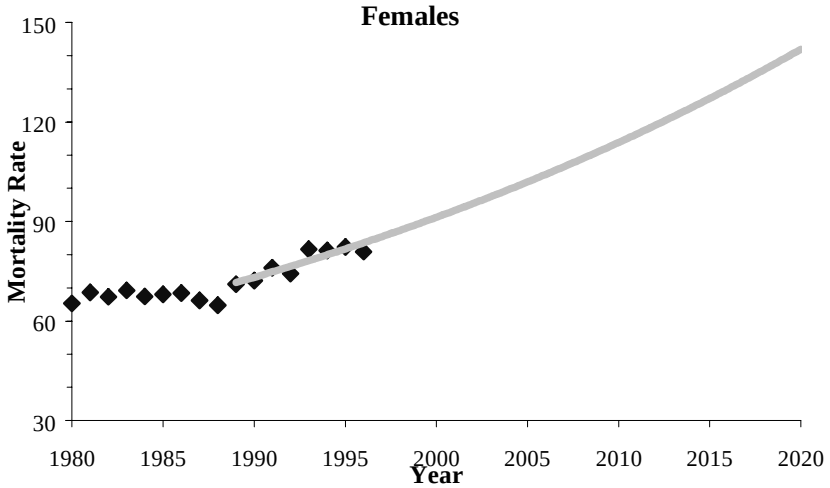
YEAR	Total	Male	Female
1980	61.5	57.4	65.3
1981	60.7	52.1	68.6
1982	61.9	56.1	67.3
1983	61.6	53.3	69.2
1984	60.6	53.3	67.4
1985	61.1	53.6	68.0
1986	61.6	54.3	68.4
1987	60.9	55.3	66.2
1988	59.9	54.8	64.7
1989	64.9	58.3	71.1
1990	67.9	63.3	72.2
1991	70.5	64.6	76.0
1992	69.7	64.9	74.3
1993	76.0	70.1	81.6
1994	75.9	70.2	81.3
1995	75.9	69.2	82.3
1996	77.2	73.4	80.9

PREDICTED

YEAR	Total	Male	Female
1996	78.6	73.5	83.6
1997	80.6	75.7	85.4
1998	82.6	77.8	87.3
1999	84.7	80.1	89.3
2000	86.8	82.4	91.3
2001	89.0	84.8	93.3
2002	91.2	87.2	95.4
2003	93.5	89.7	97.5
2004	95.9	92.3	99.7
2005	98.3	95.0	101.9
2006	100.7	97.7	104.2
2007	103.3	100.5	106.5
2008	105.9	103.4	108.9
2009	108.5	106.4	111.3
2010	111.2	109.4	113.8
2011	114.0	112.6	116.4
2012	116.9	115.8	119.0
2013	119.8	119.2	121.6
2014	122.8	122.6	124.3
2015	125.9	126.1	127.1
2016	129.0	129.8	129.9
2017	132.3	133.5	132.8
2018	135.6	137.3	135.8
2019	139.0	141.3	138.8
2020	142.5	145.4	141.9







Rates expressed per 100,000

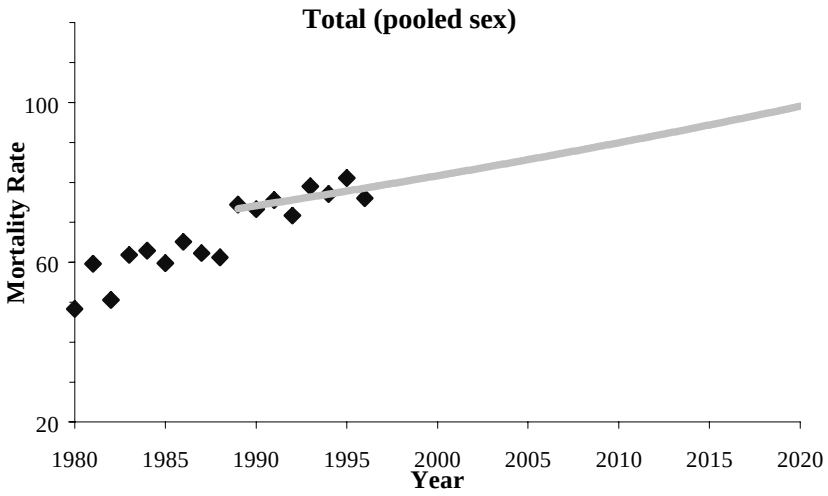
DIABETES-RELATED AGE-ADJUSTED MORTALITY RATES: AFRICAN AMERICANS

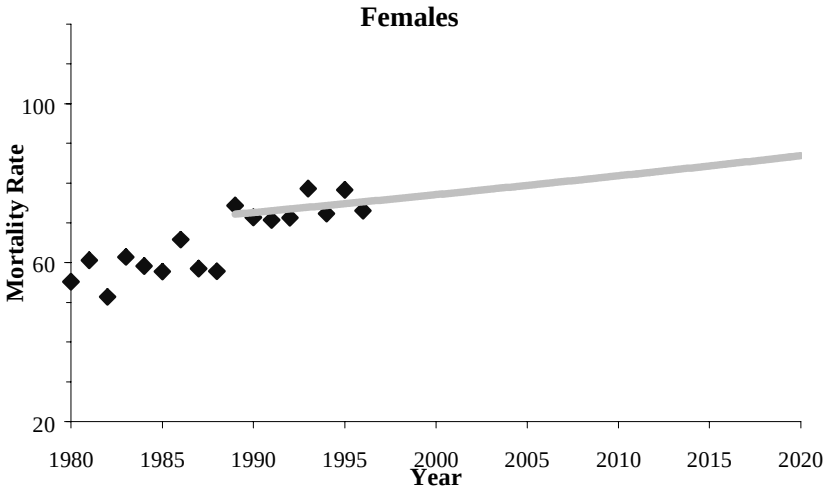
OBSERVED

YEAR	Total	Male	Female
1980	48.3	38.9	55.2
1981	59.6	57.6	60.6
1982	50.5	49.3	51.4
1983	61.8	61.6	61.4
1984	62.9	67.9	59.1
1985	59.8	62.3	57.7
1986	65.1	64.3	65.8
1987	62.3	66.8	58.5
1988	61.2	65.4	57.8
1989	74.4	73.5	74.4
1990	73.3	75.7	71.4
1991	75.6	82.8	70.7
1992	71.7	71.6	71.3
1993	79.0	78.6	78.6
1994	77.1	82.9	72.3
1995	81.1	84.2	78.3
1996	76.0	79.0	73.1

PREDICTED

YEAR	Total	Male	Female
1996	78.6	82.2	75.3
1997	79.3	83.3	75.7
1998	80.1	84.5	76.2
1999	80.9	85.6	76.6
2000	81.7	86.8	77.1
2001	82.5	88.0	77.6
2002	83.3	89.1	78.0
2003	84.1	90.4	78.5
2004	84.9	91.6	79.0
2005	85.7	92.8	79.4
2006	86.5	94.1	79.9
2007	87.4	95.4	80.4
2008	88.2	96.7	80.9
2009	89.1	98.0	81.4
2010	89.9	99.3	81.8
2011	90.8	100.7	82.3
2012	91.7	102.0	82.8
2013	92.6	103.4	83.3
2014	93.5	104.8	83.8
2015	94.4	106.3	84.3
2016	95.3	107.7	84.8
2017	96.2	109.2	85.3
2018	97.2	110.6	85.9
2019	98.1	112.1	86.4
2020	99.1	113.7	86.9





Age standardized to the 1940 US population and expressed per 100,000 individuals.

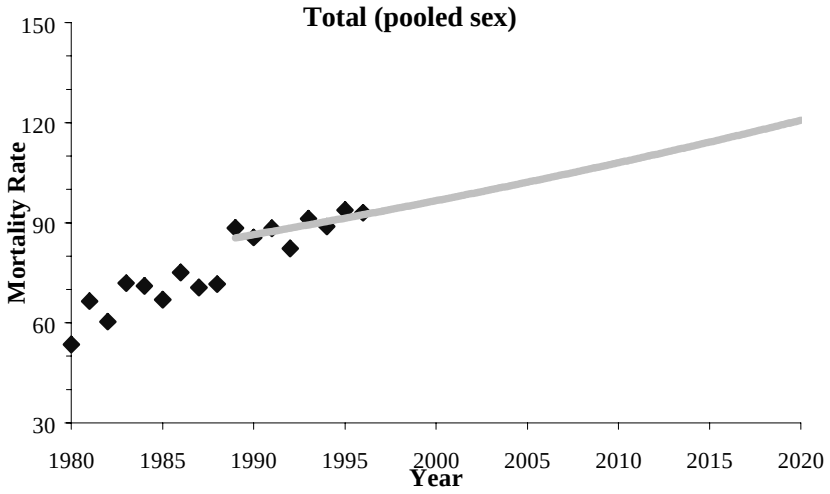
DIABETES-RELATED CRUDE MORTALITY RATES: AFRICAN AMERICANS

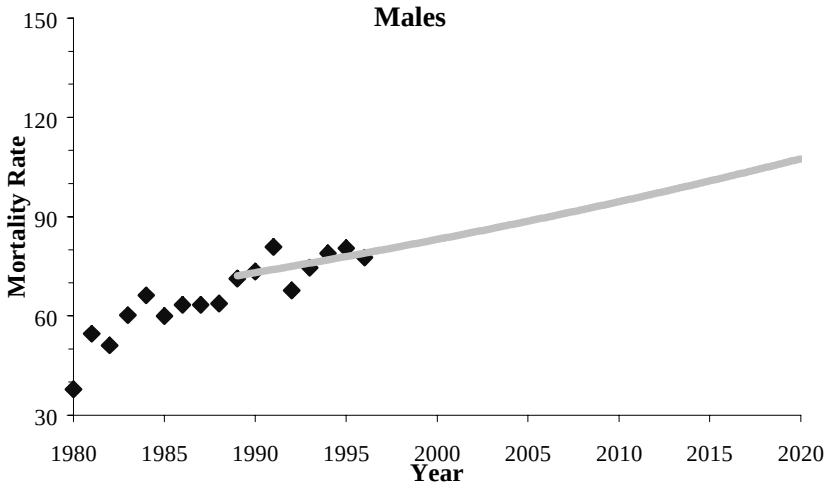
OBSERVED

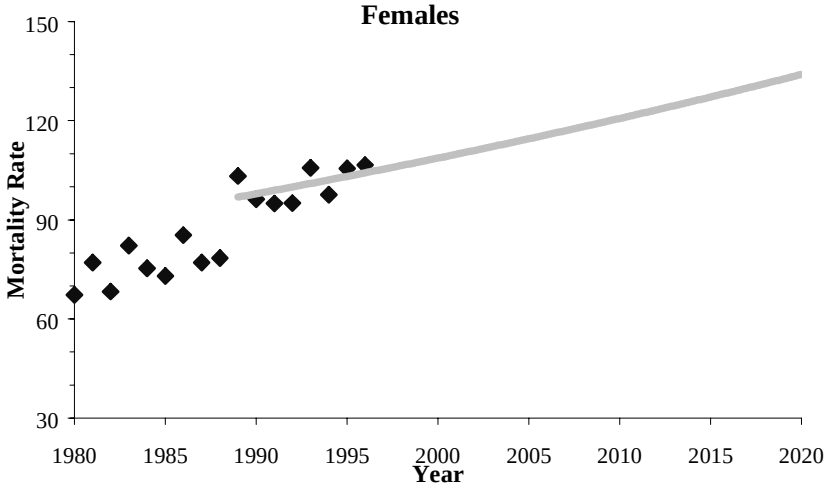
YEAR	Total	Male	Female
1980	53.5	37.8	67.3
1981	66.5	54.6	77.0
1982	60.3	51.1	68.3
1983	71.9	60.2	82.2
1984	71.0	66.2	75.3
1985	66.9	59.9	73.0
1986	75.1	63.3	85.3
1987	70.6	63.3	77.0
1988	71.6	63.7	78.4
1989	88.4	71.3	103.2
1990	85.6	73.4	96.2
1991	88.3	80.8	94.9
1992	82.3	67.7	95.0
1993	91.2	74.6	105.7
1994	88.9	78.9	97.6
1995	93.8	80.5	105.5
1996	93.0	77.6	106.6

PREDICTED

YEAR	Total	Male	Female
1996	92.4	78.9	104.2
1997	93.4	80.0	105.3
1998	94.5	81.0	106.4
1999	95.5	82.0	107.5
2000	96.6	83.1	108.7
2001	97.7	84.2	109.8
2002	98.8	85.3	111.0
2003	99.9	86.4	112.1
2004	101.0	87.5	113.3
2005	102.1	88.6	114.5
2006	103.3	89.8	115.7
2007	104.4	90.9	116.9
2008	105.6	92.1	118.2
2009	106.8	93.3	119.4
2010	108.0	94.5	120.7
2011	109.2	95.7	121.9
2012	110.4	97.0	123.2
2013	111.7	98.2	124.5
2014	112.9	99.5	125.8
2015	114.2	100.8	127.2
2016	115.5	102.1	128.5
2017	116.7	103.4	129.8
2018	118.1	104.8	131.2
2019	119.4	106.1	132.6
2020	120.7	107.5	134.0







Rates expressed per 100,000

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APPENDICES

Appendix 1. Chronic Disease Mortality Rates, 1980 – 1996. 197

Appendix 2. Standard Million Population and Grouping, 1970 and 1940. . . .198

Appendix 1
Chronic Disease Mortality Rates, 1980-1996

Table 1: Age-Adjusted Chronic Disease Mortality Rates, Missouri 1980-1996

	Total	Male	Female
Cardiovascular Disease (CVD)[1]	213.9	281.3	163.0
All Cancer[2]	174.6	224.3	41.2
Ischemic Heart Disease (IHD)[1]	123.7	173.3	85.9
Lung Cancer[2]	52.4	82.3	30.5
Diabetes-Related Diseases[1]	38.0	42.9	34.3
Stroke[1]	31.8	34.7	29.8
Breast Cancer[2,3]			26.1
Prostate Cancer[2]		23.3	
Chronic Obstructive Pulmonary Disease (COPD)[1]	20.8	30.2	14.5
Colorectal Cancer[2]	19.6	24.0	16.6
Diabetes[1, 4]	12.0	12.8	11.3
Cervical Cancer[2]			3.1
Oral Cancer[2]	2.6	4.2	1.4

[1] Age-standardized to the 1940 US population and expressed per 100,000 individuals.
[2] Age-standardized to the 1970 US population and expressed per 100,000 individuals.
[3] Breast cancer rates include only female breast cancer.
[4] Diabetes rates are for 1989-1996.

Table 2: Crude Chronic Disease Mortality Rates, Missouri 1980-1996[1]

	Total	Male	Female
Cardiovascular Disease (CVD)	461.4	454.4	467.8
Ischemic Heart Disease (IHD)	260.4	275.1	246.7
All Cancer	220.5	243.7	199.0
Stroke	75.5	60.9	89.1
Diabetes-Related Diseases	73.4	67.1	79.3
Lung Cancer	63.6	88.7	40.2
Chronic Obstructive Pulmonary Disease (COPD)	39.8	49.7	30.5
Breast Cancer[2]			34.5
Prostate Cancer		26.3	
Colorectal Cancer	26.2	26.3	26.0
Diabetes[3]	22.2	19.4	24.7
Cervical Cancer			3.9
Oral Cancer	3.2	4.4	2.0

[1] Rates expressed per 100,000 population.
[2] Breast cancer rates include only female breast cancer.
[3] Diabetes rates are for 1989-1996.

Appendix 2

Table 1: Standard Million Population and Grouping – 1970

Age Group	Number
All Years	1,000,000
<5	84,416
5-9	98,204
10-14	102,304
15-19	93,845
20-24	80,561
25-29	66,320
30-34	56,249
35-39	54,656
40-44	58,958
45-49	59,622
50-54	54,643
55-59	49,077
60-64	42,403
65-69	34,406
70-74	26,789
75-79	18,871
80-84	11,241
85+	7,435

Table 2: Standard Million Population and Grouping – 1940

Age Group	Number
All Years	1,000,000
<1	15,343
1-4	64,718
5-14	170,355
15-24	181,677
25-34	162,066
35-44	139,237
45-54	117,811
55-64	80,294
65-74	48,426
75-84	17,303
85+	2,770