

Mortality in the general population

Diabetes remains a leading cause of mortality, and deaths are increasing. Increased death rates are seen for all ages and races, and the highest rates are seen in minority populations, and older Americans.

In 1994, diabetes was the 7th leading cause of death in the United States (Table 3.1). When leading causes of death were examined by race, diabetes ranked as the 7th leading cause among whites, blacks, Chinese, and Filipinos; as the 6th leading cause among Japanese; as the 5th leading cause among Hawaiians; and as the 4th leading cause among American Indians (Table 3.2). Regardless of race, diabetes ranked higher as a leading cause of death among females than among males and was the 4th leading cause of death among females who were black, American Indian, Hawaiian, or Filipino. Similar trends are seen among persons of Hispanic origin; diabetes ranked as the 7th leading cause of death overall and as the 4th leading cause of death among females (Table 3.3). Also in 1994, both age-adjusted diabetes death rates (based on diabetes as the underlying cause of death) and diabetes-related death rates (based on diabetes as any listed cause of death) were higher among American Indians, blacks, and persons of Hispanic origin than among whites, with black females having the highest rates (Figures 3.9, 3.10; Tables 3.4, 3.5)

The annual number of deaths for which diabetes was the underlying cause increased from 34,851 in 1980 to 56,692 in 1994 (Figure 3.1; Table 3.8). Throughout most of the 1980s, the age-adjusted diabetes death rate remained relatively constant (Figure 3.2; Table 3.15). However, in 1989 (the year a new standard death certificate was implemented in the United States), the age-adjusted diabetes death rate increased 14% and continued to increase in the 1990s, although at a slower rate (11% increase between 1989 and 1994). By 1994, the age-adjusted diabetes death rate was 27% higher than in 1980 (19.5 per 100,000 vs 15.3 per 100,000, respectively).

The annual number of diabetes-related deaths (deaths for which diabetes was recorded as any cause) increased from 135,931 in 1980 to 182,261 in 1994 (Figure 3.3; Table 3.22). In contrast to the age-adjusted diabetes death rate, the age-adjusted diabetes-related death rate did not display a large increase in 1989 and only increased 4% between 1980 and 1994 (Figure 3.4; Table 3.29).

Between 1980 and 1994, age-adjusted diabetes death rates and diabetes-related death rates were higher among males than females and male rates increased at a greater rate (Figures 3.5, 3.6; Tables 3.16, 3.17, 3.30, 3.31). Among the four race-sex groups examined (white and black males and females), black females had the highest rates, but the greatest rate of increase was seen for black males (Figures 3.7, 3.8; Tables 3.18-3.21, 3.32-3.35). Among black males, diabetes death rates increased at a greater rate among those aged >45 years and diabetes-related death rates increased at a greater rate among those aged >65 years.

Mortality in the diabetic population.

When the prevalence of diabetes is adjusted for by using estimates of the diabetic population in calculating death rates, differences in diabetes death rates and in diabetes-related deaths rates among whites and blacks decrease notably (Figures 3.10, 3.20, 3.21; Tables 3.14-3.17, 3.19-3.22). This finding indicates that a substantial proportion of the disparity in death rates in the general population resulted from the greater prevalence of diabetes among blacks. Diabetes death rates in the diabetic population remained higher for blacks than for whites, however, and were highest for black males. In 1994, black males also had the highest diabetes-related death rates, crossing over the rates for white males in the early 1990s.

In contrast to age-adjusted diabetes death rates in the general population that increased 27% between 1980 and 1994, corresponding death rates in the diabetic population only increased 11% (Figure 3.14; Table 3.40). Similarly, in contrast to diabetes-related death rates in the general population that increased 4% between 1980 and 1994, corresponding death rates in the diabetic population actually decreased 9% (Figure 3.15; Table 3.47), indicating that diabetes-related deaths are declining among persons with diabetes.

Age-adjusted diabetes death rates in both the general population and the diabetic population increased in 1989, which may be attributed, in part, to the 1989 revision of the U.S. Standard Death Certificate (16). However, the continued increase in diabetes death rates in the general population after 1989 compared with the lack of increase in the diabetes death rates among the diabetic population, suggests that the increasing prevalence of diabetes explains the increasing rates in the general population.

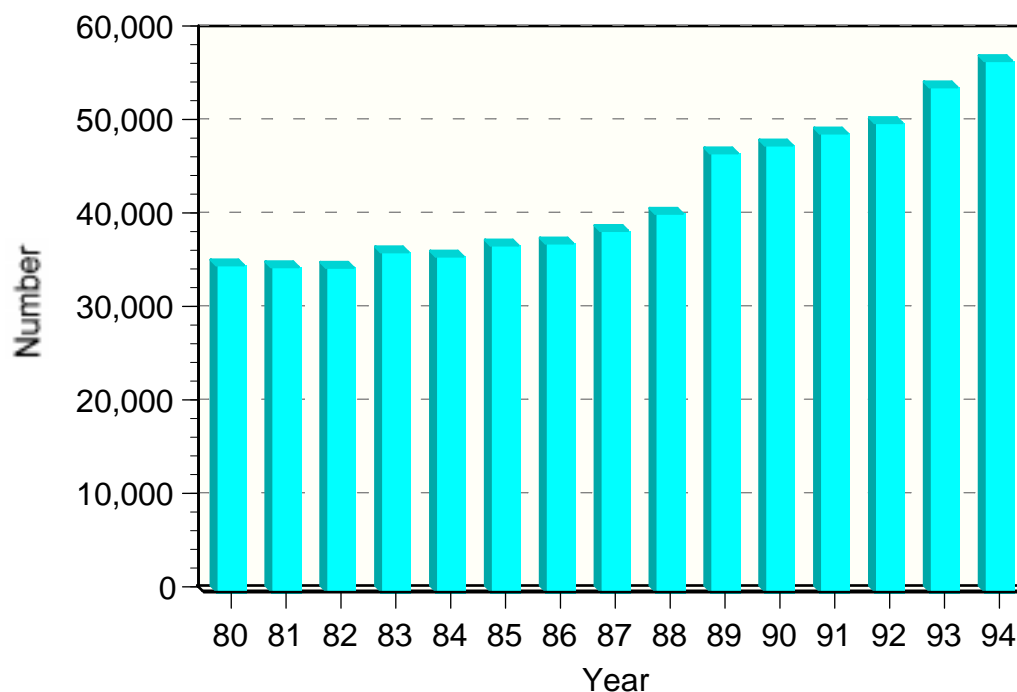


Figure 3.1: Number of Deaths with Diabetes as an Underlying Cause of Death, United States, 1980-1994.

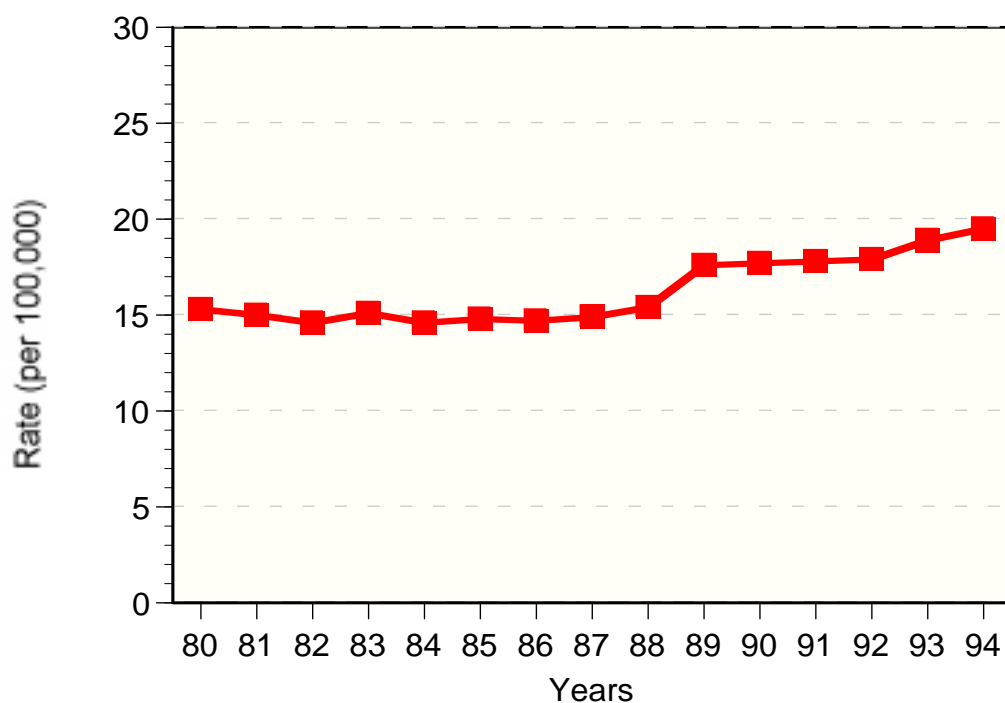


Figure 3.2: Age-standardized Death Rates for Diabetes as an Underlying Cause of Death, United States, 1980-1994.

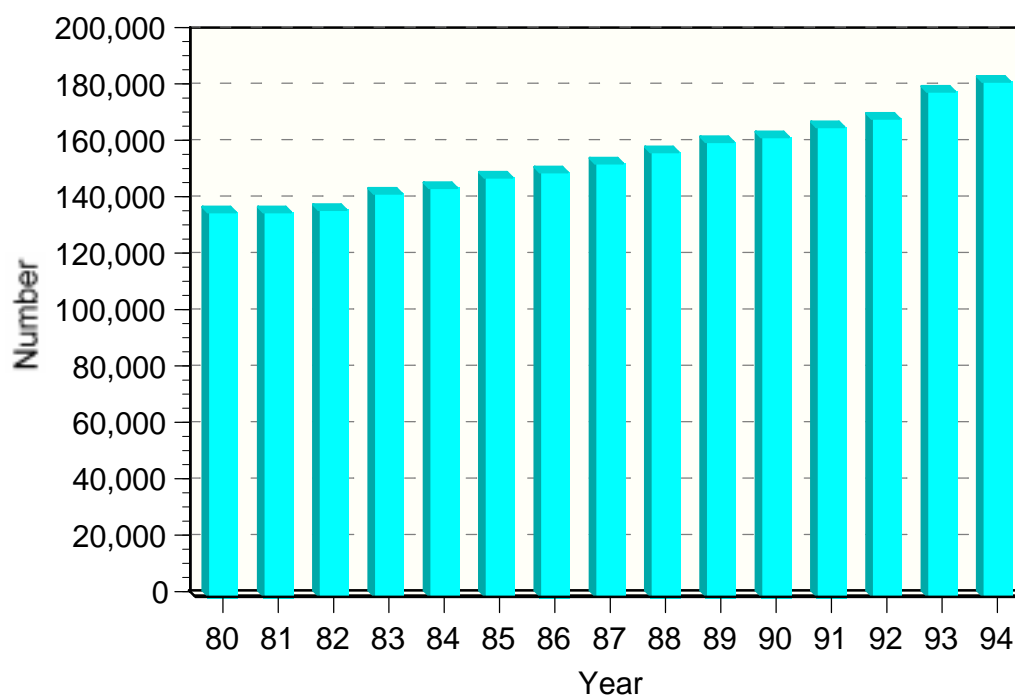


Figure 3.3: Number of Deaths for Diabetes as an Any Listed Cause of Death, United States, 1980-1994.

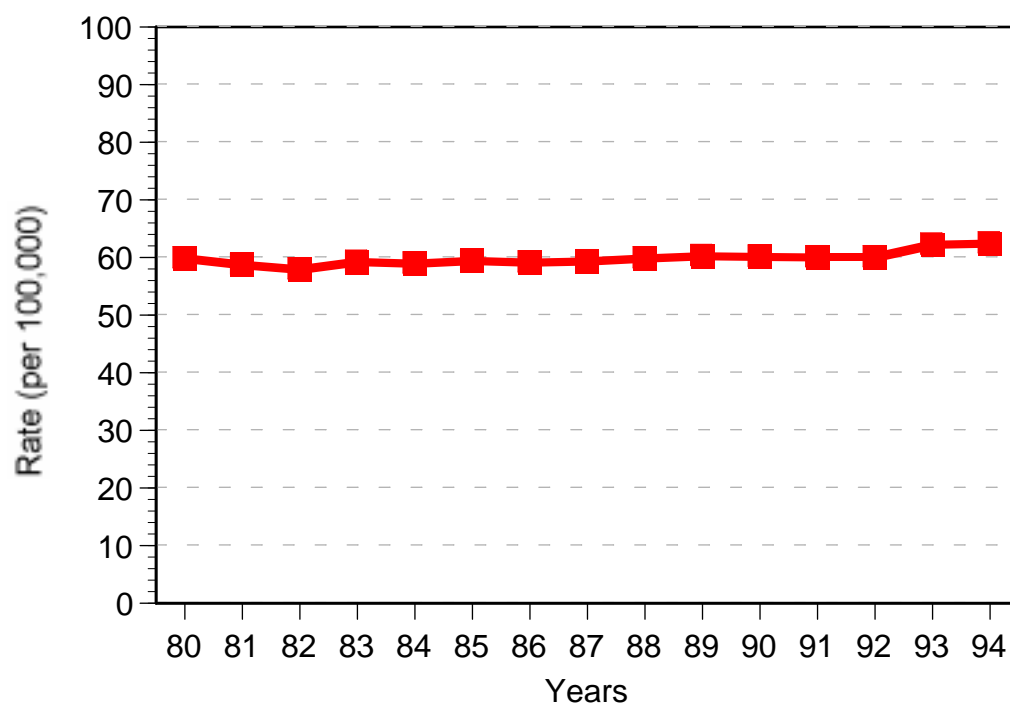


Figure 3.4: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death, United States, 1980-1994.

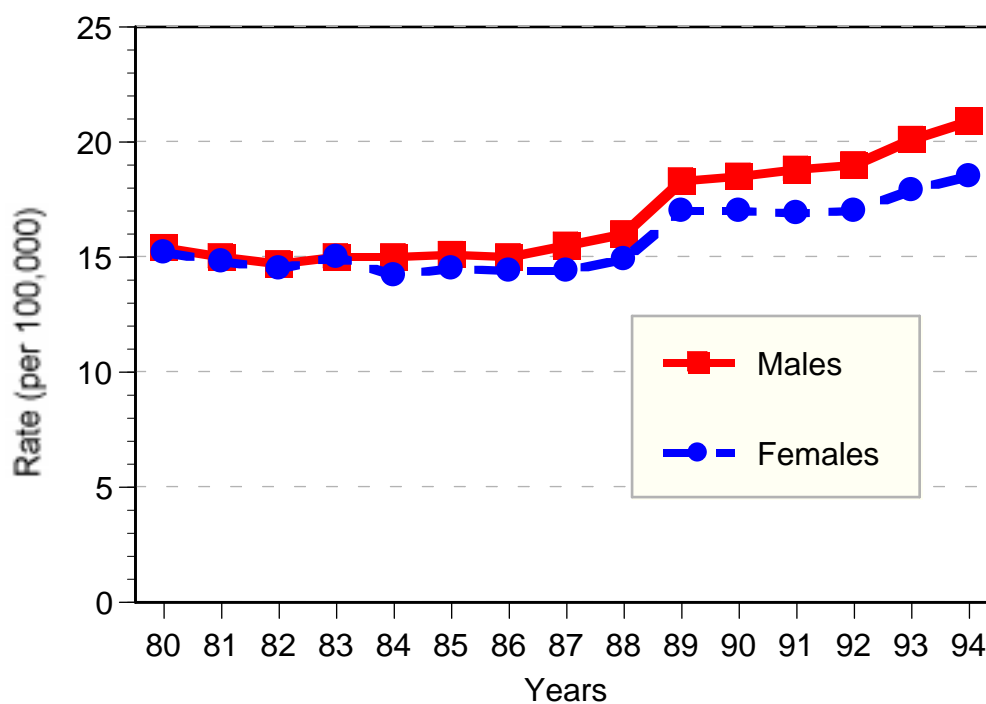


Figure 3.5: Age-standardized Death Rates for Diabetes as the Underlying Cause of Death, by Sex, United States, 1980-1994.

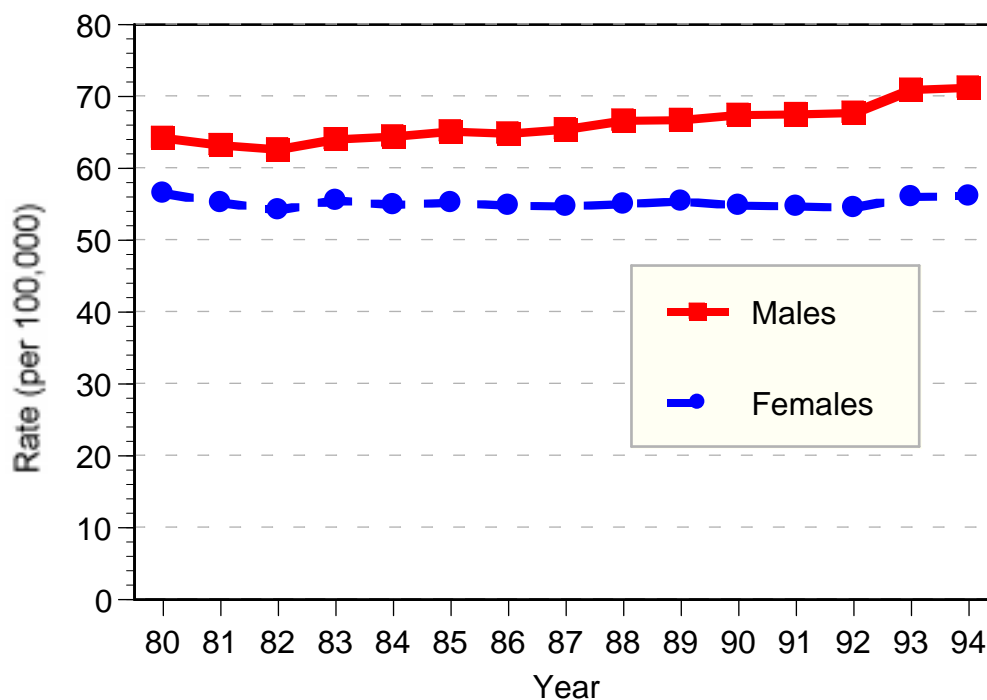


Figure 3.6: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death, By Sex, United States, 1980-1994.

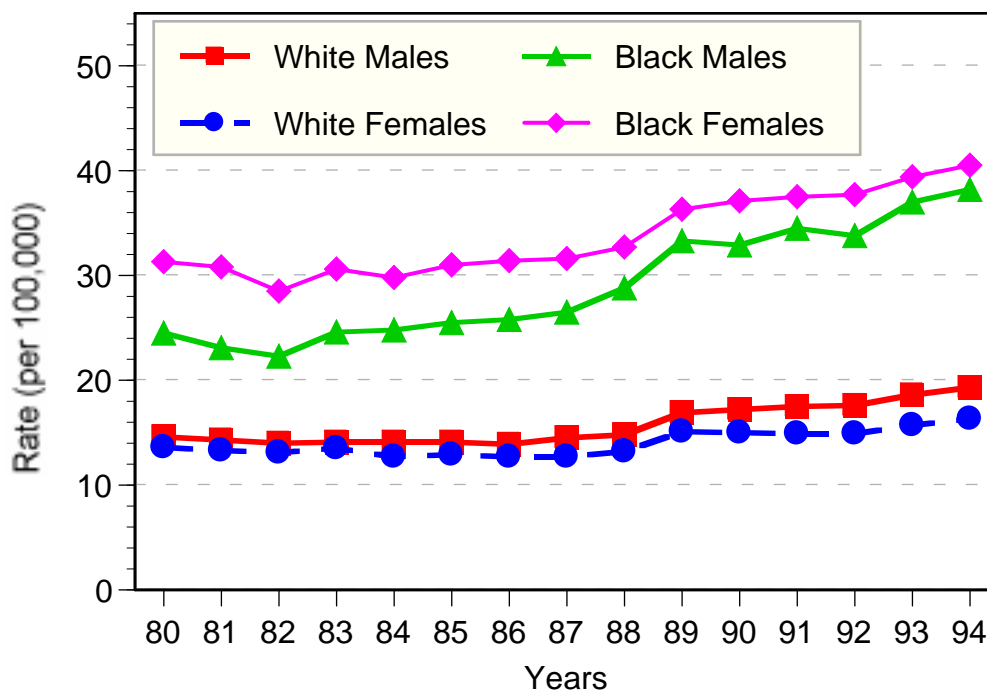


Figure 3.7: Age-standardized Diabetes Death Rates per as the Underlying Cause, by Race and Sex, United States, 1980-1994.

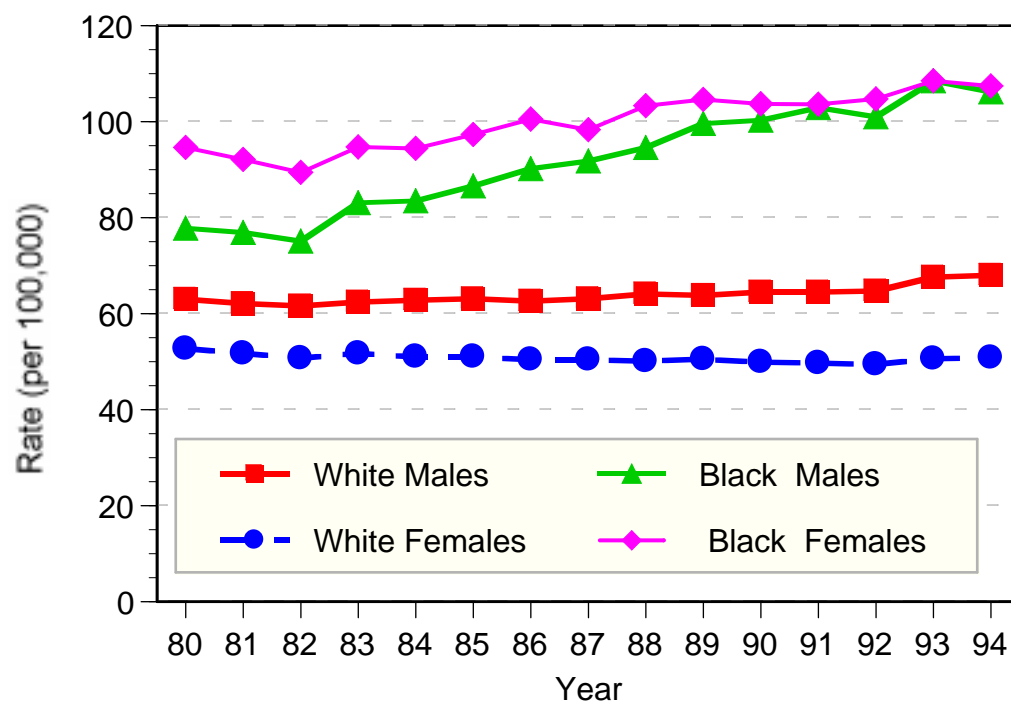


Figure 3.8: Age-standardized Death Rates for Diabetes as a Listed Cause of Death, By Race and Sex, United States, 1980-1994.

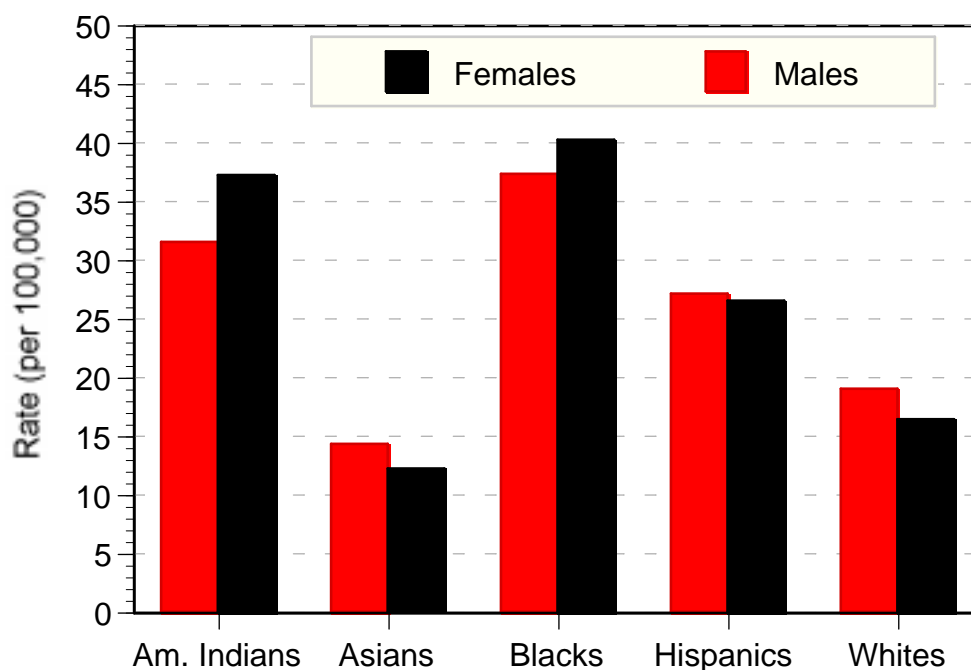


Figure 3.9: Age-standardized Death Rates for Diabetes as the Underlying Cause of Death, By Race, Hispanic Origin, and Sex, United States, 1994.

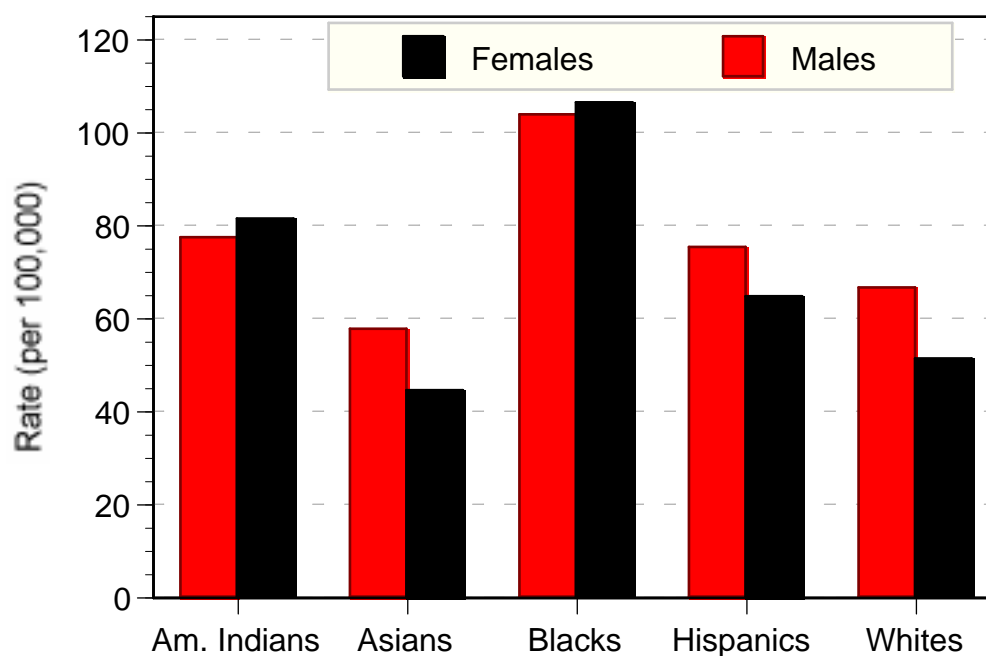


Figure 3.10: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death, By Race, Hispanic Origin, and Sex, United States, 1994.

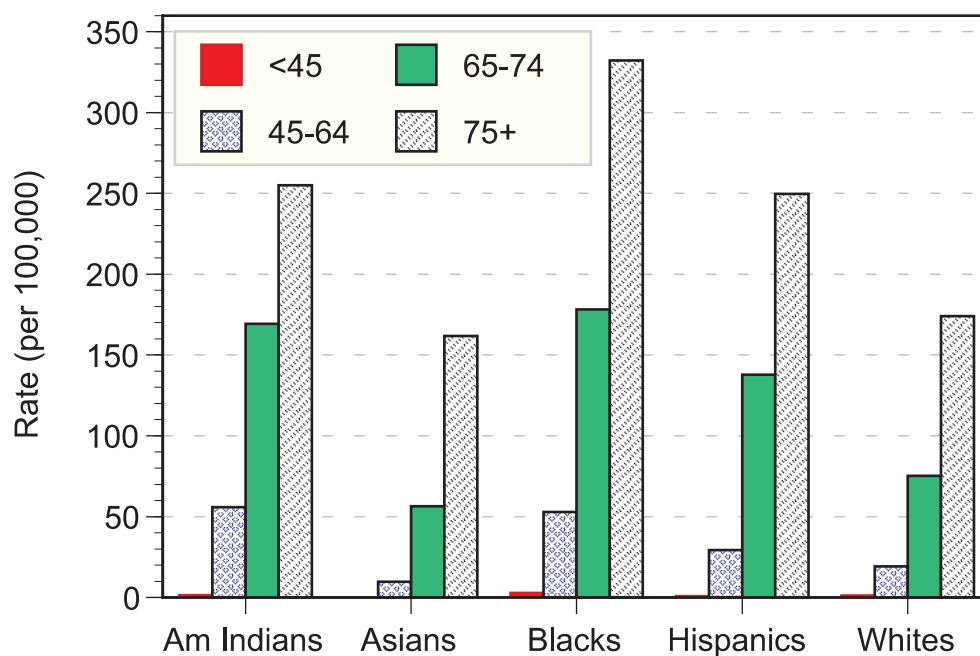


Figure 3.11: Death Rates for Diabetes as the Underlying Cause of Death, By Race, Hispanic Origin, and Age, United States, 1994.

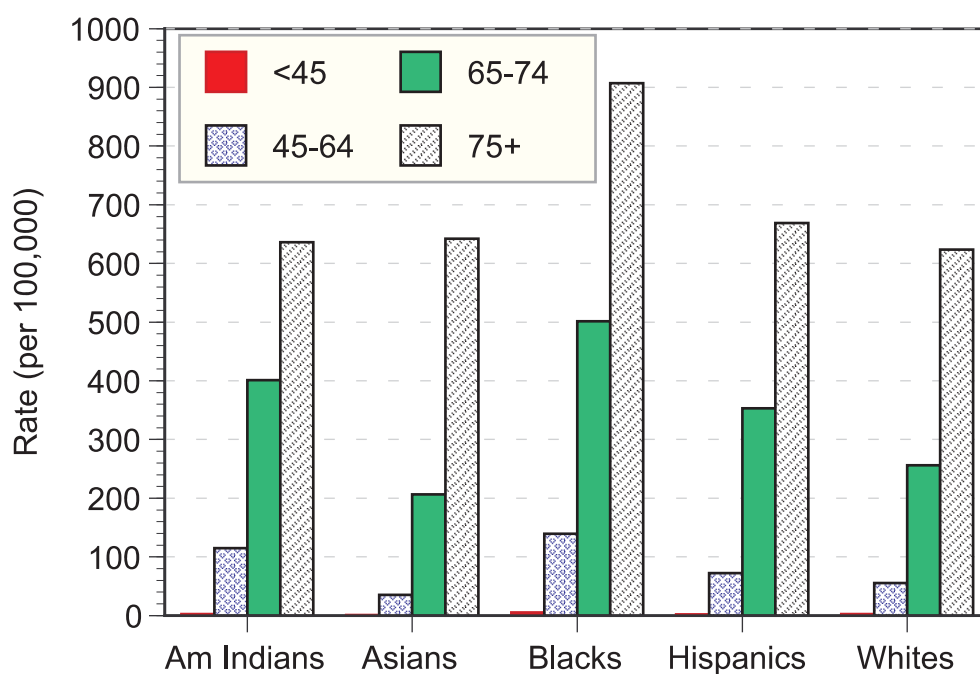


Figure 3.12: Death Rates for Diabetes as a Listed Cause of Death, By Race, Hispanic Origin, and Age, United States, 1994.

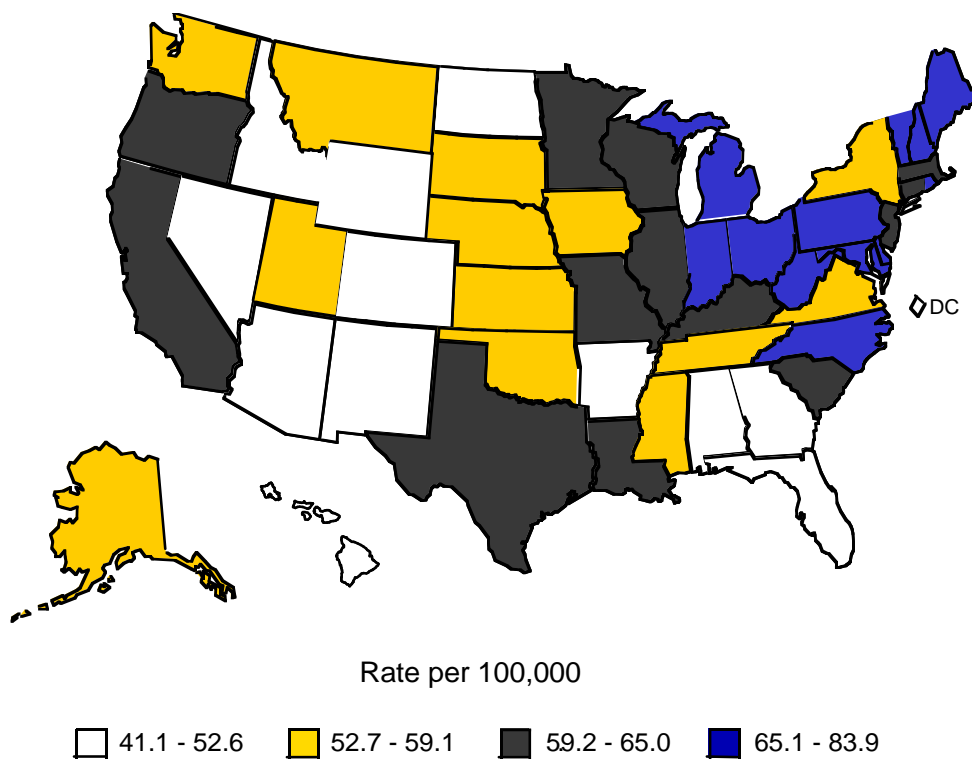


Figure 3.13: Age- and Race-standardized Death Rates for Diabetes as any Listed Cause per 100,000 population, By State and Rank, United States, 1992-1994.

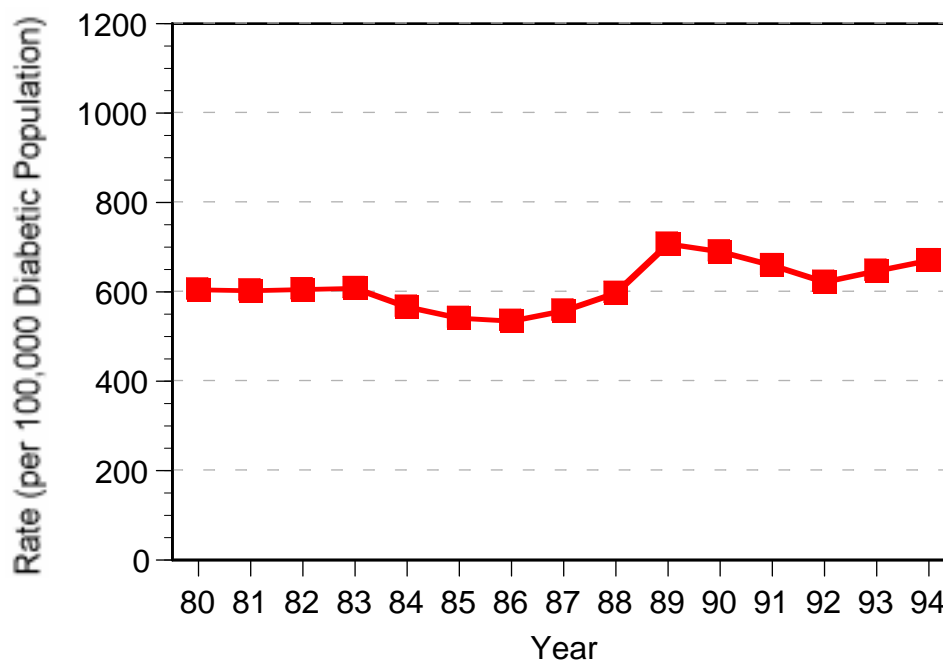


Figure 3.14: Age-standardized Death Rates for Diabetes as the Underlying Cause of Death Among Persons With Diabetes, United States, 1980-1994.

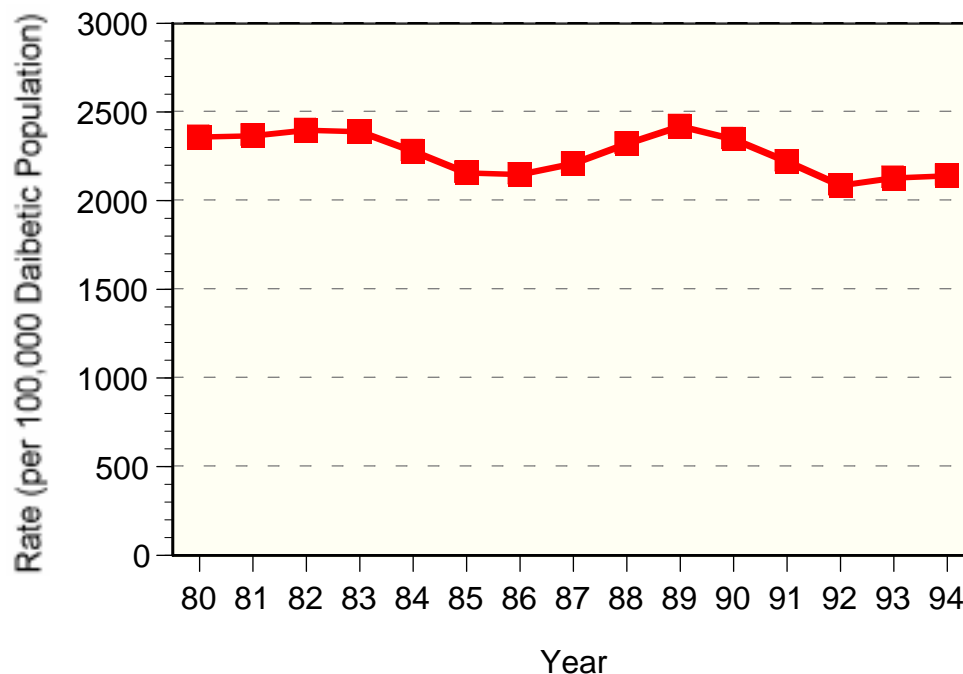


Table 3.15: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death Among Persons With Diabetes, United States, 1980-1994.

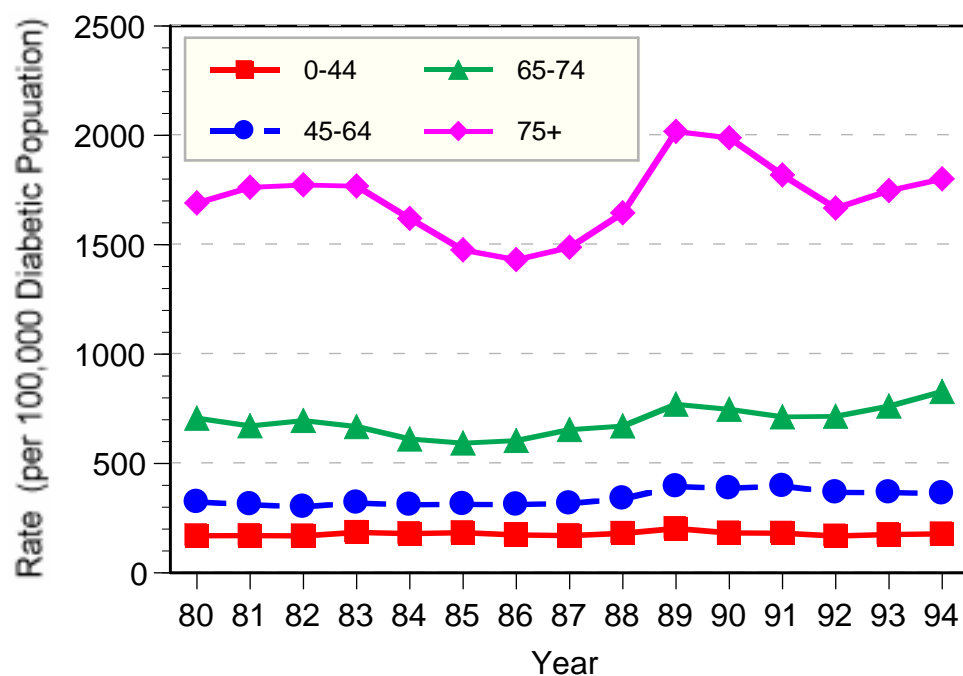


Figure 3.16: Age-specific Death Rates for Diabetes as an Underlying Cause of Death Among Persons With Diabetes, United States, 1980-1994.

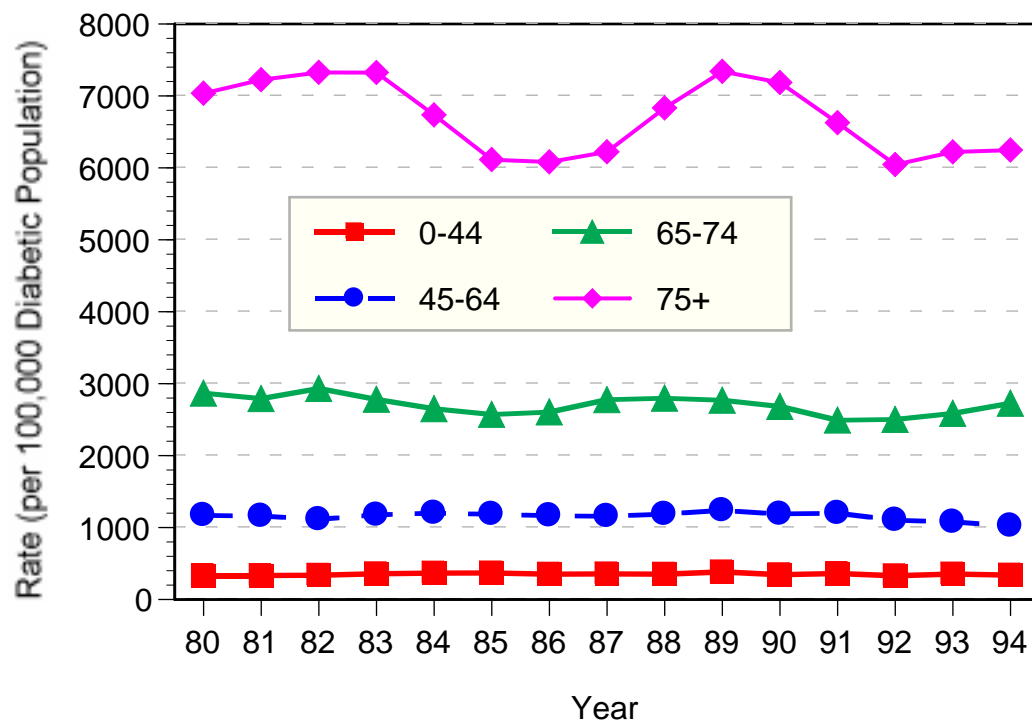


Figure 3.17: Age-specific Death Rates for Diabetes as Any Listed Cause of Death Among Persons With Diabetes, United States, 1980-1994.

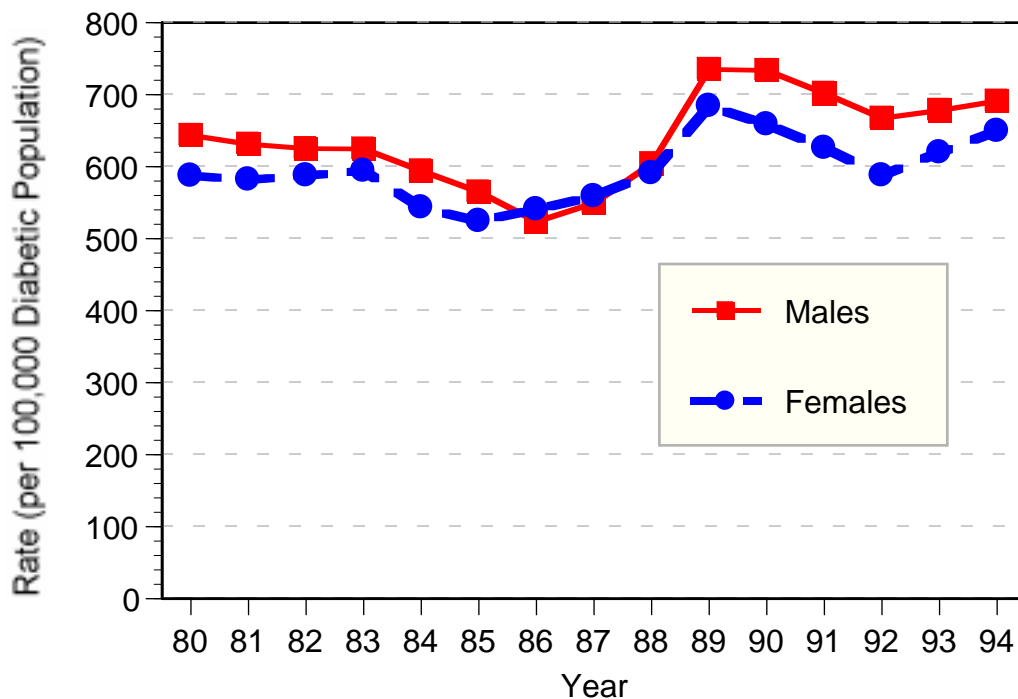


Figure 3.18: Age-standardized Death Rates for Diabetes as the Underlying Cause of Death Among Persons With Diabetes, per 100,000 Persons With Diabetes, By Sex, United States, 1980-1994.

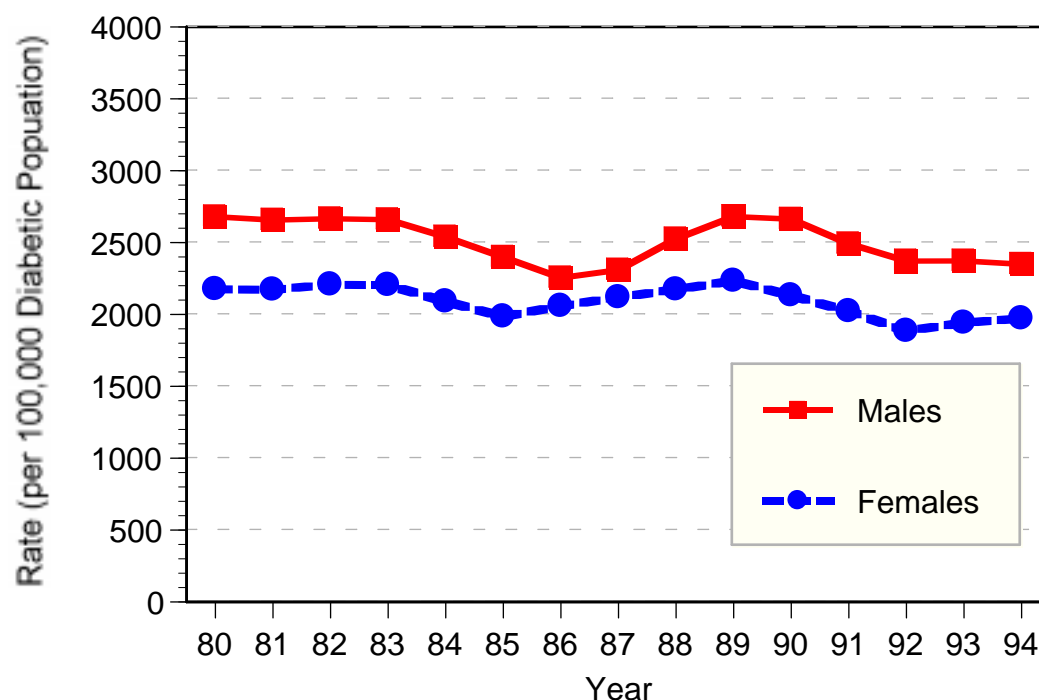


Figure 3.19: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death Among Persons With Diabetes, By Sex, United States, 1980-1994.

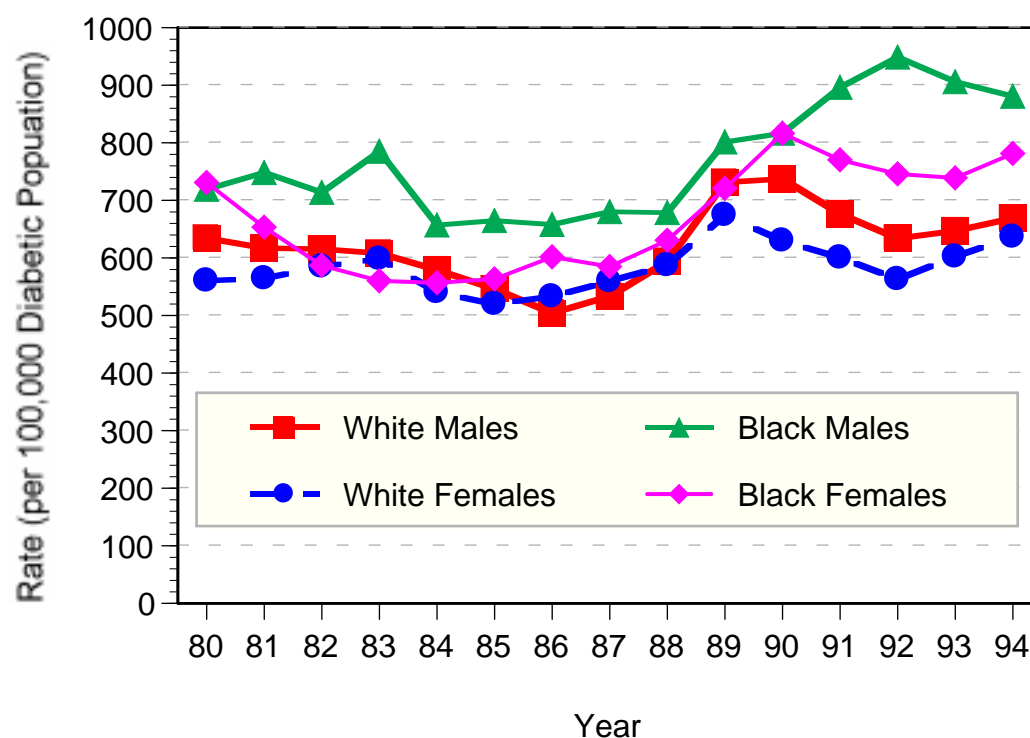


Figure 3.20: Age-standardized Death Rates for Diabetes as an Underlying Cause of Death Among Persons With Diabetes, By Race and Sex, United States, 1980-1994.

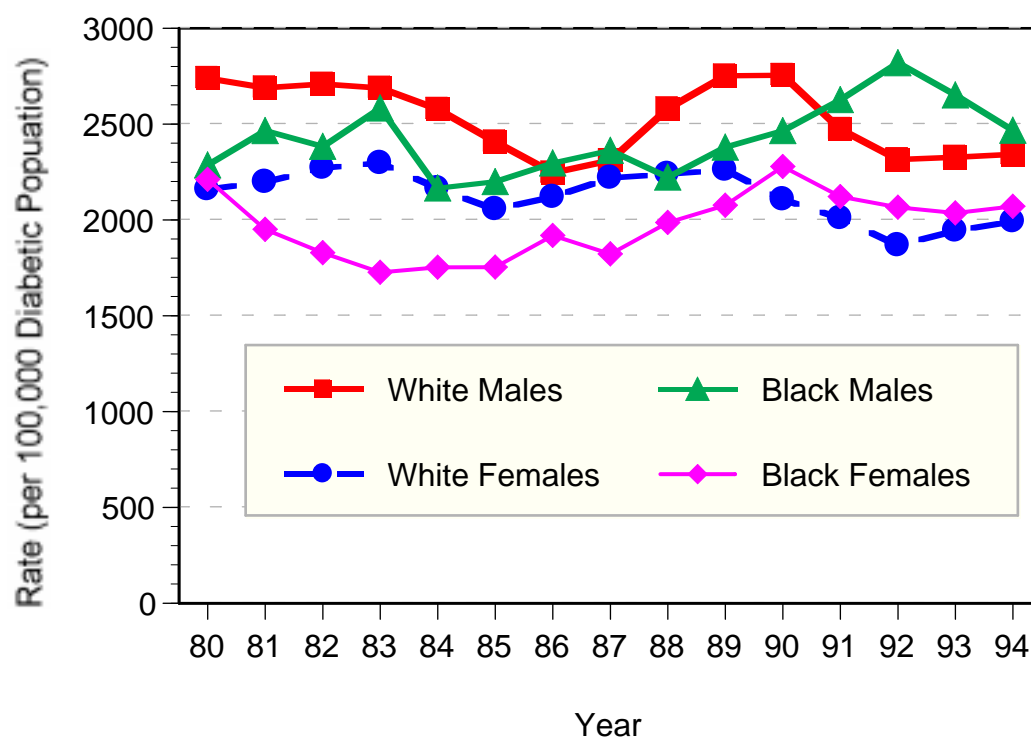


Figure 3.21: Age-standardized Death Rates for Diabetes as Any Listed Cause of Death Among Persons With Diabetes, By Race and Sex, United States, 1980-1994.

Table 3.1: Number of Deaths for the 15 Leading Causes of Death and Rank Order of Cause, United States, 1994.

Cause	Number	Rank
Diseases of heart	732,409	1
Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues	534,310	2
Cerebrovascular diseases	153,306	3
Chronic obstructive pulmonary diseases and allied conditions	101,628	4
Accidents and adverse effects	91,437	5
Pneumonia and influenza	81,473	6
Diabetes mellitus	56,692	7
Human immunodeficiency virus infection	42,114	8
Suicide	31,142	9
Chronic liver and cirrhosis	25,406	10
Homicide and legal intervention	24,926	11
Nephritis, nephrotic syndrome, and nephrosis	22,976	12
Septicemia	20,360	13
Atherosclerosis	17,116	14
Certain conditions originating in the perinatal period	14,487	15

Table 3.2: Number of Deaths Due to Diabetes and Rank of Diabetes Among Top 15 Causes of Death by Age, Race, and Sex, United States, 1994.

Race	Age Group	Total		Males		Females	
		Number	Rank	Number	Rank	Number	Rank
Total							
	0-44	2617	11	1561	11	1056	11
	45-64	11473	6	5998	8	5475	5
	65-74	15744	5	7328	5	8416	5
	75+	26856	6	9870	6	16986	6
	Total	56692	7	24758	9	31934	6
Whites							
	0-44	1896	11	1156	11	740	11
	45-64	8398	7	4572	9	3826	5
	65-74	12528	5	6055	5	6473	5
	75+	22827	6	8607	6	14220	6
	Total	45650	7	20391	9	25259	7
Blacks							
	0-44	681	11	381	11	300	10
	45-64	2734	5	1267	6	1467	4
	65-74	2852	4	1113	5	1739	4
	75+	3581	5	1073	6	2508	4
	Total	9849	7	3834	9	6015	4
American Indians							
	0-44	24	11	- -	- -	- -	- -
	45-64	189	5	86	5	103	3
	65-74	140	3	58	3	82	3
	75+	138	5	43	6	95	5
	Total	491	4	200	8	291	4
Chinese							
	Total	181	7	89	7	92	6
Japanese							
	Total	121	6	61	7	60	6
Hawaiians							
	Total	48	5	22	7	26	4
Filipinos							
	Total	144	7	64	9	80	4
Other Asians							
	Total	208	8	97	11	111	5
- - Number of deaths <20.							

Table 3.3: Number of Deaths Due to Diabetes and Rank of Diabetes as a Cause of Death Among Persons of Hispanic Origin by Age, Sex, and Origin, United States, 1994.

	Age Group	Total		Males		Females	
		Number	Rank	Number	Rank	Number	Rank
All Origins							
	0-44	182	11	109	11	73	11
	45-64	1027	6	526	7	501	3
	65-74	1244	3	566	3	678	3
	75+	1307	5	460	6	847	4
	Total	3760	7	1661	8	2099	4
Mexican							
	0-44	115	11	66	11	49	11
	45-64	667	4	331	5	336	3
	65-74	824	3	377	3	447	3
	75+	754	5	281	6	473	4
	Total	2360	6	1055	8	1305	3
Puerto Rican							
	0-44	38	12	22	11	- -	- -
	45-64	175	5	95	6	80	4
	65-74	137	3	49	4	88	3
	75+	160	5	57	5	103	4
	Total	510	6	223	8	287	4
Cuban							
	0-44	- -	- -	- -	- -	- -	- -
	45-64	42	7	25	8	- -	- -
	65-74	100	3	60	3	40	3
	75+	160	6	49	6	111	5
	Total	308	6	139	7	169	4
Other							
	0-44	23	12	- -	- -	- -	- -
	45-64	143	7	75	7	68	5
	65-74	183	4	80	4	103	3
	75+	233	6	73	6	160	5
	Total	582	7	244	11	338	5
- - Number of deaths <20.							