In 1999-2001, the age-adjusted death rate (all causes) for the IHS service area population was 1,059.0 deaths per 100,000 population. The AI/AN rate is 21 percent higher than the U.S. all-races rate of 872.0 for 2000. The Aberdeen (1,470.8), Bemidji (1,449.0) and Billings (1,445.1) service areas had the highest rates. The rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.1 Age-Adjusted Death Rates Calendar Years 1999-2001

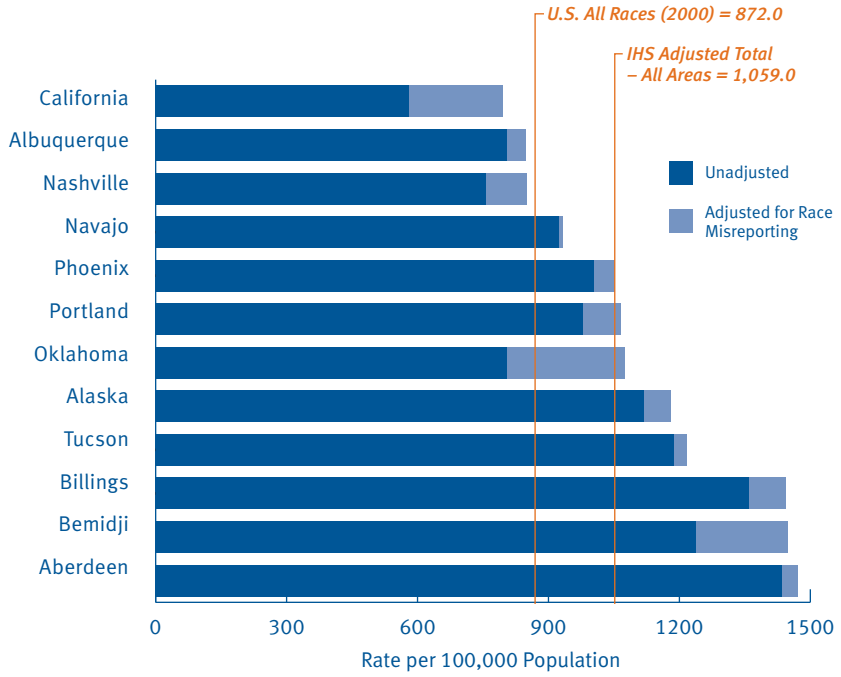


Table 4.1 Age-Adjusted Death Rates (All Causes) Calendar Years 1999-2001

	Deaths[1]		Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]
U.S. All Races (2000)	*2,403,351*		*872.0*	
All IHS Areas	***25,609***	***29,431***	***933.8***	***1,059.0***
Aberdeen	2,142	2,201	1,435.4	1,470.8
Alaska	1,983	2,105	1,118.6	1,179.7
Albuquerque	1,323	1,398	805.1	846.8
Bemidji	1,981	2,359	1,238.7	1,449.0
Billings	1,218	1,300	1,358.2	1,445.1
California	1,489	2,145	580.6	795.3
Nashville	1,212	1,386	757.6	850.7
Navajo	3,667	3,701	923.0	932.3
Oklahoma	4,719	6,554	805.1	1,075.1
Phoenix	2,755	2,894	1,003.0	1,051.4
Portland	2,479	2,734	978.6	1,065.0
Tucson	641	654	1,186.3	1,218.2

[1] Includes deaths with age not reported (9 deaths IHS-wide; Albuquerque-1 death, Nashville-1 death, Navajo-3 deaths, Phoenix-3 deaths and Tucson-1 death).
[2] Age-adjusted rate per 100,000 population.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the years of potential life lost rate for the IHS service area population was 81.8 years per 1,000 persons under 65 years, which is 79 percent higher than the U.S. all-races rate of 45.7 for 2000. The rate of each IHS Area is higher than the U.S. all-races rate. The lowest Area rate, California (52.8 years of potential life lost per 1,000 persons under 65 years), is 16 percent greater than the U.S. all-races rate, while the highest Area rate, Aberdeen (113.4), is 2.5 times the U.S. all-races rate. The IHS service area rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.2 Years of Potential Life Lost (YPLL) Rates Calendar Years 1999-2001

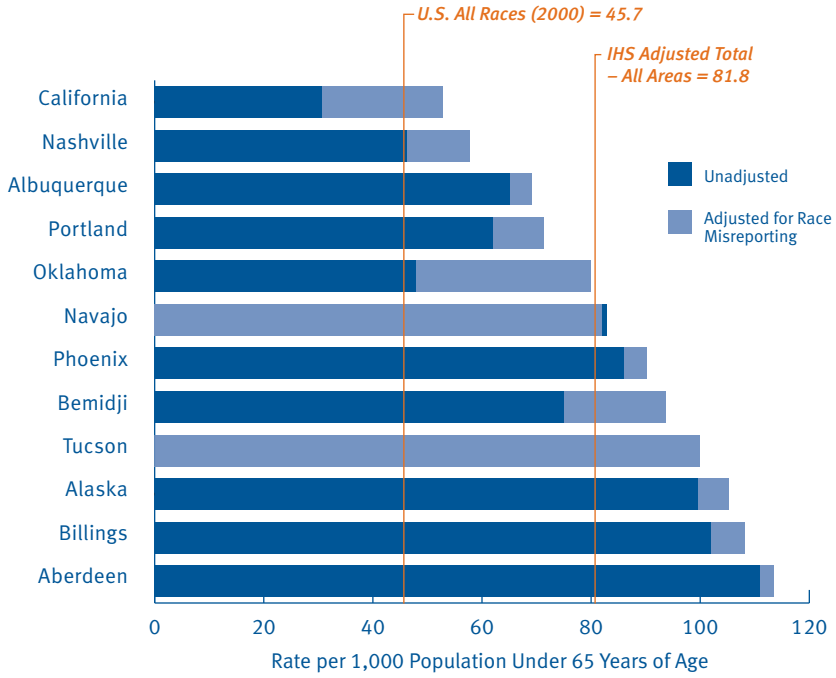


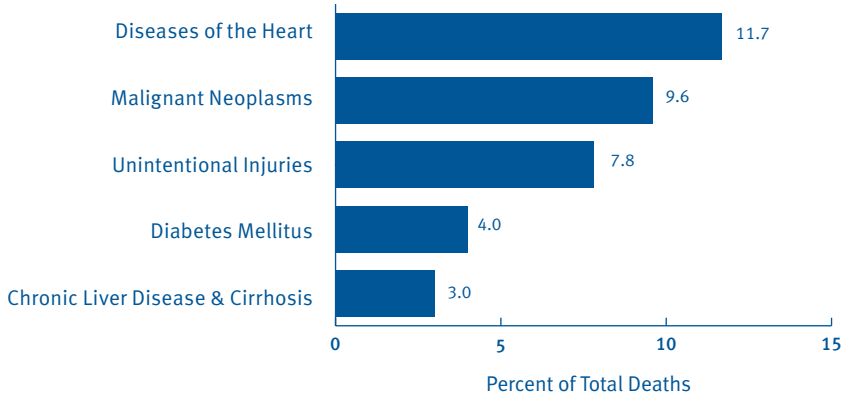
Table 4.2 Years of Potential Life Lost (YPLL) Rates (All Causes), Calendar Years 1999-2001

	Number of YPLL[1]		Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]
U.S. All Races (2000)	*11,261,211*		*45.7*	
All IHS Areas	***321,972***	***379,602***	***69.4***	***81.8***
Aberdeen	32,090	32,766	111.0	113.4
Alaska	30,361	32,134	99.5	105.3
Albuquerque	17,526	18,594	65.1	69.1
Bemidji	22,699	28,344	75.0	93.6
Billings	17,040	18,081	102.0	108.2
California	14,324	24,738	30.6	52.8
Nashville	12,107	15,125	46.2	57.8
Navajo	50,913	50,434	83.0 [4]	82.2 [4]
Oklahoma	42,634	70,915	47.9	79.8
Phoenix	42,922	44,957	86.0	90.1
Portland	29,772	34,203	62.0	71.3
Tucson	9,584	9,311	103.0 [4]	100.0 [4]

[1] Years of Potential Life Lost (YPLL) is a mortality indicator which measures the burden of premature deaths. It is calculated by subtracting the age at death from age 65 and summing the result over all deaths. This calculation was performed through the use of age groups under one, one to four, and five-year age groups through sixty to 64 years. The age at death was calculated based upon the mid-point of each of these age groups.
[2] Rate per 1,000 population under 65 years of age.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.
[4] The adjusted numbers and rates (Navajo and Tucson Areas) are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts for infant deaths) had one less death for this cause than did the unadjusted mortality file for each IHS area (1999-2001 data).

In 1999-2001, 11.7 percent of all deaths in the IHS service area were caused by diseases of the heart, followed by malignant neoplasms (9.6 percent), unintentional injuries (7.8 percent), diabetes mellitus (4.0 percent), and chronic liver disease and cirrhosis (3.0 percent).

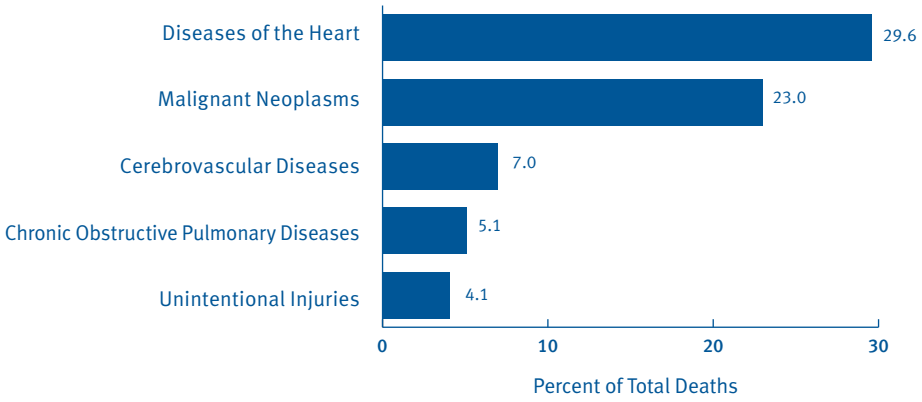
Leading Causes of Death, All IHS Areas, Calendar Years 1999-2001



In 2000, 29.6 percent of all deaths in the U.S. were caused by diseases of the heart, followed by malignant neoplasms at 23.0 percent.

Chart 4.4

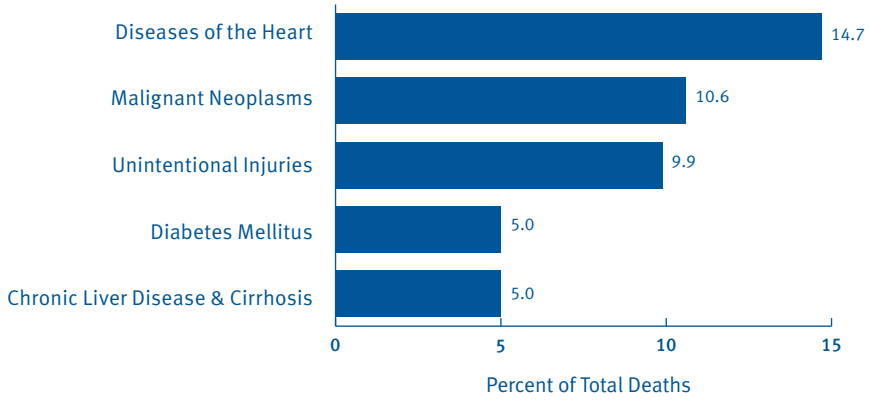
Leading Causes of Death, U.S. All Races, Calendar Year 2000



In 1999-2001, 14.7 percent of all deaths in the **Aberdeen Area** were caused by diseases of the heart, followed by malignant neoplasms at 10.6 percent.

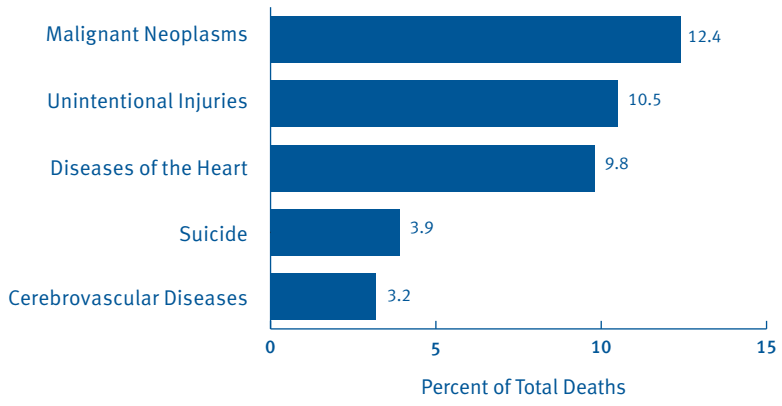
Chart 4.5

Leading Causes of Death, Aberdeen Area, Calendar Years 1999-2001



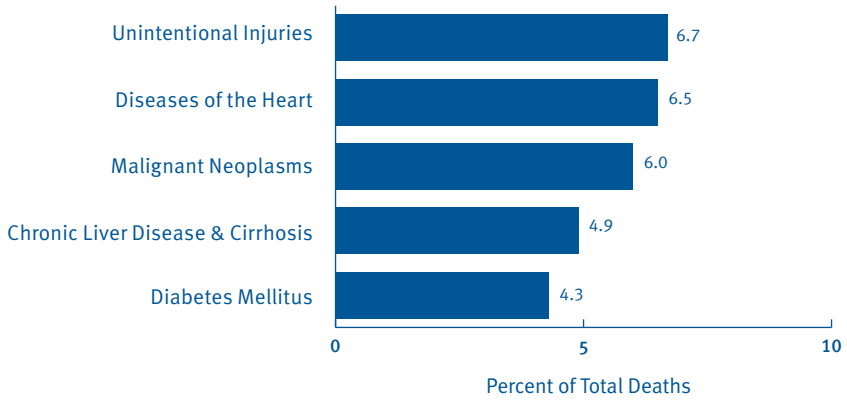
In 1999-2001, 12.4 percent of all deaths in the **Alaska Area** were caused by malignant neoplasms, followed by unintentional injuries at 10.5 percent.

Chart 4.6 **Leading Causes of Death, Alaska Area, Calendar Years 1999-2001**



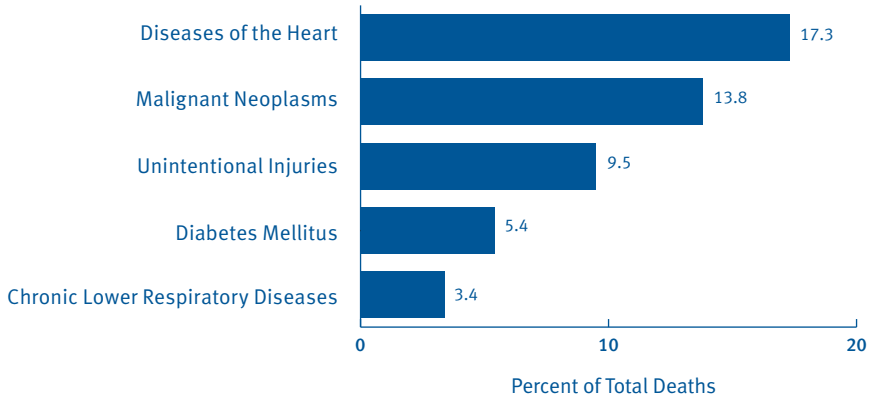
In 1999-2001, 6.7 percent of all deaths in the **Albuquerque Area** were caused by unintentional injuries, followed by diseases of the heart at 6.5 percent.

Chart 4.7 **Leading Causes of Death, Albuquerque Area, Calendar Years 1999-2001**



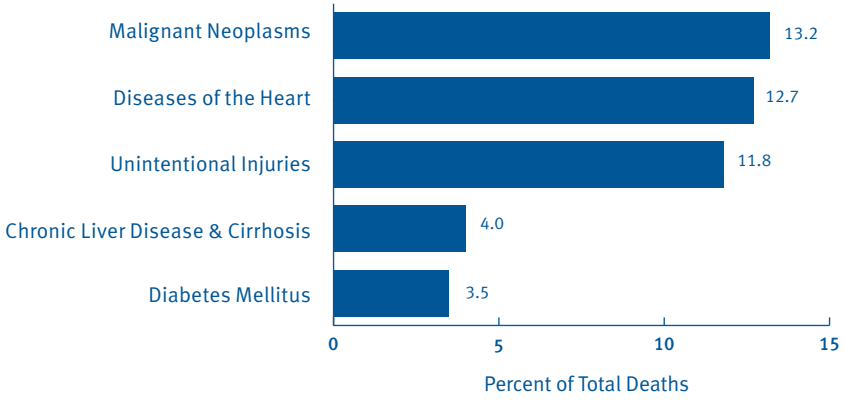
In 1999-2001, 17.3 percent of all deaths in the **Bemidji Area** were caused by diseases of the heart, followed by malignant neoplasms at 13.8 percent.

Chart 4.8 **Leading Causes of Death, Bemidji Area, Calendar Years 1999-2001**



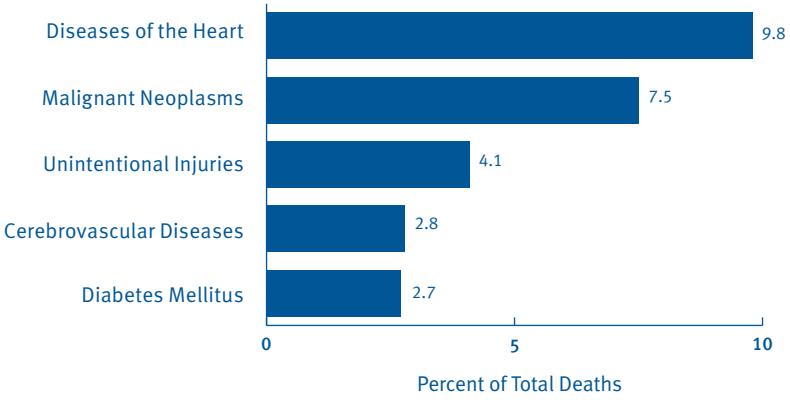
In 1999-2001, 13.2 percent of all deaths in the **Billings Area** were caused by malignant neoplasms, followed by diseases of the heart at 12.7 percent.

Chart 4.9 **Leading Causes of Death, Billings Area, Calendar Years 1999-2001**



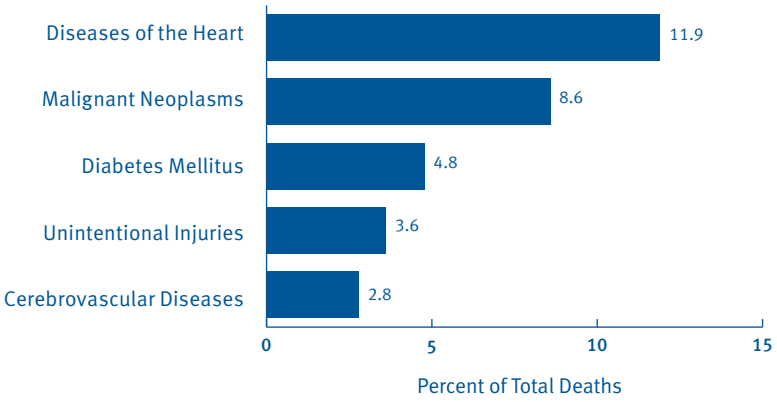
In 1999-2001, 9.8 percent of all deaths in the **California Area** were caused by diseases of the heart, followed by malignant neoplasms at 7.5 percent.

Chart 4.10 **Leading Causes of Death, California Area, Calendar Years 1999-2001**



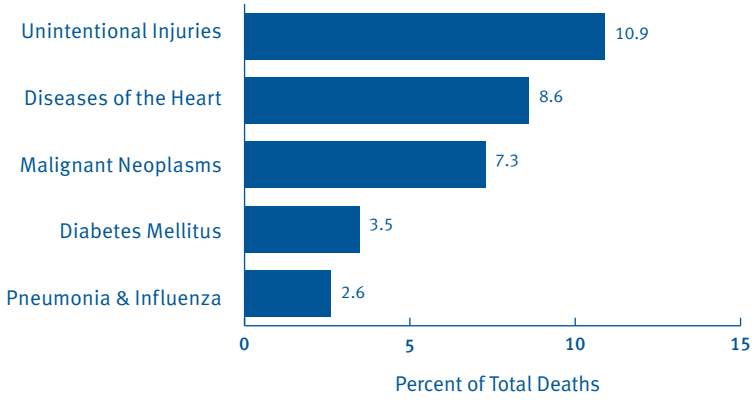
In 1999-2001, 11.9 percent of all deaths in the **Nashville Area** were caused by diseases of the heart, followed by malignant neoplasms at 8.6 percent.

Chart 4.11 **Leading Causes of Death, Nashville Area, Calendar Years 1999-2001**



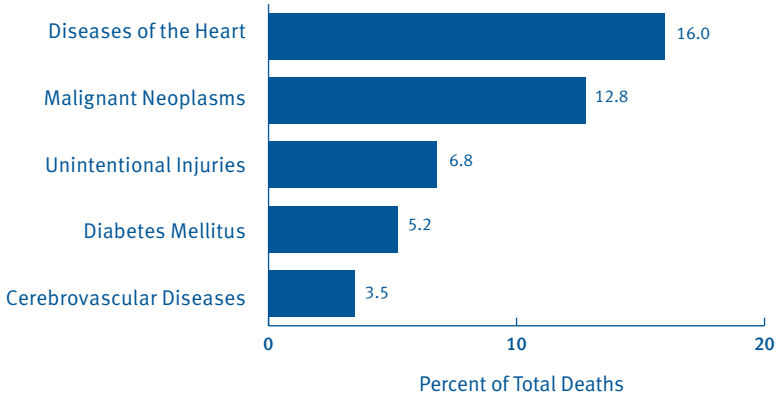
In 1999-2001, 10.9 percent of all deaths in the **Navajo Area** were caused by unintentional injuries, followed by diseases of the heart at 8.6 percent.

Chart 4.12 **Leading Causes of Death, Navajo Area, Calendar Years 1999-2001**



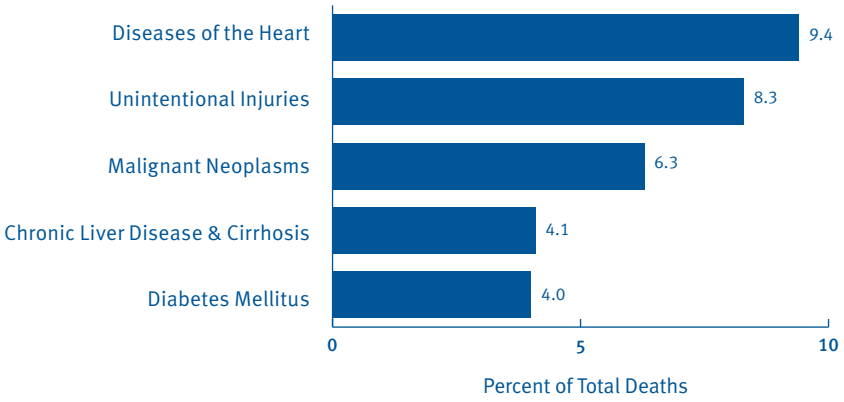
In 1999-2001, 16.0 percent of all deaths in the **Oklahoma Area** were caused by diseases of the heart, followed by malignant neoplasms at 12.8 percent.

Chart 4.13 **Leading Causes of Death, Oklahoma Area, Calendar Years 1999-2001**



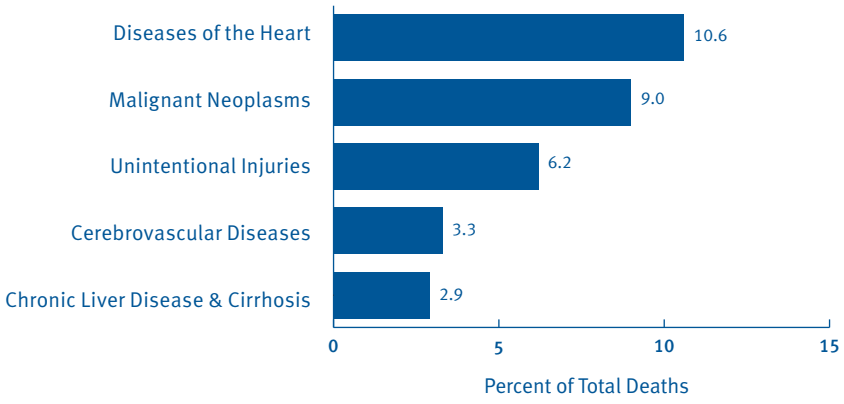
In 1999-2001, 9.4 percent of all deaths in the **Phoenix Area** were caused by diseases of the heart, followed by unintentional injuries at 8.3 percent.

Chart 4.14 **Leading Causes of Death, Phoenix Area, Calendar Years 1999-2001**



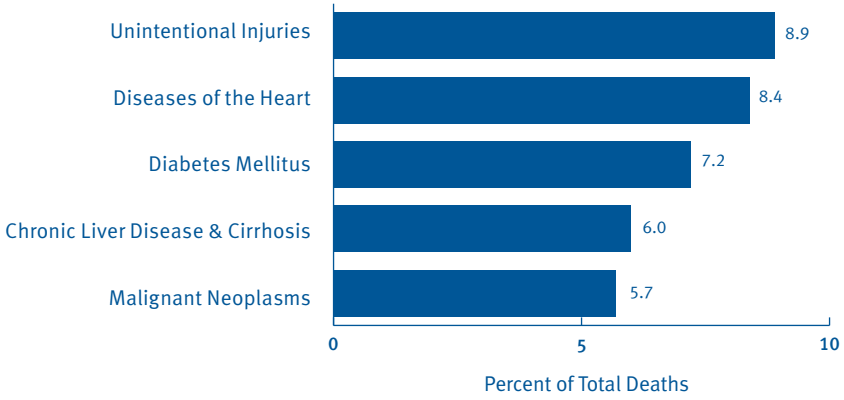
In 1999-2001, 10.6 percent of all deaths in the **Portland Area** were caused by diseases of the heart, followed by malignant neoplasms at 9.0 percent.

Chart 4.15 **Leading Causes of Death, Portland Area, Calendar Years 1999-2001**



In 1999-2001, 8.9 percent of all deaths in the **Tucson Area** were caused by unintentional injuries, followed by diseases of the heart at 8.4 percent.

Chart 4.16 **Leading Causes of Death, Tucson Area, Calendar Years 1999-2001**



In 1999-2001, the age-adjusted injury and poisoning death rate for the IHS service area population was 70.5 deaths per 100,000 population. The AI/AN rate is 2.9 times the U.S. all-races rate (24.6 per 100,000 population) for 2000. The Navajo Area rate (113.9 per 100,000 population), which is the highest among the Areas, is 4.6 times the U.S. all-races rate. The Nashville Area rate (31.0), which is the lowest among the IHS areas, is 1.3 times the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.17 Age-Adjusted Injury and Poisoning Death Rates Calendar Years 1999-2001

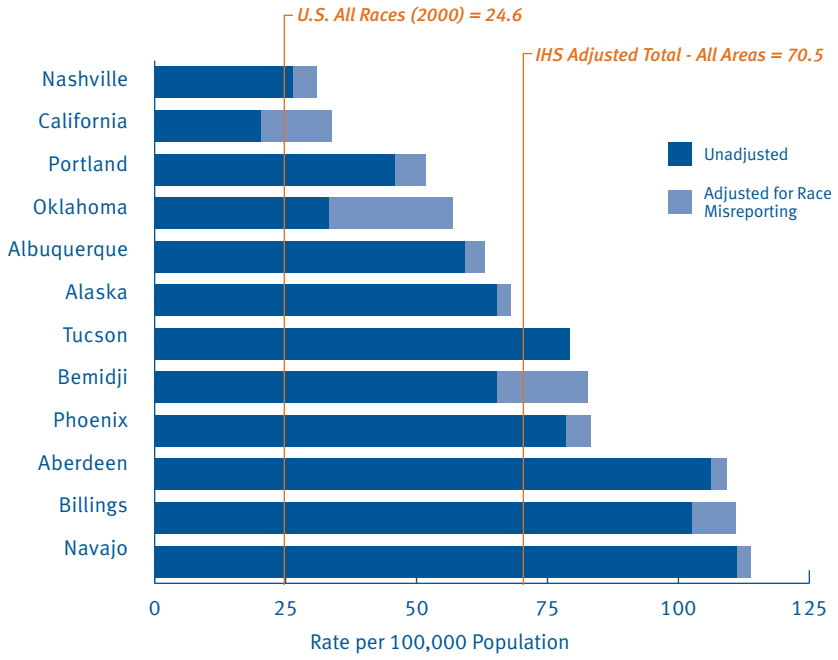


Table 4.17 Age-Adjusted Injury and Poisoning[1] Death Rates Calendar Years 1999-2001

	Deaths[2]		Rate[3]	
	Unadjusted	Adjusted[4]	Unadjusted	Adjusted[4]
U.S. All Races (2000)	*67,704*		*24.6*	
All IHS Areas	***2,833***	***3,345***	***60.8***	***70.5***
Aberdeen	298	309	106.2	109.3
Alaska	191	200	65.3	68.0
Albuquerque	168	181	59.3	63.1
Bemidji	204	265	65.3	82.7
Billings	174	189	102.6	110.9
California	91	165	20.2	33.9
Nashville	74	89	26.4	31.0
Navajo	648	665	111.1	113.9
Oklahoma	303	540	33.3	56.9
Phoenix	379	405	78.6	83.2
Portland	227	261	45.9	51.7
Tucson	76	76	79.2	79.2

[1] Includes the following ICD-10 cause of death groups combined: motor vehicle accidents, other accident, suicide, homicide, injury undetermined whether accidentally or purposely inflicted, and injury resulting from operations of war.
[2] Includes two deaths with age not reported. One death was reported in the Nashville Area and the second death was reported in the Phoenix Area.
[3] Age-adjusted rate per 100,000 population.
[4] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted unintentional injury death rate for the IHS service area population was 88.9 per 100,000 population. The AI/AN rate is 2.5 times higher than the U.S. all-races rate of 35.5 for 2000. The Nashville Area has the lowest rate among the IHS Areas (38.8), but it is still over one time the U.S. all-races rate. The highest Area rate (Billings, 132.9) is 3.7 times the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.18 Age-Adjusted Unintentional Injury Death Rates Calendar Years 1999-2001

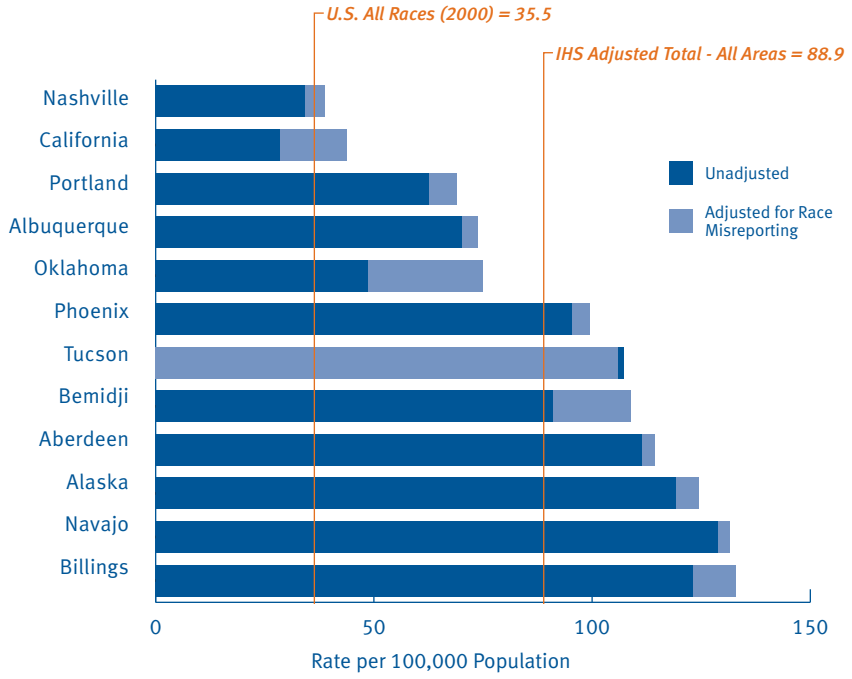


Table 4.18 Age-Adjusted Unintentional Injury Death Rates, Calendar Years 1999-2001

	All Unintentional Injuries				Motor Vehicle Crashes			Other Unintentional Injuries	
	Deaths		Rate[2]		Totals Rate[2]		Percent of Motor Vehicle Crash Deaths Pedestrian-Related[1]	Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]		Unadjusted	Adjusted[3]
U.S. All Races (2000)	*97,900*		*35.5*		*15.7*			*19.8*	
All IHS Areas	***3,289***	***3,841***	***78.1***	***88.9***	***40.5***	***48.0***	***9.9%***	***37.6***	***40.9***
Aberdeen	291	301	111.5	114.4	66.3	69.1	11.6%	45.2	45.2
Alaska	320	338	119.1	124.4	30.6	32.2	7.8%	88.6	92.2
Albuquerque	180	192	70.2	73.8	42.0	45.5	23.4%	28.3	28.3
Bemidji	240	301	90.9	108.8	46.0	60.0	10.8%	44.9	48.9
Billings	189	207	123.0	132.9	72.9	81.2	4.3%	50.0	51.6
California	117	201	28.4	43.9	13.9	25.1	4.8%	14.5	18.8
Nashville	84	99	34.2	38.8	19.2	23.8	10.1%	15.0	15.0
Navajo	696	714	128.7	131.6	77.6	80.4	14.5%	51.1	51.2
Oklahoma	394	654	48.5	75.0	22.0	38.1	5.4%	26.5	36.9
Phoenix	414	435	95.4	99.3	56.4	60.3	5.1%	39.0	39.0
Portland	275	312	62.7	69.0	29.3	33.9	13.3%	33.4	35.2
Tucson	89[4]	87[4]	107.3[4]	105.9[4]	49.8	49.8	2.1%	57.4	56.1

[1] Includes motor vehicle crashes having ICD-10 codes V02-V04 indicates a pedestrian was the subject decedent as a result of the motor vehicle crash. Percentages rare based on adjusted numbers of deaths.
[2] Age-adjusted rate per 100,000 population.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.
[4] The adjusted number and rate for Tucson (all unintentional injuries) is lower than the unadjusted number and rate because the linked birth/infant death file (used to obtain the adjusted counts for infant deaths) had one less death for this cause than did the unadjusted mortality for this Area.

In 1999-2001, the age-adjusted suicide death rate for the IHS service area population was 17.0 per 100,000 population. The AI/AN rate is 60 percent higher than the U.S. all-races rate of 10.6 for 2000. The Alaska Area rate (38.5) is 3.6 times the U.S. rate while two other Area rates (Aberdeen and Tucson) are at least double the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.19 Age-Adjusted Suicide Death Rates Calendar Years 1999-2001

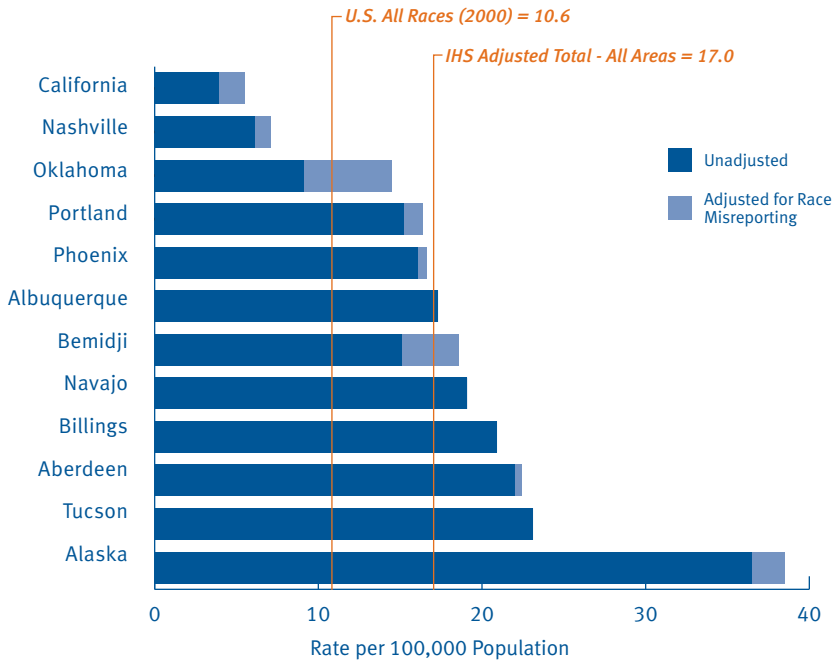


Table 4.19 Age-Adjusted Suicide Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*29,350*		*10.6*	
All IHS Areas	***732***	***825***	***15.2***	***17.0***
Aberdeen	65	66	22.0	22.4
Alaska	120	127	36.5	38.5
Albuquerque	52	52	17.3	17.3
Bemidji	46	58	15.1	18.6
Billings	34	34	20.9	20.9
California	17	26	3.9	5.5
Nashville	17	20	6.1	7.1
Navajo	117	117	19.1	19.1
Oklahoma	78	129	9.1	14.5
Phoenix	86	89	16.1	16.6
Portland	77	84	15.2	16.4
Tucson	23	23	23.1	23.1

[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted homicide death rate for the IHS service area population was 11.4 per 100,000 population. The AI/AN rate is 87 percent higher than the U.S. all-races rate of 6.1 for 2000. The Alaska Area had the highest rate of 20.6. Six IHS Areas including Alaska had more than double the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.20 Age-Adjusted Homicide Death Rates Calendar Years 1999-2001

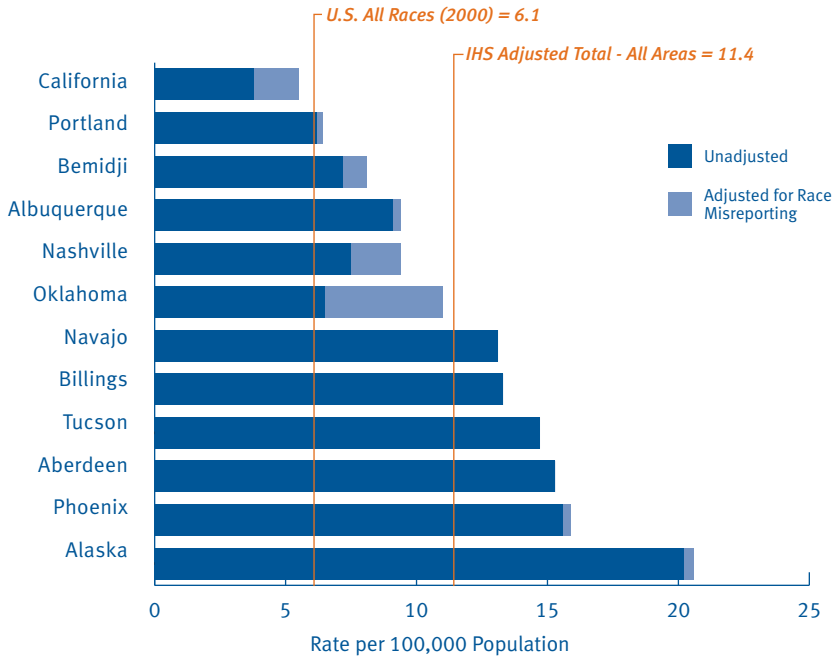


Table 4.20 Age-Adjusted Homicide Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*16,765*		*6.1*	
All IHS Areas	***484***	***554***	***10.1***	***11.4***
Aberdeen	42	42	15.3	15.3
Alaska	60	61	20.2	20.6
Albuquerque	27	28	9.1	9.4
Bemidji	23	26	7.2	8.1
Billings	25	25	13.3	13.3
California	16	25	3.8	5.5
Nashville	22	28	7.5	9.4
Navajo	75	75	13.1	13.1
Oklahoma	59	106	6.5	11.0
Phoenix	85	87	15.6	15.9
Portland	33	34	6.2	6.4
Tucson	17	17	14.7	14.7

[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.
Note: Includes deaths due to homicide and legal intervention.

In 1999-2001, the age-adjusted firearm injury death rate for the IHS service area population was 13.1 per 100,000 population. The AI/AN rate is 1.3 times the U.S. all-races rate of 10.4 for 2000. The Alaska Area rate (33.5) far exceeds the rates of the other Areas and is 2 times higher than the next highest Area rate (Billings, 16.7) and 4.9 times higher than the lowest Area rate (Navajo, 6.9). The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.21 Age-Adjusted Firearm Injury Death Rates Calendar Years 1999-2001

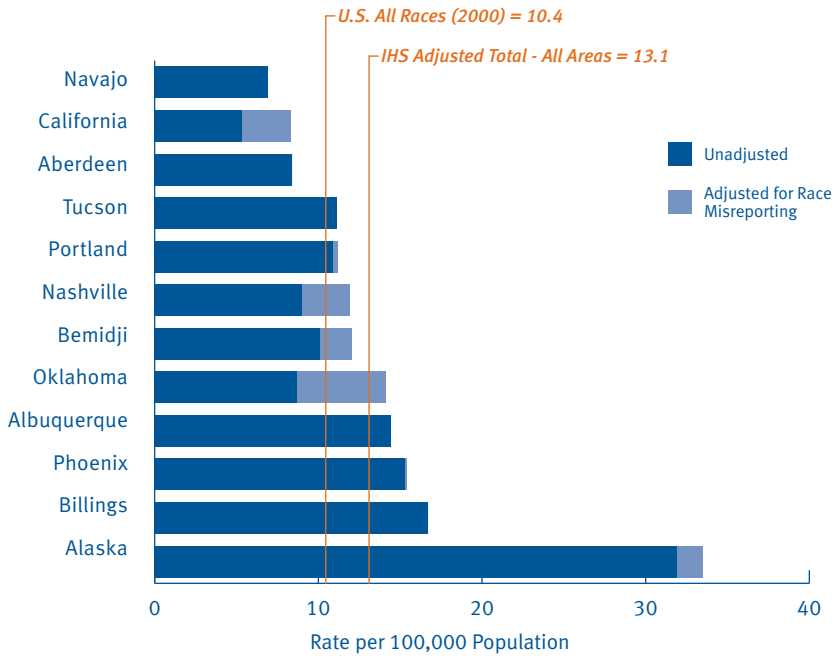


Table 4.21 Age-Adjusted Firearm Injury[1] Death Rates Calendar Years 1999-2001

	Deaths		Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]
U.S. All Races (2000)	*28,663*		*10.4*	
All IHS Areas	***554***	***649***	***11.3***	***13.1***
Aberdeen	26	26	8.4	8.4
Alaska	105	111	31.9	33.5
Albuquerque	43	43	14.4	14.4
Bemidji	32	39	10.1	12.0
Billings	29	29	16.7	16.7
California	26	43	5.3	8.3
Nashville	26	35	9.0	11.9
Navajo	40	40	6.9	6.9
Oklahoma	77	130	8.7	14.1
Phoenix	82	83	15.3	15.4
Portland	54	56	10.9	11.2
Tucson[2]	14	14	11.1	11.1

[1] Includes deaths with ICD-10 codes: accident caused by firearm missile—W32-W34; suicide and self-inflicted injury by firearms—X72-X74; assault by firearms and legal intervention—X93-X95,Y35.0; and injury by firearms, undetermined whether accidentally or purposely inflicted—Y22-Y24. Injury by firearm causes exclude explosive and other causes indirectly related to firearms.
[2] Age-adjusted rate per 100,000 population.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, for the IHS service area population, the age-adjusted death rate for injury and poisoning deaths due to other causes was 2.3 per 100,000 population. The AI/AN rate is 77 percent higher than the U.S. all-races rate of 1.3 deaths per 100,000 population for 2000. The Area rates should be interpreted with caution because of the relatively small numbers of deaths involved. (See section *Sources and Limitations of Data: Population Statistics*.) The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.22 Age-Adjusted Death Rates for Injury and Poisoning Deaths Due to Other Causes, Calendar Years 1999-2001

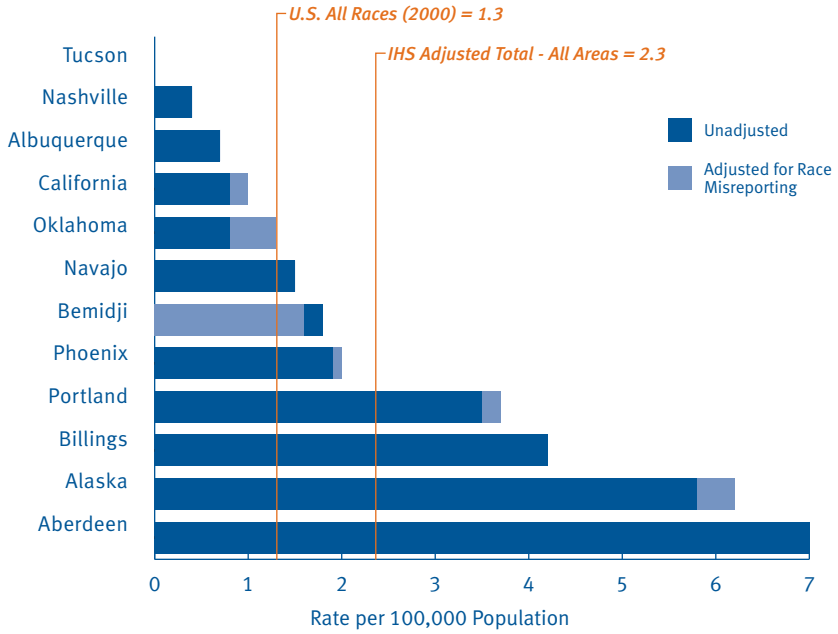


Table 4.22 Age-Adjusted Death Rates for Injury and Poisoning Deaths Due to Other Causes[1], Calendar Years 1999-2001

	Deaths		Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]
U.S. All Races (2000)	*3,605*		*1.3*	
All IHS Areas	***91***	***100***	***2.1***	***2.3***
Aberdeen	14	14	7.0	7.0
Alaska	18	20	5.8	6.2
Albuquerque	2	2	0.7	0.7
Bemidji	6[4]	5[4]	1.8[4]	1.6[4]
Billings	6	6	4.2	4.2
California	2	3	0.8	1.0
Nashville	1	1	0.4	0.4
Navajo	7	7	1.5	1.5
Oklahoma	6	11	0.8	1.3
Phoenix	11	12	1.9	2.0
Portland	18	19	3.5	3.7
Tucson	–	–	–	–

– Represents zero.
[1] Includes the following ICD-10 cause of death groups combined: injury undetermined whether accidentally or purposely inflicted—Y10-Y21, Y25-Y34, Y87.2, Y89.9; injury resulting from operations of war—Y36, Y89.1.
[2] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.
[4] The adjusted number and rate in the Bemidji Area is lower than the unadjusted number and rate because the linked birth/infant death file (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1999-2001 data).

The age-adjusted alcohol-related death rate for the IHS service area population in 1999-2001 was 43.2 per 100,000 population. The AI/AN rate is 6.3 times the U.S. all-races rate of 6.9 for 2000. The Aberdeen Area rate of 86.4 is 13 times the U.S. all-races rate and 5 times the lowest Area rate (Nashville, 18.3). The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.23 Age-Adjusted Alcohol-Related Death Rates Calendar Years 1999-2001

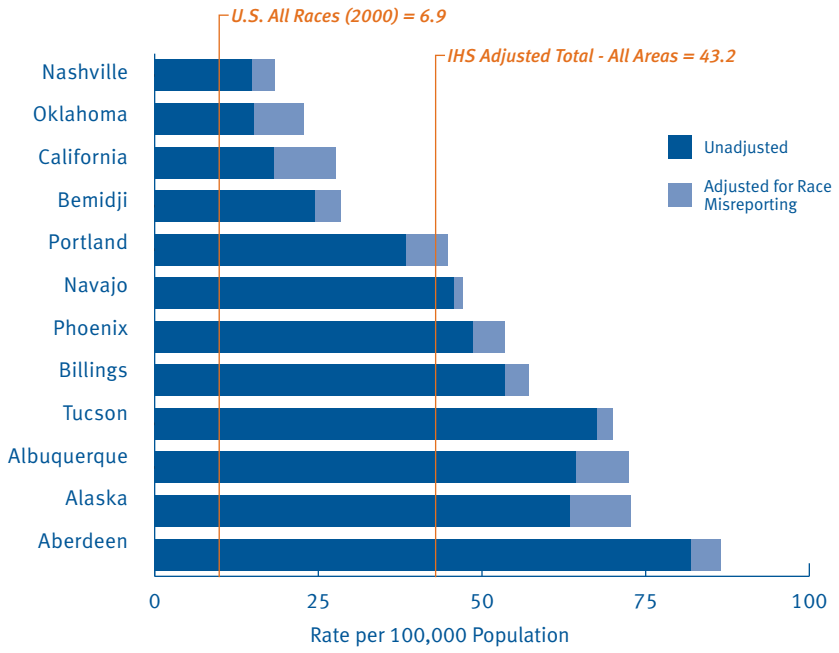


Table 4.23 Age-Adjusted Alcohol-Related Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*19,358*		*6.9*	
All IHS Areas	***1,420***	***1,646***	***37.4***	***43.2***
Aberdeen	157	167	81.9	86.4
Alaska	154	177	63.4	72.8
Albuquerque	140	158	64.3	72.4
Bemidji	58	67	24.4	28.5
Billings	68	73	53.5	57.1
California	72	111	18.2	27.6
Nashville	34	43	14.8	18.3
Navajo	230	236	45.7	47.1
Oklahoma	113	171	15.2	22.8
Phoenix	189	209	48.6	53.4
Portland	157	184	38.3	44.8
Tucson	48	50	67.5	70.0

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

The age-adjusted diabetes death rate for the IHS service area population in 1999-2001 was 77.7 per 100,000 population. The diabetes death rate increased 47.2 percent from the rate experienced by the IHS service area during 1996-1998 (52.8). The 1999-2001 AI/AN rate is 3.1 times the U.S. all-races rate of 25.2 for 2000. The IHS Area rates vary widely, ranging from 20.3 in Alaska (which is 19 percent lower than the U.S. all-races rate) to 157.8 in Tucson (which is 526 percent higher than the U.S. all-races rate). The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.24 Age-Adjusted Diabetes Mellitus Death Rates Calendar Years 1999-2001

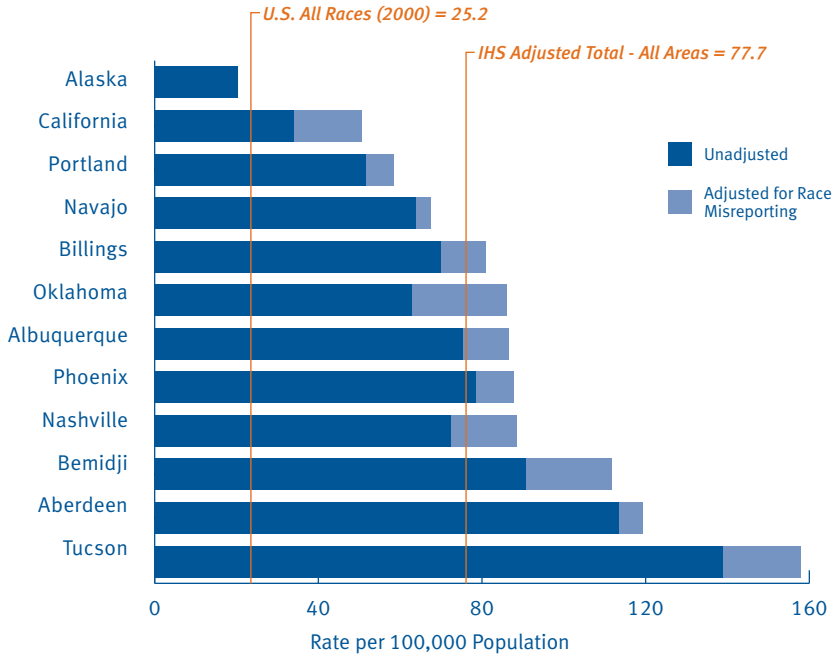


Table 4.24 Age-Adjusted Diabetes Mellitus Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*69,301*		*25.2*	
All IHS Areas	***1,615***	***1,949***	***64.9***	***77.7***
Aberdeen	145	152	113.4	119.3
Alaska	29	29	20.3	20.3
Albuquerque	106	122	75.4	86.6
Bemidji	138	171	90.6	111.7
Billings	53	61	70.0	80.8
California	86	132	33.9	50.6
Nashville	111	135	72.5	88.4
Navajo	218	230	63.8	67.4
Oklahoma	359	501	62.9	86.0
Phoenix	191	212	78.6	87.8
Portland	117	134	51.5	58.5
Tucson	62	70	138.9	157.8

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

The age-adjusted pneumonia and influenza death rate for the IHS service area population in 1999-2001 was 33.6 per 100,000 population. The AI/AN rate is 1.4 times the U.S. all-races rate of 23.7 for 2000. The two highest Area rates in Billings (61.6) and Tucson (56.5), are at least four times higher than the lowest Area rate in California (13.3). The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.25 Age-Adjusted Pneumonia and Influenza Death Rates Calendar Years 1999-2001

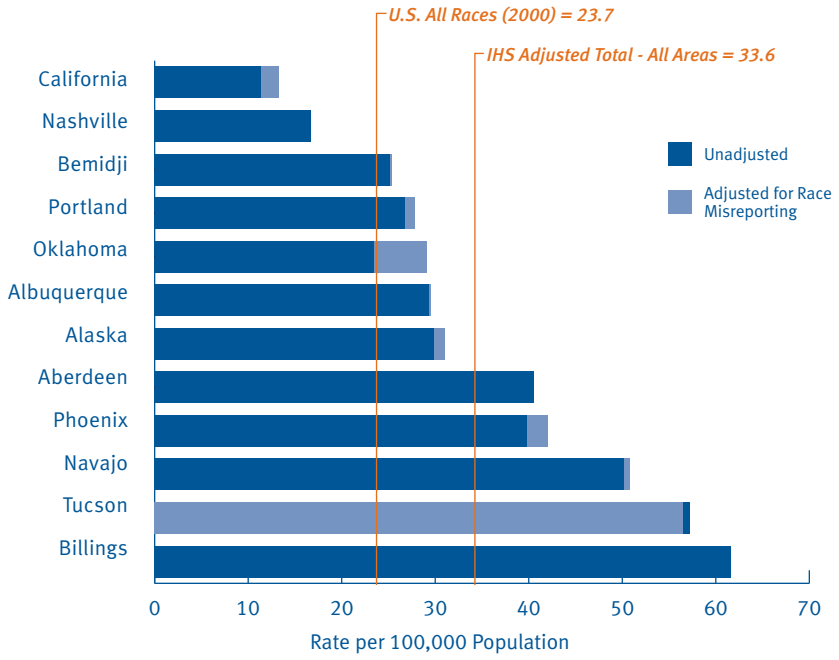


Table 4.25 Age-Adjusted Pneumonia and Influenza Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*65,313*		*23.7*	
All IHS Areas	***704***	***751***	***31.6***	***33.6***
Aberdeen	48	48	40.5	40.5
Alaska	42	44	29.9	31.0
Albuquerque	42	40	29.3	29.5
Bemidji	36	37	25.1	25.4
Billings	46	46	61.6	61.6
California	22	26	11.4	13.3
Nashville	21	21	16.7	16.7
Navajo	164	168	50.2	50.8
Oklahoma	118	150	23.4	29.1
Phoenix	88	93	39.8	42.0
Portland	51	53	26.7	27.8
Tucson	26[3]	25[3]	57.2[3]	56.5[3]

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.
[3] The adjusted numbers and rates in the Tucson Area are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1999-2001 data).

In 1999-2001, the age adjusted tuberculosis death rate for the IHS service area population was 1.9 per 100,000 population. The AI/AN rate is six times higher than the U.S. all-races rate of 0.3 for 2000. Area rates with small numbers of deaths should be interpreted with caution. The Navajo (10 deaths) and Oklahoma (11 deaths) Areas had the highest numbers of deaths over the 3-year period. (See section *Sources and Limitations of Data: Population Statistics*.) The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.26 Age-Adjusted Tuberculosis Death Rates Calendar Years 1999-2001

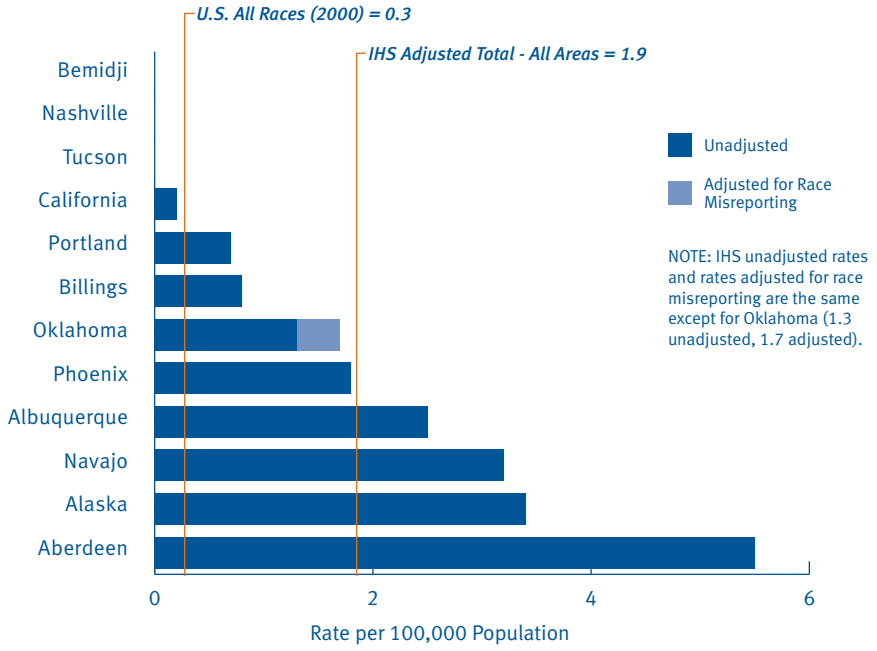


Table 4.26 Age-Adjusted Tuberculosis Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*776*		*0.3*	
All IHS Areas	***43***	***46***	***1.8***	***1.9***
Aberdeen	6	6	5.5	5.5
Alaska	5	5	3.4	3.4
Albuquerque	3	3	2.5	2.5
Bemidji	–	–	–	–
Billings	1	1	0.8	0.8
California	1	1	0.2	0.2
Nashville	–	–	–	–
Navajo	10	10	3.2	3.2
Oklahoma	8	11	1.3	1.7
Phoenix	6	6	1.8	1.8
Portland	3	3	0.7	0.7
Tucson	–	–	–	–

– Represents zero.
[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted gastrointestinal diseases death rate for the IHS service area population was 0.8 per 100,000 population. The AI/AN rate is equal to the U.S. all-races rate for 2000 (0.8 per 100,000 population). The Area rates should be interpreted with caution because of the small number of deaths involved. (See section *Sources and Limitations of Data: Population Statistics*.) The largest number of deaths over the 3-year period for any one Area was six deaths in the Oklahoma Area. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.27 Age-Adjusted Gastrointestinal Diseases Death Rates Calendar Years 1999-2001

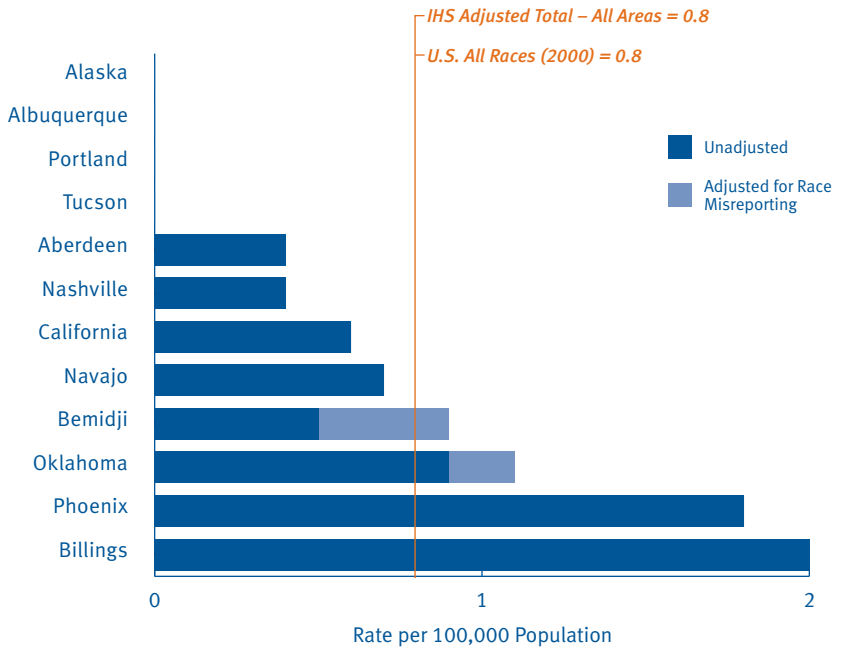


Table 4.27 Age-Adjusted Gastrointestinal Diseases Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*2,096*		*0.8*	
All IHS Areas	***16***	***18***	***0.7***	***0.8***
Aberdeen	1	1	0.4	0.4
Alaska	–	–	–	–
Albuquerque	–	–	–	–
Bemidji	1	2	0.5	0.9
Billings	1	1	2.0	2.0
California	1	1	0.6	0.6
Nashville	1	1	0.4	0.4
Navajo	2	2	0.7	0.7
Oklahoma	5	6	0.9	1.1
Phoenix	4	4	1.8	1.8
Portland	–	–	–	–
Tucson	–	–	–	–

– Represents zero.
[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted heart disease death rate for the IHS service area population was 243.8 per 100,000 population. The AI/AN rate is 5 percent lower than the U.S. all-races rate (257.9) in 2000. The Albuquerque Area has the lowest rate (141.7) and is 45 percent lower than the U.S. all-races rate while the Bemidji Area has the highest rate (392.1) for heart disease which is 52 percent higher than the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.28 Age-Adjusted Heart Disease Death Rates Calendar Years 1999-2001

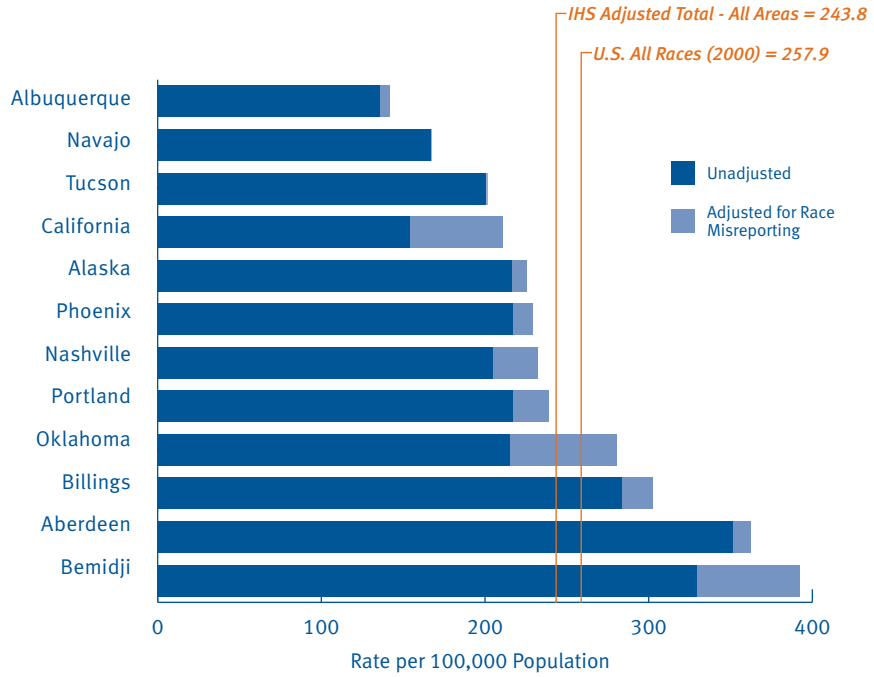


Table 4.28 Age-Adjusted Heart Disease Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*710,760*		*257.9*	
All IHS Areas	***4,952***	***5,737***	***212.2***	***243.8***
Aberdeen	430	444	351.4	362.5
Alaska	303	316	216.6	225.6
Albuquerque	179	186	135.9	141.7
Bemidji	458	551	329.6	392.1
Billings	211	223	283.8	302.2
California	342	484	154.0	211.0
Nashville	291	332	204.8	231.9
Navajo	560	563	166.8	167.6
Oklahoma	1,148	1,528	215.0	280.7
Phoenix	467	492	217.3	229.4
Portland	482	536	217.1	238.8
Tucson	81	82	200.4	201.7

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted cerebrovascular diseases death rate for the IHS service area population was 63.7 per 100,000 population. The IHS Area rates differ considerably between Areas; the Billings rate of 91.4 is 1.9 times higher than the Navajo rate of 47.9, whereas the U.S. all-races rate is 60.8 for the year 2000. Mortality from cerebrovascular disease is 5 percent higher in the IHS service areas compared to the U.S. all-races. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.29 Age-Adjusted Cerebrovascular Diseases Death Rates Calendar Years 1999-2001

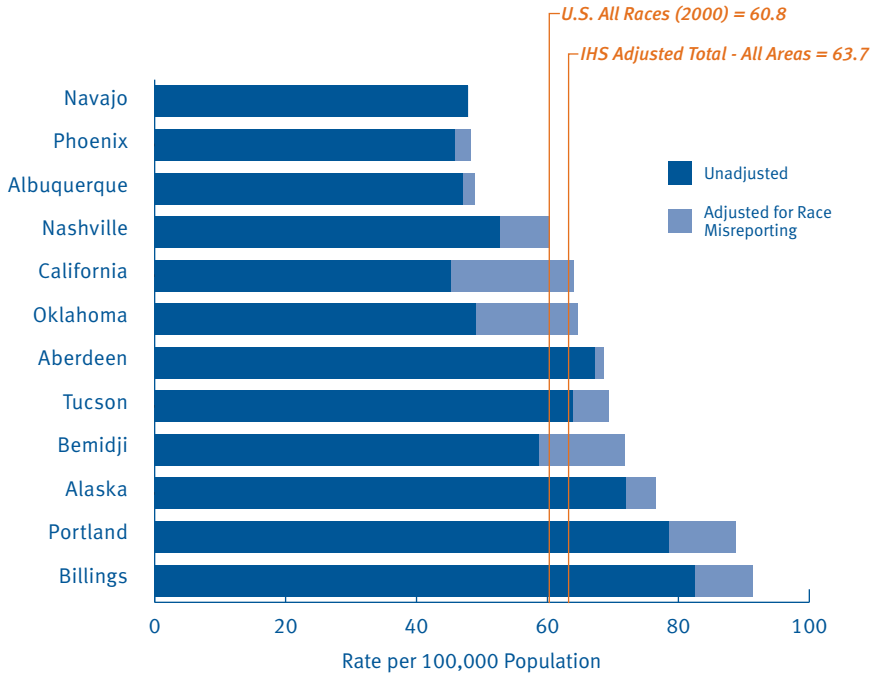


Table 4.29 Age-Adjusted Cerebrovascular Diseases Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*167,661*		*60.8*	
All IHS Areas	***1,209***	***1,405***	***55.1***	***63.7***
Aberdeen	84	86	67.3	68.6
Alaska	96	102	71.9	76.6
Albuquerque	59	61	47.1	48.9
Bemidji	74	90	58.7	71.7
Billings	54	59	82.5	91.4
California	97	140	45.2	64.1
Nashville	69	79	52.7	60.4
Navajo	154	154	47.9	47.9
Oklahoma	251	338	49.1	64.6
Phoenix	98	102	45.8	48.3
Portland	147	166	78.6	88.7
Tucson	26	28	63.8	69.4

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted malignant neoplasm death rate for the IHS service area population was 184.1 per 100,000 population. The 1999-2001 AI/AN rate is 8.4 percent less than the U.S. all-races rate of 201.0 for 2000. Five IHS Areas have a rate greater than the U.S. all-races rate; Billings (297.1), Bemidji (278.2), Aberdeen (252.2), Alaska (249.5), and Oklahoma (205.7). The rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.30 Age-Adjusted Malignant Neoplasm Death Rates Calendar Years 1999-2001

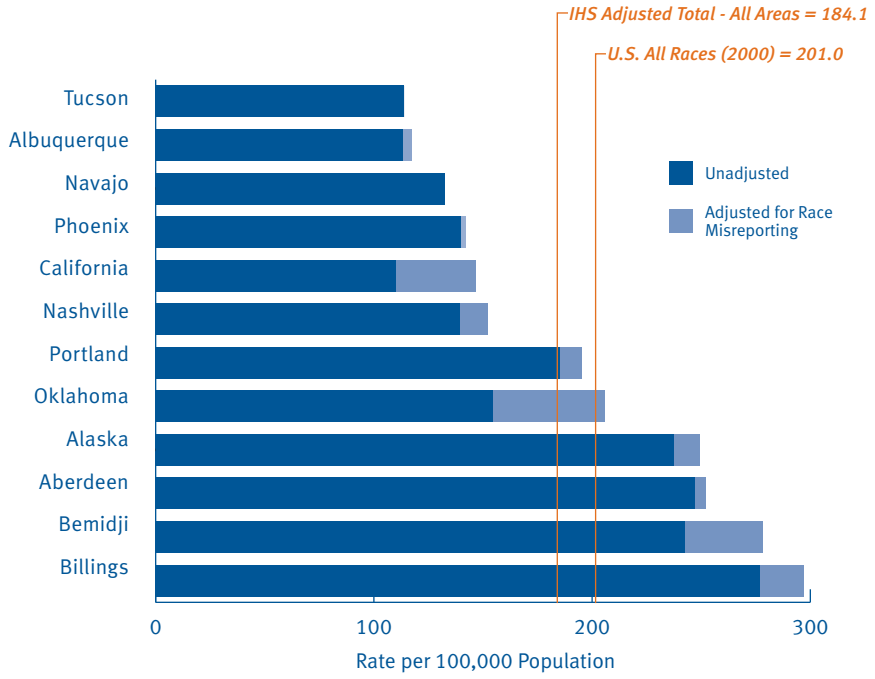


Table 4.30 Age-Adjusted Malignant Neoplasm Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*553,091*		*201.0*	
All IHS Areas	***4,137***	***4,707***	***162.9***	***184.1***
Aberdeen	314	320	247.1	252.2
Alaska	379	400	237.3	249.5
Albuquerque	165	170	113.4	117.5
Bemidji	381	438	242.6	278.2
Billings	217	232	276.9	297.1
California	278	374	110.2	146.5
Nashville	218	240	139.6	152.1
Navajo	478	479	132.3	132.5
Oklahoma	898	1,218	154.6	205.7
Phoenix	324	328	140.0	141.9
Portland	429	452	185.2	195.4
Tucson	56	56	113.9	113.9

[1] Age-adjusted rate per 100,000 population.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted lung cancer death rate for the IHS service area population was 49.1 per 100,000 population. The definition of lung cancer has been expanded to include the trachea and bronchus. The 1999-2001 AI/AN rate is 13 percent less than the U.S. all-races rate of 56.5 in 2000. Six IHS Areas (Aberdeen, Alaska, Bemidji, Billings, Oklahoma and Portland) have rates exceeding the U.S. all-races rate. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.31 Age-Adjusted Lung Cancer Death Rates Calendar Years 1999-2001

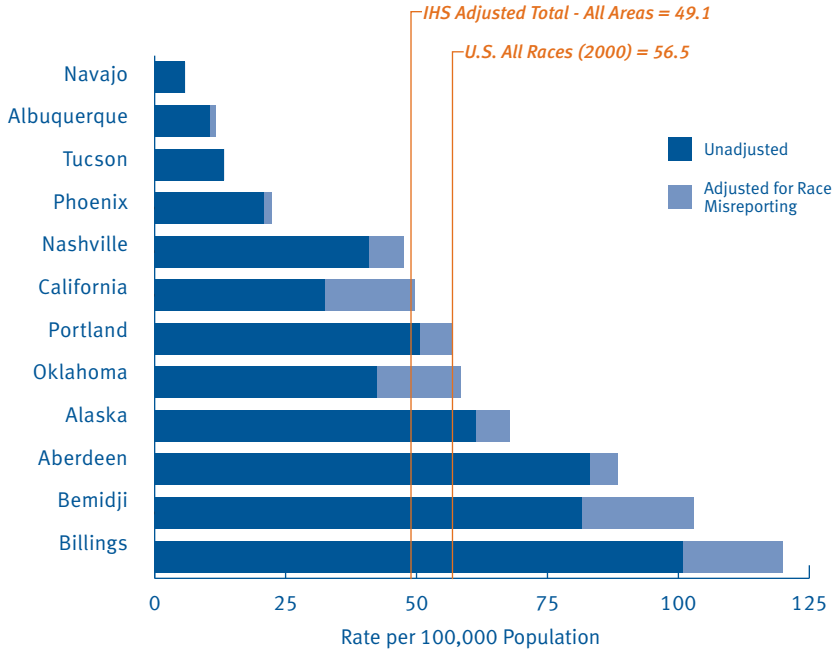


Table 4.31 Age-Adjusted Lung Cancer[1] Death Rates Calendar Years 1999-2001

	Deaths		Rate[2]	
	Unadjusted	Adjusted[3]	Unadjusted	Adjusted[3]
U.S. All Races (2000)	*155,521*		*56.5*	
All IHS Areas	***1,001***	***1,240***	***39.9***	***49.1***
Aberdeen	103	109	83.1	88.3
Alaska	97	108	61.4	67.8
Albuquerque	14	15	10.6	11.6
Bemidji	133	170	81.5	102.9
Billings	75	89	100.9	119.9
California	81	124	32.4	49.6
Nashville	63	74	40.8	47.5
Navajo	20	20	5.8	5.8
Oklahoma	244	341	42.5	58.5
Phoenix	45	48	20.8	22.3
Portland	119	135	50.6	56.9
Tucson	7	7	13.3	13.3

[1] Lung cancer death includes deaths due to cancers of the trachea, bronchus and lung, ICD-10 codes C33-C34.
[2] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[3] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted female breast cancer death rate in the IHS service area population was 17.9 per 100,000 population. The 1999-2001 AI/AN rate was almost 10 percent lower than the comparable 1996-1998 AI/AN rate (19.8 deaths per 100,000 population). The 1999-2001 AI/AN rate is 33 percent less than the U.S. all-races rate of 26.8 per 100,000 population for 2000. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.32 Age-Adjusted Female Breast Cancer Death Rates Calendar Years 1999-2001

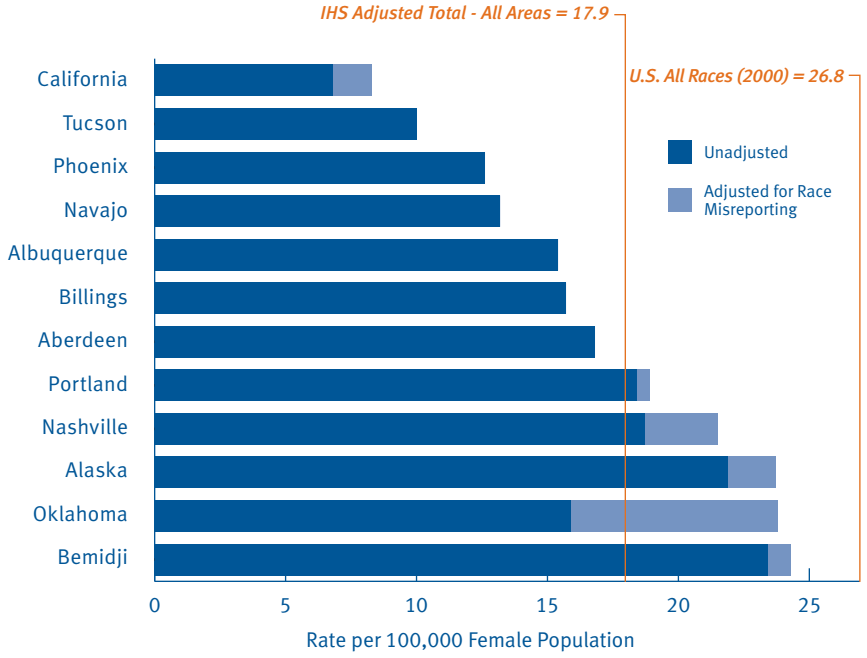


Table 4.32 Age-Adjusted Female Breast Cancer Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*41,872*		*26.8*	
All IHS Areas	***238***	***277***	***17.6***	***17.9***
Aberdeen	14	14	16.9	16.9
Alaska	22	24	21.9	23.7
Albuquerque	14	14	15.4	15.4
Bemidji	22	23	23.4	24.3
Billings	7	7	15.7	15.7
California	10	13	6.8	8.3
Nashville	17	20	18.7	21.5
Navajo	29	29	13.2	13.2
Oklahoma	56	85	15.9	23.8
Phoenix	20	20	12.6	12.6
Portland	24	25	18.4	18.9
Tucson	3	3	10.0	10.0

[1] Age-adjusted rate per 100,000 **female** population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted cervical cancer death rate for females in the IHS service area population was 4.4 per 100,000 population. The 1999-2001 AI/AN rate was over 15 percent lower than the comparable 1996-1998 AI/AN rate (5.2 per 100,000 population). The 1999-2001 AI/AN rate is 57 percent greater than the U.S. all-races rate of 2.8 per 100,000 population for 2000. The Area rates should be interpreted with caution because of the small number of deaths involved. The largest numbers of cervical cancer death rates occurred in Aberdeen (11.6) followed by Bemidji (8.6) during the 3-year period. (See section *Sources and Limitations of Data: Population Statistics*.) The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.33 Age-Adjusted Cervical Cancer Death Rates Calendar Years 1999-2001

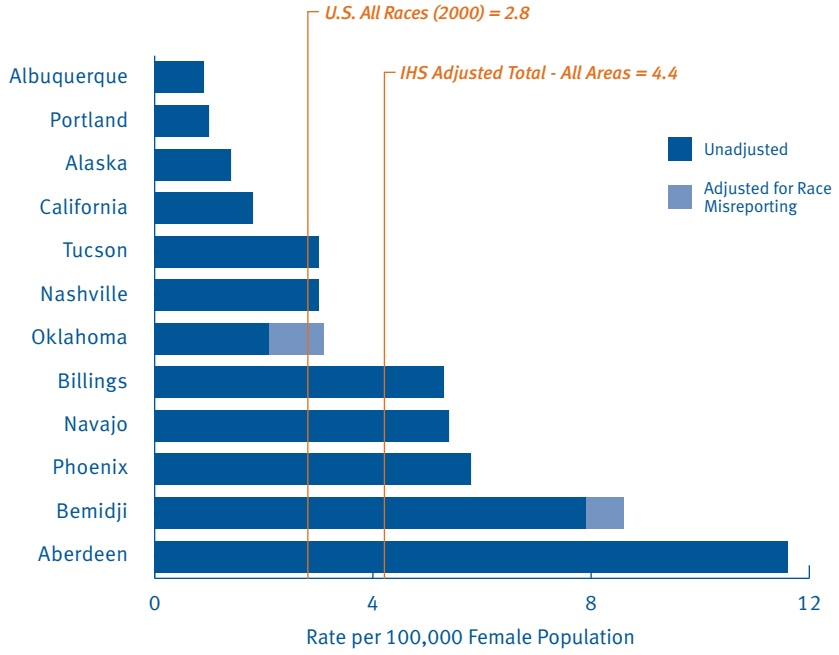


Table 4.33 Age-Adjusted Cervical Cancer Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*4,200*		*2.8*	
All IHS Areas	***65***	***70***	***3.8***	***4.4***
Aberdeen	11	11	11.6	11.6
Alaska	2	2	1.4	1.4
Albuquerque	1	1	0.9	0.9
Bemidji	10	11	7.9	8.6
Billings	3	3	5.3	5.3
California	3	3	1.8	1.8
Nashville	3	3	3.0	3.0
Navajo	13	13	5.4	5.4
Oklahoma	9	13	2.1	3.1
Phoenix	7	7	5.8	5.8
Portland	2	2	1.0	1.0
Tucson	1	1	3.0	3.0

[1] Age-adjusted rate per 100,000 female population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

The age-adjusted colon-rectal cancer death rate for the IHS service area population in 1999-2001 was 18.9 per 100,000 population. The 1999-2001 AI/AN rate is 10 percent less than the U.S. all-races rate in 2000 (20.9). The highest IHS Area rate (Alaska, 36.0) is 1.7 times the U.S. all-races rate, while the lowest Area rate (Navajo, 8.2) is less than half the U.S. all-races rate. The age adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.34 Age-Adjusted Colon-Rectal Cancer Death Rates Calendar Years 1999-2001

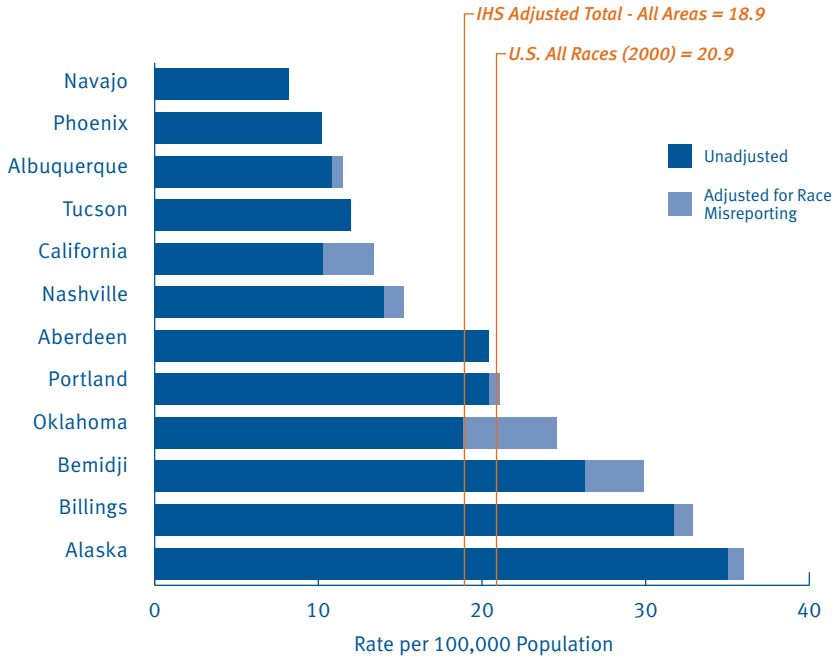


Table 4.34 Age-Adjusted Colon-Rectal Cancer Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*57,477*		*20.9*	
All IHS Areas	***414***	***469***	***16.8***	***18.9***
Aberdeen	25	25	20.4	20.4
Alaska	51	53	35.0	36.0
Albuquerque	16	17	10.8	11.5
Bemidji	36	40	26.3	29.9
Billings	24	25	31.7	32.9
California	24	32	10.3	13.4
Nashville	24	27	14.0	15.2
Navajo	32	32	8.2	8.2
Oklahoma	106	141	18.8	24.6
Phoenix	23	23	10.2	10.2
Portland	48	49	20.4	21.1
Tucson	5	5	12.0	12.0

[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted prostate cancer death rate for males in the IHS service area population was 23.8 per 100,000 population. The 1999-2001 AI/AN rate was 12 percent lower than the comparable 1996-1998 AI/AN rate (26.9 per 100,000 population). The 1999-2001 AI/AN rate is 22 percent lower than the U.S. all-races rate of 30.4 per 100,000 population in 2000. Only the rates for Alaska (33.4), Bemidji (56.2) and Billings (63.0) exceed the rate for the U.S. all-races. The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.35 Age-Adjusted Prostate Cancer Death Rates Calendar Years 1999-2001

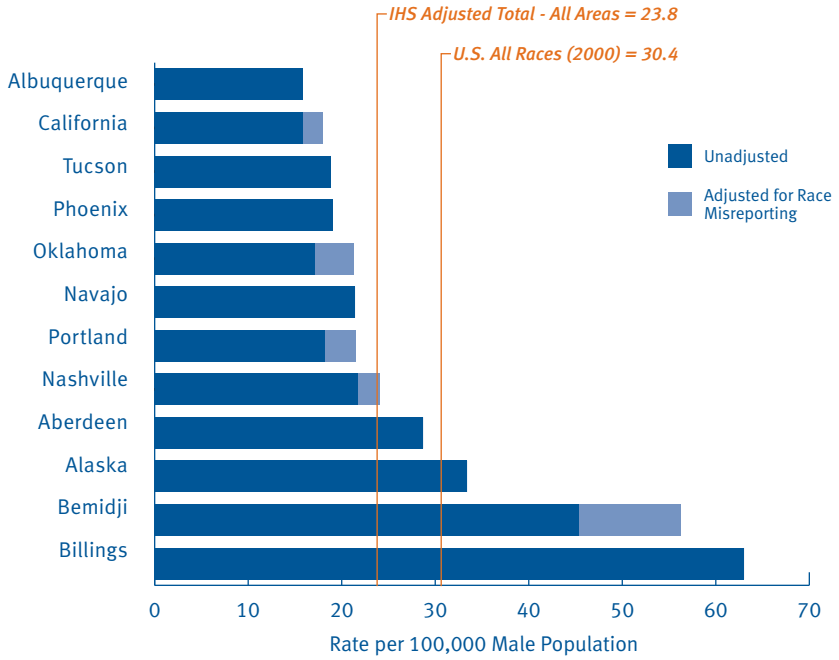


Table 4.35 Age-Adjusted Prostate Cancer Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*31,078*		*30.4*	
All IHS Areas	***169***	***186***	***21.6***	***23.8***
Aberdeen	11	11	28.7	28.7
Alaska	12	12	33.4	33.4
Albuquerque	8	8	15.8	15.8
Bemidji	18	22	45.4	56.2
Billings	13	13	63.0	63.0
California	12	14	15.8	18.0
Nashville	9	10	21.7	24.1
Navajo	28	28	21.4	21.4
Oklahoma	31	39	17.1	21.3
Phoenix	12	12	19.0	19.0
Portland	12	14	18.2	21.5
Tucson	3	3	18.8	18.8

[1] Age-adjusted rate per 100,000 male population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

In 1999-2001, the age-adjusted human immunodeficiency virus (HIV) infection death rate for the IHS service area population was 3.3 per 100,000 population. The 1999-2001 AI/AN age-adjusted rate (3.3) is 1.6 times lower than the 2000 U.S. all-races rate (5.3). The Navajo Area's rate (1.0) is the lowest mortality rate for all IHS areas. Area rates should be interpreted with caution when small numbers of deaths occur. (See section *Sources and Limitations of Data: Population Statistics*.) The age-adjusted rate is adjusted for misreporting of AI/AN race on the state death certificate.

Chart 4.36 Age-Adjusted Human Immunodeficiency Virus (HIV) Infection Death Rates, Calendar Years 1999-2001

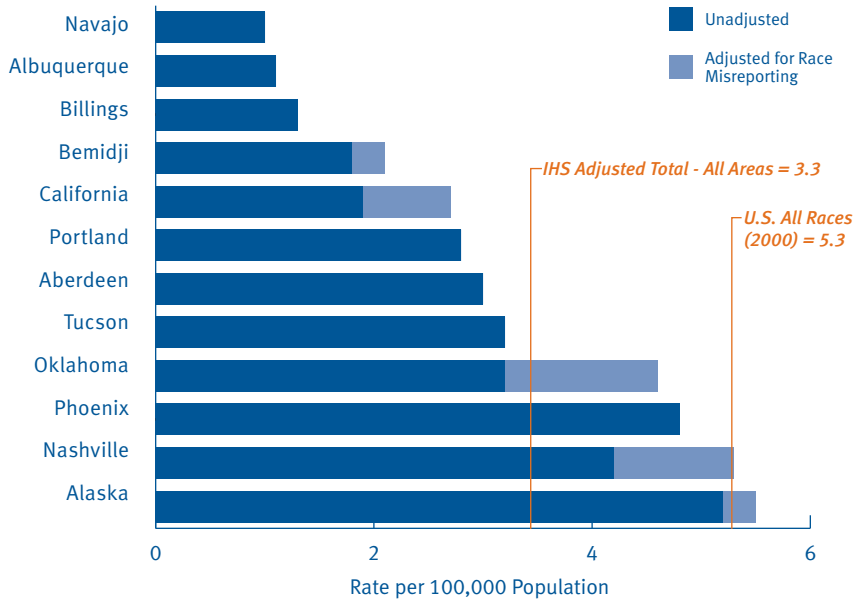


Table 4.36 Age-Adjusted Human Immunodeficiency Virus (HIV) Infection Death Rates Calendar Years 1999-2001

	Deaths		Rate[1]	
	Unadjusted	Adjusted[2]	Unadjusted	Adjusted[2]
U.S. All Races (2000)	*14,478*		*5.3*	
All IHS Areas	***119***	***140***	***2.8***	***3.3***
Aberdeen	7	7	3.0	3.0
Alaska	14	15	5.2	5.5
Albuquerque	3	3	1.1	1.1
Bemidji	5	6	1.8	2.1
Billings	2	2	1.3	1.3
California	9	13	1.9	2.7
Nashville	11	14	4.2	5.3
Navajo	5	5	1.0	1.0
Oklahoma	25	37	3.2	4.6
Phoenix	22	22	4.8	4.8
Portland	13	13	2.8	2.8
Tucson	3	3	3.2	3.2

[1] Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.
[2] Adjusted to compensate for misreporting of American Indian/Alaska Native race on the state death certificate.

Among males 35-74 years old, rates of death with heart disease as a cause listed anywhere in the death record significantly exceeded U.S. rates for all races in 4 IHS Areas (Aberdeen, Bemidji, Billings, and Portland). Among females 35-74 years old, 6 IHS Areas significantly exceeded the U.S. rate (Aberdeen, Bemidji, Billings, Nashville, Phoenix, and Portland). Aberdeen, Bemidji and Billings had the highest rates for both sexes. The lowest rates were experienced by women in Albuquerque and Navajo Areas. Among both sexes, there was a significant 3-fold difference between areas with the highest and lowest rates of death where heart disease was listed as a cause anywhere in the death record.

Among females 75 years and older, only the Aberdeen and Bemidji areas experienced rates of death due to heart disease listed anywhere in the death record that significantly exceed the U.S. rate. Among males in this age group, no areas had rates significantly higher than the U.S. Among men there was nearly a 2-fold significant difference between areas with the highest and lowest rates, and among women there was a 2.5-fold significant difference between areas.

Table 4.37 Heart Disease Death Rates by Age and Sex, Ages 35 and Over (Underlying vs. Multiple Cause) Calendar Years 1999-2001

	Ages 35-74[1]		Ages 75 or More[1]	
	Underlying[2] Rate[4] (Deaths)	Multiple Cause[3] Rate[4] (Deaths)	Underlying[2] Rate[4] (Deaths)	Multiple Cause[3] Rate[4] (Deaths)
MALE				
U.S. All Races (2000)	*259.4 (153,087)*	*359.6 (211,912)*	*3,283.2 (188,589)*	*4,758.8 (274,150)*
All IHS Areas	***266.2 (1,771)***	***397.0 (2,635)****	***2,378.8 (935)***	***3,613.8 (1,417)***
Aberdeen	509.4 (166)*	781.9 (255)*	3,355.3 (56)	5,687.5 (94)
Alaska	230.9 (102)	319.9 (139)	2,594.5 (58)	4,544.9 (99)
Albuquerque	149.4 (52)	257.5 (90)	1,947.9 (50)	3,183.1 (82)
Bemidji	453.6 (193)*	664.0 (279)*	3,476.1 (68)	5,101.4 (100)
Billings	354.8 (79)*	490.5 (109)*	3,464.2 (37)	4,727.6 (52)
California	174.0 (120)	268.6 (185)	1,770.0 (64)	2,961.7 (106)
Nashville	232.8 (95)	377.8 (155)	2,394.1 (54)	3,551.4 (80)
Navajo	215.9 (184)	328.2 (279)	2,297.8 (156)	3,196.0 (217)
Oklahoma	266.1 (376)	392.7 (551)	2,569.7 (236)	3,754.3 (343)
Phoenix	267.7 (170)	391.4 (249)	2,341.0 (78)	3,304.3 (110)
Portland	307.9 (212)*	428.9 (298)*	2,000.5 (64)	3,450.7 (113)
Tucson	191.8 (22)	370.0 (46)	2,334.9 (14)	3,355.1 (21)
FEMALE				
U.S. All Races (2000)	*121.0 (81,378)*	*184.5 (124,110)*	*2,547.4 (282,713)*	*3,585.5 (396,684)*
All IHS Areas	***129.3 (969)***	***227.8 (1,696)****	***1,765.2 (1,158)***	***2,730.6 (1,790)***
Aberdeen	277.5 (109)*	469.5 (181)*	2,657.2 (87)	4,451.5 (146)*
Alaska	121.0 (56)	177.3 (83)	2,111.8 (80)	3,035.9 (115)
Albuquerque	64.6 (28)	146.3 (62)	1,161.7 (47)	1,779.3 (71)
Bemidji	185.9 (84)*	391.3 (173)*	2,799.4 (99)	4,272.3 (151)*
Billings	220.8 (55)*	353.1 (89)*	1,926.3 (35)	3,321.1 (60)
California	101.1 (71)	172.3 (124)	1,351.2 (81)	2,242.6 (135)
Nashville	155.9 (71)	251.4 (113)*	1,638.6 (64)	2,508.1 (98)
Navajo	81.8 (85)	143.9 (149)	1,221.5 (125)	1,935.5 (195)
Oklahoma	110.4 (180)	199.9 (324)	1,930.4 (337)	2,882.1 (503)
Phoenix	160.3 (111)*	252.2 (174)*	1,753.3 (90)	2,439.3 (125)
Portland	136.0 (100)	262.3 (189)*	1,867.3 (93)	3,224.5 (163)
Tucson	132.0 (19)	244.5 (35)	1,969.8 (20)	2,765.7 (28)

* Rate is significantly higher ($p<0.05$) than the corresponding rate among U.S. all races.
[1] Age divided into 35-74 vs 75+ because American Indian and Alaska Native rates are higher than U.S. All Races prior to age 75 and lower than U.S. All Races after age 75.
[2] Underlying cause of death in the death record.
[3] Heart disease listed one or more times anywhere in the death record. When cardiac arrest (I46) is listed in the death record in the absence of other diseases of the heart, it counts as a heart disease death only if cardiac arrest is classified as the underlying cause of death.
[4] Rates per 100,000 population are adjusted to the 2000 U.S. standard population. Rates based on a small number of deaths should be interpreted with caution.

Among males 35-74 years old, rates of death with cerebrovascular disease listed as a cause anywhere in the death record significantly exceeded U.S. rates for all races in the Aberdeen and Billings areas. Among females 35-74 years old, the entire IHS service area, as well as the Aberdeen, Bemidji, California, Phoenix, and Portland areas, significantly exceeded the U.S. rate. Aberdeen and Billings had the highest rates for men; Aberdeen and Portland had the highest rates for women. The lowest rates were experienced by women in Albuquerque and Navajo Areas. Among males, there was a 3.5-fold significant difference between areas with the highest and lowest rates of death with cerebrovascular disease listed as a cause in the death record, and among females there was a 2.5-fold significant difference.

Among males 75 years and older, only the Billings area experienced rates of death due to cerebrovascular disease listed anywhere in the death record that were significantly higher than the U.S. Among females, no area experienced rates significantly higher than the U.S. Among males there was over a 4.5-fold significant difference between the area with the highest and lowest rate, and among women, there was slightly over a 2-fold significant difference.

Table 4.38 Cerebrovascular Death Rates by Age and Sex, Ages 35 and Over (Underlying vs. Multiple Cause) Calendar Years 1999-2001

	Ages 35-74[1]		Ages 75 or More[1]	
	Underlying[2] Rate[4] (Deaths)	Multiple Cause[3] Rate[4] (Deaths)	Underlying[2] Rate[4] (Deaths)	Multiple Cause[3] Rate[4] (Deaths)
MALE				
U.S. All Races (2000)	*37.5 (22,070)*	*66.8 (39,171)*	*737.1 (42,158)*	*1,274.8 (73,268)*
All IHS Areas	***41.9 (273)***	***73.6 (474)***	***585.9 (228)***	***1,032.6 (407)***
Aberdeen	104.0 (34)*	159.4 (52)*	328.4 (6)	1,023.1 (18)
Alaska	50.3 (22)	80.6 (35)	876.2 (19)	1,179.7 (25)
Albuquerque	24.1 (9)	44.9 (16)	429.3 (11)	668.2 (17)
Bemidji	41.0 (16)	89.8 (34)	538.2 (10)	1,363.6 (26)
Billings	55.0 (12)	129.5 (26)*	1,703.1 (17)*	2,564.4 (26)*
California	32.2 (23)	55.9 (37)	572.6 (20)	957.5 (36)
Nashville	46.7 (19)	76.0 (30)	771.8 (18)	1,112.3 (26)
Navajo	28.1 (23)	52.9 (43)	574.0 (39)	971.6 (66)
Oklahoma	36.8 (51)	61.4 (86)	584.5 (54)	1,040.5 (98)
Phoenix	49.4 (32)	82.2 (53)	305.4 (11)	781.8 (27)
Portland	38.6 (24)	81.1 (52)	619.5 (20)	1,162.9 (38)
Tucson	83.7 (8)	98.7 (10)	412.0 (3)	549.3 (4)
FEMALE				
U.S. All Races (2000)	*30.0 (20,145)*	*51.0 (34,300)*	*742.4 (82,238)*	*1,201.8 (132,821)*
All IHS Areas	***38.2 (290)****	***66.7 (499)****	***607.4 (398)***	***956.6 (627)***
Aberdeen	64.9 (25)*	103.7 (39)*	576.9 (19)	1,062.8 (35)
Alaska	40.2 (21)	64.3 (32)	871.0 (33)	1,293.8 (49)
Albuquerque	27.9 (12)	46.6 (20)	681.6 (27)	882.8 (35)
Bemidji	49.3 (23)*	83.8 (39)*	680.8 (24)	1,331.8 (47)
Billings	55.5 (14)	76.8 (19)	559.5 (10)	1,053.5 (19)
California	36.6 (26)	70.6 (49)*	444.0 (27)	631.7 (38)
Nashville	30.9 (14)	57.9 (26)	463.4 (18)	846.7 (33)
Navajo	24.5 (26)	40.8 (43)	596.1 (59)	836.4 (83)
Oklahoma	29.0 (48)	59.7 (97)	543.8 (95)	939.0 (164)
Phoenix	36.2 (27)	79.3 (57)*	512.6 (26)	750.4 (38)
Portland	66.8 (45)*	97.5 (67)*	1,057.5 (54)*	1,453.6 (74)
Tucson	62.3 (9)	72.8 (11)	594.9 (6)	1,205.9 (12)

* Rate is significantly higher ($p<0.05$) than the corresponding rate among U.S. all races.
[1] Age divided into 35-74 vs 75+ because American Indian and Alaska Native rates are higher than U.S. All Races prior to age 75 and lower than U.S. All Races after age 75.
[2] Underlying cause of death in the death record.
[3] Cerebrovasular death listed one or more times anywhere in the death record.
[4] Rates per 100,000 population are adjusted to the 2000 U.S. standard population. Rates based on a small number of deaths should be interpreted with caution.

Among males and females 35 years of age and older, all IHS areas except Alaska had rates of death with diabetes included as a cause anywhere in the death record that were substantially and significantly higher than the U.S. rate for all races. Among males, the Bemidji Area had the highest rate, which is five times greater than Alaska, the area with the lowest rate ($p<0.05$). Among females, the Tucson Area had the highest rate, 4 times greater than Alaska ($p<0.05$).

Table 4.39 Diabetes Mellitus Death Rates by Sex, Ages 35 and Over (Underlying vs. Multiple Cause) Calendar Years 1999-2001

	MALE		FEMALE	
	Underlying[1] Rate[3] (Deaths)	Multiple Cause[2] Rate[3] (Deaths)	Underlying[1] Rate[3] (Deaths)	Multiple Cause[2] Rate[3] (Deaths)
U.S. All Races (2000)	*53.1 (31,113)*	*172.9 (100,217)*	*44.2 (37,367)*	*130.9 (111,468)*
All IHS Areas	***122.6 (704)****	***295.6 (1,686)****	***125.5 (887)****	***276.2 (1,943)****
Aberdeen	243.0 (65)*	499.8 (141)*	211.2 (79)*	478.4 (172)*
Alaska	46.7 (14)	102.2 (30)	38.0 (14)	120.3 (45)
Albuquerque	177.3 (55)*	339.4 (107)*	124.4 (51)*	233.0 (98)*
Bemidji	168.6 (62)*	512.0 (177)*	176.9 (74)*	425.3 (177)*
Billings	125.4 (23)*	352.3 (64)*	140.2 (29)*	339.4 (75)*
California	69.6 (39)	265.6 (132)*	62.5 (44)*	234.5 (156)*
Nashville	142.6 (48)*	355.6 (116)*	138.4 (61)*	327.6 (140)*
Navajo	131.9 (102)*	267.4 (210)*	116.4 (114)*	251.2 (248)*
Oklahoma	111.2 (143)*	263.5 (334)*	127.4 (211)*	250.2 (415)*
Phoenix	129.8 (78)*	297.6 (173)*	168.8 (109)*	312.2 (203)*
Portland	96.0 (52)*	277.3 (151)*	102.6 (63)*	240.9 (147)*
Tucson	239.4 (23)*	447.7 (51)*	289.8 (38)*	493.1 (67)*

* Rate is significantly higher ($p<0.05$) than the corresponding rate among U.S. all races.
[1] Underlying cause of death in the death record.
[2] Diabetes Mellitus listed one or more times anywhere in the death record.
[3] Rates per 100,000 population are adjusted to the 2000 U.S. standard population. Rates based on a small number of deaths should be interpreted with caution.

Among persons 35-74 years of age, death rates for heart disease listed in the death record without mention of diabetes were significantly higher than the U.S. rate for all races in the Aberdeen, Bemidji, Billings and Portland areas. Death rates for diabetes without mention of heart disease were significantly higher than the U.S. rates in all areas except Alaska, with the highest rates in Tucson, Aberdeen, and Phoenix. Death rates for diabetes and heart disease together in the death record were significantly higher than the U.S. rate in all areas except Alaska, with the highest rates in Aberdeen, Bemidji, and Tucson. Alaska had the lowest rates for both diabetes without heart disease and diabetes with heart disease.

Among persons 75 years of age and older, death rates involving heart disease without mention of diabetes were not significantly higher than the U.S. rate in any IHS area. Rates for death with diabetes listed and no mention of heart disease were significantly higher than the U.S. rate in all areas except Alaska, with Bemidji and Billings having the highest rates. Death rates for heart disease and diabetes listed together in the death record were significantly higher than the U.S. rate for the Aberdeen, Bemidji, California, Nashville, Oklahoma, and Portland areas, as well as for the entire IHS service area.

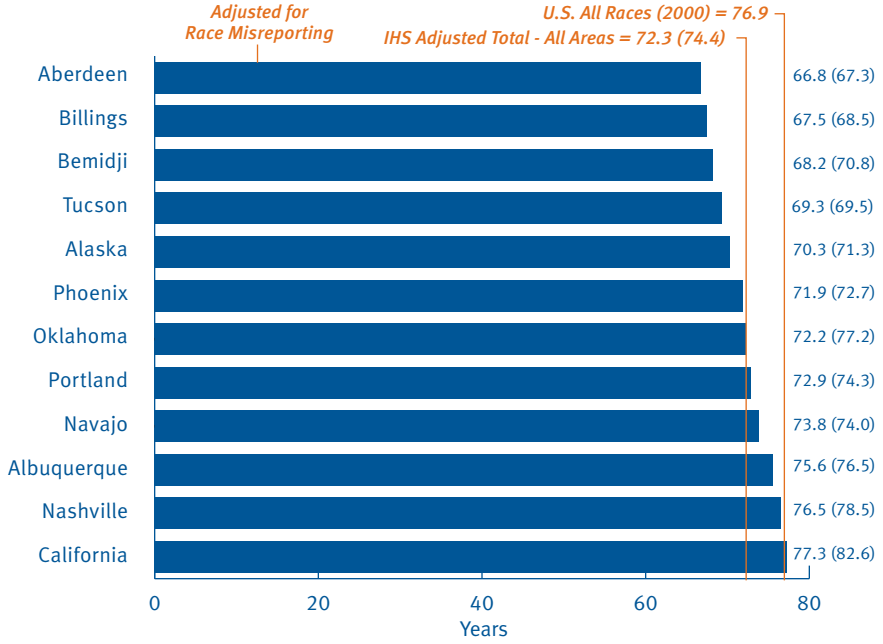
Table 4.40 Rates for Each Combination of Heart Disease (He) and Diabetes (D) by Age, Ages 35 and Over (Multiple Cause Analysis), Calendar Years 1999-2001

	Rate[1] (Deaths)					
	35-74 Years Old[2]			75+[2]		
	He Alone[3]	D Alone[4]	He & D[5]	He Alone[3]	D Alone[4]	He & D[5]
U.S. All Races (2000)	*218.4 (275,217)*	*27.6 (34,712)*	*48.3 (60,805)*	*3,563.0 (595,301)*	*243.2 (40,635)*	*452.1 (75,533)*
All IHS Areas	***215.1 (3,038)***	***81.0*(1,142)***	***94.1*(1,293)***	***2,470.7 (2,544)***	***507.8*(531)***	***630.4*(663)***
Aberdeen	424.6*(306)	124.6*(89)	186.4*(130)	3,597.8 (176)	580.9*(30)	1,271.2*(64)
Alaska	223.2 (202)	18.7 (17)	22.8 (20)	3,153.7 (193)	280.6 (17)	346.9 (21)
Albuquerque	106.9 (86)	87.2*(71)	89.0*(66)	1,817.7 (120)	526.4*(35)	521.5 (33)
Bemidji	343.4*(300)	119.1*(104)	178.4*(152)	3,648.3 (197)	781.4*(44)	936.6*(54)
Billings	295.9*(141)	85.5*(40)	121.0*(57)	3,282.5 (93)	771.9*(23)	645.9 (19)
California	143.9 (208)	50.6*(72)	74.4*(101)	1,796.1 (170)	430.8*(44)	716.8*(71)
Nashville	202.6 (176)	83.2*(74)	108.5*(92)	1,935.3 (119)	497.2*(31)	942.5*(59)
Navajo	154.8 (295)	79.5*(149)	71.5*(133)	2,009.8 (338)	616.3* (102)	459.4 (74)
Oklahoma	204.1 (618)	70.5*(214)	84.8*(257)	2,587.3 (679)	412.4*(111)	620.4*(167)
Phoenix	218.3 (293)	120.1*(162)	99.4*(130)	2,372.7 (200)	562.5*(49)	404.2 (35)
Portland	253.4*(368)	62.9*(88)	88.6*(119)	2,689.8 (220)	415.5*(35)	642.1*(56)
Tucson	157.0 (45)	234.6*(62)	142.9*(36)	2,359.8 (39)	624.3*(10)	601.3 (10)

* Rate is significantly higher ($p<0.05$) than the corresponding rate among U.S. all races.
[1] Rates per 100,000 population are adjusted to the 2000 U.S. standard population. Rates based on a small number of deaths should be interpreted with caution.
[2] Age divided into <75 vs 75+ because American Indian and Alaska Native heart disease rates are higher than U.S. All Races prior to age 75 and lower than U.S. All Races after age 75.
[3] Heart disease listed 1+ times in the death record in the absence of diabetes mellitus. When cardiac arrest (I46) is listed in death record in the absence of other diseases of the heart, it counts as a heart disease death only if cardiac arrest is classified as the underlying cause of death.
[4] Diabetes mellitus listed 1+ times in the death record in the absence of heart disease.
[5] Heart disease and diabetes mellitus listed on the death record together.

In 1999-2001, the AI/AN life expectancy at birth (both sexes) for the IHS service area population was 72.3 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the death certificate. Life expectancy at birth is 4.6 years less than the 2000 figure of 76.9 years for the U.S. all-races population. The California IHS Area has a life expectancy greater than the U.S. all-races population. The Aberdeen Area has a life expectancy (66.8) 10.1 years less than the U.S. figure.

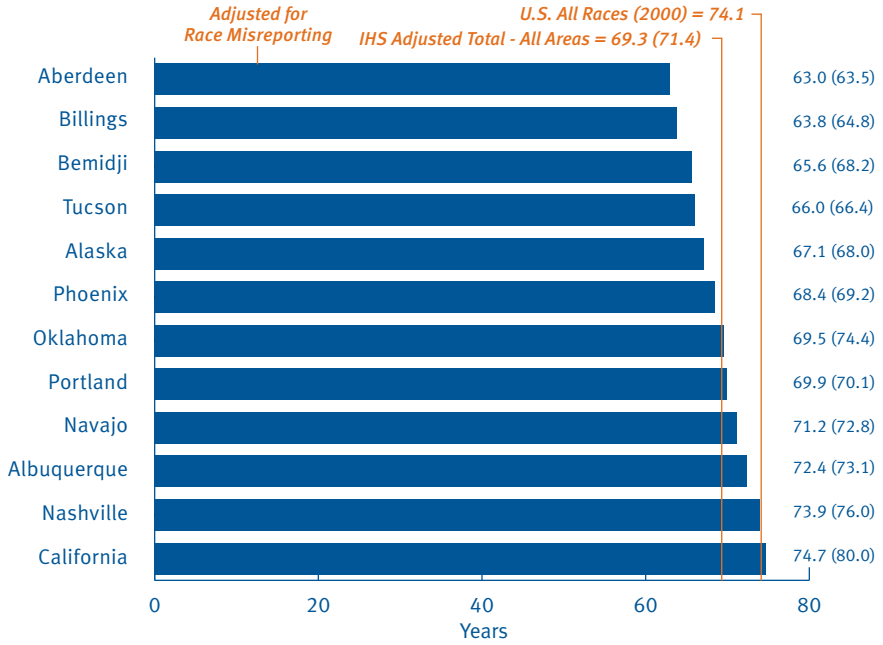
Chart 4.41 Life Expectancy at Birth, Both Sexes, Calendar Years 1999-2001



NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race on state death certificates are shown in parentheses.

In 1999-2001, the life expectancy at birth for AI/AN males in the IHS service area population was 69.3 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the death certificate. Life expectancy at birth is 4.8 years less than the 2000 figure of 74.1 years for the U.S. all-races male population. AI/AN males in the Aberdeen Area (63.0) can expect to live from birth, 11.1 years less than U.S. males.

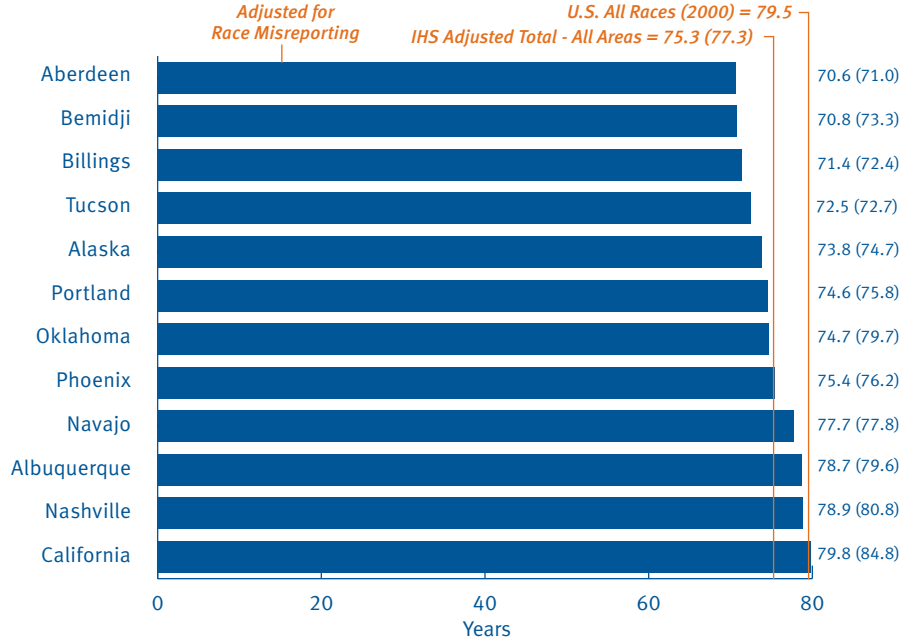
Chart 4.42 Life Expectancy at Birth, Males, Calendar Years 1999-2001



NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race on state death certificates are shown in parentheses.

In 1999-2001, the life expectancy at birth for AI/AN females in the IHS service area population was 75.3 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the state death certificate. Life expectancy at birth is 4.2 years less than the 2000 figure of 79.5 years for the U.S. all-races female population. AI/AN females in the California Area (79.8) had the best Area life expectancy, can expect to live from birth slightly longer than their counterparts in the U.S. all-races population. Females in the Aberdeen Area have a life expectancy (70.6) that is 8.9 years less than that of U.S. females.

Chart 4.43 **Life Expectancy at Birth, Females, Calendar Years 1999-2001**



NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race on state death certificates are shown in parentheses.