

Navajo Nation Mortality Report, 2006-2009

Arizona & New Mexico Data

Navajo Epidemiology Center

Prepared by and acknowledgements:

This report was prepared by the Epidemiologist team of the Navajo Epidemiology Center (NEC) consisting of David Foley, JB Kinlacheeny, and Del Yazzie. Both Dornell Pete, former Epidemiologist with the NEC, and Deborah Klaus, former NEC Director, deserve special recognition for their efforts to establish data sharing agreements with State partners and for securing the data used to create this report. We acknowledge the data contributions of and express appreciation towards the following agencies and individuals:

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Richard Porter, Chief

Purpose: The purpose of this mortality report is to quantify the leading causes of death among Navajos living within the borders of the Navajo Nation and its border towns. Many of the results of this report, including leading cause of death, were likely suspected already by the Navajo community, but hard data can strengthen arguments to address disease issues. Rates for many of the leading causes of death have also been calculated which can be used to make comparisons to the Navajo Nation across time and to other population groups. Because age can influence mortality rates, many of these rates have also been adjusted by age (a further explanation of age adjustment can be found in the technical notes at the end of this report). Tracking these rates can help health programs evaluate their progress in reducing the burden of these diseases.

Data Included: The NEC has established data sharing agreements with the Arizona Department of Health Services and the New Mexico Department of Health wherein the NEC has received Vital Statistics data. From Arizona the NEC received data for 2000 through 2009 and from New Mexico the NEC received data for 2006 through 2010. Data for this report were only included from 2006-2009, since these are the overlapping years. Data were included only for individuals identified as Navajo, and whose reported city of residence was found within the Navajo Nation borders or within one of the following border towns: Bloomfield City (NM), Cuba Village (NM), Farmington City (NM), Gallup City (NM), Holbrook City (AZ), Joseph City (AZ), Page City (AZ), Sanders (AZ) Census Designated Place (CDP), Thoreau CDP (NM), Waterflow CDP (NM), and Winslow City (AZ). Causes of death were identified and tabulated according to the International Statistical Classification of Diseases and Related Health Problems, or ICD-10 codes (further explanation can be found in the technical notes at the conclusion of this report).

Population Data: Population data for 2006-2009 were estimated from 2000 and 2010 U.S. Census Bureau data found in the Summary File 2 tables. Persons were included for Navajo Nation tribal grouping alone or in any combination found within the Arizona and New Mexico portions of the Navajo Nation Reservation. Additionally, Navajo tribal grouping alone or in any combination persons were included from the following border towns: Bloomfield City (NM), Cuba Village (NM), Farmington City (NM), Gallup City (NM), Holbrook City (AZ), Joseph City (AZ), Page City (AZ), Sanders CDP (AZ), Thoreau CDP (NM), Waterflow CDP (NM), Winslow City (AZ). Percent population change was calculated for the time period from 2000 to 2010 for the Arizona and New Mexico portions of the Navajo Nation. This percent change was then applied to the border cities and Census Designated Places (CDP). This change was applied uniformly over the 10 year period, and only the estimated population counts for the years 2006 through 2009 were included to calculate the Navajo total population. The 4 year population total for the Navajo Nation was 698,033. Further explanation can be found in the technical notes at the conclusion of this report.

Executive Summary/Report Highlights:

Unintentional injuries are the leading cause of death for the Navajo Nation from 2006-2009, accounting for 18.9% of all deaths. Unintentional injuries are the 5th leading cause of death in the U.S., and account for only 4.8% of all deaths.¹ The age-adjusted mortality rate for unintentional injuries is 126.55 per 100,000 for the Navajo Nation and 37.3/100,000 for the U.S. in 2009. The 5 leading causes of unintentional injury death are motor vehicle crash (289 deaths), pedestrian (116 deaths), falls (75 deaths), unintentional alcohol poisoning (73 deaths), and exposure to cold (66 deaths).

Chronic Liver Disease & Cirrhosis is the 5th leading cause of death for the Navajo Nation, accounting for 5.6% of all deaths, whereas Chronic Liver Disease & Cirrhosis is the 12th leading cause of death for the U.S. accounting for 1.3% of all deaths. The age-adjusted mortality rates for Chronic Liver Disease & Cirrhosis are 43.05 and 9.2 for the Navajo Nation and U.S. respectively.

The Navajo age-adjusted mortality rates are lower than the U.S. for Heart Disease, Stroke, and Chronic Lower Respiratory Disease.

The age adjusted all-cause mortality rates for the Navajo Nation are 876.68/100,000 and 692.84/100,000 for men and women respectively. The Navajo rate for male all-cause mortality is slightly lower than the 2009 U.S. male all-cause mortality rate of 888.4/100,000, while the Navajo rate for women is higher than the 2009 U.S. female all-cause mortality rate of 625.5/100,000. There are some key health issues for which the Navajo male mortality rate is higher than the Navajo female mortality rate:

¹ National Vital Statistics Reports, Vol. 61, No. 7, October 26, 2012

Cause of death	Male	Female	Male/Female Ratio
Suicide	31.41/100,000	5.30/100,000	5.93
Assault	21.14/100,000	4.44/100,000	4.76
Alcohol Dependence Syndrome	23.88/100,000	6.25/100,000	3.82
Unintentional Injury	193.14/100,000	53.02/100,000	3.64
Hypertensive Disease	15.82/100,000	5.86/100,000	2.70
Chronic Obstructive Pulmonary Disease	13.07/100,000	5.30/100,000	2.47
Diabetes	62.63/100,000	28.18/100,000	2.22

There are differences in mortality rates between the Arizona and New Mexico portions of the Navajo Nation. The age-adjusted mortality rates in Arizona for all causes, male, and females are 744.94/100,000, 861.52/100,000, and 610.00/100,000 respectively. The age-adjusted mortality rates in New Mexico for all causes, males and females are 841.88, 904.49, and 744.80 respectively.

Our goal is not to simply prevent death but to extend life, so another key metric to evaluate mortality data has been used. Years of Potential Life Lost (YPLL) is a metric that accounts for total deaths and age at death simultaneously to further quantify the impact each cause of death has on a population. Many causes of death occur primarily in an older population, and those who die from that cause may do so after they have reached their expected life span. When resources are limited, using YPLL may be helpful in directing resource allocation to have the greatest impact on improving the health and collective life span of a population. Unintentional injuries account for more than 4 times the number of years of potential life lost than cancer although the age adjusted mortality rate is only 1.2 times greater. The 5 leading causes of YPLL are:

- ❖ Unintentional Injuries: 26,622.2 years
- ❖ Cancers: 6,358.9
- ❖ Diseases of Liver & Cirrhosis: 5,753.4
- ❖ Suicide: 5,526.1
- ❖ Heart Disease: 4,783.9

Although difficult to quantify because of different reporting practices between Arizona and New Mexico, alcohol is a major cause of death or major contributor to death among the Navajo Nation. Among deaths reported in New Mexico, alcohol was a reported factor in 23.9% with an additional 2.8% reported as probably influenced by alcohol. After combining New Mexico's results with an estimation of alcohol contributions from Arizona's results, alcohol contributed to between 12.6% and 19.3% of all deaths.

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Table 1: Crude All-Cause Mortality

Group	Count ²	Rate per 100,000
Both Genders	3,991	571.75
Male	2,330	685.93
Female	1,661	463.52

Table 2: 15 Leading Causes of Death, Both Genders

Rank	Cause of Death	Count	Rate per 100,000	Percent of all deaths ³
1	Unintentional Injuries	752	107.73	18.9
2	Cancer	506	72.49	12.7
3	Heart Disease ⁴	485	69.48	12.2
4	Diabetes	228	32.66	5.7
5	Chronic Liver Disease & Cirrhosis	224	32.09	5.6
6	Influenza & Pneumonia	181	25.93	4.6
7	Suicide	119	17.05	3.0
8	Stroke	107	15.33	2.7
9	Septicemia	90	12.89	2.3
10	Dementia	84	12.03	2.1
11	Assault	83	11.89	2.1
12	Alcohol Dependence Syndrome	81	11.60	2.0
13	Renal Failure	77	11.03	1.9
14	Hypertensive Disease	59	8.45	1.5
15	Chronic Obstructive Pulmonary Disease (COPD)	49	7.02	1.2

Noteworthy

The crude all-cause mortality rate is 32% higher for males than females.

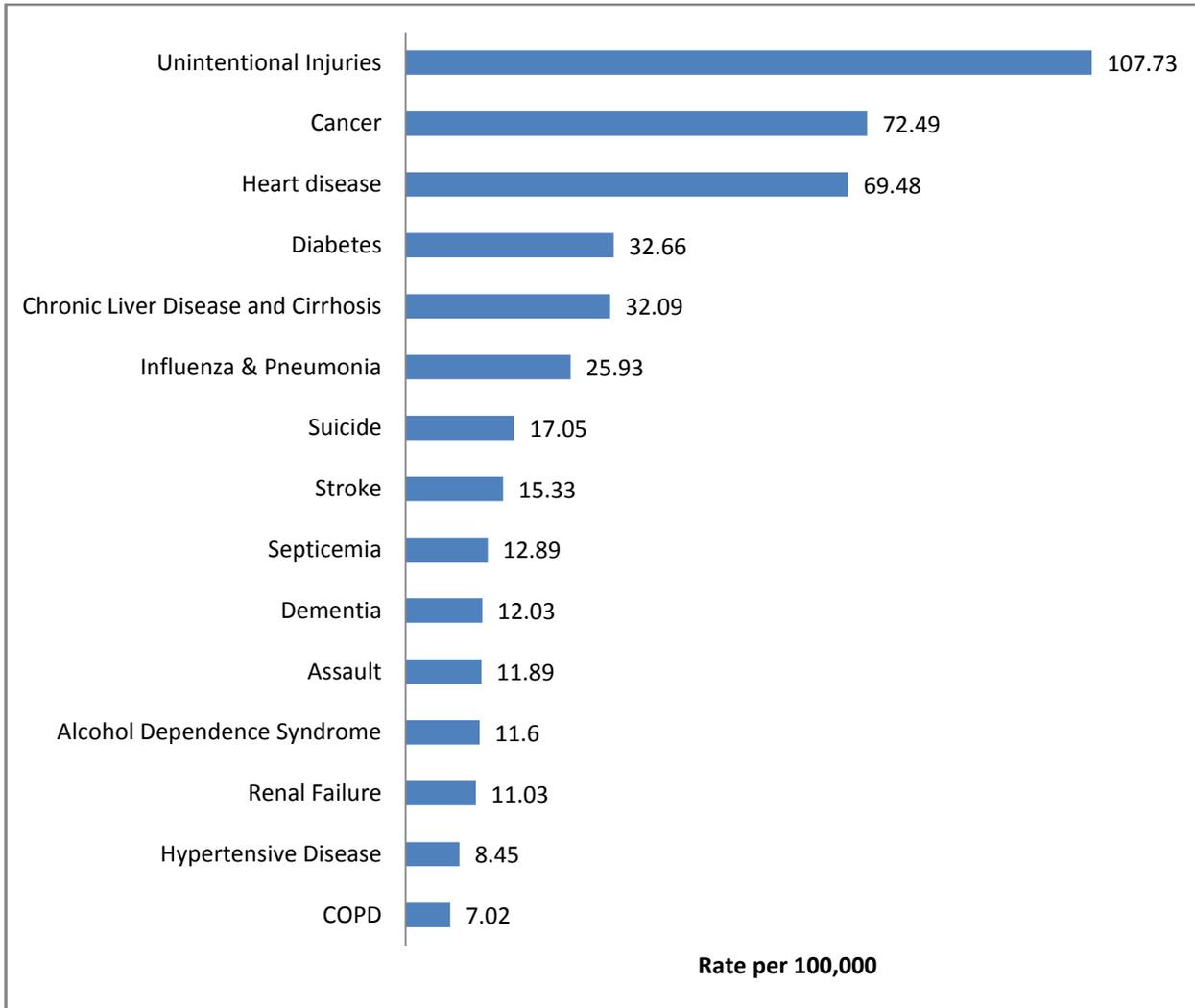
Unintentional Injuries account for nearly 1 in every 5 Navajo deaths. There are nearly 33% more Unintentional Injury deaths than Cancer deaths and 35.5% more than Heart Disease deaths.

² Only 3,975 deaths had a known and reported ICD-10 code for cause of death, 2,319 males and 1,656 females

³ Percent based on known cause (n=3,975)

⁴ Heart disease includes: Chronic rheumatic heart disease, Ischemic heart disease, pulmonary heart disease, and ICD-10 classifications of “other forms of heart disease”

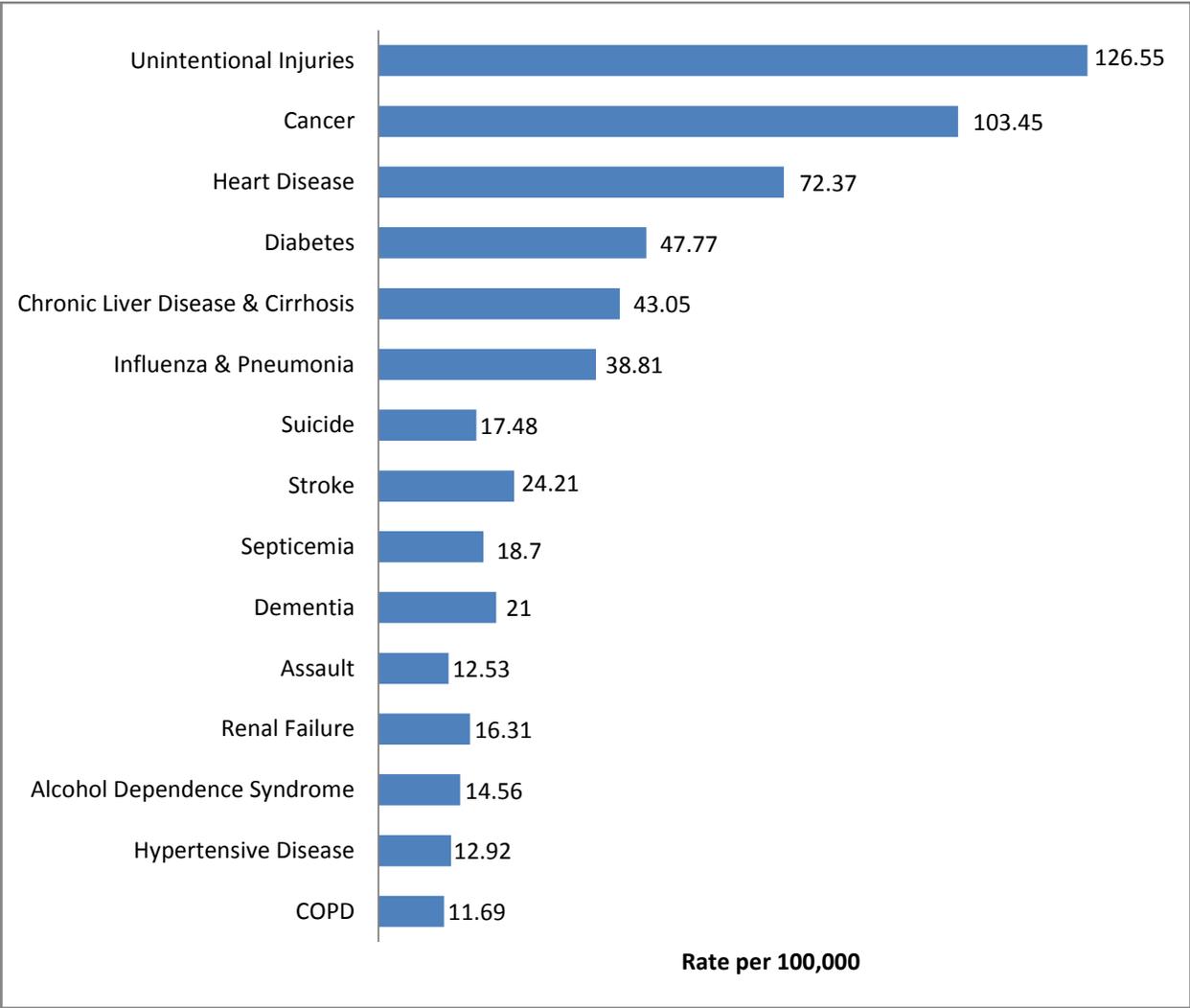
Chart 1: Crude Mortality Rate for the 15 Leading Causes of Death, Both Genders



Noteworthy

The crude mortality rate for Unintentional Injuries is equal to the combined rate for Diabetes, Chronic Liver Disease & Cirrhosis, Influenza & Pneumonia, and Suicide. Unintentional Injuries, Cancer, and Heart Disease, are by far the 3 leading causes of mortality in the Navajo Nation.

Chart 2: Age-Adjusted Mortality Rate for the 15 Leading Causes of Death, Both Genders



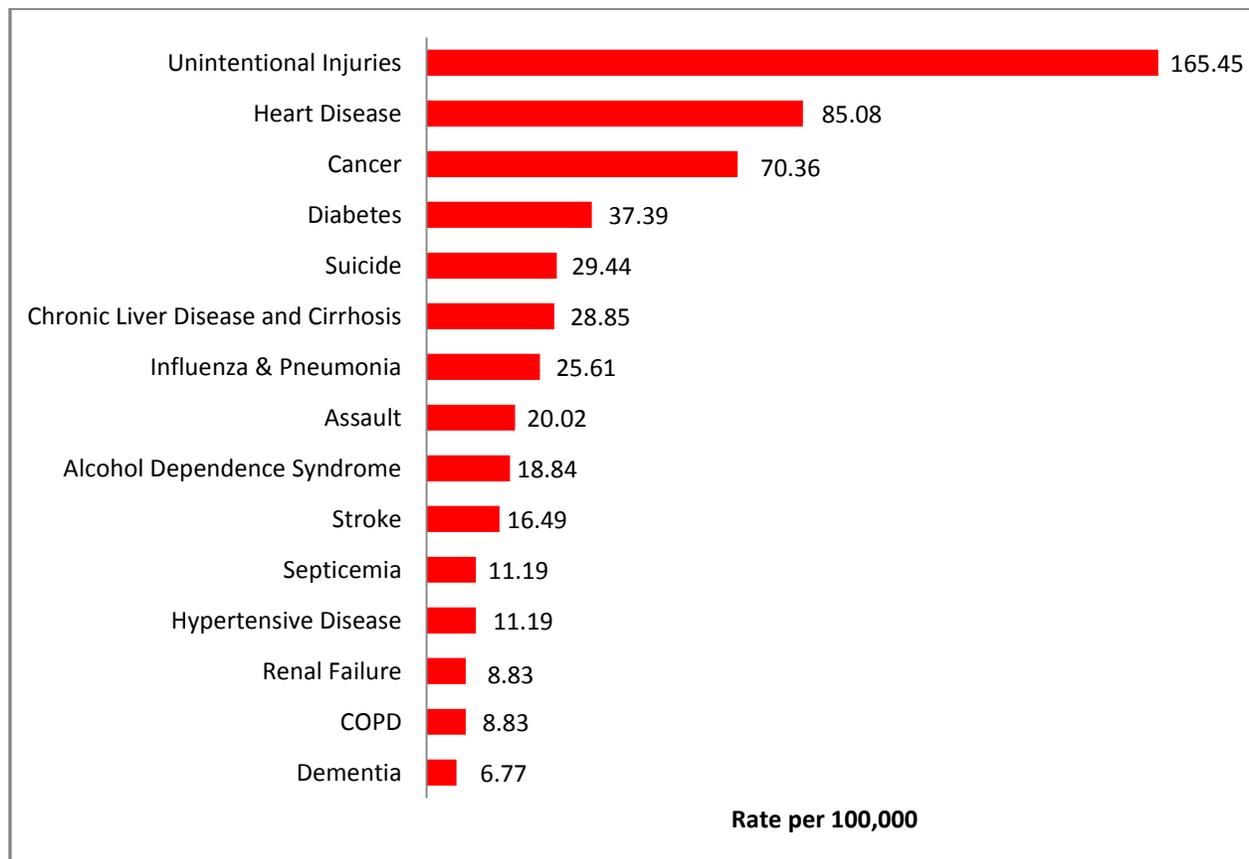
Noteworthy

After adjusting for age there is no change in the order of the 6 leading causes of death, but Stroke, Septicemia and Dementia mortality rates now all exceed Suicide.

Table 3: 15 Leading Causes of Death, Males

Rank	Cause of Death	Count	Rate per 100,000	Percent of all deaths
1	Unintentional Injuries	562	165.45	24.2
2	Heart Disease	289	85.08	12.5
3	Cancer	239	70.36	10.3
4	Diabetes	127	37.39	5.5
5	Suicide	100	29.44	4.3
6	Chronic Liver Disease and Cirrhosis	98	28.85	4.2
7	Influenza & Pneumonia	87	25.61	3.8
8	Assault	68	20.02	2.9
9	Alcohol Dependence Syndrome	64	18.84	2.8
10	Stroke	56	16.49	2.4
11	Septicemia	38	11.19	1.6
11	Hypertensive Disease	38	11.19	1.6
13	Renal Failure	30	8.83	1.3
13	Chronic Obstructive Pulmonary Disease	30	8.83	1.3
15	Dementia	23	6.77	1.0

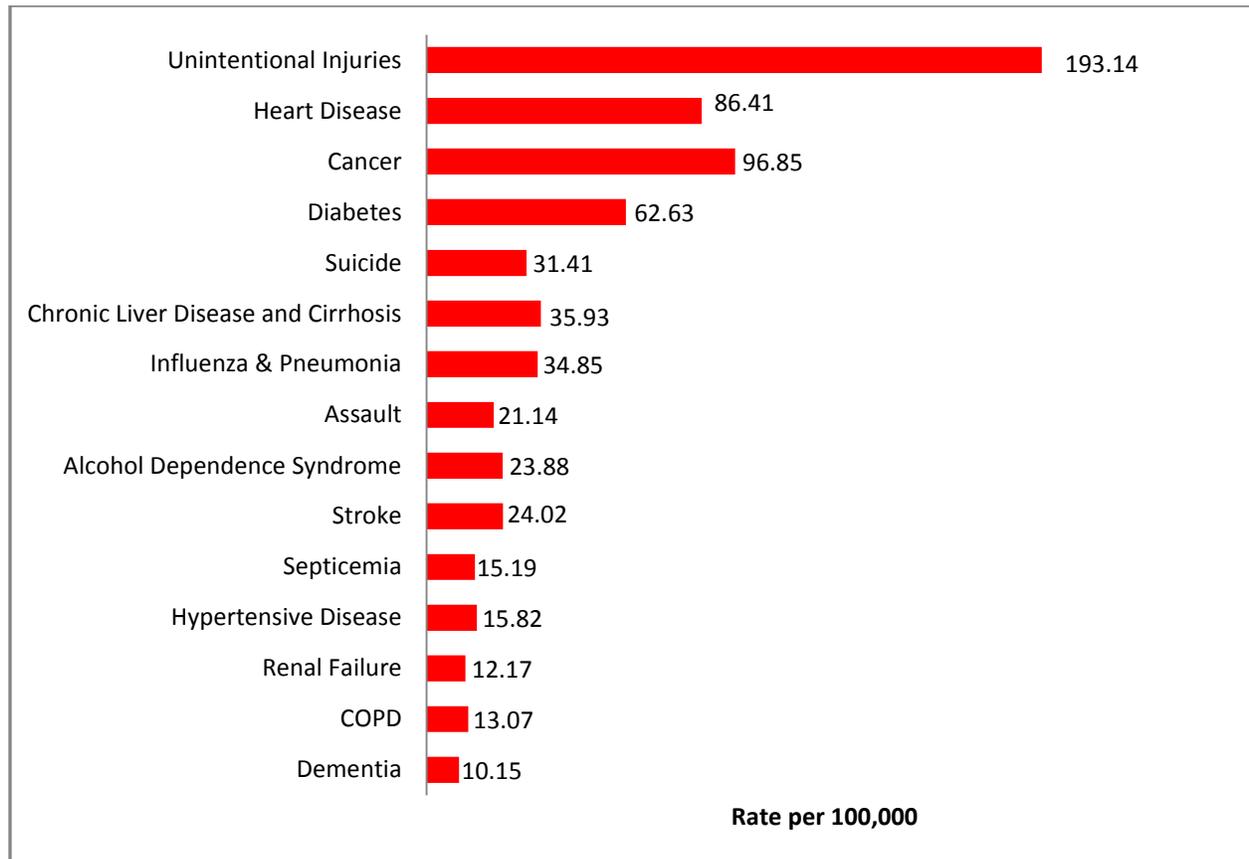
Chart 3: Crude Mortality Rate for the 15 Leading Causes of Death, Males



Noteworthy for Table 3/Chart 3

Among males the mortality rate for Unintentional Injuries is nearly twice that of the next leading cause of death, and account for nearly 1 in 4 male deaths. While the 15 leading causes of death are identical to the total population, the order of these causes are slightly different: Suicide moved up 2 spaces from 7 to 5, Assault moved from 11 to 8, Alcohol Dependence Syndrome moved from 12 to 9, and Hypertensive Disease moved from 14 to 11.

Chart 4: Age-Adjusted Mortality Rate for the 15 Leading Causes of Death, Males



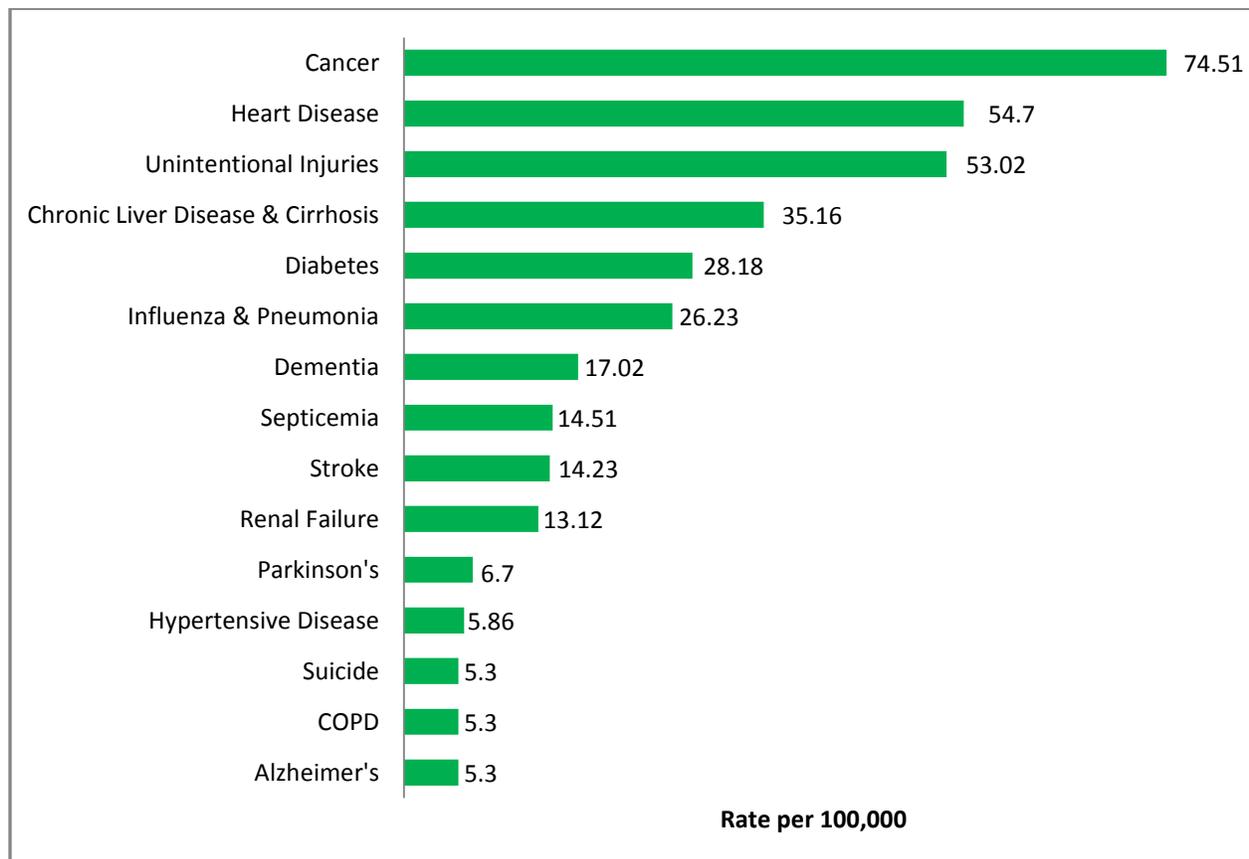
Noteworthy

After adjusting for age Cancer moves from the 3rd leading cause of death to the 2nd. There are large increases in mortality after adjusting for age for many causes of death, but Diabetes has the highest increase at 67.5%.

Table 4: 15 Leading Causes of Death, Females

Rank	Cause of Death	Count	Rate per 100,000	Percent of all deaths
1	Cancer	267	74.51	16.1
2	Heart Disease	196	54.70	11.8
3	Unintentional Injuries	190	53.02	11.5
4	Chronic Liver Disease & Cirrhosis	126	35.16	7.6
5	Diabetes	101	28.18	6.1
6	Influenza & Pneumonia	94	26.23	5.7
7	Dementia	61	17.02	3.7
8	Septicemia	52	14.51	3.1
9	Stroke	51	14.23	3.1
10	Renal Failure	47	13.12	2.8
11	Parkinson's	24	6.70	1.4
12	Hypertensive Disease	21	5.86	1.3
13	Suicide	19	5.30	1.1
13	Chronic Obstructive Pulmonary Disease	19	5.30	1.1
13	Alzheimer's	19	5.30	1.1

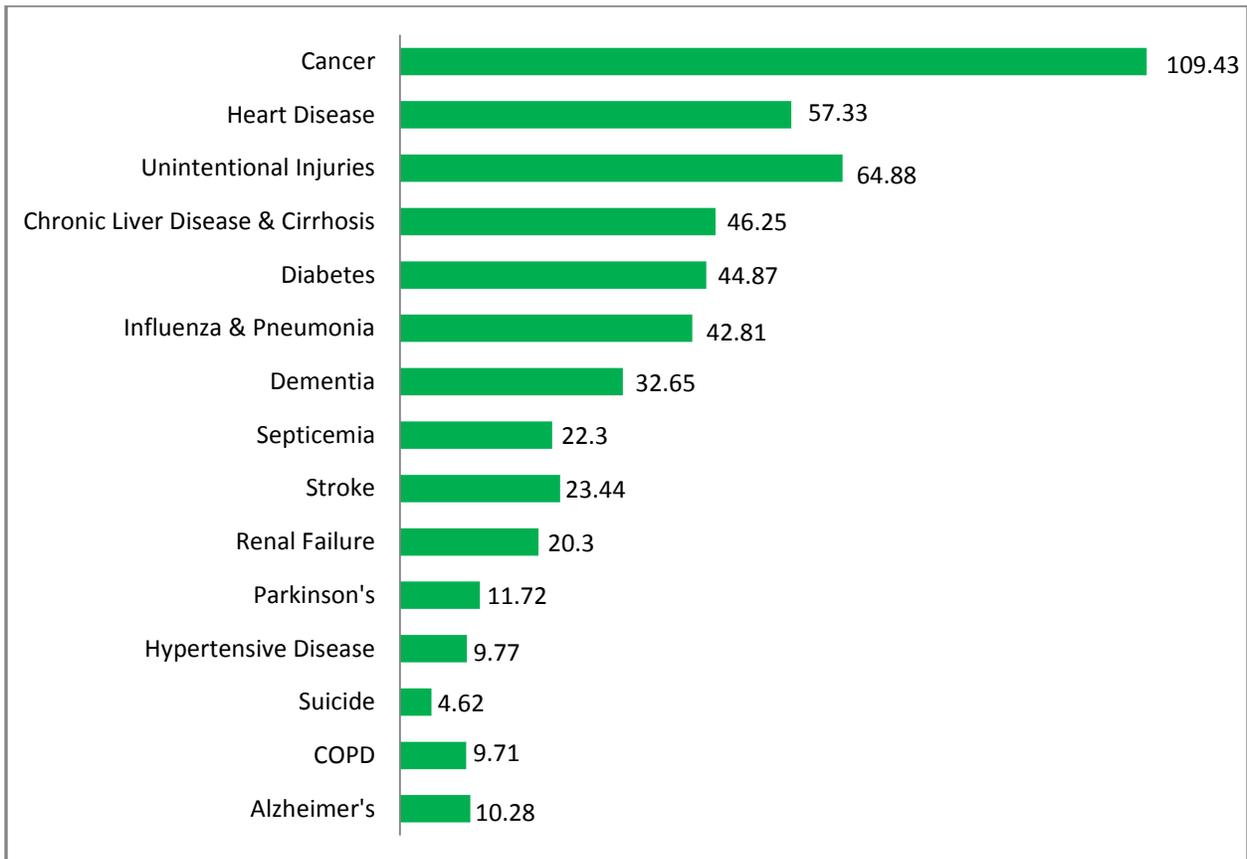
Chart 5: Crude Mortality Rate for the 15 Leading Causes of Death, Females



Noteworthy for Table4/Chart 5

Cancer is the leading cause of death among Navajo females, while the Unintentional Injury crude mortality rate is approximately one third the male rate. Parkinson's and Alzheimer's disease are among the 15 leading causes of death for females, but are not seen in the top 15 among males. Assault and Alcohol Dependence Syndrome are not seen among the 15 leading causes of death among females, but are seen among males.

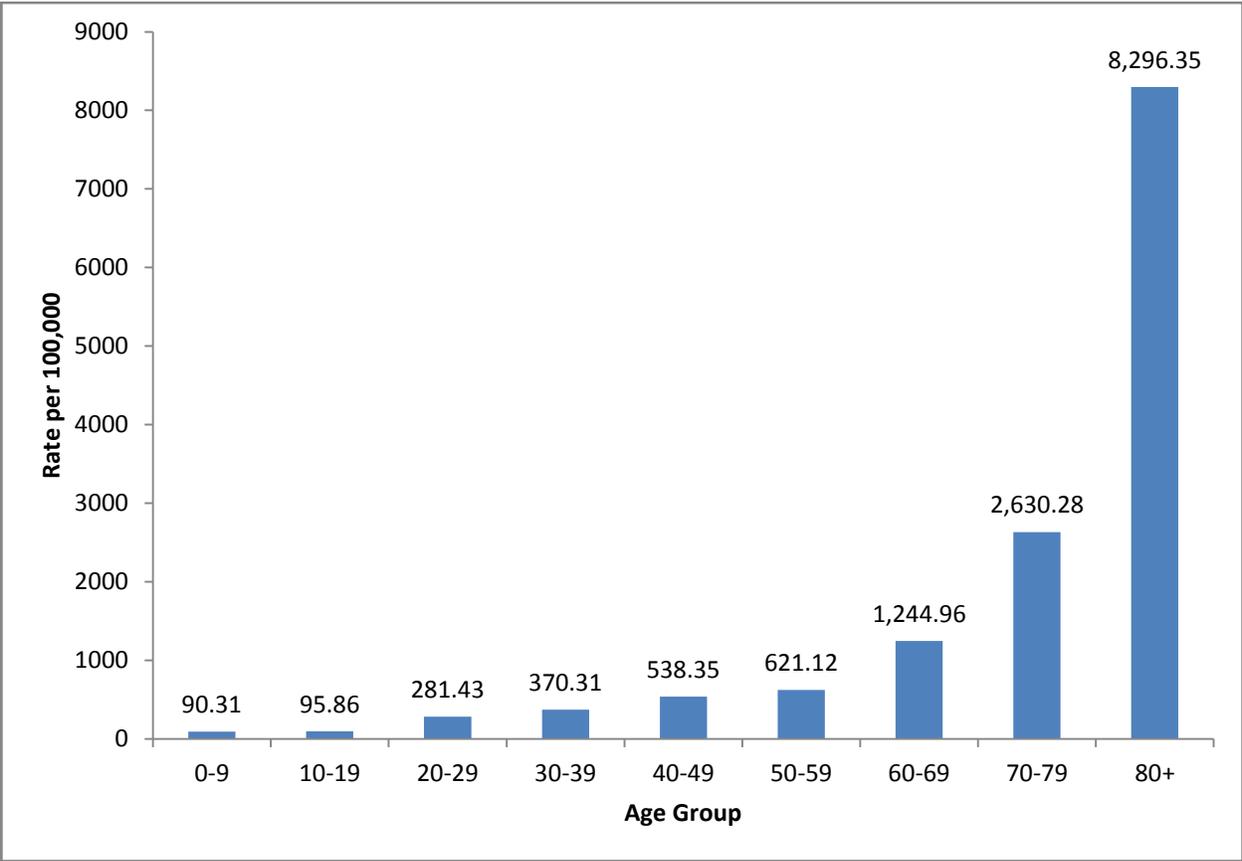
Chart 6: Age-Adjusted Mortality Rate for the 15 Leading Causes of Death, Females



Noteworthy

After adjusting for age Unintentional Injuries becomes the 2nd leading cause of death. There are large increases in mortality after adjusting for age for many of the leading causes of death, but Alzheimer's (94.0%) and Dementia (91.8%) have the largest increases.

Chart 7: All Causes Mortality Rate, by Age Group



Noteworthy

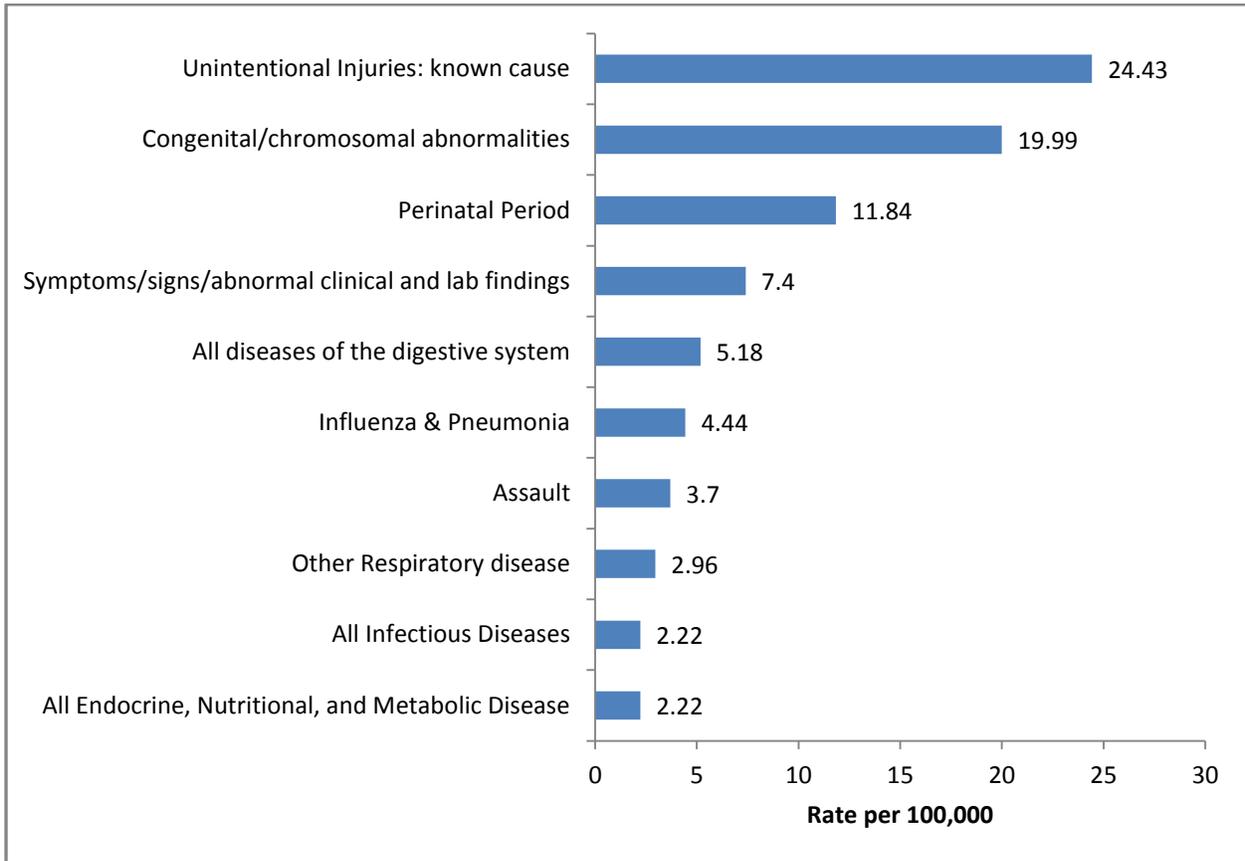
There is a definite gradient in all-cause mortality by age group. The largest increases in mortality rates are from ages 10-19 to ages 20-29 (193.6%), and from 70-79 to 80+ (215.4%).

Table 5: Leading Causes of Death, Ages Birth to 9 (122 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries	33	24.43	27.0%
2	Congenital malformations, deformations and chromosomal abnormalities	27	19.99	22.1%
3	Certain conditions originating in the perinatal period	16	11.84	13.1%
4	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified ⁵	10	7.40	8.2%
5	All diseases of the digestive system	7	5.18	5.7%
6	Influenza & Pneumonia	6	4.44	4.9%
7	Assault	5	3.70	4.1%
8	Other Respiratory Disease (non-Influenza & Pneumonia)	4	2.96	3.3%
9	All Infectious Diseases	3	2.22	2.5%
9	All Endocrine, Nutritional, and Metabolic Disease	3	2.22	2.5%

⁵ This disease category includes Sudden Infant Death Syndrome (SIDS), and other deaths without a clear, well defined cause

Chart 8: Leading Causes of Death, Ages Birth to 9



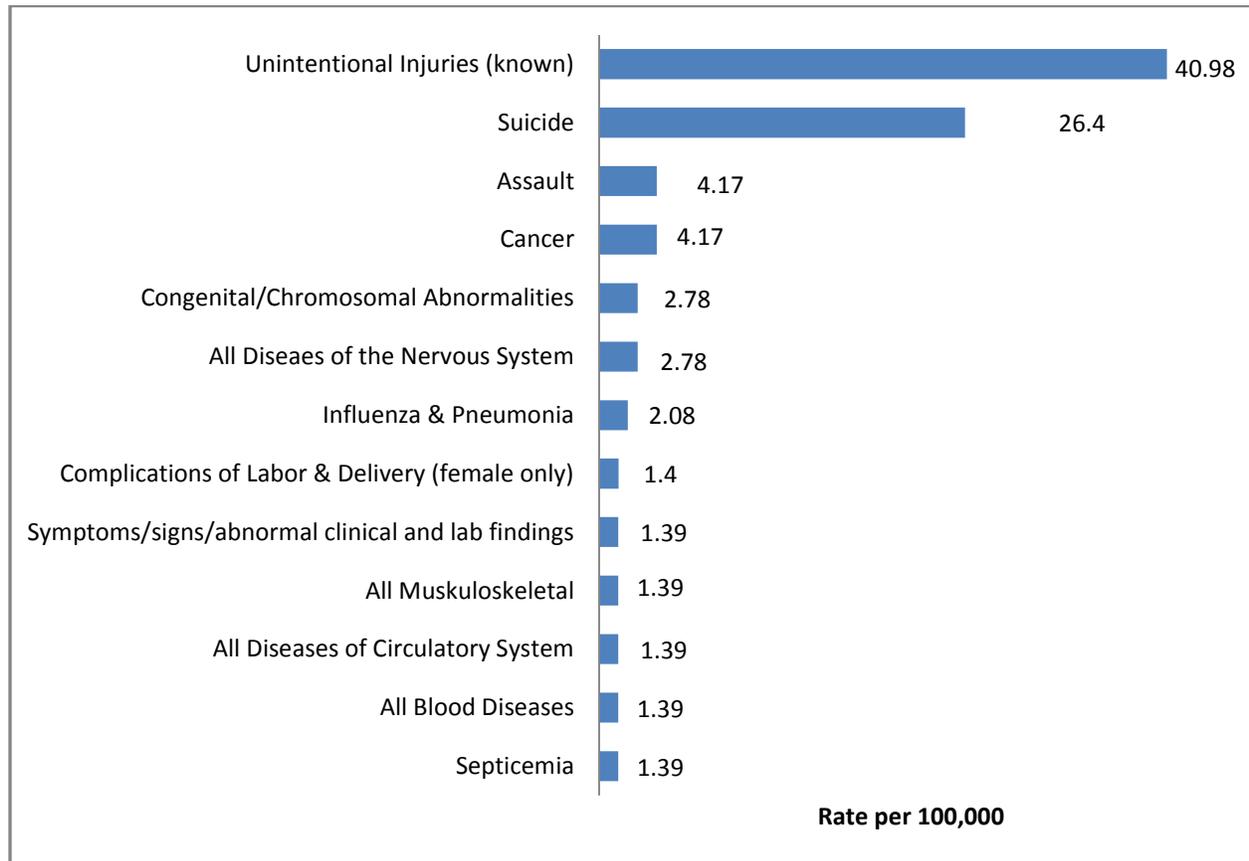
Noteworthy for Table 5/Chart 8

Because of low numbers for most causes of death (only 122 across 5 years of data), most causes are grouped into broad categories. The leading causes among Unintentional Injuries are pedestrian injury (12), and occupant in a car crash (10), and other land transport accidents (8). The leading Congenital Malformations are for chromosomal abnormalities (8), other (7) and the circulatory system (5). The leading condition in the Perinatal Period is for “disorders related to length of gestation and fetal growth” (5).

Table 6: Leading Causes of Death, Ages 10 to 19 (138 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries: known cause	59	40.98	42.8%
2	Suicide	38	26.40	27.5%
3	Assault	6	4.17	4.3%
3	Cancer	6	4.17	4.3%
5	Congenital malformations, deformations and chromosomal abnormalities	4	2.78	2.9%
5	All diseases of nervous system	4	2.78	2.9%
7	Influenza & Pneumonia	3	2.08	2.2%
7	All Infectious Diseases	3	2.08	2.2%
9	Complications of labor & delivery ⁶	1	1.40	0.7%
10	5 tied	2	1.39	1.4%

Chart 9: Leading Causes of Death, Ages 10-19



⁶ Ranking is based on rate and rate for Complications of Labor & Delivery was calculated using only the female population

Noteworthy

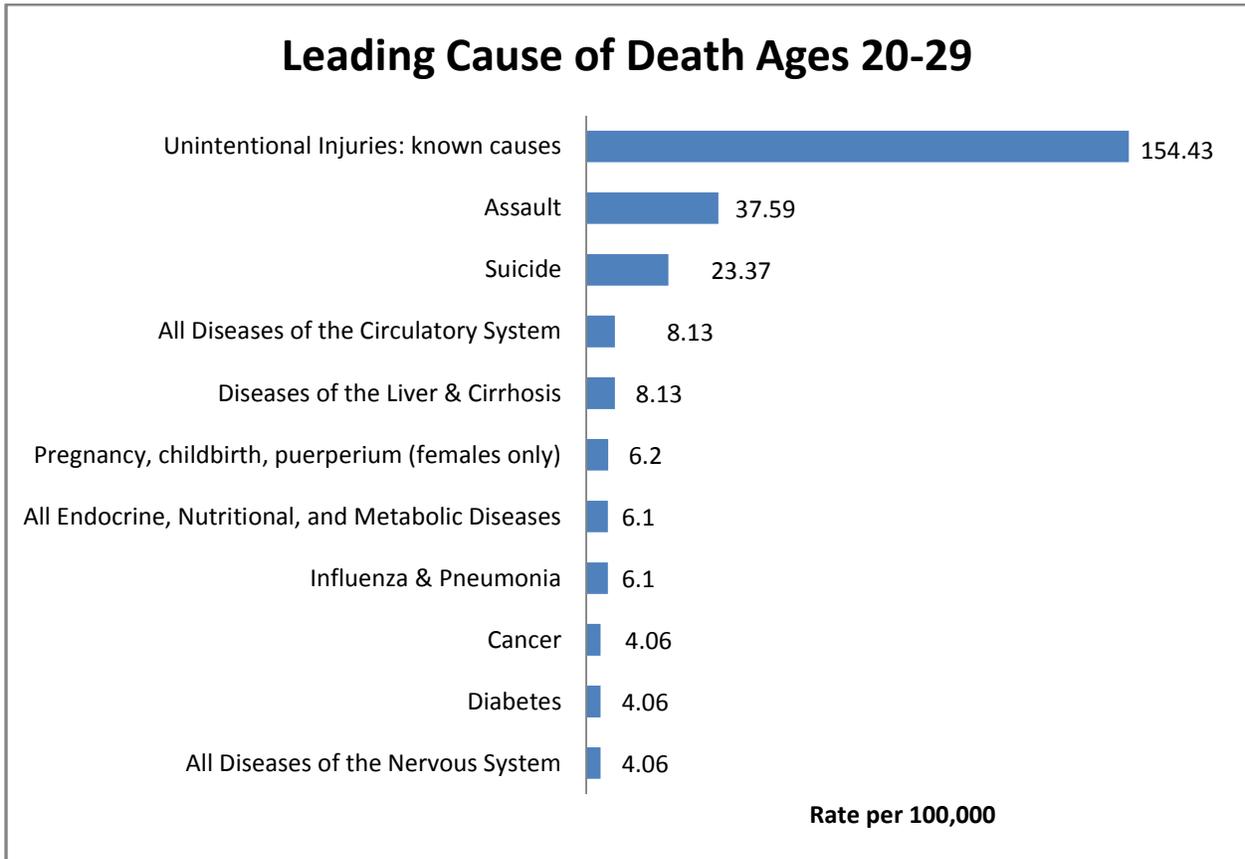
Table 6/chart 9: Only 4 causes of death have an average of one death per year. The leading Unintentional Injury causes are occupant in a car crash (30), pedestrian (8), and drowning (5). The most common method for Suicide is hanging/strangulation/suffocation (26). All of the deaths by Assault are due to a sharp object.

Table 7: Leading Causes of Death, Ages 20 to 29 (277 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries: known causes	152	154.43	54.9%
2	Assault	37	37.59	13.4%
3	Suicide	23	23.37	8.3%
4	All Diseases of the Circulatory System	8	8.13	2.9%
4	Diseases of Liver & Cirrhosis	8	8.13	2.9%
6	Pregnancy, childbirth, puerperium ⁷	3	6.20	1.1%
7	All Endocrine, Nutritional, and Metabolic Diseases	6	6.10	2.2%
7	Influenza & Pneumonia	6	6.10	2.2%
9	Cancer	4	4.06	1.4%
9	Diabetes	4	4.06	1.4%
9	All Diseases of the Nervous System	4	4.06	1.4%

⁷ Ranking is based on rate and rate for Pregnancy, childbirth, puerperium was calculated using only the female population

Chart 10: Leading Causes of Death, Ages 20-29



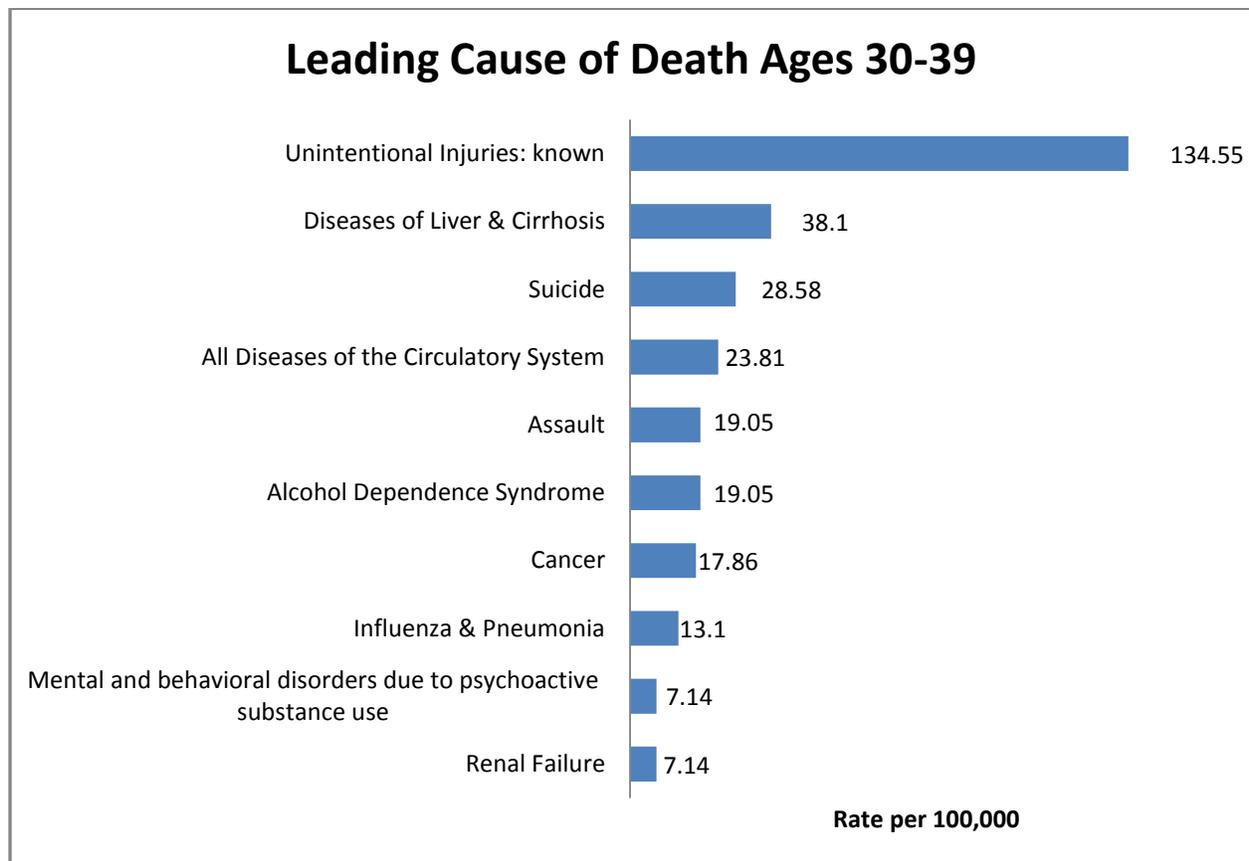
Noteworthy

Table 7/chart 10: Unintentional Injury, Assault and Suicide are the leading causes of death for Navajos 20-29 by a large margin. The leading causes of Unintentional Injury, among known causes, are occupant in a car crash (89), pedestrian (22), accidental exposure to alcohol (10), fall (6), and poisoning (including medical) (6). Among those with a specified weapon used in an assault, half the assaults involve a firearm and half involve a sharp object (13 each). The most common known methods of suicide are hanging/strangulation/suffocation (13) and firearm (4).

Table 8: Leading Causes of Death, Ages 30 to 39 (311 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries	113	134.55	36.3%
2	Diseases of Liver & Cirrhosis	32	38.10	10.3%
3	Suicide	24	28.58	7.7%
4	All diseases of circulatory system	20	23.81	6.4%
5	Assault	16	19.05	5.1%
5	Alcohol Dependence Syndrome	16	19.05	5.1%
7	Cancer	15	17.86	4.8%
8	Influenza & Pneumonia	11	13.10	3.5%
9	Mental & Behavioral Disorders due to Psychoactive substance abuse (non-alcohol)	6	7.14	1.9%
9	Renal Failure	6	7.14	1.9%

Chart 11: Leading Causes of Death, Ages 30 to 39



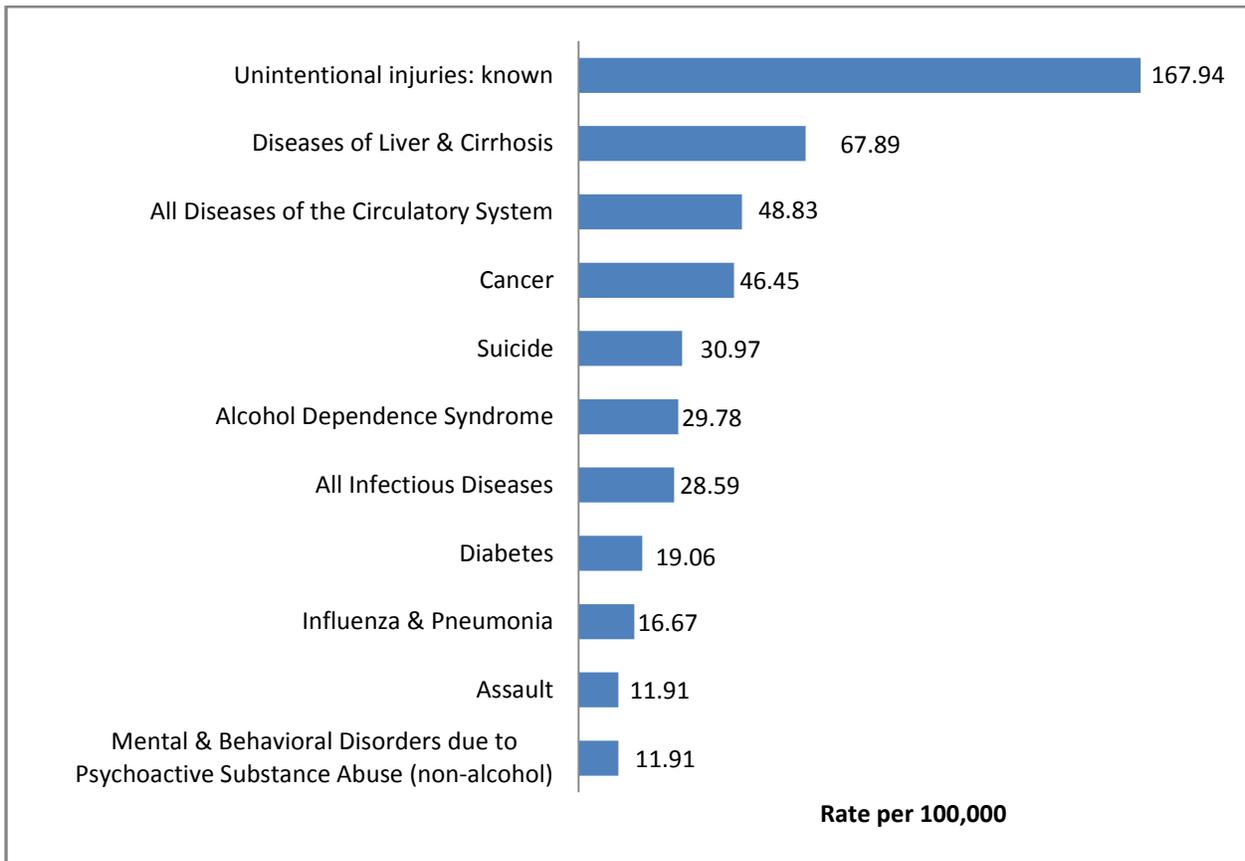
Noteworthy

Unintentional Injuries continue to be the leading cause of death. The leading known causes of Unintentional Injury are occupant in a car crash (49), pedestrian (21), alcohol poisoning (14), exposure to cold (6), and drowning (5). Alcohol Dependence Syndrome emerges as a leading cause of death for the first time among the age groups. Suicide continues to be a large problem with 18 completed by hanging/strangulation/suffocation and 3 by firearm. **There are no suicide deaths for women 30-39.** Among the assaults 5 were done with sharp objects and one with a firearm. The leading cause of Cancer death is cancer of the digestive system (7).

Table 9: Leading Causes of Death, Ages 40 to 49 (452 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries: known cause	141	167.94	31.2%
2	Diseases of Liver & Cirrhosis	57	67.89	12.6%
3	All Diseases of the Circulatory System	41	48.83	9.1%
4	Cancer	39	46.45	8.6%
5	Suicide	26	30.97	5.8%
6	Alcohol Dependence Syndrome	25	29.78	5.5%
7	All infectious disease	24	28.59	5.3%
8	Diabetes	16	19.06	3.5%
9	Influenza & Pneumonia	14	16.67	3.1%
10	Assault	10	11.91	2.2%
10	Mental & Behavioral Disorders due to Psychoactive substance abuse (non-alcohol)	10	11.91	2.2%

Chart 12: Leading Causes of Death, Ages 40 to 49



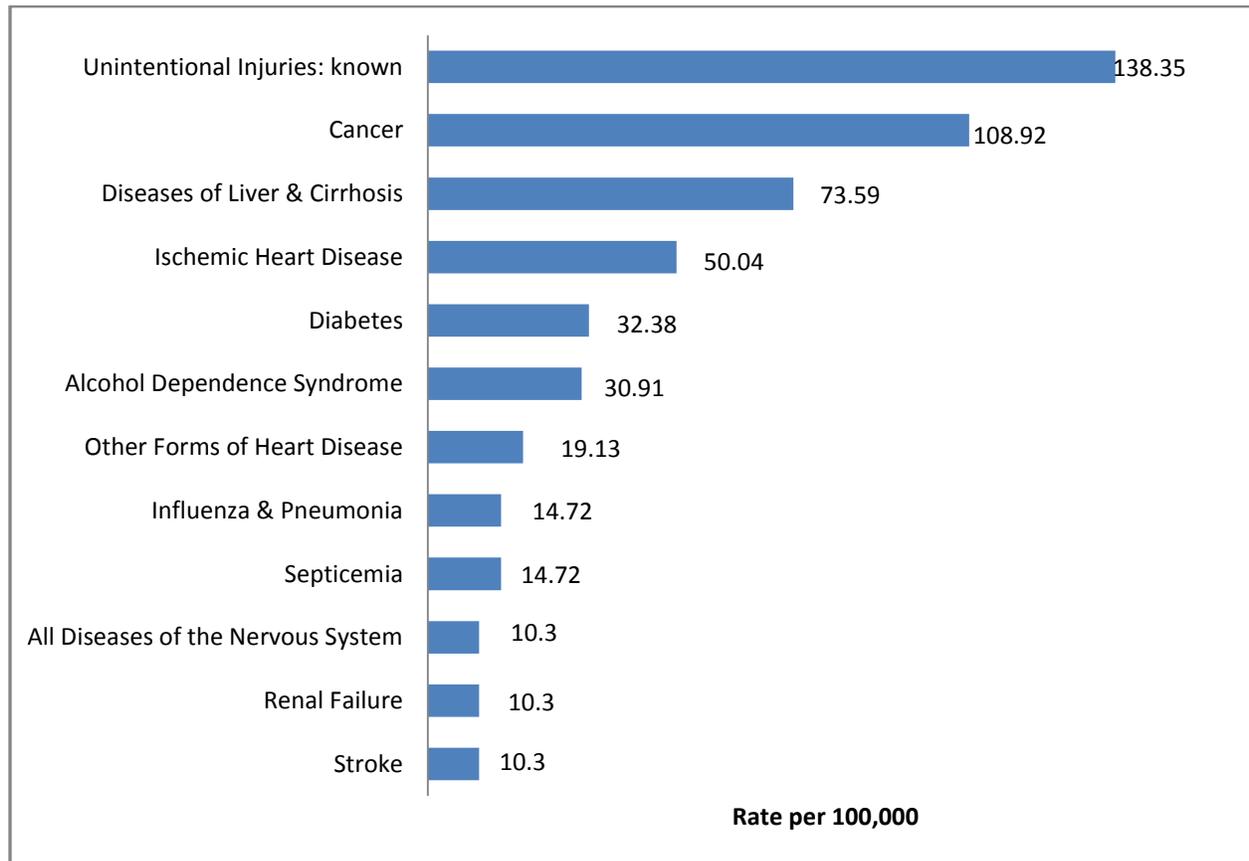
Noteworthy

The leading causes of Unintentional Injury death are occupant in a car crash (41), pedestrian (25), alcohol poisoning (22), exposure to cold (20), and falls (12). Nearly half (19) of the Diseases of the Circulatory System are due to ischemic heart disease, 5 were due to hypertensive disease and 5 due to stroke. The only type of Cancer that causes more than 10 deaths is cancer of the digestive system (15). Fifteen of the Suicides are done by hanging/strangulation/suffocation, and 5 with firearms. Four of the Assaults are done with a sharp object, one with a firearm, and 5 by unknown method.

Table 10: Leading Causes of Death, Ages 50 to 59 (422 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Unintentional Injuries: known causes	94	138.35	22.3%
2	Cancer	74	108.92	17.5%
3	Diseases of Liver & Cirrhosis	50	73.59	11.8%
4	Ischemic heart disease	34	50.04	8.1%
5	Diabetes	22	32.38	5.2%
6	Alcohol Dependence Syndrome	21	30.91	5.0%
7	Other forms of heart disease	13	19.13	3.1%
8	Influenza & Pneumonia	10	14.72	2.4%
8	Septicemia	10	14.72	2.4%
10	3 tied	7	10.30	1.7%

Chart 13: Leading Causes of Death, Ages 50 to 59



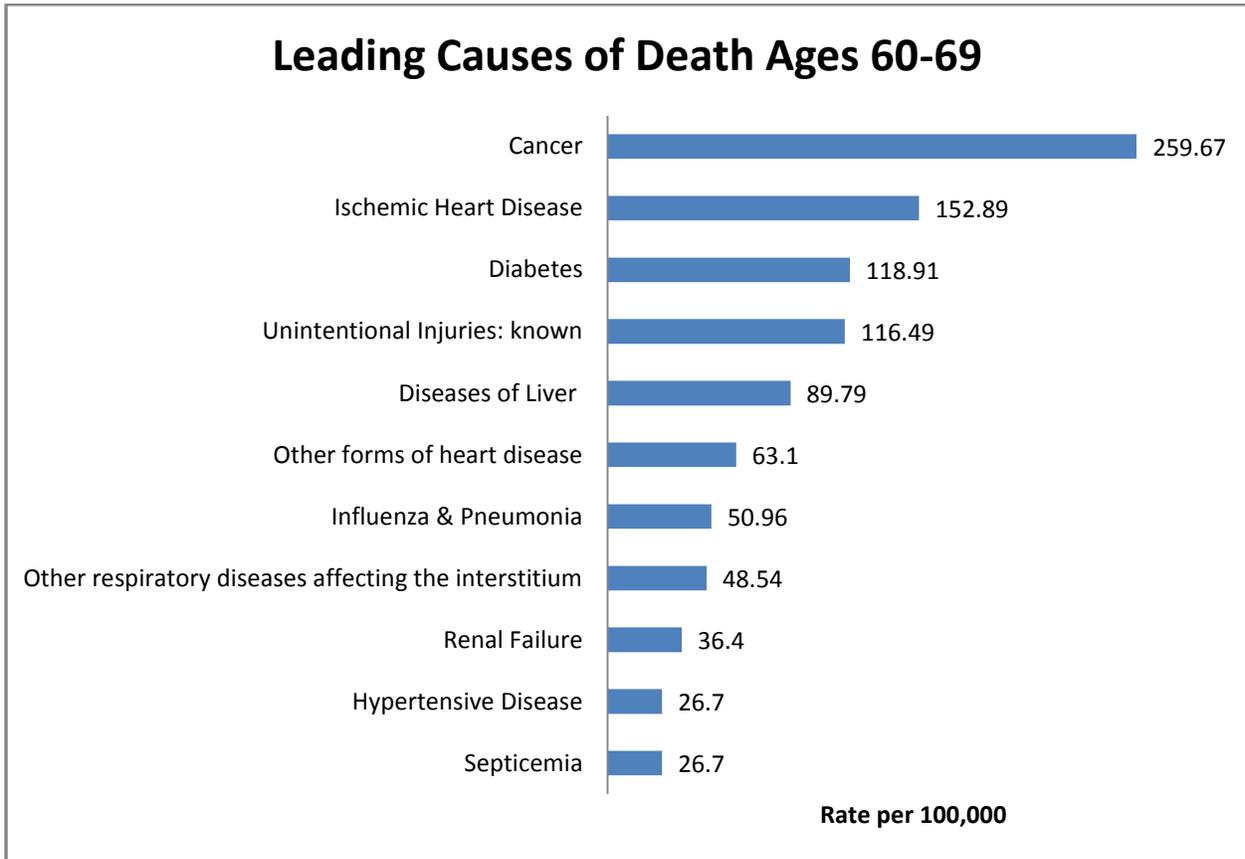
Noteworthy

Table 10/Chart 13: There is a large drop in Unintentional Injury death compared to the preceding age group, and the leading causes among Unintentional Injury are occupant in a car crash (25), pedestrian (16), alcohol poisoning (15), and exposure to cold (15). Suicide and Assault are no longer represented in the 10 leading causes of death by age group. The leading causes of Cancer death are: secondary and ill-defined (11), breast (10), lung (6), lymphatic and haematopoietic tissue (6), and stomach (6).

Table 11: Leading Causes of Death, Ages 60 to 69 (513 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Cancer	107	259.67	20.9%
2	Ischemic Heart Disease	63	152.89	12.3%
3	Diabetes	49	118.91	9.6%
4	Unintentional Injuries	48	116.49	9.4%
5	Diseases of Liver	37	89.79	7.2%
6	Other forms of heart disease	26	63.10	5.1%
7	Influenza & Pneumonia	21	50.96	4.1%
8	Other respiratory diseases principally affecting the interstitium	20	48.54	3.9%
9	Renal Failure	15	36.40	2.9%
10	Hypertensive Disease	11	26.70	2.1%
10	Septicemia	11	26.70	2.1%

Chart 14: Leading Causes of Death, Ages 60 to 69



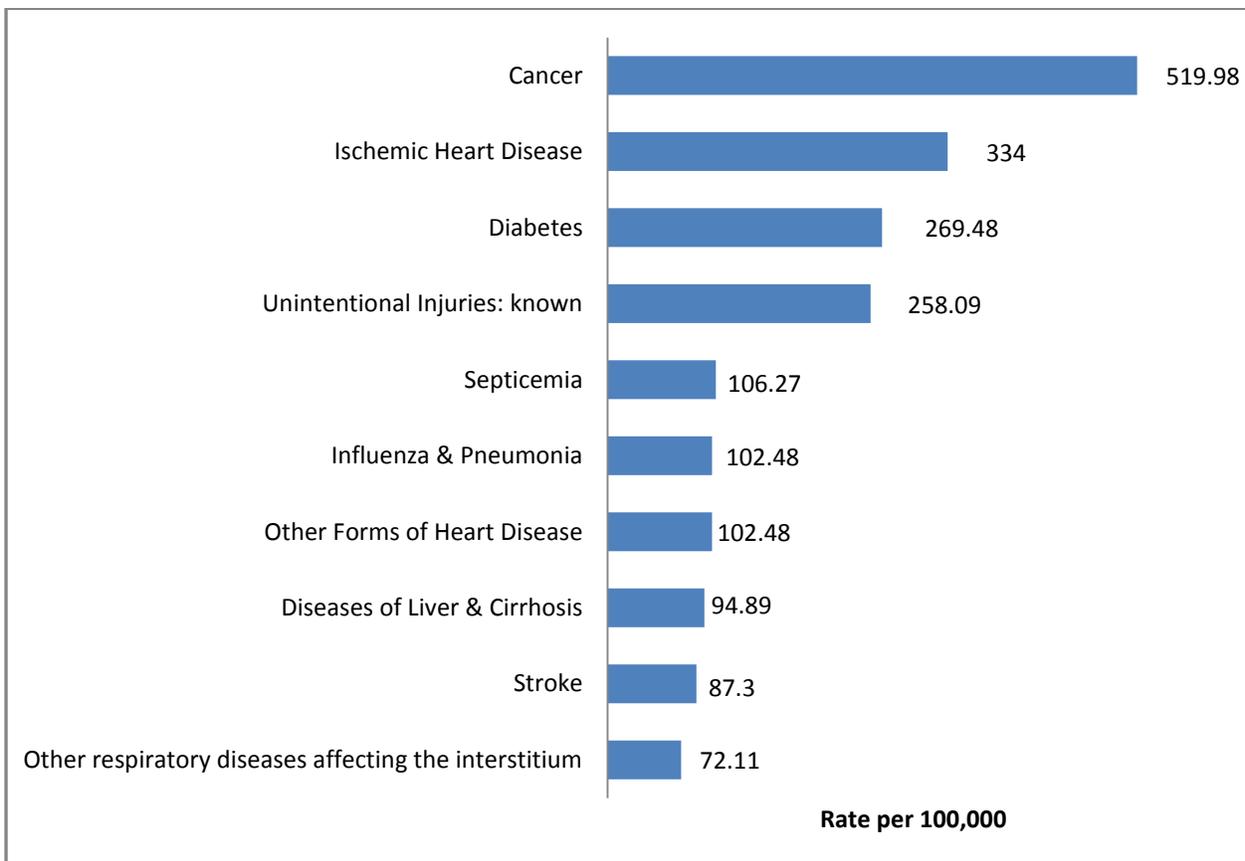
Noteworthy

For the first time the leading cause of death for a 10 year age group isn't Unintentional Injuries. The 5 leading types of Cancer are: lymphatic and haematopoietic tissues (14), colon (11), stomach (11), secondary and ill-defined (11), breast (6), and prostate (6). The diabetes mortality rate jumps from 32.38/100,000 for the 50-59 age group to 118.91 for the 60-69 age group.

Table 12: Leading Causes of Death, Ages 70 to 79 (693 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Cancer	137	519.98	19.8%
2	Ischemic Heart Disease	88	334.00	12.7%
3	Diabetes	71	269.48	10.2%
4	Unintentional Injuries	68	258.09	9.8%
5	Septicemia	28	106.27	4.0%
6	Influenza & Pneumonia	27	102.48	3.9%
6	Other forms of heart disease	27	102.48	3.9%
8	Diseases of Liver & Cirrhosis	25	94.89	3.6%
9	Stroke	23	87.30	3.3%
10	Other respiratory diseases principally affecting the interstitium	19	72.11	2.7%

Chart 15: Leading Causes of Death, Ages 70 to 79



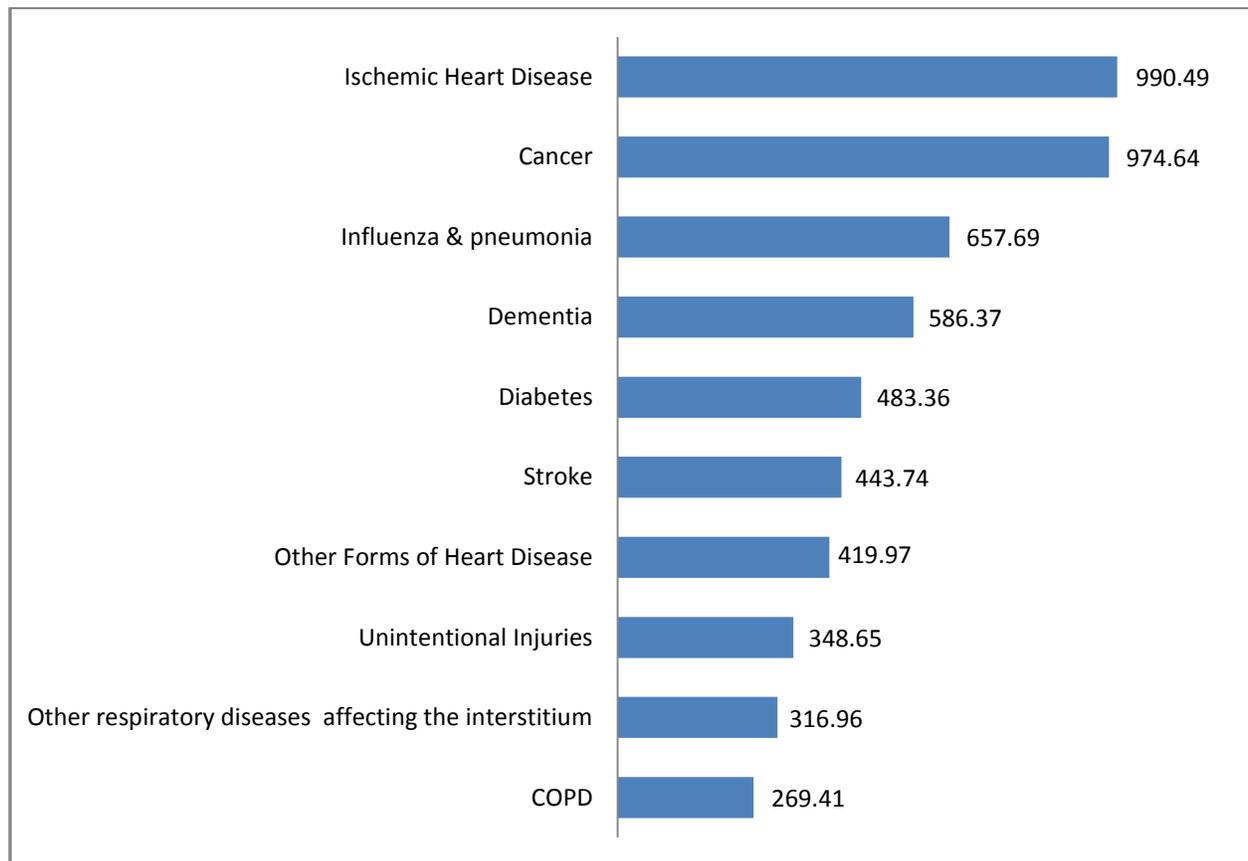
Noteworthy

Table 12/Chart 15: The 5 leading types of Cancer are: secondary and ill-defined (19), colon (11), liver (11), lymphatic and haematopoietic tissue (9), and prostate (9).

Table 13: Leading Causes of Death, Ages 80 and Older (1,047 total deaths)

Rank	Cause of death	Count	Rate per 100,000	Percent of all
1	Ischemic Heart Disease	125	990.49	11.9%
2	Cancer	123	974.64	11.7%
3	Influenza & Pneumonia	83	657.69	7.9%
4	Dementia	74	586.37	7.1%
5	Diabetes	61	483.36	5.8%
6	Stroke	56	443.74	5.3%
7	Other forms of heart disease	53	419.97	5.1%
8	Unintentional Injuries	44	348.65	4.2%
9	Other respiratory diseases principally affecting the interstitium	40	316.96	3.8%
10	Chronic Obstructive Pulmonary Disease	34	269.41	3.2%

Chart 16: Leading Causes of Death, Ages 80 and Older



Noteworthy

Ischemic heart disease has become the leading cause of death for an age group for the first time, and Influenza & Pneumonia rates have increased by nearly 6 ½ times above the preceding age group. The 5 leading causes of Cancer are: secondary and ill-defined (23), prostate (12), Colon (10), stomach (10), and lung (9).

Table 14: Navajo Nation 2006-2009 Age-Adjusted Death Rates for All Causes and Leading Causes of Death, Both Genders

Cause	Age-Adjusted	Crude Rate	% Increase from Crude to Age-Adjusted
All Deaths ⁸	785.84	571.75	37.4
All Females	692.84	465.19	48.9
All Males	881.73	695.39	27.8
Unintentional Injuries	126.55	107.73	17.5
Cancer	103.45	72.49	42.7
Heart Disease ⁹	103.71	69.48	4.2
Diabetes	47.77	32.66	46.3
Chronic Liver Disease & Cirrhosis	43.05	32.09	34.2
Influenza & Pneumonia	38.81	25.93	49.7
Suicide	17.49	17.05	2.6
Stroke	24.21	15.33	57.9
Septicemia	18.70	12.89	45.1
Dementia	21.00	12.03	74.6
Assault	12.53	11.89	5.4
Renal Failure	16.31	11.03	47.9
Alcohol Dependence Syndrome	14.56	11.60	25.5
Hypertensive Disease	12.92	8.45	52.9
Chronic Obstructive Pulmonary Disease	11.69	7.02	66.5

⁸ All Deaths includes 16 deaths with missing cause of death, All Females includes 5 deaths with missing cause of death, All Males includes 11 deaths with missing causes of death

⁹ Includes chronic rheumatic heart disease, ischemic heart disease, pulmonary heart disease, and other forms of heart disease

Table 15: Navajo Nation 2006-2009 Age-Adjusted Mortality Rates & U.S. 2007, 2008, 2009 Age Adjusted Mortality Rates

Cause	Navajo	U.S. 2007 ¹⁰	U.S. 2008 ¹¹	U.S. 2009 ¹²
All Deaths	782.00	760.2	758.3	741.1
All Females	692.84	643.4	643.4	625.5
All Males	876.68	905.6	900.6	888.4
Unintentional Injuries	126.55	40.0	38.8	37.3
Cancer	103.45	178.4	175.3	173.2
Heart Disease	103.71	190.9	186.5	180.1
Diabetes	47.77	22.5	21.8	20.9
Chronic Liver Disease & Cirrhosis	43.05	9.1	9.2	9.2
Influenza & Pneumonia	38.81	16.2	16.9	16.2
Stroke	24.21	42.2	40.7	38.9
Dementia	21.00	NA	NA	NA
Septicemia	18.70	11.0	11.1	10.9
Suicide	17.49	11.3	11.6	11.8
Renal Failure and Nephritis	17.64	14.5	14.8	14.9
Chronic Lower Respiratory Disease	14.90	40.8	44.0	42.3
Alcohol Dependence Syndrome ¹³	14.56	NA	NA	NA
Hypertensive Disease	12.92	7.4	7.7	7.7
Assault	12.53	6.1	5.9	5.5
Alzheimer's ¹⁴	7.85	22.7	24.4	23.5
Parkinson's ¹⁵	10.75	6.4	6.4	6.4

Noteworthy

Age-adjusted mortality for Navajo is much higher than the U.S. for Unintentional Injuries (3.39 times greater), Diabetes (2.29 times greater), Chronic Liver Disease (4.68 times greater), Influenza & Pneumonia (2.40 times greater), and Assault (2.28 times greater). Age-adjusted mortality for Navajo is much lower for Cancer, Heart Disease, Stroke, Chronic Lower Respiratory Disease, and Alzheimer's.

¹⁰ Source: National Vital Statistics Reports, Volume 58, Number 19, *Deaths: Final Data for 2007*

¹¹ Source: National Vital Statistics Reports, Volume 59, Number 10, *Deaths: Final Data for 2008*

¹² Source: National Vital Statistics Reports, Volume 60, Number 3, *Deaths: Final Data for 2009*

¹³ This cause of death was not isolated in the National Vital Statistics Reports, however alcohol induced deaths had an age adjusted rate of 7.3/100,000 in 2007. Alcohol induced death in the 2007 report included many more codes than Alcohol Dependence Syndrome alone.

¹⁴ Alzheimer's was the 6th leading cause of death in the U.S. for all 3 comparison years

¹⁵ Parkinson's was the 14th leading cause of death in the U.S. for all 3 comparison years

Table 16: Navajo Nation 2006-2009 Age-Adjusted Mortality Rates & Arizona 2006, 2007, 2008, & 2009¹⁶
Age Adjusted Mortality Rates¹⁷

Cause	Navajo 2006-2009	Arizona 2006	Arizona 2007	Arizona 2008	Arizona 2009
All Deaths	782.00	727.3	663.2	659.6	653.2
Unintentional Injuries	126.55	51.2	46.6	44.7	43.1
Cancer	103.45	154.7	148.0	145.5	147.2
Heart Disease	116.62	166.1	149.5	149.3	145.9
Diabetes	47.77	18.9	17.0	17.0	15.7
Chronic Liver Disease & Cirrhosis	43.05	11.4	11.3	11.7	12.2
Influenza & Pneumonia	38.81	18.4	12.9	15.6	14.6
Stroke	24.21	34.8	30.6	30.3	28.9
Dementia	21.00	NA	NA	NA	NA
Septicemia	18.70	8.6	8.1	7.9	7.7
Suicide	17.49	15.4	15.4	14.8	16.1
Renal Failure & Nephritis	17.64	8.8	7.6	7.1	7.7
Alcohol Dependence Syndrome	14.56	NA	NA	NA	NA
Assault	12.53	8.5	7.7	7.1	5.5
Chronic Lower Respiratory Disease	14.90	44.3	39.2	42.2	40.5

Noteworthy

Age-adjusted mortality for Navajo is much higher than Arizona for Unintentional Injury, Diabetes, Chronic Liver Disease & Cirrhosis, Influenza & Pneumonia, Septicemia, Renal Failure & Nephritis, and Assault. Age adjusted mortality for Navajo is much lower for Cancer, and Chronic Lower Respiratory Disease.

¹⁶ <http://www.azdhs.gov/plan/menu/for/deaths.htm>

¹⁷ For purposes of equal comparison heart disease for Navajo rates include hypertensive & rheumatic disease; Chronic Lower Respiratory Disease is reported instead of just COPD; and Renal Disease and Nephritis is reported not just Renal Disease

Table 17: Navajo Nation 2006-2009 Age-Adjusted and New Mexico 2006, 2007, 2008, & 2009¹⁸ Age Adjusted Mortality Rates for Leading Causes of Death¹⁹

Cause	Navajo 2006-2009	New Mexico 2006	New Mexico 2007	New Mexico 2008	New Mexico 2009
All Deaths	782.00	761.2	902.2	907.9	893.3
Unintentional Injuries	126.55	64.0	69.5	70.9	65.6
Cancer	103.45	153.7	167.0	168.2	161.7
Heart Disease	116.62	167.8	209.2	204.1	198.2
Diabetes	47.77	27.5	35.2	31.3	31.2
Chronic Liver Disease & Cirrhosis	43.05	15.0	17.8	16.9	16.8
Influenza & Pneumonia	38.81	18.3	23.0	22.7	21.9
Stroke	24.21	32.2	41.8	47.6	47.5
Dementia	21.00	NA	NA	NA	NA
Septicemia	18.70	NA	NA	9.8	10.8
Suicide	17.49	17.1	19.5	19.0	17.4
Renal Failure & Nephritis	17.64	13.1	14.6	17.1	15.7
Alcohol Dependence Syndrome	14.56	NA	NA	NA	NA
Assault	12.53	6.9	8.0	7.2	8.4
Chronic Lower Respiratory Disease	14.90	46.2	52.1	56.8	56.6

Noteworthy

Age-adjusted mortality for Navajo is much higher than New Mexico for Unintentional Injury, and Chronic Liver Disease & Cirrhosis. Age-adjusted mortality for Navajo is much lower than New Mexico for Cancer, Heart Disease, Stroke, and Chronic Lower Respiratory Disease.

¹⁸ <http://www.vitalrecordsnm.org/StatReports.shtml>

¹⁹ For purposes of equal comparison heart disease for Navajo rates include hypertensive & rheumatic disease; Chronic Lower Respiratory Disease is reported instead of just COPD; and Renal Disease and Nephritis is reported not just Renal Disease

Table 18: Selected Causes²⁰ of Death for the Navajo Nation 2006-2009, Both Genders

Cause	Count	Percent of all deaths	Crude Rate	Age-Adjusted
Ischemic Heart Disease	335	8.4%	47.99	72.37
Motor Vehicle Injury	289	7.7%	41.40	44.80
Diabetes	228	5.7%	32.66	47.77
Chronic Liver Disease & Cirrhosis	224	5.6%	32.09	43.05
Influenza & Pneumonia	181	4.6%	25.93	38.81
Other forms of heart disease	150	3.8%	21.49	31.34
Suicide	119	3.0%	17.05	17.48
Pedestrian Injury	116	2.9%	16.62	18.61
Stroke	107	2.7%	15.33	24.21
Septicemia	90	2.3%	12.89	18.70
Other respiratory diseases principally affecting the interstitium	87	2.2%	12.46	19.27
Assault	83	2.1%	11.89	12.53
Alcohol Dependence Syndrome	81	2.0%	11.60	14.56
Renal Failure	77	1.9%	11.03	16.31
Fall Injuries	75	1.9%	10.74	15.65
Unintentional Alcohol Poisoning	73	1.8%	10.46	12.41
Exposure to cold	66	1.7%	9.46	12.28
Chronic lower respiratory disease	65	1.6%	9.31	14.90
Hypertensive Disease	59	1.5%	8.45	12.92
Parkinson's	45	1.1%	6.45	10.75
Lung disease due to external agents	45	1.1%	6.45	10.62
Cancer: stomach	44	1.1%	6.30	8.86
Cancer: Pancreatic	42	1.1%	6.02	9.13
Cancer: colon-rectal	41	1.0%	5.87	8.52
Cancer: breast	33	0.8%	4.73	6.29
Alzheimer's	32	0.8%	4.58	7.85
Cancer: liver	31	0.8%	4.44	6.54
Mental & Behavioral disorders due to psychoactive substance abuse (non-alcohol)	30	0.8%	4.30	5.33

²⁰ Selected cause includes more specific cancer, heart disease, and injury causes

Table 18 Cont...Cause	Count	Percent of all deaths	Crude Rate	Age-Adjusted
Cancer: prostate	28	0.7%	8.24	12.03
Cancer: urinary organs	27	0.7%	3.87	5.56
Cancer: lung/trachea/bronchus	26	0.7%	3.72	5.47
Unintentional Injury: choking/breathing	23	0.6%	3.29	4.04
Unintentional injury: drowning	23	0.6%	3.01	3.30
HIV	17	0.4%	2.44	3.06
Unintentional Poisoning (non-alcohol)	16	0.4%	2.29	2.02
Intestinal infectious disease	13	0.3%	1.86	2.71
Cancer: cervix/uteri	11	0.3%	3.07	3.71
Tuberculosis	10	0.3%	1.43	2.27
Exposure to heat	10	0.3%	1.43	1.78

Noteworthy

The leading specific causes of death after adjusting for age are: (1) Ischemic Heart Disease, (2) Diabetes, (3) Motor Vehicle Crash Occupant, (4) Chronic Liver Disease & Cirrhosis, (5) Influenza & Pneumonia, (6) Other forms of heart disease, (7) Stroke, (8) Other respiratory diseases principally affecting the interstitium, (9) Septicemia, and (10) Pedestrian Injury. While Cancer is the 3rd leading cause of death among Navajo, prostate cancer is the first specific type of Cancer to make the list at number 20.

Table 19: Selected Causes²¹ of Death Navajo Nation 2006-2009, Males

Cause	Count	Percent of all deaths	Crude Rate	Age-Adjusted
Ischemic Heart Disease	209	9.0%	61.53	86.41
Motor Vehicle Injury	200	8.6%	58.88	64.80
Diabetes	127	5.5%	37.39	62.63
Suicide	100	4.3%	29.44	31.41
Chronic Liver Disease & Cirrhosis	98	4.2%	28.85	35.93
Pedestrian Injury	90	3.9%	26.50	30.30
Influenza & Pneumonia	87	3.8%	25.61	34.85
Other forms of heart disease	80	3.5%	23.55	31.47
Assault	68	2.9%	20.02	21.14
Alcohol Dependence Syndrome	64	2.8%	18.84	23.88
Unintentional Alcohol Poisoning ²²	61	2.6%	17.96	21.99
Exposure to Cold	58	2.5%	17.07	22.0
Stroke	56	2.4%	16.49	24.02
Fall Injuries	48	2.1%	14.13	18.94
Other respiratory diseases principally affecting the interstitium	44	1.9%	12.95	18.60
Chronic lower respiratory disease	41	1.8%	12.07	17.27
Septicemia	38	1.6%	11.19	15.19
Hypertensive disease	38	1.6%	11.19	15.82
Cancer: stomach	33	1.4%	9.71	13.23
Lung diseases due to external agents	30	1.3%	8.83	13.05
Renal Failure	30	1.3%	8.83	12.17
Cancer: prostate	28	1.2%	8.24	12.03
Mental and behavioral disorders due to psychoactive substance (non-alcohol)	26	1.1%	7.65	9.53

²¹ Selected cause includes more specific cancer, heart disease, and injury causes

²² Alcohol Poisoning, Drowning, and Other poisoning deaths of undetermined intent were included with their unintentional counterpart because the median age at death was more consistent with unintentional cause rather than intentional

Table 19 Cont...Cause	Count	Percent of all deaths	Crude Rate	Age-Adjusted
Dementia	23	1.0%	6.77	10.15
Cancer: Pancreas	23	1.0%	6.77	9.92
Parkinson's	21	0.9%	6.18	9.38
Unintentional drowning	21	0.9%	6.18	6.26
Cancer: colon-rectal	20	0.9%	5.89	8.03
Choking/Breathing Injury	17	0.7%	5.00	5.81
Cancer: Liver	15	0.6%	4.42	6.33
HIV	15	0.64	4.42	5.51
Alzheimer's	13	0.6%	3.83	5.68
Cancer: urinary organs	13	0.6%	3.83	5.31
Unintentional Poisoning (non-alcohol)	12	0.5%	3.53	3.71
Cancer: lung/trachea/bronchus	10	0.4%	2.94	4.03
Intestinal infectious disease	10	0.4%	2.94	4.16

Noteworthy

The leading specific causes of death for males after adjusting for age are: (1) Ischemic Heart Disease, (2) Motor Vehicle Crash Occupant, (3) Diabetes, (4) Chronic Liver Disease & Cirrhosis, (5) Influenza & Pneumonia, (6) Other forms of heart disease, (7) Suicide, (8) Pedestrian Injury, (9) Stroke, and (10) Alcohol Dependence Syndrome.

Table 20: Selected Causes²³ of Death for Navajo Nation 2006-2009, Females

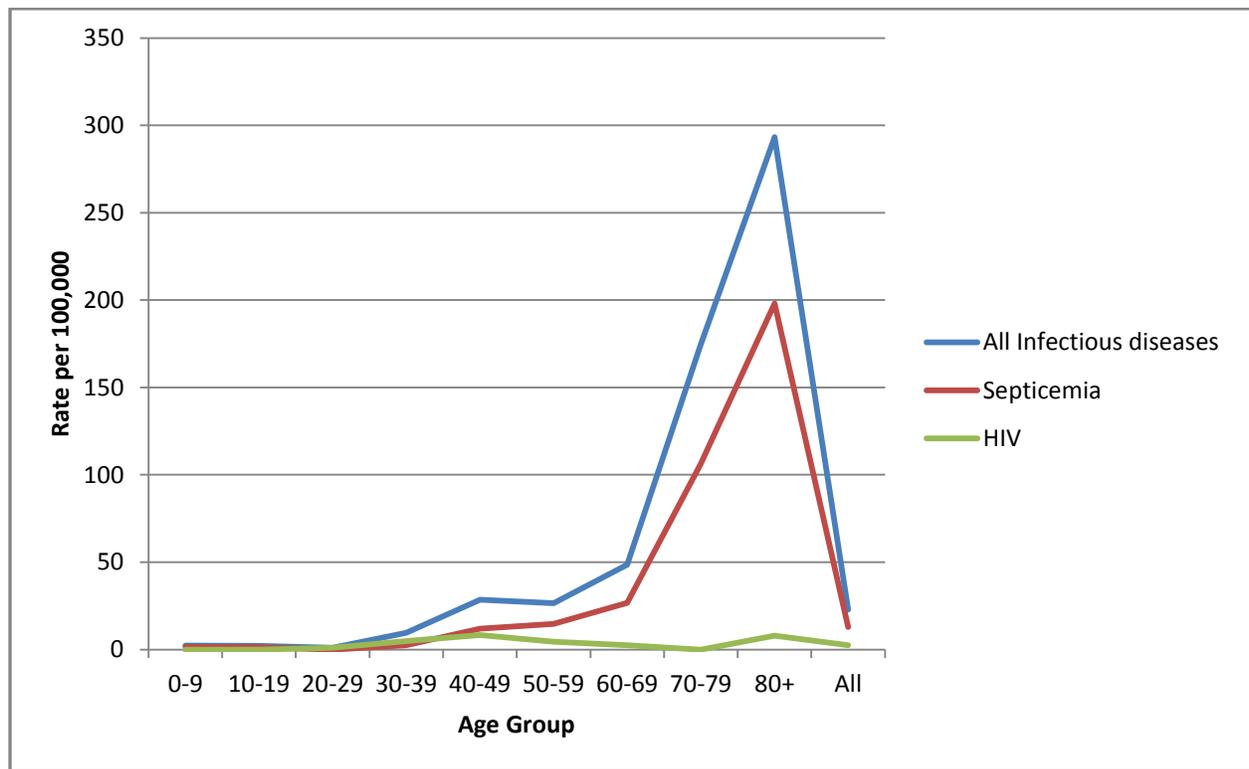
Cause	Count	Percent of All Deaths	Crude Rate	Age-Adjusted
Ischemic Heart Disease	126	7.6%	35.16	57.33
Chronic Liver Disease & Cirrhosis	126	7.6%	35.16	46.25
Diabetes	101	6.1%	28.18	44.87
Influenza & Pneumonia	94	5.7%	26.23	42.81
Motor Vehicle Injury	89	5.3%	24.84	28.28
Other forms of heart disease	70	4.2%	23.55	31.47
Dementia	61	3.7%	17.02	32.65
Septicemia	52	3.1%	14.51	22.3
Stroke	51	3.1%	14.23	23.44
Renal Failure	47	2.8%	13.12	20.30
Other respiratory diseases principally affecting the interstitium	43	2.6%	12.00	19.84
Cancer: breast	32	1.9%	8.93	11.95
Fall Injuries	27	1.6%	7.53	12.32
Pedestrian Injury	26	1.6%	7.26	8.62
Chronic lower respiratory disease	24	1.4%	6.70	11.95
Parkinson's	24	1.4%	6.70	11.72
Hypertensive Disease	21	1.3%	5.86	9.77
Cancer: colon-rectal	21	1.3%	5.86	9.11
Suicide	19	1.1%	5.30	4.62
Alzheimer's	19	1.1%	5.30	10.28
Cancer: Pancreatic	19	1.1%	5.30	8.21
Alcohol Dependence Syndrome	17	1.0%	4.74	6.25
Cancer: Liver	16	1.0%	4.46	6.76
Cancer: lung/trachea/bronchus	16	1.0%	4.46	7.04
Assault	15	0.9%	4.19	4.44
Lung disease due to external agents	15	0.9%	4.19	6.83
Cancer: urinary organs	14	0.8%	3.91	5.96
Unintentional Alcohol Poisoning	12	0.7%	3.35	3.63
Cancer: cervix/uteri	11	0.7%	3.07	3.71
Cancer: stomach	11	0.7%	3.07	4.28

²³ Selected cause includes more specific cancer, heart disease, and injury causes

Noteworthy

The leading specific causes of death for females after adjusting for age are: (1) Ischemic Heart Disease, (2) Chronic Liver Disease & Cirrhosis, (3) Diabetes, (4) Influenza & Pneumonia, (5) Dementia, (6) Other forms of heart disease, (7) Motor Vehicle Crash Occupant, (8) Stroke, (9) Septicemia, and (10) Renal Failure. The leading specific Cancer type is breast cancer, which ranks 13th overall.

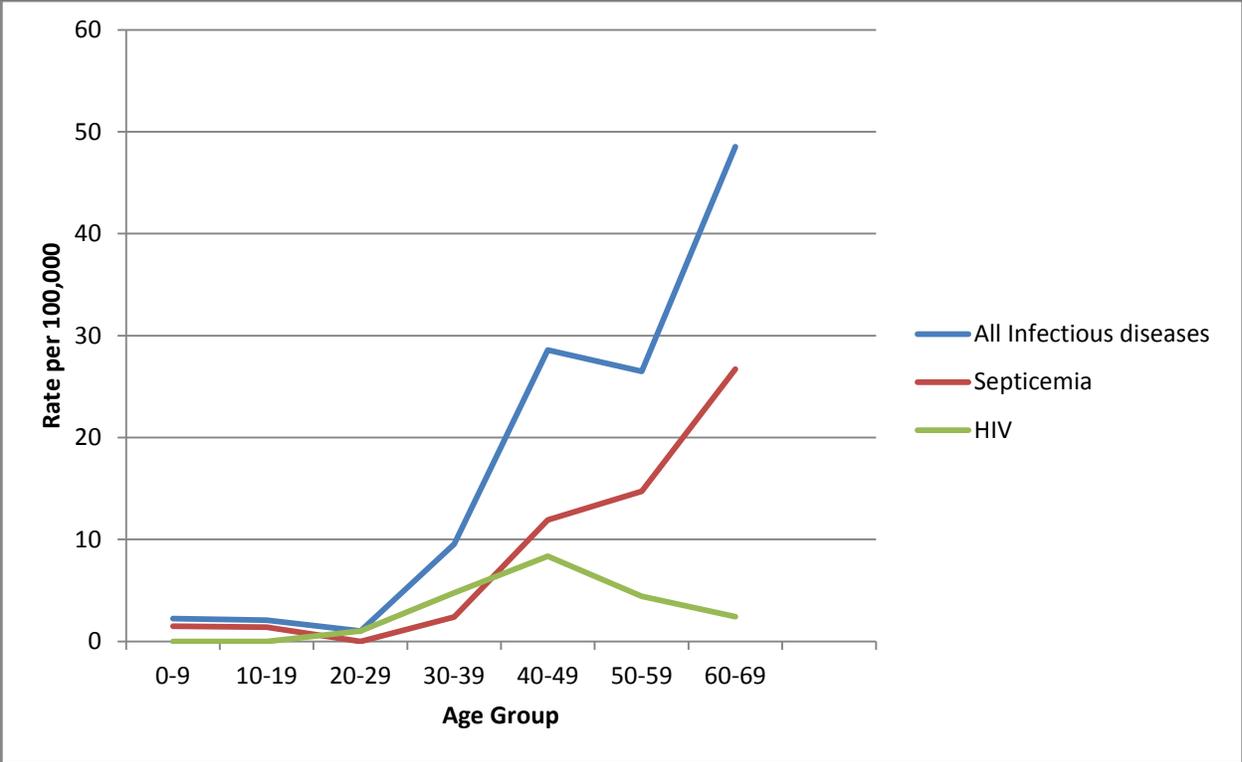
Chart 17: Infectious Disease Crude Mortality, by Age



Noteworthy

Infectious diseases doesn't begin to be a large contributor to death until about age 60. The leading Infectious Disease cause of death is Septicemia. While HIV is a public health concern, and infection may greatly affect quality of life, it is not a major contributor to mortality among the Navajo population.

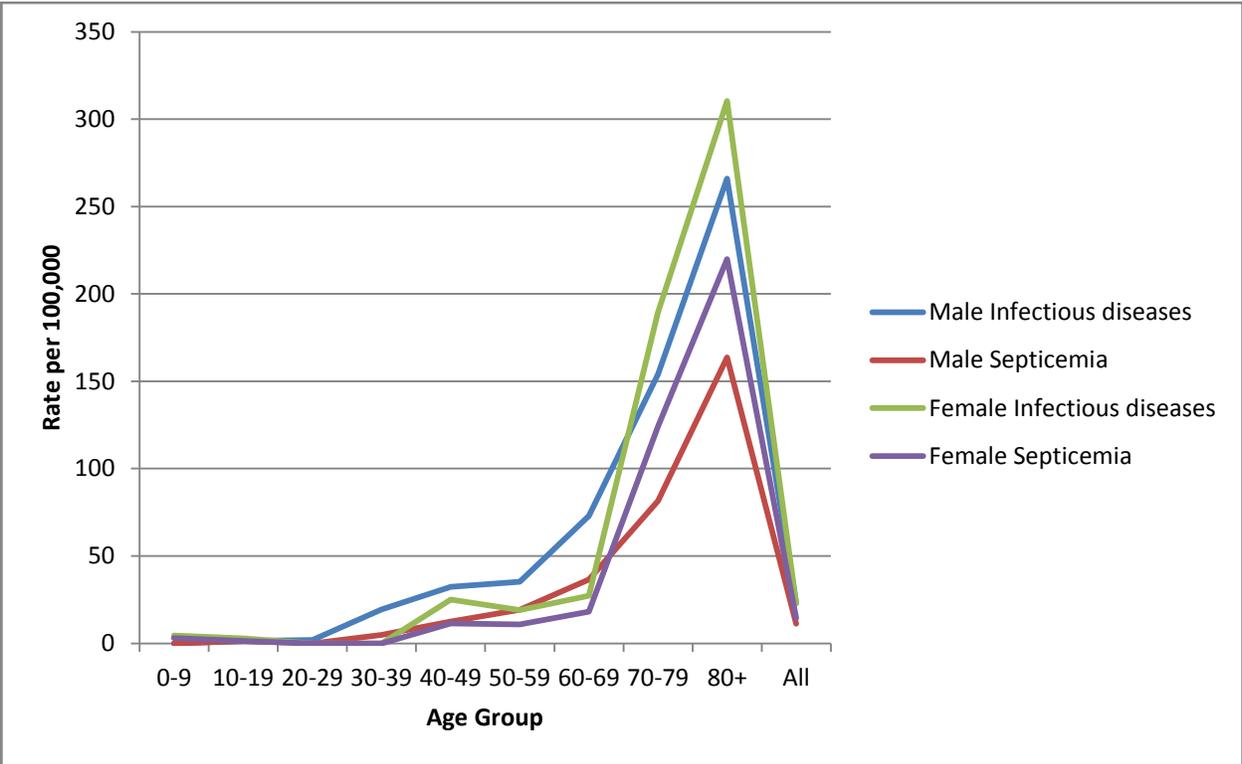
Chart 18: Infectious Disease Crude Mortality, Ages 0-69



Noteworthy

This enlarges the view of Infectious Disease for ages 0-69 since rates for 70+ are much greater than the younger age groups. HIV mortality peaks at the 40-49 age group.

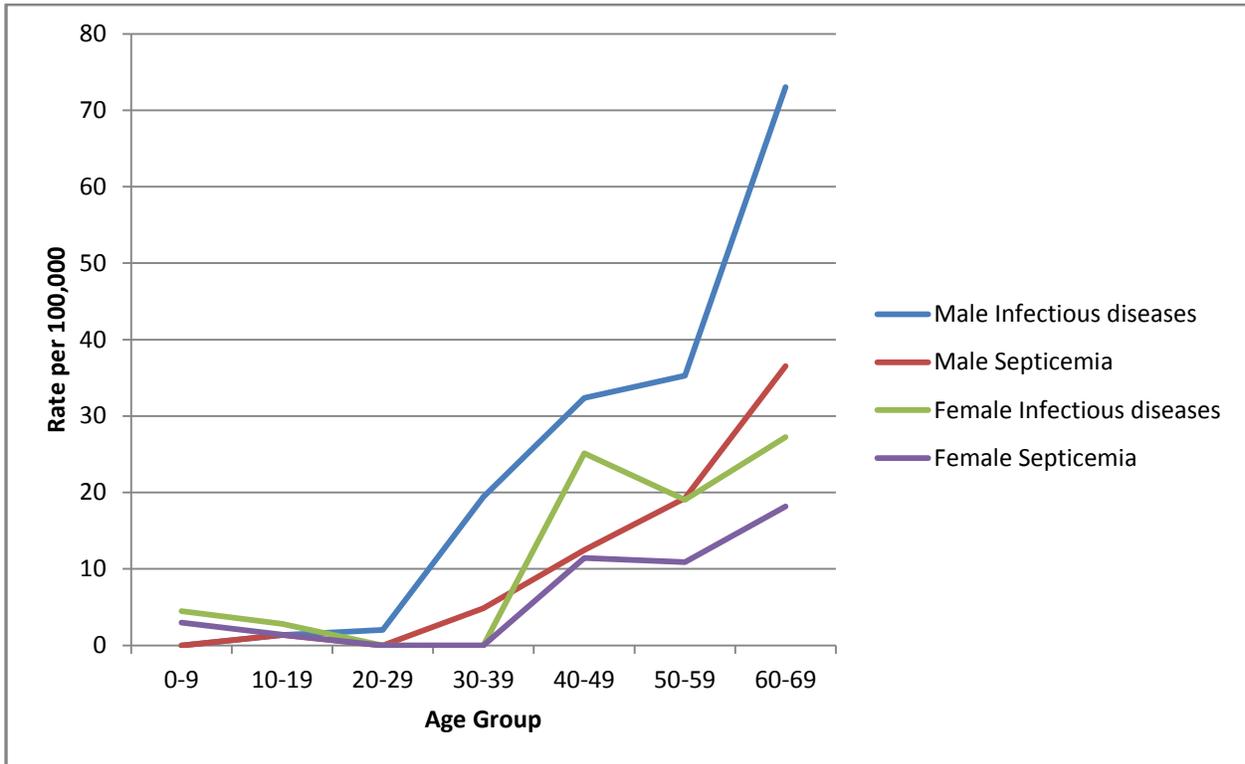
Chart 19: Infectious Disease Crude Mortality, by Gender and Age



Noteworthy

Infectious Disease mortality is higher for males until age group 70-79.

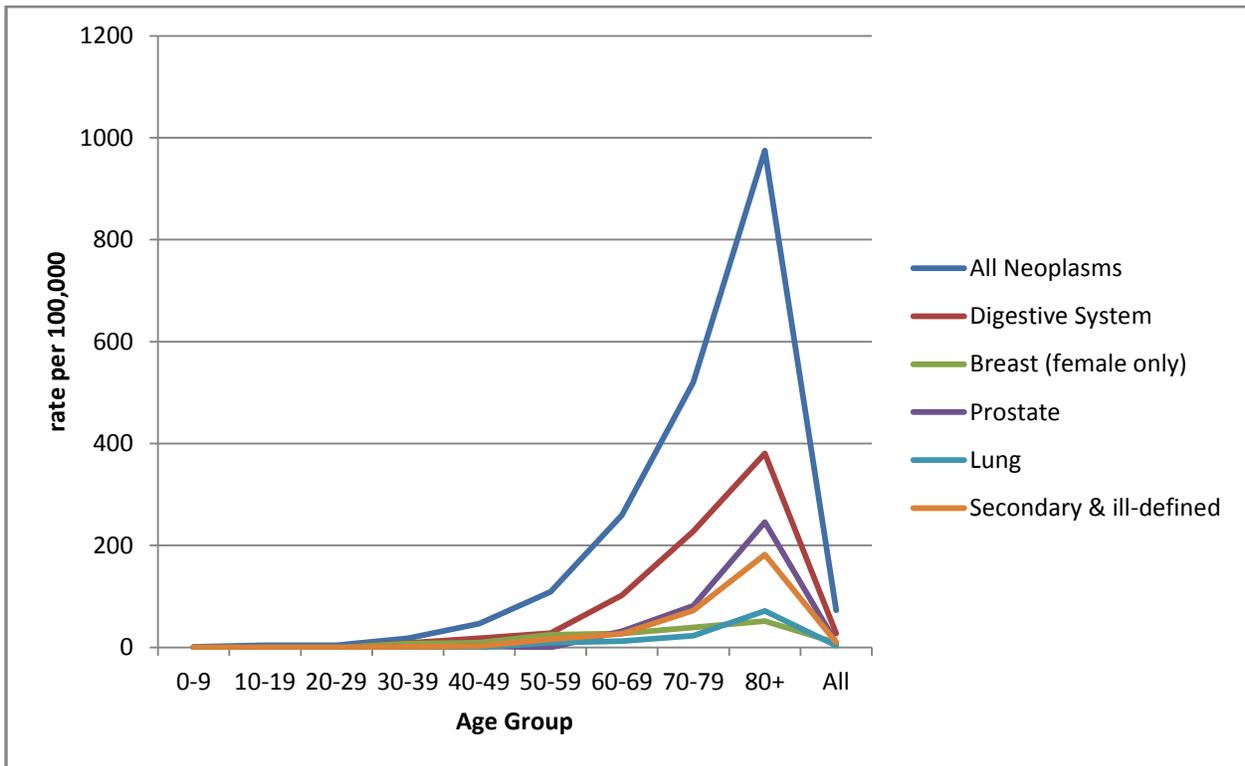
Chart 20: Infectious Disease Crude Mortality, Ages 0-69 by Gender



Noteworthy

Infectious Disease doesn't begin to contribute to mortality until age group 40-49.

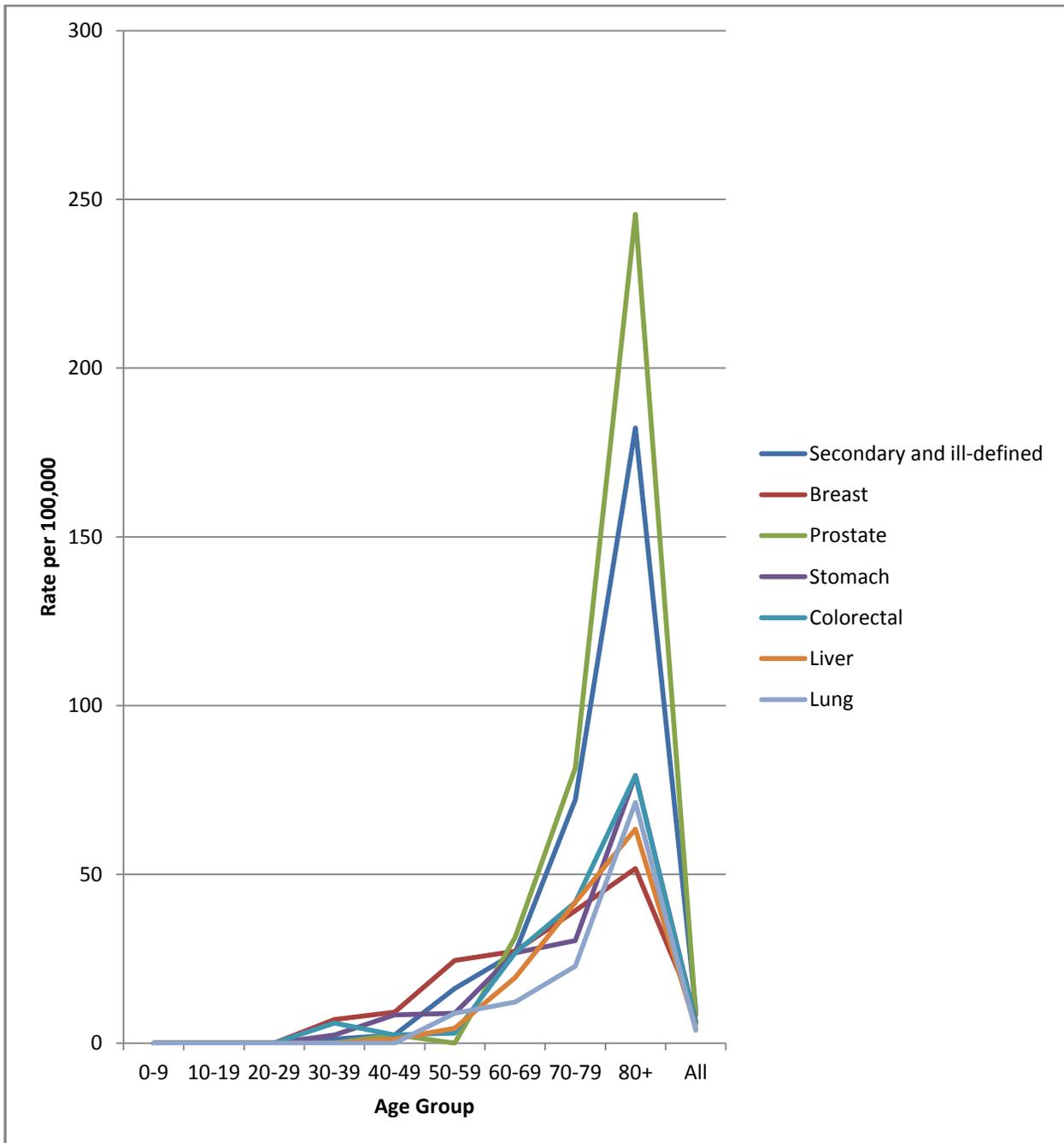
Chart 21: Cancer Crude Mortality, by Age



Noteworthy

Cancer begins to contribute greatly to mortality at the 50-59 age group, and differences in type of cancers begin to manifest around the 60-69 age group. Digestive system cancer rates are nearly twice the rate as the next leading type of cancer.

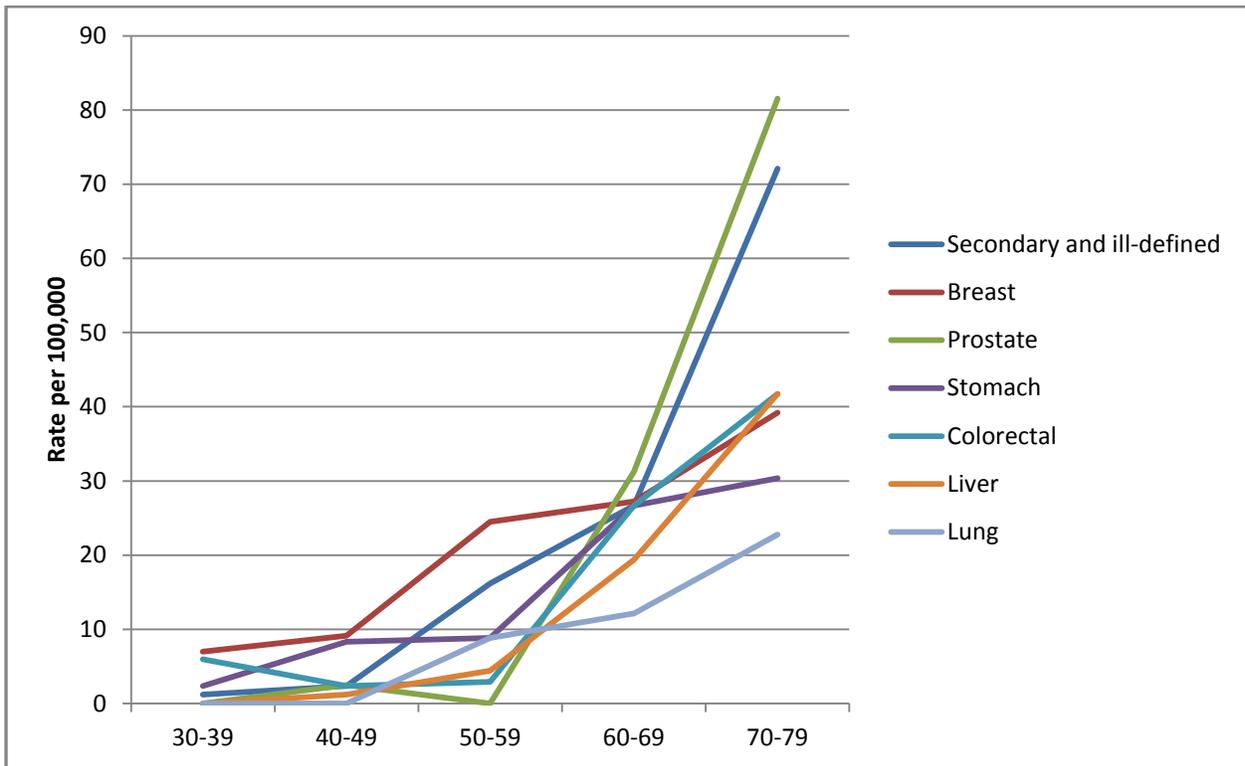
Chart 22: Cancer Crude Mortality with Isolated Digestive System Cancers, by Age



Noteworthy

For all ages, mortality from Cancer noticeably starts at the 20-29 age group with breast cancer leading followed by secondary and ill-defined. Then, at the 30-39 age group, mortality from stomach and liver cancer are reported, with all cancers increasing throughout. For the 60-69 age group, prostate cancer becomes the leading cause followed by secondary and ill-defined.

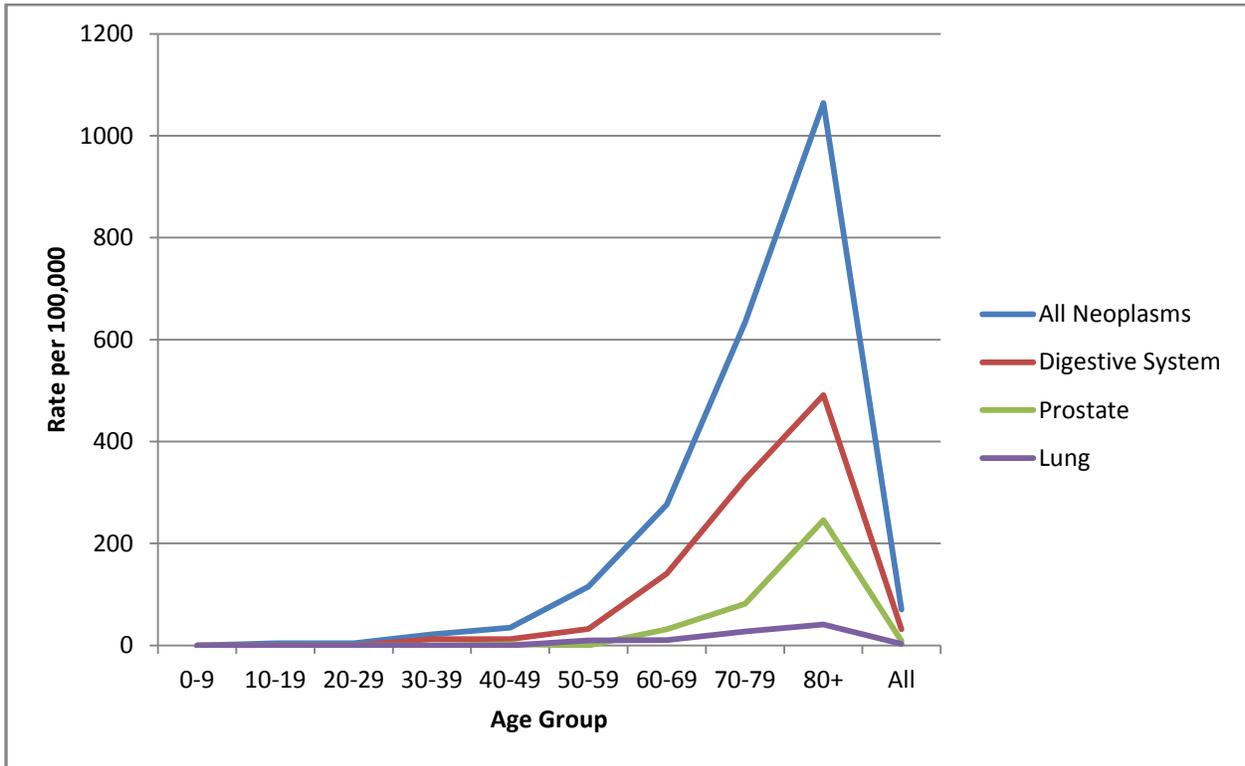
Chart 23: Cancer Crude Mortality Rates, Ages 30-79



Noteworthy

For Navajos between the age of 30-79, breast cancer is the leading cause of Cancer death. Breast cancer is reported highest among all other cancers for the 50-59 age group with a crude rate of approximately 25 per 100,000. Prostate cancers become the leading cause of cancer death for the 60-69 age group with a crude rate of slightly more than 30 per 100,000 and sharply increasing thereafter.

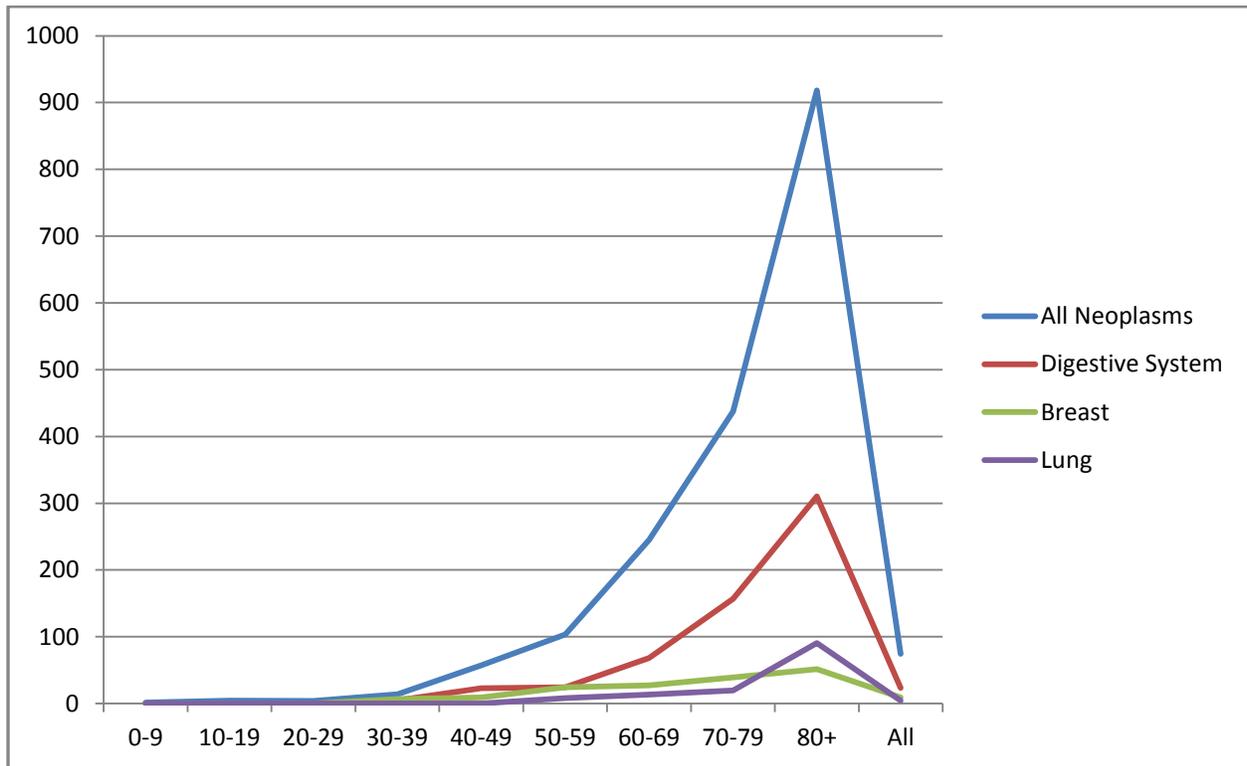
Chart 24: Male Cancer Crude Mortality Rates, by Age



Noteworthy

For Navajo men, the leading causes of Cancer deaths are cancers of the digestive system followed by prostate cancer. Deaths from cancers of the digestive system begin to be a major cause of death at the 50-59 age group while deaths from prostate cancer begin for the 60-69 age group.

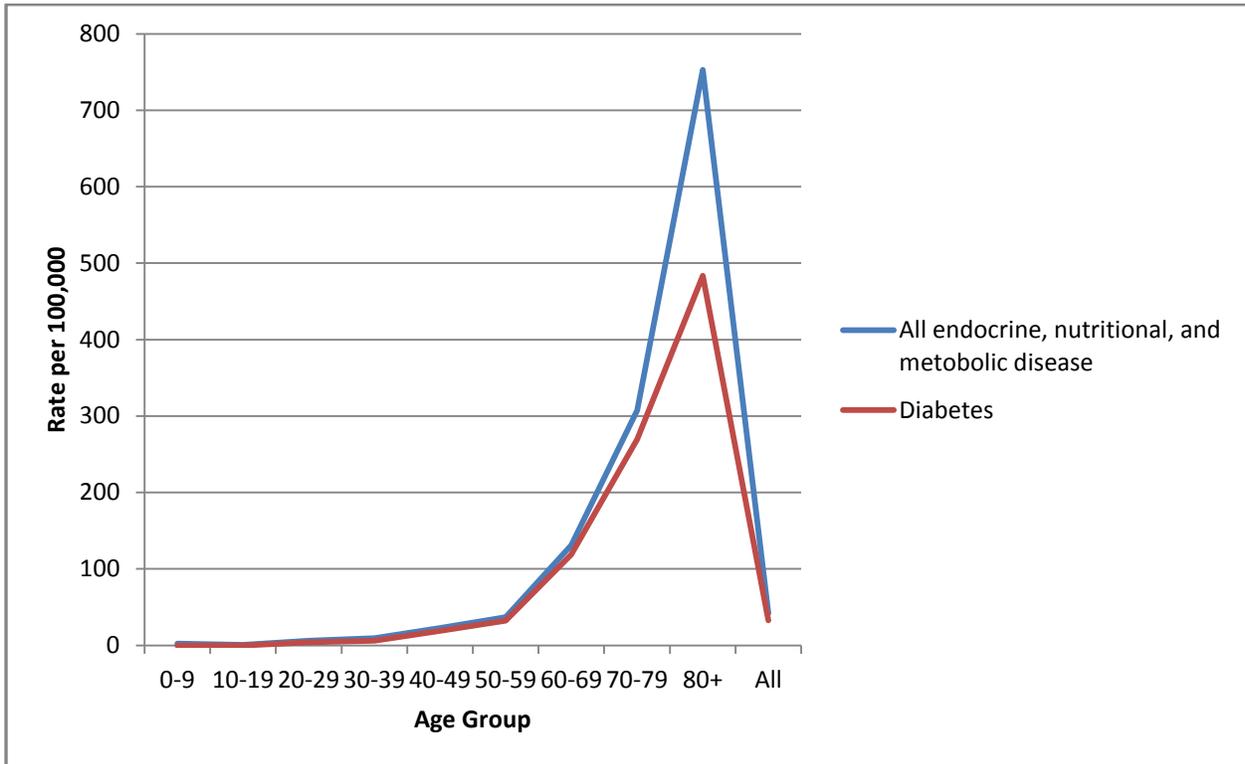
Chart 25: Female Cancer Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading causes of Cancer deaths are cancers of the digestive system, which becomes discernible at the 40-49 age group, followed closely by breast cancer. Deaths from cancers of the digestive system continue to rise as women age while breast cancer remains constant. Males tend to get cancers earlier than females with higher death rates for men.

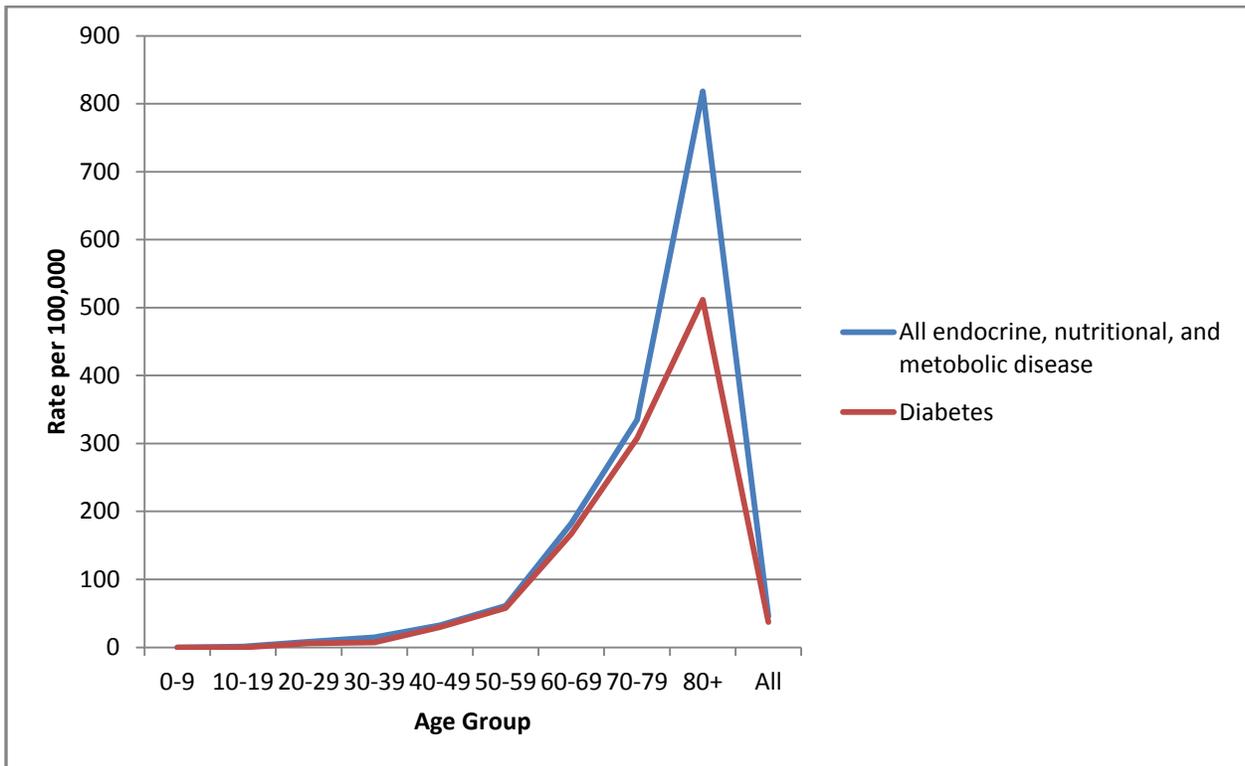
Chart 27: Endocrine, Nutritional and Metabolic Disease Crude Mortality Rates, by Age



Noteworthy

For Navajos, diabetes is the leading cause of Endocrine, Nutritional and Metabolic Disease death. Deaths from this disease starts to occur at the 20-29 age group and doubles by the 40-49 age group, then sharply increases for the 50-59 age group.

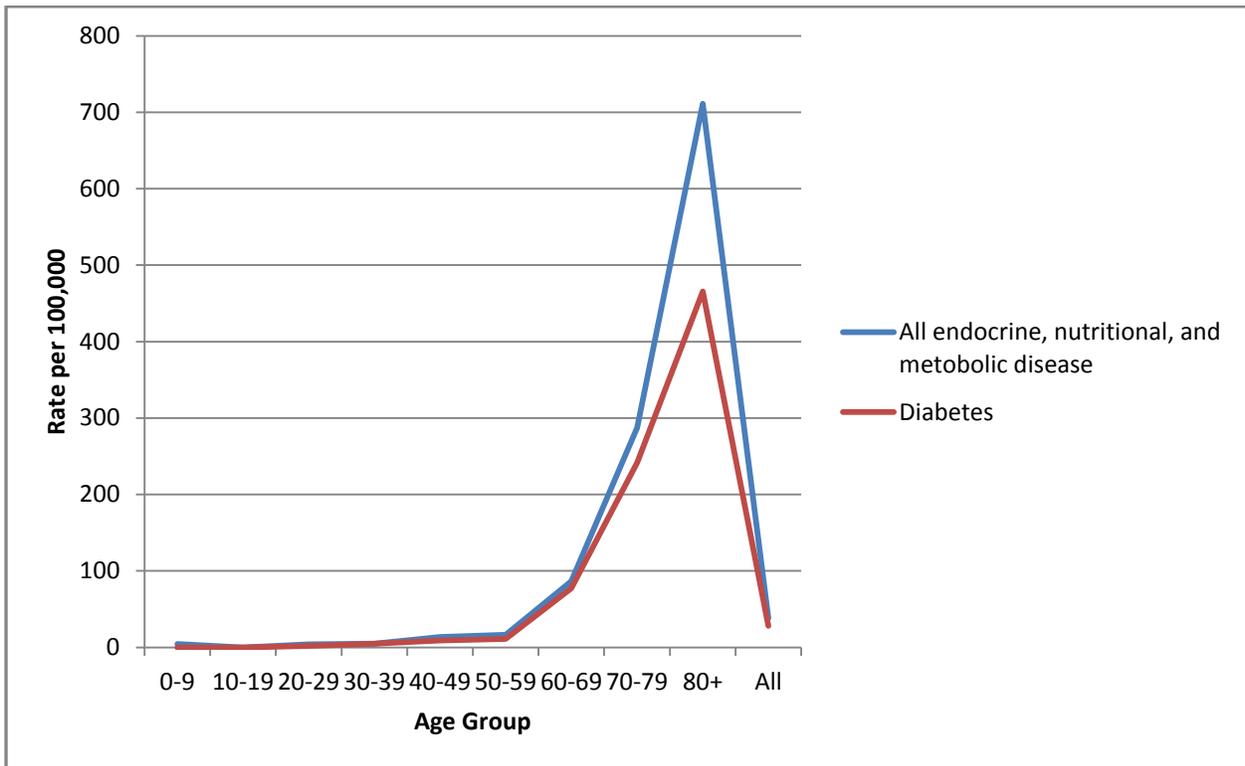
Chart 29: Male Endocrine, Nutritional, and Metabolic Disease Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of Endocrine, Nutritional and Metabolic Disease deaths are from diabetes. Deaths from Diabetes begin to occur at the 30-39 age group and drastically increase at the 50-59 age group.

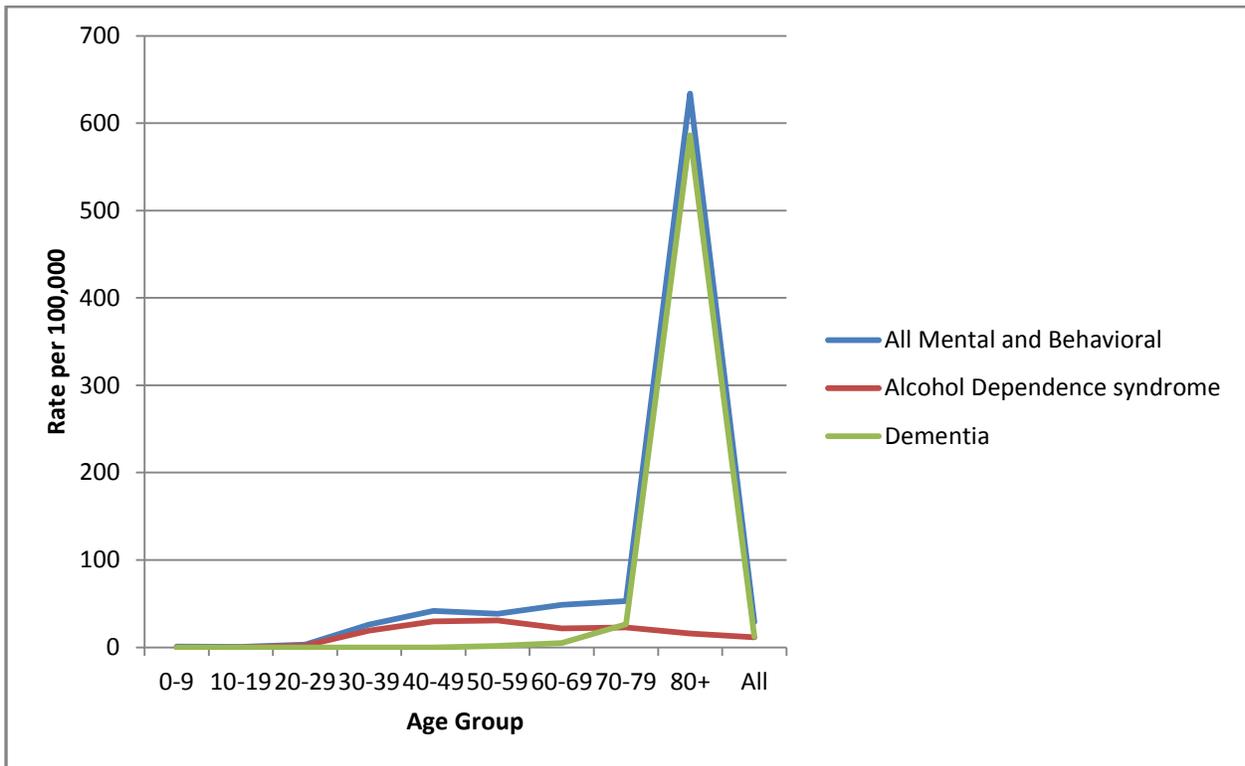
Chart 30: Female Endocrine, Nutritional, and Metabolic Disease Crude Mortality Rates, by Age



Noteworthy

The leading cause of Endocrine, Nutritional, and Metabolic Disease death is Diabetes for Navajo women. Death from Diabetes starts at 50-59 age group for Navajo females and mortality is lower for females than males.

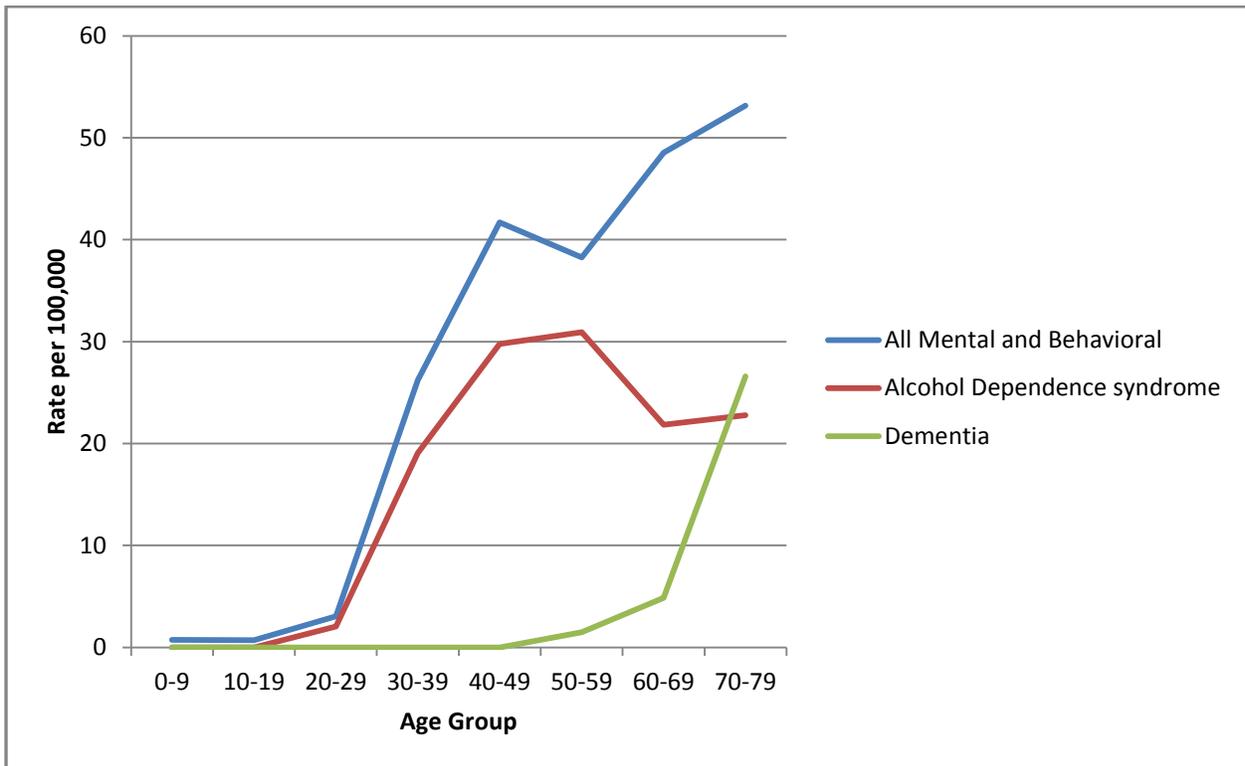
Chart 31: Mental & Behavioral Disorders Crude Mortality Rates, by Age



Noteworthy

For Navajos, All Mental and Behavioral Disorders mortality starts at the 20-29 age group with Alcohol Dependence Syndrome as the leading cause. Dementia starts to rise in the 60-69 age group surpassing Alcohol Dependence Syndrome at the 70-79 age group.

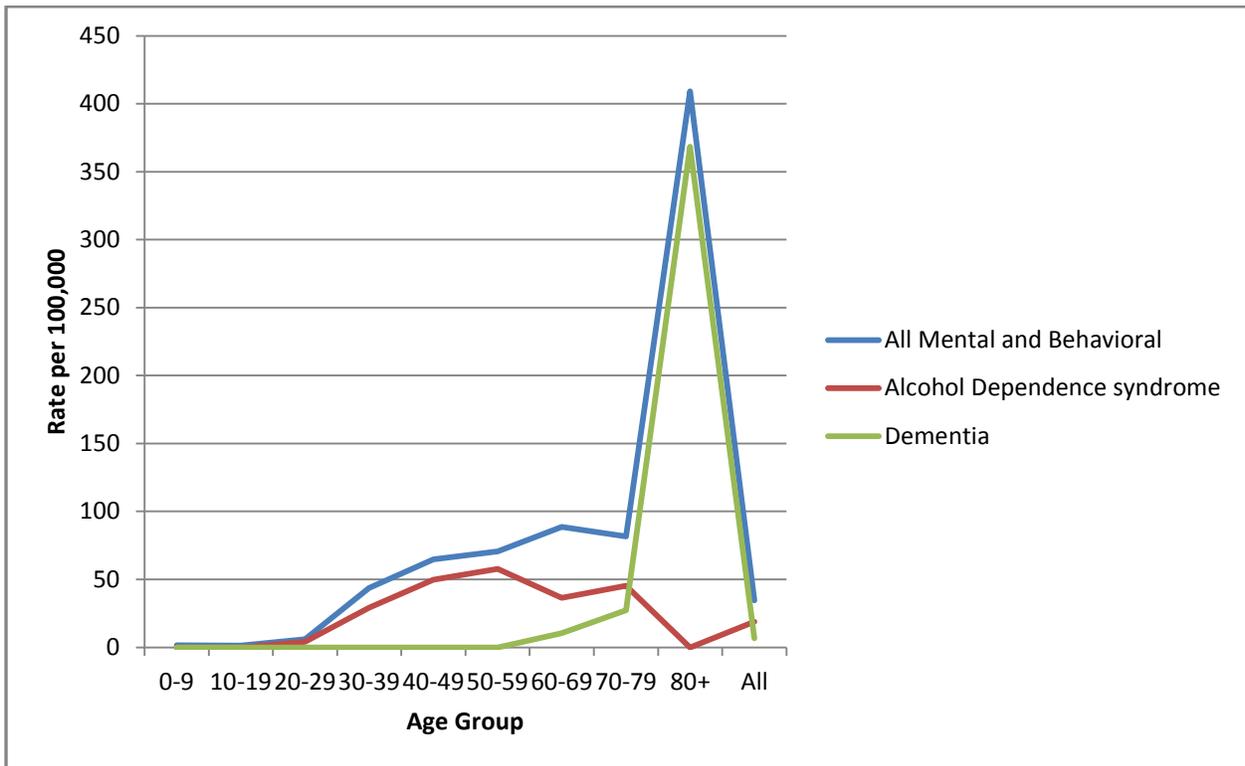
Chart 32: Mental & Behavioral Disorders Crude Mortality Rates, Ages 0-79



Noteworthy

Looking more closely at the age ranges, Alcohol Dependence Syndrome is the leading cause of death for the Mental and Behavioral Disorders peaking at 50-59 years. Alcohol Dependence Syndrome then declines at the 60-69 age group while dementia appears as a cause of death at the 50-59 age group and sharply increases at the 60-69 age group.

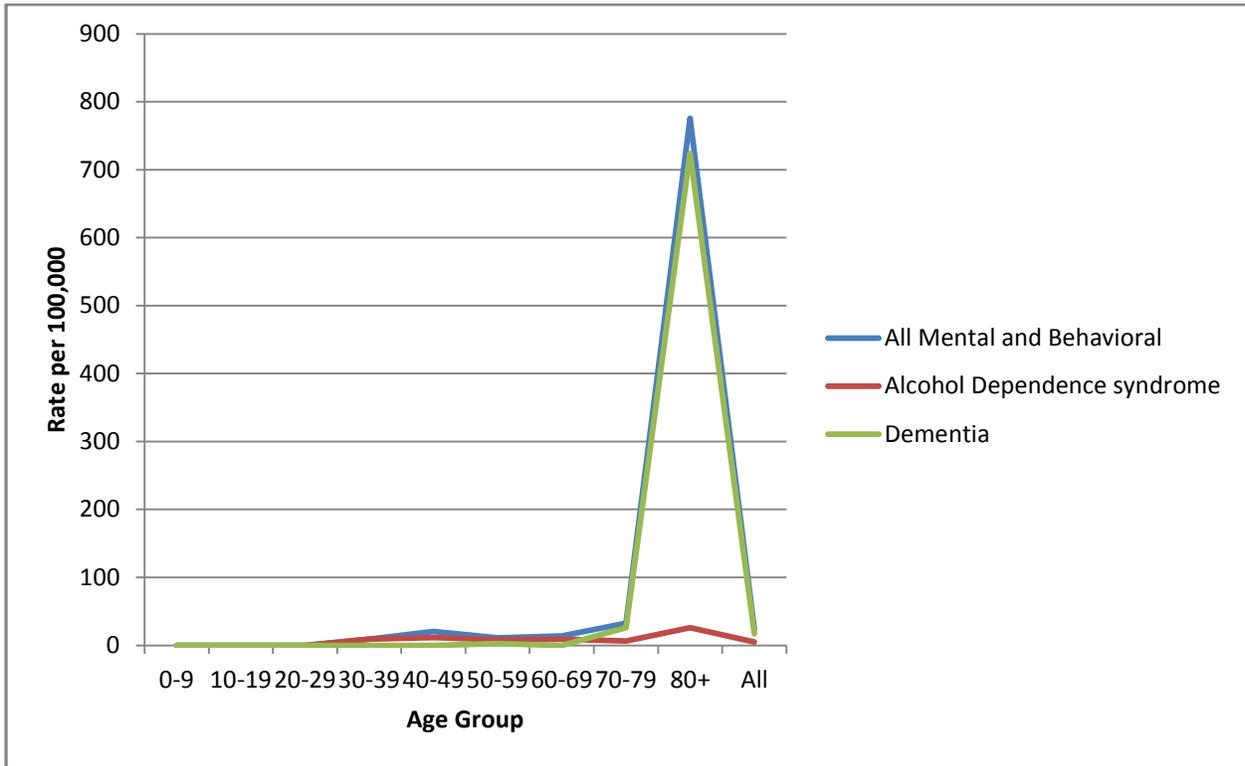
Chart 33: Male Mental & Behavioral Disorders Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of death for All Mental and Behavioral disorders is Alcohol Dependence Syndrome starting at the 20-29 age group and peaking at the 50-59 age group. Dementia deaths start at the 50-59 age group and surpasses Alcohol Dependence Syndrome at the 70-79 age group.

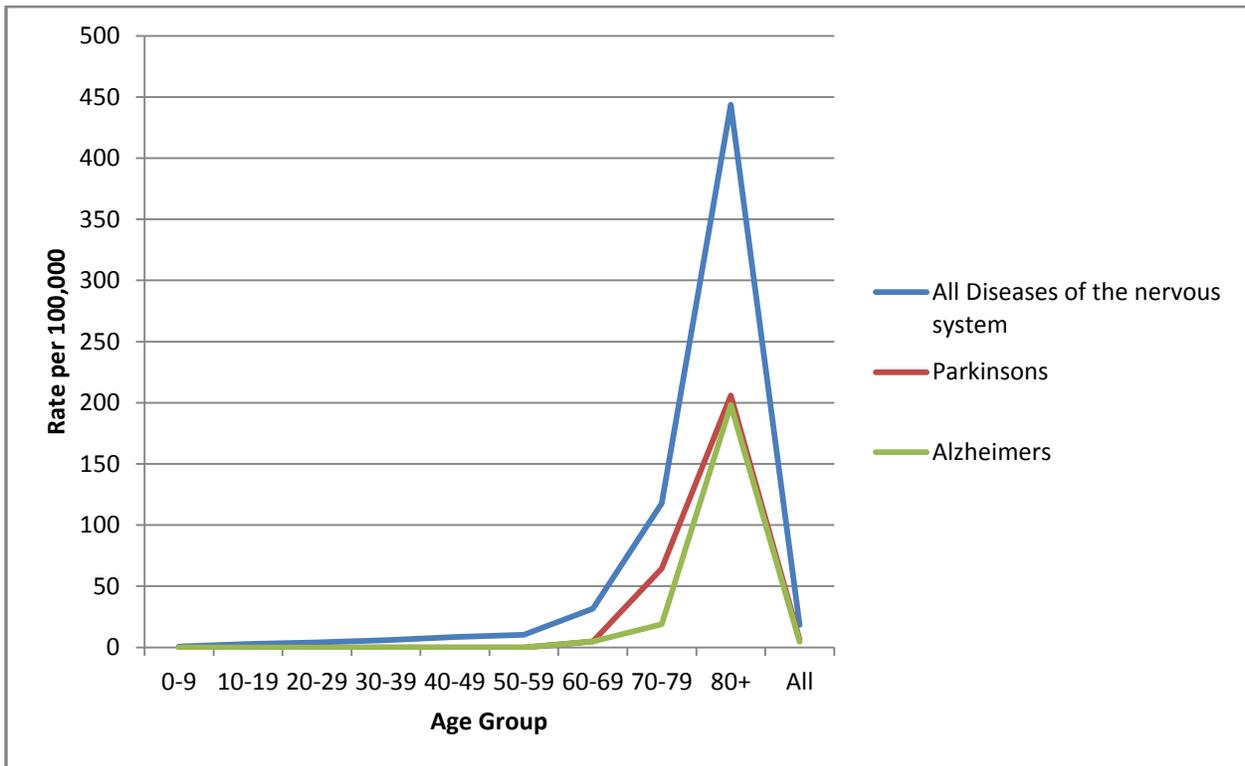
Chart 35: Female Mental & Behavioral Disorders Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death for Mental and Behavioral Disorders is Dementia, although it does not surpass Alcohol Dependence Syndrome until age 70-79.

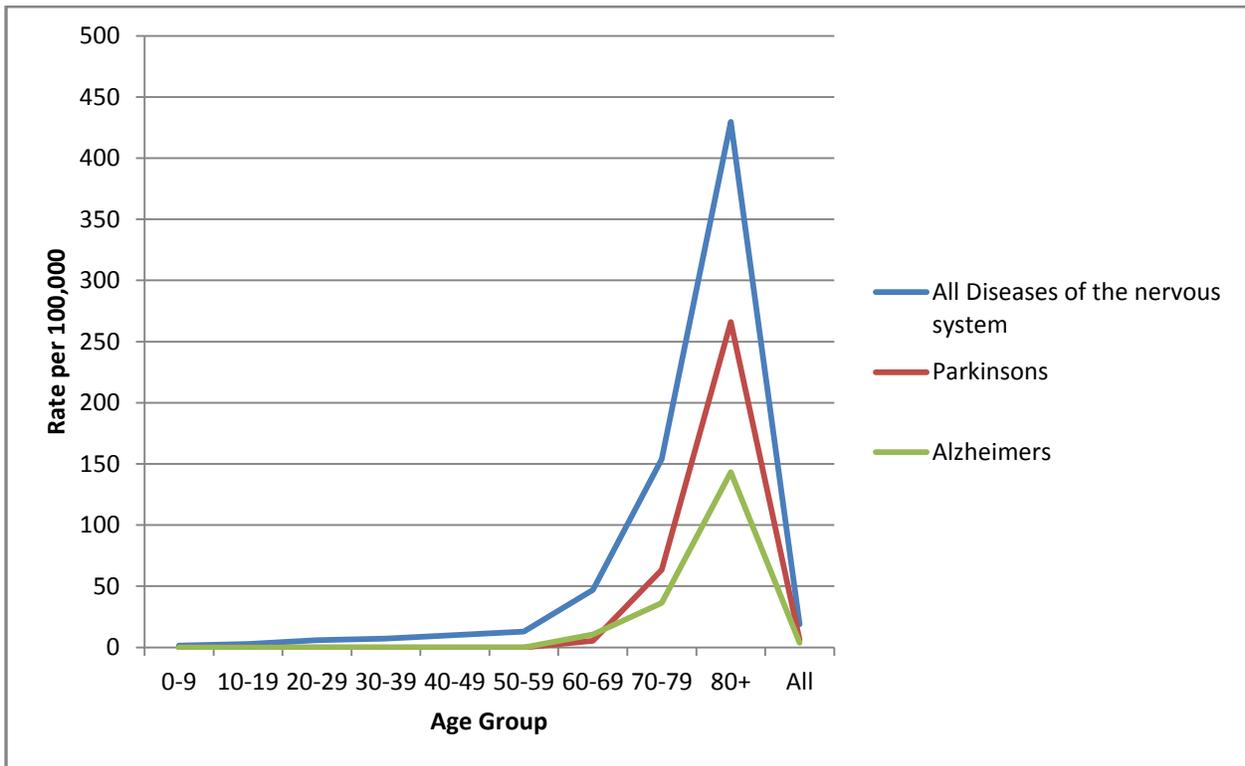
Chart 37: Diseases of the Nervous System Crude Mortality Rates, by Age



Noteworthy

For Navajos, the leading cause of death from Diseases of the Nervous System is Parkinson’s disease followed closely by Alzheimer’s disease. Mortality for both diseases starts to rise in the 60-69 age group and sharply increases for later age groups.

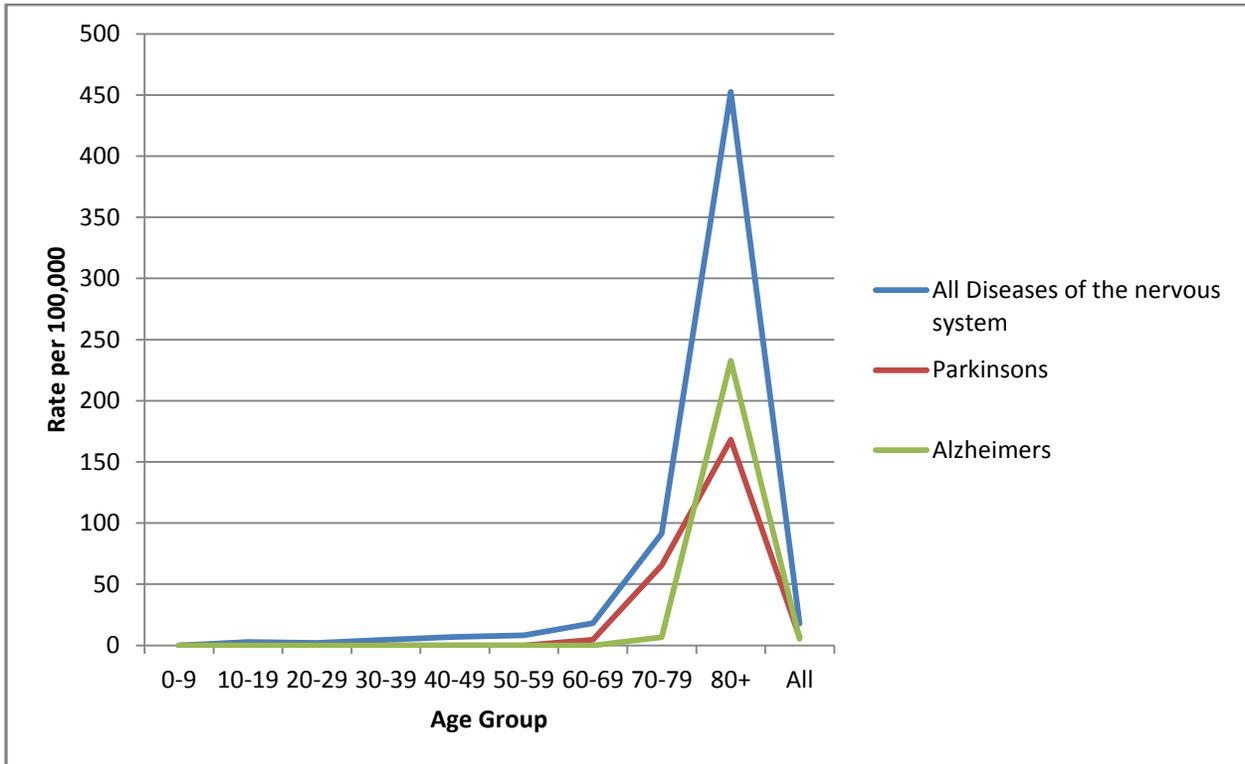
Chart 38: Male Diseases of the Nervous System Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of death from Diseases of the Nervous System is Parkinson’s disease with mortality starting at the 60-69 age group followed by Alzheimer’s disease.

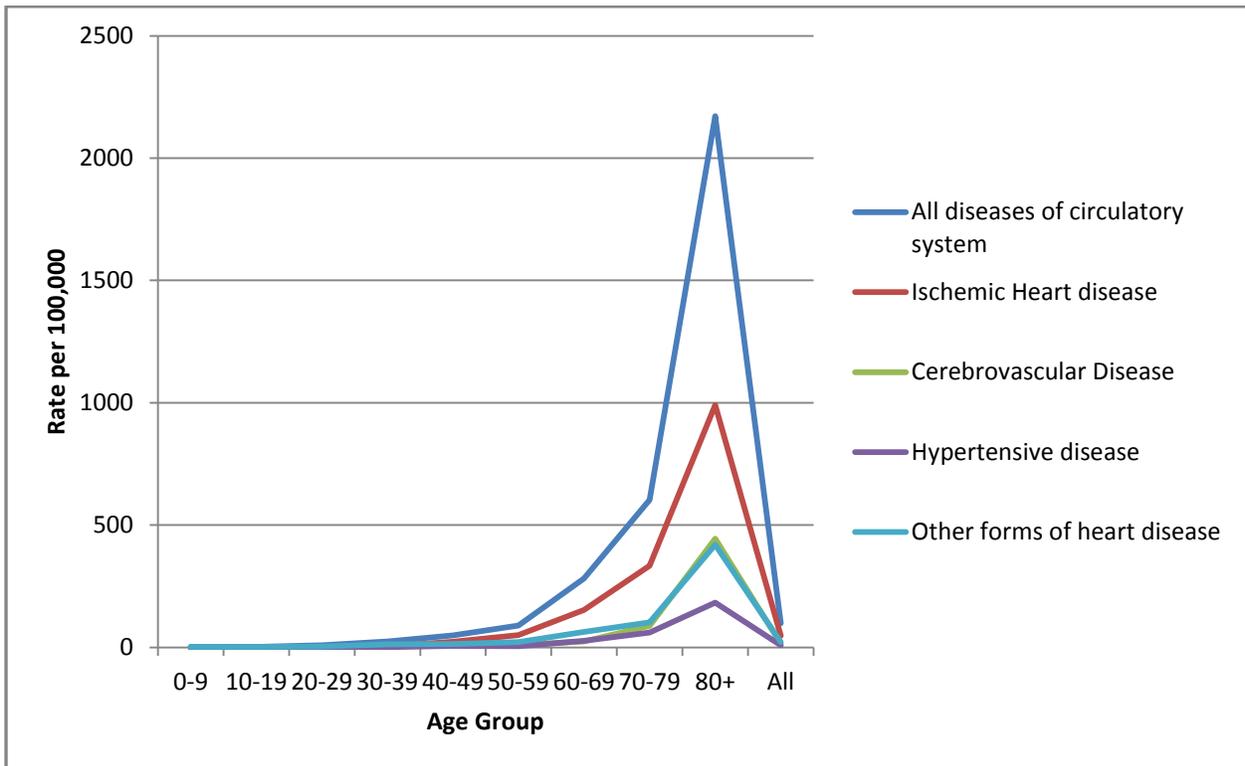
Chart 39: Female Diseases of the Nervous System Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death for Diseases of the Nervous System is Parkinson’s disease with mortality starting at the 60-69 age group. Alzheimer’s disease starts at the 70-79 age group for Navajo females surpassing Parkinson’s disease at the 70-79 age group.

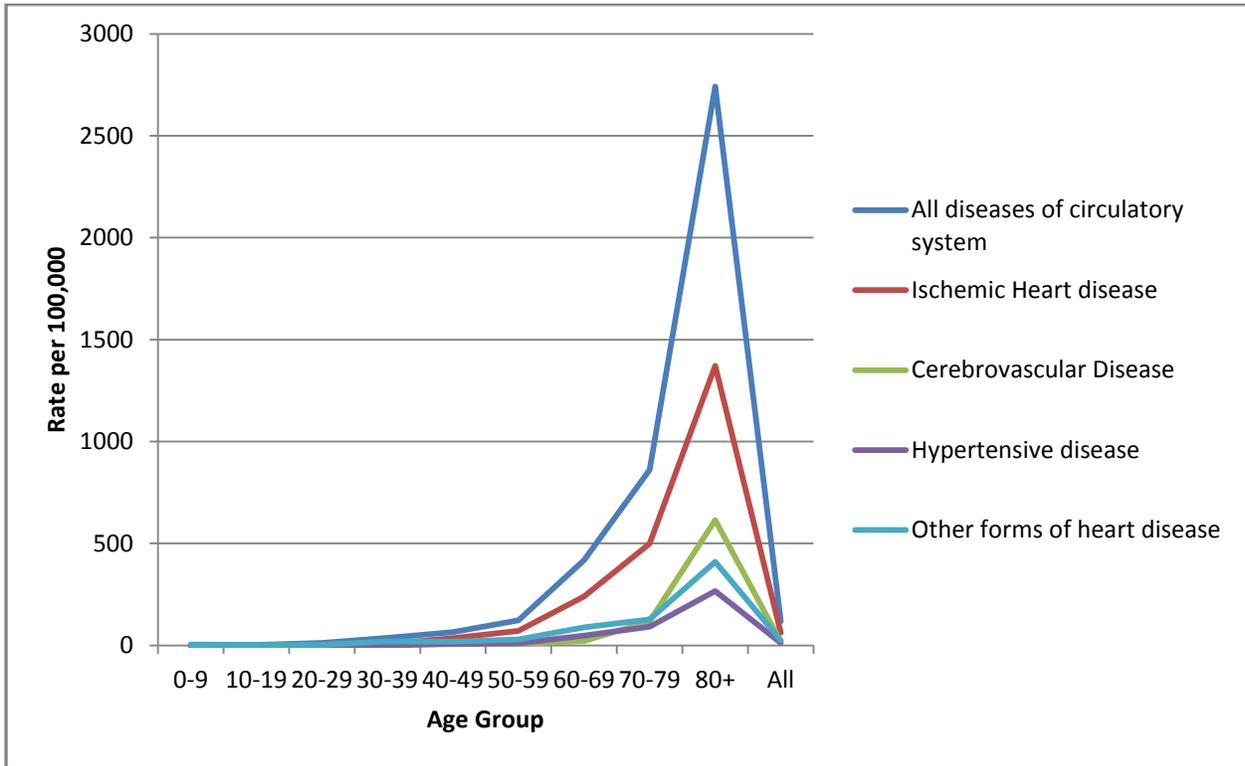
Chart 40: Diseases of the Circulatory System Crude Mortality Rates, by Age



Noteworthy

For Navajos, the leading causes of death for Diseases of the Circulatory System include Ischemic Heart Disease, followed by Cerebrovascular (i.e. Stroke), Hypertensive Disease, and Other forms of heart disease. Mortality from Diseases of the Circulatory System begins to be a major contributor to death at the 30-39 age group and increase consistently as age group increases.

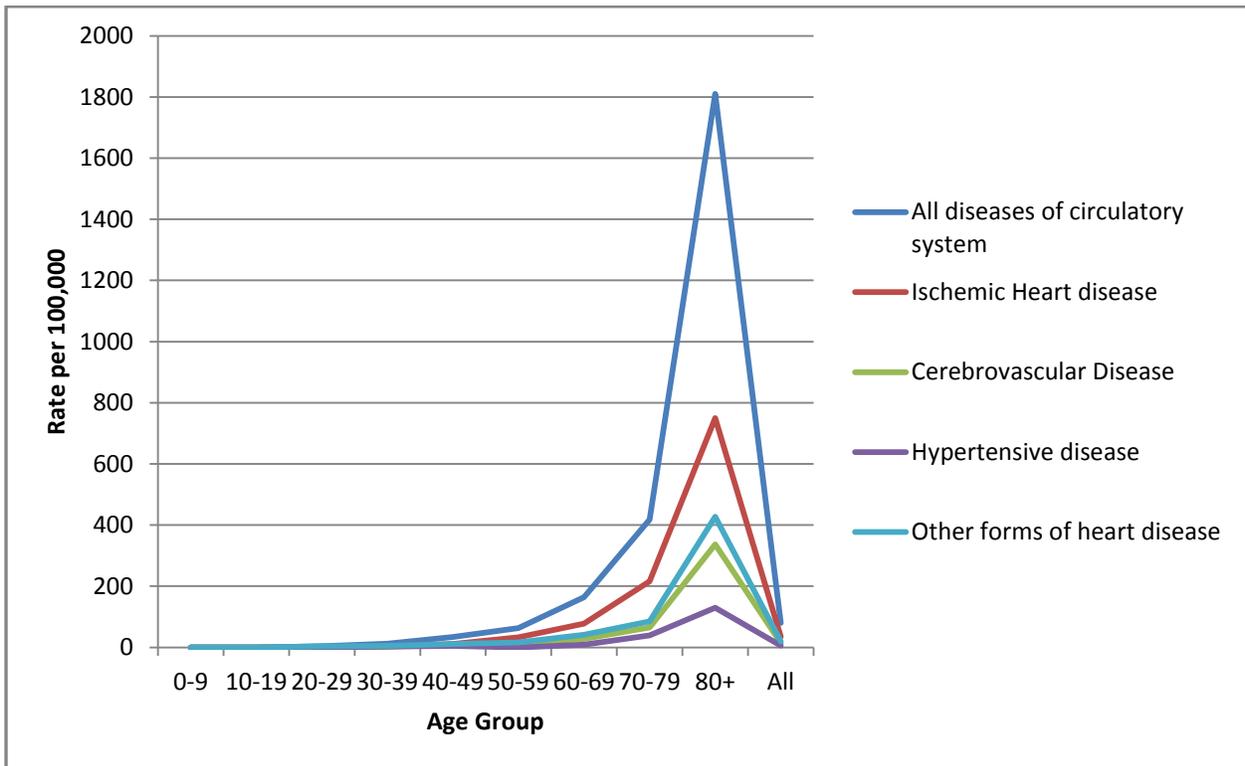
Chart 41: Male Diseases of the Circulatory System Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of death for Diseases of the Circulatory System is Ischemic Heart Disease followed by Other forms of heart disease, Hypertensive Disease and Cerebrovascular disease (i.e. Stroke). Diseases of the Circulatory System begin to be a major contributor to death at the 30-39 age group increasing slowly until the 50-59 age group.

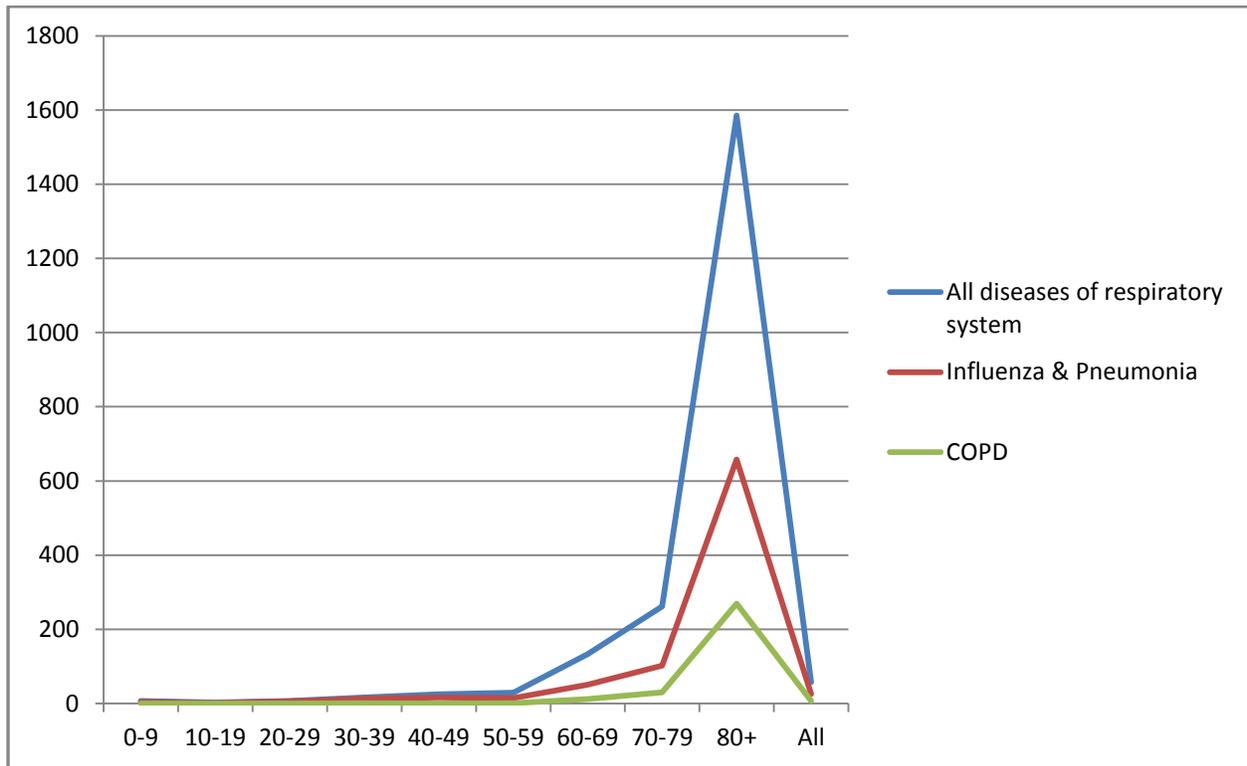
Chart 42: Female Diseases of the Circulatory System Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death for Diseases of the Circulatory System is Ischemic Heart disease. Diseases of the Circulatory system begin to be a major contributor to death at the 40-49 age group increasing slightly thereafter for later age groups. Other forms of heart disease follows Ischemic Heart disease for the 70+ age group.

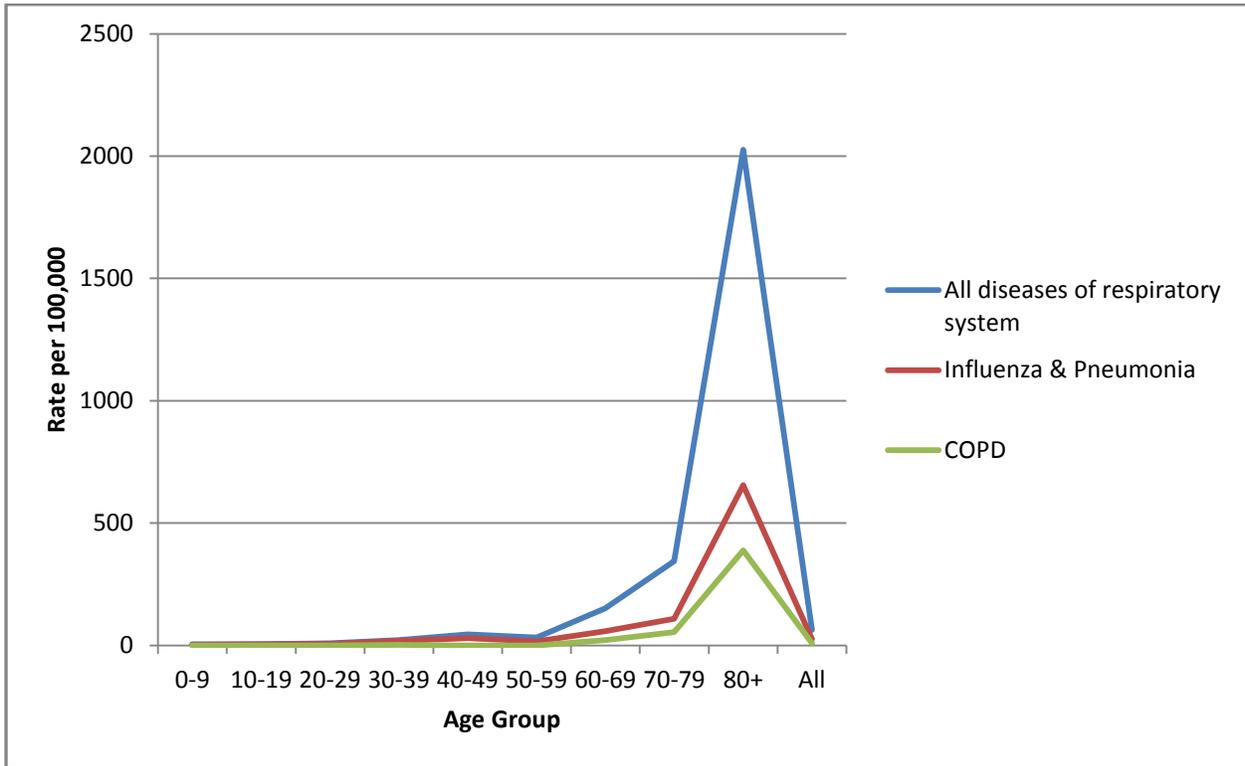
Chart 43: Diseases of the Respiratory System Crude Mortality Rates, by Age



Noteworthy

For Navajos, the leading causes of death for Diseases of the Respiratory System are Influenza & Pneumonia followed by Chronic Obstruction Pulmonary Disease. Mortality from this disease group starts to increase in the 50-59 age group. Additionally, major contributors to Diseases of the Respiratory System are Other diseases affecting the intersitium, and Lung diseases due to external agents.

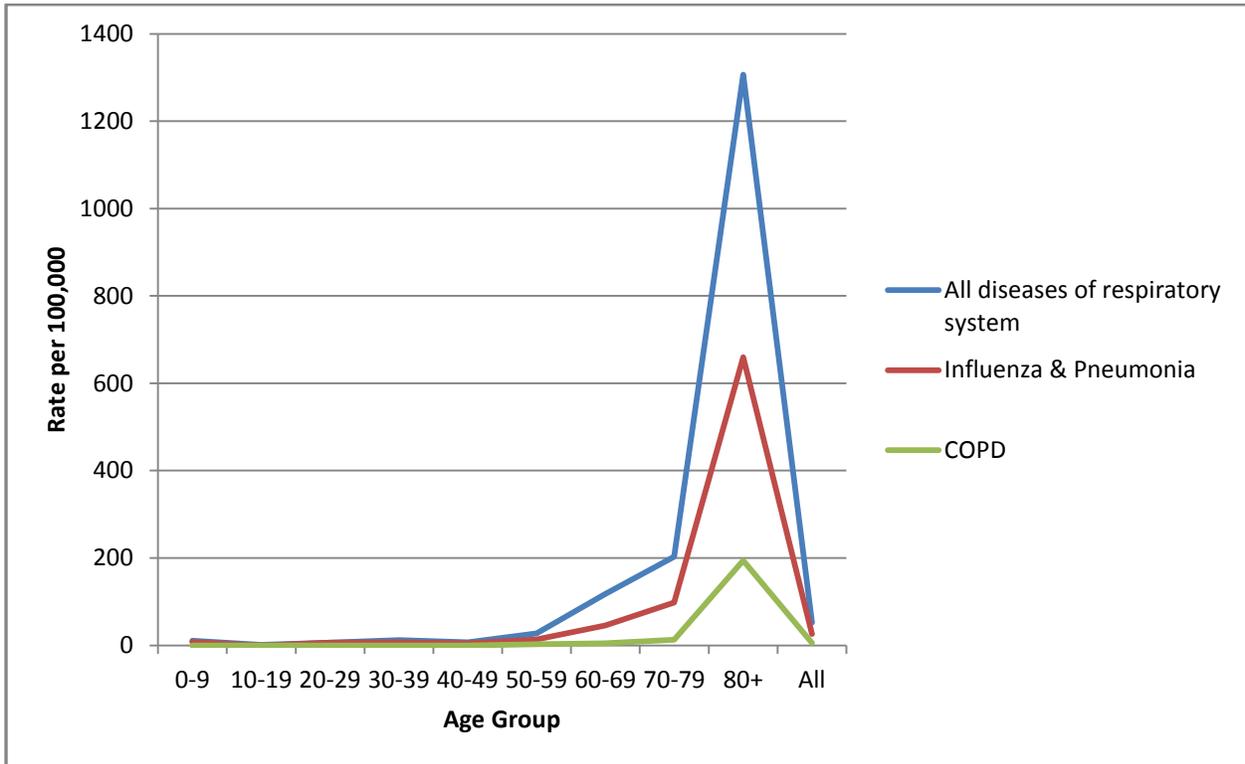
Chart 44: Male Diseases of the Respiratory System Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of death for Diseases of the Respiratory System is Influenza & Pneumonia, followed by Chronic Obstruction Pulmonary Disease with mortality occurring at the 40-49 age group.

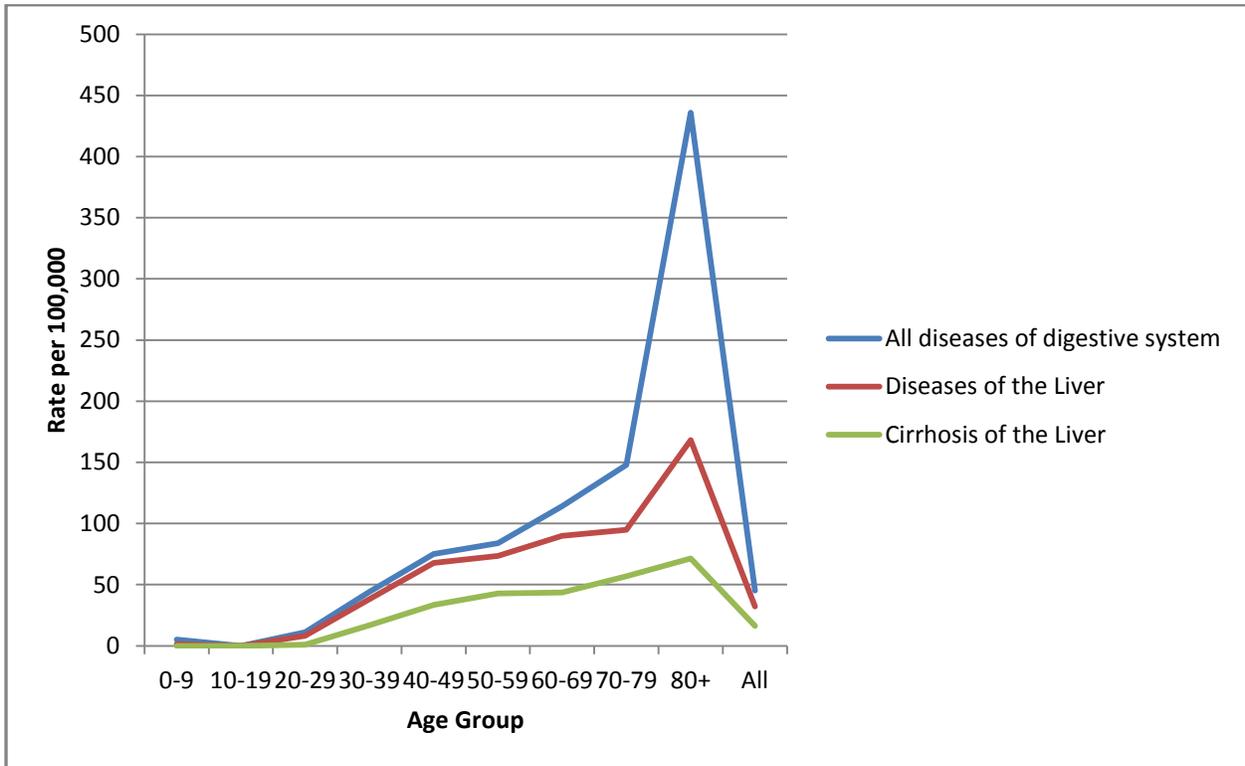
Chart 45: Female Diseases of the Respiratory System Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death for Diseases of the Respiratory System is Influenza and Pneumonia followed by Chronic Obstruction Pulmonary Disease with mortality occurring at the 50-59 age group.

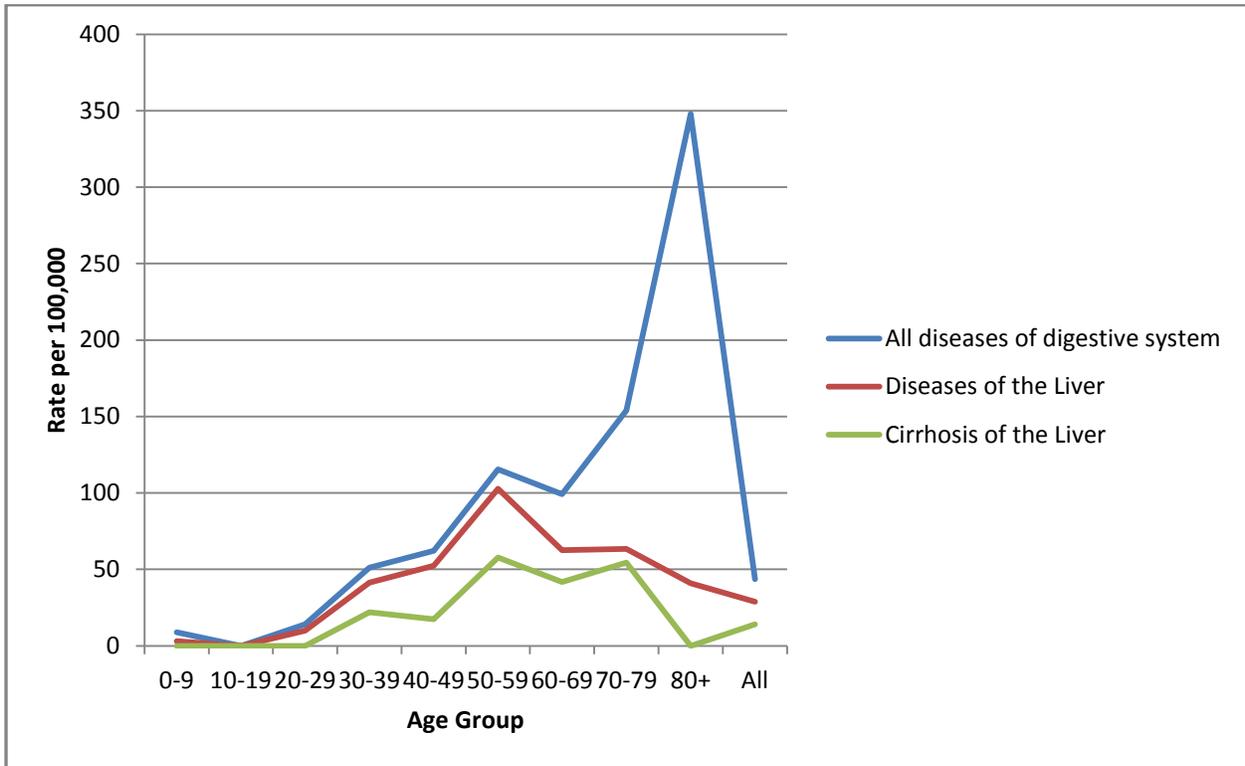
Chart 46: Diseases of the Digestive System Crude Mortality Rates, by Age



Noteworthy

For Navajos, the leading causes of death for Diseases of the Digestive System are Diseases of the Liver followed by Cirrhosis of the Liver (in most literature and reports diseases of the liver and cirrhosis of the liver are combined). Mortality starts at the 20-29 age group and steadily increases for the remaining age groups.

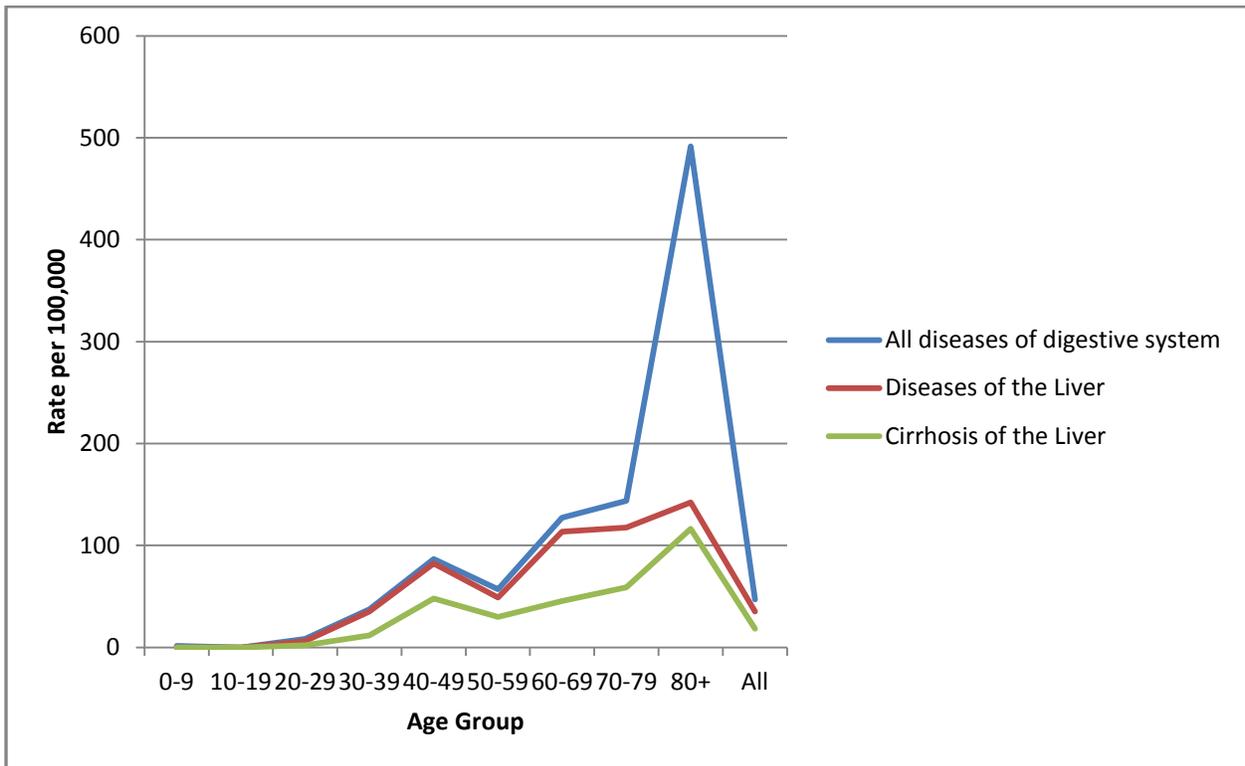
Chart 47: Male Diseases of the Digestive System Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading causes of death for Diseases of the Digestive System are Diseases of the Liver followed by Cirrhosis of the Liver. Diseases of the Liver begins to be a major contributor to death at the 30-39 age group, and Cirrhosis of the Liver begins to be a major contributor to death at the 50-59 age group. Mortality from Diseases of the Liver peak at the 50-59 age group while mortality from Cirrhosis of the Liver peaks both at the 50-59 age group and 70-79 age group.

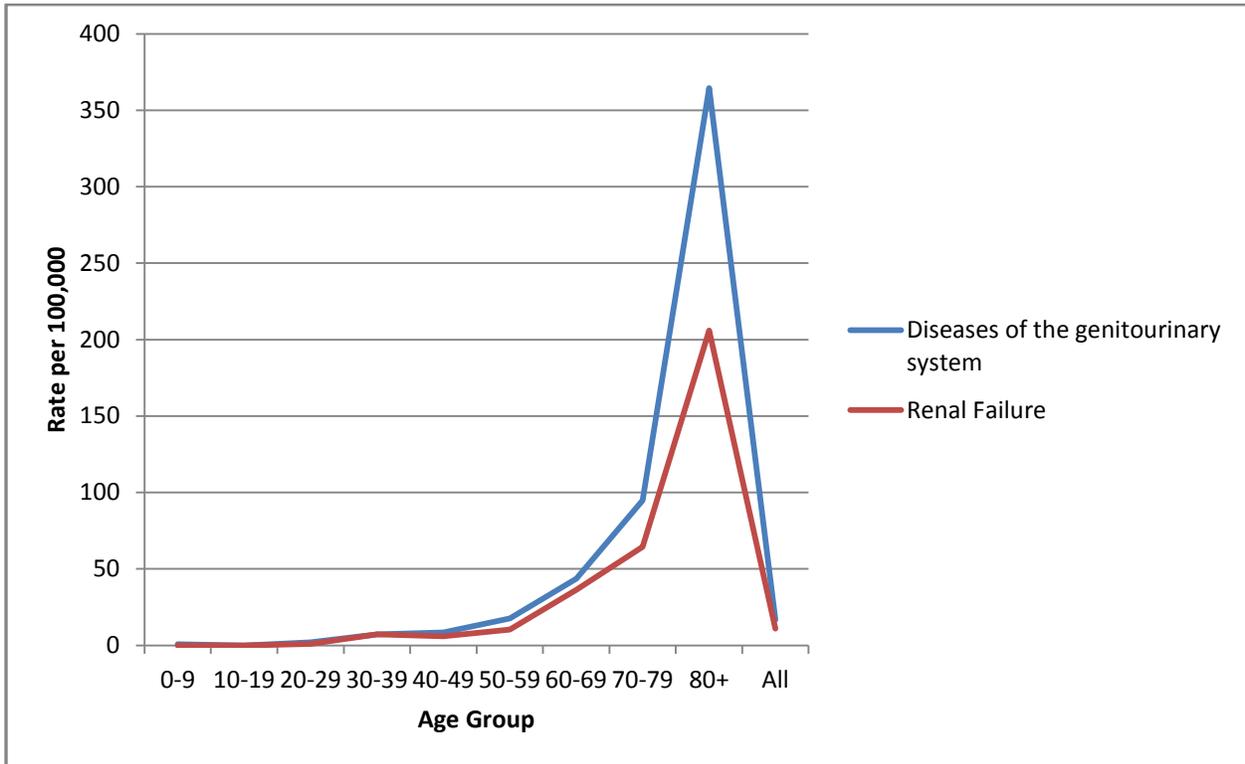
Chart 48: Female Diseases of the Digestive System Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading causes of death for Diseases of the Digestive System are Diseases of the Liver followed by Cirrhosis of the Liver. Mortality from Diseases of the Liver and Cirrhosis start at the 20-29 age group, both spike at 40-49, drop for the 50-59 age group, and increases again at the 60-69 age group.

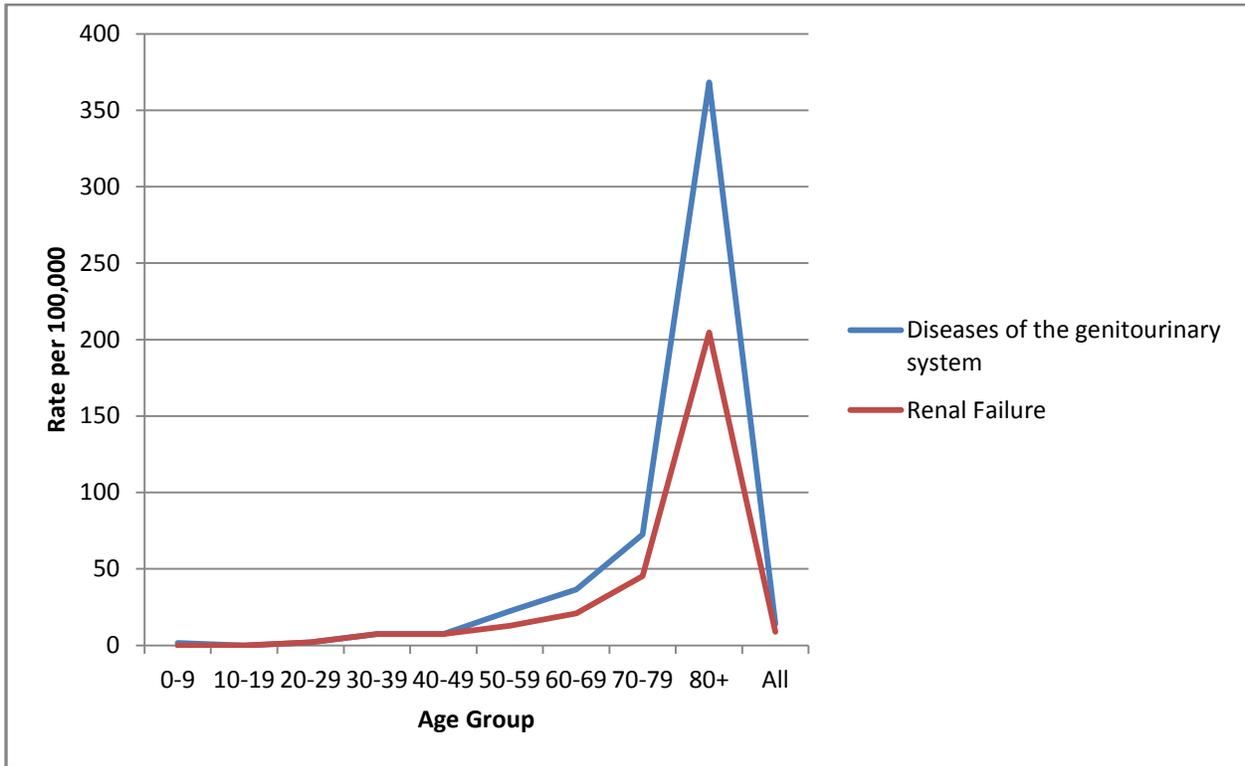
Chart 51: Diseases of the Genitourinary System Crude Mortality Rates, by Age



Noteworthy

For Navajos, the leading cause of death for Diseases of the Genitourinary System is Renal Failure. Diseases of the Genitourinary System begin to be a major contributor to death at age 50-59, and increases sharply thereafter.

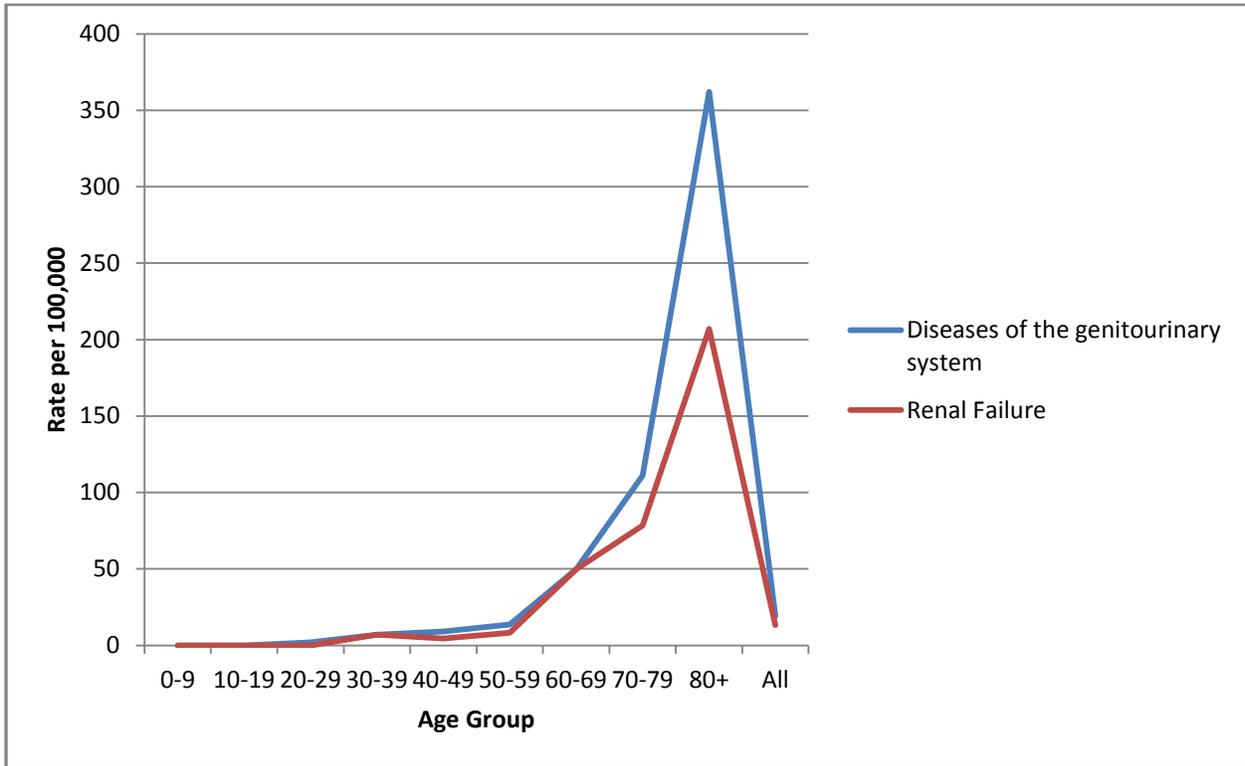
Chart 52: Male Diseases of the Genitourinary System Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of death from Diseases of the Genitourinary System is Renal Failure with mortality starting at the 30-39 age group. Mortality slightly increases over the age groups until it sharply increases beginning at the 60-69 age group.

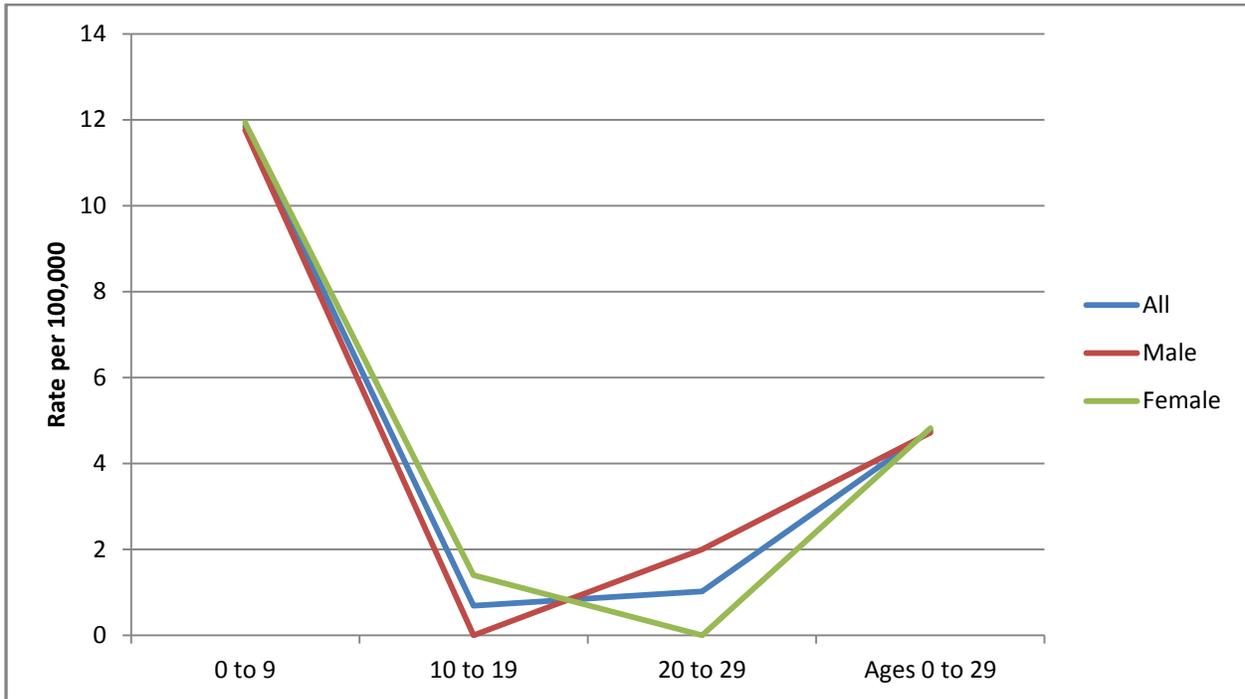
Chart 53: Female Diseases of the Genitourinary System Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death from Diseases of the Genitourinary System is Renal Failure with mortality starting at the 30-39 age group. Mortality slightly decreases for the 40-49 age group and sharply increases at the 50-59 age group.

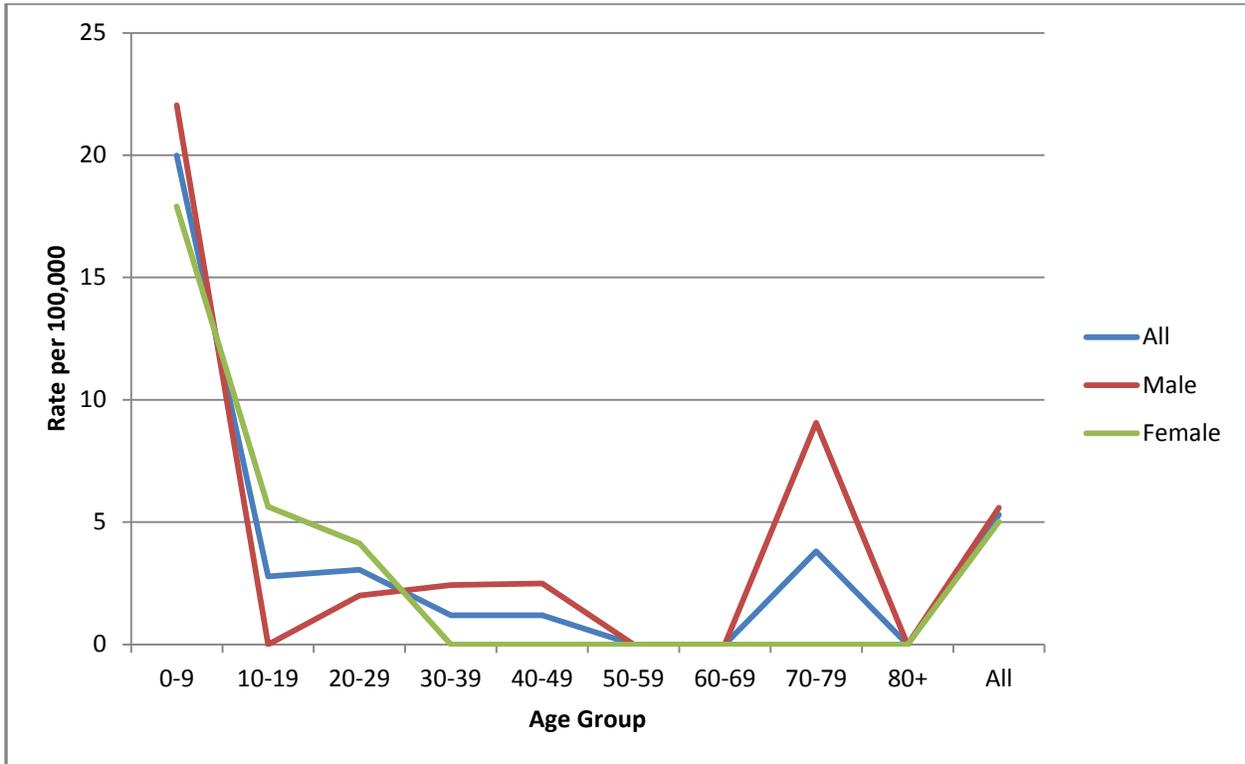
Chart 55: Conditions Originating in the Perinatal Period Crude Mortality Rates, Ages 0-29 by Gender



Noteworthy

Mortality is highest among the 0-9 age group for Conditions Originating in the Perinatal Period and then drops significantly at the 10-19 age group. More female deaths are reported in the 10-19 age group and more male deaths are reported for the 20-29 age group.

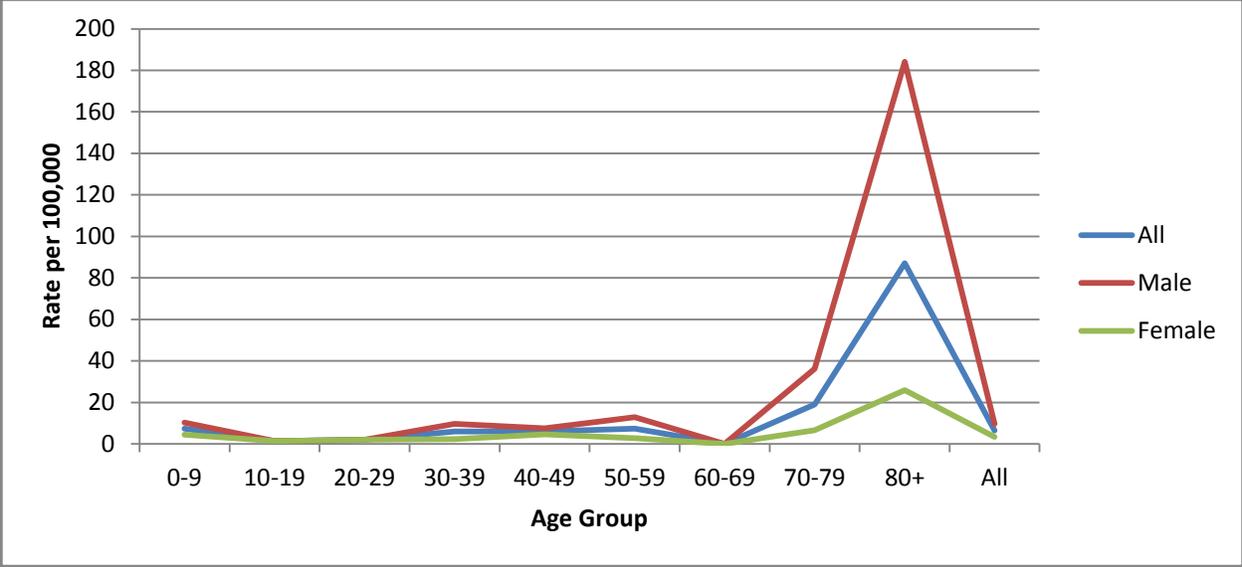
Chart 56: Congenital Malformations, Deformations, and Chromosomal Abnormalities Crude Mortality Rates, by Gender and Age



Noteworthy

Mortality is highest among the 0-9 age group for Congenital Malformations, Deformations, and Chromosomal Abnormalities. Mortality among females is highest at the 0-9 age group then declines sharply at the 10-19 age group, and among males mortality also sharply decreases at the 10-19 age group but increases slightly for age groups 20-20 through 40-49.

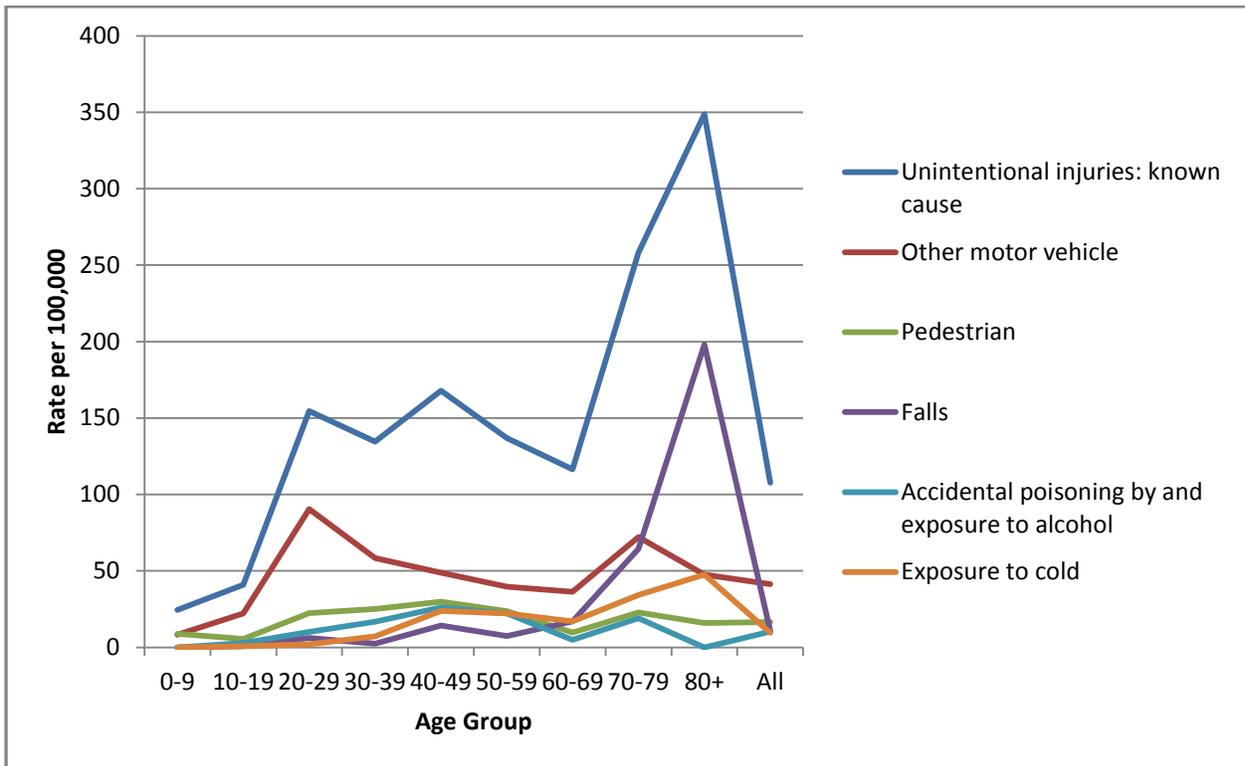
Chart 57: Symptoms, Signs, and Abnormal Clinical and Laboratory Findings Not Elsewhere Classified
Crude Mortality Rates, by Gender and Age



Noteworthy

Mortality starts in the 0-9 age group, decreasing for the 20-29 age group and increasing for the 30-39 age group. Male mortality is higher than the female counterpart increasing sharply for the 60-69 age group.

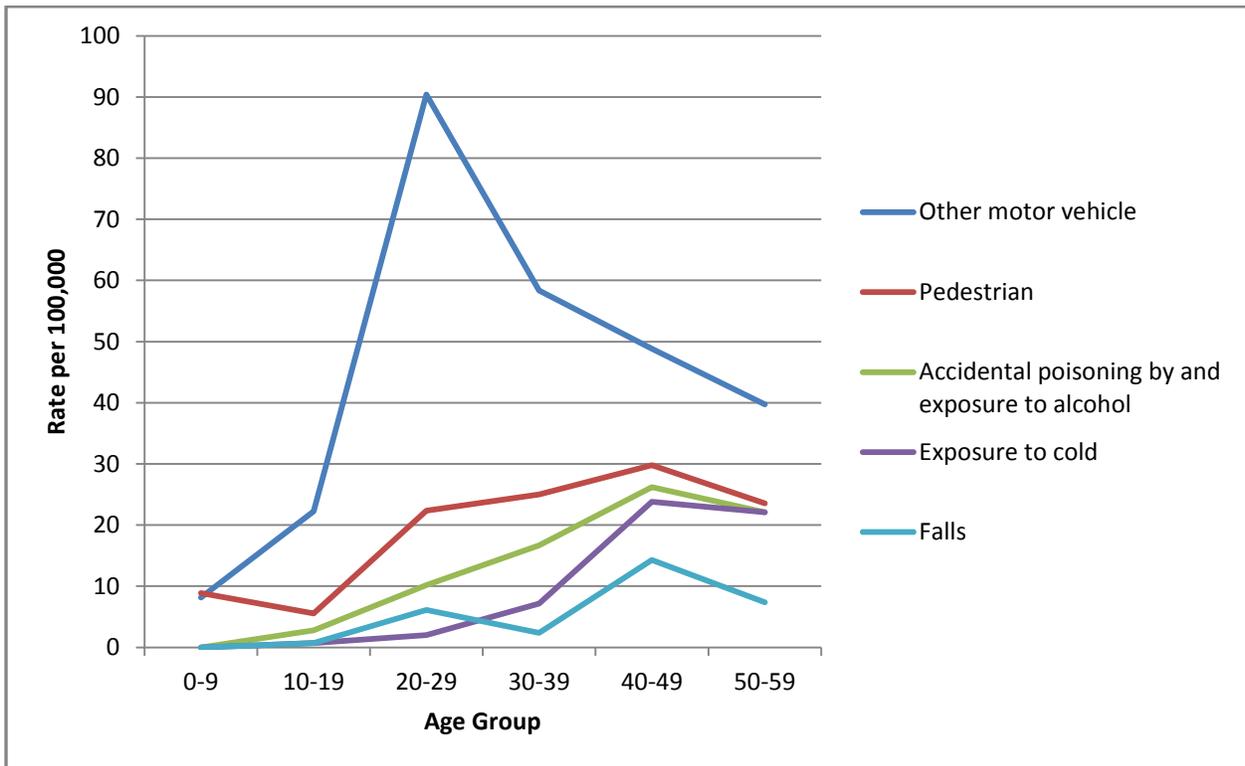
Chart 58: Crude Mortality Rates for Selected Unintentional Injuries, by Age



Noteworthy

For Navajos, the leading cause of death for Unintentional Injuries are from motor vehicles with mortality starting at the 0-9 age group, increasing sharply and peaking at 20-29 age group. The next leading causes of Unintentional Injuries are pedestrian deaths, accidental poisoning, and exposure to cold. Falls become the leading cause of death for the 70-79 age group.

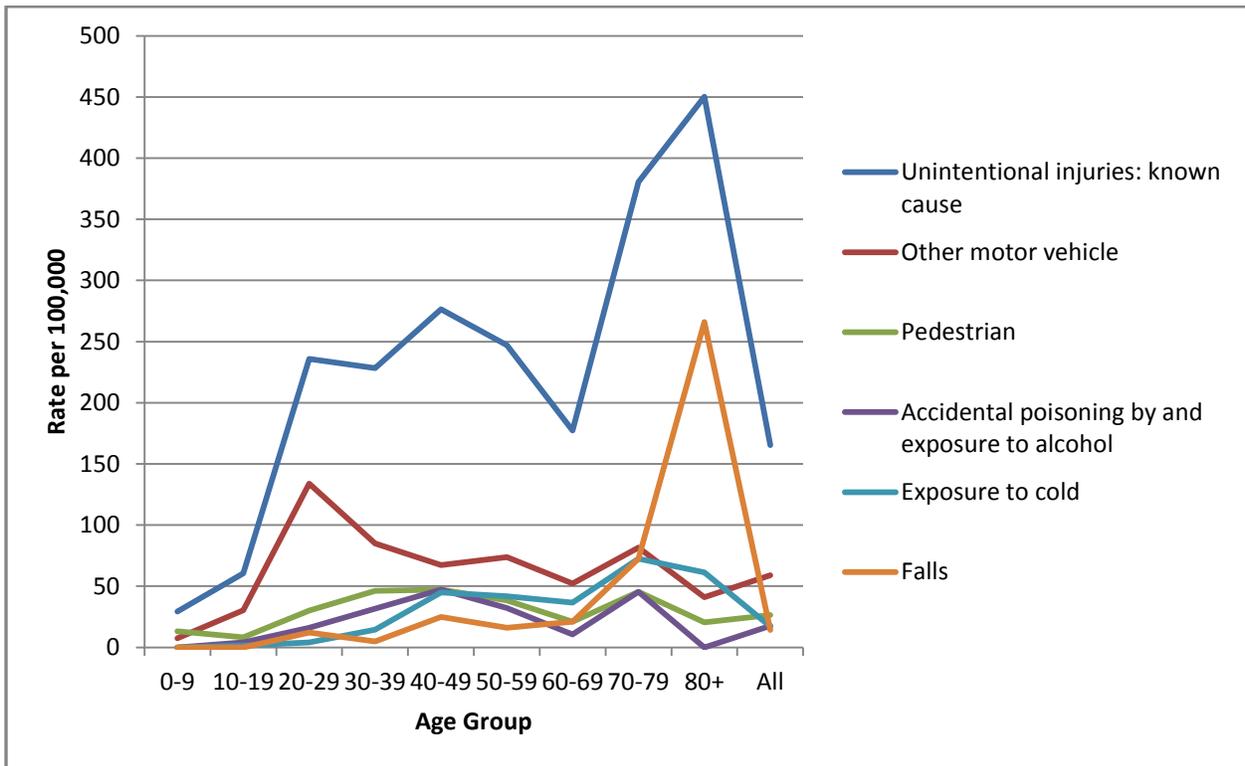
Chart 59: Unintentional Injury Crude Mortality by Leading Cause, Ages 0-59



Noteworthy

The leading cause of death for Unintentional Injuries are motor vehicles peaking at 90 per 100,000 for the 20-29 age group followed by pedestrian deaths, accidental poisoning by and exposure to alcohol. Mortality from Unintentional Injuries starts to decline at the 40-49 age group.

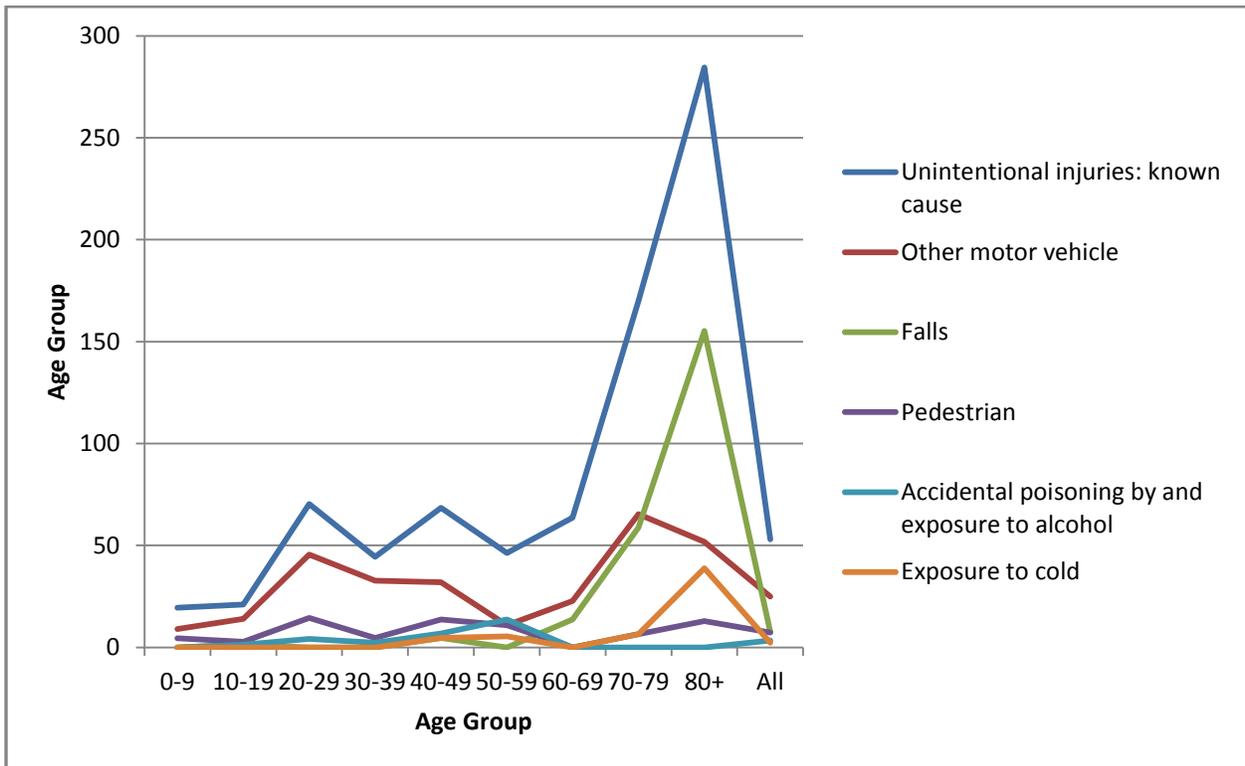
Chart 60: Male Selected Unintentional Injury Crude Mortality Rates, by Age



Noteworthy

For Navajo males, the leading cause of Unintentional Injury death is motor vehicles followed by pedestrian deaths, accidental poisoning by and exposure to alcohol, exposure to cold, and falls. Death from motor vehicles peaks at 130 per 100,000 for the 20-29 age group. Falls become the leading cause of death for the 70-79 age group.

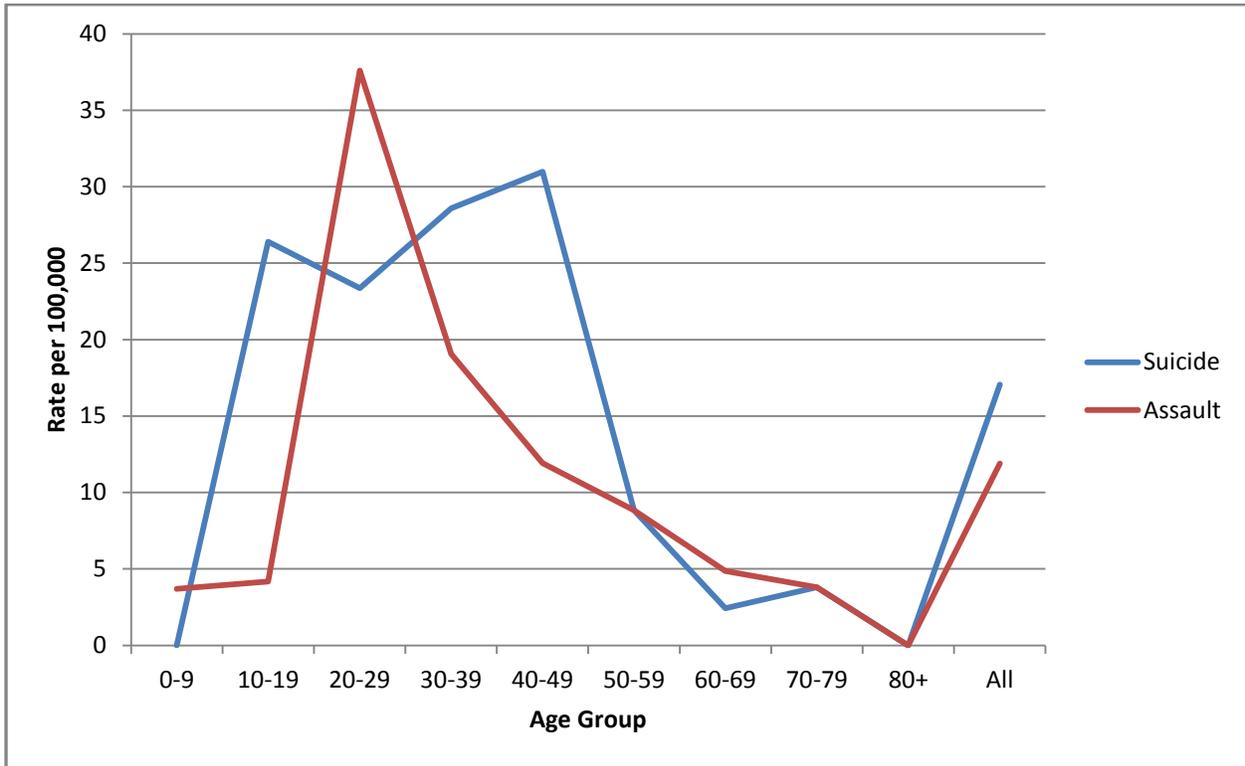
Chat 61: Female Selected Unintentional Injury Crude Mortality Rates, by Age



Noteworthy

For Navajo females, the leading cause of death from Unintentional injury is motor vehicles followed by falls, pedestrian deaths, accidental poisoning by and exposure to alcohol, and exposure to cold. Motor vehicle deaths peak at 48 per 100,000 for the 20-29 age group. Falls become the leading cause of death for the 80+ age group.

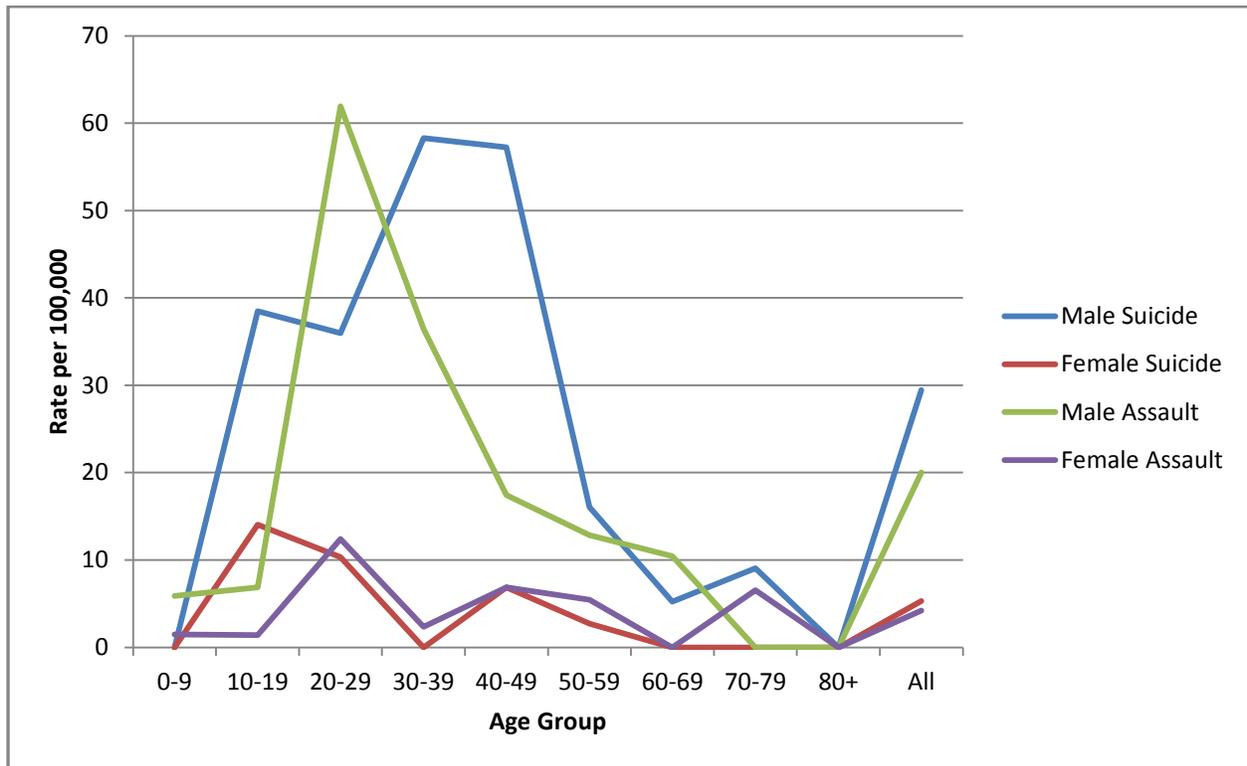
Chart 62: Intentional Crude Injury Mortality Rates, by Age



Noteworthy

For Navajos, Suicide is the leading cause of death for intentional injury with the first peak at 26 per 100,000 for the 10-19 age group, and a second peak at 31 per 100,000 for the 40-49 age group. Assault peaks at 37 per 100,000 for the 20-29 age group, and then decreases sharply thereafter.

Chart 63: Intentional Injury Crude Mortality Rates, by Gender and Age



Noteworthy

The male Suicide rate is more than women across all age groups. Male Suicide peaks twice; first at the 10-19 age group with a mortality rate of 39 per 100,000 then again at the 30-39 age group with a mortality rate of 58 per 100,000. Female Suicide is highest at the 10-19 age group and no Suicides are reported for the 30-39 age group.

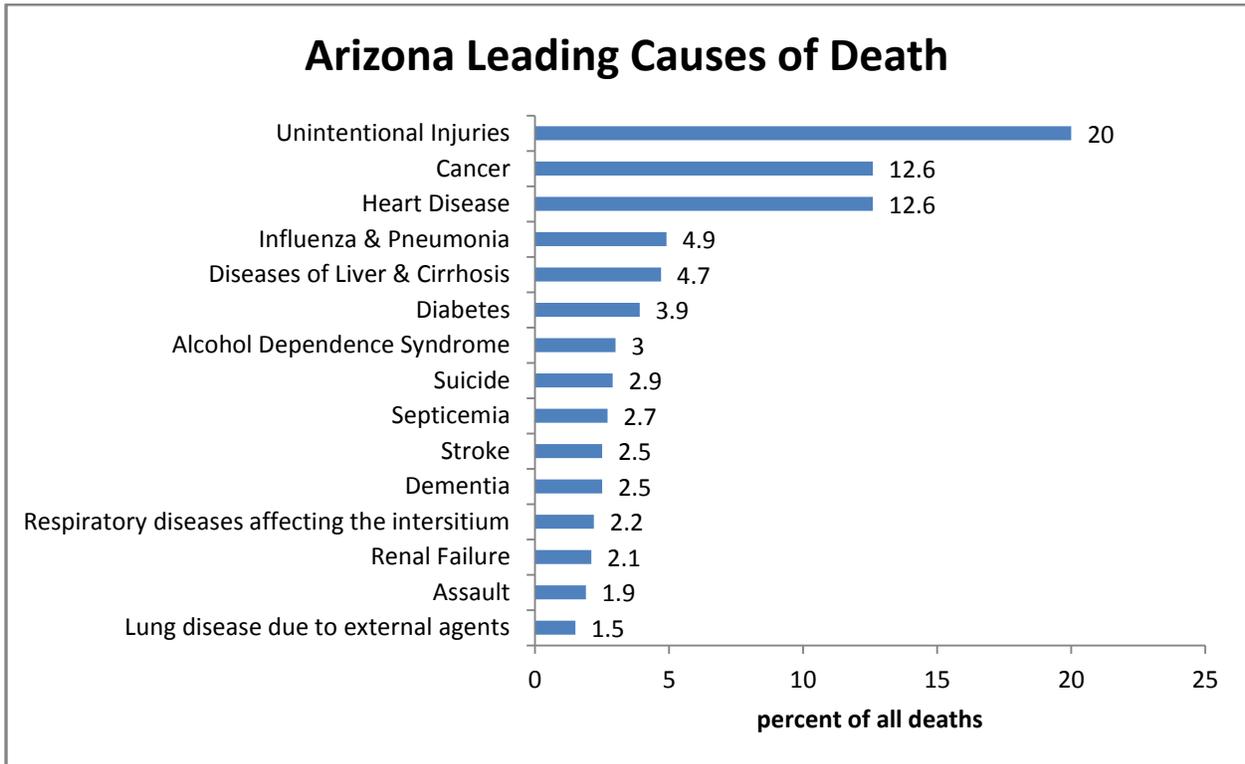
Table 21 Arizona Portion of the Navajo Nation Leading Causes of Death 2006-2009 (2,235 total deaths)

Rank	Cause of Death	Count	Percent of total
1	Unintentional Injuries	448	20.0%
2	Heart Disease	282	12.6%
3	Cancer	281	12.6%
4	Influenza & Pneumonia	110	4.9%
5	Diseases of Liver & Cirrhosis	106	4.7%
6	Diabetes	88	3.9%
7	Alcohol Dependence Syndrome	68	3.0%
8	Intentional Self-harm	65	2.9%
9	Septicemia	60	2.7%
10	Dementia	55	2.5%
10	Stroke	55	2.5%
12	Other respiratory diseases principally affecting the interstitium	49	2.2%
13	Renal Failure	47	2.1%
14	Assault	43	1.9%
15	Lung Disease due to external agents	34	1.5%

Noteworthy

For Arizona Navajos, the leading cause of death is Unintentional Injuries, which accounts for 20% of all deaths followed by Heart Disease and Cancer, each accounting for 12.6% of all deaths.

Chart 64: Arizona Portion of Navajo Nation Leading Causes of Death 2006-2009, Percent of All Deaths



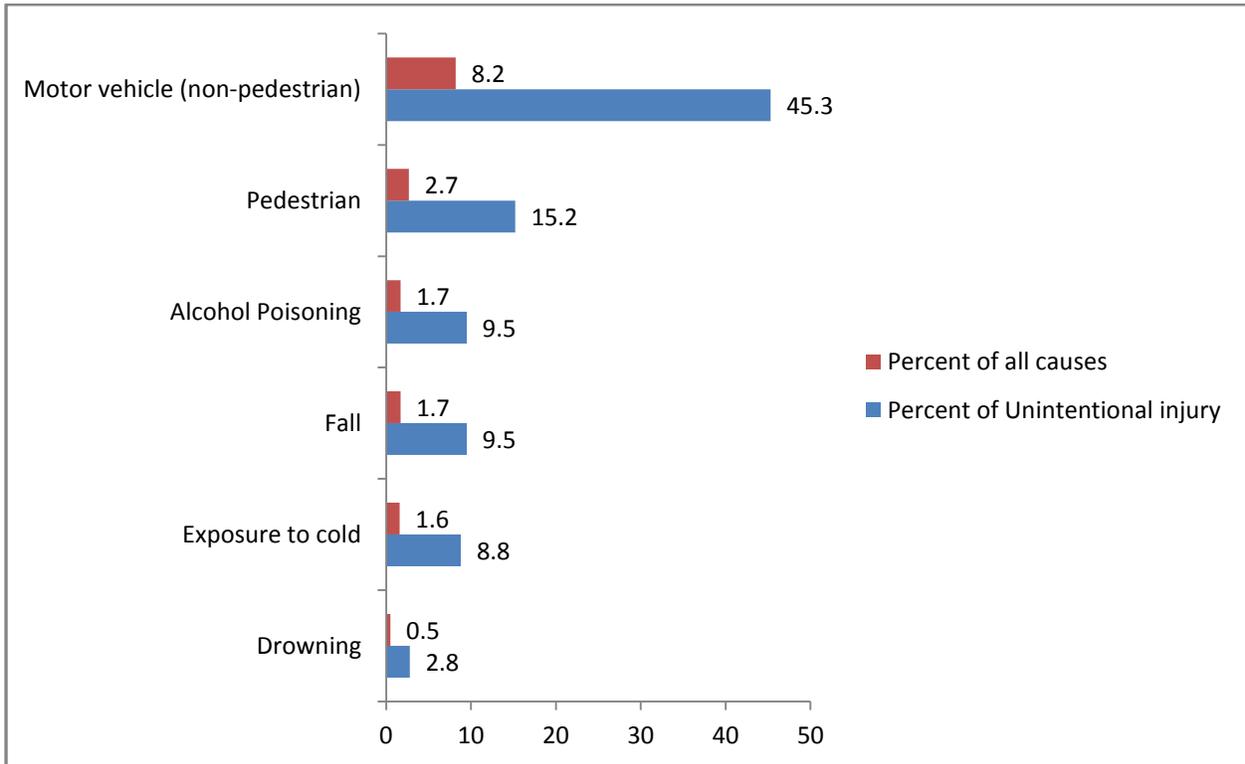
Noteworthy

Almost half (45.2%) of all deaths are attributable to Unintentional Injuries, Heart Disease, and Cancer for Navajos in Arizona.

Table 22: Arizona Portion of the Navajo Nation Leading Causes of Unintentional Injury Death

Cause	Count	Percent of ALL causes	Percent of Unintentional Injury
Motor Vehicle Injuries (non-pedestrian)	191	8.2%	45.3%
Pedestrian Injury	64	2.7%	15.2%
Fall	40	1.7%	9.5%
Unintentional Alcohol Poisoning	40	1.7%	9.5%
Exposure to excessive natural cold	37	1.6%	8.8%
Drowning	12	0.5%	2.8%

Chart 65: Arizona Portion of Navajo Nation Leading Causes of Unintentional Injury Death



Noteworthy

In Arizona, 45% of Unintentional Injury deaths are motor vehicle occupants, which also comprise 8% of all deaths. The next leading Unintentional Injury cause is pedestrian deaths at 15% of unintentional injury deaths, comprising of 3% of all deaths.

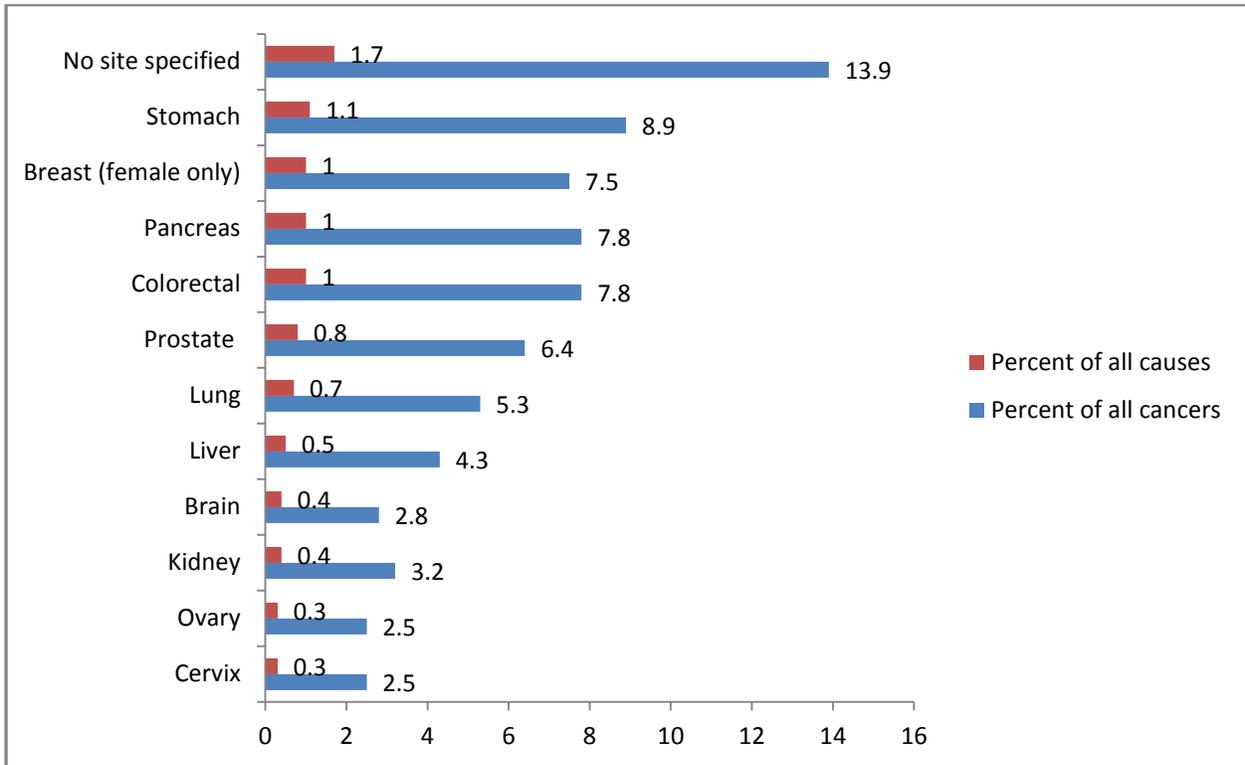
Table 23: Arizona Portion of Navajo Nation Leading Cancer Cause

Cause	Count	Percent of ALL causes	Percent of cancers
No site specified	39	1.7%	13.9%
Stomach	25	1.1%	8.9%
Colorectal	22	1.0%	7.8%
Pancreas	22	1.0%	7.8%
Breast (female only)	21	0.9%	7.5%
Prostate (male only)	18	0.8%	6.4%
Lung	15	0.7%	5.3%
Liver	12	0.5%	4.3%
Kidney	9	0.4%	3.2%
Brain	8	0.4%	2.8%
Cervix	7	0.3%	2.5%
Ovary	7	0.3%	2.5%

Noteworthy

For Navajos in Arizona, the leading cause of Cancer death was “no site specified” at 1.7% of all causes, and 13.9% of all cancers.

Chart 66: Arizona Portion of Navajo Nation Leading Cancer Sites



Noteworthy

For Navajos in Arizona, the 12 leading causes of Cancer deaths account for 9.2% of all deaths with “no site specified” as the leading cause, followed by stomach, breast (female only), pancreas, and colorectal cancers.

Table 24: Arizona Portion of Navajo Nation Leading Causes of Death, Male

Rank	Cause of Death	Count	Percent of total
1	Unintentional Injuries	341	25.5%
2	Heart Disease	168	12.6%
3	Cancer	135	10.1%
4	Alcohol Dependence Syndrome	61	4.6%
5	Influenza & Pneumonia	54	4.0%
6	Intentional Self-harm	53	4.0%
7	Diabetes	50	3.7%
8	Diseases of Liver & Cirrhosis	47	3.5%
9	Assault	37	2.8%
10	Stroke	29	2.2%

Noteworthy

For Navajo males in Arizona, Unintentional Injury is the leading cause of death at 25.5% of total deaths, followed by Heart Disease (12.6%), Cancer (10.1%), and Alcohol Dependence Syndrome (4.6%). The top three causes of death account for 48.2% of all deaths for Navajo males in Arizona.

Table 25: Arizona Portion of the Navajo Nation Leading Unintentional Injury Cause, Males

Cause	Count	Percent of ALL causes	Percent of Unintentional Injury
Motor Vehicle Injuries (non-pedestrian)	136	10.2%	43.6%
Pedestrian Injury	49	3.7%	15.7%
Unintentional Alcohol Poisoning	36	2.7%	11.5%
Exposure to excess natural cold	32	2.4%	10.3%
Fall	24	1.8%	7.7%
Drowning	12	0.9%	3.8%

Noteworthy

For Navajo males in Arizona, the leading Unintentional Injury cause is motor vehicle injuries (non-pedestrian) at 43.6%, accounting for 10.2% of all causes, followed by pedestrian injury at 15.7% of Unintentional Injury deaths, and 3.7% of all causes. Motor vehicle and pedestrian injury make up 59.3% of all Unintentional Injury causes.

Table 26: Arizona Portion of Navajo Nation Leading Causes of Death, Females

Rank	Cause of Death	Count	Percent of total
1	Cancers	146	16.2%
2	Heart Disease	114	12.7%
3	Unintentional Injury	107	11.9%
4	Diseases of Liver & Cirrhosis	59	6.6%
5	Influenza & Pneumonia	56	6.2%
6	Dementia	43	4.8%
7	Diabetes	38	4.2%
8	Septicemia	33	3.7%
9	Renal Failure	27	3.0%
10	Stroke	26	2.9%
10	Other respiratory diseases principally affecting the interstitium (J80.0-J84.9)	26	2.9%

Noteworthy

For Navajo females in Arizona, Cancer deaths are the leading cause of death at 16.2% of total deaths, followed by Heart Disease (12.7%), Unintentional Injury (11.9%), and Diseases of the Liver and Cirrhosis (6.6%). The top five leading causes of death account for 53.6% of all deaths for Navajo females in Arizona.

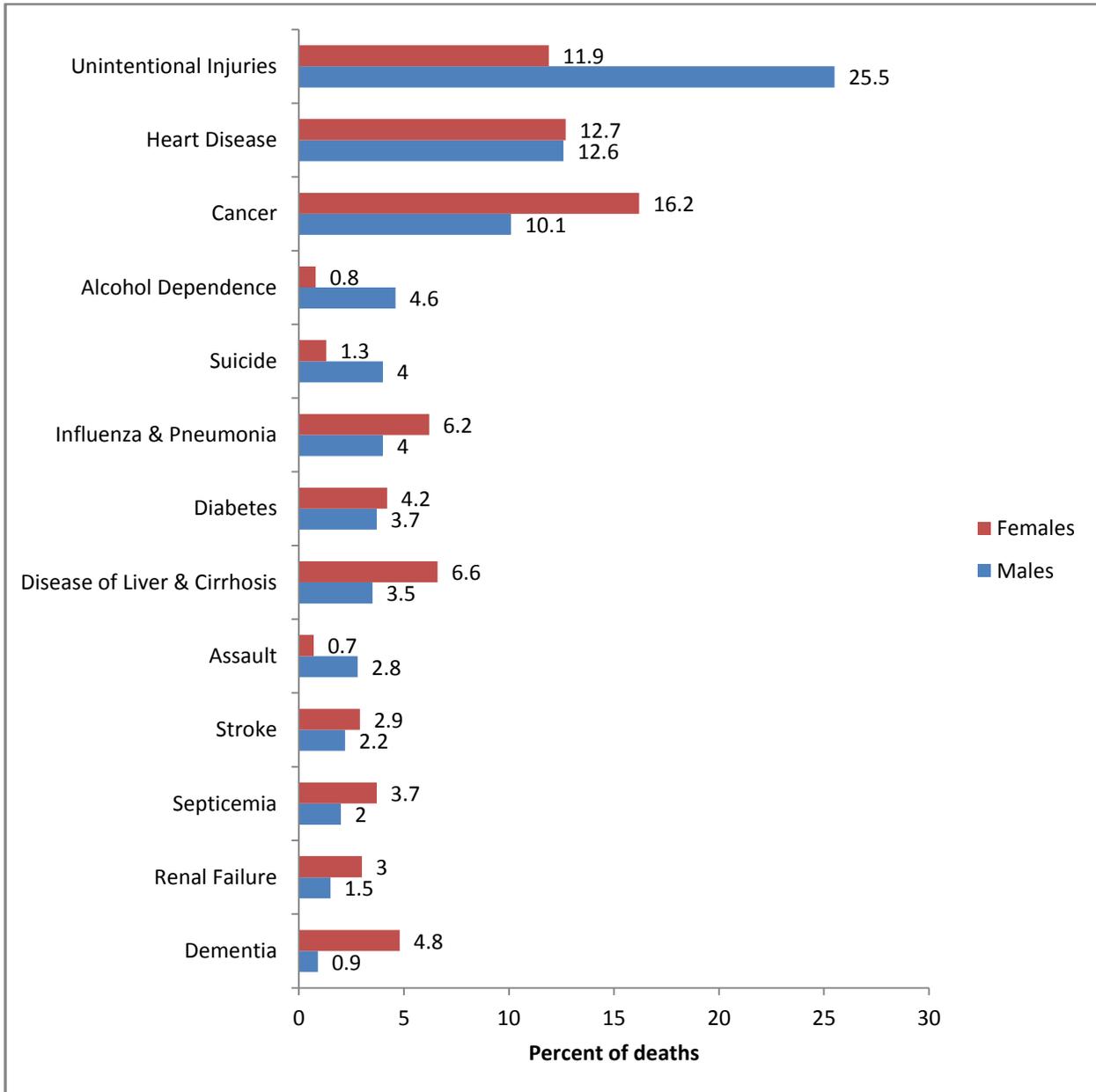
Table 27: Arizona Portion of Navajo Nation Leading Unintentional Injury Cause, Female

Cause	Count	Percent of ALL causes	Percent of Unintentional Injury
Motor Vehicle Injury (non-pedestrian)	55	6.1%	50.0%
Fall	16	1.8%	14.5%
Pedestrian Injury	15	1.7%	13.6%

Noteworthy

For Navajo females in Arizona, the leading Unintentional Injury cause is motor vehicle injuries (non-pedestrian) at 50%, accounting for 6.1% of all causes, followed by falls at 14.5% of Unintentional Injury death, and 1.8% of all causes. Motor vehicle injury, alone, makes up 50% of all Unintentional Injury causes.

Chart 67: Arizona Portion of Navajo Nation Leading Causes of Death, by Gender



Noteworthy

For Navajos in Arizona, more females are reported dying from Cancer, Influenza and Pneumonia, Diabetes, Disease of the Liver and Cirrhosis, Stroke, Septicemia, Renal Failure, and Dementia than males. Males disproportionately die from Unintentional Injuries, Alcohol Dependence, Suicide, and Assault.

Table 28: Arizona Portion of Navajo Nation All Causes Mortality Rates per 100,000 persons

Category	Crude Rate	Age-Adjusted
Total	566.15	744.94
Female	445.89	610.00
Male	691.96	861.52

Noteworthy

All previous descriptions were percentages and counts of all causes. In this table, we move to crude rate and age-adjusted rates in which a comparison can be made between the sexes. The Navajo total mortality rates increases after adjusting for age from 566.15 per 100,000 to 744.94 per 100,000.

Table 29: Arizona Portion of Navajo Nation 15 Leading Causes of Death Crude and Age adjusted Mortality per 100,000 Persons

Cause	Crude Rate	Age-Adjusted
Unintentional Injury	113.48	130.90
Heart Disease	71.43	101.28
Cancer	71.18	97.11
Influenza & Pneumonia	27.86	39.23
Diseases of Liver & Cirrhosis	26.85	33.58
Diabetes	22.29	30.92
Alcohol Dependence Syndrome	17.23	21.21
Suicide	16.47	16.41
Septicemia	15.20	20.56
Dementia	13.93	22.51
Stroke	13.93	21.16
Other respiratory diseases principally affecting the interstitium (J80.0-J84.9)	12.41	18.04
Renal Failure	11.91	16.39
Assault	10.89	11.82
Lung Disease due to external agents	8.61	13.46

Noteworthy

For Arizona Navajos, the 7 leading cause of death remain in place after adjusting for age. All leading causes of death increase after adjustment for age except for Suicide. This is mainly because only younger Navajo males tend to commit suicide.

Table 30: Arizona Portion of Navajo Nation 15 Leading Causes of Death Crude and Age-adjusted Mortality per 100,000 Persons, Males

Cause	Crude Rate	Age-Adjusted
Unintentional injuries	176.74	204.38
Heart Disease	87.08	114.43
Cancer	69.97	92.70
Alcohol	31.62	39.86
Influenza & Pneumonia	27.99	36.27
Suicide	27.47	28.59
Diabetes	25.92	33.88
Diseases of Liver & Cirrhosis	24.36	30.63
Assault	19.18	21.00
Stroke	15.03	20.74
Septicemia	13.99	18.06
Lung Disease due to external agents	12.96	17.86
Other respiratory diseases principally affecting the interstitium (J80.0-J84.9)	11.92	16.39
Hypertensive Disease	10.37	14.09
Renal Failure	10.37	13.77

Noteworthy

For Navajo males in Arizona, mortality rates increase after adjustment for age for all causes. Unintentional injuries remain as the leading cause. After adjusting for age, Diabetes and Diseases of Liver and Cirrhosis are reported as the 5th and 6th leading cause of death (moving from 7th and 8th place respectively).

Table 31: Arizona Portion of Navajo Nation 15 Leading Causes of Death Crude and Age-adjusted per 100,000, Females

Cause	Crude Rate	Age-Adjusted
Cancer	72.33	99.97
Heart Disease	56.48	88.01
Unintentional Injury	53.01	62.95
Diseases of Liver & Cirrhosis	29.23	36.84
Influenza & Pneumonia	27.74	42.23
Dementia	21.30	37.49
Diabetes	18.83	28.36
Septicemia	16.35	23.33
Renal Failure	13.38	18.64
Stroke	12.88	20.47
Other respiratory diseases principally affecting the interstitium (J80.0-J84.9)	12.88	19.48
Diseases of musculoskeletal system and connective tissue (M00.9-M86.9)	7.93	11.05
Parkinson's	7.43	12.48
Alzheimer's	5.95	10.49
Hypertensive disease	5.95	9.01
Suicide	5.95	4.98

Noteworthy:

For Navajo females in Arizona, mortality rates increase after adjustment for age for all causes except Suicide, with Cancer still as the leading cause. After adjusting for age, Influenza and Pneumonia is reported as the 4th leading cause of death followed by Dementia (5th leading cause of death), and Diseases of Liver and Cirrhosis (6th leading cause of death).

Chart 68: Arizona Portion of Navajo Nation Age Adjusted Mortality Rates, by Gender

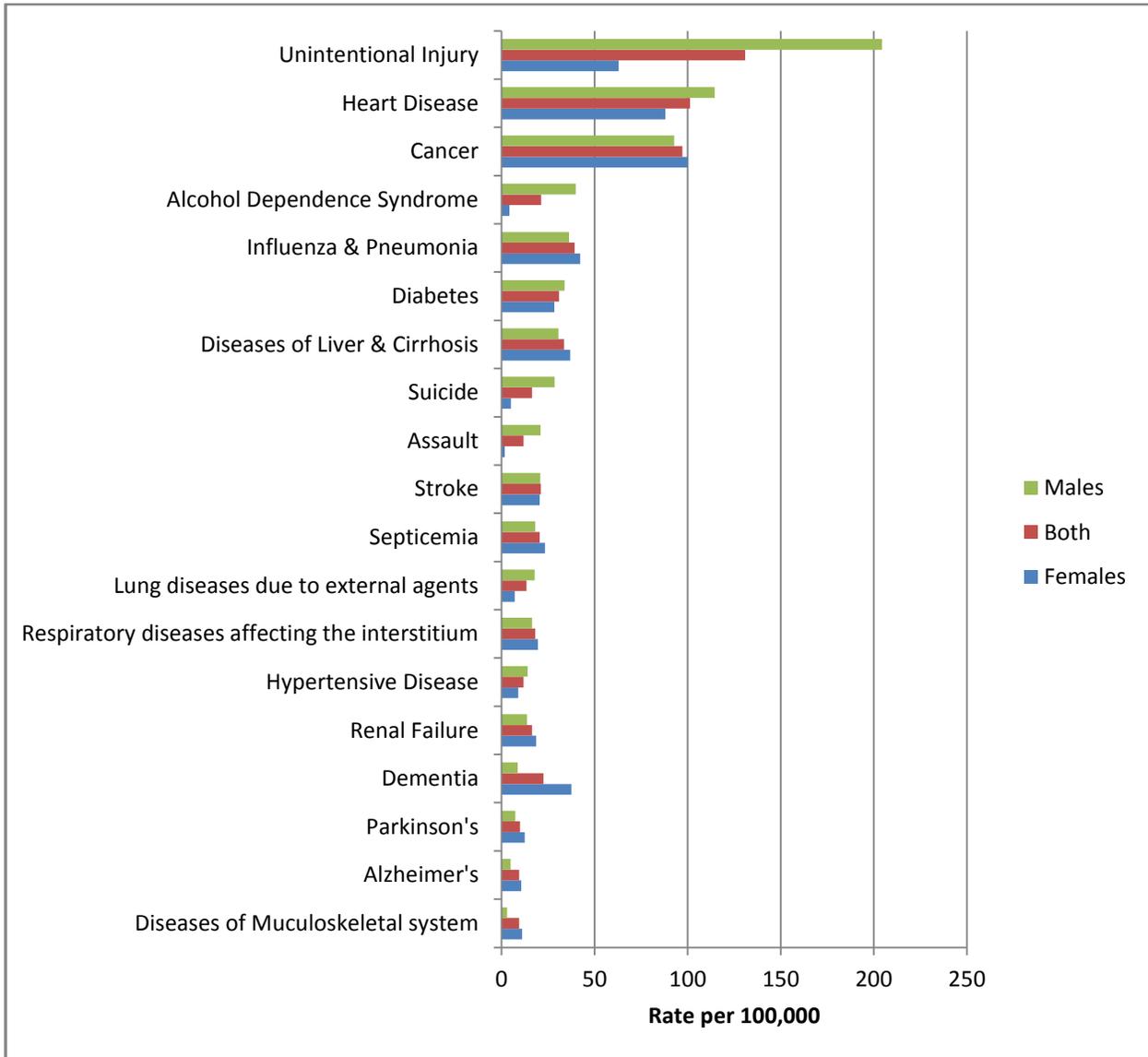


Table 32: New Mexico Portion of Navajo Nation Leading Causes of death (1,740 total deaths)

Rank	Cause	Count	Percent of All Deaths
1	Unintentional Injury	304	17.5%
2	All Cancers	225	12.9%
3	Heart Disease	203	11.7%
4	Diabetes	140	8.0%
5	Diseases of Liver & Cirrhosis	118	6.8%
6	Influenza & Pneumonia	71	4.1%
7	Suicide	54	3.1%
8	Stroke	52	3.0%
9	Chronic Lower Respiratory disease	42	2.4%
10	Assault	41	2.4%
11	Other respiratory diseases affecting the interstitium	38	2.2%
12	Septicemia	30	1.7%
12	Renal Failure	30	1.7%
14	Dementia	28	1.6%
14	Alcohol Dependence Syndrome	28	1.6%

Noteworthy

Among Navajo males and females in New Mexico, the 5 leading causes of death account for 56.9% of all deaths.

Table 33: New Mexico Portion of Navajo Nation Leading Unintentional Injuries

Cause	Count	Percent of ALL causes	Percent of Unintentional Injury
Motor Vehicle Injuries (non-pedestrian)	98	5.6%	32.0%
Pedestrian Injury	52	3.0%	17.0%
Fall	35	2.0%	11.4%
Unintentional Alcohol Poisoning	33	1.9%	10.8%
Exposure to excessive natural cold	29	1.7%	9.5%
Drowning	11	0.6%	3.6%

Noteworthy

Among Navajo males and females in New Mexico, injury from motor vehicle crashes and pedestrian injury account for nearly half (49%) of all Unintentional Injury deaths.

Table 34: New Mexico Portion of Navajo Nation Leading Cancer Cause

Cause	Count	Percent of ALL Causes	Percent of Cancers
No site specified	21	1.2%	9.3%
Pancreas	20	1.1%	8.9%
Stomach	19	1.1%	8.4%
Colorectal	19	1.1%	8.4%
Liver	19	1.1%	8.4%
Lymphoid & Hemoatopoietic	17	1.0%	7.6%
Ovary	13	0.7%	5.8%
Lung	11	0.6%	4.9%
Breast	11	0.6%	4.9%
Kidney	11	0.6%	4.9%
Prostate	10	0.6%	4.4%

Noteworthy

Stomach, colorectal, pancreas, and liver combined account for 34.1% of all cancers among Navajo males and females in New Mexico, followed by lung, breast, kidney, and prostate combined which account for 19.1%.

Table 35: New Mexico Portion of Navajo Nation Leading Cause of Death, Males

Rank	Cause	Count	Percent of Male Deaths
1	Unintentional Injury	221	22.5%
2	Heart Disease	121	12.3%
3	Cancer	104	10.6%
4	Diabetes	77	7.8%
5	Diseases of Liver & cirrhosis	51	5.2%
6	Suicide	47	4.8%
7	Influenza & Pneumonia	33	3.4%
8	Assault	32	3.3%
9	Alcohol	28	2.8%
9	Chronic Lower Respiratory Disease	28	2.8%

Noteworthy

Unintentional Injury (22.5%) is the leading cause of death among Navajo males in New Mexico. Unintentional Injury, Heart Disease, Cancer, Diabetes, and Diseases of Liver and Cirrhosis combined account for 58.4% of all deaths.

Table 36: New Mexico Portion of Navajo Nation Leading Unintentional Injury, Males

Cause	Count	Percent of ALL Causes	Percent of Unintentional Injury
Motor Vehicle Injury (non-pedestrian)	64	6.5%	29.0%
Pedestrian Injury	41	4.2%	18.6%
Exposure to excessive natural cold	26	2.6%	11.8%
Unintentional Alcohol Poisoning	25	2.5%	11.3%
Fall	24	2.4%	10.9%
Drowning	9	0.9%	4.0%

Noteworthy

Among Navajo males in New Mexico motor vehicle injury and pedestrian injury account for 47.6% of all Unintentional Injury deaths, and exposure to natural cold is the 3rd leading Unintentional Injury cause of death.

Table 37: New Mexico Portion of Navajo Nation Leading Causes of Death, Females

Rank	Cause	Count	Percent of Male Deaths
1	Cancer	121	16.0%
2	Unintentional Injury	83	11.0%
3	Heart Disease	82	10.8%
4	Diseases of Liver & Cirrhosis	67	8.9%
5	Diabetes	63	8.3%
6	Influenza & Pneumonia	38	5.0%
7	Stroke	25	3.3%
8	Renal Failure	20	2.6%
9	Septicemia	19	2.5%
10	Dementia	17	2.2%
10	Other respiratory diseases principally affecting the interstitium	17	2.2%

Noteworthy

Among Navajo females in New Mexico, Cancer (16.0%) is the leading cause of death. Cancer, Unintentional Injury, Heart Disease, Diseases of Liver and Cirrhosis, and Diabetes combined account for 55.0% of all deaths.

Table 38: New Mexico Portion of Navajo Nation Leading Unintentional Injury Deaths, Females

Cause	Count	Percent of ALL Causes	Percent of Unintentional Injury
Motor Vehicle Injury (non-pedestrian)	34	4.5%	41.0%
Pedestrian Injury	11	1.5%	13.3%
Fall	11	1.5%	13.3%
Unintentional Alcohol Poisoning	8	1.1%	9.6%

Noteworthy

Two-thirds of all Unintentional Injury deaths among Navajo females in New Mexico are due to motor vehicle, pedestrian, and fall injuries.

Table 39: New Mexico Portion of Navajo Nation All Causes Mortality Rates

Category	Crude Rate	Age-Adjusted
Total	573.76	841.88
Female	483.05	784.80
Male	670.50	904.49

Noteworthy

Age-adjusted all causes mortality rates among Navajo males (904.49/100,000 persons) and females (784.80/100,000 persons) in New Mexico are similar to age-adjusted all causes mortality rates among Navajo males (861.52/100,000 persons) and females (610.00/100,000 persons) in Arizona.

Table 40: New Mexico Portion of Navajo Nation 15 Leading Causes of Death Crude and Age-adjusted per 100,000 Persons

Cause	Crude Rate	Age-Adjusted
Unintentional Injury	100.24	121.80
All Cancers	74.19	113.11
Heart Disease	66.94	107.25
Diabetes	46.16	73.38
Diseases of Liver & Cirrhosis	38.91	50.99
Influenza & Pneumonia	23.41	38.21
Suicide	17.81	18.96
Stroke	17.15	29.05
Chronic Lower Respiratory disease	13.85	24.57
Assault	13.52	13.73
Other respiratory diseases principally affecting the interstitium	12.53	21.36
Septicemia	9.89	15.94
Renal Failure	9.89	16.32
Dementia	9.23	17.86
Alcohol Dependence Syndrome	9.23	17.34

Noteworthy

Among the 15 leading causes of death for all Navajos in New Mexico, Unintentional Injury is the leading cause of death with a crude rate of 100.24/100,000 persons and age-adjusted rate of 121.80/100,000 persons. After adjusting for age, the disparity narrows among the top 4 causes of death (Unintentional Injury, all Cancer, Heart Disease, and Diabetes). A note of interest is that there is a substantial increase in comparing crude and age-adjusted rates for Chronic Lower Respiratory Disease (crude rate 13.85/100,000 persons; age-adjusted rate 24.57/100,000) and Other respiratory diseases principally affecting the interstitium (crude rate 12.53/100,000 persons; age-adjusted rate 21.36/100,000 persons).

Table 41: New Mexico Portion of Navajo Nation 15 Leading Causes of Death Crude and Age-adjusted per 100,000 Persons, Males

Cause	Crude Rate	Age-Adjusted
Unintentional Injury	150.59	179.61
Heart Disease	82.45	123.76
Cancer	70.87	102.02
Diabetes	52.47	76.58
Diseases of Liver & cirrhosis	34.75	42.68
Suicide	32.03	35.19
Influenza & Pneumonia	22.49	32.88
Assault	21.80	22.08
Alcohol Dependence Syndrome	19.08	23.77
Chronic Lower Respiratory Disease	19.08	30.22
Stroke	18.40	29.16
Other respiratory disease principally affecting the interstitium	14.31	21.83
Hypertensive Disease	12.27	18.19
Injury undetermined intent	9.54	10.94
Septicemia	7.50	10.84
Dementia	7.50	12.54
Parkinson's	7.50	12.54

Noteworthy

Among the 15 leading causes of death for Navajo males in New Mexico, Unintentional Injury is the leading cause of death with a crude rate of 150.59/100,000 persons and age-adjusted rate of 179.61/100,000 persons. A note of interest is that the second leading cause of death is Heart Disease (age-adjusted rate 123.76/100,000 persons) compared to Table 40, where Heart Disease (age-adjusted rate 107.25/100,000 persons) is the third leading cause of death for all Navajos in New Mexico. Another note of interest is Suicide is the sixth leading cause of death among Navajo males in New Mexico with an age-adjusted rate of 35.19/100,000 persons).

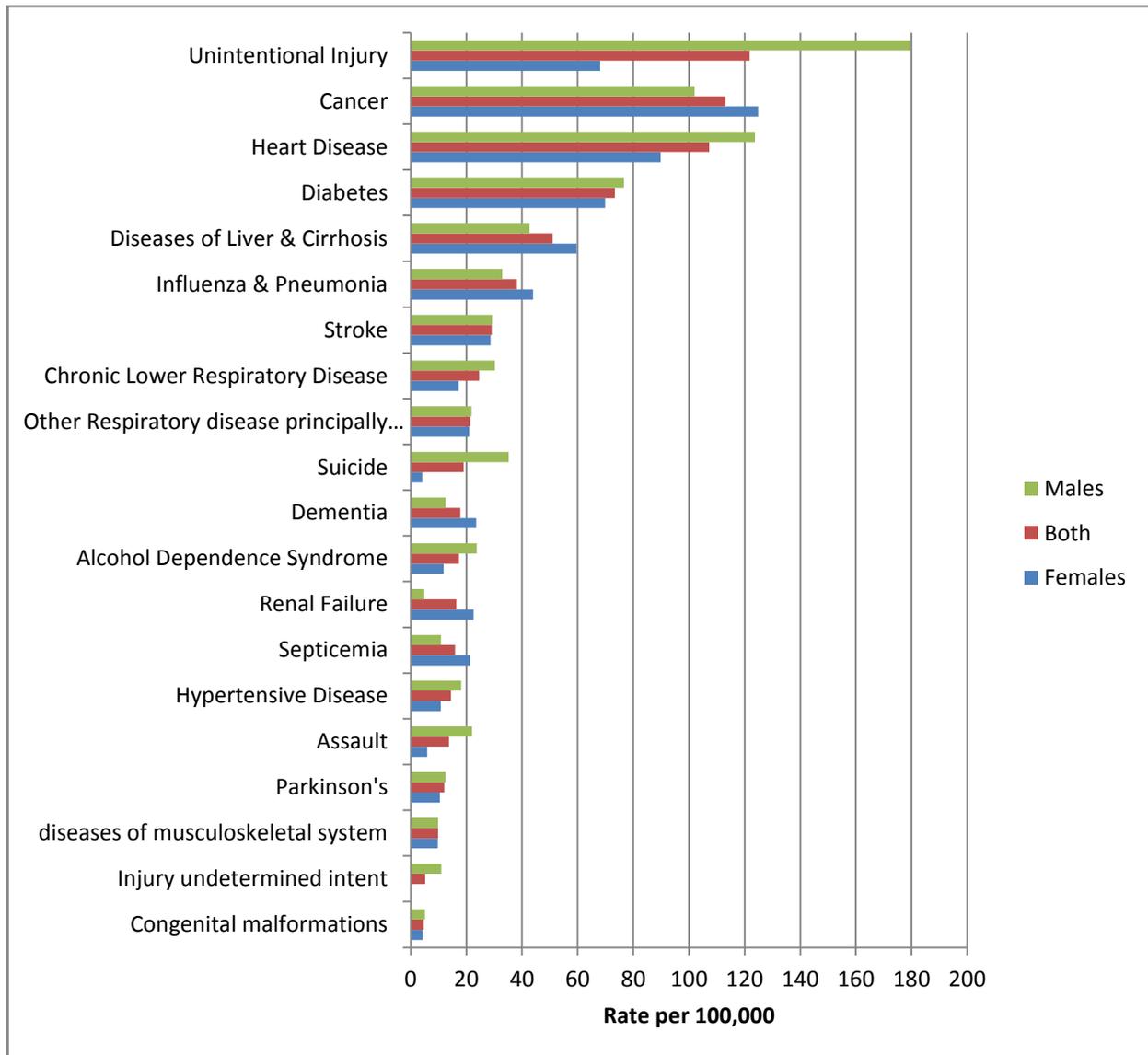
Table 42: New Mexico Portion of Navajo Nation 15 Leading Causes of Death Crude and Age-adjusted per 100,000 Persons, Females

Cause	Crude	Age-Adjusted
Cancer	77.31	124.91
Unintentional Injury	53.03	68.09
Heart Disease	52.39	89.83
Diseases of Liver & Cirrhosis	42.81	59.69
Diabetes	40.25	69.86
Influenza & Pneumonia	24.28	43.93
Stroke	15.97	28.63
Renal Failure	12.78	22.53
Septicemia	12.14	21.25
Dementia	10.86	23.49
Other respiratory diseases principally affecting the interstitium	10.86	20.95
Chronic Lower Respiratory Disease	8.95	17.22
Alcohol Dependence Syndrome	8.31	11.77
Parkinson's	5.75	10.45
Hypertensive Disease	5.75	10.80
Diseases of the musculoskeletal system and connective tissue	5.75	9.69
Congenital malformation	5.75	4.30
Assault	5.75	5.88

Noteworthy

Among the 15 leading causes of death for Navajo females in New Mexico, Cancer is the leading cause of death with a crude rate of 77.31/100,000 persons and age-adjusted rate of 124.91/100,000 persons. Furthermore, it is interesting to note that the Navajo females in New Mexico have higher age-adjusted rates of Diseases of Liver and Cirrhosis (59.69/100,000 persons), Influenza and Pneumonia (43.93/100,000 persons), Renal Failure (22.53/100,000 persons), Septicemia (21.25/100,000 persons), and Dementia (23.49/100,000 persons) than Navajo males in New Mexico (see Table 41).

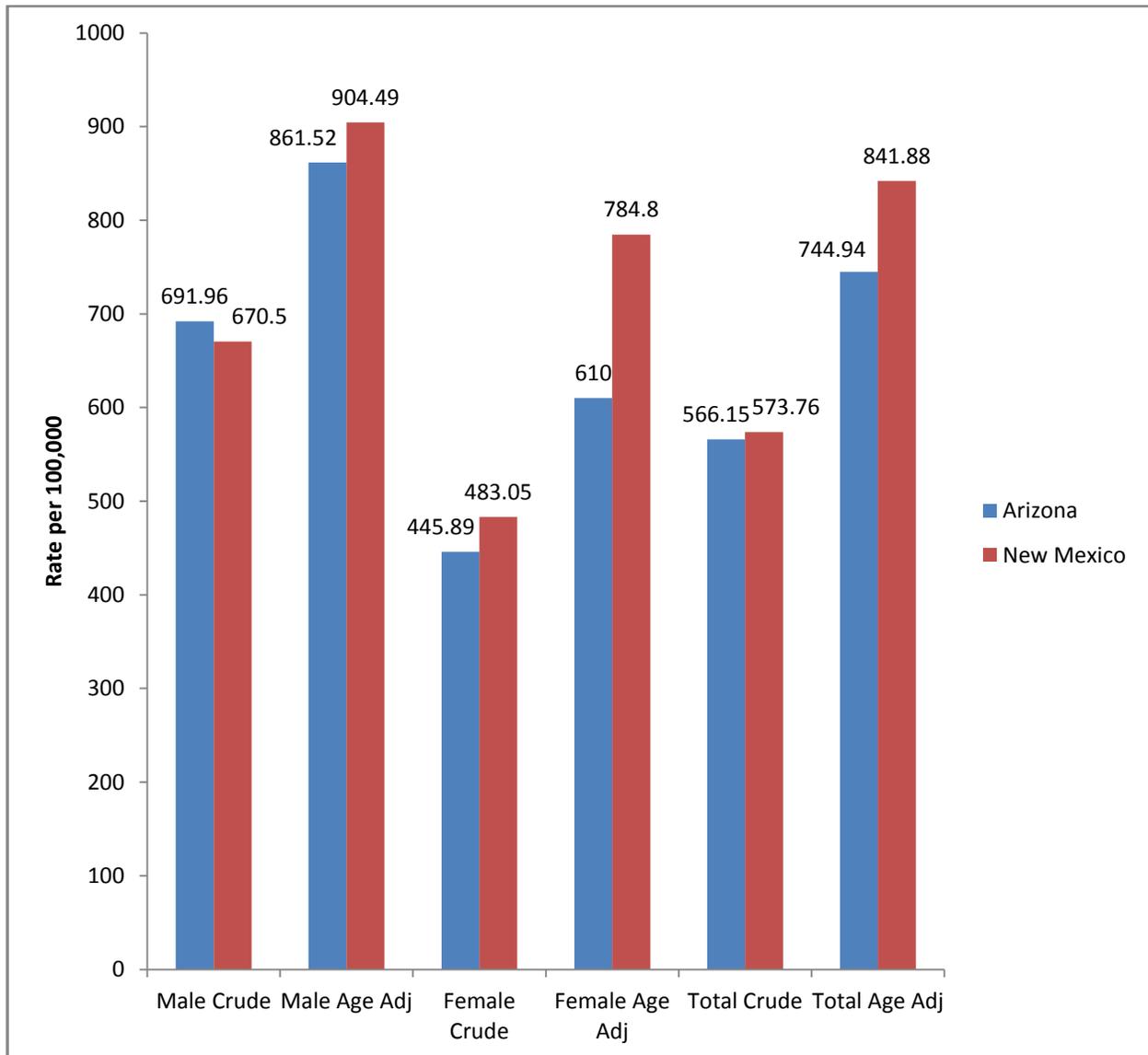
Chart 69: New Mexico Portion of Navajo Nation Age-adjusted Mortality, by Gender



Noteworthy

Among Navajo males and females combined in New Mexico, the five leading causes of death are Unintentional Injury (121.80/100,000 persons), Cancer (113.11/100,000 persons), Heart Disease (107.25/100,000 persons), Diabetes (73.38/100,000 persons), and Diseases of Liver and Cirrhosis (50.99/100,000 persons). A note of interest is that the mortality rates for Suicide (35.19/100,000 persons), Assault (22.08/100,000 persons), and Alcohol Dependence Syndrome (23.77/100,000) among Navajo males in New Mexico are substantially higher than their female counterparts. Among Navajo females in New Mexico, Cancer is the leading cause of death (124.91/100,000 persons).

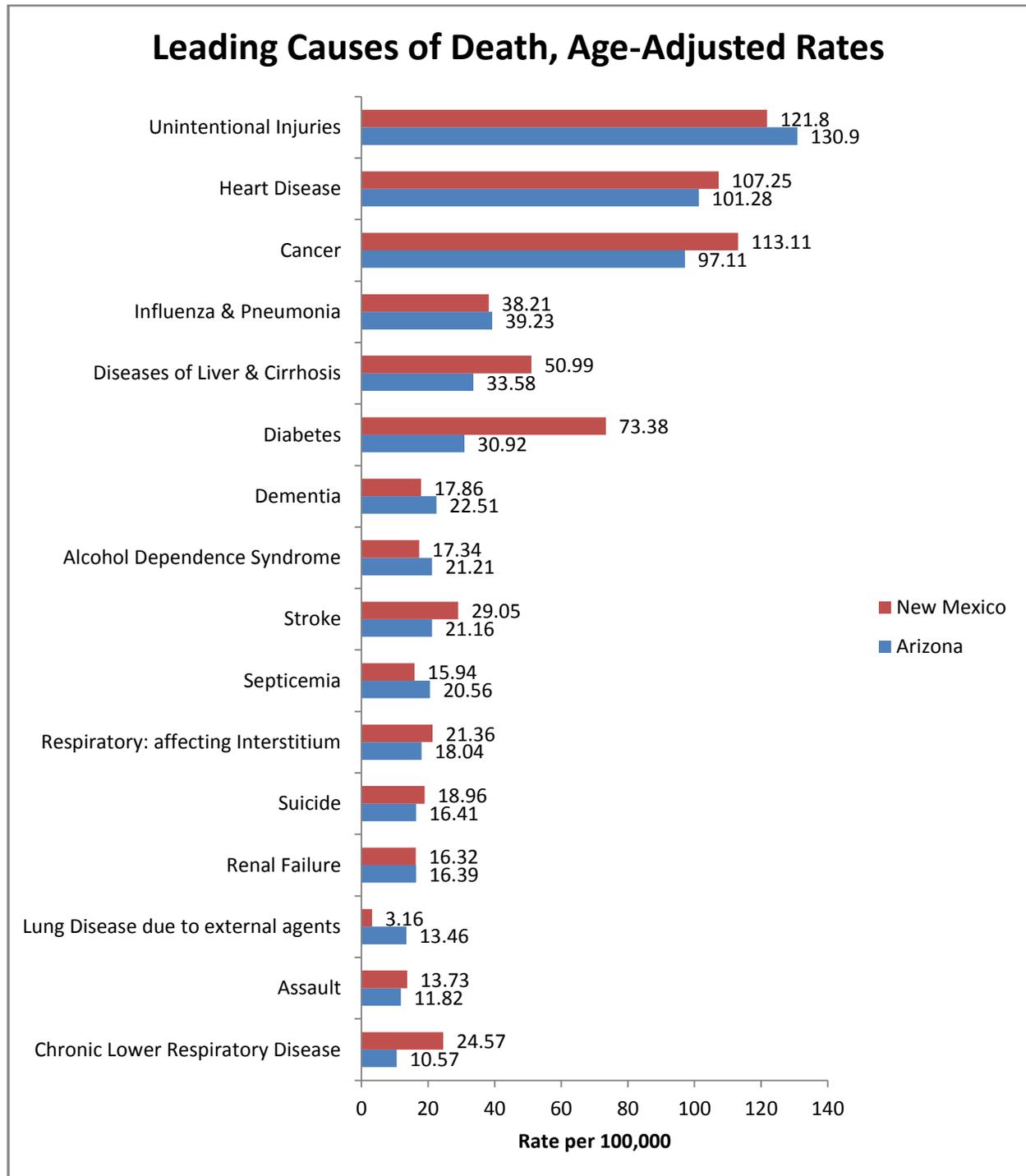
Chart 70: State Portions of Navajo Nation Mortality Rates, by Gender



Noteworthy

In comparing age-adjusted mortality rates among Navajos in Arizona and New Mexico, Navajos in New Mexico tend to have higher rates (male age-adjusted 904.49/100,000 persons; female age-adjusted 784.80/100,000 persons); total age-adjusted 841.88/100,000 persons) than Navajos in Arizona (male age-adjusted (861.52/100,000 persons; female age-adjusted 610.00/100,000 persons; total age-adjusted 744.94/100,000).

Chart 71: Age-Adjusted Mortality Rates for Leading Causes of Death, by State Portions of Navajo Nation



Noteworthy

Among Navajos in Arizona and New Mexico, Unintentional Injury is the leading cause of death in both states (Arizona 130.9/100,000 persons; New Mexico 121.8/100,000 persons). A note of interest is that there are disparities in age-adjusted leading causes of death for Cancer (Arizona 97.11/100,000 persons; New Mexico 113.11/100,000 persons), Diabetes (Arizona 30.92/100,000 persons; New Mexico 73.38/100,000 persons), Lung disease due to external agents (Arizona 13.46/100,000 persons; New Mexico 3.16/100,000 persons), and Chronic Lower Respiratory Disease (Arizona 10.57/100,000; New Mexico 24.57/100,000 persons).

Table 43: Navajo Nation Unintentional Injury Breakdown

Injury	Count	Crude Rate	Age-Adjusted
Motor Vehicle Injury	276	39.54	43.77
Pedestrian (motor vehicle)	88	12.61	14.15
Fall	75	10.74	15.65
Unintentional Alcohol Poisoning	73	10.46	12.41
Exposure to excessive natural cold	66	9.46	12.28
Inhalation, ingestion of objects obstructing the respiratory tract and other threats to breathing	23	3.29	4.04
Other events of undetermined intent	23	3.29	3.98
Drowning	23	3.29	3.30
Pedestrian injury by railway train or railway vehicle	16	2.29	2.81
Unknown	14	2.01	2.28
Accidental exposure to hallucinogens, drugs, medicaments and biological substances	16	2.29	2.48
Pedestrian non-motor vehicle or other non-traffic	12	1.72	1.65
Sequelae of injuries	12	1.72	2.11
Exposure to fire, flames, hot objects, hot drinks	10	1.43	1.70
Exposure to excessive	10	1.43	1.78

natural heat			
Table 43 Cont...Injury	Count	Crude Rate	Age-Adjusted
Struck by object	9	1.29	1.46
Adverse effects of prescribed drugs, surgical procedure, complications of medical care	7	1.00	1.38
Fall or thrown from animal or animal drawn vehicle	5	0.72	0.89
All-terrain vehicle	5	0.72	0.74
Accidental hanging, strangulation, or suffocation	4	0.57	0.53
Carbon monoxide poisoning	4	0.57	0.62
Remaining events (unintentional and undetermined intent)	25	3.58	4.02

Noteworthy

Among Navajos in Arizona and New Mexico, injury from motor vehicle accounts for 34.7% (age-adjusted 43.77/100,000 persons) of Unintentional Injuries. Motor vehicle injury, pedestrian (motor vehicle), fall, unintentional alcohol poisoning, and exposure to excessive natural cold combined account for 72.6% of Unintentional Injuries. Although mortality rates of Unintentional Injuries for some causes (e.g., drowning, fire) have shown substantial improvement over time, rates for other causes have increased or remained unchanged (e.g., unintentional alcohol poisoning, exposure to excessive natural cold). A note of interest is the difficulty of positively identifying a pedestrian death by motor vehicle or railway train as suicide, which is complicated by the complexities of determining true intent and psychological motivation. There is a belief that suicide by motor vehicle crash is a preferred method for disguising suicidal intent as an accident.

Table 44: Navajo Nation Suicide Method

Method	Count	Crude Rate	Age-Adjusted
Hanging, strangulation, and suffocation	76	10.89	11.14
Firearm	21	3.01	3.19
Poisoning	10	1.43	1.53
Jumping from a high place or in front of a moving object	8	1.15	1.11
Other methods	4	0.57	0.51

Noteworthy

Hanging, strangulation, and suffocation account for 63.9% (age-adjusted 11.14/100,000 persons) of commonly used methods of Suicide among Navajos in Arizona and New Mexico. A note of interest is that firearm is the most commonly used method of suicide among the general U.S. population.

Table 45: Navajo Nation Assault and Violence Methods

Method	Count	Crude Rate	Age-Adjusted
Assault by other means	34	4.87	5.32
Assault by sharp object	29	4.15	4.26
Assault by firearm	17	2.44	2.48
Other	7	1.00	1.15

Noteworthy

Assault by other means (e.g., hot liquid, human bite, fire, thrown object, pushing from a high place) account for 39.1% (age-adjusted 5.32/100,000 persons) of commonly used methods of Assault and violence among Navajos in Arizona and New Mexico. A note of interest is that firearm is the most commonly used method of assault and violence among the general U.S. population.

Table 46: Navajo Nation External Injury by Specific Cause, Males

Cause	Count	Crude Rate	Age-Adjusted
Motor Vehicle injury	187	55.05	60.65
Pedestrian hit by motor vehicle	64	18.84	21.57
Suicide by hanging, strangulation, and suffocation	64	18.84	20.39
Unintentional Alcohol Poisoning	61	17.96	21.99
Exposure to excessive natural cold	58	17.07	22.00
Fall	48	14.13	18.94
Assault by sharp object	26	7.65	7.85
Assault by other means	26	7.65	8.58
Other events undetermined event	22	6.48	7.77
Suicide by firearm	20	5.89	6.31
Drowning	21	6.18	6.26
Inhalation, ingestion of objects obstructing respiratory tract and other threat to breathing	17	5.00	5.81
Pedestrian struck by railway train or other railway vehicle	15	4.42	5.48
Assault by firearm	13	3.83	3.75
Pedestrian non-motor vehicle or other non-traffic	11	3.24	3.25
Unknown	10	2.94	3.46
Accidental exposure to hallucinogens, drugs, medicaments, and biological substances	12	3.53	3.71
Exposure to excessive natural heat	9	2.65	3.36
Struck by object	8	2.36	2.85
Fire, flames, hot objects/drinks	8	2.36	2.81
Suicide by jumping from a high place or in front of a vehicle	7	2.06	2.12
Sequelae of injuries	7	2.06	2.55
Fall or thrown from	5	1.47	1.78

animal or animal drawn vehicle			
Table 46 Cont...Cause	Count	Crude Rate	Age-Adjusted
All-terrain vehicle	5	1.47	1.54
Suicide by poisoning	5	1.47	1.53
Accidental hanging, strangulation, or suffocation	4	1.18	1.09
Adverse effects of prescribed drugs, surgical procedure, complications of medical care	4	1.18	1.54

Noteworthy

Among Navajo males in Arizona and New Mexico, injury from motor vehicle account for 25.4% (age-adjusted 60.65/100,000 persons) of all external injuries. Pedestrian hit by motor vehicle and suicide by hanging, strangulation, and suffocation combined account for 17.4% of external injuries. A note of interest is the increase in rank for exposure to excessive natural cold (now ranks second behind motor vehicle injury) after adjusting for age (age-adjusted 22.00/100,000 persons).

Table 47: Navajo Nation External Injury by Specific Cause, Females

Cause	Count	Crude Rate	Age-Adjusted
Motor Vehicle injury	89	24.84	28.28
Fall	27	7.54	12.32
Pedestrian motor vehicle	24	6.70	7.30
Unintentional Alcohol Poisoning	12	3.35	3.63
Suicide by hanging, strangulation, and suffocation	12	3.35	2.63
Exposure to excessive natural cold	8	2.23	3.36
Assault by other means	8	2.23	2.33
Inhalation, ingestion of objects obstructing respiratory tract and other threat to breathing	6	1.67	2.44
Suicide by poisoning	5	1.40	1.50

Table 47 Cont...Cause	Count	Crude Rate	Age-Adjusted
Sequelae of injuries	5	1.40	1.79
Unknown	4	1.12	1.23
Assault by firearm	4	1.12	1.22
Accidental exposure to hallucinogens, drugs, medicaments, and biological substances	4	1.12	1.32

Noteworthy

Among Navajo females in Arizona and New Mexico, injury from motor vehicle account for 42.8% (age-adjusted 28.28/100,000 persons) of external injury death. Injury from motor vehicle, fall, and pedestrian motor vehicle combined account for 67.3% of all external injury deaths. A note of interest is that Navajo females tend to have lower external injury mortality rates than Navajo males.

Table 48: Average and Median Age at Death, and Years of Potential Life Lost (YPLL), All Causes

Group	Average Age at Death	Median Age at Death	Percent of deaths before expected years of life reached	Years of Potential Life Lost (YPLL)²⁴	YPLL per Person
All	60.49	65	71.1%	79,871.3	20.09
Females	66.5	72	66.2%	28,594.3	17.27
Males	56.2	58	74.6%	51,277	22.11

Noteworthy

Quantifying years of potential life lost (YPLL) provides a simple method to identify important causes of premature death. This table summarizes the results of YPLL among Navajos in Arizona and New Mexico, which found that a total of 79,871 years of potential life were lost from all causes during 2006-2009. The average age at death is 60.49 years (females 66.5 years; males 56.2 years), indicating that Navajo males are dying prematurely more frequently than Navajo females.

²⁴ Life expectancy based on 2009 U.S. all race/ethnicity figures (National Vital Statistics Registry), Males = 76 years, Females = 80.9 years

Table 49: Years of Potential Life Lost by General Cause

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Unintentional Injury	40	26,622.2	33.33
Cancers	70	6,358.9	7.96
Diseases of Liver & Cirrhosis	51.5	5,753.4	7.20
Suicide	28	5,526.1	6.92
Heart Disease	74	4,783.9	5.99
Assault	27	3,919.5	4.91
Alcohol Dependence Syndrome	48	2,988.2	3.74
Congenital Malformations	1	2,579.2	3.23
Influenza & Pneumonia	77	2,516.7	3.15
Diabetes	73	2,330	2.92
Certain conditions originating in the perinatal period	0.5	1,362.1	1.71
Injury undetermined intent	40	1,026.9	1.29
Septicemia	72.5	1,231.4	1.54
Renal Failure	72	961.7	1.20
Stroke	80	860.3	1.08

Noteworthy

Among Navajos in Arizona and New Mexico, Unintentional Injury is the leading cause of years of potential life lost (YPLL) with a total of 26,622 years lost from all causes during 2006-2009, contributing to 33.33% of total years lost.

Table 50: Years of Potential Life Lost by General Cause, Males

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Unintentional Injury	40	19,827	38.67
Suicide	31	4,470	8.72
Assault	26	3,200	6.24
Heart Disease	72	3,027	5.90
Diseases of Liver & Cirrhosis	51	2,582	5.04
Cancers	70	2,517	4.91
Alcohol Dependence Syndrome	49	2,401	4.68
Diabetes	69	1,470	2.87
Influenza & Pneumonia	73	1,373	2.68
Congenital malformations	1	1,254	2.45
Injury undetermined intent	39	1,026	2.00
Certain conditions originating in the perinatal period	0	657	1.28
Septicemia	67	530	1.03
HIV	44	480	0.94
Other ill-defined and unspecified causes of mortality	44	413	0.81

Noteworthy

Among Navajo males in Arizona and New Mexico, Unintentional Injury is the leading cause of years of potential life lost (YPLL) with an total of 19,827 years lost from all causes during 2006-2009, contributing to 38.67% of total years lost. A note of interest is the appearance of human immunodeficiency virus (HIV) among the leading causes of premature death contributing to 480 YPLL.

Table 51: Years of Potential Life Lost by General Cause, Females

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Unintentional Injury	43	6,795.2	23.76
Cancers	68	3,841.9	13.44
Diseases of Liver & Cirrhosis	53.5	3,171.4	11.09
Heart Disease	78	1,756.9	6.14
Congenital malformations	0.5	1,325.2	4.63
Influenza & Pneumonia	83.5	1,143.7	4.00
Suicide	18	1,056.1	3.69
Diabetes	77	860	3.01
Assault	29	719.5	2.52
Certain conditions originating in the perinatal period	1	701.5	2.45
Septicemia	74.5	701.4	2.45
Alcohol	47.5	587.2	2.05
Renal Failure	73	552.7	1.93
Stroke	80	450.3	1.57
Other Respiratory diseases principally affecting the interstitium	80	328.8	1.15

Noteworthy

Among Navajo females in Arizona and New Mexico, Unintentional Injury is the leading cause of years of potential life lost (YPLL) with a total of 6,795 years lost from all causes during 2006-2009, contributing to 23.76% of total years lost. A note of interest is that it appears that Navajo females tend to die prematurely from chronic diseases more than Navajo males.

Table 52: Years of Potential Life Lost by Specific Cause²⁵

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Motor Vehicle Occupant and Pedestrian Injury	33	16,636	20.83
Diseases of Liver & Cirrhosis	51.5	5,753.4	7.20
Suicide	28	5,526.1	6.92
Heart Disease	74	4,783.9	5.99
Assault	27	3,919.5	4.91
Alcohol	48	2,988.2	3.74
Congenital Malformations	1	2,579.2	3.23
Influenza & Pneumonia	77	2,516.7	3.15
Unintentional Alcohol Poisoning	44	2,457.8	3.08
Diabetes	73	2,330	2.92
Exposure to excessive natural cold	52	1,520.5	1.90
Certain conditions originating in the perinatal period	0.5	1,362.1	1.71
Injury undetermined intent	40	1,026.9	1.29
Septicemia	72.5	1,231.4	1.54
Unintentional Fall	71	1,149.5	1.44
Unintentional Drowning	25	1,176.8	1.47
Renal Failure	72	961.7	1.20
Stroke	80	860.3	1.08
Cancer: lymphoid, hemoatopoietic and related tissues	67	769.2	0.96
Cancer: Breast	59	678.2	0.84
Exposure to inanimate mechanical force	34	615.8	0.77
Cancer: Stomach	67.5	577.1	0.72
Accidental exposure to narcotics and psychodysleptics, and other unspecified drugs	27	682.6	0.85
Cancer: no site specified	74.5	538.7	0.67
HIV	46	514.9	0.64
Cancer: Colorectal	70	514.5	0.64
Hypertensive Disease	72	499.9	0.63
SIDS	0	458.9	0.57
Cerebral palsy and other paralytic syndromes	31	438.6	0.55
Chronic lower respiratory disease	82	367	0.46

²⁵ Specific cause indicates injury cause specified, cancer site specified

Noteworthy

Among Navajos in Arizona and New Mexico, motor vehicle occupant and pedestrian injury is the leading specific cause of years of potential life lost (YPLL) with a total of 16,636 years lost during 2006-2009, contributing to 20.83% of total years lost. The top five leading specific causes of premature death are Motor vehicle occupant and pedestrian injury (YPLL 16,636), Diseases of Liver and Cirrhosis (YPLL 5,753), Suicide (YPLL 5,526), Heart Disease (YPLL 4,784), Assault (YPLL 3,919), accounting for 45.85% of total YPLL.

Table 53: Years of Potential Life Lost by Specific Cause, Males

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Motor-vehicle and Pedestrian Injury	33	11,650	22.72
Suicide	31	4,470	8.72
Assault	26	3,200	6.24
Heart Disease	72	3,027	5.90
Diseases of Liver & Cirrhosis	51	2,582	5.04
Alcohol	49	2,401	4.68
Unintentional Alcohol Poisoning	44	1,984	3.87
Diabetes	69	1,470	2.87
Exposure to excessive natural cold	51.5	1,379	2.69
Influenza & Pneumonia	73	1,373	2.68
Congenital malformations	1	1,254	2.45
Injury undetermined intent	40	1,026	2.00
Drowning	25	1,050	2.05
Fall	62.5	888	1.73
Certain conditions originating in the perinatal period	0	657	1.28
Septicemia	67	530	1.03
HIV	44	480	0.94
Exposure to inanimate mechanical forces	37	463	0.90
Accidental exposure to narcotics and psychodysleptics, and other unspecified drugs	26.5	522	1.02
Other ill-defined and unspecified causes of mortality	44	413	0.81
Stroke	80.5	410	0.80
Renal Failure	68.5	409	0.80
SIDS	0	378	0.74
Cancer: Stomach	69	363	0.71

Table 53 Cont...Cause	Count	Crude Rate	Age-Adjusted
Cancer: lymphoid, hemoatopoietic and related tissues	64.5	358	0.70
Other respiratory diseases principally affecting the interstitium	76.5	307	0.60
Hypertensive disease	72	288	0.56
Exposure to fire/flame	37.5	279	0.54
Diseases of musculoskeletal system and connective tissue	69	273	0.53
Chronic lower respiratory disease	80	268	0.52

Noteworthy

Among Navajo males in Arizona and New Mexico, Motor vehicle and pedestrian injury is the leading specific cause of years of potential life lost (YPLL) with a total of 11,650 years lost during 2006-2009, contributing to 22.72% of total years lost. The top five leading specific causes of premature death are Motor vehicle and pedestrian injury (YPLL 11,650), Suicide (YPLL 4,470), Assault (YPLL 3,200), Heart Disease (YPLL 3,027), and Diseases of Liver and Cirrhosis (YPLL 2,582), accounting for 48.62% of total YPLL.

Table 54: Years of Potential Life Lost by Specific Cause, Females

Cause	Median Age at Death	Total Years of Potential Life Lost	Percent of All Years Lost
Motor Vehicle & Pedestrian Injury	34	4,986	17.44
Diseases of Liver & Cirrhosis	53.5	3,171.4	11.09
Heart Disease	78	1,756.9	6.14
Congenital malformations	0.5	1,325.2	4.63
Influenza & Pneumonia	83.5	1,143.7	4.00
Suicide	18	1,056.1	3.69
Diabetes	77	860	3.01
Assault	29	719.5	2.52
Certain conditions originating in the perinatal period	1	701.5	2.45
Septicemia	74.5	701.4	2.45
Cancer: Breast	59.5	658.2	2.30
Alcohol	47.5	587.2	2.05
Renal Failure	73	552.7	1.93
Unintentional Alcohol Poisoning	47.5	473.8	1.66
Stroke	80	450.3	1.57
Cancer: lymphoid,	69	411.2	1.44

hemoatopoietic and related tissue			
Table 54 Cont...Cause	Count	Crude Rate	Age-Adjusted
Cancer: no site specified	75	352.7	1.23
Other respiratory diseases principally affecting the interstitium	80	328.8	1.15
Diseases of musculoskeletal system and connective tissue	73	325.3	1.14
Cancer: cervix	48	323.9	1.13
Other ill-defined and unspecified causes of mortality	32.5	315.4	1.10
Cancer: colorectal	74	263.5	0.92
Fall	77	261.5	0.91
Cancer: ovary	69	256.5	0.90
Cancer: stomach	56	214.1	0.75
Hypertensive Disease	72	211.9	0.74
Cancer: pancreas	72	205.7	0.72
Cerebral palsy and other paralytic syndromes	28	187.6	0.66
Cancer: liver	72	171.9	0.60
Accidental exposure to narcotics and psychodysleptics, and other unspecified drugs	32	160.6	0.56
Exposure to inanimate mechanical forces	4.5	152.8	0.53

Noteworthy

Among Navajo females in Arizona and New Mexico, Motor vehicle and pedestrian injury is the leading specific cause of years of potential life lost (YPLL) with a total of 4,986 years lost during 2006-2009, contributing to 17.44% of total YPLL. The top five leading specific causes of premature death are Motor vehicle and pedestrian injury (YPLL 4,986), Diseases of Liver and Cirrhosis (YPLL 3,171), Heart Disease (YPLL 1,757), Congenital malformations (YPLL 1,325), and Influenza and Pneumonia (YPLL 1,144), accounting for 43.3% of total YPLL.

Table 55: All Navajo Deaths, by month

Month	Count	Percent of All
January	342	8.6
February	355	8.9
March	384	9.7
April	327	8.2
May	299	7.5
June	332	8.4
July	300	7.5
August	319	8.0
September	321	8.1
October	352	8.9
November	322	8.1
December	322	8.1

Noteworthy

During 2006-2009, more deaths occurred in the month of March (384 deaths) and the least in the month of May (299 deaths) among Navajos in Arizona and New Mexico.

Table 56: Infant Mortality by Year, Gender, and State of Residence

Category	Count	Percent
Year: 2006	4	8.3%
Year: 2007	11	22.9%
Year: 2008	14	29.2%
Year: 2009	19	39.6%
Female	21	43.8%
Male	27	56.3%
Residence: Arizona	22	45.8%
Residence: New Mexico	26	54.2%

Noteworthy

During 2006-2009, infant mortality increased yearly among Navajo infants in New Mexico. There were a total of 48 Navajo infant deaths (27 males; 21 females). Among all Navajo infant deaths that occurred during 2006-2009, 45.8% (22) were in Arizona and 54.2% (26) were in New Mexico.

Table 58: Infant Mortality Specific Cause

Cause	Count	Percent of Total
Sudden Infant Death Syndrome	5	10.4%
Sepsis	3	6.3%
Homicide	3	6.3%
Respiratory and cardiovascular disorders specific to the perinatal period	3	6.3%
Unintentional Injuries	3	6.3%
Congenital malformations of the brain	2	4.2%
Congenital malformations, Down's syndrome	2	4.2%
Congenital malformations of the heart	2	4.2%
Congenital malformations of the musculoskeletal system	2	4.2%
Disorders related to length of gestation and fetal growth	2	4.2%
Fetus and newborn affected by maternal factors and by complications of pregnancy, labor, and delivery	2	4.2%

Noteworthy

During 2006-2009, the leading cause of death among Navajo infants in New Mexico is sudden infant death syndrome (10.4%). The five leading causes of death (sudden infant death syndrome, sepsis, homicide, respiratory and cardiovascular disorders, and unintentional injuries) combined account for 35.6% of Navajo infant deaths.

Table 59: Estimated²⁶ Infant Mortality Rate by State and Gender

Category	Mortality per 1,000
Arizona	2.98
New Mexico	4.73
Female	3.34
Male	4.10
Arizona Female	3.38
Arizona Male	2.35
New Mexico Female	3.29

²⁶ Birth counts were unavailable so they were estimated from U.S. Census Data

New Mexico Male	6.52
Total	3.73

Noteworthy

During 2006-2009, the mortality rate among Navajo infants in New Mexico is 3.73/1,000 infants. Navajo male infants in New Mexico had a substantially higher mortality rate (6.52/1,000 infants) than Navajo females in New Mexico, and Navajo males and females in Arizona.

Table 60: Age Specific Mortality by Place of Death and Decedent Status for All Navajo Nation

Place of Death		Age									Total
		0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
In Hospital	In- patient	63	24	53	98	163	174	258	347	546	1,726
	Out-patient ²⁷	25	24	33	35	35	46	37	39	55	329
	Died on Arrival	9	4	13	22	20	15	15	19	14	131
	Status Unknown	0	0	0	0	1	0	0	0	0	1
	Subtotal	97	52	99	155	219	235	310	405	615	2,187
Not in Hospital	Nursing Home ²⁸	0	1	4	6	22	20	49	89	275	466
	Residence	9	20	26	33	54	62	72	102	108	486
	Other ²⁹	14	65	141	115	152	97	68	77	66	795
	Subtotal	23	86	171	154	228	179	189	268	449	1,747
Missing/Not classified		4	0	6	2	7	5	4	11	18	57
Total		124	138	276	311	454	419	503	684	1,082	3,991

Noteworthy

During 2006-2009, the 54.8% (2,187) and 43.8% (1,747) of deaths occurred In Hospital and Not in Hospital respectively. 11.7% of deaths occurred in a nursing home.

²⁷ Includes Emergency Room

²⁸ Includes other Long-term Care Facilities

²⁹ Includes Hospices

Table 61: Alcohol Reported as Contributing to Death, Count³⁰

Reported	Age Group									Total
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
Yes	2	6	38	69	87	62	33	23	8	328
Probably	0	0	0	3	8	10	11	4	2	38
No	31	29	28	25	49	76	165	234	367	1,004
Unknown	13	19	52	41	54	44	40	67	40	370
Missing	6	1	13	12	17	20	36	39	79	223
Total	52	55	131	150	215	212	285	367	496	1,963

Noteworthy

During 2006-2009, 16.7% of deaths reported alcohol as a contributing factor among Navajos in New Mexico. Alcohol as a contributing factor peaks at the 30-39 age-group at 46.0%. After including those coded as “Probably”, alcohol contributes to 18.1% of all deaths, which still peaks at the 30-39 age-group (48.0% of all deaths).

Table 62: Alcohol Reported as Contributing to Death, Percentage of Known

Reported	Age Group									Total
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
Yes	6.1	17.1	57.6	71.1	60.4	41.9	15.8	8.8	2.1	23.9
Probably	0	0	0	3.1	5.6	6.8	5.3	1.5	0.5	2.8
No	93.9	82.9	42.4	25.8	34.0	51.4	78.9	89.7	97.3	73.3

Noteworthy

During 2006-2009, 23.9% of Navajo deaths in New Mexico deaths reported alcohol as a contributing factor among those with known contribution. The highest proportion of deaths due to alcohol as a known cause occurred in the 30-39 age range (71.1%).

Table 63: Percent of Total Deaths with an Unknown Code or Missing Code for Alcohol Reported as Contributing to Death

Reported	Age Groups									Total
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	
Unknown	25.0	34.5	39.7	27.3	25.1	20.8	14.0	18.3	8.1	18.8

³⁰ These data primarily came from deaths occurring in New Mexico, and Arizona did not report this directly

Missing	11.5	1.8	9.9	8.0	7.9	9.4	12.6	10.6	15.9	11.4
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Noteworthy

The contribution of alcohol to death may be under or overestimated due to the fact that nearly 1 in 3 (30.2%) deaths have data coded incorrectly or missing entirely. This percentage is highest for the 20-29 age group (49.6%).

Table 64: Alcohol Reported as Contributing to Death, Count with Arizona Estimation³¹

Reported	Age Group									
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Yes	2	10	45	100	138	108	53	34	10	500
Probably	1	0	1	8	14	15	23	22	19	103
No	119	128	231	203	300	299	437	637	1,018	3,372
Total	122	138	277	311	452	422	513	693	1,047	3,975

Noteworthy

More deaths with alcohol as a contributing factor were reported among the 40-49 age-group (138 “Yes”, 152 “Yes” and “Probably”) than any other age group.

Table 65: Alcohol Reported as Contributing to Death, Percentage of Known with Arizona Estimation

Reported	Age Group									
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+	Total
Yes	1.6	7.2	16.2	32.2	30.5	25.6	10.3	4.9	1.0	12.6
Probably	0.8	0	0.4	2.6	3.1	3.6	4.5	3.2	1.8	2.6
No	97.5	92.8	83.4	65.3	66.4	70.9	85.2	91.9	97.2	84.8

Noteworthy

During 2006-2009, 12.6% of all deaths reported alcohol as a contributing factor among New Mexico and Arizona Navajos. The highest proportion of deaths due to alcohol as a known cause occurred in the 30-39 age-group (32.2% “Yes” only; 34.7% “Yes” and “Probably”).

³¹ In many cases in Arizona the cause of death explicitly identified alcohol as a cause, such as Alcohol Dependence Syndrome or Unintentional Alcohol Poisoning. In these cases the death was recorded as alcohol induced.

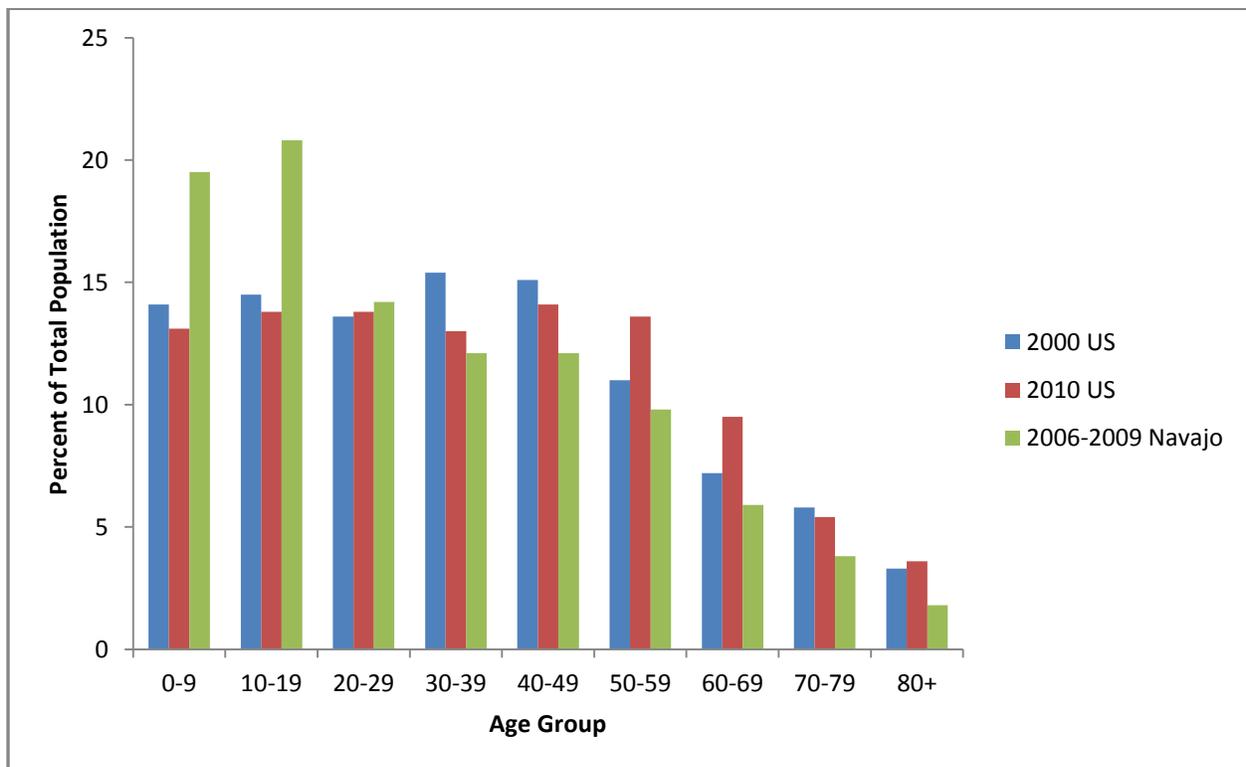
Table 66: Alcohol reported as contributing to death, Percentage of Known with Arizona Adjusted³²

Reported	Percentage
Yes	12.6
Probable	6.7
No	80.8

Noteworthy

This table allowed for additional “Probable” deaths to be included. At least 19.3% of all Navajo deaths have alcohol as a contributing factor.

Chart 72: U.S. and Navajo Nation Population Distribution, by Age Group³³



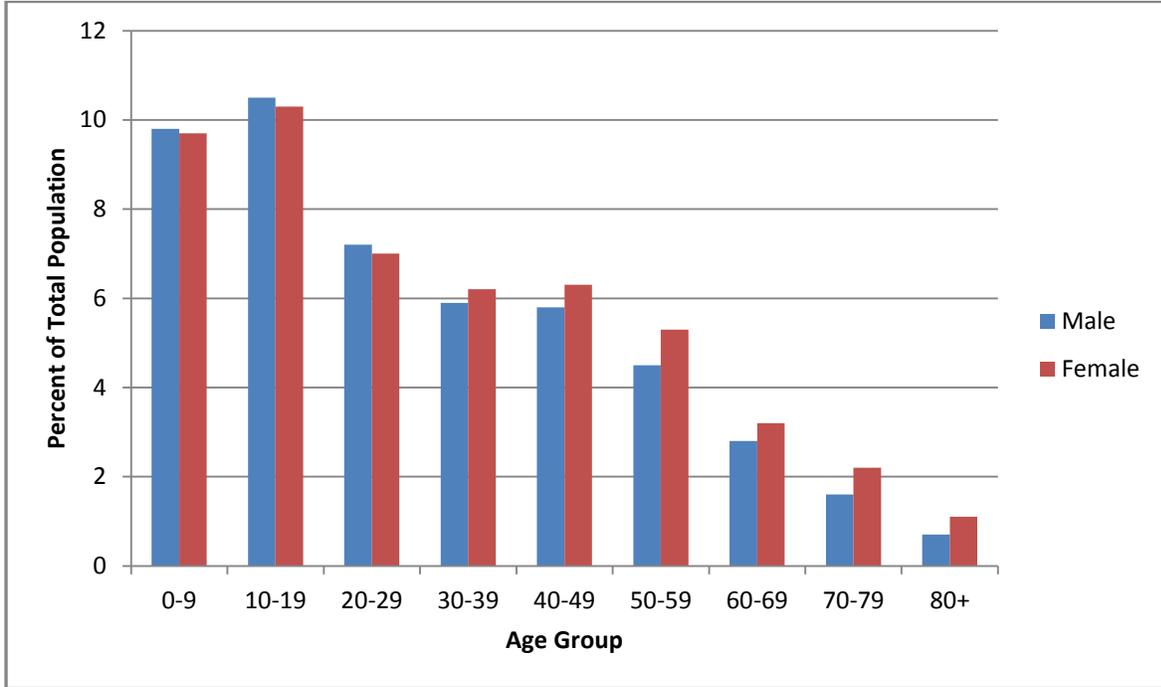
Noteworthy

³² The percent of New Mexico external causes of morbidity and mortality that were identified as probable induced by alcohol were applied to similar Arizona deaths for an estimated, or adjusted alcohol induced death percentage

³³ 54.5% of the estimated Navajo Nation population is under 30 years of age, while 40.7% of the 2010 U.S. population and 42.2% of the 2000 U.S. population are under 30 years of age.

The Navajo population in Arizona and New Mexico is younger than the U.S. population.

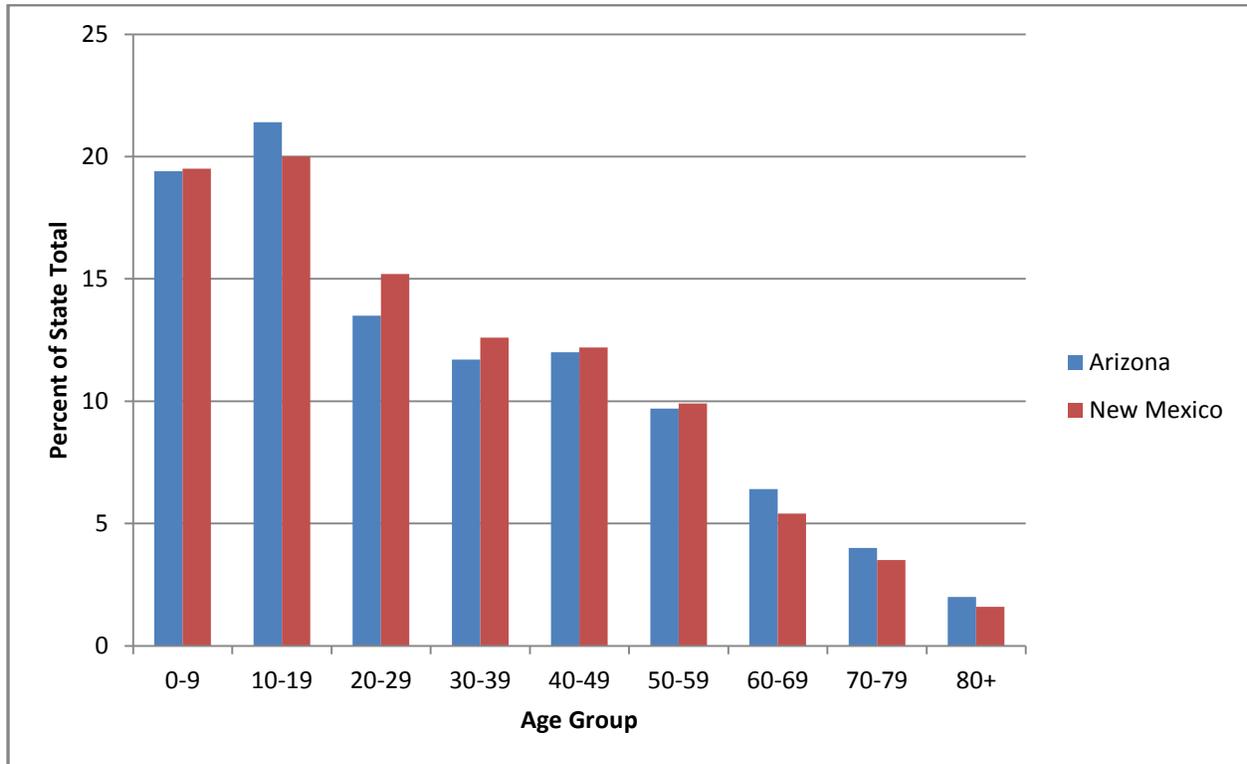
Table 73: Navajo Nation 2006-2009 Estimated Population Distribution, by Gender and Age Group



Noteworthy

The estimated Navajo population distribution by gender and age group is similar. Males slightly outnumber females for ages 0-39, while females represent a larger segment of the population from age 30+.

Chart 74: Navajo Nation Estimated Population 2006-2009, by State



Noteworthy

The estimated Navajo population distribution by age group and state is similar.

Technical Notes

Age-adjustment rates: Age is a major factor for disease and mortality rates (e.g. older persons are much more likely to die due to chronic disease issues such as heart disease, cancer, Alzheimer’s). For purposes of comparing the same population to itself over time, or different populations to each other it becomes necessary to adjust rates for age in the event that the populations being compared have a different underlying age structure. Age-adjustment is done by first calculating disease rates for each unique age group. In this report the age groups are 0-9, 10-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70-79, and 80 and older. The age specific disease rate is then multiplied by the standard population for that age group, which indicates the number of disease cases in that age group. All age-adjusted rates in this report are based on the 2000 U.S. population (U.S. Census Bureau) standard. Each of these estimated age group specific disease counts are then added together and divided by the total standard population to generate an age-adjusted rate.

For example, population A and population B might each have a heart disease rate of 200/100,000. Population A has an older population than population B. We want to learn which population would have a higher heart disease rate if each population had the same age structure. Population A had a median age of 52, and population B had a median age of 39. After adjusting for age, Population A's rate was 106/100,000, while Population B's rate was 170/100,000. This indicates that heart disease is actually having a much bigger impact on Population B in spite of what the original mortality rate indicated.

Population Numbers: Population data for 2006-2009 were estimated from 2000 and 2010 U.S. Census Bureau data found in the Summary File 2 tables. Persons were included for Navajo Nation tribal grouping alone or in any combination found within the Arizona and New Mexico portions of the Navajo Nation Reservation. Additionally, Navajo tribal grouping alone or in any combination persons were included from the following border towns: Bloomfield City (NM), Cuba Village (NM), Farmington City (NM), Gallup City (NM), Holbrook City (AZ), Joseph City (AZ), Page City (AZ), Sanders CDP (AZ), Thoreau CDP (NM), Waterflow CDP (NM), Winslow City (AZ). Percent population change was calculated for the time period from 2000 to 2010 for the Arizona and New Mexico portions of the Navajo Nation. This percent change was then applied to the border cities and Census Designated Places (CDP). This change was applied uniformly over the 10 year period, and only the estimated population counts for the years 2006 through 2009 were included. For example if the 2010 Arizona population was 200 and the 2000 Arizona population was 150 then the population change was 33.3%. The average change for Arizona was 5 persons per year. The estimated 2009 population would be 195, 2008 would be 190, 2007 would be 185, and 2006 would be 180. The total Arizona population for 2006-2009 would be 750. If the Winslow border town had a population of 40 in 2010 then the estimated population in 2000 would be 30 (based on 33.3% population growth in Arizona). The average change per year would then be 1 person per year. The estimated 2009 would be 39, 2008 would be 38, 2007 would be 37, and 2006 would be 36 for a total 2006-2009 population of 150. This process was used to calculate both total population as well as age group populations.

ICD-10 code: All causes of death were reported using the International Classification of Diseases (ICD) system. This is the standard diagnostic tool for epidemiology, health management and clinical settings by which diseases and health problems, including mortality, are classified. By using this system specific causes of death can be identified, or several specific causes can be grouped into broader categories. For example lung cancer can be reported as a specific cause of death, or grouped into "cancers of the respiratory system and intrathoracic organs", or simply "Cancer". The 10th Revision of the ICD system was endorsed by the Forty-third World Health Assembly in May 1989 and came into use in World Health Organization (WHO) member states as of 1989.