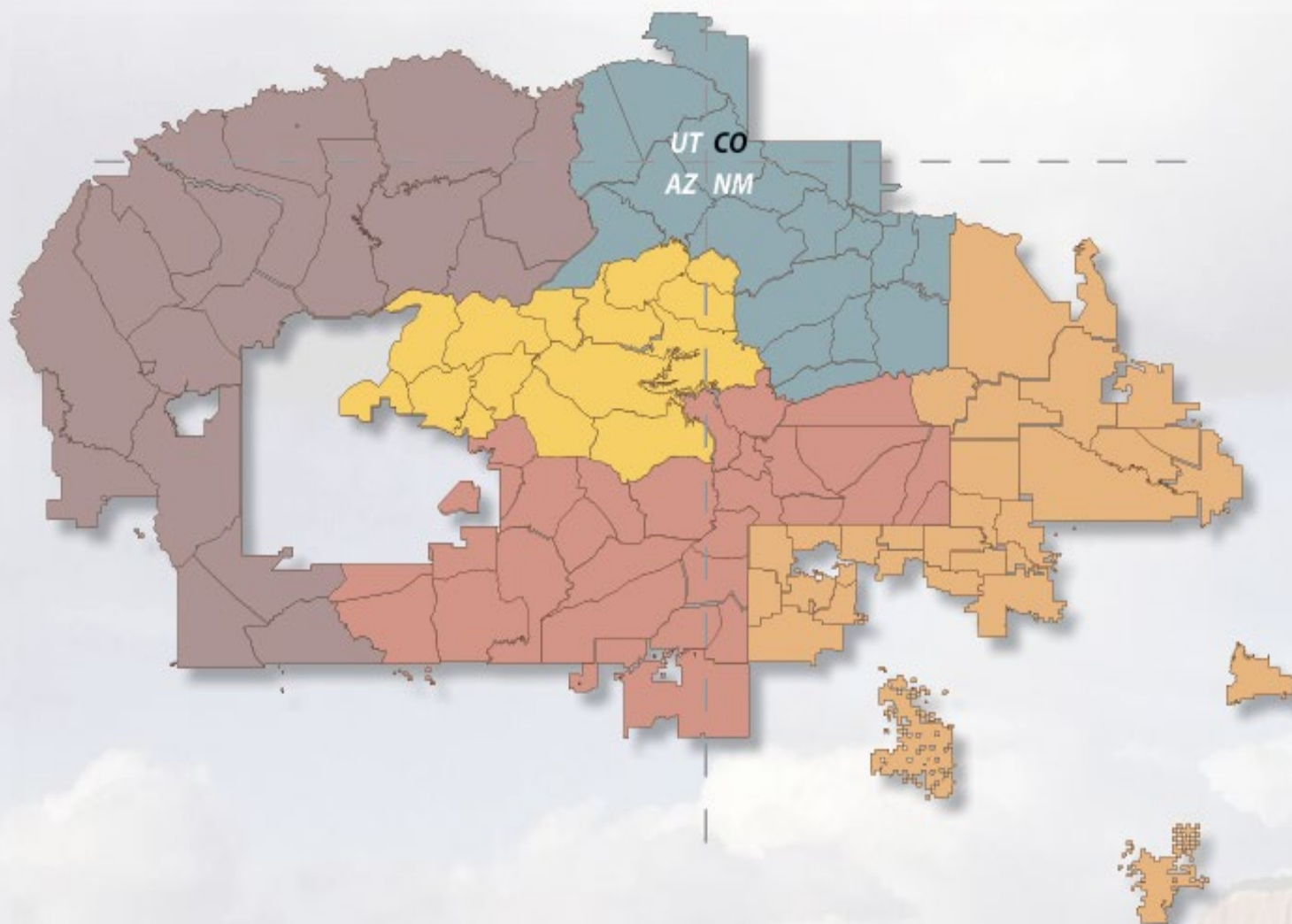




Navajo Nation Mortality Report, 2018-2024

New Mexico Portion of Navajo Nation



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Navajo Epidemiology Center

By David Foley

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Abstract

Objectives—The report presents the 2018-2024 data on Navajo deaths, death rates, life expectancy, years of potential life lost, and trends by age and sex occurring on the New Mexico portion of the Navajo Nation.

Methods—Information reported on death certificates is presented in descriptive tables, figures and charts. Data were contributed by the New Mexico Department of Health Vital Records Division. Data are organized into 2 distinct surveillance periods: 2018-2020, and 2021-2024. Surveillance periods are created to increase the likelihood of having stable rates for rare causes of death and were divided to have the clearest distinction between the first year of COVID-19 and subsequent years. Causes of death are processed in accordance with the *International Classification of Diseases, 10th Revision*. Population numbers are interstitial estimates calculated based on tables produced by the U.S. Census Bureau.

Results—From 2018-2020 there were a total of 3,598 (1,199.3 per year) Navajo deaths reported. The age-adjusted death rate was 1448.7 per 100,000. Average age at death for males was 57.2 years, and 64.3 years for females. From 2021-2024 there were a total of 5,241 (1,310 per year) Navajo deaths reported. The age adjusted death rate was 1491.8 per 100,000. Average age at death for males was 55.9 years, and 62.8 years for females. There was one change in the leading 15 causes of death from the 2015-2017 to the 2018-2020 surveillance years: COVID-19 was the leading cause of death while Chronic Lower Respiratory Disease was no longer included. From the 2018-2020 to the 2021-2024 surveillance period there was no change in which causes were among the leading causes of death, but the rank order did change. COVID-19 moved from the leading cause of death to the third, and Unintentional Injuries returned as the leading cause of death. Chronic Liver Disease & Cirrhosis increased to the 2nd leading cause of death. Alcohol abuse increased from the 10th leading cause of death (2015-2017) to the 7th leading cause of death (2021-2024). Males had significantly higher age-adjusted mortality for Alcohol Abuse, Assault, Heart Disease, Suicide and Unintentional Injury in both 2018-2020 and 2021-2024 surveillance years. In 2021-2024 males also had higher age-adjusted mortality than females for Chronic Liver Disease & Cirrhosis. Females had higher age-adjusted mortality rates for Dementias and Influenza & Pneumonia in 2018-2020, but only for Dementias in 2021-2024. There was a decrease in mortality for both males and females from 2018-2020 to 2021-2024 for COVID-19. There was a significant increase in mortality for males Chronic Liver Disease & Cirrhosis from 2018-2020 to 2021-2024.

Conclusions—There has been a significant increase in mortality for Navajos living on or near the Navajo Nation in New Mexico. Much of this increase may be explained by the emergence of COVID-19. However, Navajos still experience significant mortality due to injuries and alcohol related causes of death.

Limitations—Th report only includes mortality data from the New Mexico portion of the Navajo Nation; therefore, the results may not represent the leading causes of death for the entire Navajo Nation. Differences in risk factor behavior, access to healthcare, quality of care, and attitudes of residents in the Arizona or Utah portions of the Navajo Nation could potentially affect mortality. Rates could also be inflated if the U.S. Census data did not adequately quantify residents of the Navajo Nation. The Navajo Epidemiology Center (NEC) is working to renew Data Sharing Agreements with both the Arizona Department of Health Services and the Utah Department of Health & Human Services to complete a comprehensive Navajo Nation mortality report.

Highlights

Key Findings

- COVID-19 accounted for 1 in 6 deaths from 2018-2020, and 1 in 10 deaths from 2021-2024
- There was a significant increase in mortality for Chronic Liver Disease & Cirrhosis. Deaths per year increased by 47% across the surveillance periods, and the age-adjusted rate increased by 37%. Navajo Nation rates are 11 times higher than U.S. rates in 2022.
- Unintentional injury regained its position as the leading cause of death during the 2021-2024 surveillance period. The leading 5 causes of Unintentional Injury death are Motor Vehicle Crash (Occupant), Alcohol Poisoning, Pedestrian, Falls, and Cold Exposure.
- Crude mortality rates decreased across surveillance periods for the following 10-year age groups: <10 years, 60-69 years, 70-79 years, and ≥ 80 years.
- Males had significantly higher rates than females for Unintentional Injury, Suicide, and Assault. Females had significantly higher rates than males for Dementia and Stroke (Cerebrovascular Disease).
- The leading types of Cancer are: Colorectal, Stomach, Liver, Pancreatic, and Breast.

Table 1 All-Cause Mortality

	2018-2020	2021-2024
Average Deaths per Year	1,199.33	1,312.75
Age Adjusted Death Rate (Per 100,000 Person Years): All People	1,448.7	1,491.8
Age Adjusted Death Rate (Per 100,000 Person Years): Females	1,308.5	1,319.1
Age Adjusted Death Rate (Per 100,000 Person Years): Males	1,594.6	1,671.5

Figure 1 Leading 15 Causes of Death

2018-2020		2021-2024	
Cause	Percent of All Deaths	Cause	Percent of All Deaths
COVID-19	15.6%	Unintentional Injury	12.9%
Unintentional Injury	12.8%	Chronic Liver Disease & Cirrhosis	10.6%
Heart Disease	8.5%	COVID-19	10.0%
Cancer	8.3%	Heart Disease	8.7%
Chronic Liver Disease & Cirrhosis	8.1%	Cancer	7.4%
Diabetes	5.9%	Diabetes	5.3%
Alcohol Abuse	3.6%	Alcohol Abuse	4.3%
Suicide	3.3%	Dementias	2.7%
Dementias	3.1%	Suicide	2.6%
Stroke	2.9%	Influenza & Pneumonia	2.5%
Influenza & Pneumonia	2.3%	Stroke	2.2%
Other Respiratory Disease	2.0%	Other Respiratory Disease	2.2%
Renal Failure	2.0%	Assault	2.0%
Assault	1.8%	Renal Failure	1.5%
Septicemia	1.4%	Septicemia	1.4%

Results & Discussion

There were 1,199 and 1,313 deaths per year on the New Mexico portion of the Navajo Nation in the surveillance years 2018-2020 and 2021-2024, respectively. Age is a major factor in disease and mortality rates (e.g. older people 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. This technique allows for comparison if the populations being compared have a different underlying age structure. According to the NCHS, "Age-adjusted death rates should be viewed as relative indexes rather than as actual measures of mortality risk. They are constructs that show what the level of mortality would be if no changes occurred in the age composition of the population from year to year. Thus, age-adjusted death rates are better indicators than unadjusted (crude) death rates for examining changes in the risk of death over a period of time when the age distribution of the population is changing. Age-adjusted death rates also are better indicators of relative risk when comparing mortality across geographic areas or between sex or race subgroups of the population that have different age distributions."¹ The age adjusted death rate increased by 3% from one surveillance period to the next. The increase in age adjusted death rate was more pronounced for males (4.8%) and the crude rate was largest for the 30–39-year-old age group (23%).

As expected, COVID-19 played a significant role in Navajo mortality. COVID-19 was the leading cause of death for the 2018-2020 surveillance period even though the first Navajo death did not occur until the final year of that period. Unintentional injury reclaimed its position as the leading cause of death on the Navajo Nation in the 2021-2024 period. Chronic Liver Disease & Cirrhosis was the cause of more deaths in recent years. Across the surveillance periods there was a meaningful increase in the percentage of deaths attributable to Alcohol Abuse, but progress in reducing the percentage of deaths attributable to Cancer and Suicide.

The leading causes of death by Gender are very similar. But Dementia appears on the female list but not on the male list and Suicide and Assault appearing on the male list but not on the female list. There was limited variation within the female or male lists from one surveillance period to the next. Males were 3.1 and 2.6 times more likely to die from Unintentional Injuries than females during the 2018-2020 and 2021-2024 surveillance periods respectively. Males were 4.8 and 3.4 times more likely to die from Suicide

¹ Kochanek KD, Murphy SL, Xu JQ, Arias E. Deaths: Final data for 2017. National Vital Statistics Reports; vol 68 no 9. Hyattsville MD: National Center for Health Statistics. 2019.

than females, and 4.0 and 4.5 times more likely to die from Assaults than females. Females were 2.2 and 1.9 times more likely to die from Dementia than males.

Table 2 Percent change in crude death rate, age-adjusted death rate and 10-year age group from 2018-2020 to 2021-2024.

Group	2018-2020	2021-2024	Percent Change
Crude Rate Both Genders	1281.2	1365.8	6.6%
Age Adjusted Rate Both Genders	1448.7	1491.8	3.0%
Crude Rate Females	1086.1	1152.3	6.1%
Age Adjusted Females	1308.5	1319.1	0.8%
Crude Rate Males	1480.2	1581.3	6.8%
Age Adjusted Rate Males	1594.6	1671.5	4.8%
<10 Years	118.8	79.8	-32.8%
10 to 19 Years	62.28	71.88	15.4%
20 to 29 Years	561.51	632.7	12.7%
30 to 39 Years	1112.99	1370.09	23.1%
40 to 49 Years	1355.42	1638.65	20.9%
50 to 59 Years	1621.49	1818.72	12.2%
60 to 69 Years	2198.97	2094.23	-4.8%
70 to 79 Years	4276.12	3959.81	-7.4%

80+ Years	11958.3	10816.71	-9.5%
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Figure 2 Leading 10 Causes of death, Females from 2018-2020 and 2021-2024

2018-2020		2021-2024	
Cause	Percent all	Cause	Percent all
COVID-19	15.8%	COVID-19	11.3%
Chronic Liver Disease & Cirrhosis	8.5%	Chronic Liver Disease & Cirrhosis	10.7%
Cancer	8.3%	Unintentional Injury	8.3%
Heart Disease	7.7%	Cancer	8.1%
Unintentional Injury	7.1%	Heart Disease	7.7%
Diabetes	6.2%	Diabetes	5.5%
Dementias	4.6%	Dementias	3.8%
Stroke	3.6%	Stroke	3.0%
Influenza & Pneumonia	3.3%	Alcohol Abuse	2.9%
Alcohol Abuse	3.2%	Influenza & Pneumonia	2.8%
All Other Causes	31.7%	All Other Causes	35.9%

Figure 3 Leading 10 Causes of death, Males from 2018-2020 and 2021-2024

2018-2020		2021-2024	
Cause	Percent all	Cause	Percent all
Unintentional Injury	17.0%	Unintentional Injury	16.3%
COVID-19	15.5%	Chronic Liver Disease & Cirrhosis	10.5%
Heart Disease	9.1%	Heart Disease	9.4%
Cancer	8.3%	COVID-19	9.1%
Chronic Liver Disease & Cirrhosis	7.8%	Cancer	6.9%
Diabetes	5.5%	Alcohol Abuse	5.4%
Suicide	4.8%	Diabetes	5.2%
Alcohol Abuse	4.0%	Suicide	3.4%
Assault	2.5%	Assault	2.8%
Stroke	2.3%	Influenza & Pneumonia	2.2%
All Other Causes	23.2%	All Other Causes	28.8%

During the 2018-2020 surveillance period Unintentional injuries are the leading cause of death for ages 10-49, and the second leading cause of death for those <10 and those in the 50-59 age group. COVID-19 was the 4th leading cause of death for those 40-49, the 3rd leading cause of death for those 40-59 and the leading cause of death for those 60 and older. Suicide was a major contributor to death for people ages 10-49, and Chronic Liver Disease & Cirrhosis was for people ages 20-59.

For the 2021-2024 surveillance period Unintentional Injury was the leading cause from birth through age 39, and the 2nd leading cause for those aged 40-59. COVID-19 was the third leading cause for those 40-59, the leading cause from 60-79 and the 4th leading cause for those over age 80. Chronic Liver Disease and Cirrhosis remain a major contributor to mortality from ages 20-69, and Suicide for those aged 10-39.

Table 3 Leading Causes of Death: Count, Percent of Total, Rates and Male to Female Ratio (2018-2020)

Rank	Cause of death (ICD-10)	Count	Percent of Total deaths	Crude Rate (Per 100,000 person years)	Age Adjusted Rate (Per 100,000 person years)	Male to Female
1	COVID-19 (U07)	562	15.6%	200.1	220.0	1.19
2	Unintentional Injuries (V01-X59, Y85-Y86)	459	12.8%	163.4	177.4	3.14
3	Diseases of heart (I00-I09, I11, I13, I20- I51)	306	8.5%	109.0	125.0	1.40
4	Malignant Neoplasms (C00-C97)	297	8.3%	105.8	117.0	1.18
5	Chronic liver disease and cirrhosis (K70, K73-K74)	292	8.1%	104.0	117.9	1.24
6	Diabetes (E10-E14)	210	5.8%	74.8	84.6	1.04
7	Alcohol Abuse (G00.3, G00.9, G03.9)	131	3.6%	46.6	51.9	1.68
8	Intentional self-harm (suicide) (X60-X84, Y87.0)	120	3.3%	42.7	46.3	4.81
9	Dementia (F01.1, F01.9, F03)	112	3.1%	39.9	53.0	0.45
10	Cerebrovascular diseases (stroke) (I60-I69)	103	2.9%	36.7	44.5	0.69

11	Influenza and Pneumonia (J09-J18)	82	2.3%	29.2	35.6	0.51
12	Other diseases of the respiratory system (J05.0, J39.1, J70.9- J98.9)	72	2.0%	25.6	31.4	0.88
13	Renal Failure (N17.9- N19)	72	2.0%	25.6	30.2	0.60
14	Assault (X93-X95, Y14- Y21, Y26-Y34)	65	1.8%	23.2	24.7	4.01
15	Septicemia (A40-A41)	52	1.4%	18.5	20.8	0.81

Table 4 Leading Causes of Death: Count, Percent of Total, Rates and Male to Female Ratio (2021-2024)

Rank	Cause of death (ICD-10)	Count	Percent of Total deaths	Crude Rate (Per 100,000 person years)	Age Adjusted Rate (Per 100,000 person years)	Male to Female
1	Unintentional Injuries (V01-X59, Y85-Y86)	676	12.9%	175.8	189.4	2.64
2	Chronic liver disease and cirrhosis (K70, K73-K74)	573	10.9%	144.9	161.8	1.34
3	COVID-19 (U07)	527	10.0%	137.1	146.4	1.05
4	Diseases of heart (I00-I09, I11, I13, I20-I51)	455	8.7%	118.3	130.7	1.39

5	Malignant Neoplasms (C00-C97)	390	7.4%	101.4	106.3	1.05
6	Diabetes (E10-E14)	279	5.3%	72.6	77.7	1.12
7	Alcohol Abuse (G00.3, G00.9, G03.9)	228	4.3%	59.3	64.8	2.40
8	Dementia (F01.1, F01.9, F03)	140	2.6%	36.4	45.5	0.52
9	Intentional self-harm (suicide) (X60-X84, Y87.0)	137	2.6%	35.6	37.2	3.41
10	Influenza and Pneumonia (J09-J18)	129	2.5%	33.6	38.4	0.89
11	Cerebrovascular diseases (stroke) (I60-I69)	116	2.2%	30.2	34.8	0.60
12	Other diseases of the respiratory system (J05.0, J39.1, J70.9- J98.9)	114	2.2%	29.7	32.2	1.24
13	Assault (X93-X95, Y14- Y21, Y26-Y34)	103	2.0%	27.6	28.2	4.52
14	Renal Failure (N17.9- N19)	78	1.5%	20.3	21.1	0.97
15	Septicemia (A40-A41)	72	1.4%	18.7	20.2	1.27

Figure 4 Leading 5 Causes of death by Age Group, Bother Genders: Percent of all Deaths, 2018-2020

<10	10 to 19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Chromosomal Abnormalities: 30%	Unintentional Injury: 57.6%	Unintentional Injury: 33.6%	Unintentional Injury Tied: 23.9%	Unintentional Injury: 22.0%	COVID-19: 15.5%	COVID-19: 24.5%	COVID-19: 22.4%	COVID-19: 15.2%
Unintentional Injury: 24%	Suicide: 18.2%	Suicide: 20.6%	Chronic Liver Disease & Cirrhosis: 23.9%	Chronic Liver Disease & Cirrhosis: 17.8%	Unintentional Injury: 13.8%	Cancer: 12.9%	Cancer: 12.1%	Heart Disease: 14.0%
Perinatal Period: 24%	Assault 6.1%	Chronic Liver Disease & Cirrhosis: 10.3%	Suicide: 9.2%	COVID-19: 10.5%	Chronic Liver Disease & Cirrhosis: 12.0	Heart Disease: 9.5%	Heart Disease: 11.4%	Dementias: 11.2%
Influenza & Pneumonia 4%	6 Tied: 3.0%	Assault Tied: 7.6%	COVID-19: 8.8%	Alcohol Abuse: 7.7%	Heart Disease: 8.3%	Unintentional Injury: 8.8%	Diabetes: 10.4%	Cancer: 10.4%
9 Tied at 2%		Alcohol Abuse: 7.6%	Alcohol Abuse: 6.6%	Suicide: 5.1%	2 Tied (Cancer & Alcohol Abuse) 7.3%	Diabetes: 7.9%	Stroke: 5.1%	Diabetes: 6.3%

Figure 5 Leading 5 Causes of death by Age Group, Both Genders: Percent of all Deaths, 2021-2024

<10	10 to 19	20-29	30-39	40-49	50-59	60-69	70-79	80+
Unintentional Injury 27.9%	Unintentional Injury: 46.2%	Unintentional Injury: 32.3%	Unintentional Injury: 22.4%	Chronic Liver Disease & Cirrhosis: 21.5%	Chronic Liver Disease & Cirrhosis: 15.4%	COVID-19: 14.6%	COVID-19: 14.4%	Heart Diseases: 15.4%
Chromosomal Abnormalities: 18.6%	Suicide: 21.2%	Chronic Liver Disease & Cirrhosis: 13.6%	Chronic Liver Disease & Cirrhosis: 20.9%	Unintentional Injury: 17.5%	Unintentional Injury: 14.7%	Cancer: 11.5%	Heart Disease: 12.8%	Cancer: 10.9%
Perinatal Period: 16.3%	Assault: 11.5%	Suicide: 13.6%	Alcohol Abuse: 10.0%	COVID-19: 9.7%	COVID-19: 10.3%	Heart Disease: 9.1%	Cancer: 12.4%	Dementias: 10.5%
Assault: 4.7%	Cancer: 3.9%	Assault: 7.4%	Suicide: 5.6%	Alcohol Abuse: 7.2%	Heart Disease: 7.5%	Chronic Liver Disease & Cirrhosis: 7.6%	Diabetes: 9.3%	COVID-19: 9.8%
6 Tied at 2.3%	Stroke: 3.9%	Alcohol Abuse: 5.0%	Assault: 5.2%	Heart Disease: 5.2%	Alcohol Abuse: 6.4%	Diabetes: 7.5%	Unintentional Injury: 5.7%	Diabetes: 6.3%

NCHS 113

Health conditions are organized according to the *International Classification of Diseases* (ICD) 10 standards, and according to the National Center of Health Statistics (NCHS) guidelines for 113 selected causes of death. These causes of death are reported because they often provide more specific information than the Leading Causes section. For example, under Leading Causes all Malignant neoplasms (cancers) are reported as one cause of death, whereas with the NCHS 113 many cancer sites are specified. All the NCHS 113 select causes with at least one case reported are listed, however, if there are fewer than 6 deaths the count data is suppressed (Table 5).

When considering the leading causes among the NCHS 113 categories this report falls in line with techniques used in the National vital statistics report. Namely all conditions with “Other” in the title or conditions wherein all diseases in a major category are combined into one cause (e.g. Certain conditions originating in the perinatal period contain all P codes) are not included. In the 2018-2020 period the NCHS-113 leading 5 causes of death were COVID-19, Alcoholic Liver Disease, Diabetes, Motor Vehicle Crash and Unintentional Poisoning/Suicide (tied). Motor Vehicle crash was the leading cause for those in their 20’s, Alcoholic Liver Disease for those ages 30-49, and COVID-19 for those ages 50 and older. In the 2021-2024 period the NCHS-113 leading 5 causes of death and leading cause by age group were unchanged.

There are significant differences in age adjusted rates by gender for several NCHS-113 categories. Males had higher rates for 4 health conditions in both surveillance periods: Assault, Other (4.4 & 6.25 times higher respectively); Assault, Firearm (3.4 & 3.35); Suicide, Other (3.7 & 2.66); Unintentional Poisoning (3.1 & 3.25). Females had higher rates for two conditions in both surveillance periods: Dementia (2.22, 1.92); Alzheimer’s (1.85, 2.56). Females had higher rates than males for Pneumonia (2.56) in 2018-2020, and higher rates for Kidney Cancer in 2021-2024 (2.70).

External injury causes of death are a significant contributor of death. These include broad categories such as Unintentional Injury, Assault, and Suicide. After breaking these 3 broad categories into smaller subsections the 5 leading causes of external injury death are Motor Vehicle Crash, Alcohol Poisoning, Suicide by hanging, Pedestrian, and Cold Exposure. Age Adjusted rates for Motor Vehicle Crash and Pedestrian remained relatively unchanged across the surveillance periods, but decreased for Alcohol Poisoning, Suicide by hanging, and Cold Exposure.

The New Mexico portion of the Navajo Nation has a lower burden than the U.S. for major causes of death such as Heart Disease, Cancer, Stroke, Chronic Lower Respiratory Disease, Alzheimer’s/Dementia, and Hypertension. The Navajo Nation has lower burden than the U.S. American Indian/Alaska Native (AIAN) population for Heart Disease, Cancer, Unintentional Injury, Stroke and Chronic Lower Respiratory Disease. The Navajo Nation has a higher burden than the U.S. for Unintentional Injury, Diabetes, Suicide, Chronic Liver Disease & Cirrhosis, COVID-19, Influenza & Pneumonia, and Assault. The Navajo Nation has a higher burden of disease than U.S. AIAN for Alzheimer’s/Dementia, Chronic Liver Disease & Cirrhosis, COVID-19, and Influenza & Pneumonia.

In many cases co-morbid conditions are identified that impacted the health of the individual but were not identified as the underlying cause of death. These co-morbidities contained within the vital records data were examined for 3 major health conditions:

Cancer, Heart Disease, and Diabetes. Diabetes, hypertension and kidney failure were frequently identified as contributing causes for Cancer and Heart Disease. Hypertension and kidney disease were frequently identified as a contributing cause for Diabetes.

Table 5 NCHS 113 Select Causes of death both Genders: Count, Age Adjusted Rate, and Count by Age Group, 2018-2020

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
All Cause	3,598	1,448.7	50	33	223	422	428	484	580	586	792
Salmonella	0	0	0	0	0	0	0	0	0	0	0
Certain other intestinal infections	13	5.13	0	0	0	0	*	*	*	*	*
Respiratory TB	*	NA	0	0	0	0	*	0	0	0	0
Septicemia	52	20.84	0	0	0	7	*	7	12	10	12
Viral Hepatitis	*	NA	0	0	0	*	0	*	*	0	0
Human immunodeficiency virus (HIV) disease	*	NA	0	0	0	*	*	*	0	0	0
Other and unspecified infections and parasitic diseases and their sequelae	15	6.19	0	0	*	*	*	*	*	*	*
Malignant neoplasms	297	117.0	*	0	*	10	20	35	75	71	82
lip, oral cavity and pharynx	*	NA	0	0	0	0	*	0	0	0	0
esophagus	*	NA	0	0	0	0	0	0	*	*	*
stomach	37	13.48	0	0	*	*	*	*	14	6	7
colon, rectum and anus	37	15.08	0	0	0	*	*	10	6	7	10

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
liver and intrahepatic bile ducts	28	10.57	0	0	*	0	*	*	10	8	6
pancreas	23	9.37	0	0	0	0	0	*	*	6	10
larynx	0	0	0	0	0	0	0	0	0	0	0
trachea, bronchus and lung	9	3.70	0	0	*	0	0	0	*	*	*
skin	*	NA	0	0	0	0	0	0	0	*	*
breast	23	9.27	0	0	0	0	*	6	6	*	7
cervix uteri**	*	NA	0	0	0	*	*	*	0	*	0
corpus uteri**	9	6.40	0	0	0	0	*	*	*	*	0
ovary**	17	14.30	0	0	0	0	*	*	*	9	*
prostate***	26	20.40	0	0	0	0	*	*	*	5	15
kidney and renal pelvis	27	11.57	0	0	0	0	*	*	*	*	11
bladder	0	0	0	0	0	0	0	0	0	0	0
meninges, brain and other parts of central nervous system	6	2.21	0	0	0	*	0	0	*	*	0
Hodgkin's disease	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin lymphoma	10	4.27	0	0	0	0	*	0	*	*	6
multiple myeloma	7	2.36	0	0	0	0	0	*	*	*	0
Leukemia	14	4.90	*	0	0	0	*	*	6	*	0

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
All other neoplasms	50	20.49	0	0	0	*	*	6	10	14	13
In situ neoplasm	9	3.27	*	0	0	0	0	*	*	0	*
Anemias	6	2.42	0	0	0	*	*	0	*	*	*
Diabetes	210	84.56	0	0	*	*	21	27	46	61	50
Malnutrition	15	7.23	0	0	0	0	0	0	*	*	12
Other nutritional deficiencies	0	0	0	0	0	0	0	0	0	0	0
Meningitis	*	NA	0	0	0	0	*	0	0	0	0
Parkinson's	18	7.62	0	0	0	0	0	*	*	6	10
Alzheimer's	17	8.15	0	0	0	0	0	0	0	*	12
Major cardiovascular diseases											
Acute rheumatic fever and chronic rheumatic heart diseases	0	NA	0	0	0	0	0	0	0	0	0
Hypertensive heart disease	20	9.17	0	0	0	0	*	*	*	*	12
Hypertensive heart disease and rheumatic heart disease	6	2.70	0	0	0	0	0	*	0	*	*
Acute myocardial infarction	59	24.30	0	0	*	*	*	*	11	19	17
Other acute ischemic heart disease	*	NA	0	0	0	0	0	*	0	0	*
Atherosclerotic cardiovascular disease	61	23.17	0	0	0	*	*	16	15	11	14

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Pneumonitis due to solids and liquids	11	4.73	0	0	0	0	*	*	*	*	*
Other diseases of the respiratory system	72	31.39	*	0	0	*	*	8	6	14	38
Peptic Ulcer	*	NA	0	0	0	*	0	*	0	*	*
Diseases of appendix	*	NA	0	0	0	0	*	*	0	0	0
Hernia	0	0	0	0	0	0	0	0	0	0	0
Alcoholic liver disease	226	92.05	0	0	17	85	59	44	13	*	*
Other chronic liver disease and cirrhosis	66	25.90	0	0	6	14	17	14	11	*	0
Cholelithiasis and other disorders of gallbladder	9	3.60	0	0	0	*	0	*	*	*	*
Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis unspecified	*	NA	0	0	0	0	0	0	0	0	*
Renal failure	72	30.16	0	0	0	*	*	11	13	19	24
Infections of kidney	7	3.01	0	0	0	*	*	0	0	*	*
Certain conditions originating in the perinatal period	13	4.42	12	0	0	*	0	0	0	0	0
Congenital malformations	19	6.62	15	*	0	*	*	*	0	0	0

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	42	16.17	*	0	7	7	7	7	6	*	*
Residual (All other diseases)	312	126.1	*	*	11	33	32	57	54	60	63
Unintentional Injuries											
Motor vehicle crash	175	66.82	*	12	50	38	33	18	10	6	*
Unintentional injury: Other land transport	11	3.98	0	*	0	*	*	*	*	0	0
Unintentional injury: Water, air and space, and other transport	0	0	0	0	0	0	0	0	0	0	0
Falls	37	14.91	*	0	*	*	*	7	*	9	11
Accidental discharge of firearms	0		0	0	0	0	0	0	0	0	0
Accidental drowning and submersion	12	4.50	*	*	*	*	*	*	0	0	0
Accidental exposure to smoke, fire and flames	9	3.82	0	0	0	*	*	*	*	0	*
Accidental poisoning and exposure to noxious substances	143	56.46	0	*	21	46	37	20	15	*	*
Other and unspecified non-transport accidents and their sequelae	72	26.94	*	*	*	8	14	15	18	6	*
Intentional self-harm (suicide) by discharge of firearms	21	8.54	0	0	6	7	6	*	0	*	0

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Intentional self-harm (suicide) by other and unspecified means and their sequelae	99	37.79	*	6	40	32	16	*	0	0	0
Assault (homicide) by discharge of firearms	21	7.81	0	0	8	6	*	*	*	0	0
Assault (homicide) by other and unspecified means and their sequelae	44	16.93	*	*	9	15	8	*	*	*	0
Legal intervention	*	NA	0	0	0	0	*	*	0	0	0
Discharge of firearms, undetermined intent	0	0	0	0	0	0	0	0	0	0	0
Other and unspecified events of undetermined intent and their sequelae	14	5.19	0	0	*	6	*	*	*	0	0
Complications of medical and surgical care	*	NA	*	0	0	0	0	*	*	0	*
COVID-19	562		0	*	11	37	45	75	142	131	120

*Indicates fewer than 6 cases

**no male cases, counts and rates are only among females

***no female causes, counts and rates are only among males

Table 6 NCHS 113 Select Causes of death both Genders: Count, Age Adjusted Rate, and Count by Age Group, 2021-2024

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
All Cause	5,251	1,491.8	43	52	338	731	692	733	817	804	1041
Salmonella	0	0	0	0	0	0	0	0	0	0	0
Certain other intestinal infections	14	3.69	0	0	*	0	*	*	*	0	*
Respiratory TB	*	NA	0	0	0	0	0	*	*	0	*
Other TB	*	NA	0	0	0	0	0	0	*	0	0
Septicemia	72	20.18	0	0	*	6	13	15	16	7	14
Viral Hepatitis	*	NA	0	0	0	*	0	*	0	*	0
Human immunodeficiency virus (HIV) disease	9	2.35	0	0	0	*	*	*	*	*	0
Other and unspecified infections and parasitic diseases and their sequelae	30	8.58	0	*	*	*	*	*	*	*	*
Malignant neoplasms											
lip, oral cavity and pharynx	*	NA	0	0	0	0	0	0	0	*	0
esophagus	8	2.13	0	0	0	*	0	*	*	*	*
stomach	35	9.05	0	*	0	*	*	12	6	12	0
colon, rectum and anus	71	19.46	0	0	0	3	6	17	14	22	9
liver and intrahepatic bile ducts	29	8.10	0	0	0	0	0	*	6	11	9

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
pancreas	33	8.55	0	0	0	0	*	*	14	*	9
larynx	0	0	0	0	0	0	0	0	0	0	0
trachea, bronchus and lung	18	5.54	0	0	0	*	*	*	*	*	11
skin	*	NA	0	0	0	*	0	*	*	0	0
breast	32	9.15	0	0	*	*	*	*	8	9	6
cervix uteri**	*	NA	0	0	0	0	*	*	0	*	0
corpus uteri**	17	8.16	0	0	0	0	0	*	8	*	*
ovary**	23	13.07	0	0	*	0	*	*	*	10	*
prostate***	25	13.75	0	0	0	0	0	0	*	7	16
kidney and renal pelvis	24	6.12	0	0	0	0	0	*	7	7	8
bladder	*	NA	0	0	0	0	0	0	0	*	*
meninges, brain and other parts of central nervous system	7	1.79	*	0	*	0	*	0	*	*	0
Hodgkin's disease	0	0	0	0	0	0	0	0	0	0	0
Non-Hodgkin lymphoma	13	3.99	0	0	0	0	0	*	0	*	6
multiple myeloma	11	3.15	0	0	0	0	*	*	*	*	*
Leukemia	10	2.61	0	*	0	*	0	*	*	*	*
All other neoplasms	81	22.63	0	0	*	*	*	9	20	20	25

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
In situ neoplasm	12	3.23	0	0	0	0	0	0	*	*	6
Anemias	6	1.76	0	0	0	0	0	0	*	*	*
Diabetes	279	77.71	0	1	3	11	21	41	61	75	66
Malnutrition	24	7.59	0	0	0	0	0	0	*	*	19
Other nutritional deficiencies	0	0	0	0	0	0	0	0	0	0	0
Meningitis	*	NA	0	0	0	0	*	0	*	0	0
Parkinson's	36	10.60	0	0	0	0	0	*	*	9	21
Alzheimer's	31	10.22	0	0	0	0	0	0	0	8	23
Major cardiovascular diseases											
Acute rheumatic fever and chronic rheumatic heart diseases	*	NA	0	0	0	0	0	*	*	0	*
Hypertensive heart disease	19	6.37	0	0	0	0	*	0	*	*	10
Hypertensive heart disease and rheumatic heart disease	8	2.45	0	0	0	0	*	*	*	*	*
Acute myocardial infarction	53	15.12	0	0	0	*	*	*	8	16	18
Other acute ischemic heart disease	6	1.74	0	0	0	0	*	*	0	0	*
Atherosclerotic cardiovascular disease	85	24.06	0	0	0	*	10	18	17	18	20
All other forms of chronic ischemic heart disease	94	27.42	0	0	*	*	*	7	13	23	46

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Acute and subacute endocarditis	*	NA	0	0	0	*	0	0	0	0	0
Heart Failure	43	12.03	0	0	0	*	0	*	11	*	20
All other forms of heart disease	144	40.72	*	0	7	13	12	17	22	32	40
Essential hypertension and hypertensive renal disease	47	13.07	0	0	0	*	*	9	10	10	12
Cerebrovascular disease (stroke)	116	34.76	*	*	*	*	*	11	15	26	52
Atherosclerosis	10	2.79	0	0	0	0	0	*	*	*	*
Aortic aneurysm and dissection	*	NA	0	0	0	*	0	0	0	*	*
Diseases of the pericardium	*	NA	0	0	0	0	0	0	*	0	0
Other diseases of the arteries	17	4.82	0	0	0	0	0	*	*	0	9
Other diseases of circulatory system	10	2.63	0	0	*	0	*	*	*	0	*
Influenza	13	3.56	*	0	0	*	*	*	*	*	*
Pneumonia	116	34.87	0	0	*	11	15	10	13	25	40
Emphysema	0	0	0	0	0	0	0	0	0	0	0
Asthma	*	NA	0	0	0	0	0	0	0	0	3
Other chronic lower respiratory disease	16	4.91	0	0	0	0	*	*	*	*	7
Pneumoconiosis and chemical effects	*	NA	0	0	0	0	0	0	0	*	*
Pneumonitis due to solids and liquids	18	4.97	0	0	0	*	0	*	*	*	7

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Other diseases of the respiratory system	114	32.17	*	0	*	7	6	10	20	27	41
Peptic Ulcer	*	NA	0	0	0	*	*	0	*	0	0
Diseases of appendix	*	NA	0	0	0	*	0	0	0	0	0
Hernia	*	NA	0	0	0	0	0	*	0	0	*
Alcoholic liver disease	370	109.5	0	0	32	115	112	72	27	10	*
Other chronic liver disease and cirrhosis	187	52.33	0	0	14	38	37	41	35	17	*
Cholelithiasis and other disorders of gallbladder	18	5.66	0	0	0	*	*	*	*	*	10
Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis unspecified	*	NA	0	0	*	0	0	0	0	*	0
Renal failure	78	21.14	0	0	*	*	9	8	24	15	18
Infections of kidney	*	NA	0	0	0	0	0	0	0	*	*
Hyperplasia of Prostate	*	NA	0	0	0	0	0	0	0	*	*
Inflammatory condition of female pelvic organs	*	NA	0	0	0	0	0	0	0	*	0
Other complications of pregnancy	6	4.25	0	0	*	*	0	0	0	0	0
Certain conditions originating in the perinatal period	7	1.81	7	0	0	0	0	0	0	0	0

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Congenital malformations	10	2.62	8	0	*	*	0	0	0	0	0
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	137	39.51	*	0	14	28	30	25	15	6	15
Residual (All other diseases)	559	158.6	*	*	20	81	70	87	103	93	99
Unintentional Injuries											
Motor vehicle crash	249	68.42	6	15	59	64	38	40	15	10	*
Unintentional injury: Other land transport	11	3.09	0	0	*	*	*	*	0	0	0
Unintentional injury: Water, air and space, and other transport	0	0	0	0	0	0	0	0	0	0	0
Falls	63	18.04	0	0	*	*	*	9	8	17	24
Accidental discharge of firearms	5	NA	0	*	*	*	0	0	0	0	0
Accidental drowning and submersion	17	4.09	*	*	*	*	*	*	*	*	*
Accidental exposure to smoke, fire and flames	14	3.84	0	*	0	*	*	*	*	*	0
Accidental poisoning and exposure to noxious substances	229	66.21	0	*	34	79	59	35	14	*	0
Other and unspecified non-transport accidents and their sequelae	93	25.18	*	*	8	14	14	17	18	11	6
Intentional self-harm (suicide) by discharge of firearms	35	9.29	0	*	11	8	*	*	*	*	0

Cause of death	Count	Age Adjusted Rate (Per 100,000 person years)	<10	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80+
Intentional self-harm (suicide) by other and unspecified means and their sequelae	102	27.90	0	9	35	33	15	6	*	0	0
Assault (homicide) by discharge of firearms	49	13.24	0	6	14	16	7	*	*	0	0
Assault (homicide) by other and unspecified means and their sequelae	54	14.94	*	0	11	22	8	6	*	0	0
Legal intervention	*	NA	0	0	0	*	*	*	0	0	0
Discharge of firearms, undetermined intent	*	NA	0	0	*	0	0	0	0	0	0
Other and unspecified events of undetermined intent and their sequelae	23	6.36	0	0	*	7	*	*	*	*	*
Complications of medical and surgical care	15	4.12	0	0	*	0	*	*	*	*	5
COVID-19	527	146.4	0	*	12	35	67	75	119	116	102

Table 7 NCHS 113 Select Causes of death: Age-Adjusted Rates (Per 100,000 person years) by Gender, 2018-2020

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
All Cause	1308.5	1594.6	1.22
COVID-19	201.4	239.3	1.19
Salmonella	0	0	
Certain other intestinal infections	4.55	5.73	1.26
Respiratory TB	*	0	
Septicemia	22.97	18.63	0.81
Viral Hepatitis	*	*	
Human immunodeficiency virus (HIV) disease	*	*	
Other and unspecified infections and parasitic diseases and their sequelae	8.63	3.65	0.42
Malignant neoplasms			
lip, oral cavity and pharynx	*	0	
esophagus	*	*	
stomach	8.35	18.82	2.25
colon, rectum and anus	12.79	17.46	1.37

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
liver and intrahepatic bile ducts	11.34	9.77	0.86
pancreas	9.97	8.74	0.88
larynx	0	0	
trachea, bronchus and lung	4.88	*	
skin	*	*	
breast	17.39	*	
cervix uteri**	4.05	-	
corpus uteri**	6.40	-	
ovary**	14.30	-	
prostate***	-	20.40	
kidney and renal pelvis	10.37	12.82	1.24
bladder	0	0	
Meninges, brain and other parts of central nervous system	*	*	
Hodgkin's disease	0	0	
Non-Hodgkin lymphoma	4.68	3.84	0.82

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
multiple myeloma	*	*	
Leukemia	*	7.07	
All other neoplasms	22.69	18.21	0.80
In situ neoplasm	4.58	*	
Anemias	*	3.19	
Diabetes	82.97	86.21	1.04
Malnutrition	11.02	*	
Other nutritional deficiencies	0	0	
Alcohol Abuse	38.96	65.37	1.68
Meningitis	0	*	
Parkinson's	6.52	8.75	1.34
Alzheimer's	10.49	5.71	0.54
Dementias	72.51	32.73	0.45
Major cardiovascular diseases			
Acute rheumatic fever and chronic rheumatic heart diseases	0	*	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Hypertensive heart disease	9.42	8.91	0.95
Hypertensive heart disease and rheumatic heart disease	*	*	
Acute myocardial infarction	25.85	22.70	0.88
Other acute ischemic heart disease	*	*	
Atherosclerotic cardiovascular disease	10.84	36.0	3.32
All other forms of chronic ischemic heart disease	26.37	34.93	1.32
Acute and subacute endocarditis	*	*	
Heart Failure	10.73	10.52	0.98
All other forms of heart disease	17.41	28.31	1.63
Essential hypertension and hypertensive renal disease	12.12	10.39	0.86
Cerebrovascular disease (stroke)	52.39	36.32	0.69
Atherosclerosis	0	*	
Aortic aneurysm and dissection	0	0	
Other diseases of the arteries	*	*	
Other diseases of circulatory system	*	*	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Influenza	6.75	8.10	1.20
Pneumonia	40.20	15.78	0.39
Emphysema	*	*	
Asthma	*	*	
Bronchitis	*	0	
Other chronic lower respiratory disease	9.23	8.75	0.95
Pneumoconiosis and chemical effects	0	*	
Pneumonitis due to solids and liquids	4.69	4.77	1.02
Other diseases of the respiratory system	33.36	29.34	0.88
Peptic Ulcer	*	*	
Diseases of appendix	*	0	
Hernia	0	0	
Alcoholic liver disease	80.14	104.4	1.30
Other chronic liver disease and cirrhosis	25.31	26.51	1.05
Cholelithiasis and other disorders of gallbladder	*	5.67	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis unspecified	*	0	
Renal failure	37.57	22.44	0.60
Infections of kidney	4.33	*	
Hyperplasia of prostate***	-	0	
Other Complications of Pregnancy	*	-	
Certain conditions originating in the perinatal period	4.20	4.66	1.11
Congenital malformations	7.96	5.22	0.66
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	9.07	23.55	2.60
Residual (All other diseases)	135.4	116.4	0.86
Unintentional Injuries			
Motor vehicle crash	36.02	92.18	2.56
Unintentional injury: Other land transport	*	6.40	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Unintentional injury: Water, air and space, and other transport	0	0	
Falls	9.00	21.07	2.34
Accidental discharge of firearms	0	0	
Accidental drowning and submersion	*	7.75	
Accidental exposure to smoke, fire and flames	*	6.69	
Accidental poisoning and exposure to noxious substances	28.00	86.07	3.07
Other and unspecified non-transport accidents and their sequelae	9.51	45.07	4.74
Intentional self-harm (suicide) by discharge of firearms	0	17.41	
Intentional self-harm (suicide) by other and unspecified means and their sequelae	16.15	60.31	3.73
Assault (homicide) by discharge of firearms	3.63	12.16	3.35
Assault (homicide) by other and unspecified means and their sequelae	6.38	27.92	4.38
Legal intervention	0	*	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Discharge of firearms, undetermined intent	0	0	
Other and unspecified events of undetermined intent and their sequelae	4.49	5.93	1.32
Complications of medical and surgical care	0	*	

Table 8 NCHS 113 Select Causes of death: Age-Adjusted Rates (Per 100,000 person years) by Gender, 2021-2024

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
All Cause	1319.1	1671.5	1.27
COVID-19	142.5	150.3	1.05
Salmonella	0	0	
Certain other intestinal infections	3.68	3.71	1.01
Respiratory TB	*	*	
Other TB	*	0	
Septicemia	17.79	22.67	1.27
Viral Hepatitis	*	*	
Human immunodeficiency virus (HIV) disease	*	4.43	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Other and unspecified infections and parasitic diseases and their sequelae	7.56	9.64	1.28
Malignant neoplasms			
lip, oral cavity and pharynx	*	*	
esophagus	*	3.18	
stomach	7.62	10.54	1.38
colon, rectum and anus	16.99	22.03	1.30
liver and intrahepatic bile ducts	8.32	7.88	0.95
pancreas	9.19	7.88	0.86
larynx	0	0	
trachea, bronchus and lung	6.18	4.88	0.79
skin	*	*	
breast	17.41	*	
cervix uteri**	*	-	
corpus uteri**	8.16	-	
ovary**	13.07	-	
prostate***	-	13.75	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
kidney and renal pelvis	26.3	9.76	0.37
bladder	*	*	
Meninges, brain and other parts of central nervous system	2.65	*	
Hodgkin's disease	0	0	
Non-Hodgkin lymphoma	4.10	3.88	0.95
multiple myeloma	*	4.31	
Leukemia	*	2.71	
All other neoplasms	29.42	15.56	0.53
In situ neoplasm	2.90	3.58	1.23
Anemias	*	*	
Diabetes	73.43	82.16	1.12
Malnutrition	9.46	5.65	0.60
Other nutritional deficiencies	0	0	
Alcohol Abuse	38.40	92.19	2.40
Meningitis	*	*	
Parkinson's	10.51	10.70	1.02

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Alzheimer's	14.62	5.65	0.39
Dementias	59.60	30.76	0.52
Major cardiovascular diseases			
Acute rheumatic fever and chronic rheumatic heart diseases	*	*	
Hypertensive heart disease	8.10	3.57	0.44
Hypertensive heart disease and rheumatic heart disease	3.36	*	
Acute myocardial infarction	9.98	20.47	2.05
Other acute ischemic heart disease	*	*	
Atherosclerotic cardiovascular disease	17.43	30.97	1.78
All other forms of chronic ischemic heart disease	24.09	30.88	1.28
Acute and subacute endocarditis	*	*	
Heart Failure	12.35	11.69	0.95
All other forms of heart disease	32.59	49.17	1.51
Essential hypertension and hypertensive renal disease	9.42	16.87	1.79

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Cerebrovascular disease (stroke)	43.13	26.05	0.60
Atherosclerosis	*	3.56	
Aortic aneurysm and dissection	*	0	
Other diseases of the arteries	6.16	3.42	0.56
Other diseases of circulatory system	3.92	*	
Influenza	3.05	4.08	1.34
Pneumonia	37.49	32.15	0.86
Emphysema	0	0	
Asthma	*	*	
Bronchitis	0	0	
Other chronic lower respiratory disease	6.45	3.32	0.51
Pneumoconiosis and chemical effects	0	2.84	
Pneumonitis due to solids and liquids	4.86	5.08	1.05
Other diseases of the respiratory system	28.77	35.70	1.24
Peptic Ulcer	*	*	
Diseases of appendix	0	*	

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Hernia	*	*	
Alcoholic liver disease	86.71	133.2	1.54
Other chronic liver disease and cirrhosis	52.03	52.64	1.01
Cholelithiasis and other disorders of gallbladder	6.05	5.24	0.87
Chronic glomerulonephritis, nephritis and nephritis not specified as acute or chronic, and renal sclerosis unspecified	*	0	
Renal failure	21.45	20.83	0.97
Infections of kidney	*	*	
Hyperplasia of prostate***	-	*	
Other Complications of Pregnancy	4.25	-	
Certain conditions originating in the perinatal period	*	2.60	
Congenital malformations	2.61	2.64	1.01
Symptoms, signs, and abnormal clinical and laboratory findings, not elsewhere classified	25.03	54.58	2.18
Residual (All other diseases)	174.8	141.8	0.81

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Unintentional Injuries			
Motor vehicle crash	42.54	95.34	2.24
Unintentional injury: Other land transport	11.65	5.25	0.45
Unintentional injury: Water, air and space, and other transport	0	0	
Falls	16.57	19.56	1.18
Accidental discharge of firearms	0	2.48	
Accidental drowning and submersion	*	8.25	
Accidental exposure to smoke, fire and flames	*	7.22	
Accidental poisoning and exposure to noxious substances	31.50	102.3	3.25
Other and unspecified non-transport accidents and their sequelae	11.65	39.26	3.37
Intentional self-harm (suicide) by discharge of firearms	*	17.21	
Intentional self-harm (suicide) by other and unspecified means and their sequelae	15.38	40.94	2.66
Assault (homicide) by discharge of firearms	6.16	20.61	3.35

Cause of death	Female (Rate per 100,000 person years)	Male (Rate per 100,000 person years)	Male to Female Ratio
Assault (homicide) by other and unspecified means and their sequelae	4.18	26.14	6.25
Legal intervention	0	*	
Discharge of firearms, undetermined intent	*	*	
Other and unspecified events of undetermined intent and their sequelae	4.61	8.18	1.77
Complications of medical and surgical care	3.61	4.64	1.29

Years of Potential Life Lost

An additional way to understand the impact of different causes of death on the health of a people is through years of potential life lost (YPLL). This measure considers both the quantity (count) of deaths by cause, and the age of the decedent. Causes of death that affect younger populations, and most likely influence life expectancy, are reflected in this metric. YPLL was calculated using 2023 U.S. life expectancy as the baseline. The formula for calculating total years of life lost for each cause is:

$$\Sigma \text{Life Expectancy} - \text{Age at death}$$

For example, if a male died because of a motor vehicle at age 30 the years of life lost would be 75.8 years (average US life expectancy) – 30 years = 45.8 years. This calculation would then be done for each male who died because of a car crash and summed together to get total years of life lost.

The leading causes of YPLL were relatively unchanged from the first surveillance period to the second. The total number of YPLL increased from the first surveillance to the second, which can't be entirely explained by the decrease in COVID YPLL. Even during the COVID-19 pandemic Unintentional Injuries and Chronic Liver Disease & Cirrhosis account for a large portion of YPLL. Among the leading causes for females, YPLL decreased for each. COVID-19 dropped off the leading 5 causes for females and

Suicide joined the top 5. Among males the conditions included in the top 5 did not change from the first to the second surveillance period, but YPLL increased for Unintentional Injuries, Chronic Liver Disease & Cirrhosis, and Alcohol Abuse.

Figure 6 Years of Potential Life Lost, All People

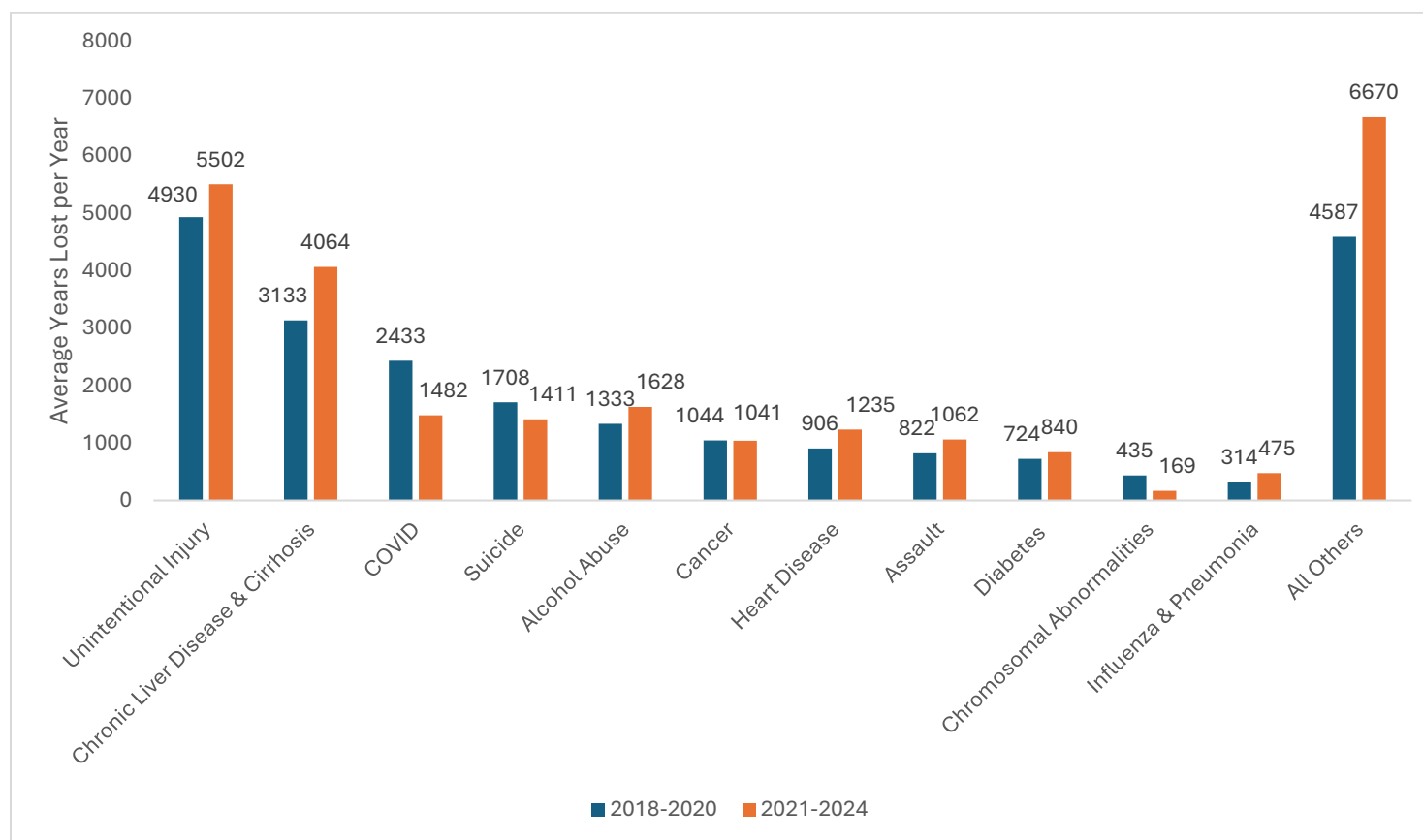


Figure 7 Years of Potential Life Lost, Females

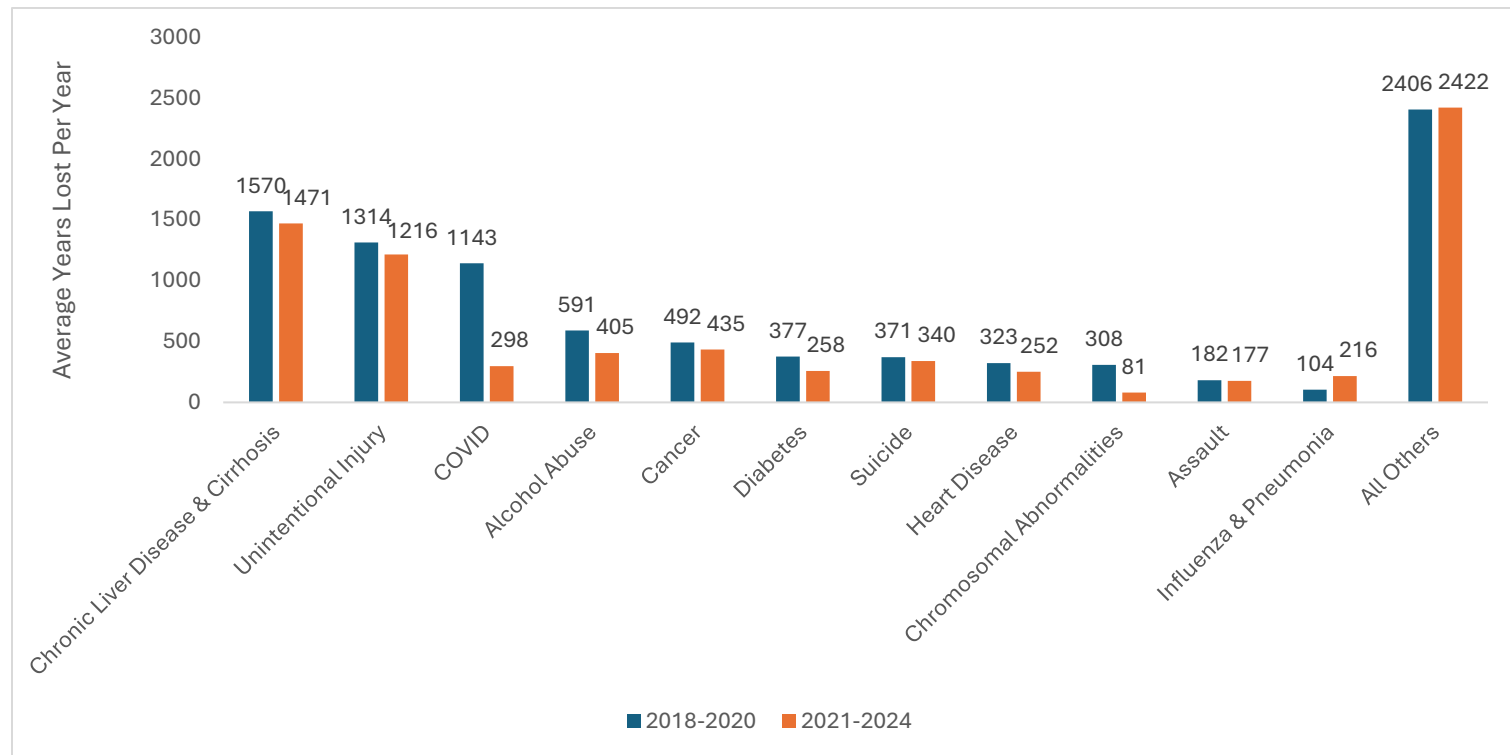
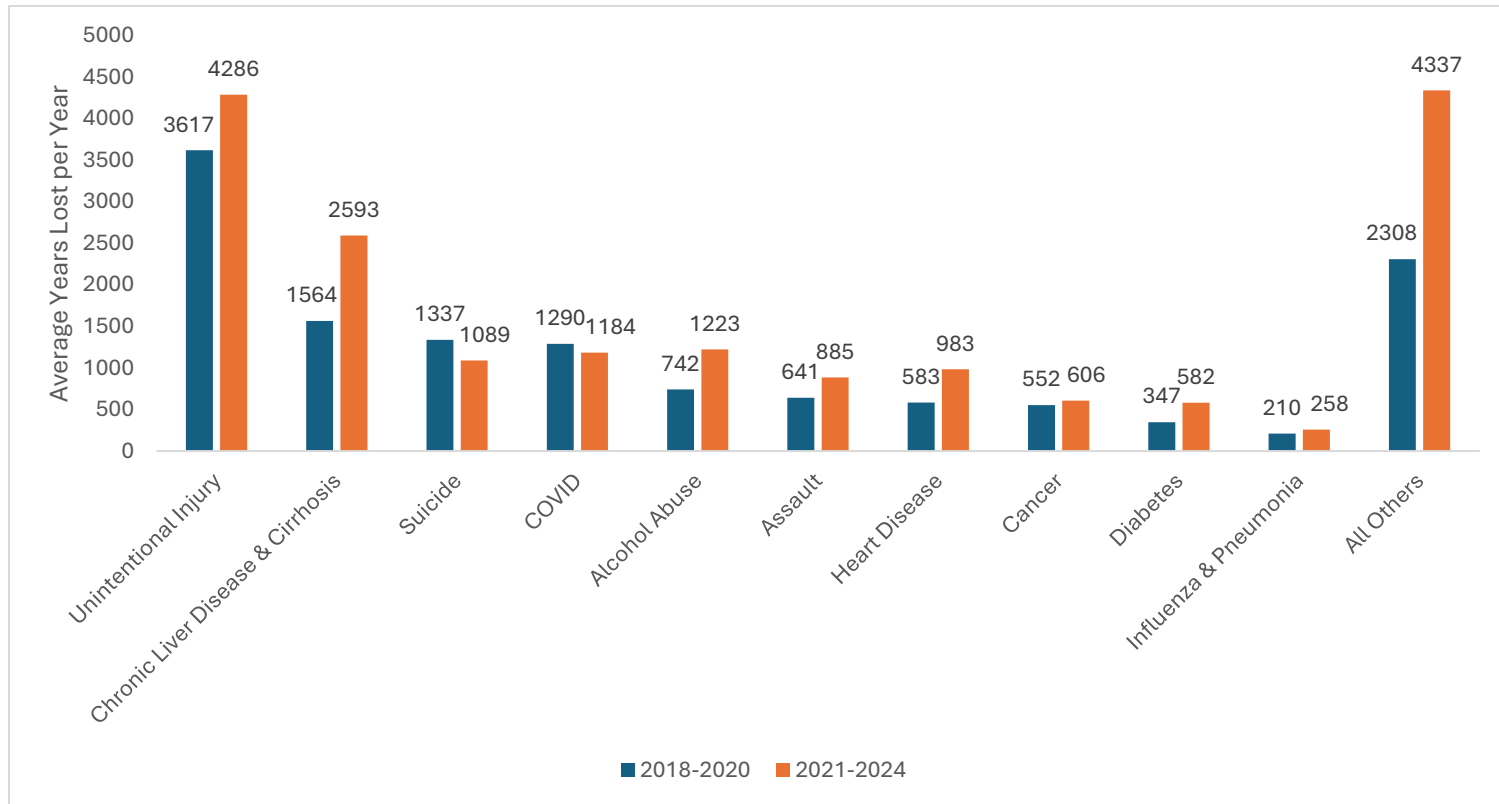


Figure 8 Years of Potential Life List, Males



Injury Specific Mortality

Table 9 External Injury Cause Both Genders: Count, Age-Adjusted Rates

	2018-2020		2021-2024	
Injury Type	Count	Age-Adjusted Rate (Per 100,000 person years)	Count	Age-Adjusted Rate (Per 100,000 person years)
Alcohol Poisoning	93	36.24	92	26.70
All-Terrain Vehicle (V86.0, v86.5)	0	0	*	*
Animal Rider (V800)	0	0	*	*
Assault, Firearm	21	7.81	49	13.24
Assault, Other (X91, Y00, Y03, Y04, Y08, Y09)	24	9.01	29	8.06
Assault, Sharp Object (X99)	20	7.92	25	6.89
Cold Exposure (X31)	39	15.02	42	11.03
Drowning	12	4.50	17	4.54
Falls	37	14.91	63	18.04
MV Crash Occupant	116	43.51	159	43.19

	2018-2020		2021-2024	
Injury Type	Count	Age-Adjusted Rate (Per 100,000 person years)	Count	Age-Adjusted Rate (Per 100,000 person years)
Natural Heat (X30)	*	*	12	3.56
Opioid poisoning	16	6.35	24	6.78
Other Non-transportation Injuries (W20, W22, W23 W31, W40, W54, W55, W87, X15, X39, X50, X590, X599, Y86)	16	5.85	21	5.88
Choking & Other threats to breathing (W75, W78, W79, W80, W83, W84)	14	5.09	18	4.71
Pedestrian (Train, other vehicle) V059, V060, V091	9	3.43	7	1.94
Pedestrian (MVC) V030, V031, V039, V041, , V051, V092, V199	59	23.3	89	25.04
Smoke, Fire, Flame	9	3.82	14	3.84
Suicide Firearms	21	8.53	35	9.29

	2018-2020		2021-2024	
Injury Type	Count	Age-Adjusted Rate (Per 100,000 person years)	Count	Age-Adjusted Rate (Per 100,000 person years)
Suicide Hanging (X70)	78	28.96	82	22.09
Suicide Other (X60, X61, X62, X64, X65, X71, X76, X78, X80, X81, X82, X83, Y871)	21	8.83	18	5.26
Undetermined Intent	14	5.19	23	6.36

Table 10 Comparison to US. Percent of Total Deaths

Cause of Death	NM Navajo Nation 2018-2020	NM Navajo Nation 2021-2024	U.S. 2023	U.S. Non-Hispanic White	U.S. AIAN
Diseases of Heart	8.5%	8.7%	22.0%	22.6%	17.0%
Cancer	8.3%	7.4%	19.8%	20.2%	15.1%
Unintentional Injury	12.8%	12.9%	7.2%	6.4%	14.5%
Stroke	2.9%	2.2%	5.3%	5.1%	3.3%

Cause of Death	NM Navajo Nation 2018-2020	NM Navajo Nation 2021-2024	U.S. 2023	U.S. Non-Hispanic White	U.S. AIAN
Chronic Lower Respiratory Disease	0.7%	0.4%	4.7%	5.4%	3.5%
Alzheimer's*	0.5%	0.6%	3.7%	4.0%	1.5%
Diabetes	5.7%	5.3%	3.1%	2.6%	5.2%
Suicide	3.3%	2.6%	1.6%	1.6%	2.7%
Nephritis	2.1%	1.5%	1.8%	1.6%	1.9%
Chronic Liver Disease & Cirrhosis	8.3%	10.7%	1.7%	1.6%	6.2%
COVID-19	15.6%	10.0%	1.6%	1.7%	1.4%
Influenza & Pneumonia	2.4%	2.4%	1.4%	1.4%	1.7%
Essential Hypertension	0.8%	0.9%	1.4%	1.2%	0.9%
Assault	1.8%	2.0%	0.7%	0.2%	1.5%

*Many Alzheimer's deaths might be recorded as Dementia deaths which account for an additional 3.0% and 2.6% of all deaths in 2018-2020 and 2021-2024 respectively.

Table 11 Leading Causes of Death with US 2022 Age adjusted Rates (Per 100,000 person years)

Cause of Death	Navajo (NM Portion) 2021-2024	U.S. 2022	NN to US Ratio
Unintentional Injury	189.4	64.0	2.96
Chronic Liver Disease & Cirrhosis	161.8	13.8	11.72
COVID-19	146.4	44.5	3.29
Heart Disease	130.7	167.2	0.78
Cancer	106.3	142.3	0.75
Diabetes	77.71	24.1	3.22
Alcohol Abuse	64.8	NA	NA
Dementias	45.5	NA	NA
Suicide	37.2	14.2	2.62
Influenza & Pneumonia	14.1	11.3	1.25
Stroke	34.8	39.5	0.88
Other Respiratory Disease	32.2	40.7	0.79

Cause of Death	Navajo (NM Portion) 2021-2024	U.S. 2022	NN to US Ratio
Assault	28.2	7.5	3.76
Renal Failure	21.1	17.4	1.21
Septicemia	12.7	10.1	1.26

U.S. Alzheimer's rate was 36.0

Figure 9 Leading Co-Morbid Conditions for those with Cancer as the Underlying Cause of Death

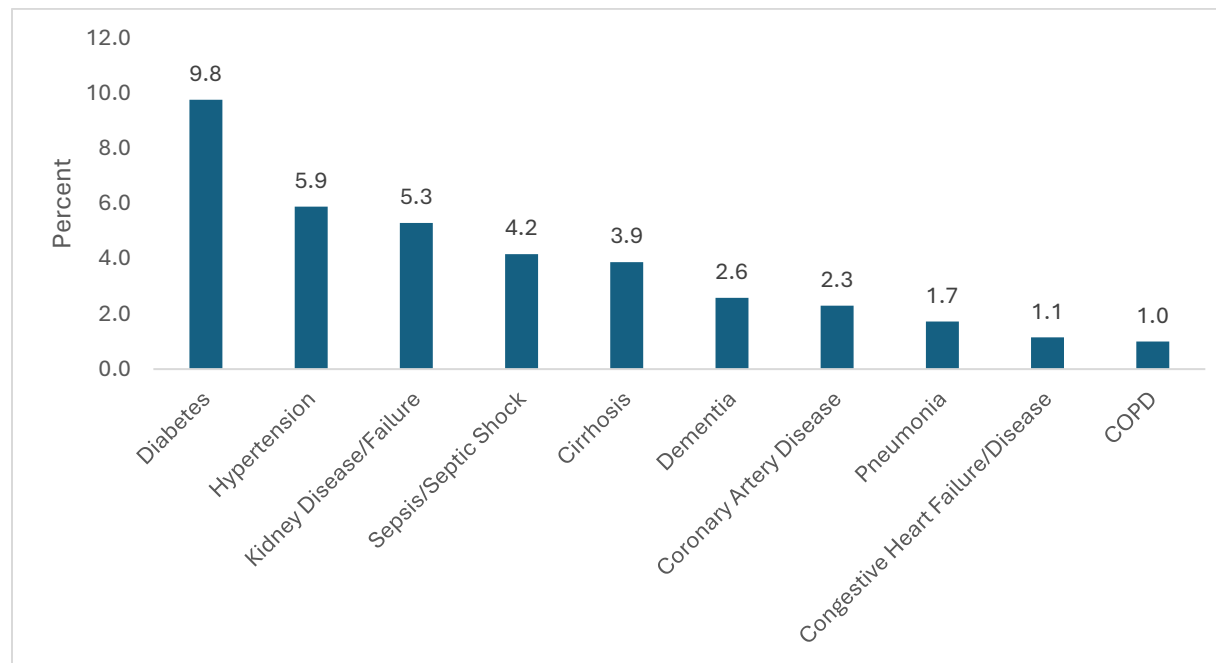


Figure 10 Leading Co-Morbid Conditions for those with Heart Disease as the Underlying Cause of Death

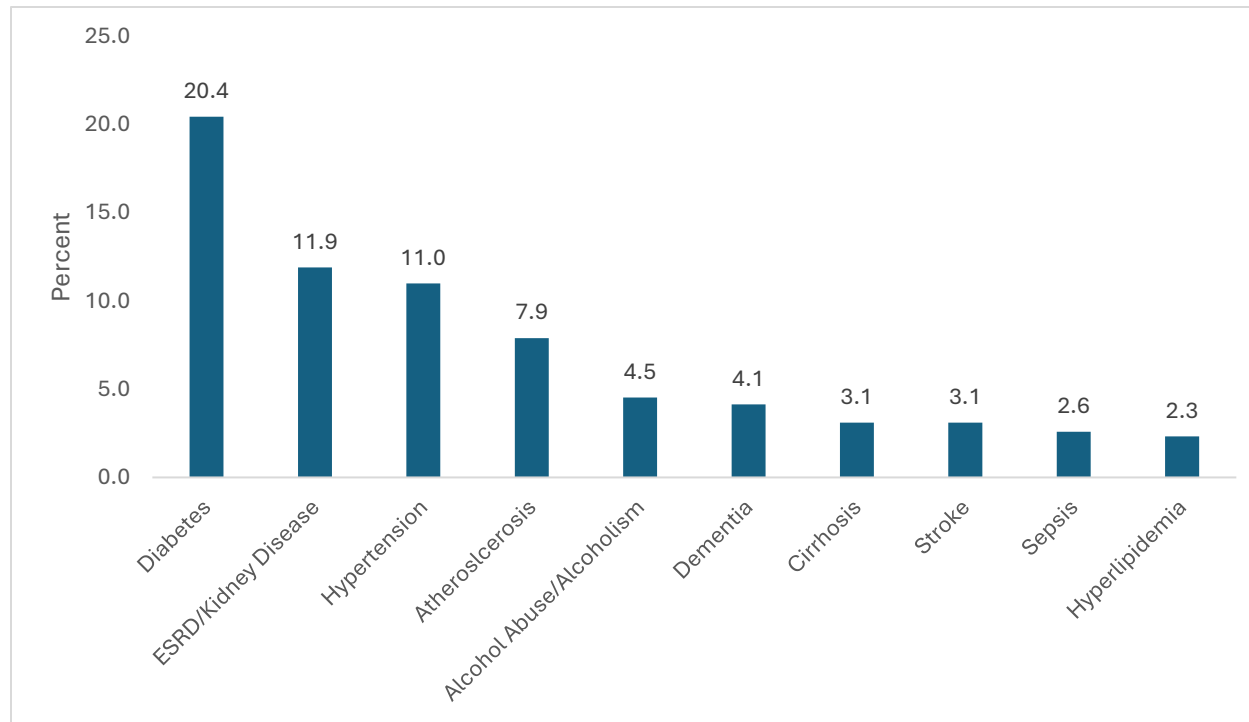


Figure 11 Leading Co-Morbid conditions for those with Diabetes as the Underlying Cause of Death

