



# Navajo Epidemiology Center Update

Vol. 1, May 2016

The NEC is a program within the Navajo Department of Health, which serves one of the largest Native American tribes in the United States. The Navajo Nation has a population of approximately 155,000 Navajos living within the Navajo Nation boundaries, plus approximately another 175,000 living in border towns and metropolitan areas. It serves an area of 28,000 square miles in the southwest United States. Portions of Arizona, New Mexico, and Utah extend into the Navajo Nation lands, necessitating working relationships with the “three-states” on a number of fronts, including public health.

*Mortality*

*Infectious Disease Epidemiology*

*Cancer Epidemiology*

*Maternal & Child Health Epidemiology*

*Close-up: Suicide*

*Close-up: Health Survey*

*Good Health & Wellness in Indian Country*

This first issue of **Update** provides you with an overview of the mission and activities of the Navajo Epidemiology Center (NEC), a program within the Navajo Department of Health. The NEC was established in 2005 to manage Navajo Nation’s public health information systems, investigate diseases and injuries of concern, provide data and reports to help health programs effectively manage programs, respond to public health emergencies, and coordinate these activities with other public health authorities. The NEC’s primary objectives are: data collection, analysis and interpretation; disease surveillance; disease control and prevention; and data sharing. The NEC is one of twelve Tribal Epidemiology Centers across the United States. Tribal Epidemiology Centers are Indian Health Service funded organizations serving American Indian/Alaska Native tribal and urban communities.



Contact us:  
Tel. 928/871-6539  
Website: [www.nec.navajo-nsn.gov](http://www.nec.navajo-nsn.gov)  
Email: [navajoepi@nndoh.org](mailto:navajoepi@nndoh.org)



## Mortality

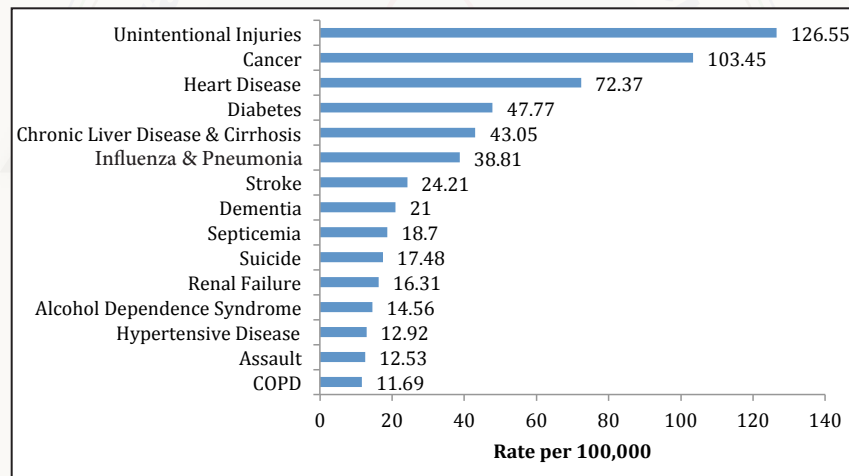
Our goal is not to simply prevent death but to extend life, so several key metrics are used to evaluate mortality data.

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. 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 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.

Navajo Nation Top 15 Age-adjusted Leading Causes of Death, 2006-2009



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. 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.



## Infectious Disease Epidemiology

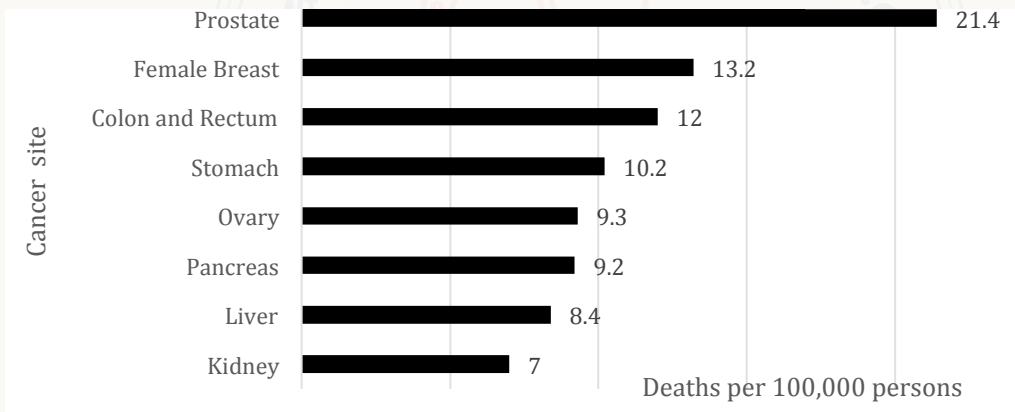


The purpose of the Navajo Infectious Disease Epidemiology is to conduct public health related epidemiological investigation, disease surveillance and response, and to partner with external entities in response to acute events. The activities will assure: (a) complete and timely acute public health event and disease surveillance activities to include appropriate documentation, case management, training, and collaboration with partners, healthcare providers, and other agencies as needed; (b) responses to infectious disease and other acute disease cases, clusters and outbreaks; (c) special projects, data analysis, and related initiatives; and (d) supervision and communication as it relates to central/regional/local coordination with partners.

## Cancer Epidemiology

The Navajo Cancer Epidemiology Workgroup is currently working toward developing the second report covering years 2005-2012. The Workgroup has tabulated incidence, mortality, stage and screening rates using Navajo proxy 6 counties – McKinley (NM), San Juan (NM), San Juan (UT), Apache (AZ), Navajo (AZ), Coconino (AZ). The workgroup consists of representatives from tumor registries from AZ, NM and UT, CDC, NAIHS, and State health departments.

Leading Causes of Death by Cancer Site among the Navajo, Age-Adjusted Mortality Rates<sup>b</sup>, 2005-2012, Males and Females Combined



Source: Surveillance, Epidemiology, and End Results (SEER) Program ([www.seer.cancer.gov](http://www.seer.cancer.gov)) SEER\*Stat Database: Mortality - All COD, Aggregated With County, Total U.S. (1990-2012) <Katrina/Rita Population Adjustment> - Linked To County Attributes - Total U.S., 1969-2013 Counties, National Cancer Institute, DCCPS, Surveillance Research Program, Surveillance Systems Branch, released April 2015. Underlying mortality data provided by NCHS ([www.cdc.gov/nchs](http://www.cdc.gov/nchs)).

<sup>a</sup> American Indian/Alaska Native cancer mortality data in the six counties that comprise most of Navajo Nation were used as a proxy for Navajo cancer mortality rates; the six counties included: Apache County (AZ), Coconino County (AZ), Navajo County (AZ), McKinley County (NM), San Juan County (NM), San Juan County (UT).

<sup>b</sup> Rates are per 100,000 persons and are age-adjusted to the 2000 U.S. standard population.



Pregnancy Risk Assessment Monitoring System (PRAMS) – PRAMS is a population-based surveillance system developed and sponsored by the Centers for Disease Control and Prevention and implemented in partnership with New Mexico PRAMS. The PRAMS program monitors the health status, behaviors and experiences of mothers before, during and after the birth of a child. The PRAMS program uses a survey instrument to query mothers on a variety of pregnancy risk factors, including prenatal care, counseling, multivitamin use, intimate partner abuse, teen pregnancy, home visiting, unintended and unwanted pregnancies, and other factors associated with pregnancy and birth outcomes.

### Preconception: Key Findings

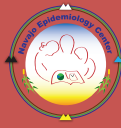
- **A high prevalence of Navajo mothers did not use contraception at conception.** 62% of Navajo mothers who said they were not trying to get pregnant were not using contraception.
- **Unintended pregnancy.** Over half of Navajo mothers (52%) did not intend to get pregnant. Navajo mothers who were younger and unmarried were more likely to report an unintended pregnancy.
- **Low multivitamin use during the month before pregnancy.** 61% of Navajo mothers did not take a multivitamin or prenatal vitamin; only 24% took a multivitamin daily during the month before pregnancy.
- **Overweight.** The data indicate that BMI was too high for 57% of Navajo mothers. The mothers who were overweight were older, had higher levels of education, and were married.
- **3% of Navajo mothers reported having pre-existing diabetes, and 14% developed diabetes during pregnancy (gestational diabetes).** Navajo women who were married, older, and reported I.H.S. as a payer of prenatal care were significantly more likely to have gestational diabetes.

### Prenatal: Key Findings

- **43% of Navajo mothers did not receive prenatal care beginning in the first trimester, and only half (49%) received adequate or adequate-plus prenatal care.** Younger Navajo mothers and those who were not married were less likely to receive timely prenatal care.
- **14% of Navajo mothers developed diabetes during pregnancy.** This puts their health and the health of their baby at risk. Being overweight is a risk factor for gestational diabetes. Excess sugar in the blood causes the baby to put on too much weight which can result in problems during delivery, as well as weight problems throughout life. Mothers age 25 and above had the highest rates of gestational diabetes.
- **8% of Navajo mothers experience physical abuse during the prenatal period, reporting that they were slapped, hit, kicked, punched, or choked by their husband or partner during pregnancy.**
- **20% of Navajo mothers reported that they did not always have enough food to eat during pregnancy.** Navajo mothers with a lower level of education and low income mothers were more likely to not always have sufficient food to eat.

### Postpartum: Key findings

- **Breastfeeding initiation and duration are associated with education level and marital status.** From 2005-2011, 60.8% of Navajo mothers reported that they breastfed for at least 2 months. Navajo mothers with less education and who were not married were less likely to engage in this healthy behavior.
- **Neonatal intensive care unit admissions were higher (14%) for babies born to Navajo mothers residing elsewhere in New Mexico compared to those residing in McKinley or San Juan counties (8%).**
- **Postpartum depression was common among Navajo mothers, with 20% reporting symptoms of depression after delivery.** The percentages were similar among all the subgroups, except those not enrolled in WIC during pregnancy had a significantly higher rate of 26%.
- **After pregnancy, the use of support services varied for Navajo mothers.** The most widely used programs were home visiting services at 34%, breastfeeding class at 11.5% or support group at 12%. The least used programs were smoking cessation programs at 0.7%, and Families FIRST case management at 4%.

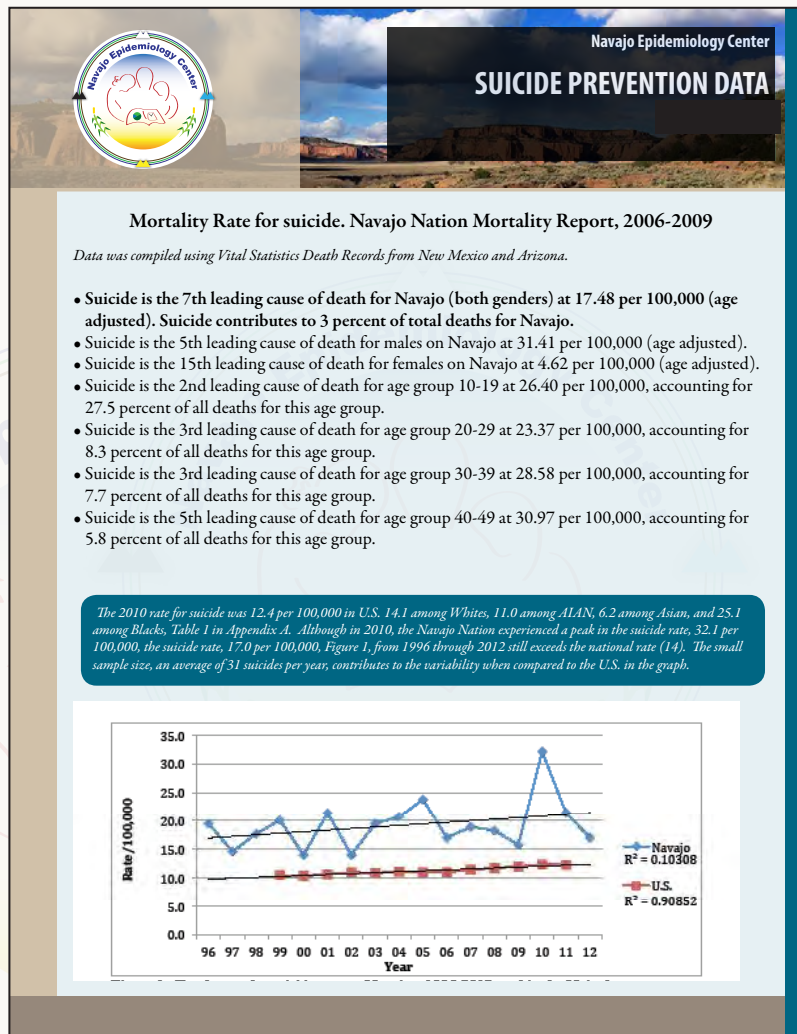


# Close-up: Suicide

Suicide remains a significant contributor to mortality among Navajo. In 2010, the Navajo Nation experienced a peak in the suicide rate, 32.1 per 100,000, well above the national average of 12.5 per 100,000. An earlier figure from 1996 through 2012 of 17% still exceeds the national rate. The Navajo Epidemiology Center worked in collaboration with CDC, New Mexico Department of Health, and others, collecting data on suicide, suicidal ideation, depression, substance abuse, and other risk factors.

## Suicide: Key Findings

- Suicide contributes to 3 percent of total deaths for Navajo.
- Suicide is the 7th leading cause of death for Navajo (both genders) at 17.48 per 100,000 (age adjusted).
- Suicide is the 5th leading cause of death for males on Navajo at 31.41 per 100,000 (age adjusted).
- Suicide is the 15th leading cause of death for females on Navajo at 4.62 per 100,000 (age adjusted).
- Suicide is the 2nd leading cause of death for age group 10-19 at 26.40 per 100,000, accounting for 27.5 percent of all deaths for this age group.
- Suicide is the 3rd leading cause of death for age group 20-29 at 23.37 per 100,000, accounting for 8.3 percent of all deaths for this age group.
- Suicide is the 3rd leading cause of death for age group 30-39 at 28.58 per 100,000, accounting for 7.7 percent of all deaths for this age group.
- Suicide is the 5th leading cause of death for age group 40-49 at 30.97 per 100,000, accounting for 5.8 percent of all deaths for this age group.



## Close-up: Health Survey

The Navajo Nation Health Survey (NNHS) spans the entire 28,000 square miles of the Navajo Nation, as well as Navajo Nation members living in proximity to the reservation. The sampling approach incorporates spatial analysis of aerial imagery, trained teams of researchers, and careful data review and analysis. When completed in 2017, the NNHS will provide a in-depth understanding of the health status of Navajo Nation residents and risk factors influencing morbidity and mortality. Highlights of the survey results from the Chinle agency are provided below.

### • Demographics

51.7% Female – 48.3% Male. Age of participants ranged from 18 to 91 years of age. 95% indicated they are of Navajo origin.

### • General Health Status and Health Care

67% Chinle agency adults felt they were in good to fair health, compared to 29% who felt they were in very good to excellent health. 4% reported having poor general health. 77% of all participants indicated they have health care coverage. 66.7% have health insurance through the Indian Health Service. 68% of Chinle agency adults reported using a traditional native healer or traditional native medicine.

### • Chronic Health Conditions

The top four chronic health conditions among Chinle agency adults are: diabetes, high blood pressure, arthritis, and depression.

### • Weight Control

Among Chinle agency adults, males had an average BMI of 29.03, and females 29.96. 30% of participants were overweight, and 47% were obese.

### • Physical Activity

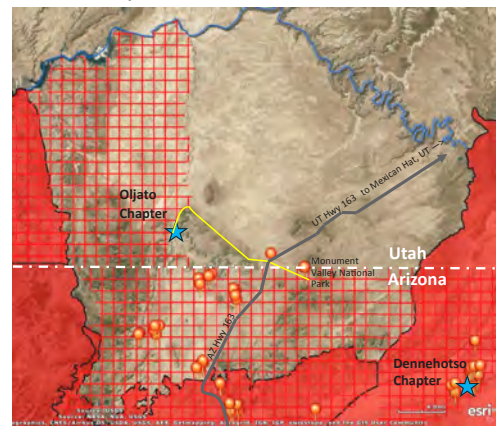
Among Chinle agency adults, 80.9% said they are physically active. It is recommended that adults exercise for at least 150 minutes per week, and 17.9% of Chinle agency adults achieve this goal.

### • Dietary Behavior

28% of Chinle agency adults eat at least 5 fruits and vegetables per day. 42% drink soda on a daily basis. 39% drink sweetened fruit drinks on a daily basis. 20% never drink regular soda.

### • Commercial Tobacco or Alcohol Use

74% of Chinle agency adults said they never smoked cigarettes. 8% of Chinle agency adults reported cigarette use, and 17.7% reported chewing tobacco use. 15% of Chinle agency adults reported alcohol consumption in the last 30 days, which is significantly lower than the United States. 29.9% Chinle agency adults reported using marijuana, and among those who have used it, 15.9% used it in the past 30 days.



**Oljato, AZ House Selection.** All houses are in the general area (unshaded only) 12 mile radius of Oljato Chapter. Most houses are accessible from AZ Hwy 163. Major roads: AZ Hwy 163 and local roads.

<b>Total Houses Selected: 32</b>	Cell C10: 02 . . . . . page 6
Total Houses by Cell:	Cell D13: 06 . . . . . Page 7
Cell A18: 01 . . . . . page 4	Cell G05: 03 . . . . . Page 10
Cell B12: 03 . . . . . page 5	Cell G06: 04 . . . . . Page 11
Cell B20: 06 . . . . . page 3	Cell J12: 07 . . . . . Page 13-14
(Monument Valley Visitor Center)	

## Close-up: GOOD HEALTH and WELLNESS in INDIAN COUNTRY



Chronic diseases and their risk factors remain widespread among American Indians and Alaska Natives, as the rest of the country. However, American Indian and Alaska Natives have higher rates of disease, injury, and premature death than other racial and ethnic groups in the United States. In response to these disparities, the CDC developed a funding opportunity to promote chronic disease prevention and health promotion, titled *Good Health and Wellness in Indian Country*. The NEC proposes to strength public health functions and strategies to increase epidemiology and evaluation services by engaging stakeholders to coordinate in addressing chronic diseases on Navajo Nation. The NEC has the potential to increase leadership, technical assistance, training, and resources to improve policy, systems, and environment on the Navajo Nation.

- The program works at the chapter level to reduce impact of chronic diseases.
- The program seeks to augment health efforts of existing programs, bridging funding gaps.
- Ultimately, the program seeks to improve quality of life, avert premature deaths, and decrease chronic disease-related hospitalizations among the Navajo Nation.

Anticipated program outcomes from the *Health and Wellness in Indian Country* program include: increasing program effectiveness; improving policies, systems, and environments; preventing or delaying the onset of chronic disease; maintaining and self-managing care of chronic disease; and, increasing program effectiveness.



NEC Good Health and Wellness in Indian Country staff and partners.





## Contact information: NDoH and NEC

**Ramona Antone-Nez**, Acting Executive Director, Navajo Department of Health  
Phone: 928/871-6350 ramona.nez@nndoh.org

**Del Yazzie**, Acting Director, Navajo Epidemiology Center  
Phone: 928/871-6265 del.yazzie@nndoh.org

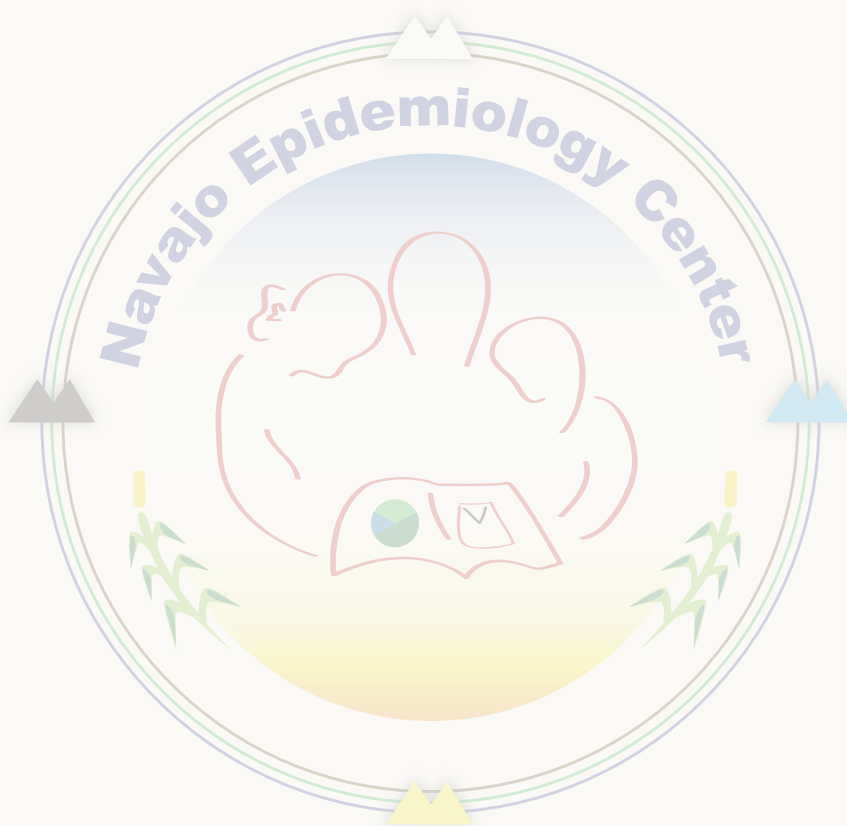
**David Foley**, Epidemiologist, Navajo Epidemiology Center  
Phone: 928/660-9945 david.foley@nndoh.org

**JB Kinlacheeny**, Epidemiologist, Navajo Epidemiology Center  
Phone: 928/241-1424 jb.kinlacheeny@nndoh.org

**Kevin Bitsie**, Epidemiologist, Navajo Epidemiology Center  
928/871-6392 kevin.bitsie@nndoh.org

**Simental Francisco**, Project Manager, Navajo Epidemiology Center  
Phone: 928/871-6542 simental.francisco@nndoh.org

**Darlene Tracy**, Administrative Assistant  
Phone: 928/871-6539 darlene.tracy@nndoh.org



Contact us:

Tel. 928/871-6539

Website: [www.nec.navajo-nsn.gov](http://www.nec.navajo-nsn.gov)

Email: [navajoepi@nndoh.org](mailto:navajoepi@nndoh.org)