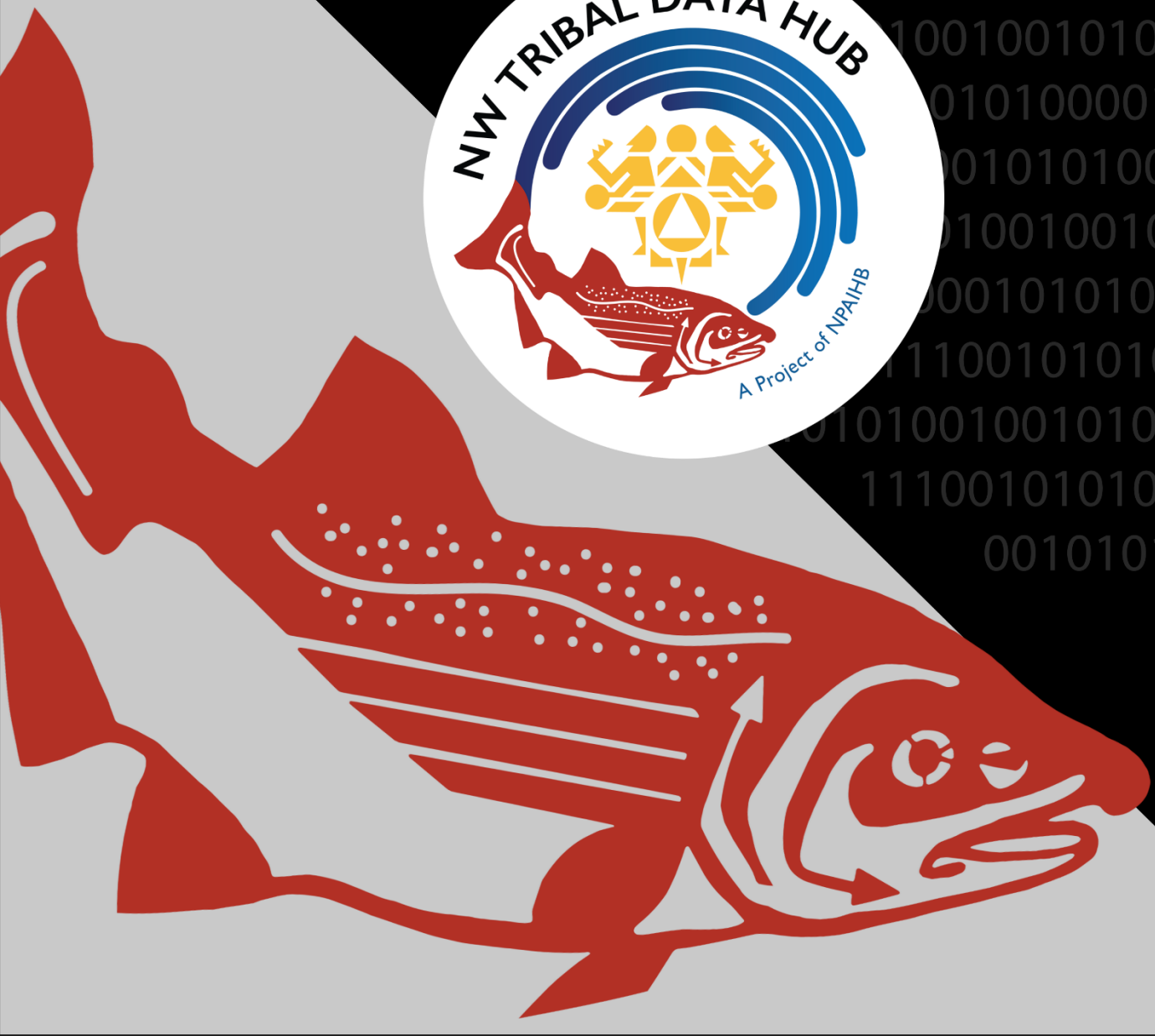
NORTHWEST PORTLAND AREA
INDIAN HEALTH BOARD
*Indian Leadership for Indian Health*

# Northwest Tribal Data Hub
# Data Analysis Methods

NW TRIBAL DATA HUB
A Project of NPAIHB



*Connecting Northwest Tribal communities with accurate and relevant data, on-demand.*

NWTEC
NPAIHB

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# NW Tribal Data Hub General Methods

## Data Comparability Disclaimer

### Methodological Changes Over Time

The Northwest Tribal Epidemiology Center (NWTEC) uses the best available data and methods available at the time of analysis. These data and methods change over time. Therefore, data presented through the Data Hub (particularly rate and rate ratio estimates) should not be compared to estimates in other products developed by the Northwest Tribal Epidemiology Center, primarily due to changes in the population denominators used to calculate rates.

### Race Comparability

The data presented on the Northwest Tribal Data Hub dashboards may not be comparable to information published by state and federal agencies due to differences in how the Northwest Tribal Epidemiology Center identifies and counts American Indian/Alaska Native (AI/AN) people. See Racial Misclassification Correction Measures for more information.

## Tribal Area

### Tribal Area Definition:

Tribal areas include the county or counties that form the Tribe's Purchased/Referred Care Delivery Area (PRCDA) as defined by the Indian Health Service (IHS). These areas may occasionally change and are listed on the IHS website.

### Update Process:

Northwest Tribal Epidemiology Center (NWTEC) staff reference the IHS PRCDA list and periodically scan Federal Register notices to identify recently approved expansions to Tribal areas that may not yet be reflected in the IHS list.

For our current list of Tribal PRCDA areas, see Appendix A: Tribal Areas.

### Historical Note:

The PRCDA was previously known as the Contract Health Service Delivery Area (CHSDA).

# Race

## Definition of American Indian/Alaska Native (AI/AN):

NWTEC uses a broad definition for identifying American Indian/Alaska Native (AI/AN) status. Records mentioning any AI/AN status or tribal affiliation, whether alone or in combination with other races, are included as AI/AN. AI/AN people with Hispanic and Non-Hispanic ethnicity are both included. Finally, individuals identified as having AI/AN status through record linkage corrections are included as AI/AN (see Racial Misclassification Correction Measures).

Race Data Comparability Disclaimer

## Definition of Non-AI/AN:

All other death records besides those classified as AI/AN are identified as Non-AI/AN, including records with race unknown. If a record indicates AI/AN and another race, the record is included in the AI/AN category only.

## Racial Misclassification Correction Measures:

AI/AN people are often misclassified as another race in health data. For example, an AI/AN person might be incorrectly listed as "White" in their hospital or medical clinic records – this is considered racial misclassification. Misclassification causes an under-counting of AI/AN people in health data, which leads to inaccurate AI/AN health data, artificially lowered disease rates, and incomplete data for public health decision-making.

With authorization from NPAIHB's Board of Delegates, NWTEC performs correction measures to address racial misclassification in various health data systems to improve accuracy. Correcting misclassification involves a process called a "record linkage" between health data systems and the Northwest Tribal Registry (NTR). The NTR includes AI/AN individuals in Idaho, Washington, and Oregon who have received services at IHS, tribal, or urban Indian health clinics in the region. Records are corrected to indicate AI/AN status when an individual included in the NTR is classified as another (incorrect) race in the health data system, such as on their death certificate.

For more information on racial misclassification and NWTEC record linkages, visit https://www.npaihb.org/idea-nw/.

For more details on the NTR, see the Northwest Tribal Registry document.

# Mortality Rates

Rates are calculated per 100,000 people using population estimates from the US Census Bureau Population Division.

## Purpose of Mortality Rates

Mortality rates, also called death rates, measure the number of deaths in a given population relative to the size of that population, over a specified period of time. Mortality rates provide a standardized metric for comparing the burden of various causes of death across different regions and time periods. For example, 100 deaths for a condition in a county with a population of 2,000 indicates a significantly higher disease burden than 100 deaths in a county with a population of 200,000. While the death count is the same (100) for each county, the corresponding (crude) mortality rates are 5,000 per 100,000 population for the first county versus 50 per 100,000 population for the second, which more clearly displays that the burden of that condition is higher in the first county (5,000 vs 50 per 100,000).

## Crude Death Rates

A 'crude' death rate is a basic measure that calculates the number of deaths in a population divided by the total population, multiplied by 100,000.

Rates provided by age group (age-specific rates) are presented as crude death rates, since these are specific to each age group and do not require adjustment for age distribution differences. See Age-Adjusted Rates.

## Age-Adjusted Rates

Rates by race and sex are age-adjusted using the direct method with standardized population estimates and corresponding population weights. This type of adjustment accounts for natural variations in the age distribution of different populations. For example, the AI/AN population tends to be younger compared to the general population. Age-adjustment helps make fair comparisons across populations with different age structures by standardizing the age distribution.

## Mortality Rate Notes

### Small Counts & Rate Reliability

Note: This section applies to the Suicide Deaths Dashboard only at this time and will apply to other dashboards that provide rates in future releases.

Rates calculated from small counts (less than 10 deaths) may be unreliable. This means that it is harder to tell if a difference in rates, either over time or compared to another group, is a true difference or simply due to the small number of deaths. For example, if there were two deaths one year and four deaths the next year, the rate may appear to double from the first to second year, however, the actual fluctuation from 2 to 4 deaths is likely due to chance and not the reflection of a significant change in the population's health. Notes will be provided in Data Hub dashboards to help provide cautionary interpretation of these estimates when applicable as follows:

- Rate ratios: If either rate being compared is based on a death count of less than 10 (excluding zero deaths), the rate ratio estimate will be flagged with an asterisk (*) and accompanied by a note to interpret differences with caution.
    - Example: There were six AI/AN deaths and the AI/AN rate was 1.5 times higher than the Non-AI/AN rate. The rate ratio of 1.5 times higher will include an asterisk (*) and footnote stating that one or both rates are based on fewer than 10 deaths and to interpret differences between the two groups with caution.
- Percentage change in rates over time: If either year's rate being compared is based on a death count of less than 10 (excluding zero deaths), the rate will be flagged with asterisks as follows:
    - ** 1–4 deaths: Rate is suppressed (not shown) and flagged with a cautionary note.
    - *** 5–9 deaths: Rate is shown but flagged with a cautionary note.
    - 10+ deaths: Rate is considered reliable and shown without a note.

    Example: The AI/AN rate decreased from 2020 to 2023. In 2020, the rate was based on seven deaths and is shown with a cautionary note. In 2023, the rate was based on four deaths and is suppressed along with a cautionary note. The percentage decrease between the two years will also be provided, such as 22.4% decrease over time.

## Time Trends & 3-Year Rolling Rates

Mortality rates presented in line charts by year are presented as 3-year rolling rates. This helps reduce suppression for small populations (such as the AI/AN

population) compared to presenting annual (single year) rates. The rolling rates are "trailing," meaning the previous two years of data are included. For example, the 2023 rate includes the two previous years, 2020 and 2021. Whenever rolling rates are presented on the dashboard, a note will be included.

Note: Estimates for the year 2010, the oldest year of data included in the Data Hub, are presented as a single year rate. This is because there are not previous years of data to create a trailing rate. Estimates for 2011 include only 2010 and 2011. All line chart rates for years 2012+ are 3-year trailing rates.

### Other & Unknown Sex

US population estimates are provided for males and females only. Death certificates with sex 'unknown' or 'other' (<0.01% of records in Washington, Oregon, and Idaho) are included in presented rates in Data Hub dashboards whenever possible. For example, records with Other/Unknown sex are included in rates by race and age group but not in rates by sex due to the lack of corresponding population estimates.

## Data Suppression

To protect confidentiality and meet data sharing requirements with the NWTEC's data partners, data in dashboards are suppressed when the death count is fewer than five deaths, excluding instances of zero deaths. This means that the death count, mortality rate, percentage of deaths, or other statistics based on a death count of less than five will not display in the dashboard. Depending on the type of visual, the suppressed data will either appear blank or be represented by a dash (-). Suppression is more common when data are stratified (e.g. by sex, age group) and when data cover smaller geographic regions or shorter time periods because there are fewer total deaths.

Suppression Example: If there were four deaths among AI/AN people and six deaths among Non-AI/AN in the selected region and time frame, the corresponding mortality rate for AI/AN people will be suppressed and appear blank in the bar chart comparing the AI/AN and Non-AI/AN rate. The Non-AI/AN rate, created from a count greater than 5, will display.

## Secondary Data Suppression

Secondary suppression applies when the number of deaths or a derived statistic for a suppressed data point could be inferred using other data provided. As a

result, some percentages, death counts, or other information may not display even when the number of deaths for that condition does not merit suppression (e.g., the number of deaths is greater than five). This further protects confidentiality and adheres to data sharing agreements.

Each visualization in the dashboard contains a statement or footnote about how suppressed data will be handled for that visualization, such as whether suppressed data will display as a (-) or a blank. In general, selecting a longer time period or a larger geographic area (e.g. a state or the NW Region) can help reduce suppression.

Whenever possible, overview statements are provided in the dashboard to highlight trends even when data is suppressed. For example, a statement such as "Opioids were the most common drug involved in overdose deaths among AI/AN people in the region" will display even though the exact number of deaths involving opioids in that region and time period may be suppressed.

# NW Tribal Data Hub Data Sources

## Death Records

Analyses are conducted using death certificates from the states of Washington, Oregon, and Idaho, which have been individually corrected for AI/AN racial misclassification by NWTEC. Data include state resident deaths only; deaths of non-residents that occurred within the state are excluded.

### Washington Death Certificates

Dataset composed of death certificate records for residents of Washington State. Data are obtained from the Washington State Department of Health in accordance with an established data sharing agreement between NWTEC and the State of Washington.

### Oregon Death Certificates

Dataset composed of death certificate records for residents of Oregon State. Data are obtained from the Oregon Health Authority after the approval of a records request.

### Idaho Death Certificates

Dataset composed of death certificate records for residents of Idaho State. Data are obtained from the Idaho Bureau of Vital Records & Health Statistics after the approval of a research request.

Detailed information on death certification processes can be found in the Physician's Handbook on Medical Certification of Death by the U.S. Department of Health and Human Services.

#### Death Certificate Data Availability

Each state undergoes a process of ensuring the quality and completeness of the previous year's death certificate data before preparing an annual file that can be used for statistical analysis. These annual files are usually available 8-12 months after the end of a calendar year (e.g., the annual statistical file for deaths occurring in 2025 will be available between September and December of 2026). Once a state's annual statistical file is available, NWTEC performs a record linkage process to correct and improve the accuracy of AI/AN identification in the data. After record linkages with all three states' death certificate data are completed, NWTEC works to update the Data Hub

dashboards with the newly available year of data as quickly as possible. The most recent year of death certificate data available in Data Hub dashboards is typically 1-3 years behind the current year.

**Currently available years:** 2010–2023

## Population Estimates

Population estimates are used in calculating mortality rates. The estimates used are the County Characteristics Resident Population Estimates from the U.S. Census Bureau, Population Division. These estimates currently include:

Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2010 to July 1, 2020. Release date: June 2021.

Annual County Resident Population Estimates by Age, Sex, Race, and Hispanic Origin: April 1, 2020 to July 1, 2023. Release date: June 2024.

## Population Standardization for Age-Adjustment

Age-adjusted rates are calculated using the U.S. 2000 Standard Million Population estimates from the National Center for Health Statistics (NCHS). The age groupings used for adjustment match the age groups presented in each dashboard.

## Causes of Death

Causes of death are determined using the underlying and multiple cause-of-death codes derived from death certificates. The current standard for coding is the International Classification of Disease, 10th Revision (ICD-10), as defined by the World Health Organization.

Underlying cause-of-death is defined by the World Health Organization (WHO) as "the disease or injury which initiated the train of events leading directly to death, or the circumstances of the accident or violence which produced the fatal injury." Multiple cause-of-death codes include other contributory causes in the train of events leading to death, such as additional conditions and the immediate cause of death. For example, heart disease may be listed as the underlying cause of death, with heart attack (the immediate cause of death), hypertension, and tobacco use listed as multiple contributory causes.

## NW Tribal Data Hub Data Sources

Detailed information about multiple cause of death codes can be found in the National Vital Statics System Instructions for Classifying the Multiple Causes of Death, ICD-10, 2025.

Additional details on cause of death codes is available in the National Center of Health Statistics ICD-10 and Related Health Statistical Classification of Diseases and Related Health Problems. Tabular List, 2025.

# Dashboard Specific Methods

## Drug Overdose Deaths Dashboard

### Suggested Citation

Northwest Portland Area Indian Health Board, Northwest Tribal Epidemiology Center. Drug Overdose Deaths Dashboard on the Northwest Tribal Data Hub. Data are from death certificates, 2010-2023, provided by the states of Washington, Oregon, and Idaho, and corrected for AI/AN racial misclassification by the Northwest Tribal Epidemiology Center. Accessed at datahub.npaihb.org on <date>.

### Definition of Drug Poisoning (Overdose) Deaths

Drug poisoning (overdose) deaths are identified using the ICD–10 underlying cause-of-death (UCD) codes: X40–X44, X60–X64, X85, and Y10–Y14. These codes are defined as follows:

- **X40–X44:** Accidental poisoning by drugs, medicaments, and biological substances
- **X60–X64:** Intentional self-poisoning by drugs, medicaments, and biological substances
- **X85:** Assault by drugs, medicaments, and biological substances
- **Y10–Y14:** Poisoning by drugs, medicaments, and biological substances, undetermined intent

Exclusions: Deaths due to alcohol poisoning, fatal injuries involving drugs (e.g., motor vehicle accidents), and other causes mentioning drugs or substances in multiple cause-of-death fields, but not as the underlying cause of death, are excluded from the drug poisoning definition.

### Drug Class and Specific Drug Involvement

Drug overdose deaths can be further categorized using the multiple cause-of-death codes on death certificates. In drug overdose death analyses, these fields can indicate specific drugs or drug classes involved in the death.

Drug categories and specific drug involvement are defined as deaths with an underlying cause-of-death code of drug poisoning (X40–X44, X60–X64, X85, Y10–Y14) and multiple cause-of-death codes (MCD) per the below list.

Note: Drug categories are not mutually exclusive. A single overdose death involving multiple drugs can be counted in multiple categories, once for each drug involved.

## Drug Class Categories

### Opioid

- T40.0 - Opium
- T40.1 - Heroin
- T40.2 - Other Opioids
- T40.3 - Methadone
- T40.4 - Other Synthetic Narcotics
- T40.6 - Other and Unspecified Narcotics

### Stimulant

- T40.5 - Cocaine
- T43.6 - Psychostimulants with Abuse Potential

### Sedative

- T42.0 - Hydantoin Derivatives
- T42.1 - Iminostilbenes
- T42.2 - Succinimides and Oxazolidinediones
- T42.3 - Barbiturates
- T42.4 - Benzodiazepines
- T42.5 - Mixed Antiepileptics Not Elsewhere Classified
- T42.6 - Other Antiepileptic and Sedative-hypnotic Drugs
- T42.7 - Antiepileptic and Sedative-hypnotic Drugs Unspecified
- T42.8 - Antiparkinsonism Drugs and Other Central Muscle-Tone Depressants

### Antidepressant

- T43.0 - Tricyclic and Tetracyclic Antidepressants
- T43.1 - Monoamine-oxidase-inhibitor Antidepressants
- T43.2 - Other and Unspecified Antidepressants

### Antipsychotic

- T43.3 - Phenothiazine Antipsychotics and Neuroleptics
- T43.4 - Butyrophenone and Thioxanthene Neuroleptics
- T43.5 - Other and Unspecified Antipsychotics and Neuroleptics

### Other Psychotropic

- T43.8 - Other Psychotropic Drugs Not Elsewhere Classified
- T43.9 - Psychotropic Drug Unspecified

### Hallucinogen

- T40.7 - Cannabis (Derivatives)
- T40.8 - Lysergide [LSD]
- T40.9 - Other and Unspecified Psychodysleptics [Hallucinogens]

### Unknown Drug

- This category applies for drug overdose deaths when:
  - T50.9 "Other and unspecified drugs, medicaments and biological substances" is the sole code from the ICD-10 range T36-T50 provided, or
  - There are no multiple cause-of-death codes specified on the death certificate (ie: there is only an underlying cause-of-death code provided), or
  - There are no drug code(s) from the ICD-10 range T36-T50 "Poisoning by - adverse effect of and underdosing of drugs, medicaments and biological substances" indicated in the multiple cause-of-death fields (ie: there is at least one multiple cause-of-death code specified, but none from the drug code range)

### Other Pharmaceutical

- Includes all other codes in the range T36-T50 not listed in the above defined categories. The broad classifications of drugs included in Other Pharmaceutical are:
  - Systemic Antibiotics
  - Other Systemic Anti-infectives and Antiparasitics
  - Hormones and Their Synthetic Substitutes and Antagonists Not Elsewhere Classified
  - Nonopioid Analgesics Antipyretics and Antirheumatics
  - Anaesthetics And Therapeutic Gases
  - Drugs Primarily Affecting the Autonomic Nervous System
  - Primarily Systemic and Haematological Agents Not Elsewhere Classified
  - Agents Primarily Affecting the Cardiovascular System
  - Agents Primarily Affecting the Gastrointestinal System

- Agents Primarily Acting on Smooth and Skeletal Muscles and the Respiratory System
- Topical Agents Primarily Affecting Skin and Mucous Membrane and By Ophthalmological Otorhinolaryngological and Dental Drugs
- Diuretics and Other and Unspecified Drugs Medicaments and Biological Substances

For more details on ICD-10 coding and drugs included/excluded from certain codes, visit https://icd.who.int/browse10/.

## Polysubstance (Multidrug) Deaths

Many drug overdose deaths involve more than one drug. For the present analysis, overdose deaths are categorized into involving 1, 2, 3, or 4+ drugs, or Unspecified. Deaths are categorized by the number of distinct ICD-10 codes within the range of T36-T50 (Poisoning by, adverse effect of and underdosing of drugs, medicaments and biological substances) that are listed as multiple causes-of-death on the death certificate. For example, if a death involved heroin (an opioid), a benzodiazepine (a sedative), and cocaine (a stimulant), it would be counted in the three-drug category.

Codes that fall into the category of Other Pharmaceutical are included only once per broad drug classification in counting the number of drugs involved. For example, if a death certificate listed heroin (an opioid) and two systemic antibiotics (a category within Other Pharmaceutical), the death would be counted in the two-drug category even though there were three drugs listed. In contrast, if a death involved heroin (an opioid), methadone (another opioid), and cocaine (a stimulant), it would be counted in the three-drug category. This is done to ensure that polysubstance information is relevant to drugs of most interest in overdose deaths and not inflated with common medications atypically contributing significantly to overdose deaths.

Deaths with only codes outside the selected drug range (T36-T50) or where no drug was identified are classified as "Unspecified" and are excluded for the present polysubstance analysis.

## Intent/Manner of Death

Drug poisoning deaths are classified by intent (or manner of death) as recorded on death certificates. These categories include unintentional (accidental), intentional

(suicide), homicide, or undetermined intent. Natural manner of death, such as those from disease or age, are not indicated in drug overdose deaths.

## Drug Overdose Death Data Limitations

### Lack of ICD-10 Drug Coding Specificity

Some ICD-10 codes represent a specific drug (i.e. T40.1 Heroin) and some codes represent multiple drugs (i.e. T40.2 Other Opioids). When the specific drug of interest falls into a non-specific code, it is difficult to analyze trends for that drug. For example, fentanyl, a drug that has more recently become common in fatal overdoses, is included under ICD-10 code T40.4 "Other Synthetic Narcotics." However, this code also captures other synthetic opioids, such as Tramadol and Demerol, and it is difficult to differentiate to which drug the code is referencing.

Additional drug specificity can be found by reviewing the literal (written) cause of death fields on death certificates, which was not performed for the present analysis. This type of analysis is particularly helpful for newer emerging drugs that do not have a specific ICD-10 code defined, or for codes that represent multiple drugs.

### Death Certificate Quality and Variability

Variability in the completion of death certificates, drug and toxicology testing, medical examiner vs coroner systems, and other factors can lead to a higher percentage of unknown or unspecified drugs for certain regions, which may artificially lower the counts for specific drug categories. For example, if 'unknown' drugs in a region are actually unverified or untested opioids, then the reported number of opioid cases will be lower than true.

### Lag in Data Collection and Reporting

There can be significant delays in data collection, processing, and reporting of death certificates. This lag means that the most recent data might not be available, limiting the ability to assess current trends or respond to emerging issues quickly. This can be particularly important for overdose data, where new drugs emerge, and rapidly evolving trends occur.

### Racial Misclassification

The effects of racial misclassification on death certificates are reduced by the correction measures conducted by NWTEC, however some AI/AN individuals could still be misclassified.

## Drug Overdose Deaths Dashboard Data Sources

### Death Records

Death certificates from Washington, Oregon, and Idaho, corrected for AI/AN racial misclassification.

### Population Estimates

U.S. Census Bureau Population Division - County Characteristics Resident Population Estimates.

### Population Standardization

National Center for Health Statistics (NCHS) - U.S. 2000 Standard Million Population

### Age Categories

For this dashboard, standard population weights are aggregated into the following 10-year age groups for age-adjustment: 00-09, 10-19, 20-29, 30-39, 40-49, 50-59, 60+, Unknown.

### Causes of Death

The International Classification of Disease, 10th Revision (ICD-10), defined by the World Health Organization

# Suicide Deaths Dashboard

## Suggested Citation

Northwest Portland Area Indian Health Board, Northwest Tribal Epidemiology Center. Suicide Deaths Dashboard on the Northwest Tribal Data Hub. Data are from death certificates, 2010-2023, provided by the states of Washington, Oregon, and Idaho, and corrected for AI/AN racial misclassification by the Northwest Tribal Epidemiology Center. Accessed at datahub.npaihb.org on <date>.

## Definition of Suicide (Intentional Self-Harm) Deaths

Suicide deaths are identified using the ICD–10 underlying cause-of-death (UCD) codes: U03, X60–X84, and Y87.0. These codes are defined as follows:

- **U03:** Terrorism Intentional (Suicide)
- **X60–X84:** Intentional self-harm
- **Y87.0:** Sequelae of intentional self-harm

## Method/Means of Suicide

Suicide deaths can be further categorized using the underlying cause-of-death code on death certificates to indicate the method (means) of suicide. The method of death is defined into the following categories, with the individual ICD-10 codes included in each category listed below:

Note: Method of suicide is mutually exclusive. Each death is counted in one category as defined by the sole underlying cause-of-death code.

### Suicide Method Categories

#### Firearm

- X72 - Intentional self-harm by handgun discharge
- X73 - Intentional self-harm by rifle, shotgun and larger firearm discharge
- X74 - Intentional self-harm by other and unspecified firearm discharge

#### Poisoning

- X60 - Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics
- X61 - Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified

- X62 - Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified
- X63 - Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system
- X64 - Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances
- X65 - Intentional self-poisoning by and exposure to alcohol
- X66 - Intentional self-poisoning by and exposure to organic solvents and halogenated hydrocarbons and their vapours
- X67 - Intentional self-poisoning by and exposure to carbon monoxide and other gases and vapours
- X68 - Intentional self-poisoning by and exposure to pesticides
- X69 - Intentional self-poisoning by and exposure to other and unspecified chemicals and noxious substances

### Suffocation

- X70 - Intentional self-harm by hanging, strangulation and suffocation

### Drowning

- X71 - Intentional self-harm by drowning and submersion

### Fall/Jump

- X80 - Intentional self-harm by jumping from a high place

### Other

- U03.0 - Terrorism (intentional suicide) involving explosions and fragments
- U03.9 - Terrorism (intentional suicide) by other and unspecified means
- X75 - Intentional self-harm by explosive material
- X76 - Intentional self-harm by smoke, fire and flames
- X77 - Intentional self-harm by steam, hot vapours and hot objects
- X78 - Intentional self-harm by sharp object
- X79 - Intentional self-harm by blunt object
- X81 - Intentional self-harm by jumping or lying before moving object
- X82 - Intentional self-harm by crashing of motor vehicle
- X83 - Intentional self-harm by other specified means
- X84 - Intentional self-harm by unspecified means

- Y87.0 - Sequelae of intentional self-harm

For more details on ICD-10 coding and methods of suicide included/excluded from certain codes, visit https://icd.who.int/browse10/.

## Suicide Death Data Limitations

### Difficulty Ascertaining Intent of Death

Classifying a death as suicide requires clear evidence of both self-infliction and intent. Standards vary by jurisdiction, with suicide often requiring a higher burden of proof ("preponderance of evidence") than other death manners such as natural or unintentional/accidental deaths. In cases lacking sufficient evidence of intent, suicide deaths may be classified as unintentional or undetermined, potentially leading to an undercounting of suicide deaths.

### Racial Misclassification

The effects of racial misclassification on death certificates are reduced by the correction measures conducted by NWTEC, however some AI/AN individuals could still be misclassified.

## Suicide Deaths Dashboard Data Sources

### Death Records

Death certificates from Washington, Oregon, and Idaho, corrected for AI/AN racial misclassification.

### Population Estimates

U.S. Census Bureau Population Division - County Characteristics Resident Population Estimates.

### Population Standardization

National Center for Health Statistics (NCHS) - U.S. 2000 Standard Million Population

### Age Categories

For this dashboard, standard population weights are aggregated into the following age groups for age-adjustment: 00-24, 25-44, 45-64, 65+, and Unknown.

### Causes of Death

The International Classification of Disease, 10th Revision (ICD-10), defined by the World Health Organization.

# Leading Causes of Death Dashboard

## Suggested Citation

Northwest Portland Area Indian Health Board, Northwest Tribal Epidemiology Center. Leading Causes of Death Dashboard on the Northwest Tribal Data Hub. Data are from death certificates, 2010-2023, provided by the states of Washington, Oregon, and Idaho, and corrected for AI/AN racial misclassification by the Northwest Tribal Epidemiology Center. Accessed at datahub@npaihb.org on <date>.

## Definition of Leading Causes of Death

### Ranking Leading Causes of Death

Leading causes of death are ranked by the total number of deaths attributed to each cause of death within a specified population and time period. The cause responsible for the highest number of deaths is ranked as the #1 leading cause of death, followed by subsequent causes in descending order. For example, the cause with the greatest number of deaths among AI/AN people in 2023 is considered the #1 leading cause of death among AI/AN for that year, and the cause with the second highest number of deaths is the #2 leading cause.

### Standardized Leading Cause of Death Categories

Deaths are recorded using thousands of detailed cause-of-death codes on death certificates. For leading cause of death reporting, these individual codes are grouped into categories developed by the National Center for Health Statistics (NCHS) for standardized public health reporting as follows:

- For individuals aged 1 year and older, leading causes of deaths are grouped using the NCHS "List of 113 selected causes of death and Enterocolitis due to *Clostridium difficile* and COVID-19."
- For infants under 1 year of age, leading causes of death are grouped using the NCHS "List of 130 Selected Causes of Infant Death."

Death records are grouped into these categories by the underlying cause-of-death ICD-10 code listed on the death certificate. Each death certificate includes only one underlying cause-of-death.

## Rankable Leading Causes of Death

NCHS designates a subset of the 113 and 130 standardized cause of death categories noted above as eligible to be ranked as leading causes of death. These subsets are considered most appropriate for comparison as leading causes.

- **All Ages 1+:** Of the NCHS 113 selected cause of death categories for all ages 1+, 52 causes are designated as rankable.
  - ICD-10 code ranges included in each of the 52 categories are provided in the list of 52 rankable causes and ICD-10 code ranges for all ages 1+.

- **Infants (<1):** Of the 130 infant cause of death categories, 71 are designated as rankable.
  - ICD-10 code ranges included in each of the 71 causes are provided in the list of 71 rankable causes and ICD-10 code ranges for infants less than 1 year.

The remainder of the 113 and 130 causes beside the 52 and 71 causes noted above are not considered rankable as leading causes of death. These are generally used as standardized sub-categories for reporting additional information about the ranked cause. For example, the leading cause of death "Chronic Lower Respiratory Disease," one of the 52 rankable causes, includes codes under the sub-categories "Asthma," "Bronchitis," "Emphysema," and "Other chronic lower respiratory diseases." These categories are noted in the 113 list and considered a subset of the main leading cause category; these sub-categories are not eligible to be ranked as a leading cause of death on their own.

An interactive and complete listing of all individual codes and causes included within each leading cause of death category and sub-category is available within the Leading Causes of Death Dashboard on the *Methods & Cause Descriptions* tab.

## All Other Causes

There are many causes of death not included in the NCHS selected causes lists. The majority of these causes are unspecified, ill-defined, or of uncertain intent. For example, an injury that cannot be determined as intentional or unintentional intent cannot be categorized into the Unintentional Injury (Accident) nor Suicide (Intentional Self-Harm) rankable leading causes of death.

All remaining causes of death not included in the 113 (ages 1+) and 130 (infant) lists are combined into the non-rankable category "All Other Causes." This category ensures that all deaths are accounted for while maintaining a clear and interpretable set of leading causes of public health importance.

The total number and percentage of deaths classified as All Other Causes is provided on the All Leading Causes Table tab of the dashboard, along with the data for each leading cause, to ensure that all deaths are accounted for (suppression rules also apply to All Other Causes).

An itemization of all conditions included in All Other Causes, as well as the complete list of causes in each rankable category and sub-category, are available in the Methods & Cause Descriptions tab of the Leading Cause of Death Dashboard. General category definitions and ICD-10 code ranges are provided in the list of 52 rankable causes and ICD-10 code ranges for all ages 1+ and the list of 71 rankable causes and ICD-10 code ranges for infants less than 1 year.

### Unknown Cause of Death

A small number of death certificate records do not include an underlying cause-of-death ICD-10 code. These records cannot be classified into a leading cause of death category. Records with an unknown cause of death are included in All Other Causes only.

## Leading Causes of Death Dashboard Notes

### Ties and Skipped Ranks

When two or more leading causes of death have the same number of deaths, they are considered tied and assigned the same ranking. For example, if both cancer and heart disease have the highest and exact same number of deaths, both causes are assigned the rank of #1 leading cause of death for that population and year.

When ties occur, subsequent ranks are adjusted to reflect the tie by skipping the next rank(s). In the example above, there would be no #2 leading cause of death. The cause with the next highest number of deaths would be ranked #3. This approach prevents artificially inflating the rank of lower-ranked causes and preserves consistency with how ranks would be assigned if the tied causes differed by even a single death.

Within the Leading Causes of Death Dashboard, charts displaying the "Top 10" or "Top 5" leading causes of death may show more than five or ten causes when there are

multiple conditions tied for a ranking. For example, if there are three causes tied for the 5th leading cause of death (and no other ties), seven total causes will display in the "Top 5."

Maximum Ties Displayed: In some dashboard visuals, only up to five ties will display due to readability and limitations with spacing. In the few cases where more than five conditions are tied for a ranking, the note (tied**) will display a corresponding footnote indicating that more than five causes are tied for that ranking.

## Leading Causes of Death Based on Small Numbers

When there are very few deaths in a region or population, a listed leading cause of death may not reflect a significant public health concern. A less common cause of death may be ranked as a leading cause of death for a small population when the deaths were due to individual or unusual circumstance and may not truly be a common occurrence for that population or age group.

In addition to applying data suppression rules that hide counts and percentages for causes with less than five deaths, additional precautions are used to aid interpretation of leading cause of death rankings when based on a small number of deaths. In cases where a leading cause of death is derived from a very small number of deaths, an asterisk (*) is displayed along with a note indicating that this leading cause of death is based on limited data and may not represent a broad community trend. The * applies to visualizations where the leading causes of death are written without a number or percentage of deaths provided (which would be suppressed). This includes the labels on the *Top 5 Causes by Year* timeline chart, and in the *Top 5 Causes by Age* chart comparing causes by smaller age groups.

## None or Few Leading Causes of Death

In regions or populations with a small number of deaths, fewer leading causes of death than is indicated by the chart title may display. For example, a "Top 10" chart may show fewer than 10 leading causes, or even no leading causes of death. This means that there were deaths in fewer than 10 rankable cause categories, or no deaths in any rankable categories.

Deaths may have occurred from causes that are not included in the NCHS selected causes lists, which are grouped under All Other Causes. The total number and percentage of deaths classified as All Other Causes is provided on the All Leading

Causes Table tab of the dashboard, along with the data for each leading cause, to ensure that all deaths are accounted for (suppression rules also apply to All Other Causes).

## Age Groups

Because leading causes of death vary substantially by age, the Leading Causes of Death dashboard allows users to filter results by age category. The available age categories are:

- Infants (under 1 year of age)
- Youth (age 1–24 years)
- Adults (age 25–64 years)
- Older adults (age 65 years and older)
- All ages 1 year and older (the default and most commonly reported grouping)

Within each age category selection, additional smaller age groupings are available in the Top 5 Causes by Age section of the dashboard. The smaller age groups available are:

- Youth (age 1-24): 1-4, 5-9, 10-14, 15-19, 20-24, along with all ages 25 and older for comparison.
- Adult (age 25-64): 25-34, 35-44, 45-54, 55-64, and 1-24 and 65+ for comparison
- Older Adults (age 65+): 65-74, 75-84, 85+, and 1-64 for comparison
- Infant (<1): Ages 1-4 are provided for comparison.
- All ages 1+: 1-14, 15-24, 25-44, 45-64, 65+

Causes of death can vary substantially across these smaller age groups as well. However, displaying all smaller age groupings simultaneously can obscure broader patterns. Therefore, both the broader age category and smaller groups are provided to support different public health and programmatic purposes.

### Infant Note

Smaller age groupings (days to months of age) are not provided for infant deaths because the ages available in the data are in years only. The age group 1-4 is provided for comparison as there is some overlap in conditions of importance for those groups; however, the list of rankable conditions differs for infants (uses the 130 list) versus ages 1-4 (uses the 113 list).

### Unknown Age Exclusion

A small number of death certificates do not include the deceased's age at death. These records are excluded from the Leading Causes of Death dashboard as the records cannot be categorized into either the Infant or All Ages 1+ groups.

### Infant vs. Other Age Leading Cause List Difference

The NCHS 113 selected causes of death list is used for the classification and ranking for all age categories besides infants (e.g. the 113 list applies for Youth, Adult, Older Adult, and All Ages 1+).

### Percentage of Total Deaths

In addition to rankings, the percentage of deaths attributable to each rankable cause is presented in the dashboard. This percentage is calculated as the number of deaths from a specific cause divided by the total number of deaths from all causes. The cause with the highest percentage of deaths will match the highest ranked cause. Percentages will be suppressed when suppression rules apply.

## Leading Causes of Death Limitations

### Relative Nature of Rankings & Ranking Interpretation

Leading cause of death rankings are relative to other leading causes and do not necessarily reflect changes in the burden of specific causes of death over time. For example, a cause may maintain the same rank even if its mortality rate increases, or it may fall in rank even if its mortality rate remains unchanged. This occurs because rankings are based solely on the number of deaths for each cause and, for example, do not account for changes in population size or age structure like mortality rates. Rankings provide the relative contribution of different causes of death, but not the overall risk of death from that cause.

Mortality rates are a common and useful measure of disease burden that account for the population at risk and the population's age distribution, however, rates are not suitable for ranking leading causes. Mortality rates are inherently influenced by the population's age structure. Standard methods used to calculate age-adjusted mortality rates may place greater weight on some age groups. For example, if mortality rates were used for ranking, causes that primarily affect older populations (e.g., stroke) might appear higher in rankings than causes that disproportionately affect younger populations (e.g., unintentional injury). Ranking by mortality rate would skew cause of death rankings and not be comparable across age groups or by race.

### Grouping of Causes

Rankable leading causes of death categories vary in their level of specificity. Some causes are narrowly defined (for example, COVID-19 corresponds to a single condition), while others represent broad categories (for example, unintentional injury includes motor vehicle accidents, drug overdoses, falls, and other injury mechanisms).

Certain causes of major public health importance—such as lung cancer or motor vehicle accidents—are not rankable on their own under NCHS leading cause procedures. Instead, these are incorporated into broader categories like Cancer and Unintentional Injury. If ranked separately, both lung cancer and motor vehicle accidents would generally place among the top 10 leading causes of death. Although grouping causes is not ideal in all situations, it provides a standardized and widely accepted approach for comparing leading causes of death across populations and time.

### Racial Misclassification

The effects of racial misclassification on death certificates are reduced by the correction measures conducted by NWTEC, however some AI/AN individuals could still be misclassified.

## Leading Causes of Death Dashboard Data Sources

### Death Records

Death certificates from Washington, Oregon, and Idaho, corrected for AI/AN racial misclassification.

### Causes of Death

The International Classification of Disease, 10th Revision (ICD-10), defined by the World Health Organization.

5th digit ICD-10 mortality codes: ICD-10 and Related Health Statistical Classification of Diseases and Related Health Problems. Tabular List, 2025. https://www.cdc.gov/nchs/nvss/manuals/2025/2e-vol1-2025.html

### Standardized Leading Cause of Death Categories

NVSS National Vital Statistics Reports. Deaths: Leading Causes for 2023. Published 9/16/2025. https://www.cdc.gov/nchs/data/nvsr/nvsr74/nvsr74-10.pdf

## Leading Causes of Death Categories

### All Ages 1 Year and Older Rankable Leading Cause of Death Categories:

| | Cause of Death | ICD-10 Codes | Dashboard Display/Common Name |
|---|---|---|---|
| 1 | Salmonella infections | A01-A02 | |
| 2 | Shigellosis and amebiasis | A03, A06 | |
| 3 | Tuberculosis | A16-A19 | |
| 4 | Whooping cough | A37 | |
| 5 | Scarlet fever and erysipelas | A38, A46 | |
| 6 | Meningococcal infection | A39 | |
| 7 | Septicemia | A40-A41 | Sepsis |
| 8 | Syphilis | A50-A53 | |
| 9 | Acute poliomyelitis | A80 | Polio |
| 10 | Arthropod-borne viral encephalitis | A83-A84, A85.2 | Arthropod-Borne Encephalitis |
| 11 | Measles | B05 | |
| 12 | Viral hepatitis | B15-B19 | |
| 13 | Human immunodeficiency virus (HIV) disease | B20-B24 | HIV Disease |
| 14 | Malaria | B50-B54 | |
| 15 | Malignant neoplasms | C00-C97 | Cancer |
| 16 | In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior | D00-D48 | Neoplasm (In Situ, Benign, Unk) |
| 17 | Anemias | D50-D64 | |
| 18 | Diabetes mellitus | E10-E14 | Diabetes |
| 19 | Nutritional deficiencies | E40-E64 | |
| 20 | Meningitis | G00, G03 | |
| 21 | Parkinson's disease | G20-G21 | |
| 22 | Alzheimer's disease | G30 | |
| 23 | Diseases of heart | I00-I09, I11, I13, I20-I51 | Heart Disease |
| 24 | Essential hypertension and hypertensive renal disease | I10, I12, I15 | Essential Hypertension & HRD |
| 25 | Cerebrovascular diseases | I60-I69 | Stroke |
| 26 | Atherosclerosis | I70 | |
| 27 | Aortic aneurysm and dissection | I71 | |
| 28 | Influenza and pneumonia | J09-J18 | |
| 29 | Acute bronchitis and bronchiolitis | J20-J21 | |
| 30 | Chronic lower respiratory diseases | J40-J47 | Chronic Low. Respiratory Disease |
| 31 | Pneumoconioses and chemical effects | J60-J66, J68, U07.0 | Pneumoconiosis & Chem. Effects |
| 32 | Pneumonitis due to solids and liquids | J69 | |
| 33 | Peptic ulcer | K25-K28 | |
| 34 | Diseases of appendix | K35-K38 | Appendix Disease |
| 35 | Hernia | K40-K46 | |
| 36 | Chronic liver disease and cirrhosis | K70, K73-K74 | |
| 37 | Cholelithiasis and other disorders of gallbladder | K80-K82 | Gallbladder Disease |
| 38 | Nephritis, nephrotic syndrome and nephrosis | N00-N07, N17-N19, N25-N27 | Kidney Disease |
| 39 | Infections of kidney | N10-N12, N13.6, N15.1 | |
| 40 | Hyperplasia of prostate | N40 | |
| 41 | Inflammatory diseases of female pelvic organs | N70-N76 | Female Pelvic Inflamm. Diseases |
| 42 | Pregnancy, childbirth and the puerperium | O00-O99 | Comp. of Pregnancy & Childbirth |

## All Ages 1 Year and Older Rankable Leading Cause of Death Categories (continued):

| | | | |
|---|---|---|---|
| 43 | Certain conditions originating in the perinatal period | P00-P96 | Perinatal Period Condition |
| 44 | Congenital malformations, deformations and chromosomal abnormalities | Q00-Q99 | Congenital Malformation |
| 45 | Unintentional injuries | V01-X59, Y85-Y86 | Accidents (unintentional injuries) |
| 46 | Intentional self-harm (suicide) | X60-X84, Y87.0, *U03 | Suicide |
| 47 | Assault (homicide) | X85-Y09, Y87.1, *U01-*U02 | Homicide |
| 48 | Legal intervention | Y35, Y89.0 | |
| 49 | Operations of war and their sequelae | Y36, Y89.1 | Operations of War |
| 50 | Complications of medical and surgical care | Y40-Y84, Y88 | Comp. of Medical/Surgical Care |
| 51 | Enterocolitis due to Clostridium difficile | A04.7 | C. Difficile Enterocolitis |
| 52 | Coronavirus disease 2019 | U07.1 | COVID-19 |
| * | All Other Causes | Residual Codes Not Listed Above | |

## Infants (less than 1 year of age) Rankable Leading Cause of Death Categories:

| | Cause of Death | ICD-10 Codes | Dashboard Display/Common Name |
|---|---|---|---|
| 1 | Diarrhea and gastroenteritis of infectious origin | A09 | Infectious Orig. Gastroenteritis |
| 2 | Tuberculosis | A16-A19 | |
| 3 | Tetanus | A33, A35 | |
| 4 | Diphtheria | A36 | |
| 5 | Whooping cough | A37 | |
| 6 | Meningococcal infection | A39 | |
| 7 | Septicemia | A40-A41 | Sepsis |
| 8 | Congenital syphilis | A50 | |
| 9 | Gonococcal infection | A54 | Gonorrhea |
| 10 | Acute poliomyelitis | A80 | Polio |
| 11 | Varicella (chickenpox) | B01 | |
| 12 | Measles | B05 | |
| 13 | Human immunodeficiency virus (HIV) disease | B20-B24 | HIV Disease |
| 14 | Mumps | B26 | |
| 15 | Candidiasis | B37 | |
| 16 | Malaria | B50-B54 | |
| 17 | Pneumocyctosis | B59 | |
| 18 | Malignant neoplasms | C00-C97 | Cancer |
| 19 | In situ neoplasms, benign neoplasms and neoplasms of uncertain or unknown behavior | D00-D48 | Neoplasm (In Situ, Benign, Unk) |
| 20 | Diseases of the blood and blood-forming orgnas and certain disorders involving the immune mechanism | D50-D89 | Blood Disease |
| 21 | Short stature, not elsewhere classified | E34.3 | Short Stature |
| 22 | Nutritional deficiencies | E40-E64 | |
| 23 | Cystic fibrosis | E84 | |
| 24 | Volume depletion, diorders of fluid, electrolyte and acid-base balance | E86-E87 | Fluid Disorder/Electrolyte Imba. |
| 25 | Meningitis | G00, G03 | |

## Infants (less than 1 year of age) Rankable Leading Cause of Death Categories (continued):

| | | | |
|---|---|---|---|
| 26 | Infantile spinal muscular atrophy, type I (Werdnig–Hoffman) | G12.0 | |
| 27 | Infantile cerebral palsy | G80 | |
| 28 | Anoxic brain damage, not elsewhere classified | G93.1 | Anoxic Brain Damage |
| 29 | Diseases of the ear and mastoid process | H60-H93 | Ear & Mastoid Process Disease |
| 30 | Diseases of the circulatory system | I00-I99 | Circulatory System Disease |
| 31 | Acute upper respiratory infections | J00-J06 | Acute Upper Resp. Infection |
| 32 | Influenza and pneumonia | J09-J18 | |
| 33 | Acute bronchitis and acute bronchiolitis | J20-J21 | |
| 34 | Bronchitis, chronic and unspecified | J40-J42 | |
| 35 | Asthma | J45-J46 | |
| 36 | Pneumonitis due to solids and liquids | J69 | Pneumonitis from Solids/Liquids |
| 37 | Gastritis, duodenitis, and noninfective enteritis and colitis | K29, K50-K55 | Gastritis & Noninfective Colitis |
| 38 | Hernia of abdominal cavity and intestinal obstruction without hernia | K40-K46, K56 | Hernia & Intestinal Obstruction |
| 39 | Renal failure and other disorders of kidney | N17-N19, N25, N27 | Renal Failure/Other Kidney Dis. |
| 40 | Newborn affected by maternal hypertensive disorders | P00.0 | Maternal Hypertensive Disorder |
| 41 | Newborn affected by other maternal conditions which may be unrelated to present pregnancy | P00.1-P00.9 | Other Maternal Condition |
| 42 | Newborn affected by maternal complications of pregnancy | P01 | Maternal Comp. of Pregnancy |
| 43 | Newborn affected by complications of placenta, cord and membranes | P02 | Placenta/Cord/Membrane Comp. |
| 44 | Newborn affected by other complications of labor and delivery | P03 | Labor & Delivery Complication |
| 45 | Newborn affected by noxious influences transmitted via placenta or breast milk | P04 | Noxious Sub. Via Placenta/Milk |
| 46 | Slow fetal growth and fetal malnutrition | P05 | |
| 47 | Disorders related to short gestation and low birth weight, not elsewhere classified | P07 | Preterm & Low Birth Weight |

## Infants (less than 1 year of age) Rankable Leading Cause of Death Categories (continued):

| | | | |
|---|---|---|---|
| 48 | Disorders related to long gestation and high birth weight | P08 | Long Gest. & High Birth Weight |
| 49 | Birth trauma | P10-P15 | |
| 50 | Intrauterine hypoxia and birth asphyxia | P20-P21 | Fetal Hypoxia & Birth Asphyxia |
| 51 | Respiratory distress of newborn | P22 | Respiratory Distress |
| 52 | Congenital pneumonia | P23 | |
| 53 | Neonatal aspiration syndromes | P24 | |
| 54 | Interstitial emphysema and related conditions originating in the perinatal period | P25 | Interstitial Emphysema |
| 55 | Pulmonary hemorrhage originating in the perinatal period | P26 | Pulmonary Hemorrhage |
| 56 | Chronic respiratory disease originating in the perinatal period | P27 | Chronic Respiratory Disease |
| 57 | Atelectasis | P28.0-P28.1 | |
| 58 | Bacterial sepsis of newborn | P36 | |
| 59 | Omphalitis of newborn with or without mild hemorrhage | P38 | Omphalitis |
| 60 | Neonatal hemorrhage | P50-P52, P54 | |
| 61 | Hemorrhagic disease of newborn | P53 | Hemorrhagic Disease/Vit. K Def. |
| 62 | Hemolytic disease of newborn due to isoimmunization and perinatal jaundice | P55-P59 | Isoimmune Hemolytic Disease |
| 63 | Hematological disorders | P60-P61 | |
| 64 | Syndrome of infant of a diabetic mother and neonatal diabetes mellitus | P70.0-P70.2 | Mother or Infant Diabetes |
| 65 | Necrotizing entercolitis of newborn | P77 | |
| 66 | Hydrops fetalis not due to hemolytic disease | P83.2 | Nonimmune Hydrops Fetalis |
| 67 | Congenital malformations, deformations and chromosomal abnormalities | Q00-Q99 | Congenital Malformation |
| 68 | Sudden infant death syndrome | R95 | |
| 69 | Accidents (unintentional injuries) | V01-X59 | Unintentional Injury |
| 70 | Assault (homicide) | *U01, X85-Y09 | Homicide |
| 71 | Complications of medical and surgical care | Y40-Y84 | Comp. of Medical/Surgical Care |

## Infants (less than 1 year of age) Rankable Leading Cause of Death Categories (continued):

| | | | |
|---|---|---|---|
| * | All Other Causes | Residual Codes Not Listed Above | |

# Appendix A: Tribal Areas

| Tribe | Tribal Area (PRCDA Counties) |
|---|---|
| **Burns Paiute Tribe** | Harney, OR |
| **Coeur d'Alene Tribe** | Benewah, ID; Kootenai, ID; Latah, ID; Spokane, WA; Whitman, WA |
| **Confederated Tribes and Bands of the Yakama Nation** | Klicktat, WA; Lewis, WA; Skamania, WA; Yakima, WA |
| **Confederated Tribes of Siletz Indians of Oregon** | Benton, OR; Clakamas, OR; Lane, OR; Lincoln, OR; Linn, OR; Marion, OR; Multnomah, OR; Polk, OR; Tillamook, OR; Washington, OR; Yamhill, OR |
| **Confederated Tribes of the Chehalis Reservation** | Grays Harbor, WA; Lewis, WA; Thurston, WA |
| **Confederated Tribes of the Colville Reservation** | Chelan, WA; Douglas, WA; Ferry, WA; Grant, WA; Lincoln, WA; Okanogan, WA; Stevens, WA |
| **Confederated Tribes of the Coos, Lower Umpqua, and Siuslaw Indians** | Coos, OR; Curry, OR; Douglas, OR; Lane, OR; Lincoln, OR |
| **Confederated Tribes of the Grand Ronde Community of Oregon** | Clackamas, OR; Marion, OR; Multnomah, OR; Polk, OR; Tillamook, OR; Washington, OR; Yamhill, OR |
| **Confederated Tribes of the Umatilla Indian Reservation** | Umatilla, OR; Union, OR |
| **Confederated Tribes of the Warm Springs Reservation of Oregon** | Clackamas, OR; Jefferson, OR; Linn, OR; Marion, OR; Wasco, OR |
| **Coquille Indian Tribe** | Coos, OR; Curry, OR; Douglas, OR; Jackson, OR; Lane, OR |
| **Cow Creek Band of Umpqua Tribe of Indians** | Coos, OR; Deschutes, OR; Douglas, OR; Jackson, OR; Josephine, OR; Klamath, OR; Lane, OR |
| **Cowlitz Indian Tribe** | Clark, WA; Cowlitz, OR; King, WA; Lewis, WA; Pierce, WA; Skamania, WA; Thurston, WA; Columbia, OR; Kittitas, WA; Wahkiakum, WA |
| **Hoh Indian Tribe** | Jefferson, WA; Clallam, WA |
| **Jamestown S'Klallam Tribe** | Clallam, WA; Jefferson, WA |

## Appendix A: Tribal Areas

| | |
|---|---|
| **Kalispel Indian Community of the Kalispel Reservation** | Pend Oreille, WA; Spokane, WA |
| **Klamath Tribes** | Klamath, OR |
| **Kootenai Tribe of Idaho** | Boundary, ID |
| **Lower Elwha Tribal Community** | Clallam, WA |
| **Lummi Tribe of the Lummi Reservation** | Whatcom, WA |
| **Makah Indian Tribe of the Makah Indian Reservation** | Clallam, WA |
| **Muckleshoot Indian Tribe** | King, WA; Pierce, WA |
| **Nez Perce Tribe** | Clearwater, ID; Idaho, ID; Latah, ID; Lewis, ID; Nez Perce, ID |
| **Nisqually Indian Tribe** | Pierce, WA; Thurston, WA |
| **Nooksack Indian Tribe** | Whatcom, WA |
| **Northwestern Band of Shoshone Nation** | Box Elder, UT; Davis, UT; Salt Lake, UT; Weber, UT |
| **Port Gamble S'Klallam Tribe** | Kitsap, WA |
| **Puyallup Tribe of the Puyallup Reservation** | King, WA; Pierce, WA; Thurston, WA |
| **Quileute Tribe of the Quileute Reservation** | Clallam, WA; Jefferson, WA |
| **Quinault Indian Nation** | Grays Harbor, WA; Jefferson, WA |
| **Samish Indian Nation** | Clallam, WA; Island, WA; Jefferson, WA; King, WA; Kitsap, WA; Pierce, WA; San Juan, WA; Skagit, WA; Snohomish, WA; Whatcom, WA |
| **Sauk-Suiattle Indian Tribe** | Snohomish, WA; Skagit, WA |
| **Shoalwater Bay Tribe of the Shoalwater Bay Indian Reservation** | Pacific, WA |
| **Shoshone-Bannock Tribes of the Fort Hall Reservation** | *Original*: Bannock, ID; Bingham, ID; Caribou, ID; Lemhi, ID; Power, ID<br><br>*Expanded*: Ada, ID; Bannock, ID; Bear Lake, ID; Bingham, ID; Blaine, ID; Bonneville, ID; Butte, ID; Canyon, ID; Caribou, ID; Cassia, ID; Custer, ID; Elmore, ID; Franklin, ID; Fremont, ID; Gem, ID; Gooding, ID; Jefferson, ID; Jerome, ID; Lemhi, ID; |

## Appendix A: Tribal Areas

| | |
|---|---|
| | Madison, ID; Minidoka, ID; Oneida, ID; Payette, ID; Power, ID; Teton, ID; Twin Falls, ID; Washington, ID |
| **Skokomish Indian Tribe** | Mason, WA |
| **Snoqualmie Indian Tribe** | King, WA; Snohomish, WA; Pierce, WA; Island, WA; Mason, WA |
| **Spokane Tribe of the Spokane Reservation** | Ferry, WA; Lincoln, WA; Spokane, WA; Stevens, WA; Whitman, WA |
| **Squaxin Island Tribe of the Squaxin Island Reservation** | Mason, WA |
| **Stillaguamish Tribe of Indians of Washington** | Snohomish, WA |
| **Suquamish Indian Tribe of the Port Madison Reservation** | Kitsap, WA |
| **Swinomish Indian Tribal Community** | Skagit, WA |
| **Tulalip Tribes of Washington** | Snohomish, WA |
| **Upper Skagit Indian Tribe** | Skagit, WA |

**For Questions or inquiries contact the NW Tribal Data Hub:**

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