Layering Multiple Data Sources for a More Complete Look at Motor Vehicle Fatalities Among American Indians and Alaska Natives

National Transportation in Indian Country Conference

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Map of Portland Area Tribes
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- Nicole Smith, Senior Biostatistician
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- Oregon Health & Science University
- Rolland Associates

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- Margo Hill, JD, MURP – Assistant Professor in Urban and Regional Planning, Eastern Washington University
- Darren Grondel, EdD, MPA – Director of the Washington Traffic Safety Coalition and Secretary of the Governor’s Highway Safety Association
- Stephanie Coffey – Environmental Health Officer at US Public Health Service
- Hollyanna Littlebull – Traffic Safety Coordinator, Yakama Nation
Background

• American Indian and Alaska Natives (AI/ANs) are severely impacted by motor vehicle crash (MVC) injuries
• Preventing MVC-related injuries and fatalities is a priority for Northwest tribes
• Addressing this issue requires comprehensive, evidence-based, community-responsive ongoing work by planning, health, tribal council, police, transportation, etc.
Where do you look for data?
New MV Data Efforts

- The Northwest Tribal EpiCenter has embarked on a new initiative through the National Institute of Minority Health and Health Disparities to explore motor vehicle injury data.
- New NIMHD grant augments ongoing efforts in the EpiCenter to provide tribes with AI/AN-specific information from existing data sources.
Linkage to Northwest Tribal Registry to Identify AI/AN Race

AI/AN misclassification rates vary from 30%-70% by data source.
Motor Vehicle Injury Data Sources

- Death Certificates
- Hospital Discharge
- Trauma Registries
- Fatality Analysis Reporting System (FARS)
- Syndromic surveillance data (emergency departments and urgent care facilities)
- Crash Data
- Qualitative data (to be collected)

Linked to NT Registry

Will assess data quality

- Inquiry based on quantitative data findings
<table>
<thead>
<tr>
<th>MV Injury Data Sources</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death Certificates</td>
<td>Has mostly accurate race info</td>
<td>Most recent data is usually 2 years old</td>
</tr>
<tr>
<td>WISQARS</td>
<td>Publically available</td>
<td>Smallest geographic reporting area is state</td>
</tr>
<tr>
<td>CDC WONDER</td>
<td>Publically available</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can access county of injury occurrence, time of incident</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can create custom definition - based on ICD10 codes</td>
<td>Your EpiCenter may not have the data or staff to fulfill your request</td>
</tr>
<tr>
<td></td>
<td>May be able to &quot;race-correct&quot; for AI/AN</td>
<td></td>
</tr>
<tr>
<td>Your EpiCenter</td>
<td>Can report zip-code level data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Can get info on non-fatal injuries</td>
<td>Racial misclassification is high (60% for NW AI/AN)</td>
</tr>
<tr>
<td></td>
<td>Has some EMS data</td>
<td>Not publically available</td>
</tr>
<tr>
<td></td>
<td>Can estimate medical costs of injury</td>
<td>Only includes fatal crashes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Data may be missing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Difficult to &quot;race-correct&quot;</td>
</tr>
<tr>
<td>Hospital Discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FARS</td>
<td>Geographic data - you can map by location</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Publically available (online query system)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crash factors are available</td>
<td></td>
</tr>
<tr>
<td>Syndromic Data</td>
<td>Instant information</td>
<td>Not publically available</td>
</tr>
<tr>
<td>(ER, urgent care, hospital ad</td>
<td>Can layer in environmental data (weather, air quality)</td>
<td>Race is largely missing</td>
</tr>
<tr>
<td></td>
<td>includes non-fatal crashes</td>
<td>Participation varies by state</td>
</tr>
<tr>
<td></td>
<td>Can get facility-level info</td>
<td></td>
</tr>
<tr>
<td>Crash data</td>
<td>Includes non-fatal crashes</td>
<td>Not standardized</td>
</tr>
<tr>
<td></td>
<td>Geographic data - you can map</td>
<td>Access varies</td>
</tr>
<tr>
<td>Qualitative</td>
<td>Can tell a compelling story &amp; give context for your data</td>
<td>You have to collect it yourself (and you may be biased)</td>
</tr>
</tbody>
</table>
We will layer MV data from different sources on a map, to look at it together, as close to the tribal-level as possible.
Data Source #1

• Washington State death certificate data- 1999 to 2016 – linked to NT Registry to identify AI/AN race

• All resident deaths regardless of the place of death

• Death location is based on the primary residence of the deceased, NOT on the place of motor vehicle injury incident
MV Injury Deaths Definition

• At least one motor vehicle involved in the incident
• All traffic and non-traffic related crash deaths (to capture deaths that occurred off public roadways)
• All crash deaths regardless of the intention of death
• Excluded war or terrorism-related motor vehicle crashes
• Results may not be comparable to the NCHS or FARS data reports (due to linkage and definition)
A greater proportion of AI/AN deaths were due to MV injuries than Non-Hispanic White (NHW)

<table>
<thead>
<tr>
<th>Race</th>
<th>AIAN</th>
<th>NHW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of deaths</td>
<td>MV Injury Count</td>
<td>Total number of deaths</td>
</tr>
<tr>
<td>15929</td>
<td>652</td>
<td>772513</td>
</tr>
</tbody>
</table>

4.1% of total deaths are MV-related among AIAN vs. 1.1% among NHW

**Racial Misclassification**

Linkage with NT Registry identified an additional 46 AI/AN MV deaths that had been classified as another race

7.6% increase in total number of motor vehicle related deaths after race-correction
Age-adjusted rates of MV injury deaths by race and sex, WA 1999-2016

<table>
<thead>
<tr>
<th></th>
<th>AI/AN</th>
<th></th>
<th></th>
<th>NHW</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate</td>
<td>Age-Adjusted Rate</td>
<td>95% CI</td>
<td>Rate</td>
<td>Age-Adjusted Rate</td>
<td>95% CI</td>
</tr>
<tr>
<td>Male</td>
<td>33.5</td>
<td>36.4</td>
<td>(32.6, 41.0)</td>
<td>13.9</td>
<td>13.6</td>
<td>(13.2, 13.9)</td>
</tr>
<tr>
<td>Female</td>
<td>18.9</td>
<td>20.1</td>
<td>(17.4, 23.3)</td>
<td>5.6</td>
<td>5.3</td>
<td>(5.1, 5.5)</td>
</tr>
<tr>
<td>Total</td>
<td>26.2</td>
<td>28.1</td>
<td>(25.8, 30.7)</td>
<td>9.7</td>
<td>9.3</td>
<td>(9.1, 9.5)</td>
</tr>
</tbody>
</table>

- AI/AN were 3.0 times more likely to die from MV injury than non-Hispanic whites
- The MV death disparity was higher for AI/AN women (Relative Risk [RR]=3.8) than men (RR=2.7)
- Though, the MV death risk was higher for AI/AN men than AI/AN women (RR=1.8)
Population age distribution for AIAN & NHW, WA

This is why we age adjust.
Motor Vehicle Injury Deaths by Year, WA 1999-2016

- **AIAN**
  - 22.3% decline in rates for AI/AN between 1999 and 2016
  - Age-adjusted rates per 100,000

- **NHW**
  - 39.8% decline in rates for NHW between 1999 & 2016
  - Age-adjusted rates per 100,000
MV Death Rates over Time, 3-year Rolling Averages, WA 1999-2016

Rates are reported per 100,000 population and are age-adjusted to the 2000 US std. population

Population data source: The National Center for Health Statistics
https://www.cdc.gov/nchs/nvss/bridged_race/data_documentation.htm#vintage2017
Motor Vehicle Injury Deaths, WA 1999-2016

Age-adjusted rates per 100,000

Year of death


AI/AN

NHW
AI/AN rate is 4.0 times the NHW rate

AI/AN rate is 3.4 times the NHW rate
How to use CDC WONDER to make this motor vehicle fatality chart

You can find this tutorial at: [https://nativecars.org/section/3-2-explore-existing-data/](https://nativecars.org/section/3-2-explore-existing-data/)
Quick list of clicks to make the CDC WONDER graph

- [https://wonder.cdc.gov/](https://wonder.cdc.gov/)
  - Compressed mortality
  - 1999-2016
  - Group by Year
  - Group by Race
  - Click “Age adjusted”
  - Select State
  - Select Years
  - Cause of death: ICD-10 113 Groups
    - GR113-114 (MV accidents)
  - Send

To alter the chart, click:
- Chart
- Chart options
- Age-adjusted rate
- Line graph
- Vertical
- Change chart

This gives us unintentional motor vehicle traffic and non-traffic deaths
Compressed Mortality File

Underlying Cause-of-Death

Compressed Mortality Data

The Compressed Mortality data include mortality and population counts for all U.S. counties for the years 1968 to 2016. Counts and rates of death can be obtained by underlying cause of death, state, county, age, race, sex, and year. For more information, refer to [Compressed Mortality data description](#).

Select from following:

- **Mortality for 1999 - 2016 with ICD 10 codes**
- **Mortality for 1979 - 1998 with ICD 9 codes**
- **Mortality for 1968 - 1978 with ICD 8 codes**
- **Mortality Archives - previous data releases for the years 1979-2015**

The International Classification of Diseases 8th Revision (ICD 8) codes are used to specify underlying cause of death for years 1968 - 1978. The International Classification of Diseases 9th Revision (ICD 9) codes are used to specify underlying cause of death for years 1979 - 1998. Beginning in 1999, cause of death is specified with the International Classification of Diseases 10th Revision (ICD 10) codes. The ICD revisions differ substantially, and to prevent confusion about the significance of any specific disease code, the data queries are separate. For more information, see [Why Separate Query Pages?](#)

This page last reviewed: Thursday, August 08, 2019
About Compressed Mortality, 1999-2016

Note: Any use of these data implies consent to abide by the terms of the data use restrictions.

The Compressed Mortality database contains mortality and population counts for all U.S. counties. Counts and rates of death can be obtained by underlying cause of death, state, county, age, race, sex, and year. Data are also available for Hispanic ethnicity, injury intent, injury mechanism, urbanization categories (both the 2000 and 2013 NCHS Urban-Rural Schemes are available), and core-based statistical areas (CBSAs) of 250,000 or more population (both the December 2005 and February 2013 Office of Management and Budget (OMB) delineation of CBSAs).

This Request form allows you to request data for the years 1999 - 2016 only, with the underlying cause of death specified with ICD-10 codes. To request data for other years, see Compressed Mortality File. For more information, refer to Why Separate Query Pages?

Data Use Restrictions:

The Public Health Service Act (42 U.S.C. 242m(d)) provides that the data collected by the National Center for Health Statistics (NCHS) may be used only for the purpose for which they were obtained; any effort to determine the identity of any reported cases, or to use the information for any purpose other than for health statistical reporting and analysis, is against the law. Therefore users will:

- Use these data for health statistical reporting and analysis only.
- For sub-national geography, do not present or publish death counts of 9 or fewer or death rates based on counts of nine or fewer (in figures, graphs, maps, tables, etc.).
- Make no attempt to learn the identity of any person or establishment included in this data.
- Make no disclosure or other use of the identity of any person or establishment discovered inadvertently and advise the NCHS Confidentiality Officer of any such discovery.

Confidentiality Officer
National Center for Health Statistics
3311 Toledo Road
Hyattsville, MD 20782
Telephone 888-642-4159
Email: nchsc Confidentiality@cdc.gov

Sanctions for Violating Rules:

Researchers who violate the terms of the data use restrictions will lose access to WONDER and their sponsors and institutions will be notified. Researchers who are suspected of violating the rules may be prevented from using WONDER until an investigation can be completed. Deliberately making a false statement in any matter within the jurisdiction of any department or agency of the Federal government violates 18 USC 1001 and is punishable by a fine of up to $10,000 or up to 5 years in prison, or both.

By clicking the “I Agree” button I signify that I will abide by the terms of data use stated above and understand the sanctions and legal penalties for violation of these terms of use.

Click Dataset Documentation for complete information about this dataset.
Compressed Mortality, 1999-2016 Request

1. Organize table layout:

   **Group Results By**
   - Census Region
   - Locations
   - Census Region
   - Census Division
   - HHS Region
   - State
   - County
   - 2013 CBSA
   - 2005 CBSA
   - 2013 Metro/Nonmetro
   - 2005 Metro/Nonmetro
   - 2013 Urbanization
   - 2006 Urbanization

   **Measures**
   - Years and Demographics
     - Age Group
     - Infant Age Groups
   - Year

   **Additional Rates**
   - Gender
   - Race
   - Hispanic Origin
   - Cause of Death

2. Select location:

   Switch to CBSA
Compressed Mortality, 1999-2016 Request

1. Organize table layout:
   - Group Results By: Year
   - And By: Race
   - And By: None
   - And By: None
   - And By: None
   - Measures: (Default measures always checked and included. Check box to include any others.)
     - Deaths
     - Population
     - Crude Rate
     - Age Adjusted Rate
   - Title

2. Select location, State/County or CBSA:
   - Switch to CBSA
<table>
<thead>
<tr>
<th>Group Results By</th>
<th>Year</th>
<th>Race</th>
<th>None</th>
</tr>
</thead>
</table>

**Measures** *(Default measures always checked and included. Check box to include any others.)*

- [x] Deaths
- [x] Population
- [x] Crude Rate
- [ ] 95% Confidence Interval
- [ ] Standard Error
- [ ] Age Adjusted Rate
- [ ] 95% Confidence Interval
- [ ] Standard Error
- [ ] Percent of Total Deaths

**Title**: Motor Vehicle Fatality Rates by Year and Race in Washington State

*Click '+' for non-standard age adjusted rates and other options.*
2. Select location, State/County or CBSA:

Click a button to choose locations by State, Census Region, or HHS Region.

- States
- Census Regions
- HHS Regions

Browse or search to find items in the States Finder Tool, then highlight the items to use for this request.

(The Currently selected box displays all current request items.)

2.a. Select urbanization classifications:

Click a button to select urbanization classifications from 2013 or 2005/2006.

<table>
<thead>
<tr>
<th>2013 Metro/Nonmetro</th>
<th>2013 Urbanization</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Categories</td>
<td>All Categories</td>
</tr>
<tr>
<td>Metro</td>
<td>Large Central Metro</td>
</tr>
<tr>
<td>Nonmetro</td>
<td>Large Fringe Metro</td>
</tr>
<tr>
<td></td>
<td>Medium Metro</td>
</tr>
<tr>
<td></td>
<td>Small Metro</td>
</tr>
<tr>
<td></td>
<td>Micropolitan (Nonmetro)</td>
</tr>
<tr>
<td></td>
<td>NonCore (Nonmetro)</td>
</tr>
</tbody>
</table>
Browse or search to find items in the ICD-10 113 Groups Finder Tool, then highlight the items to use for this request. (The Currently selected box displays all current request items.)

**Finder Tool Help**  **Advanced Finder Options**

---

**ICD-10 113 Groups**

- GR113-106 (Certain conditions originating in the perinatal period (P00-P79))
- GR113-109 (Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99))
- GR113-110 (Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99))
- GR113-111 (All other diseases (Residual))
- GR113-114 (Motor vehicle accidents (V02-V04,V09.0,V09.2,V12-V14,V19.0-V19.2,V19.4-V19.6))
- GR113-115 (Other land transport accidents (V01,V05-V06,V09.1-V09.3,V09.9,V10-V11,V15-V17))
- GR113-116 (Water, air and space, and other and unspecified transport accidents and their sequelae (V20-V89))
- GR113-118 (Falls (W00-W19))
- GR113-119 (Accidental discharge of firearms (W32-W34))
- GR113-120 (Accidental drowning and submersion (W65-W74))

Open  Close  Close All

**Browse** the list by opening and closing items. **Use** Ctrl+Click to multiple select, Shift+Click for a range.

---

**5. Other options:**

- **Export Results** (Check box to download results to a file)
- **Show Totals**
- **Show Zero Values**
- **Show Suppressed Values**
- **Precision** 1 decimal places
- **Data Access Timeout** 10 minutes

Send  Reset
Compressed Mortality, 1999-2016 Results

Motor Vehicle Fatality Rates by Year and Race in Washington State

<table>
<thead>
<tr>
<th>Year</th>
<th>Race</th>
<th>Deaths</th>
<th>Population</th>
<th>Crude Rate Per 100,000</th>
<th>Age Adjusted Rate Per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>American Indian or Alaska</td>
<td>30</td>
<td>110,034</td>
<td>27.3</td>
<td>33.1</td>
</tr>
<tr>
<td></td>
<td>Native</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>29</td>
<td>371,604</td>
<td>7.8</td>
<td>8.9</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>32</td>
<td>222,319</td>
<td>14.4</td>
<td>15.8</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>641</td>
<td>5,138,667</td>
<td>12.5</td>
<td>12.4</td>
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<tr>
<td>1999</td>
<td>Total</td>
<td>732</td>
<td>5,842,564</td>
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<td>12.6</td>
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<td></td>
<td>American Indian or Alaska</td>
<td>20</td>
<td>112,006</td>
<td>23.2</td>
<td>21.4</td>
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<tr>
<td></td>
<td>Native</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>26</td>
<td>385,181</td>
<td>6.8</td>
<td>6.9</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>19</td>
<td>230,096</td>
<td>8.3 (Unreliable)</td>
<td>8.5 (Unreliable)</td>
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<tr>
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<td>White</td>
<td>640</td>
<td>5,106,838</td>
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<tr>
<td>2000</td>
<td>Total</td>
<td>711</td>
<td>5,804,121</td>
<td>12.1</td>
<td>12.1</td>
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<td>115,121</td>
<td>24.3</td>
<td>27.6</td>
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<tr>
<td></td>
<td>Native</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>36</td>
<td>408,480</td>
<td>8.8</td>
<td>9.3</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>28</td>
<td>235,036</td>
<td>11.7</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>653</td>
<td>5,223,085</td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>2001</td>
<td>Total</td>
<td>745</td>
<td>5,985,722</td>
<td>12.4</td>
<td>12.5</td>
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<tr>
<td></td>
<td>American Indian or Alaska</td>
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<td>117,689</td>
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</tr>
<tr>
<td></td>
<td>Native</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>33</td>
<td>426,662</td>
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<td>7.9</td>
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<tr>
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<td>30</td>
<td>245,869</td>
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<tr>
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<td>White</td>
<td>669</td>
<td>5,262,109</td>
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<td>12.6</td>
</tr>
<tr>
<td>2002</td>
<td>Total</td>
<td>760</td>
<td>6,052,349</td>
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<td>12.5</td>
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<td>120,618</td>
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<td>34.2</td>
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<tr>
<td></td>
<td>Native</td>
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<td></td>
</tr>
<tr>
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<td>Asian or Pacific Islander</td>
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<td>442,413</td>
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<tr>
<td></td>
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<td>22</td>
<td>250,925</td>
<td>8.8</td>
<td>9.8</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>617</td>
<td>5,289,159</td>
<td>11.7</td>
<td>11.6</td>
</tr>
<tr>
<td>2003</td>
<td>Total</td>
<td>719</td>
<td>6,104,115</td>
<td>11.8</td>
<td>11.8</td>
</tr>
<tr>
<td></td>
<td>American Indian or Alaska</td>
<td>31</td>
<td>124,543</td>
<td>24.9</td>
<td>23.0</td>
</tr>
<tr>
<td></td>
<td>Native</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asian or Pacific Islander</td>
<td>27</td>
<td>461,698</td>
<td>5.8</td>
<td>5.6</td>
</tr>
<tr>
<td></td>
<td>Black or African American</td>
<td>19</td>
<td>237,470</td>
<td>7.4 (Unreliable)</td>
<td>7.9 (Unreliable)</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>617</td>
<td>5,289,159</td>
<td>11.7</td>
<td>11.6</td>
</tr>
<tr>
<td>2004</td>
<td>Total</td>
<td>719</td>
<td>6,104,115</td>
<td>11.8</td>
<td>11.8</td>
</tr>
</tbody>
</table>
Notes:

Caveats: Death rates are flagged as Unreliable when the rate is calculated with a numerator of 20 or less. More information.

About sub-national population figures for regions, divisions, states and counties: population figures for 1900 are from the 1990-1999 series of bridged-race intercensal estimates of the July 1 resident population; population figures for 2000 and 2010 are bridged-race April 1 census counts; population figures for 2001-2009 are from the revised 2000-2009 series of bridged-race intercensal estimates of the July 1 resident population; and population figures for 2011-2013 are bridged-race postcensal estimates of the July 1 resident population, from the Vintage 2015 series released by NCHS on June 28, 2016.

The population figures used in the calculation of death rates for the age group 'under 1 year' are the estimates of the resident population that is under one year of age. More information.

The populations used to calculate standard age-adjusted rates are documented here: More information.

The method used to calculate age-adjusted rates is documented here: More information.

Deaths for persons of unknown age are included in counts and crude rates, but are not included in age-adjusted rates.

Information included on the death certificate about the race and Hispanic ethnicity of the decedent is reported by the funeral director as provided by an informant, often the surviving next of kin, or in the absence of an informant, on the basis of observation. Race and ethnicity information from the census is by self-report. To the extent that race and Hispanic origin are inconsistent between these two data sources, death rates will be biased. More information.


As of April 3, 2017, the underlying cause of death has been revised for 125 deaths in 2014. More information.


Query Date: Aug 28, 2019 7:07:26 PM

Suggested Citation:

Query Criteria:

Title: Motor Vehicle Fatality Rates by Year and Race in Washington State

ICD-10 113 Groups: Motor vehicle accidents: \( V02-V04, V06.0, V04.0, V06.2, V02-V14, V15.0, V10.2, V19.4-V19.6, V20-V79, V80.3, V80.5, V81.0-V81.1, V82.0-V82.1, V83-V86, V87.0-V87.8, V88.0-V88.8, V89.0-V89.2 \)

States: Washington (53)

Group By: Year; Race

Show Totals: True

Show Zero Values: False

Show Suppressed: False


Calculate Rates Per: 100,000
Compressed Mortality, 1999-2016 Charts
Motor Vehicle Fatality Rates by Year and Race in Washington State

Chart Options

Messages:
Use 'Chart Options' above to create other charts; this is the default chart.

Age Adjusted Rate By Year and Race

- 1999
- 2000
- 2001
- 2002
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016
Compressed Mortality, 1999-2016 Charts

Motor Vehicle Fatality Rates by Year and Race in Washington State

1. Select chart(s) to create:

Pick a primary and secondary by-variable whose data will be charted. Pick measure(s). One chart will be created for each measure picked.

Primary / Secondary
- Year / Race
- Race / Year

Measures
- Deaths
- Population
- Cause Rate
- Age-Adjusted Rate

2. Control chart appearance:

The following options set the appearance of each chart specified in the first section.

All Chart Options
- Chart Type: Line Chart
- Height (pixels): 450
- Width (pixels): 450
- Use Codes as Labels
- Value Precision

Chart Title

New Page Each Chart

Bar and Line Chart Options
- Plot Orientation: Vertical
- Combine all measures in one chart...
- ...using this scheme if secondary by-variable is present:
  - 1st measure multicolor
  - 1st measure color gradient
  - Unique color
  - Measure by color

Axis Spacing 0.8

Make all desired selections and then click any Change Chart button once to see your charts.
### Compressed Mortality, 1999-2016 Request

**1. Organize table layout:**

**Group Results By:**
- Year ▼
- And By: None ▼
- And By: None ▼
- And By: None ▼
- And By: None ▼

**Measures**
(Default measures always checked and included. Check box to include any others.)
- Deaths □
- Population □
- Crude Rate □
- Age Adjusted Rate □
- 95% Confidence Interval □
- Standard Error □
- Percent of Total Deaths □

**Title**
AI/AN Motor Vehicle Fatality Rates by Year in Washington State

Make all desired selections and then click any Send button one time to send your request.
### 3. Select years and demographics:

**Hint:** Use Ctrl + Click for multiple selections, or Shift + Click for a range.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Ages</td>
<td>All</td>
</tr>
<tr>
<td>&lt; 1 year</td>
<td>1999</td>
</tr>
<tr>
<td>1-4 years</td>
<td>2000</td>
</tr>
<tr>
<td>5-9 years</td>
<td>2001</td>
</tr>
<tr>
<td>10-14 years</td>
<td>2002</td>
</tr>
<tr>
<td>15-19 years</td>
<td>2003</td>
</tr>
<tr>
<td>20-24 years</td>
<td>2004</td>
</tr>
<tr>
<td>25-34 years</td>
<td>2005</td>
</tr>
<tr>
<td>35-44 years</td>
<td>2006</td>
</tr>
<tr>
<td>45-54 years</td>
<td>2007</td>
</tr>
<tr>
<td>55-64 years</td>
<td>2008</td>
</tr>
<tr>
<td>65-74 years</td>
<td>2009</td>
</tr>
</tbody>
</table>

Default rates per 100,000

<table>
<thead>
<tr>
<th>Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Genders</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Male</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Race</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Races</td>
</tr>
<tr>
<td>American Indian</td>
</tr>
<tr>
<td>Alaska Native</td>
</tr>
<tr>
<td>Native Hawaiian</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Black or African American</td>
</tr>
<tr>
<td>White</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hispanic Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Origins</td>
</tr>
<tr>
<td>Hispanic or Latino</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
</tr>
<tr>
<td>Not Stated</td>
</tr>
</tbody>
</table>

### 4. Select cause of death:

Click a button to select ICD codes by Chapters or by Groups.

**ICD-10 Codes**

**ICD-10 113 Groups**

**Injury Intent and Mechanism**

**Browse** or **search** to find items in the ICD-10 113 Groups Finder Tool, then highlight the items to use for this request.

(The Currently selected box displays all current request items.)

**Finder Tool Help**  **Advanced Finder Options**

**ICD-10 113 Groups**

- GR113-109 (Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99))
- GR113-110 (Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified)
- GR113-111 (Abnormalities, not elsewhere classified)
- GR113-115 (Other transport accidents (W01-W05, X10-X19, Y85, Y88.9, Y89.8, Y89.9, Y98.0, Y98.8, Y98.9))
- GR113-116 (Water, air and space, and other and unspecified transport accidents and their sequelae)
- GR113-118 (Falls (W00-W09))
- GR113-119 (Accidental discharge of firearms (W32-W34))
- GR113-120 (Accidental drowning and submersion (W65-W74))

**Currently selected:**

## Compressed Mortality, 1999-2016 Results

### AI/AN Motor Vehicle Fatality Rates by Year in Washington State

<table>
<thead>
<tr>
<th>Year</th>
<th>Deaths</th>
<th>Population</th>
<th>Crude Rate Per 100,000</th>
<th>Age Adjusted Rate Per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>30</td>
<td>110,034</td>
<td>27.3</td>
<td>33.1</td>
</tr>
<tr>
<td>2000</td>
<td>26</td>
<td>112,006</td>
<td>23.2</td>
<td>21.4</td>
</tr>
<tr>
<td>2001</td>
<td>28</td>
<td>115,121</td>
<td>24.3</td>
<td>27.6</td>
</tr>
<tr>
<td>2002</td>
<td>28</td>
<td>117,689</td>
<td>23.8</td>
<td>28.1</td>
</tr>
<tr>
<td>2003</td>
<td>41</td>
<td>120,618</td>
<td>34.0</td>
<td>34.2</td>
</tr>
<tr>
<td>2004</td>
<td>31</td>
<td>124,543</td>
<td>24.9</td>
<td>23.0</td>
</tr>
<tr>
<td>2005</td>
<td>43</td>
<td>127,959</td>
<td>33.6</td>
<td>39.1</td>
</tr>
<tr>
<td>2006</td>
<td>38</td>
<td>131,727</td>
<td>28.8</td>
<td>27.0</td>
</tr>
<tr>
<td>2007</td>
<td>39</td>
<td>136,097</td>
<td>28.7</td>
<td>28.2</td>
</tr>
<tr>
<td>2008</td>
<td>28</td>
<td>140,912</td>
<td>19.9</td>
<td>22.1</td>
</tr>
<tr>
<td>2009</td>
<td>42</td>
<td>144,735</td>
<td>29.0</td>
<td>29.8</td>
</tr>
<tr>
<td>2010</td>
<td>33</td>
<td>147,822</td>
<td>22.3</td>
<td>23.7</td>
</tr>
<tr>
<td>2011</td>
<td>22</td>
<td>151,795</td>
<td>14.5</td>
<td>14.8</td>
</tr>
<tr>
<td>2012</td>
<td>32</td>
<td>155,024</td>
<td>20.6</td>
<td>21.0</td>
</tr>
<tr>
<td>2013</td>
<td>26</td>
<td>158,081</td>
<td>16.4</td>
<td>19.5</td>
</tr>
<tr>
<td>2014</td>
<td>29</td>
<td>161,308</td>
<td>18.0</td>
<td>18.8</td>
</tr>
<tr>
<td>2015</td>
<td>34</td>
<td>163,666</td>
<td>20.8</td>
<td>23.6</td>
</tr>
<tr>
<td>2016</td>
<td>38</td>
<td>166,151</td>
<td>22.9</td>
<td>25.9</td>
</tr>
<tr>
<td>Total</td>
<td>588</td>
<td>2,485,288</td>
<td>23.7</td>
<td>25.2</td>
</tr>
</tbody>
</table>
## Compressed Mortality, 1999-2016 Results

### AI/AN Motor Vehicle Fatality Rates by Year in Washington State

#### Table:

<table>
<thead>
<tr>
<th>Year</th>
<th>Deaths</th>
<th>Population</th>
<th>Crude Rate Per 100,000</th>
<th>Age Adjusted Rate Per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>30</td>
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<tr>
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<tr>
<td>2001</td>
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<td>28.1</td>
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<tr>
<td>2003</td>
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<td>124,543</td>
<td>24.9</td>
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<td>2007</td>
<td>20</td>
<td>136,027</td>
<td>28.7</td>
<td>28.2</td>
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<tr>
<td>2008</td>
<td>26</td>
<td>149,917</td>
<td>23.9</td>
<td>22.1</td>
</tr>
<tr>
<td>2009</td>
<td>22</td>
<td>145,725</td>
<td>20.0</td>
<td>20.6</td>
</tr>
<tr>
<td>2010</td>
<td>33</td>
<td>147,979</td>
<td>22.3</td>
<td>23.1</td>
</tr>
<tr>
<td>2011</td>
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<td>14.8</td>
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<tr>
<td>2012</td>
<td>32</td>
<td>155,054</td>
<td>20.6</td>
<td>21.0</td>
</tr>
<tr>
<td>2013</td>
<td>26</td>
<td>155,031</td>
<td>18.4</td>
<td>19.5</td>
</tr>
<tr>
<td>2014</td>
<td>27</td>
<td>161,308</td>
<td>18.0</td>
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<tr>
<td>2015</td>
<td>37</td>
<td>163,666</td>
<td>20.6</td>
<td>23.6</td>
</tr>
<tr>
<td>2016</td>
<td>35</td>
<td>165,161</td>
<td>22.9</td>
<td>25.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>588</strong></td>
<td><strong>2,483,288</strong></td>
<td><strong>23.7</strong></td>
<td><strong>25.2</strong></td>
</tr>
</tbody>
</table>
Download the Excel sheet at: [https://nativecars.org/section/3-2-explore-existing-data/](https://nativecars.org/section/3-2-explore-existing-data/)

<table>
<thead>
<tr>
<th>Year</th>
<th>American Indian &amp; Alaska Natives</th>
<th>Age-adjusted rates per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>30</td>
<td>27.3</td>
</tr>
<tr>
<td>2000</td>
<td>26</td>
<td>23.2</td>
</tr>
<tr>
<td>2001</td>
<td>28</td>
<td>24.3</td>
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<tr>
<td>2002</td>
<td>28</td>
<td>23.8</td>
</tr>
<tr>
<td>2003</td>
<td>41</td>
<td>34</td>
</tr>
<tr>
<td>2004</td>
<td>31</td>
<td>24.9</td>
</tr>
<tr>
<td>2005</td>
<td>43</td>
<td>33.6</td>
</tr>
<tr>
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<td>39</td>
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<tr>
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<td>28</td>
<td>19.9</td>
</tr>
<tr>
<td>2009</td>
<td>42</td>
<td>29</td>
</tr>
<tr>
<td>2010</td>
<td>33</td>
<td>22.3</td>
</tr>
<tr>
<td>2011</td>
<td>22</td>
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<td>18</td>
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<tr>
<td>2015</td>
<td>34</td>
<td>20.8</td>
</tr>
<tr>
<td>2016</td>
<td>38</td>
<td>22.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-Hispanic White</th>
<th>Age-adjusted rates per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>562</td>
<td>11.8</td>
</tr>
<tr>
<td>2000</td>
<td>565</td>
<td>11.9</td>
</tr>
<tr>
<td>2001</td>
<td>571</td>
<td>11.9</td>
</tr>
<tr>
<td>2002</td>
<td>578</td>
<td>11.9</td>
</tr>
<tr>
<td>2003</td>
<td>536</td>
<td>11.1</td>
</tr>
</tbody>
</table>
Quick click list to make the Excel graph

- [https://wonder.cdc.gov/](https://wonder.cdc.gov/)
  - Compressed mortality
  - 1999-2016
  - Group by Year
  - Click “Age adjusted”
  - Select State
  - Select Years
  - Select American Indian or Alaska Native
  - Cause of death: ICD-10 113 Groups
    - GR113-114 (MV accidents)
  - Send
  - Select and copy table, paste in Excel

- For Non-Hispanic White data
  - Hit “back” on browser to return to query
  - Group by Year
  - Click “Age adjusted”
  - Select State
  - Select Years
  - Click “White”
  - Click “Not Hispanic or Latino”
  - Cause of death: ICD-10 113 Groups
    - GR113-114 (MV accidents)
  - Send
  - Select and copy table, paste in Excel
Back to race-corrected data...
Motor Vehicle Injury Death Rates by Age Group, WA 1999-2016

Age Groups

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 10</td>
<td>7.2</td>
<td>4.4</td>
<td>2.5</td>
<td>1.4</td>
</tr>
<tr>
<td>10-19</td>
<td>33.0</td>
<td>14.4</td>
<td>10.6</td>
<td>5.8</td>
</tr>
<tr>
<td>20-29</td>
<td>50.2</td>
<td>35.0</td>
<td>17.0</td>
<td>11.7</td>
</tr>
<tr>
<td>30-39</td>
<td>37.6</td>
<td>37.6</td>
<td>10.3</td>
<td>7.2</td>
</tr>
<tr>
<td>40-49</td>
<td>38.0</td>
<td>26.7</td>
<td>10.7</td>
<td>7.6</td>
</tr>
<tr>
<td>50-59</td>
<td>25.9</td>
<td>25.5</td>
<td>10.0</td>
<td>8.9</td>
</tr>
<tr>
<td>60-69</td>
<td>32.5</td>
<td>24.1</td>
<td>11.4</td>
<td>8.6</td>
</tr>
<tr>
<td>70+</td>
<td>56.2</td>
<td>31.0</td>
<td>19.9</td>
<td>13.8</td>
</tr>
</tbody>
</table>
Motor vehicle-related deaths by mechanism, WA 1999-2016
Mapping Race-Corrected Data
AI/AN Motor Vehicle Fatality Counts and Rates per 100,000 Population by County of Residence, 1999-2016

Source: Washington State death certificates linked to the Northwest Tribal Registry to identify AI/AN race

Population data: NCHS bridged race estimates

Data include Washington State residents who died out of state

Motor vehicle traffic and non-traffic fatalities are included

Data suppressed for counts <5

Darker color = higher motor vehicle fatality rates
AI/AN Motor Vehicle Fatality Counts and Rates per 100,000 Population by County of Residence, 2011-2016

Source: Washington State death certificates linked to the Northwest Tribal Registry to identify AI/AN race

Population data: NCHS bridged race estimates

Data include Washington State residents who died out of state

Motor vehicle traffic and non-traffic fatalities are included

Data suppressed for counts <5

Darker color = higher motor vehicle fatality rates
Unintentional fatal injuries for AI/ANs nationally in 2017

WISQARS: https://www.cdc.gov/injury/wisqars/fatal.html
WISQARS tutorial

• To explore specific injury data, for example, by age or mechanism, use the WISQARS query system

• We have a WISQARS tutorial at: https://nativecars.org/section/3-2-explore-existing-data/
Data Source #2 Fatality Analysis Reporting System (FARS)

Detailing the Factors Behind Traffic Fatalities on our Roads

FARS is a nationwide census providing NHTSA, Congress and the American public yearly data regarding fatal injuries suffered in motor vehicle traffic crashes.

How to Access FARS Data
Fatality Analysis Reporting System (FARS)

• Census of fatal motor vehicle traffic crashes in the 50 States, the District of Columbia, and Puerto Rico.
  • Crash must involve a motor vehicle *traveling on a roadway* and must result in the death of at least one person *within 30 days of the crash*.
  • *Location and detailed characteristics* of crash, drivers, vehicle occupants and non-occupants (including pedestrians and cyclists).

• Outline for today
  • Querying FARS online ([www-fars.nhtsa.dot.gov/Main/index.aspx](http://www-fars.nhtsa.dot.gov/Main/index.aspx))
    • Tabulations and maps involving AI/AN fatalities
    • Cross-tabulations
  • More customized analyses across many years using statistical and mapping software
FARS – Web Query

To begin building a query, select a year from the drop-down list above, and click the ‘Submit’ button.

The Fatality Analysis Reporting System (FARS) contains data on all vehicle crashes in the United States that occur on a public roadway and involve a fatality. This FARS Query System provides interactive public access to fatality data through this web interface. Due to the complexities within the FARS data, users cannot query across multiple years. If you are interested in trend or cross year information, check out the Trend Reports.

The exercises and final report links listed below point to PDF documents, and require the use of the free Adobe Reader. Links will open in a new browser window or tab.

- Univariate Report Exercises
- Cross Tab Report Exercises
- Case Listing Report Exercise

Choose single year to query
FARS – Web Query – AI Crashes by Month

Crash level info and person level information for vehicle occupants and non-occupants
FARS – Web Query – AI Crashes by Month

Commonly queried fields from crash and person files are bolded.

If AI/AN specific data is required, must choose Race from the Person-level fields before going on.
FARS – Web Query – AI Crashes by Month

Can choose single state, or multiple. Default is all states.

To summarize crashes by month, leave all months selected.

Select Race=3 (American Indian, which includes Alaska Native)
FARS – Web Query - AI Crashes by Month

At this point some information is displayed.

Can choose to create report with # crashes or # persons involved. In this case, chose # crashes. Also chose to summarize by month.

Good practice to “show zero values” so months with 0 crashes display in the list.

Also good practice to add a descriptive report title.
FARS – Web Query – AI Crashes by Month

Hitting submit on previous screen yields this result.

Details on lower left – crashes in 2017 in ID, OR, WA that involved at least one American Indian.

Can choose to view individual cases by hitting View Cases, or click on number for each month.
FARS – Web Query - AI Crashes by Month
FARS – Web Query - Pedestrian

Initiate new query. After choosing year of interest...

Use Option 2 for queries regarding non-occupants of vehicles like pedestrians and cyclists.
Non-occupant fields include injury severity, person-type (pedestrian is one choice for this field), and race.

However, note that race is only completed if the person died... so counts may be low.
Can choose single state, or multiple. Default is all states.

Request certain severity of injury, in this case fatalities.

Selecting only persons of type = pedestrian
At this point some information is displayed. 102 crashes involving 103 pedestrian fatalities.

Can choose to create report with # crashes or # persons involved. In this case, chose # persons.

Also chose to summarize by county. “Show zero values” not as necessary here b/c list of counties in state will be long...

Also good practice to add a descriptive report title.
FARS – Drilling down to more local levels

• County or city specific codes
  • A lot of them! Impossible to remember!
  • Spreadsheet downloadable at:
    • www.gsa.gov/reference/geographic-locator-codes/glcs-for-the-us-and-us-territories

Note: Rather than restrict to certain counties in your FARS query – easier to report out BY COUNTY and then click on county you are interested in...
FARS – Web Query - Pedestrian

<table>
<thead>
<tr>
<th>County</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENTOM (5)</td>
<td>3</td>
</tr>
<tr>
<td>CLALLAM (9)</td>
<td>2</td>
</tr>
<tr>
<td>LARK (11)</td>
<td>7</td>
</tr>
<tr>
<td>OWLITZ (15)</td>
<td>3</td>
</tr>
<tr>
<td>ARAYS HARBOR (27)</td>
<td>2</td>
</tr>
<tr>
<td>KING (33)</td>
<td>31</td>
</tr>
<tr>
<td>ITSAP (35)</td>
<td>2</td>
</tr>
<tr>
<td>EWIS (41)</td>
<td>3</td>
</tr>
<tr>
<td>IKANOGAN (47)</td>
<td>2</td>
</tr>
<tr>
<td>GERCE (53)</td>
<td>12</td>
</tr>
<tr>
<td>KAGIT (57)</td>
<td>2</td>
</tr>
<tr>
<td>NOHOMISH (61)</td>
<td>7</td>
</tr>
<tr>
<td>POKANE (63)</td>
<td>9</td>
</tr>
<tr>
<td>HURSTON (67)</td>
<td>2</td>
</tr>
<tr>
<td>WHITCOM (73)</td>
<td>3</td>
</tr>
<tr>
<td>WHITMAN (75)</td>
<td>1</td>
</tr>
<tr>
<td>AKIMA (77)</td>
<td>12</td>
</tr>
</tbody>
</table>

**TOTAL** 103
Cross-tabulating two variables proceeds similarly...

choose year of interest, choose query type (here option 3 chosen), and then choose fields of interest.
After choosing state(s) of interest, as well as any other restriction – like fatal injuries and AI race – hit the CrossTab button…
This screen is different than prior (univariate or simple) query.

Choose which variable should be displayed in column and which variable should be displayed in rows.

In this case choose to display zero values, as well as provided a descriptive title.
Output results

Here we have fatalities among American Indians for 2017 in the Northwest...

States displayed in columns, Month displayed in rows.

As with simpler queries, can click on view cases, and create map.

<table>
<thead>
<tr>
<th>Crash Month</th>
<th>Idaho</th>
<th>Oregon</th>
<th>Washington</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>January</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>February</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>March</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>April</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>May</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>June</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>July</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>August</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>September</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>October</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>November</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>December</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>12</strong></td>
<td><strong>9</strong></td>
<td><strong>16</strong></td>
<td><strong>37</strong></td>
</tr>
</tbody>
</table>
FARS – Multi-year, customized analyses

• How to get information over multiple years?
  • Can use online FARS query system to query each year of interest,
  • Download results from each year to Excel, and
  • Merge together on your own
  • Create multi-year or longitudinal reports of interest
    • *AI/AN deaths in Idaho, Oregon, and Washington from 2008-2017*

• Can also
  • Download raw data files ([ftp.nhtsa.dot.gov/fars/](ftp.nhtsa.dot.gov/fars/))
  • Use statistical analysis and/or mapping software
    • *Crashes designated with FARS “special jurisdiction” codes vs. BIA-derived land flag in Idaho, Oregon, and Washington from 2008-2017*

Data source: Fatality Analysis Reporting System
What kinds of crashes are most important? Depends on the audience

- Special Jurisdiction
  - Element within FARS system since 1975
  - SP_JUR=3 “Native Amer Reservation”
  - Reported by crash responders and/or those who file reports
  - Available on query system

- BIA coding
  - Derived variable coded via geospatial software
  - Based on latitude and longitude of crashes overlaid with BIA land boundaries.

- More details at:
  - https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812475

<table>
<thead>
<tr>
<th>State</th>
<th>All Crashes</th>
<th>AI/AN Death</th>
<th>All Crashes</th>
<th>AI/AN Death</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idaho</td>
<td>105</td>
<td>32</td>
<td>147</td>
<td>46</td>
</tr>
<tr>
<td>Oregon</td>
<td>10</td>
<td>9</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>Washington</td>
<td>171</td>
<td>80</td>
<td>233</td>
<td>108</td>
</tr>
</tbody>
</table>

Data source: Fatality Analysis Reporting System
Tabulated in SAS v9.4

Some caveats:

- BIA and special jurisdiction coding – better in combination – but still not comprehensive.
- Large proportion of AI fatalities occur outside tribal jurisdictions, but still extremely impactful to their communities.
- FARS does not collect data on race for individuals who survived crashes. Severe injuries can have high health care costs and lifelong consequences.
- FARS lacks information on the tribal communities from which these individuals and decedents belong to.
So now what?

• How did we get here?
• What does this mean?
• What else do we need to know?
• How do we determine what to do next?
• How does this influence how our community plans to intervene?
• What changes do we expect?
• Once we do intervene how do we measure our impact?
What’s Your Story?

Context
- Historical
- Social
- Economic
- Cultural
- Environmental
- Political
- Geographical

Evidence
- Data on current burden, trends, populations affected, and disparities
- Data on risk factors and health promoters
- Observational Data
- Community knowledge and beliefs
- Gaps in community resources or data

Intervention Strategies
- Public Awareness Media Campaigns
- Education Efforts
- Safety & Law Enforcement Practices
- Infrastructure Changes (i.e., Roads, lighting)
- Policy Changes (i.e., speeding, restraint use)
- Collaborative efforts

Expected Impact
- Projections of what will happen if community adopts strategy
- Projections of what will happen if community does nothing
- “Side” benefits (or risks)
Determining Your Areas/Populations of Interest

• Historical
• Geographical
• Political
• Cultural
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Warm Springs – FARS Data

2008-2017 all fatal crashes on or near Warm Springs Reservation

2008-2017 all fatal crashes on or near Warm Springs Reservation, BIA, special jurisdiction OR AI/AN death
Vital Statistics – Motor Vehicle Related Deaths

Motor Vehicle Injury Tables, Washington State Death Certificates, Linked to Northwest Tribal Registry to identify AI/AN Race, 1999-2016
Count of motor vehicle related deaths by race, Yakima County, 1999-2016

<table>
<thead>
<tr>
<th></th>
<th>AI/AN</th>
<th>NHW</th>
<th>Other race</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yakima County Resident Death</td>
<td>145</td>
<td>254</td>
<td>291</td>
<td>690</td>
</tr>
<tr>
<td>Yakima County Death Occurrence</td>
<td>131</td>
<td>243</td>
<td>255</td>
<td>629</td>
</tr>
</tbody>
</table>

Planning Takeaways:
- Missing data considerations
- What is your population of interest?
- How does population affect actions?
  - Roads & infrastructure
  - Behaviors
Count of AI/AN pedestrians killed by motor vehicles by residential county of decedent

Data source: Washington State death certificates linked to the NW Tribal Registry, 1999-2016
## Motor Vehicle Crash Data

### Pedestrian deaths by hour of death, incidents that occurred in Yakima County 1999-2016

<table>
<thead>
<tr>
<th>Hour of injury</th>
<th>AI/AN</th>
<th>NHW</th>
<th>Other/Unknown</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Count</td>
<td>Percent</td>
<td>Count</td>
<td>Percent</td>
</tr>
<tr>
<td>Day time (6AM-3PM)</td>
<td>1</td>
<td>3.57</td>
<td>9</td>
<td>31.03</td>
</tr>
<tr>
<td>Night time (9PM-5AM)</td>
<td>14</td>
<td>50.00</td>
<td>7</td>
<td>24.14</td>
</tr>
<tr>
<td>Rush hour (4-8PM)</td>
<td>9</td>
<td>32.14</td>
<td>10</td>
<td>34.48</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>14.29</td>
<td>3</td>
<td>10.34</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>100.00</td>
<td>29</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Data Source: Washington State Death Certificates, Linked to Northwest Tribal Registry to identify AI/AN Race, 1999-2016
State Crash Data Maps example

Location of fatal and suspected serious injury crashes in Yakima County, 2019 as of 8/20/2019
Pedestrian Map at Yakima, Satellite Layer (2019 so far)
Additional Tribe Specific Data Collection
Quantitative Data Collection

- Observational Data
- Surveys

https://nativecars.org/modules/module-4-collect-your-own-cps-data/
Qualitative Data Collection

- Focus Groups
- Key Informant Interview
- Observations
- Community Listening sessions
- Public Meeting
- Door to Door

https://nativecars.org/modules/module-5-studying-culture/
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6.11 – An Example Intervention Activity Plan

https://nativecars.org/modules/module-6-use-data-driven-strategies-to-improve-use/

Define the Issue

During our elicitation interviews, we found that participants didn’t believe law enforcement officers consistently or regularly enforced the child passenger safety law. We had no indication from citation data that the law was being enforced.

Interviews with the Chief of Police revealed, however, there was more to the story than “law enforcement failing to enforce the law.” He admitted that regular processing of citations wasn’t happening for a number of reasons despite an existing Tribal Child Passenger Safety Law. The Chief explained that once officers wrote citations, inadequate staffing in the courts resulted in lack of follow up and failure to process citations. Community members and tribal police were aware of this this, so no one viewed these citations as deterrents. Moreover, citation fees were only $35.00 – not an adequate disincentive for the community.
**INTERVENTION ACTIVITY PLAN**

Lead:
Tribes:
Date:

**FEE SCHEDULE AND FINE PROCESSING CHANGE**

<table>
<thead>
<tr>
<th>ISSUE ADDRESSED</th>
<th>The tribe has an inadequate fee schedule and fine process that is a disincentive to police to issue citations.</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPROACH</td>
<td>Awareness, Public Health/Safety Practice</td>
</tr>
<tr>
<td>COLLABORATORS</td>
<td>Tribal Police, Courts' Office of Tribal Attorney, Tribal Council, Communications Department</td>
</tr>
<tr>
<td>AUDIENCE</td>
<td>Reservation Residents, Non-Tribal member drivers, Tribal Police</td>
</tr>
<tr>
<td>DESCRIPTION</td>
<td>We are proposing a change to the fee deterrent schedule (fine) for infraction of the Child Safety Seat law. We plan on reviewing the process in which fines are given, processed and enforced as well as make recommendations to increase enforcement. Following the proposed code, fee deterrent schedule and court process, we will submit for Tribal Attorney review, submit to law and justice committee, submit to council, and distribute for public comment. Once fee deterrent schedule and process is approved we will work with communications department to come up with strategies to inform general public of these changes.</td>
</tr>
</tbody>
</table>
| OBJECTIVES      | 1. Determine current public process for altering fee deterrent schedule and citation fines by [insert date]  
2. Review current fee process and recommend changes that support sustainable disincentive by [insert date]  
3. Distribute fee deterrent schedule and process changes to community from [date-date]  
4. Train police officers of new fee schedule and fines by [insert date] |
<table>
<thead>
<tr>
<th>EVALUATION MEASURES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Document completed steps of the public</td>
</tr>
<tr>
<td>process to change fee deterrent schedule</td>
</tr>
<tr>
<td>2. Number of print materials distributed in</td>
</tr>
<tr>
<td>community</td>
</tr>
<tr>
<td>3. Number of social media hits</td>
</tr>
<tr>
<td>4. Total count of tribal police officers at</td>
</tr>
<tr>
<td>training</td>
</tr>
<tr>
<td>5. Number of citations issued pre and post-</td>
</tr>
<tr>
<td>training</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIMELINE</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Invite representative from Tribal Police,</td>
</tr>
<tr>
<td>Courts, Tribal Attorney, Tribal Council to</td>
</tr>
<tr>
<td>serve as advisory workgroup (Month 1)</td>
</tr>
<tr>
<td>* Hold meeting with Advisory Workgroup to</td>
</tr>
<tr>
<td>share preliminary findings and share draft</td>
</tr>
<tr>
<td>of intervention plan proposed. (Month 1)</td>
</tr>
<tr>
<td>* Gather any documentation on current law,</td>
</tr>
<tr>
<td>fee schedule, fee handling process (Month</td>
</tr>
<tr>
<td>1)</td>
</tr>
<tr>
<td>* Draft Recommendations (Month 2)</td>
</tr>
<tr>
<td>* Present drafted recommendations to</td>
</tr>
<tr>
<td>Advisory Group (Month 3)</td>
</tr>
<tr>
<td>* Incorporate edits from Advisory Group and</td>
</tr>
<tr>
<td>Tribal Attorney (Month 5)</td>
</tr>
<tr>
<td>* Present recommendations to Tribal Council</td>
</tr>
<tr>
<td>(Month 6)</td>
</tr>
<tr>
<td>* Public Hearing (Month 6)</td>
</tr>
<tr>
<td>* Open for Public Comment (Month 7)</td>
</tr>
<tr>
<td>* Return to Council with any change from</td>
</tr>
<tr>
<td>Public Comment; Ratify Final fee deterrent</td>
</tr>
<tr>
<td>schedule (Month 8)</td>
</tr>
<tr>
<td>* Put together training materials for law</td>
</tr>
<tr>
<td>enforcement officers on change (Month 7-8)</td>
</tr>
<tr>
<td>* Work with Communications department to</td>
</tr>
<tr>
<td>create strategies for informing community</td>
</tr>
<tr>
<td>about changes to fee schedule (Month 7-8)</td>
</tr>
<tr>
<td>* Hold Trainings for officers (Month 8-9)</td>
</tr>
<tr>
<td>* Implement Communication strategies (flyers,</td>
</tr>
<tr>
<td>article, radio PSA, social media) (Month</td>
</tr>
<tr>
<td>9-12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BUDGET</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1,000 Public Hearing (room rental, food)</td>
</tr>
<tr>
<td>$700 700 Swag Bags for Officer to hand out to</td>
</tr>
<tr>
<td>driver</td>
</tr>
<tr>
<td>$100 Training Coordinator honorarium</td>
</tr>
<tr>
<td>$200 Training Expenses (room rental, food)</td>
</tr>
<tr>
<td>$3,000 Media expenses (print and radio) for</td>
</tr>
<tr>
<td>public hearing flyer and general communications</td>
</tr>
<tr>
<td>$5,000 Total Cost</td>
</tr>
</tbody>
</table>
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Expected Impact
- Projections of what will happen if community adopts strategy
- Projections of what will happen if community does nothing
- “Side” benefits (or risks)
Who are our collaborators

- TTP’s
- State DOTs
- State Traffic Commission
- Universities
- BIA
- CDC
- IHS
- Tribal Epicenters

When reaching out to Tribal Epicenters, you don’t need to know a lot about how to analyze data it is helpful to:
  - have and idea of the data sources you might use
  - have an idea of what questions you would liked to answer
  - Be as specific as you can about your request
  - Explain how you plan to use it
Questions about data?

• What would you like to hear or learn more about?
• Are there source so data that you are itchin’ to get your hands on?
• Who else should be involved?
• What data quality improvement efforts are most pressing?
• What can we do for you?
Ongoing Work

• Repeating analyses for Oregon & Idaho
• FARS analyses
• Creating relevant geographic reporting areas
  • County groups
  • Tribal boundaries
• Next steps:
  • Hospital discharge data
  • Syndromic data
  • Crash data
  • Qualitative inquiry
Funding and Contact

Grant number: 1R01MD013353-01

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