Suicides among Older Arizonans

Presented to the Arizona Governor’s Council on Aging
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Background

- **NVDRS: The National Violent Death Reporting System**
  - CDC-sponsored surveillance system primarily for homicides and suicides

- **AZ-VDRS: Arizona Violent Death Reporting System**
  - Arizona has been collecting data as part of the NVDRS since 2015
  - Comprehensive statewide collection of violent death data
National Expansion of NVDRS

The Reach of NVDRS

NVDRS began collecting data on violent deaths from six states in 2002, followed by progressive additions to the system over several years. **In 2018, NVDRS was expanded to include data collection from all 50 states, Puerto Rico, and the District of Columbia.** This expansion brings NVDRS closer to the goal of providing a complete picture of violent deaths across the nation.

**States added by year:**
- **2002:** MA, MD, NJ, OR, SC, VA
- **2003:** AK, CO, GA, NC, OK, RI, WI
- **2004:** KY, NM, UT
- **2009:** MI, OH
- **2014:** AZ, CT, HI, IA, IL, IN, KS, ME, MN, MI, NY, PA, VT, WA
- **2016:** AL, CA, DE, DC, LA, MO, NE, NV, Puerto Rico, WV
- **2018:** AR, FL, ID, MS, MT, ND, SD, TN, TX, WY
**Scope of NVDRS**

- **Unintentional Injury Deaths**
- **Intentional Injury Deaths:**
  - Suicide (including terrorism)
  - Homicide (including terrorism)
  - Legal intervention (excluding legal executions)
- **Deaths of Undetermined Intent**

*NVDRS*
Un-redacted sources of data contributing to AZ-VDRS

- Death Certificates (100% coverage)
  Arizona Department of Health Services

- Medical Examiner Reports (90% coverage)
  All medical examiners offices in AZ
  New Mexico ME

- Law Enforcement Reports (87% coverage)
  City police
  Sheriffs departments

- Other sources
  Hospital data, MOU in place, IRB approved
Examples of types of data

- Demographics
  - e.g., age, sex, education, occupation, etc.
  - Suspect information

- Cause & manner of death
  - Homicide or suicide
  - ICD-10 codes and descriptions

- Toxicology data

- Weapon type

- Circumstance information
  - Incident-level (e.g., time & place, wounds, etc.)
  - Individual-level (e.g., criminal history, relationship & life stressors, etc.)

- Mental & physical health issues
  - e.g., substance abuse, history of suicide attempts or ideation, terminal illness, etc.
Medical Examiner Data Providers and Participating Sheriffs' Offices

Sheriffs Offices
Cochise  Coconino
Mohave
Navajo
Pima
Pinal
Yavapai
Yuma

State & Federal Law Enforcement  Arizona Dept. of Public Safety (DPS)

Medical Examiner & Data Partners:
Apache County ME: Apache
Coconino County ME: Coconino, Apache & Navajo
Maricopa County ME: Maricopa
Mohave County (Contracted Pathologist) Mohave & La Paz
Navajo County ME: Navajo
Pima County ME: Pima, Apache, Cochise, Graham, Greenlee, La Paz, Navajo, & Santa Cruz
Pinal County ME: Pinal & Gila
Yavapai County ME: Yavapai
Yuma County ME: Yuma

We thank and acknowledge the cooperation and support of the Arizona Department of Health Services (ADHS), the Bureau of Vital Records, and the many local law enforcement agencies and medical examiner offices throughout the State of Arizona that have provided information to the AZ-VDRS. Without our partners, the AZ-VDRS would not be possible.
Definitions for analyses

• We defined those victims aged 60 and older as “older adults”.
• Age 60 was chosen as the cutoff for our category of “Older Adults” following guidance from the federal Older American’s Act and the Elder Justice Act.
• We then compared our older adult victims with the remainder of suicide victims (those aged 59 years and younger).
Proportion of older adults by Arizona population and number of suicides

Arizona Population by Older Adult Status (N=7,278,717)

- Aged <=59: 76.0%
- Aged 60+: 24.0%

Suicides by Older Adult Status (n=6,781)

- Aged <=59: 69.5%
- Aged 60+: 30.5%
Suicide rates by year and age, 2015-2019 (n=6,781)
Suicide rates by age group, 2015-2019* (n=6,781)

* Statistically significant at $p \leq .05$
Comparison of suicide rates by sex and age

Male suicide rates (n=5,265)

- Aged <=59: 40.8%
- Aged 60+: 25.7%

Female suicide rates (n=1,516)

- Aged <=59: 8.9%
- Aged 60+: 8.1%
Percentage of suicides by race/ethnicity and age

- White (n=5067): 82.1%
- Black (n=198): 8.9%
- American Indian (n=403): 8.3%
- Hispanic (n=921): 17.5%
- Other (n=192): 4.6%

† Non-Hispanic/Latinx; ‡ Includes Asian, Native Hawaiian, Pacific Islander, Other and Unspecified
Suicide rates by county and older adult status

NOTE: The rates indicated on the bars represent the county's rate within the respective older adult age group.

The numbers listed after each county name is the overall suicide rate for that county.
### Top ten zip codes for older adult suicide by injury zip code (n=2,069)

<table>
<thead>
<tr>
<th>ZIP</th>
<th>Region (County)</th>
<th>N</th>
<th>% of state</th>
</tr>
</thead>
<tbody>
<tr>
<td>85375</td>
<td>Sun City (Maricopa)</td>
<td>36</td>
<td>1.7</td>
</tr>
<tr>
<td>85351</td>
<td>Sun City (Maricopa)</td>
<td>33</td>
<td>1.6</td>
</tr>
<tr>
<td>85374</td>
<td>Sun City (Maricopa)</td>
<td>31</td>
<td>1.5</td>
</tr>
<tr>
<td>85614</td>
<td>Green Valley (Pima)</td>
<td>31</td>
<td>1.5</td>
</tr>
<tr>
<td>86401</td>
<td>Kingman (Mohave)</td>
<td>29</td>
<td>1.4</td>
</tr>
<tr>
<td>85541</td>
<td>Payson (Gila)</td>
<td>23</td>
<td>1.1</td>
</tr>
<tr>
<td>86314</td>
<td>Prescott Valley (Yavapai)</td>
<td>23</td>
<td>1.1</td>
</tr>
<tr>
<td>86442</td>
<td>Bullhead City (Mohave)</td>
<td>22</td>
<td>1.1</td>
</tr>
<tr>
<td>86409</td>
<td>Hualapai (Mohave)</td>
<td>21</td>
<td>1.0</td>
</tr>
<tr>
<td>86301</td>
<td>Prescott (Yavapai)</td>
<td>20</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>269</strong></td>
<td><strong>13.0</strong></td>
</tr>
</tbody>
</table>
Percent of suicide victims by educational attainment and age (n=6,781) *

![Bar chart showing the percentage of suicide victims by educational attainment and age.](chart.png)
Percent of suicide victims by marital status and (n=6,781) *
<table>
<thead>
<tr>
<th>Location</th>
<th>Aged &lt;=59</th>
<th></th>
<th>Aged 60+</th>
<th></th>
<th>Total</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>House or Apartment</td>
<td>3246</td>
<td>68.9</td>
<td>1653</td>
<td>79.9</td>
<td>4899</td>
<td>72.2</td>
</tr>
<tr>
<td>Street/road, sidewalk, alley</td>
<td>171</td>
<td>3.6</td>
<td>61</td>
<td>2.9</td>
<td>232</td>
<td>3.4</td>
</tr>
<tr>
<td>Motor vehicle (excluding school bus and public transport)</td>
<td>308</td>
<td>6.5</td>
<td>93</td>
<td>4.5</td>
<td>401</td>
<td>5.9</td>
</tr>
<tr>
<td>Commercial establishment (e.g., bar, store, etc.)</td>
<td>38</td>
<td>0.8</td>
<td>7</td>
<td>0.3</td>
<td>45</td>
<td>0.7</td>
</tr>
<tr>
<td>Parking lot/public parking garage</td>
<td>95</td>
<td>2.0</td>
<td>37</td>
<td>1.8</td>
<td>132</td>
<td>1.9</td>
</tr>
<tr>
<td>Jail, prison, group home, shelter, other supervised res. facility</td>
<td>90</td>
<td>1.9</td>
<td>22</td>
<td>1.1</td>
<td>112</td>
<td>1.7</td>
</tr>
<tr>
<td>Park, playground, public use area</td>
<td>66</td>
<td>1.4</td>
<td>21</td>
<td>1.0</td>
<td>87</td>
<td>1.3</td>
</tr>
<tr>
<td>Natural area (e.g., field, river, beaches, woods)</td>
<td>273</td>
<td>5.8</td>
<td>72</td>
<td>3.5</td>
<td>345</td>
<td>5.1</td>
</tr>
<tr>
<td>Hotel/motel</td>
<td>146</td>
<td>3.1</td>
<td>43</td>
<td>2.1</td>
<td>189</td>
<td>2.8</td>
</tr>
<tr>
<td>Other</td>
<td>225</td>
<td>4.8</td>
<td>47</td>
<td>2.3</td>
<td>272</td>
<td>4.0</td>
</tr>
<tr>
<td>Unknown</td>
<td>54</td>
<td>1.1</td>
<td>13</td>
<td>0.6</td>
<td>67</td>
<td>1.0</td>
</tr>
<tr>
<td>Total</td>
<td>4712</td>
<td>100.0</td>
<td>2069</td>
<td>100.0</td>
<td>6781</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Method of death by older adult status*

* Statistically significant at p < .05
Mental health circumstances present by older adult status

*Statistically significant at p < .05
Substance abuse / addiction circumstances present by older adult status

- Any Addiction Problem*: 17.1% (Aged <=59), 37.8% (Aged 60+)
- Other Addiction (gambling, sexual, etc.): 0.5% (Aged <=59), 0.8% (Aged 60+)
- Other Substance Problem (e.g., illicit drugs, prescription misuse)*: 7.5% (Aged <=59), 26.4% (Aged 60+)
- Alcohol Problem*: 14.0% (Aged <=59), 24.0% (Aged 60+)

* Statistically significant at p < .05
Interpersonal problem circumstances present by older adult status

- Any Interpersonal Problem:
  - Aged <=59: 10.0%
  - Aged 60+: 25.3%
  - Aged 60+: Statistically significant at p < .05

- Other Death of Friend/Family:
  - Aged <=59: 5.8%
  - Aged 60+: 10.0%

- Suicide of Friend/Family in Past 5 Years:
  - Aged <=59: 2.4%
  - Aged 60+: 1.8%

- Victim of Interpersonal Violence in Past Month:
  - Aged <=59: 0.6%
  - Aged 60+: 1.8%

- Perpetrator of Interpersonal Violence in Past Month:
  - Aged <=59: 3.5%
  - Aged 60+: 1.8%

- Other Relationship Problem:
  - Aged <=59: 2.7%
  - Aged 60+: 1.2%

- Intimate Partner Problem:
  - Aged <=59: 12.5%
  - Aged 60+: 39.1%

- Family Relationship Problem:
  - Aged <=59: 12.2%
  - Aged 60+: 5.4%
Life stressor circumstances present by older adult status

- Any Life Stressor*
  - Aged ≤59: 3.2%
  - Aged 60+: 4.7%
- Eviction or Loss of Home*
  - Aged ≤59: 2.3%
  - Aged 60+: 4.7%
- School Problem*
  - Aged ≤59: 8.9%
  - Aged 60+: 11.2%
- Financial Problem*
  - Aged ≤59: 2.3%
  - Aged 60+: 4.4%
- Other Legal Problems*
  - Aged ≤59: 1.9%
  - Aged 60+: 4.4%
- Recent Criminal Related Legal Problem*
  - Aged ≤59: 3.9%
  - Aged 60+: 9.9%
- Job Problem*
  - Aged ≤59: 4.1%
  - Aged 60+: 13.3%
- Physical Health Problem*
  - Aged ≤59: 13.9%
  - Aged 60+: 59.3%

* Statistically significant at p < .05
Suicide event circumstances present by older adult status

![Bar chart](image)

- Any Indication of Suicide: Aged <=59 (61.5%), Aged 60+ (55.7%)
- History of Suicidal Thoughts: Aged <=59 (56.6%), Aged 60+ (53.2%)
- Disclosed Intent to Complete Suicide: Aged <=59 (34.3%), Aged 60+ (31.7%)
- History of Suicide Attempts: Aged <=59 (30.6%), Aged 60+ (16.4%)

Notes:
- Statistical significance at p < .05
Major Findings

- Older Arizonans are at greater risk for suicide (23.7 per 100,000 population vs. 17.0).
- Older adult **males** are at significantly higher risk for suicide.
- Older **white**, non-Hispanic/Latinx adults are at significantly higher risk for suicide.
- Older adult suicide rates are substantially higher in **Cochise (36.4)**, **Gila (59.0)**, **La Paz (81.7)**, **Mohave (37.2)**, and **Yavapai (37.2)**, compared to the statewide rate (18.6).
- The top three zip codes for older adult suicide are in the **Sun City** area of Maricopa County. The sheriff’s office, who is the principal law enforcement agency responsible for this area, is not a partner with AZ-VDRS. This is a limitation to our research.
- More than 7 in 10 older adult suicide victims used a **firearm**
- Older adult suicide victims were generally less likely to have any documented mental health problems
- Older adult suicide victims were significantly less likely to have interpersonal problems in general (25.3% vs. 48.0%)
- About 6 in 10 older adults were experiencing **physical health problems** that reportedly contributed to the suicide, compared to slightly more than 1 in 10 for the younger group.
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