Suicide Prevention in Rural Settings

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Background
Why is suicidal behavior a public health issue?

- Morbidity and mortality
  - 10th leading cause of death in 2016 accounted for 44,965 deaths
  - Estimated 505,507 emergency dept visits for self-inflicted injury in 2015 (NEISS-AIP*)
  - Health consequences in many areas
    - Physical, mental, behavioral

- Potential for impact by public health
  - Focus on prevention
  - Science base
  - Stresses multi-disciplinary approach

*National Electronic Injury Surveillance System -- All Injury Program
CDC’s Unique Role in Suicide Prevention

Assess the Problem

What’s the problem?

Identify the Causes

Why did it happen?

Implementation & Dissemination

How do you do it?

Develop & Evaluate Programs & Policies

What works?
Leading causes of death – United States, 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
<th>Number of deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heart Disease</td>
<td>635,260</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td>598,038</td>
</tr>
<tr>
<td>3</td>
<td>Unintentional Injuries</td>
<td>161,374</td>
</tr>
<tr>
<td>4</td>
<td>Chronic Lower Respiratory Ds</td>
<td>154,596</td>
</tr>
<tr>
<td>5</td>
<td>Cerebrovascular Ds</td>
<td>142,142</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer’s Disease</td>
<td>116,103</td>
</tr>
<tr>
<td>7</td>
<td>Diabetes mellitus</td>
<td>80,058</td>
</tr>
<tr>
<td>8</td>
<td>Influenza and pneumonia</td>
<td>51,537</td>
</tr>
<tr>
<td>9</td>
<td>Nephritis</td>
<td>50,046</td>
</tr>
<tr>
<td>10</td>
<td>Suicide</td>
<td>44,965</td>
</tr>
</tbody>
</table>

Source: CDC vital statistics
Leading causes of death for selected age groups – United States, 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>10-14 years</th>
<th>15-19 years</th>
<th>20-29 years</th>
<th>30-39 years</th>
<th>40-49 years</th>
<th>50-59 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Unintentional Injuries</td>
<td>Malignant Neoplasms</td>
</tr>
<tr>
<td>2</td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>3</td>
<td>Malignant Neoplasms</td>
<td>Homicide</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Unintentional Injuries</td>
</tr>
<tr>
<td>4</td>
<td>Homicide</td>
<td>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td><strong>Suicide</strong></td>
<td>Liver Disease</td>
</tr>
<tr>
<td>5</td>
<td>Congenital Malformations</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
<td>Homicide</td>
<td>Liver Disease</td>
<td>Chronic Lower Respiratory Ds</td>
</tr>
<tr>
<td>6</td>
<td>Heart Disease</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Liver Disease</td>
<td>Diabetes Mellitus</td>
<td>Diabetes Mellitus</td>
</tr>
<tr>
<td>7</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Congenital Malformations</td>
<td>Diabetes Mellitus</td>
<td>Cerebro-Vascular</td>
<td><strong>Suicide</strong></td>
</tr>
<tr>
<td>8</td>
<td>Cerebro-Vascular</td>
<td>Cerebro-Vascular</td>
<td>Complicated pregnancy</td>
<td>Cerebro-Vascular</td>
<td>Homicide</td>
<td>Cerebro-Vascular</td>
</tr>
</tbody>
</table>

Source: CDC vital statistics
Suicide rates among all persons by sex – United States, 2000-2016

Source: CDC vital statistics
Suicide rates among persons aged 15-19 years by sex—United States, 2000-2016

Source: CDC vital statistics
Suicide rates among all persons by age group and sex - United States, 2016

Source: CDC vital statistics
Suicide rates by age group and race/ethnicity – United States, 2012-2016

Source: CDC vital statistics
Suicide by Method – United States, 2016

- Firearms: 51.0%
- Suffocation: 25.9%
- Cut/pierce: 1.9%
- Poisoning: 14.9%
- Fall: 2.5%
- Other: 3.8%

Source: CDC vital statistics
Burden of Injury

- Deaths
- Hospitalizations
- Emergency Dept visits
- Events reported on surveys
- Unreported events
Number and ratio of persons affected by suicidal thoughts and behavior among adults aged ≥18 years — United States, 2014

- Deaths*:
  - 41,425 (1)

- Hospitalizations†:
  - 111,410 (2.7)

- Emergency Department visits§:
  - 375,530 (9.1)

- Suicide attempts¶:
  - 1,120,000 (27.0)

- Seriously considered suicide**:
  - 9,436,000 (227.8)

*Source: CDC’s National Vital Statistics System,
†Source: Agency for Healthcare Research and Quality’s Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS)
§Source: CDC’s National Electronic Injury Surveillance System-All Injury Program
¶Source: SAMHSA’s National Survey on Drug Use and Health
**Source: SAMHSA’s National Survey on Drug Use and Health
Number in parentheses represent the ratio of deaths to other categories
Highlighted Risk and Protective Factors

- **Risk:** Isolation, a feeling of being cut off from other people
  - Rurality
    - Physical isolation
    - Barriers to accessing mental health treatment
      - Uninsured
      - Unemployment
    - Agricultural challenges
    - Stigma

- **Protective:** Family and community support (Connectedness)
  - Connectedness in rural areas
    - Telemental health

Study Method and Findings
Suicide Trends Among and Within Urbanization Levels by Sex, Race/Ethnicity, Age Group, and Mechanism of Death — United States, 2001–2015

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Suicide – Key Findings

- Suicide rates were consistently higher in rural areas than in metropolitan areas.

FIGURE 1. Suicide rates* among persons aged ≥10 years, by county urbanization level† — United States, 2001–2015§
Suicide – Key Findings

- Across all urbanization levels, suicide rates for males were 4 to 5 times higher than females with all rates highest in rural areas.
Suicide – Key Findings

- Rates for all racial/ethnic groups typically increased in all areas
  - Non-Hispanic American Indian/Alaska Natives had the highest rates in rural counties
  - Non-Hispanic whites had the highest rates in metropolitan counties
  - Non-Hispanic blacks had the lowest rates in rural counties
Suicide – Key Findings

- Rates increased for all age groups across all counties, with the highest rates among those aged 35-64 years.
Suicide – Key Findings

- Suicide rates by firearm in rural areas were almost double the rates in metropolitan areas.
Suicide – Conclusion

- Prevention efforts are needed for suicides occurring in rural areas

- Comprehensive suicide prevention efforts might include
  - Leveraging protective factors
  - Providing innovative prevention strategies that increase access to health care and mental health care in rural communities

- Distribution of socioeconomic factors varies in different communities and needs to be better understood in the context of suicide prevention
Resources
## Suicide Prevention Technical Package

### Preventing Suicide

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthen economic supports</td>
<td>- Strengthen household financial security</td>
</tr>
<tr>
<td></td>
<td>- Housing stabilization policies</td>
</tr>
<tr>
<td>Strengthen access and delivery</td>
<td>- Coverage of mental health conditions in health insurance policies</td>
</tr>
<tr>
<td>of suicide care</td>
<td>- Reduce provider shortages in underserved areas</td>
</tr>
<tr>
<td></td>
<td>- Safer suicide care through systems change</td>
</tr>
<tr>
<td>Create protective environments</td>
<td>- Reduce access to lethal means among persons at risk of suicide</td>
</tr>
<tr>
<td></td>
<td>- Organizational policies and culture</td>
</tr>
<tr>
<td></td>
<td>- Community-based policies to reduce excessive alcohol use</td>
</tr>
<tr>
<td>Promote connectedness</td>
<td>- Peer norm programs</td>
</tr>
<tr>
<td></td>
<td>- Community engagement activities</td>
</tr>
<tr>
<td>Teach coping and problem-solving</td>
<td>- Social-emotional learning programs</td>
</tr>
<tr>
<td>skills</td>
<td>- Parenting skill and family relationship programs</td>
</tr>
<tr>
<td>Identify and support</td>
<td>- Gatekeeper training</td>
</tr>
<tr>
<td>people at risk</td>
<td>- Crisis intervention</td>
</tr>
<tr>
<td></td>
<td>- Treatment for people at risk of suicide</td>
</tr>
<tr>
<td></td>
<td>- Treatment to prevent re-attempts</td>
</tr>
<tr>
<td>Lessen harms and prevent</td>
<td>- Postvention</td>
</tr>
<tr>
<td>future risk</td>
<td>- Safe reporting and messaging about suicide</td>
</tr>
</tbody>
</table>

Thank You

Email Asha Ivey-Stephenson at iym9@cdc.gov for additional information

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.