Rural Suicide Prevention: Reviewing the Evidence and Gaps

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Disclaimer

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What is rural?
What is rural?¹

Rural Stereotypes
• Open country
• Agriculture economy (or other extraction industry, e.g., mining, fishing, logging)
• White
• Uneducated

Rural Realities
• Range of rurality from frontier to large towns.
• Agriculture accounts for less than 1% of rural jobs today
  • Largest economic sectors are the health care and service industries.
• Cultural diversity of the rural U.S. is growing
Rural Veterans

**Rural Veterans**
4.7 Million
24% of All Veterans

**Enrolled Rural Veterans**
2.7 Million
(57% of Rural Veterans)

**Rural Veterans Demographics**
- 7% Women
- 49% earn less than $35,000/year
- 55% are 65 years or older

**All Veterans**
19.4 Million

**All Enrolled Veterans**
8.4 Million
(43% of All Veterans)

**All Veteran Demographics**
- 9% Women
- 45% earn less than $35,000/year
- 49% are 65 years or older

**Urban Veterans**
14.8 Million
76% of All Veterans

**Enrolled Urban Veterans**
5.6 Million
(38% of Urban Veterans)

**Urban Veterans Demographics**
- 10% Women
- 42% earn less than $35,000/year
- 46% are 65 years or older

Data are FY 2019-20 VA Internal Data Sources, US Census Bureau and VHA Survey of Enrollees
Rural Life: The Challenges

Socio-Economic

- Higher percentage of individuals living below the poverty line
- Lower college graduation rates
- Higher rates of combined social and economic disadvantage
- Majority of wealth generated by rural economic activity goes to benefit urban areas and residents
Rural Life: The Challenges

Health Care

- Workforce shortages in health care and behavioral health
- Rural primary care providers report being less prepared to manage suicidal patients
- Rural residents in need are less likely to receive mental health or substance use treatment
- Rural residents are less likely to have health insurance
- National and state policies and programs are largely designed for urban settings
Rural Life: The Challenges

Health

- Rural residents are more likely to report fair to poor health
- Higher rates of significant health issues
- Greater rates of isolation
Strengths In Rural Communities

**Rural**
- More Veterans Per Capita
- Ingenuity, hardiness, and adaptation

**Resilience**
- Local access to role models and peers
- Culture of local support to survive

**Social Capital**
- People working in different community systems know each other

**Trust**
- Community Insiders Must Lead
- By Veterans and for Veterans
Rural Suicide in the U.S.²

- Rural suicide increased 48% from 200-2018

- Rural suicide rates are higher than urban (19.4 vs. 13.4 per 100,000 in 2018)

- Firearms suicide deaths are more prevalent in rural vs urban areas.

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²Note: The year range for rural suicide statistics is 2000-2018, which is for the purpose of illustrating trends and does not necessarily reflect the current year.
Rural Suicide Risk Factors Around the World

- Geography
  - Access to services
  - Isolation
- Cultural factors
  - Stigma
  - Stoicism/Self-reliance
  - Male roles
- Economic
  - Farm Stress
  - Area deprivation
- Environmental
  - Lethal means
- Interpersonal factors
- Physical and Mental Health
Rural Veteran Suicide

Rural Veterans have a **20% increased risk of death by suicide** after controlling for access to care, demographic factors, and diagnoses.⁴
A Systematic Review of Factors Impacting Suicide Risk Among Rural Adults in the United States

Key Questions
1. What are rural-specific risk and protective factors for adults in rural US communities?
2. What are barriers to mental health or suicide prevention treatment for adults in rural US communities?
**Population:** US rural adults (18+ years old)

**Intervention/Exposure:** An intervention was not required for inclusion (e.g., surveys or administrative data were included).

**Comparison:** Rural-only or rural-urban comparisons.

**Outcomes:** All suicidal self-directed violence (SDV) including suicide and nonfatal SDV (e.g., suicide attempts and ideation); and barriers to treatment for mental health or suicide.

**Timing/Setting:** Restrictions were not based on timing, setting, or study design.

*Only studies including original data and published in a peer-reviewed journal from January 1, 2003, through May 23, 2019, were included.*
Methods Continued

Data Sources: OVID Medline, EMBASE, OVID PsycINFO, Web of Science, SocINDEX, Cochrane Library, and Google Scholar

Risk of Bias/Strength of Evidence: Effective Public Health Practice Project (EPHPP) quality assessment tool for quantitative studies.⁶
Social Ecological Model

• Classified findings based on the social ecological model

• Reduced findings into “inner” and “outer” levels:
  • Individual & relationship level factors
  • Community & societal level factors
Individual and Relationship Factors
• Firearms may account for most of the rural-urban disparity in suicide rates, overshadowing the impact of other potential rural risk factors.

• Rural areas compared to urban areas were associated with 1.65-2.00 times greater likelihood and 1.54-2.00 times greater suicide rate of firearm-related suicides.

• Firearm involvement was found in 77% of rural suicide deaths compared to 61% for urban.

• For every increment along the rural-urban continuum, firearm-related suicide death increased by 1.13.
Alcohol and Drug Use

• Contributes to rural suicide among men, people with multiple attempts, and American Indian/Alaska Native people.

• Some contradictory evidence from the National Violent Death Reporting System using different variables for substance use and rurality.
  • Rural male decedents as having a higher blood alcohol content compared to urban men (AOR = 1.09, 95% CI: 1.02-1.17, \( P < .001 \)).
  • Rural decedents are less likely to have a history of alcohol or drug abuse.

• Among rural AIANs, substance use was present in 59% of deaths and 73% of attempts.

• Rural individuals with substance abuse history were twice as likely to die by suicide (OR = 2.3, 95% CI: 1.0-5.3).
Other Individual and Relationship Factors

• Past suicide exposure
• Behavioral health care use
• Financial difficulties
• Attitudinal barriers to care
• Relationship problems as a contributing factor to suicide among rural AIANs.
• Rural decedents less likely to report a relationship problem.
Community and Societal Factors
Economic Factors

- Reduction in GDP in rural vs urban counties was linked to higher increase in suicide rates among rural females ($P < .001$).
- Median income and, counterintuitively, income inequality were identified as protective in rural communities.
- Among rural Alaska communities, remoteness was positively associated with suicide rates, whereas access to the modern economy was negatively associated.
Access and Quality of Behavioral Health Care

- Behavioral health care quality may be lower in rural communities.
  - Rural communities have fewer providers with specialty training for working with transgender individuals and display lower-quality prescribing patterns of depression education.
- Rural residents are more likely to experience a health service deficit, more likely not to have had a past year exam and have no identified primary care provider.
- Poor accessibility and availability act as barriers to mental health care.
Other Community and Societal Factors

Risk factors
• Higher divorce rates
• Cultural division between Alaska Native and mainstream cultures.

Protective factors
• A strong civic community,
• Greater proportion of Protestantism
• Strong traditional Native culture
## Summary of Major Findings and Needs

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<th>Findings</th>
<th>Needs</th>
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<td>Firearms are a primary driver of the rural suicide disparity in the U.S.</td>
<td>• Need research on how to reduce the rate of firearm suicide in rural U.S.</td>
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| Substance use may be another important driver of rural suicides.        | • Need to clarify the relationship between substance use and suicide comparing rural and urban communities.  
                                                                          | • Need to investigate suicide outcomes as a results of substance use prevention efforts in the rural U.S. |
| Access to and Quality of Care disparities are persistent.               | • Need to examine the impact on suicide outcomes of access and quality of care in rural places.  
                                                                          | • Need to investigate suicide outcomes as a result of programs to improve access and quality of care. |
| Role of financial and economic factors is unclear.                      | • Need to investigate the complicated interactions between individual and community level factors, including culture and gender as well. |
| Fewer studies and lower evidence quality for factors at the outer levels of social ecology. | • Need more rigorous investigation of factors at the outer levels of social ecology.  
                                                                          | • Investigation of interdependence of factors across levels of social ecology will be important to understanding the role community and societal factors. |
Identifying Promising Practices for Rural Veteran Suicide Prevention
Menu of Options (2018)³

- Searched PubMed, PsychINFO, Google Scholar, SPRC Resource Library and National Registry of Evidence-Based Programs and Practices
- Searched for programs within four categories: crisis intervention, primary care, gatekeeper training, and public awareness
- Iterative discovery, i.e., “snowballing”
- Resources rated by a team of 4 mental health professionals
- Included resources with a rating indicating alignment with rural veteran suicide prevention

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<th>Domain</th>
<th>Definition</th>
<th>Rating scale</th>
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| Scope                | Extent to which the resource aligns with the scope and goals of the rural veteran-suicide prevention program | 1 = No applicability  
                      |                                                                                   | 2 = Requires significant modifications  
                      |                                                                                   | 3 = Fits with slight modifications  
                      |                                                                                   | 4 = In alignment |
| Rurality             | Extent to which the resource can be applied to rural populations           | 1 = Does not apply to rural populations  
                      |                                                                                   | 2 = Requires significant modifications  
                      |                                                                                   | 3 = Fits rural with slight modifications  
                      |                                                                                   | 4 = Designed for rural populations |
| Veteran Focus        | Extent to which the resource can be applied to veteran populations         | 1 = Inappropriate for veteran populations  
                      |                                                                                   | 2 = Requires significant modifications  
                      |                                                                                   | 3 = Applies to veterans with minor modifications  
                      |                                                                                   | 4 = Designed for veteran populations |
| Published research support | Supporting empirical evidence available                                   | 1 = No available supporting documentation  
                      |                                                                                   | 2 = Minimal qualitative data only  
                      |                                                                                   | 3 = Preliminary empirical data  
                      |                                                                                   | 4 = Empirically validated |
Scoping Review (2020)\textsuperscript{9}

- Updated and expanded the Menu of Options search
- Added a parallel search for American Indian and Alaska Native prevention programs
- Included only “programs”

### Intervention Strategies

- Cooperation with general practitioners
- Public awareness/stigma reduction campaigns
- Gatekeeper training programs
- Programs targeting high-risk
- Restricting access to lethal means
- Improving access to care

### ORH Promising Practices

- Increased access
- Strong partnerships
- (Clinical) Impact
- Return on investment
- Operational feasibility
- Customer satisfaction

### Cultural Adaptability

- Cultural fit (overall)
- Dissemination to rural Native communities

### Other

- Measured suicide or similar
Findings from Scoping Reviews

In 2018: We reviewed 300 resources and retained 70 for the Menu of Options.
❖ Only 1 resource was developed specifically for rural communities.

In 2020: We identified and rated 51 general adult suicide prevention programs and 13 AI/AN programs.
❖ No programs developed for or tested with AI/AN Veterans.
❖ A number of promising practices were identified.
❖ More research needed on adapting and tailoring promising programs for rural and AI/AN Veterans.
Conclusions
Some existing promising practices that have shown positive effects on suicide outcomes in rural communities

• Suicide Prevention Toolkit for Rural Primary Care Practices\textsuperscript{10}
• Gatekeeper Training (e.g., QPR\textsuperscript{11,12}, MHFA\textsuperscript{13,14})
• Sources of Strength\textsuperscript{15,16}
• Promoting Community Conversations About Research to End Suicide (PC CARES)\textsuperscript{17}
How does it fit here?

Promising programs to test in rural populations or adapt for rural settings.

- Safety Planning / Crisis Response Planning
- Lethal Means Counseling
- Reducing access to lethal means (e.g., gun locks, medication blister packaging)
- Stigma reduction and public awareness campaigns
- Comprehensive public health programs (e.g., European Alliance Against Depression)
Some of our ongoing Studies

Together With Veterans
• Comprehensive public health model
• Veteran leadership and peer-to-peer model

Tribal-VHA Partnerships for Suicide Prevention
• Support VHA teams in being effective partners with local tribes

Operation Veterans Strong
• Community-tailored online wellness portal

ASCEND
• National survey of Veterans, including an oversampling plan for rural Veterans
There are many causal paths to examine, including how they intersect.

- Access to lethal means
- Access to and quality of behavioral healthcare
- Substance use
- Financial strain
- Cultural factors (e.g., social norms and stigmas)
Rural suicide prevention remains a frontier.

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References


