Preventing Suicide: a Comprehensive Public Health Approach

Accessible version: https://youtu.be/atZgfHztSxg

September 15, 2015
Suicide: An Urgent Public Health Problem

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Chief, Surveillance Branch
Division of Violence Prevention
National Center for Injury Prevention and Control
# Leading Causes of Death
## United States, 2013

<table>
<thead>
<tr>
<th>Rank</th>
<th>Cause</th>
<th>Deaths</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Heart Disease</td>
<td>611,105</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td>584,881</td>
</tr>
<tr>
<td>3</td>
<td>Chronic Lower Respiratory Disease</td>
<td>149,205</td>
</tr>
<tr>
<td>4</td>
<td>Unintentional Injuries</td>
<td>130,557</td>
</tr>
<tr>
<td>5</td>
<td>Cerebrovascular Disease</td>
<td>128,978</td>
</tr>
<tr>
<td>6</td>
<td>Alzheimer’s Disease</td>
<td>84,767</td>
</tr>
<tr>
<td>7</td>
<td>Diabetes Mellitus</td>
<td>75,578</td>
</tr>
<tr>
<td>8</td>
<td>Influenza and Pneumonia</td>
<td>56,979</td>
</tr>
<tr>
<td>9</td>
<td>Nephritis</td>
<td>47,112</td>
</tr>
<tr>
<td>10</td>
<td>Suicide</td>
<td>41,149</td>
</tr>
</tbody>
</table>

Suicides resulted in 804,195 years of potential life lost before age 65

Suicide Rates
United States, 2000–2013

www.cdc.gov/injury/wisqars/leading_causes_death.html
Suicide Rates by Age and Sex
United States, 2013

www.cdc.gov/injury/wisqars/leading-causes-death.html
Suicides and Suicide Rates
United States, 2013

Deaths

Rate  Number

Age Groups


Per 100,000 population

0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 15 12 9 6 3

www.cdc.gov/injury/wisqars/leading-causes-death.html
Middle-Aged Adults and Youth

- **Middle-aged adults (35 – 64 years)**
  - Fifth leading cause of death
  - Largest proportion of suicides (54%)
  - Suicide rate increased 29% since 2000

- **Adolescents and young adults (10 – 24 years)**
  - Second leading cause of death
  - Significant increase in suicide rates
  - American Indian/Alaska Native suicide rate (23 per 100,000) is 2.8 times higher than the national rate (8.2 per 100,000)


Sullivan et al. MMWR 64(8):201-205.
Veterans and Military

- **Veterans**
  - Suicide rate higher than civilian population

- **Active duty US Army**
  - 2008: age- and sex- adjusted rates exceeded rates among civilian population
  - Rates continue to increase

Kemp JE. Veterans Health Administration 2014
Lineberry et al. Mayo Clinic 2012;87(9):871-878.
Suicide Mechanism
United States, 2013

- Firearms, 51.1%
- Suffocation, 24.5%
- Poisoning, 16.1%
- Fall, 2.4%
- Other, 5.5%

www.cdc.gov/injury/wisqars/leading-causes-death.html
Adults Affected by Suicidal Thoughts and Behavior United States, 2012

- 39,426 Suicides
- 129,205 Hospitalizations
- 405,000 Emergency department visits
- 1,129,000 Suicide attempts
- 9,031,000 Seriously considered suicide

For every one suicide there were over 229 who seriously considered suicide

www.cdc.gov/injury/wisqars/leading_causes_death.html
Agency for Healthcare Research and Quality Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS)
CDC National Electronic Injury Surveillance System-All Injury Program
SAMHSA National Survey on Drug Use and Health
Suicide is a Form of Violence

- Historically, addressed primarily as mental health issue
- Multifaceted problem needing comprehensive solutions

Violence

Interpersonal Violence
- Homicide
- Nonfatal Assault

Self-directed Violence
- Suicide
- Nonfatal Suicidal Behavior
- Nonsuicidal Behavior

Reference:
Interconnection among multiple forms of violence

- Suicide
- Child abuse and neglect
- Intimate partner violence
- Sexual violence
- Youth violence
- Elder abuse and neglect

Connecting the Dots

- Many of forms of violence share common risk factors
- Preventing violence and other adverse life experiences can reduce the risk for suicide

CDC Role in Suicide Prevention

- Emphasizes:
  - Population approach
  - Primary prevention
  - Surveillance
  - Rigorous science base
    - Studies of risk and protective factors
    - Development and evaluation of prevention strategies
National Violent Death Reporting System (NVDRS)

- Began in 2002
- Covers 32 states accounting for 55% of US violent deaths
- Integrates data from diverse sources:
  - Death certificates
  - Coroner/medical examiner reports
  - Law enforcement
  - Crime laboratories

www.cdc.gov/violenceprevention/nvdrs/index.html
CDC unpublished data, 2014
Health and Behavior Information for Suicide Decedents by Sex – 16 States, 2010

Categories are not mutually exclusive

Parks SE, Johnson LJ, McDaniel DD, Gladden M. MMWR 2014;63(1):1-33
Health and Behavior Information for Suicide Decedents by Sex – 16 States, 2010

Categories are not mutually exclusive

Parks SE, Johnson LJ, McDaniel DD, Gladden M. MMWR 2014;63(1):1-33
State-level Suicide Prevention Efforts Informed by NVDRS Data

- **South Carolina: youth suicide**
  - Identify at-risk group and focus prevention efforts
  - Update state suicide prevention plan
  - Secure SAMHSA support to implement prevention programs

- **Oregon: older adult suicide (> 65 years)**
  - Almost 50% of men and 60% of women who died by suicide had a depressed mood before death but only 14% of men and 29% of women with depression were in treatment
  - Data on circumstances surrounding suicide among older adults assisted in integration of suicide prevention efforts into primary care practice, starting in 2006
  - Reductions in suicide among men aged ≥ 65 years (11% between 2007 and 2013) encouraging but require evaluation

NVDRS: National Violent Death Reporting System
SAMHSA: Substance Abuse and Mental Health Services Administration
CDC Collaborations Focused on High-risk Groups

- Preventing suicide by enhancing connectedness
  - University of Michigan: Linking To Enhance Teens Connectedness (LET’s CONNECT)
  - University of Rochester: The Senior Connection

- Evaluating innovative and promising strategies to prevent suicide among middle-aged men
  - University of California at Davis: Multimedia Activation to Prevent Suicide for Men, coupled with telephone follow-up care
  - University of Maryland-Baltimore: Screening for Mental Health and Man Therapy

Understanding and preventing violence: Summary of research activities, 2013.
Division of Violence Prevention Outreach

- September is National Suicide Prevention Month
- World Suicide Prevention Day is September 10
- #VetoViolence Social Media Project
  - 1 Photo & 6 Words
  - Instagram, Facebook, Twitter
- Ask the Experts
  - Facebook Forum
  - September 21 – 25, 2015
Everyone has a role in preventing suicide
- Decrease stigma, talk about suicide
- Know the warning signs
- Give support, act to prevent it

Need exists for public health role in preventing suicidal behavior
- Improved surveillance
- Expanded research
- Focus on prevention and interconnectedness of adverse health outcomes, especially multiple forms of violence
Implementing Promising Suicide Prevention Approaches While Enhancing the Evidence Base

Eric D. Caine, MD

John Romano Professor and Chair, Department of Psychiatry
Director, Injury Control Research Center for Suicide Prevention
University of Rochester Medical Center
Suicide Prevention: The Public Health Rationale

- Population approach and primary prevention are critical
  - People at risk often do not seek help
  - First attempts can be fatal
  - Reach beyond clinic and hospital walls and into communities

- Use data to understand and address common risks for premature deaths
Suicide Risks Beyond Mental Health

- Alcohol, substance abuse, and dependence
- Financial problems
- Life stressors and relationship problems
  - Recent crisis (e.g., romantic or marital break-up)
  - Job problems
  - Intimate partner violence
- Early childhood adversities (e.g., abuse, neglect)
- Criminal or legal problems
- Medical or physical health problems (older adults)
- Depression, other mental health conditions common
  - But common conditions cannot predict uncommon events
Societal

- Community crime and violence
- Few education and employment opportunities
- Residential instability
- Low community cohesion
- Limited support services

Community

- Mental health
- Alcohol, substance abuse
- Victim of violence
- Access to lethal means

Relationship

- Poor parenting
- Family and intimate partner violence
- Family history of suicide

Individual

- Poverty
- Stigma about distress and help-seeking
- Cultural norms that support violence
- Discrimination and health inequalities

Caine ED. AJPM 2012; 103:822-829.
Youth Making Suicide Attempts Requiring Medical Attention

Percentage of Risk Factors

Low Substance Use/Violence
High Substance Use/Violence
Extreme Substance Use/Violence

Suicide Ideation
Sad/Hopelessness
Other Drug Use
Marijuana Use
Binge Drinking
Weapon Carrying
Physical Fight

Pena et al. SPPE 2012; 47:29-42
Public health-community approach: “Air Force Family”
- Broad involvement of key partners and consistent leadership

Eleven initiatives grouped in four areas
- Increase awareness and knowledge
- Increase early help seeking
- Change social norms
- Change selected policies

Program Results

<table>
<thead>
<tr>
<th></th>
<th>Relative Risk Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicide</td>
<td>33%</td>
</tr>
<tr>
<td>Homicide</td>
<td>51%</td>
</tr>
<tr>
<td>Severe Family Violence</td>
<td>54%</td>
</tr>
<tr>
<td>Unintentional Death</td>
<td>18%</td>
</tr>
</tbody>
</table>

Knox KL et al. BMJ. 2003;327(7428):1376
Air Force Suicide Prevention Program – Quarterly Suicide Rates

Knox KL et al. AJPH 2010; 100(12):2457-2463
Multicomponent suicide prevention program

- Publicity campaign
- Personnel and supervisor training
- Prevention resources

<table>
<thead>
<tr>
<th>Program Results</th>
<th>Suicide Rate Before Program (1986 – 1996)</th>
<th>Suicide Rate After Program (1997 – 2008)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Montreal police</td>
<td>30.5</td>
<td>6.4</td>
</tr>
<tr>
<td>All other Quebec police</td>
<td>26</td>
<td>29</td>
</tr>
</tbody>
</table>

*Rates per 100,000*
Good Behavior Game

- Elementary school classroom-based behavior management strategy (first and second grade)

- 4 core components
  - Classroom rules
  - Team membership
  - Self- and team-behavior monitoring
  - Positive reinforcement

- Significant long-term reductions in antisocial behavior, smoking, drug and alcohol use

- Part of standard curriculum throughout school year
- 3 times per week for 10 minutes
- Training, resources available for teachers

www.blueprintsprograms.com/
Good Behavior Game
Suicide Attempts After Program for Females

Wilcox HC et al. Drug and Alcohol Dependence 2008; 95(Suppl 1),S60-S73.
Sources of Strength

- School-based primary prevention program that reaches all students regardless of risk

- Program activities
  - Peer leader training
  - Adult advisors and mentoring
  - Messaging activities to change peer group norms and improve coping skills

- Program impacts
  - Peer leaders’ connectedness and school engagement
  - Student perceptions of support and acceptability of help seeking

Wyman PA et al. AJPM 2010;100(9)1653-61.
Injury Control Research Center for Suicide Prevention (ICRC-S)

- **Center-without-walls**
  - Generates diverse collaborations
  - State, regional, and national scope

- **Focus**
  - Upstream, comprehensive strategies
  - Middle-aged adults
  - Connection between intimate partner violence and suicide

- **Center activities**
  - Enhance access to data for prevention planning
  - Systematically define and confront challenges of preventing suicide among middle-aged adults

suicideprevention-icrc-s.org/
Suicide Is Preventable

- Growing evidence base demonstrates potential reach and impact
- Suicide prevention has crosscutting benefits
- Public health leadership can lead to broad strategies and national reductions in suicide rates

Using Data to Increase Awareness and Prevention of Suicide: Colorado’s Public Health Approach

Jarrod Hindman, MS
Violence and Suicide Prevention Section Manager
Colorado Department of Public Health and Environment
Suicides by Age and Gender
Colorado, 2010 – 2014

CO Center for Health and Environmental Data
Age-adjusted Suicide Rates by Race and Ethnicity
Colorado, 2010 – 2014

Rate per 100,000

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>18</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>20</td>
</tr>
<tr>
<td>White, Hispanic</td>
<td>11</td>
</tr>
<tr>
<td>Black/African American</td>
<td>9</td>
</tr>
<tr>
<td>Asian/Pacific Islander</td>
<td>10</td>
</tr>
<tr>
<td>American Indian</td>
<td>12</td>
</tr>
</tbody>
</table>
Colorado’s Public Health Priorities

Mental Health and Substance Abuse-identified as 1 of 2 flagship priorities

Strategies
1. Improve screening and referral
2. Reduce stigma to help-seeking by increasing
   - Visitors to www.mantherapy.org
   - Percent of men who self-report symptoms of depression

Colorado Office of Suicide Prevention (OSP)

- Established and allocated state general funds in 2000
- One of four states with set-aside funds for suicide prevention
- OSP priorities through 2020
  - Suicide Prevention Commission
  - High-risk populations
  - Middle-age men - Man Therapy
  - Emergency departments - ED-CALM
  - Primary prevention - Sources of Strength
Colorado Suicide Prevention Commission

- Twenty six member commission appointed through 2024
- Members include representatives of:
  - Education (K-12 and higher education)
  - Survivor – loss and lived experience
  - Mental health and primary care
  - Philanthropy
  - State agencies
    - CDPHE coordinates the Commission
  - Private business
  - Agriculture and ranching
  - Oil and gas industry
  - Faith-based groups
  - Law enforcement
  - U.S. military (active or veteran)
Colorado Suicide Prevention Commission

- Setting statewide priorities and establishing workgroups to develop implementation strategies and recommendations

- Year 1 Workgroups
  - Emergency Services
  - Training and Development
  - Primary Care
Man Therapy: A Data-based Outreach Program for Underserved High-risk Group

- **Campaign Goals**
  1. Create social change about mental and overall wellness
  2. Empower men and increase male help-seeking behavior
  3. Long-term – reduce suicidal thoughts and deaths among men

- **Survey Results**
  - 83% would recommend Man Therapy to a friend
  - 73% - 18 Point Head Inspection directed to appropriate resources
  - 51% agree or strongly agree to being more likely to seek help

Unpublished data
Firearm Deaths in CO, 2005 – 2013

For every 1 unintentional firearm death,
there were 15 firearm homicides
and 57 firearm suicides.
Emergency Department Counseling on Access to Lethal Means (ED-CALM)
ED-CALM – Program Objectives

- Adapt the Counseling on Access to Lethal Means Online Training to pediatric emergency department (ED)
- Pilot the adapted training with ED clinicians
- Implement training and assess program outcomes
- Develop plans to scale-up implementation and rigorously evaluate the program
209 of 236 eligible families received the program

- Most recalled receiving the information and found it useful
- >90% found the counseling respectful, the recommendations clear, the time sufficient to ask questions

Medication

- >90% reported unlocked medication prior to ED visit
- <25% reported unlocked medication at follow-up

Firearms

- <25% reported unlocked guns in the home before the ED visit
- None reported unlocked guns at follow-up
CO Sources of Strength Pilot

- **Pilot Partners**
  - Office of Suicide Prevention
  - Sexual Violence Prevention
  - Child Fatality Prevention System
  - Tony Grampsas Youth Services

- **Pilot Intent**
  - Program integration
  - Shared resources
  - Prioritize shared protective and risk factors
  - Measure impact
What We Have Learned

- Use state-specific data to identify prevention priorities
- Engage key local and state leaders to support and advance initiatives and monitor impacts
- Take innovative and smart risks
- Include primary prevention and public health approaches
Progress, Partnerships, and Optimism in Preventing Suicide

Jerry Reed, Ph.D., MSW
Director, Suicide Prevention Resource Center
Co-Director, Injury Control Research Center for Suicide
Vice President, Education Development Center
20 Years Ago

- Suicide seen as private matter between patients and healthcare providers
- Suicide not discussed as a public health problem
- Evidence about effective treatments was sparse
- Clinical training in suicide assessment and treatment was rare
- Little prevention capacity and infrastructure
- Virtually no funding for suicide prevention

Key Milestones in Recognizing Suicide as a Public Health Priority

- 1997 – 1999: Senate Resolution 84 and House Resolution 212 both passed in the 105th Congress
- 1999: Surgeon General’s Call to Action to Prevent Suicide
- 2001: First National Strategy for Suicide Prevention
- 2002: Suicide Prevention Resource Center
- 2005: National Suicide Prevention Lifeline
- 2010: Action Alliance for Suicide Prevention

Vision
- A nation free from the tragic experience of suicide

Advance the National Strategy for Suicide Prevention (NSSP) by
- **Championing** suicide prevention as a national priority
- **Catalyzing** efforts to implement high-priority NSSP objectives
- **Cultivating** the resources needed to sustain progress

Co-leads
- Private sector: Robert Turner, Senior VP, Union Pacific Railroad
- Public sector: Dr. Carolyn Clancy, VA Chief Medical Officer

actionallianceforsuicideprevention.org/
Saving 20,000 Lives

Data Sources:
1. CDC WISQARS 2010
2. CDC WONDER 2010
4. DoDSER CY 2011 Report
5. Trofimovich et al, 2012
6. Dept of Veterans Affairs, 2012
7. CDC WISQARS 2010 & Owens et al, 2002

Number of deaths in groups not mutually exclusive
National Strategy for Suicide Prevention and Prioritized Research Agenda

Six Key Research Questions

1) Why do people become suicidal?
2) How can we better or optimally detect/predict risk?
3) What interventions are effective? What prevents individuals from engaging in suicidal behavior?
4) What services are most effective for treating the suicidal person and preventing suicidal behavior?
5) What other types of preventive interventions (outside health care systems) reduce suicide risk?
6) What new and existing research infrastructure is needed to reduce suicidal behavior?
Action Alliance Resources

Suicide Prevention and the Clinical Workforce: Guidelines for Training

The Way Forward: Pathways to hope, recovery, and wellness with insights from lived experience

Your life MATTERS! Faith celebrating life, hope, and reasons to live

actionalliancetorsuicideprevention.org
Comprehensive Approach to Suicide Prevention

[Diagram showing: Strategic Planning at the center, with arrows pointing to the following steps:

- Promote Social Connectedness and Support
- Identify and Assist People at Risk
- Increase Help-Seeking
- Ensure Access to Effective Mental Health and Suicide Care and Treatment
- Support Care Transitions and Organizational Linkages
- Reduce Access to Means of Suicide
- Enhance Life Skills and Resiliency
- Provide for Immediate and Long-term Postvention
- Respond Effectively to Individuals in Crisis

Additional instruction: zerosuicide.sprc.org/]
National Strategy Priorities

- **Transform healthcare systems**
  - Zero Suicide Initiative

- **Change the conversation about suicide**
  - Media guidelines

- **Implement suicide prevention programs**
  - Garrett Lee Smith Act
Zero Suicide: Transforming Healthcare Systems

CONTINUOUS

Create a leadership-driven, safety oriented culture

Suicide Care Management Plan
- Identify and assess risk
- Use effective, evidence-based care
- Provide continuous contact and support

Electronic health record

Develop a competent, confident, and caring workforce

QUALITY

IMPROVEMENT

APPROACH

www.zerosuicide.sprc.com
Recommendations for Reporting on Suicide

- Inform audience without sensationalizing
- Include crisis phone numbers
- Include sidebars with warning signs and what to do
- Report on suicide as a public health issue
- Use recent CDC data and non-sensational words (“rise” or “higher”) to describe trends

www.ReportingOnSuicide.org
Implementing Media Recommendations Can Save Lives

Garrett Lee Smith Act

- Garrett Lee Smith, son of Senator and Mrs. Gordon Smith, died by suicide in 2003
- Over 369 grantees (states, territories, tribal communities, and campuses) have been funded
- 2015 findings
  - Counties implementing training programs had significantly lower rates of youth suicide in the year after implementation
    - Estimated 427 deaths averted
  - Differences in rates were not seen 2 or more years after implementation

Today

- Every state has a strategy and has received a Garrett Lee Smith grant
- 32 states participate in the National Violent Death Reporting System
- 8 states focus on suicide prevention with CDC Core funding for Violence and Injury Prevention grants
- Over 30,000 clinicians trained in assessing and managing risk for suicidal behavior
**Where is the Federal Funding to Fight Suicide?**

In the last 10 years, we’ve invested federal funding to research leading causes of death like HIV/AIDS, heart disease, and prostate cancer. Major progress has led to decreased mortality rates. It’s time we do the same with suicide.

<table>
<thead>
<tr>
<th>Leading Causes of Death</th>
<th>2013 Funding</th>
<th>2003-2013 Death Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS</td>
<td>$2.9 Billion</td>
<td>53.2%</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>$1.2 Billion</td>
<td>29.1%</td>
</tr>
<tr>
<td>Prostate Cancer</td>
<td>$266 Million</td>
<td>13.7%</td>
</tr>
<tr>
<td>Suicide</td>
<td>$37 Million</td>
<td>20.4%</td>
</tr>
</tbody>
</table>

Death rates taken from Centers for Disease Control data for 2003 and 2013 (most recent available). Each flask represents $1 billion of research funding by the National Institutes of Health.
Actions Needed Today to Save More Lives Tomorrow

- Support new discovery in suicide prevention
- Adopt effective programs widely, and sustain their implementation over time
- Transform health systems so suicide attempt survivors and other persons seeking help have care access and options
- Involve communities and schools in primary and other types of prevention
September is National Suicide Prevention Month

Everyone has a role in preventing suicide
- Decrease stigma
- Talk safely about suicide
- Know the warning signs
- Give support
- Encourage help seeking

Continue the conversation
- Ask the Experts – Facebook Forum
- September 21 – 25, 2015
- www.facebook.com/vetoviolence