The public health approach to the prevention of suicidal behavior

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Safe States Alliance Special Interest Group

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"The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention/the Agency for Toxic Substances and Disease Registry.”
The Public Health Approach to 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?
The Public Health Approach to Prevention

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Leading causes of death for selected age groups – United States, 2010

<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>Malignant Neoplasms</td>
<td>Malignant Neoplasms</td>
</tr>
<tr>
<td>2</td>
<td>Malignant Neoplasms</td>
<td><strong>Homicide</strong></td>
<td><strong>Suicide</strong></td>
<td>Malignant Neoplasms</td>
<td>Heart Disease</td>
<td>Heart Disease</td>
</tr>
<tr>
<td>3</td>
<td><strong>Suicide</strong></td>
<td><strong>Suicide</strong></td>
<td><strong>Homicide</strong></td>
<td><strong>Suicide</strong></td>
<td>Unintentional Injuries</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><strong>Homicide</strong></td>
<td>Liver Disease</td>
<td>Diabetes Mellitus</td>
</tr>
<tr>
<td>6</td>
<td>Heart Disease</td>
<td>Congenital Malformations</td>
<td>Congenital Malformations</td>
<td>HIV</td>
<td>Cerebrovascular</td>
<td>Chronic Lower Respiratory Ds</td>
</tr>
<tr>
<td>7</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Cerebrovascular</td>
<td>HIV</td>
<td>Liver Disease</td>
<td>Diabetes Mellitus</td>
<td>Cerebrovascular</td>
</tr>
<tr>
<td>8</td>
<td>Benign Neoplasms</td>
<td>Chronic Lower Respiratory Ds</td>
<td>Diabetes Mellitus</td>
<td>Diabetes Mellitus</td>
<td>HIV</td>
<td><strong>Suicide</strong></td>
</tr>
</tbody>
</table>

Source: CDC vital statistics
Suicide among all persons by sex - United States, 1933-2010

Source: CDC vital statistics
Suicide rates among all persons by age and sex--United States, 2010

Source: CDC vital statistics
Suicide rates by ethnicity and age group -- United States, 2006-2010

Source: CDC vital statistics
Suicides and suicide rates among all persons -- United States, 2010

Source: CDC vital statistics
Suicide by method – United States, 2010

- Firearms: 50.6%
- Suffocation: 24.7%
- Poisoning: 17.2%
- Cut/pierce: 1.8%
- Fall: 2.0%
- Other: 3.7%

Source: CDC vital statistics
Age-adjusted suicide rates among all persons by state -- United States, 2010 (U.S. avg 12.1)

Rates per 100,000 population

- 6.7 to 12.0
- 12.1 to 13.8
- 13.9 to 16.4
- 16.5 to 22.9

Source: Centers for Disease Control and Prevention (CDC) vital statistics
Suicide rates by county – Arizona, 2005-2010

- U.S age-adjusted average 11.5 (05-10)
- Arizona age-adjusted average 16.4 (05-10)

Source: Centers for Disease Control and Prevention (CDC) vital statistics
Suicides by month of occurrence -- United States, 1991-2001

Source: CDC vital statistics
Burden of injury

- Deaths
- Hospitalizations
- Emergency Dept visits
- Events reported on surveys
- Unreported events
Public Health Burden of suicidal behavior -- United States, 2010

- 38,364 deaths*, rate 12.1 per 100,000
- 155,286 hospitalizations¶ rate 50.2
- 487,770 Emergency dept. visits§ rate 159.6

*Source: CDC’s National Vital Statistics System, 2010
¶Source: Agency for Healthcare Research and Quality’s Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS), 2010
§ Source: CDC’s National Electronic Injury Surveillance System, 2010
<table>
<thead>
<tr>
<th>Category</th>
<th>Number</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaths*</td>
<td>35,045</td>
<td>1</td>
</tr>
<tr>
<td>Hospitalizations†</td>
<td>197,838</td>
<td>5.6</td>
</tr>
<tr>
<td>Emergency Department visits§</td>
<td>323,342</td>
<td>9.2</td>
</tr>
<tr>
<td>Suicide attempts¶</td>
<td>1,058,000</td>
<td>30.2</td>
</tr>
<tr>
<td>Seriously considered suicide**</td>
<td>8,359,000</td>
<td>238.5</td>
</tr>
</tbody>
</table>

†Source: Agency for Healthcare Research and Quality’s Healthcare Cost and Utilization Project - Nationwide Inpatient Sample (HCUP-NIS), 2008
§Source: CDC’s National Electronic Injury Surveillance System-All Injury Program, 2008
¶Source: SAMHSA’s National Survey on Drug Use and Health, 2008–2009
**Source: SAMHSA’s National Survey on Drug Use and Health, 2008–2009

Number in parentheses represent the ratio of deaths to other categories
Self-inflicted injury among all persons by age and sex--United States, 2010

Source: CDC WISQARS NEISS
Suicidal ideation and behavior among high school students by category and sex* -- United States, 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage of all students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seriously consider suicide</td>
<td>Female: 20</td>
</tr>
<tr>
<td>Suicide plan</td>
<td>Female: 15</td>
</tr>
<tr>
<td>Attempted suicide^</td>
<td>Female: 10</td>
</tr>
<tr>
<td>Suicide attempt with medical</td>
<td>Female: 5</td>
</tr>
</tbody>
</table>

Source: CDC Youth Risk Behavior Survey
* During the 12 months preceding the survey
^One or more times
Suicidal behavior*^ among high school students by sexual identity# -- New York City, 2001-2009

<table>
<thead>
<tr>
<th>Category</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>gay or lesbian</td>
<td>35</td>
</tr>
<tr>
<td>hererosexual</td>
<td>25</td>
</tr>
<tr>
<td>bisexual</td>
<td>20</td>
</tr>
<tr>
<td>unsure</td>
<td>15</td>
</tr>
</tbody>
</table>

* During the 12 months before the survey.
^ One or more times.
# Among students who ever had sexual contact.
Source: New York City Youth Risk Behavior Survey Results
Suicidal ideation and behavior among adults by category and sex* -- United States, 2008-9

Source: SAMHSA National Survey on Drug Use and Health (NSDUH)
* During the 12 months preceding the survey
^One or more times
Prevalence of suicidal attempts among adults aged ≥18 years, by state — United States, 2008–2009)

*U.S. average: 0.5%.
Source: Natl Survey on Drug Use and Health
The Public Health Approach to Prevention

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What's the problem?

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How do you do it?
Overlap of spheres of influence for suicidal behavior

- Individual
  - Age
  - Sex
  - Mental illness
  - Substance misuse
  - Stressful life events

- Peer/Family
  - Spirituality
  - Incarceration
  - Social isolation vs support

- Society
  - Inappropriate access to lethal means
  - Geography
  - Economy
  - Cultural values

- Community
  - Family history of interpersonal or self-directed violence
  - Exposure to violence
  - Spirituality
  - Incarceration
  - Social isolation vs support

Population attributable risk (%) estimates for risk factors for suicidal behavior – systematic review

<table>
<thead>
<tr>
<th>Risk factor</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychiatric disorder</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affective disorder</td>
<td>26.3</td>
<td>31.6</td>
</tr>
<tr>
<td>Substance abuse</td>
<td>19.0</td>
<td>25.4</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>4.6</td>
<td>11.7</td>
</tr>
<tr>
<td>Personality disorder</td>
<td>15.2</td>
<td>5.5</td>
</tr>
<tr>
<td><strong>Socioeconomic factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>10.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Education</td>
<td>40.9</td>
<td>20.3</td>
</tr>
<tr>
<td>Occupation</td>
<td>33.1</td>
<td>6.8</td>
</tr>
<tr>
<td>Unemployment</td>
<td>4.0</td>
<td>2.2</td>
</tr>
</tbody>
</table>

Source: Li Z, 2011
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# Prevention science applied to suicidal behavior prevention

<table>
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<tr>
<th>Category</th>
<th>Focus</th>
<th>Objectives</th>
<th>Examples of programs</th>
</tr>
</thead>
</table>
| Universal  | Entire population      | Broad initiatives to reduce risk and enhance protective factors           | • Restrict access to lethal means  
• Media awareness campaign  
General public education |
| Selective  | At-risk population     | Address specific characteristics that increase risk                       | • Gatekeeper training  
• Screening programs  
• Peer support  
• Skill building programs |
| Indicated  | High risk individuals  | Treat individuals                                                          | • Case management  
• Referral sources for crisis intervention and treatment |

Categories of prevention programs

- Integrated/Comprehensive
  - U.N./W.H.O. recommendations
  - U.S. Air Force

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National Strategy for Suicide Prevention (NSSP) Overview

• Written to appeal to a broad base
• Aligns with framework of the National Prevention Strategy released June 2011
• Includes four strategic directions, 13 goals, and 60 objectives
• Addresses public and mental health
• Builds on advances made since 2001 (1st NSSP)

NSSP Components

• 4 strategic directions; 13 goals; 60 objectives
• Strategic Directions
  1. Healthy and Empowered Individuals, Families, and Communities
  2. Clinical and Community Preventive Services
  3. Treatment and Support Services
  4. Surveillance, Research, and Evaluation

CDC’s approach to suicidal behavior prevention

- Examine a broad perspective
- Support collaboration across disciplines (public health, mental health, medicine, education, social services, criminal justice, etc.)
- Strengthen information
- Determine what works
Conclusion

• Suicide is a significant public health problem
• Results from an interaction of factors never a single item that causes a suicide
  multiple opportunities for action
• Research has shown much of suicidal behavior can be prevented
• Broad responsibility for addressing the issue
  – communities must work together
  – no one person or group can do it alone
Thank you.

For more information visit
http://www.cdc.gov/violenceprevention/suicide