SUICIDE PREVENTION IN LATER LIFE

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Disclosures

- Conflicts of interest - none

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- Phillip Smith, PhD
- Tracy Witte, PhD

and many more……
“My work is done. Why wait?”

George Eastman
March 14, 1932
Age 77
Significance

- Older adults are the most rapidly growing segment of the population.
Population age 65 and over and age 85 and over, selected years 1900–2008 and projected 2010–2050

NOTE: Data for 2010–2050 are projections of the population.
Reference population: These data refer to the resident population.
### Population aged 80 or over: world, 1950-2050 (Millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Population (Millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>14.5</td>
</tr>
<tr>
<td>1975</td>
<td>31.8</td>
</tr>
<tr>
<td>2009</td>
<td>101.9</td>
</tr>
<tr>
<td>2025</td>
<td>160.8</td>
</tr>
<tr>
<td>2050</td>
<td>394.7</td>
</tr>
</tbody>
</table>

Significance

- Older adults are the most rapidly growing segment of the population.
- Older adults have higher rates of suicide than other segments of the population.
Worldwide Suicide Rates, WHO

Distribution of suicide rates (per 100,000) by gender and age, 2000

<table>
<thead>
<tr>
<th>Age group</th>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-14</td>
<td>1.5</td>
<td>0.4</td>
</tr>
<tr>
<td>15-24</td>
<td>22.0</td>
<td>4.9</td>
</tr>
<tr>
<td>25-34</td>
<td>30.1</td>
<td>6.3</td>
</tr>
<tr>
<td>35-44</td>
<td>37.5</td>
<td>7.7</td>
</tr>
<tr>
<td>45-54</td>
<td>43.8</td>
<td>9.6</td>
</tr>
<tr>
<td>55-64</td>
<td>42.1</td>
<td>10.6</td>
</tr>
<tr>
<td>65-74</td>
<td>41.0</td>
<td>12.1</td>
</tr>
<tr>
<td>75+</td>
<td>50.0</td>
<td>15.8</td>
</tr>
</tbody>
</table>

World Health Organization, 2002
Suicide rates among all persons by age and sex--United States, 2010

Source: CDC vital statistics
Suicide Rates 2010

Suicide Rate Per 100K

Age (Years)

White Male • Black Male • White Female • Black Female • Am Indian Male • Am Indian Female
Significance

- Older adults are the most rapidly growing segment of the population.
- Older adults have higher rates of suicide than other segments of the population.
- Suicidal behavior is more lethal in later life than at other points in the life course.
Self-inflicted injury among all persons by age and sex – United States, 2007

Source: CDC WISQARS NEISS
ATTEMPTED : COMPLETED SUICIDE

General population

Deaths

Hospitalizations

Emergency Dept visits

Older adults

Deaths

Hospitalizations

Emergency Dept visits
LETHALITY OF LATE LIFE SUICIDE

• Older people are
  – more frail (more likely to die)
  – more isolated (less likely to be rescued)
  – more planful and determined
METHODS OF SUICIDE IN THE U.S.

Total

Age > 65

- FIREARMS
- Hanging, Strangulation, suffocation
- Solid & liquid poisons
- Gas Poisons
- Jump from high place
- All other methods
LETHALITY OF LATE LIFE SUICIDE

• Older people are
  – more frail (more likely to die)
  – more isolated (less likely to be rescued)
  – more planful and determined

• Implying
  – Interventions must be aggressive (indicated)
  – More distal prevention is key (selective and universal)
As the largest and most rapidly growing segment of the population enters the stage of life with highest risk for suicide, we should expect the total number (and proportion) of late life suicides to increase dramatically in coming decades.

WHAT CAN WE DO ABOUT IT?
What to look for: Risk factors

- **Axis I**: psychopathology
- **Axis II**: personality, coping style
- **Axis III**: physical health
- **Axis IV**: social context
- **Axis V**: functioning
## RISK FACTOR: Psychiatric Dx in case/control studies of suicide in later life

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Any Axis I dx</td>
<td>--</td>
<td>43.9</td>
<td>113.1</td>
<td>56.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Any mood d/o</td>
<td>4.0</td>
<td>184.6</td>
<td>63.1</td>
<td>56.0</td>
<td>59.2</td>
</tr>
<tr>
<td>Maj dep episode</td>
<td>--</td>
<td>184.6</td>
<td>28.6</td>
<td>14.0</td>
<td>36.3</td>
</tr>
<tr>
<td>Subst use d/o</td>
<td>ns</td>
<td>4.4</td>
<td>43.1</td>
<td>3.0</td>
<td>ns</td>
</tr>
<tr>
<td>Anxiety disorder</td>
<td>--</td>
<td>--</td>
<td>3.6</td>
<td>3.0</td>
<td>ns</td>
</tr>
<tr>
<td>Schiz spectrum</td>
<td>ns</td>
<td>--</td>
<td>10.7</td>
<td>ns</td>
<td>&gt;1</td>
</tr>
<tr>
<td>Dementia/del</td>
<td>0.2</td>
<td>--</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
</tr>
</tbody>
</table>

ns = not significant
What to look for: Risk factors

Axis I
- psychopathology

Axis II
- personality, coping style

Axis III
- physical health

Axis IV
- social context

Axis V
- functioning
Personality Traits In Later Life
Completed Suicides

- High Neuroticism
  - anxious
  - angry
  - sad
  - fearful
  - self-conscious

- Low Openness to Experience
  - follow routine
  - prefer familiar to the novel
  - constricted range of intellectual interests
  - blunted affective and hedonic responses
What to look for: Risk factors

- Axis I: Psychopathology
- Axis II: Personality, coping style
- Axis III: Physical health
- Axis IV: Social context
- Axis V: Functioning
Suicide and Medical Illness

- Cancer: 1.73 (1.16-2.58)
- Prostate disease (not CA): 1.70 (1.16-2.49)
- COPD (for married): 1.86 (1.22-2.83)
- CHF: 1.36 (1.00 - 1.85)
- COPD: 1.30 (1.06 - 1.58)
- Seizure disorder: 2.41 (1.42 - 4.07)
- Pain - moderate
  - severe: 4.07 (2.51 - 6.59)


Juurink et al., Arch Intern Med 2004;164:1179-1184
Comorbidity and Suicide Risk
Juurlink et al., Arch Intern Med 2004;164:1179-1184
What to look for: Risk factors

Axis II
- personality, coping style

Axis III
- physical health

Axis IV
- social context

Axis V
- functioning

Axis I
- psychopathology
CONNECTEDNESS AND SUICIDE IN OLDER ADULTS

- Family discord and social isolation (Beautrais, 2002; Rubenowitz et al, 2001; Duberstein et al, 2004; Harwood et al, 2006)

- Having no confidantes (Miller, 1977; Turvey et al, 2002)

- Living alone (Barraclough, 1971)

- Not participating in community organizations or having hobbies (Rubenowitz et al, 2001, Duberstein et al, 2004)


- Bereavement (Erlangsen et al, 2004; Conwell et al, 1990)
RISK FACTORS FOR SUICIDE AMONG OLDER ADULTS

- Depression – major depression, other
- Prior suicide attempts
- Co-morbid general medical conditions
- Often with pain and role function decline
- Social dependency or isolation
- Family discord, losses
- Personality inflexibility, rigid coping
- Access to lethal means
Axis I - psychopathology

Axis II - personality, coping style

Axis III - physical health

Axis IV - social context

Axis V - functioning

Area of highest convergent risk

Elderly widower with rigid, constricted coping, macular degeneration, and depression, learns he can no longer drive.

Recently bereaved older woman, disabled and homebound by arthritis, with no social network on which to call for support.
The Interpersonal Theory of Suicide

Joiner (2005); Van Orden et al. (2010)
PREVENTION FRAMEWORK

**HOW** DO WE PREVENT SUICIDE IN ELDERS?

(Approaches to Prevention)
POPULATION DISTRIBUTION OF SUICIDE RISK

Modified from Crosby
Institute of Medicine Terminology: “LEVELS” OF PREVENTIVE INTERVENTION

“Indicated” – symptomatic and ‘marked’ high risk individuals – interventions to prevent full-blown disorders or adverse outcomes.

“Selective” – high-risk groups, though not all members bear risks – prevention through reducing risks.

“Universal” – focused on the entire population as the target – prevention through reducing risk and enhancing health.
INDICATED/SELECTIVE APPROACH

Suicide Risk

Mortality threshold

Population

Low

High

Identify and treat high-risk

Modified from Crosby
UNIVERSAL APPROACH

Mortality threshold

Modified from Alex Crosby
DEVELOPMENTAL PROCESS OF LATE LIFE SUICIDE

Caine & Conwell, 2001
INDICATED PREVENTION

- Because of the close association between depression and suicide in older adults
  - detection and effective treatment of depression are key

- Routine screening for depression
  - PHQ-9, GDS, CES-D

- Depression treatment is effective
  - Including at reducing suicidal ideation and maybe suicide rates
Odds Ratios for Suicidality and Suicidal Behavior for Active Drug Relative to Placebo by Age

(Stone et al, BMJ 2009)
Because of the close association between depression and suicide in older adults

- detection and effective treatment of depression are key

Routine screening for depression

- PHQ-9, GDS, CES-D

Depression treatment is effective

- Including at reducing suicidal ideation and maybe suicide rates

Primary care most common venue
Why we use screening tools

1. The goal of suicide risk assessment is *NOT* a prediction about whether or not an older person will die by suicide.

2. The goal *IS* to determine the most appropriate actions to take to keep the older person safe.

3. Take action for any endorsement of suicidal ideation, but not the same action for every level of risk.
# Mood Scale (PHQ)

*I am now going to ask you some questions regarding your emotional health.*

In the past two weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Little interest or pleasure in doing things</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>b. Feeling down, depressed, or hopeless</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>c. Trouble falling or staying asleep, or sleeping too much</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>d. Feeling tired or having little energy</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>e. Poor appetite or overeating</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>f. Feeling bad about yourself — or that you are a failure or have let yourself or your family down</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>g. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>h. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>i. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
Past suicide attempt
Suicide plan
Probability (perceived)
Preventive factors

Does response on the PHQ-9 predict subsequent suicide attempt or death?

Figure 1
Cumulative risk of suicide attempt or death among 84,418 responders to PHQ-9 item 9 in 2007–2011

Response to item 9
- Nearly every day
- More than half the days
- Several days
- Not at all

Cumulative risk of suicide attempt or death

Days since PHQ-9 completion

* PHQ-9, Patient Health Questionnaire for depression

Simon et al., 2013
<table>
<thead>
<tr>
<th>Study</th>
<th>Age</th>
<th>N</th>
<th>1 week</th>
<th>1 month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Murphy (1975)</td>
<td>-</td>
<td>60</td>
<td>-</td>
<td>53</td>
</tr>
<tr>
<td>Lin et al (1989)</td>
<td>all</td>
<td>84</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Diekstra &amp; van Egmond (1989)</td>
<td>all</td>
<td>150</td>
<td>22</td>
<td>44</td>
</tr>
<tr>
<td>Miller (1978)</td>
<td>≥ 60</td>
<td>30</td>
<td>33</td>
<td>77</td>
</tr>
<tr>
<td>Barraclough (1971)</td>
<td>≥ 65</td>
<td>30</td>
<td>47</td>
<td>70</td>
</tr>
<tr>
<td>Clark (1991)</td>
<td>≥ 65</td>
<td>54</td>
<td>41</td>
<td>70</td>
</tr>
<tr>
<td>Cattell &amp; Jolley (1995)</td>
<td>≥ 65</td>
<td>100</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td>Conwell et al (1994)</td>
<td>21-34</td>
<td>21</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>35-54</td>
<td>20</td>
<td>15</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>55-74</td>
<td>24</td>
<td>25</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>75+</td>
<td>20</td>
<td>35</td>
<td>75</td>
</tr>
</tbody>
</table>
The IMPACT Study
Unutzer et al., JAGS 54:1150-6, 2006

N=1801 subjects >60 yrs with major depression or dysthymia
Randomized to -- collaborative care (depression care manager; n=906)
-- or care as usual (CAU; n=895)
Delivery system reform

INTEGRATED CARE NETWORKS

Community

Primary Care Service System (PCMH)

Mental Health Services

Aging Services Network (ASN)
ATTEMPTED : COMPLETED SUICIDE

General population

- 1 Death
- 5 Hospitalizations
- 30 Emergency Dept visits

Older adults

- 1 Death
- 2 Hospitalizations
- 4 Emergency Dept visits
SELECTIVE PREVENTION

- *High-risk groups*, though not all members bear risks – prevention through reducing risks.
Tele-Help/Tele-Check Service for the Elderly

- 18,641 service users in Padua, Italy
- January 1, 1988 thru December 31, 1998
- Mean age = 80.0 years
- 84% women, 73% lived alone
- Suicides observed = 6
  expected = 20.9

Among women

DeLeo et al., Br J Psychiatry 181:226-229, 2002
Sites of engagement

Community
- Utility workers
- Families & friends

Health Care
- Primary
- Specialty
- Long-term
- Home

Aging Services Network
- Banks
- Pharmacies

Mental Health Services
- Mail carriers
- Faith communities
Delivery system reform

INTEGRATED CARE NETWORKS

Primary Care Service System (PCMH)

Mental Health Services

Aging Services Network (ASN)

Community
SPECTRUM OF ASN DEPRESSION CARE

- None
- Mild
- Mod
- Sever

Illness complexity (severity; med comorbidity)

ASN CAU

Augmented ASN CAU (E.g., PEARLS)

Collaborative Care Management (ASN + MH + PC)
OBJECTIVE: To examine whether linking socially disconnected seniors with peer supports is effective in reducing risk for suicide.

DESIGN
- Sample: Primary care patients ≥60 yrs who self-identify as lonely or a burden on others
- RCT comparing
  - CAU (n=200)
  - TSC (n=200) – peer companion
TSC Intervention – Anticipated Outcomes

- Reduced...
  - Loneliness, burdensomeness (psychological disconnectedness)
  - Depression, SI, worthlessness

- Improved ...
  - Structural connectedness
  - Physical health
  - Well-being
UNIVERSAL PREVENTION

- Focused on the *entire population* as the target – prevention through reducing risk and enhancing health.
QPR
Question, Persuade, Refer

- Considered a “best practice” intervention
  - by SAMHSA & Suicide Prevention Resource Center
- Target of intervention is *gatekeepers*
- 1 to 2 hour education program
  - think CPR but for suicide prevention.
- Empirically shown to increase:
  - knowledge and self-efficacy about helping identify and refer suicidal individuals, including older adults

Wyman et al., (2008); Matthieu et al. (2008); Cross et al. (2011)
QPR

1) Teaches the warning signs of a suicidal crisis.

2) Teaches how to respond:

- Question the individual’s desire or intent regarding suicide
- Persuade the person to seek and accept help
- Refer the person to appropriate services
QPR

- Developer is Paul Quinnett, PhD
- qinstitute@qwestoffice.net
- www.qprinstitute.com
Warning Signs of Acute Risk

- Threatening to hurt or kill him or herself, or talking of wanting to hurt or kill him/herself; and or,

- Looking for ways to kill him/herself by seeking access to firearms, available pills, or other means; and/or,

- Talking or writing about death, dying or suicide, when these actions are out of the ordinary.
Warning Signs
American Association of Suicidology

IS
Ideation
Substance Abuse

PATH
Purposeless Agitation
Trapped Hopelessness

WARM
Withdrawal
Anger
Restlessness
Mood changes
1-800-273-TALK

National Suicide Prevention Lifeline

Suicide Warning Signs

These signs may mean someone is at risk for suicide. Risk is greater if a behavior is new or has increased and if it seems related to a painful event, loss, or change.

- Talking about wanting to die or to kill oneself.
- Looking for a way to kill oneself, such as searching online or buying a gun.
- Talking about feeling hopeless or having no reason to live.
- Talking about feeling trapped or in unbearable pain.
- Talking about being a burden to others.
- Increasing the use of alcohol or drugs.
- Acting anxious or agitated; behaving recklessly.
- Sleeping too little or too much.
- Withdrawing or feeling isolated.
- Showing rage or talking about seeking revenge.
- Displaying extreme mood swings.

Suicide Is Preventable.

Call the Lifeline at 1-800-273-TALK (8255).

With Help Comes Hope
Symptoms of Clinical Depression

- Sadness (dysphoria)
- Loss of interest in usually pleasurable activities (anhedonia)
- Sleep disturbance – insomnia or hypersomnia
- Appetite change – increased or decreased
- Loss of energy (anergia)
- Guilty feelings
- Impaired concentration
- Psychomotor change – agitation or retardation.
Mr. S (1989)

- 75 year old widowed white male.
- Resides in a senior housing complex in a rural town, 2 hour drive from Rochester.
- Retired local delivery man.
- Father of two sons who live out of state; sister lives in the same complex.
- History of stroke with left sided hemiparesis, colon cancer, hypertensive heart disease.
- Remote history of alcohol misuse; no psychiatric illness.
Mr. S (1989)

- Admitted to rural hospital with gunshot wound to the left chest.
- Transferred to trauma center in Rochester.
- Stabilized, bullet removed, transferred to psychiatry.
What to look for: Risk factors

Axis I
- psychopathology

Axis II
- personality, coping style

Axis III
- physical health

Axis IV
- social context

Axis V
- functioning
What to look for: The common …

- **Stimulus** -- intolerable psychological pain, due to unmet psychological needs.
- **Emotion** -- hopelessness-helplessness.
- **Cognitive state** -- ambivalence.
- **Perceptual state** – constriction.
OPTIMAL SUICIDE PREVENTION =

Indicated +
Selective +
Universal

“MULTI-LAYERED SUICIDE PREVENTION”
OPTIMAL SUICIDE PREVENTION =

Indicated – *detect and treat depression*

+ 

Selective – *optimize independent functioning, increase social connectedness*

+ 

Universal – *education to reduce ageism, gatekeeper programs*
Promoting Emotional Health and Preventing Suicide: A Toolkit for Senior Living Communities.

HHS Publication No. SMA 4515, CMHS-NSPL-0197. Rockville, MD: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration.

http://store.samhsa.gov/product/Promoting-Emotional-Health-and-Preventing-Suicide/SMA10-4515
Suicide in late-life is not an expected or “normal” response to the stresses of aging

**Risk**
- psychiatric illness
- social disconnectedness
- functional impairment
- physical illness
- pain

**Resiliency**
- Positive emotions
- Emotion regulation
- Closeness in relationships

Charles & Carstensen (2010); Gatz et al. 1996

Helpful Review Articles


Thank you

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