Our 21st Century Seatbelt: Restricting Access to Methods in Suicide Prevention

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Disclosure

• I have no relevant financial relationships with the manufacturers(s) of any commercial products(s) and/or provider of commercial services discussed in this CME activity

• I do not intend to discuss an unapproved/investigative use of a commercial product/device in my presentation.
Objectives

- Review trends in suicide for youth
- Identify the most lethal methods used in completed suicides
- Explain how means restriction can be used to decrease risk of suicide attempts
- Learn to discuss means restriction effectively with parents even when it feels awkward.
Age-standardized suicide rates (per 100,000)

A tragic trend

Suicides, United States

<table>
<thead>
<tr>
<th>Year</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>23,443</td>
<td>5,777</td>
</tr>
<tr>
<td>2014</td>
<td>33,059</td>
<td>9,655</td>
</tr>
</tbody>
</table>

Main methods

- **Firearm**: % of total
- **Suffocation**: % of total
- **Poisoning**: % of total

*2011-14: Economist estimates using CDC data

Sources: OECD; US Centres for Disease Control and Prevention

Between 1999-2016, rates rose 45% in KS, 36% in MO (CDC, 2018)

Suicide rates rose across the US from 1999 to 2016.

Males without known mental health conditions more likely to die by firearm
(CDC, 2018)

Differences exist among those with and without mental health conditions. People without known mental health conditions were more likely to be male and to die by firearm.

<table>
<thead>
<tr>
<th>No known mental health conditions</th>
<th>Known mental health conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td><strong>Method</strong></td>
</tr>
<tr>
<td>Male 84%</td>
<td>Poisoning 10% Other 8%</td>
</tr>
<tr>
<td>Female 16%</td>
<td>Suffocation 27%</td>
</tr>
<tr>
<td>Firearm 55%</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Sex</strong></td>
</tr>
<tr>
<td>Male 69%</td>
<td>Poisoning 20% Other 8%</td>
</tr>
<tr>
<td>Female 31%</td>
<td>Suffocation 31%</td>
</tr>
<tr>
<td>Firearm 41%</td>
<td></td>
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</tbody>
</table>


**QuickStats:** Age-Adjusted* Suicide† Rates, by State§ — United States, 2012
Suicide Rate for Youth in KC, MO

Suicide Deaths in KS, 5-24 y/o, 2007-2016, Firearms & Other Causes
Youth Risk Behavior Survey, (Kann et al, 2018)

- 31.5% felt sad or hopeless 2+ weeks
- 17.2% seriously considered suicide
- 13.6% made a plan
- 7.4% attempted suicide
- Less than 2.4% saw a medical provider for the attempt
Means Matter

- Death by asphyxiation is the most common method for young women
- Firearms most common for males
- Females have more attempts, males more completed suicides; M:F 4:1

(CDC, 2015)
Means Restriction:
Modify the environment:
Limiting access to the methods used in suicide

(Yip et al, 2012)

Which Methods Matter?

• Method should contribute substantially to mortality in that area/region
• Method should be something you can eliminate or constrain on a broad scale
• Should be able to monitor impact of intervention

(Yip, et al, 2012)
Many crisis are short-lived

Patients reported time between decision to attempt suicide and taking action:

47% report < 10 minutes

(Deisenhammer EA, et al, 2009)

The Coal Gas Story

• Carbon Monoxide content is decreased in the UK/Scotland in the late 1950’s
• Total suicide rates fell; other methods increased for the youngest, but the overall rate still fell
• Catalytic converters had a similar impact in the US

(Kreitman, 1976)
Sri Lanka

- Pesticides: highly lethal, highly common in Asia
- 1990: Safer storage of pesticides, banned highly toxic pesticides
- WHO: Incidence of suicide:
  - 37.4 in 1995 vs.
  - 11.2 per 100,000 in 2009
- Admissions for drug overdose have increased, but are less lethal (Silva, 2012)

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Israeli Defense Force Suicide Prevention Program

- Interventions:
  - Psychoeducation
  - Increased access to mental health officers
  - No access to weapons on weekends
- Suicide rate: fell by 40%

(Shelef L, Tatsa-Laur L, Derazne E, Mann JJ, Fruchter E, 2015)
### Mortality Rates by Method

<table>
<thead>
<tr>
<th>Most lethal</th>
<th>Least lethal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firearm</strong>: 82.5%</td>
<td>Jumping: 34.5%</td>
</tr>
<tr>
<td>Drowning: 65.9%</td>
<td>Drug/poison ingestion: 1.5%</td>
</tr>
<tr>
<td>Suffocation/hanging: 61.4%</td>
<td>Cut/pierce: 1.2%</td>
</tr>
<tr>
<td>Poison by gas: 41.5%</td>
<td></td>
</tr>
</tbody>
</table>

(Spicer RS, Miller TR, 2000)

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Firearm ownership correlates with suicide rates in males, (Siegel and Rothman, 2016)
Storage Links to Risk

- Population: Youth < 20 years of age
  - Youth who sustained intentional/unintentional self-inflicted GSW, or accidentally shot another
  
  Compared to:
  - Youth not involved in a shooting but with firearms in the home

- Risk of being shot was less if firearms were stored locked, unloaded, ammunition locked up separately

  (Grossman et al, 2005)

Promoting Safe Firearm Storage

- Review of studies published 2000-2012
- Interventions that provided a device to families showed significant improvement in storage practices
- Only ¼ studies without a firearm storage device showed significant improvement (Rowhani-Rahbar, Simonetti, Rivara, 2016)
Means Restriction

Beliefs and Practices in the ER

Beliefs of physicians and nurses:

– 44% thought most/all suicides are preventable
– 84% felt psychiatrists should be responsible for asking about firearms
– 49% of physicians, 72% of nurses “hardly ever” counsel on firearm storage  

(Betz et al, 2013)
What About Method Substitution?

• Some argue “when there’s a will there’s a way”
• Fortunately, research does not support this notion
• Remember Sri Lanka: the more lethal method was less available, so less lethal methods were chosen
• 90% of those who survived a violent attempt did not go on to die by suicide (O’Donnel, Arthur, Farmer, 1994)

Public Opinions on Firearm Counseling

Who agreed it was sometimes appropriate for health professionals to talk about firearms?

• 54% of firearm owners
• 70% of non-owners
• Only 55% participation rate

(Betz, Azrael, Barber, Miller, 2016)
Opinions on Discussions with Pediatricians

• 36% reported firearm ownership, ¼ of owners had at least one firearm stored loaded
• 75% thought pediatricians should advise on safe storage
• 12.8% reported a discussion on firearms with their pediatrician
• 31.5% of firearm owners did not think patients should be asked about ownership  (Garbutt et al, 2016)

Firearm Storage Practices in Homes with Children at High Risk for Self-harm

• Adults who cared for a child were asked about firearm ownership and storage practices
• All were asked about the presence of children with self-harm risk factors living in the home:
  – Depression
  – Mental health conditions outside of depression
  – ADHD

(Scott, Azrael, Miller, 2018)
Firearm Storage: No relation to Risk Factors

- Firearms were present in 43.5% of homes with risk factors, compared with 42.3% with none.
- Families who stored firearms locked, unloaded, with ammunition locked separately:
  - 34.9% with risk factors
  - 31.8% without risk factors

The authors concluded there was no appreciable difference between storage practices in high-risk homes and low-risk homes.

(Scott, Azrael, Miller, 2018) 33

In a recent study, 82% of youth who died by suicide with a gun were not in treatment at the time of their deaths.

(Fowler et al, 2017) 34
How Do You Feel About Firearms?

“Because firearms are the most lethal among suicide methods, it is particularly important that you remove them until things improve at home, or, second best, lock them very securely.”

(https://www.hsph.harvard.edu/means-matter/recommendations/families/#Questions)
No Need to Ask About Ownership!

“Guns are really common in our community, so I’ve started talking to all my families about the safest way to store them. We have free gun locks because storing a gun locked and unloaded is one of the most important things we can all do to keep kids safe”

“I’m not against guns, I’m against your son having access to a gun if he’s feeling desperate. We know teens often have trouble seeing past today, so making sure they don’t have a gun when upset is extremely important. The don’t always understand that this feeling or situation will pass”
"This is one of the hardest conversations I have with parents. But I would much rather for us to both feel uncomfortable right now then someday wish I’d talked to you about this. I have seen too many parents who wish someone would have told them, because having your child attempt suicide is really not something even the best parent is prepared to face. We all want to feel we have done everything possible to keep our kids safe.”
How Are Firearms Stored in Your Home?

• “Lady you don’t live in my neighborhood”
• “My son is safe with guns, he took the safety class, we hunt, he knows how to be safe”
• “Are you trying to say my daughter is going to shoot herself? I know my daughter, she’d never do that”
• “The kids have no idea where we hide the gun”

Position Statement on Banning of Pharmacy Benefit Management Policies that Require the Provision of Dangerous Quantities of Medications

Approved by the Board of Trustees, July 2012
Approved by the Assembly, May 2012

APA POSITION:
Pharmacy Benefit Management companies should offer
Substances found at home are some of the most commonly used in abuse, attempts.

Using household items to get high is dangerous and can be life threatening.
Before you reach for the cleaner or cough medicine, consider the consequences.

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**National Overdose Deaths**

Number of Deaths Involving Opioid Drugs

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**Sources of Prescription Opioids Among Past-Year Non-Medical Users**

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*Data from Substance Abuse and Mental Health Services Administration (SAMHSA).*
*Excludes samples for nonmedical use that were not able to be categorized by age, gender, or race/ethnicity.*
*Includes data from NPS (or actions) and nonmedical use of substances from illegal sources, such as friends, family, or friends.*
*Includes data from the internet.*
Medication Storage

- Lock up full bottles
- Use pill boxes
- Keep small amounts of PRN meds available unlocked
- Educate parents on the impulsive nature of teens
- Point out that OTC meds can be dangerous
Dispose of Old Meds!

• DEA has a helpful website for specific guidance: https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm101653.htm
• Next Take Back day is October 27
• Some pharmacies/hospitals now taking meds back
• Dispose of meds in a Ziploc mixed with coffee grounds or kitty litter, sealed, into the trash

Our 21° Century Seatbelt

• Limit access to firearms
• Limit access to sharps
• Lock up ALL medications, especially OTC, ETOH
• Dispose of old medications
• Open door policy
• Suicideproof.org
Questions?

Resources on Suicide

- Suicide prevention hotline and chat:
  - [https://suicidepreventionlifeline.org/](https://suicidepreventionlifeline.org/)
- Local resources on suicide prevention:
  - [http://speakup.us/](http://speakup.us/)
  - [https://dmh.mo.gov/mentalillness/suicide/](https://dmh.mo.gov/mentalillness/suicide/)
- Support for survivors of suicide (local):
Resources continued

- National Data and Resources:
  - https://www.cdc.gov/vitalsigns/suicide/index.html
  - https://afsp.org/
  - https://www.hsph.harvard.edu/means-matter/
  - https://childmind.org/audience/for-families/
  - http://reportingonsuicide.org/

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• https://www.hsph.harvard.edu/means-matter/recommendations/families/#Questions

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