Clinicians’ Role in Preventing Firearm Injury

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Overview

How do violence, firearms and healthcare intersect?

What role can clinicians play to reduce gun injury and death?
Firearm Deaths, United States 2015

Firearm Deaths (N=36247)

- Homicide: 13049
- Suicide: 22111

Homicide  Suicide
Firearm deaths: Segmentation by Intent

<table>
<thead>
<tr>
<th>Suicide</th>
<th>Homicide</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Adolescent</td>
<td>• Associated with criminal activity</td>
</tr>
<tr>
<td>• Elderly</td>
<td>• Intimate Partner</td>
</tr>
<tr>
<td></td>
<td>• Other perpetrator known to victim</td>
</tr>
<tr>
<td></td>
<td>• Stranger /random</td>
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<tr>
<td></td>
<td>• Legal intervention</td>
</tr>
<tr>
<td></td>
<td>• Youth</td>
</tr>
</tbody>
</table>

Unintentional/accidental
Firearm suicide and homicide rates, by age, 2017

Web-based Injury Statistics Query and Reporting System (WISQARS), CDC
Firearm deaths: Segmentation by Intent

Fall: 28.4%

Cut/Pierce: 6.9%

Struck by / Against: 16.9%

Poisoning: 6.7%

Overexertion: 8.5%

Motor Vehicle Occupant (Transp): 8.3%

Other Specified: 8.1%

Other Bite,...: 3.9%

Unknown / Unspecified: 2.5%

Foreign Body: 1.9%
Gun Injuries by Intent, USA

**Fatal**
- Suicide: 22,274
- Homicide: 12,830
- Unintentional Deaths: 487
- Shootings by Law Enforcement: 496
- Undetermined: 295

**Non-Fatal**
- Assault: 76,258
- Unintentional: 18,362
- Self-Harm: 4,149
- Shootings by Law Enforcement: 1,350

Centers for Disease Control and Prevention. National Center for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS) Fatal Injury Reports. A yearly average was developed using five years of most recent available data: 2013 to 2017.
Why Do People Own Firearms?

Reasons

- Protection
- Hunting
- Other sports
Association of Ownership with Risk

Household risk is to all members

- Homicide: OR=3.2
- Suicide: OR= 2.0

Anglemyer, et al; Ann Int Med 2014
Haddon’s Matrix: A Framework for Injury Prevention

<table>
<thead>
<tr>
<th>Human Factors</th>
<th>Pre-event</th>
<th>During event</th>
<th>Post-event</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education and licensing</td>
<td>Health at time of crash</td>
<td>Response to EMS</td>
<td></td>
</tr>
<tr>
<td>Driver impairment</td>
<td>Sitting properly in restraint</td>
<td>Severity of injury</td>
<td></td>
</tr>
<tr>
<td>Crash avoidance maneuvers</td>
<td>Impairment</td>
<td>Type of injury</td>
<td></td>
</tr>
<tr>
<td>(braking, turning, etc.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vehicle/Equipment Factors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crash avoidance equipment</td>
<td>Speed of travel</td>
<td>Ease of extraction from vehicle</td>
<td></td>
</tr>
<tr>
<td>and technology (lights, tires,</td>
<td>Functioning of safety equipment (seat belts, air bags, child restraints)</td>
<td>Integrity of fuel systems and battery systems</td>
<td></td>
</tr>
<tr>
<td>collision avoidance, etc.)</td>
<td>Energy absorption of vehicle</td>
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<td></td>
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<tr>
<td>Vehicle design</td>
<td></td>
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<td></td>
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<tr>
<td>Vehicle load</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Physical Environment</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Road hazards</td>
<td>Roadside features</td>
<td>Distance of EMS personnel</td>
<td></td>
</tr>
<tr>
<td>Distractions</td>
<td>Guardrails</td>
<td>Notification of EMS personnel</td>
<td></td>
</tr>
<tr>
<td>Weather conditions</td>
<td>Type and size of object struck</td>
<td>Accessibility to crash victims</td>
<td></td>
</tr>
<tr>
<td>Social/Economic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enforcement activities</td>
<td>Laws concerning use of safety equipment</td>
<td>Trauma system equipment, personnel, training</td>
<td></td>
</tr>
<tr>
<td>Insurance incentives</td>
<td></td>
<td>Information sharing</td>
<td></td>
</tr>
<tr>
<td>Social norming</td>
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<td></td>
</tr>
</tbody>
</table>
Role of Clinicians in Preventing Firearm Injury

Which cells in the Matrix are likely to be influenced by clinicians?

- Host/Pre-event—Reducing Risk behavior
- Host/Post-event---Trauma Care
- Agent/Pre-event—Influencing acquisition by host
- Environment Pre-event--: influence storage by host
- Environment Post-event: EMS/Trauma systems organization, 911
Steps you can take today

**Recognize and Mitigate Risk**

**Screening patients**

- Depression/ suicidality
- Alcohol Misuse
- Intimate Partner violence
## Screening for Depression/Suicidality

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade (What's This?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General adult population, including pregnant and postpartum women</td>
<td>The USPSTF recommends screening for depression in the general adult population, including pregnant and postpartum women. Screening should be implemented with adequate systems in place to ensure accurate diagnosis, effective treatment, and appropriate follow-up.</td>
<td>B</td>
</tr>
</tbody>
</table>
Depression ScreeningCascade

PHQ-2

PHQ-9

C-SSRS

Access to Firearms
## Reducing Unhealthy Alcohol Use (Nov 2018)

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade (What's This?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adults 18 years or older, including pregnant women</td>
<td>The USPSTF recommends screening for unhealthy alcohol use in primary care settings in adults 18 years or older, including pregnant women, and providing persons engaged in risky or hazardous drinking with brief behavioral counseling interventions to reduce unhealthy alcohol use.</td>
<td>B</td>
</tr>
<tr>
<td>Adolescents aged 12 to 17 years</td>
<td>The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening and brief behavioral counseling interventions for alcohol use in primary care settings in adolescents aged 12 to 17 years. See the Clinical Considerations section for suggestions for practice regarding the I statement.</td>
<td>I</td>
</tr>
</tbody>
</table>

Screening for Alcohol Misuse

Audit-C

Audit

Referral
## Screening for IPV and Elder Abuse (Oct 2018)

<table>
<thead>
<tr>
<th>Population</th>
<th>Recommendation</th>
<th>Grade (What's This?)</th>
</tr>
</thead>
</table>
| Women of reproductive age   | The USPSTF recommends that clinicians screen for intimate partner violence (IPV) in women of reproductive age and provide or refer women who screen positive to ongoing support services.  
See the Clinical Considerations section for more information on effective ongoing support services for IPV and for information on IPV in men.                                                                 | B                    |
| Older or vulnerable adults  | The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for abuse and neglect in all older or vulnerable adults.  
See the Clinical Considerations section for suggestions for practice regarding the I statement.                                                                                                                          | I                    |

Step 2: Incorporate Firearms safety into Injury Prevention counseling

Key populations at risk: adolescents and young adults, elderly, firearm injury victims, dementia

Focus on the household environment

Help patients understand what is known about risk of household ownership, and how little evidence we have about potential benefits of ownership

Counseling regarding safe storage and estimates of protective value
Safe Storage Counseling

What is Safe Storage?

Firearms are:
- Unloaded
- Locked with a device or in a container
- Ammunition stored separately and locked

Current Practices

- 46% of owners report safely storing all guns
- 30% of owners report storing at least one gun loaded and unlocked
- 25% store all weapons unloaded and unlocked
- 46% store weapon either locked and loaded OR unlocked and unloaded

Azrael, et al. 2015 National Firearms Survey
Tips for Changing Storage Practice

- Make it easier for patients to access devices
- Be specific and concrete on how to improve storage
Influence your work environment

Healthcare leads other occupations in rates of violent injury

Work with your institution to develop policies regarding the building environment:
- No weapons permitted except law enforcement
- No open carry

Ensure robust workplace violence policies in place
Resources

USPSTF Recommendations

UC Davis clinician counseling recommendations

OSHA and ACEP workplace violence resources
Preventing Firearm-Related Death and Injury

Rocco Pallin, MPH; Sarah Beth A. Spitzer, BA; Megan L. Ranney, MD, MPH; Marian E. Betz, MD, MPH; Garen J. Wintemute, MD, MPH

Abstract

Deaths and injuries from firearms are significant public health problems, and clinicians are in a unique position to identify risk among their patients and discuss the importance of safe firearm practices. Although clinicians may be ill-prepared to engage in such discussions, an adequate body of evidence is available for support, and patients are generally receptive to this type of discussion with their physician. Here, we provide an overview of existing research and recommended strategies for counseling and intervention to reduce firearm-related death and injury.

Firearm-related death and injury are significant public health problems in the
Thank you