Gun Violence in Maine
Public Health Perspective

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Outline

1. US Large Problem with Gun Violence
2. Public Health Approach
3. Background Checks
4. Suicide
US Civilian Deaths

More Americans have died from guns in the United States since 1968 than on battlefields of all the wars in American history.
Among high income countries: firearm death is a uniquely American problem
U.S. vs. Other First World Countries

- We have similar non-gun crime rates
- We have more households with guns
- And particularly HANDGUNS
- We have the weakest gun laws
### Mortality Rate Ratio

<table>
<thead>
<tr>
<th>Category</th>
<th>Mortality Rate Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Homicides</strong></td>
<td></td>
</tr>
<tr>
<td>Gun homicides</td>
<td>18.5</td>
</tr>
<tr>
<td>Non-gun homicides</td>
<td>1.4</td>
</tr>
<tr>
<td>Total</td>
<td>3.4</td>
</tr>
<tr>
<td><strong>Suicides</strong></td>
<td></td>
</tr>
<tr>
<td>Gun Suicides</td>
<td>11.2</td>
</tr>
<tr>
<td>Non-gun Suicides</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>1.5</td>
</tr>
<tr>
<td><strong>Unintentional firearm deaths</strong></td>
<td>12.2</td>
</tr>
<tr>
<td><strong>Total firearm deaths</strong></td>
<td>14.2</td>
</tr>
</tbody>
</table>

Source: Grinshetyn & Hemenway AJM 2016
And within the US, lots of evidence that where more guns, more death

- More homicide because more gun homicide
- More suicide because more gun suicide
- More unintentional gun fatalities
## Police as Victims

### # Killed (1996-2010)

<table>
<thead>
<tr>
<th></th>
<th>High Gun States</th>
<th>Low Gun States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household Gun Ownership</td>
<td>52%</td>
<td>14%</td>
</tr>
<tr>
<td>LEOs 1996-2010</td>
<td>2.7m</td>
<td>2.7m</td>
</tr>
<tr>
<td>Homicide Deaths</td>
<td>263</td>
<td>85</td>
</tr>
<tr>
<td>Homicide Rate per 100,000 LEO</td>
<td>9.5</td>
<td>3.1</td>
</tr>
</tbody>
</table>

Swedler et al APHA 2015
2. Promoting the Public Health Approach to Gun Violence Prevention
Now everyone wants to use the public health approach: to everything

- Antimicrobial resistance
- Bereavement
- Bullying
- Climate change
- Cyber security
- Education
- Fracking
- Gambling
- Homelessness
- Justice reform
- Malware propagation
- Obesity
- Parenting
- War
The Public Health Approach
One Sentence Description

Make it easy for people to stay healthy
And difficult to become sick or injured.
Five key elements of the Public Health Approach

- Prevention (upstream if possible)
The Public Health Approach

- Population based (not named individuals)
The Public Health Approach

- Systems Approach
Public Health Approach

- Broad and Inclusive (get everyone to help)
- Less Blame, more shared responsibility
“While We Were Sleeping”
Success Stories in Injury Prevention

David Hemenway, PhD
Harvard Injury Control Research Center
A Key Insight from Successes: Don’t have to change people

More cost-effective to change product and the environment

Goal to create a system

• Hard to make mistakes
• Hard to behave inappropriately

• If some still do, ensure that no one seriously injured
First Step in Public Health Approach

- Create a good data system

National Violent Death Reporting System (NVDRS) for firearm and other violent deaths
Fatal Gun Accidents of Children

Claims of gun advocates (John Lott)
“There are only 60 unintentional firearm deaths each year to children (age 0-14)”

“About two thirds of accidental deaths to children are not shots fired by other little kids but rather adult males with criminal backgrounds”
Actual Unintentional Firearm Deaths to Children (age 0-14)

1. Some 110 deaths/year (80% more than Vitals reports) Vital Statistics good for overall gun deaths, not good classifying unintentional shootings vs. homicides of children.

2. Children killing children
1/3 self inflicted;
1/3 other children as shooters;
1/6 older teenagers as shooters;
most of the rest are parents as shooters

Hemenway & Solnick Injury Ept 2015
# Unintentional Child Firearm Deaths

<table>
<thead>
<tr>
<th>Years</th>
<th>Deaths/million</th>
<th>% Male</th>
<th>% Other Inflicted</th>
<th>% At Friends House</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>0.4</td>
<td>29%</td>
<td>86%</td>
<td>0%</td>
</tr>
<tr>
<td>2-4</td>
<td>1.6</td>
<td>88%</td>
<td>29%</td>
<td>0%</td>
</tr>
<tr>
<td>5-10</td>
<td>1.1</td>
<td>72%</td>
<td>69%</td>
<td>0%</td>
</tr>
<tr>
<td>11-12</td>
<td>2.1</td>
<td>83%</td>
<td>67%</td>
<td>39%</td>
</tr>
<tr>
<td>13-14</td>
<td>2.5</td>
<td>95%</td>
<td>69%</td>
<td>45%</td>
</tr>
</tbody>
</table>

Hemenway & Solnick
Injury Epidemiology
2015
Of interest

- Mostly shot by someone else (older brother or friend)
- But 2-4 year olds have relatively high rates of accidental firearm deaths AND shoot selves
- No one shot at a friends house before the age of 11.
Policy

For 2-4 year olds—child proof guns

For 10+ year old males—ASK campaign
Read all cases:
Most common circumstance

- “I didn’t know the gun was loaded”
Policy

- Blame kid
- Blame parents

- Or solve problem

--magazine safety--
Policies

- Safe Storage
- Smart Guns
Why Physicians Need to talk with Parents
(MDs experts of child development)
Parents and Children (≤14 years old)
Alabama Pediatricians/Family Practice Offices
N=200 gun owners

Has your child handled gun in the home?
Parents Report:
Yes: 30%        No : 70%

In homes where parents report “No”, children report:
Boys: Yes 36%
Girls: Yes 12%

Baxley and Miller, Annals Ped Adolesc Med. 2006
3. Background Checks

Every gun begins as a legal gun

1. Weak background checks: Appears that most suicides, most homicides, the shooter could pass a NICS check

2. Easy for those who can’t pass a background check to obtain a firearm—e.g., theft, straw purchases, sales without a background check.
No Background Check Transfers Common

HICRC National Gun Survey
(N = 4000)
When got most recent gun...

41% of transfers no background check
(25% of gun purchases)
(79% of non-purchases)

Azrael et al 2017
“Whether it is legal or not, it is not acceptable to sell a gun to a stranger without a background check.”

Agree: 73%
Disagree: 11%

Harvard National Firearm Survey 2015
Effects others: Gun Traces 2015

<table>
<thead>
<tr>
<th></th>
<th>MA Traces (1124)</th>
<th>ME Traces (300)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>37%</td>
<td>ME</td>
</tr>
<tr>
<td>NH</td>
<td>12%</td>
<td>NH</td>
</tr>
<tr>
<td>ME</td>
<td>8%</td>
<td>FL</td>
</tr>
<tr>
<td>GA</td>
<td>5%</td>
<td>MA</td>
</tr>
<tr>
<td>FL</td>
<td>5%</td>
<td>NC</td>
</tr>
</tbody>
</table>

MA pop 6.8 million

ME pop 1.3 million

ATF data
4. Suicide Prevention

Without changing any laws,
Without changing anyone’s mental health
Reduce Access to Lethal Means
Pesticides are the leading suicide method in Sri Lanka. The most highly human-toxic pesticides were banned in the mid to late 1990s. Suicide rates dropped 50% from 1996 to 2005. Nonfatal pesticide attempts, and suicide by other methods, did not drop.
Britain & Domestic Gas

- Before 1960, domestic gas was the leading method of suicide in England and Wales.
- By 1970, almost all domestic gas in the UK was non-toxic.
- Suicide rates dropped by about a third.
- The drop was driven by a drop in gas suicides; non-gas suicides increased slightly.
Israeli Defense Force (IDF) & Firearms

- Almost all 18-21 year-olds Israelis serve.
- In the early 2000s, IDF focused on preventing suicides—90% by firearm; many during weekend leave.
- In 2006, IDF required soldiers to leave weapons on base during weekend leaves.
- The suicide rate decreased by 40%.
- Weekend suicides dropped significantly.
- Weekday suicides did not.

Lubin 2010, Suic & Life-Threat Behavior.
Suicide: Scientific Evidence Overwhelming

Sixteen case-control studies

<table>
<thead>
<tr>
<th>Study, Year (Reference)</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Suicide studies</strong></td>
<td></td>
</tr>
<tr>
<td>Beauvais et al, 1996 (20)</td>
<td>1.38 (0.96–1.99)</td>
</tr>
<tr>
<td>Cummings et al, 1997 (22)</td>
<td>1.9 (1.42–2.54)</td>
</tr>
<tr>
<td>Brent et al, 1991 (17)</td>
<td>2.1 (1.20–3.69)</td>
</tr>
<tr>
<td>Dahlberg et al, 2004 (23) (women)</td>
<td>2.3 (1.03–5.14)</td>
</tr>
<tr>
<td>Kung et al, 2005 (19)</td>
<td>2.6 (2.29–2.96)</td>
</tr>
<tr>
<td>Brent et al, 1988 (16)</td>
<td>2.7 (1.14–6.39)</td>
</tr>
<tr>
<td>Kung et al, 2003 (18) (women)</td>
<td>2.99 (1.58–5.65)</td>
</tr>
<tr>
<td>Conwell et al, 2002 (21)</td>
<td>3.23 (1.04–10.08)</td>
</tr>
<tr>
<td>Mahon et al, 2005 (25)</td>
<td>3.29 (1.12–9.64)</td>
</tr>
<tr>
<td>Wiebe, 2003 (33)</td>
<td>3.44 (3.06–3.86)</td>
</tr>
<tr>
<td>Kung et al, 2003 (18) (men)</td>
<td>3.53 (2.42–5.15)</td>
</tr>
<tr>
<td>Shah et al, 2000 (8)</td>
<td>3.91 (1.11–13.78)</td>
</tr>
<tr>
<td>Brent et al, 1993 (32)</td>
<td>4.4 (1.10–17.55)</td>
</tr>
<tr>
<td>Kellermann et al, 1992 (7)</td>
<td>4.8 (2.71–8.52)</td>
</tr>
<tr>
<td>Grassel et al, 2003 (24)</td>
<td>6.8 (5.71–8.11)</td>
</tr>
<tr>
<td>Dahlberg et al, 2004 (23) (men)</td>
<td>10.38 (5.75–18.74)</td>
</tr>
<tr>
<td><strong>Pooled estimate</strong></td>
<td>3.24 (2.41–4.40)</td>
</tr>
</tbody>
</table>

**Homicide studies**

Diagram illustrating the odds ratio and 95% confidence interval (CI) for each study, with a pooled estimate also shown.
### Ecological Studies (Cities, States, Regions) (e.g. New England)

#### Suicide Rate per 100,000 2005-2014

<table>
<thead>
<tr>
<th>State</th>
<th>Households with Firearms (%)</th>
<th>Overall</th>
<th>Firearm</th>
<th>Non-Firearm</th>
</tr>
</thead>
<tbody>
<tr>
<td>VT</td>
<td>48%</td>
<td>15.6</td>
<td>8.5</td>
<td>7.2</td>
</tr>
<tr>
<td>ME</td>
<td>45%</td>
<td>15.0</td>
<td>8.0</td>
<td>7.1</td>
</tr>
<tr>
<td>NH</td>
<td>33%</td>
<td>14.0</td>
<td>6.5</td>
<td>7.5</td>
</tr>
<tr>
<td>CT</td>
<td>21%</td>
<td>9.2</td>
<td>2.9</td>
<td>6.4</td>
</tr>
<tr>
<td>RI</td>
<td>16%</td>
<td>10.1</td>
<td>2.5</td>
<td>7.6</td>
</tr>
<tr>
<td>MA</td>
<td>14%</td>
<td>8.3</td>
<td>1.8</td>
<td>6.5</td>
</tr>
</tbody>
</table>
Disseminating the Message

- Suicide Experts
  - Army, VHA, National-State Strategies

- Providers/Gatekeepers
  - Lethal Means Counseling (suicide prevention plans)

- Gun-Owning Community
  - Expand firearm safety to include suicide prevention
Gatekeepers Training: CALM-Online

- Counseling on Access to Lethal Means – Free online training by Harvard, Dartmouth, & SPRC
  http://training.sprc.org
Gun organizations are very safety oriented.

- Emphasis on preventing gun accidents (~500 deaths a year) and family protection.
- Expand focus to include preventing firearm suicides (21,000 deaths a year); falls within the safety culture of gun groups.
- Some gun-owner groups have already begun.
Working with gun advocates to reduce suicide

- Gun Shop Project
- Gun Trainers (suicide modules)
“We hope you will join us in a new effort to prevent suicide in Maryland. Our goals include: 1) informing firearm retailers and ranges about suicide so you and your staff can be alert for signs that a customer may be seeking a firearm for that purpose; 2) educating all customers that if someone they know is at risk of suicide they should act to reduce their access to firearms”
Gun Trainers

- Suicide Prevention Modules in MA, UT
  --when you might want someone to babysit your gun--
11. Consider temporary off-site storage if a family member may be suicidal. When an emotional crisis (like a break-up, job loss, legal trouble) or a major change in someone’s behavior (like depression, violence, heavy drinking) causes concern, storing guns outside the home for a while may save a life. Friends as well as some shooting clubs, police departments, or gun shops may be able to store them for you until the situation improves.
“While We Were Sleeping”
Success Stories in Injury Prevention

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U Cal Press (2009)