

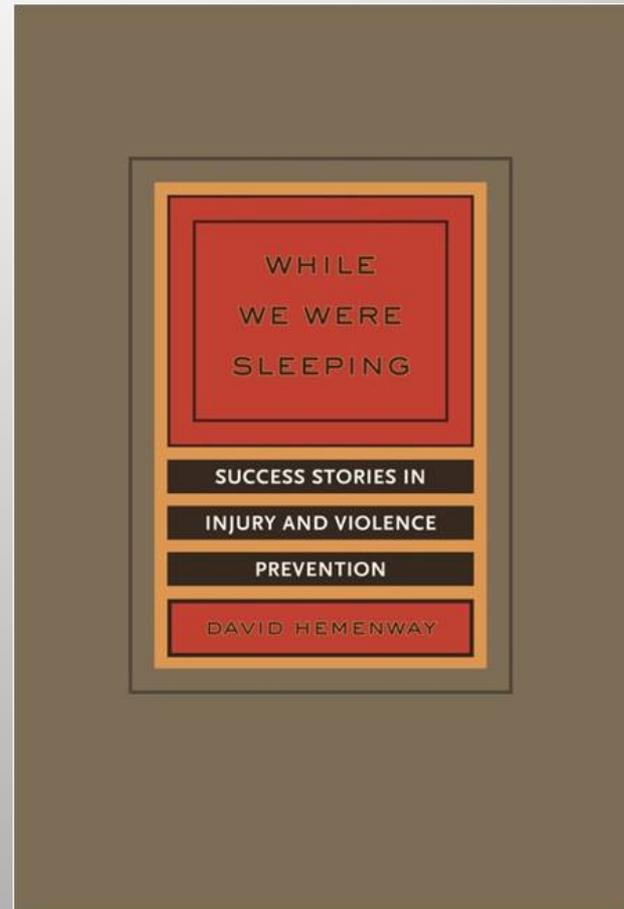
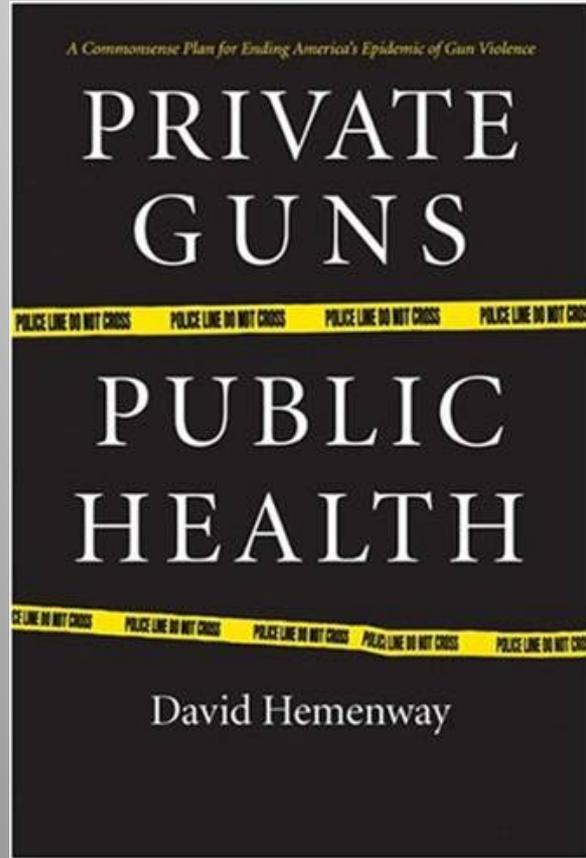
Guns and Public Health

David Hemenway

New Hampshire Public Health
Association Fall Forum

Bedford NH

October 1, 2014



Outline

- Guns Create Serious PH Problems in US
- Including to Children and Women
- How We Can Live With Guns

Motor Vehicle Analogy

- Gun Industry Unwarranted Protections
- Policies—Supported by the Public
- Changing Social Norms
- Importance of Data Systems
- Other Ways to Reduce Violence

Newtown Shooting

School Shooters

- Young
- Males
- Troubled
- Easy access to guns

My focus: Easy Access to Guns



Three of the findings from the scientific literature illustrated by the Newtown Shootings

A gun in the home increases the likelihood of:

- 1) Suicide of someone in the family
- 2) Murder of a female family member
- 3) Gun deaths of others in the community

(since 1994, every gun originally owned by someone who could pass a Brady background check)

School or Mass Shootings: one part of larger gun problem

- Horrific
- Get media attention
- Window of opportunity to do something about our gun problem
(e.g., Dunblane, Port Author massacres)

Mass Shootings

(FBI definition: 4 people murdered with gun)

January 2009-September 2013

- 93 incidents (almost 2/month)
- 57% shooter a family member
- 43% a prohibited possessor
- 67% in private residences; 15% in gun free zones
-

US Gun Deaths

In 2011: Per Day

>290 shot

>88 die

2011 Violent Deaths

Homicides	16,238
Firearm Homicide	11,068 (68%)
Suicides	39,518
Firearm Suicides	19,990 (51%)
Unintentional Firearm Deaths	<u>591</u>
Total Firearm Deaths	32,351

U.S. vs. Other First World Countries (Similarities)

Similar Crime

Similar Violence

Similar Bullying rates

Similar Fighting/Depression rates
among school children

Percentage of People Victimized in 2000

(from comparable victimization surveys)

Nation	Car Theft	Burglary	Robbery	Sexual Incident	Assault or Threat	11 Crimes**
United States	0.5	1.8	0.6	1.5	3.4	21.1
17 Industrialized Nations*	1.0	1.8	0.8	1.7	3.5	21.3

*Australia, Belgium, Canada, Catalonia (Spain), Denmark, England & Wales, Finland, France, Japan, Netherlands, Northern Ireland, Poland, Portugal, Scotland, Sweden, Switzerland, USA

**Additional crimes: theft from car, car vandalism, motorcycle theft, bike theft, attempted burglary, personal theft

U.S. vs. Other First World Countries

Differences

- More private guns

Handguns

+ Permissive gun laws

= More gun homicides

= **MORE HOMICIDES**

Firearm Regulations

Country	License System	Storage Regulations	Training Certificate Needed for Purchase	Handgun Ownership Permitted for Protection
Australia	Yes	Yes	Yes	No
Austria	Yes	Yes		Yes
Belgium	Yes	Yes	Yes	Yes
Canada	Yes	Yes	Yes	No*
Finland	Yes	No		No
Germany	Yes	Yes		Yes
Japan	Yes	Yes	Yes	No
New Zealand	Yes	Yes	Yes	No
Norway	Yes	Yes	Yes	Yes
Spain	Yes	Yes	Yes	Yes
Sweden	Yes	Yes		No
Switzerland	Yes	Yes	No	Yes
UK	Yes	Yes		No*
United States	No	No		Yes

Source: United Nations International Study of Firearm Regulation. New York: United Nations. 1998.

A blank indicates "No Response."

*In exceptional cases, permit may be issued.

Firearm and Non-Firearm Homicide Rates per 100,000

Nation	Firearm Homicide Rate	Non-Firearm Homicide Rate	Total Homicide Rate	Percentage of Households with Guns
United States	3.1	1.5	4.6	35%
United Kingdom	0.1	1.3	1.4	7%
Canada	0.6	1.2	1.8	24%
Australia	0.1	1.3	1.4	15%
New Zealand	0.2	0.9	1.1	23%

Sources: UK: UCR 2009, norc.org (2006)
 UK: UNODC 2008; Small Arms Survey 2007
 Canada: Beattie 2009, Royal Canadian mounted Police 2010
 Australia: AU Bureau of Statistics 2009; Small Arms Survey 2007
 New Zealand: UNODC 2008; Small Arms survey 2007

Homicide, Suicide, and Unintentional Gun Deaths among 5-14 year olds:
 The United States vs. the Other High Income Populous Countries, early 2003

	Mortality Rate Ratio
Homicides	
Gun homicides	13.2
Non-gun homicides	1.7
Total	3.4
Suicides	
Gun Suicides	7.8
Non-gun Suicides	1.3
Total	1.7
Unintentional firearm deaths	10.3

Homicide, Suicide, and Unintentional Gun Deaths among 15-24 year olds:
The United States vs. the Other High Income Populous Countries, early 2003

	Mortality Rate Ratio
Homicides	
Gun homicides	42.7
Non-gun homicides	3.4
Total	14.2
Suicides	
Gun Suicides	8.8
Non-gun Suicides	0.6
Total	1.2
Unintentional firearm deaths	11.6

Homicide, Suicide, and Unintentional Gun Deaths among 15-24 year olds:
 The United States WHITES ONLY vs. the ALL RACES in the Other High
 Income Populous Countries, 2003

	Mortality Rate Ratio
Homicides	
Gun homicides	16.7
Non-gun homicides	3.4
Total	7.4
Suicides	
Gun Suicides	8.9
Non-gun Suicides	0.6
Total	1.2
Unintentional firearm deaths	12.0

U.S. Ecological Studies

U.S. Case Control Studies

Where more guns,
more homicide because more gun homicide
more suicide because more gun suicide

State Studies:

Factors held constant:

- Poverty
- Alcohol Consumption
- Unemployment
- Urbanization
- Divorce
- Education
- Violent Crime

- Major Depression
- Suicidal Thoughts
- Suicide Attempts (Hospitalized)

Violent Deaths, 2001-2007, U.S. Children (aged 5-14)

	High-Gun States	Low-Gun States	Mortality Rate Ratio (High Gun : Low Gun)
Total population, 5-14 Year Olds (2001-2007)	36.7 million	37.5 million	
Homicides			
Gun homicides	184	79	2.3
Non-gun homicides	141	130	1.1
Total	325	209	1.6
Suicides			
Gun Suicides	117	10	11.7
Non-gun Suicides	178	119	1.5
Total	295	129	2.3
Unintentional firearm deaths	112	12	9.3

The 15 States with the highest average levels of household gun ownership (based on the 2001 Behavioral Risk Factor Surveillance System) were WY, MT, AK, SD, AR, WV, AL, ID, MS, ND, KY, WI, SC, UT, and LA. The 6 States with the lowest average gun levels were HI, MA, RI, NJ, CT, and NY.

Source: WISQARS

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%

Violent Deaths to US Women

2001-2007

	High-Gun States	Low-Gun States	Mortality Rate Ratio (High Gun : Low Gun)
Total population, Female (2001-2007)	134.1 million	144.4 million	
Homicides			
Gun homicides	1978	780	2.5
Non-gun homicides	2305	2240	1.0
Total	4283	3020	1.4
Suicides			
Gun Suicides	2926	406	7.2
Non-gun Suicides	3621	3638	0.9
Total	6547	4044	1.6
Unintentional firearm deaths	205	29	7.0

Violent Deaths to Women

2002-2011

	High-Gun States	Low-Gun States	Mortality Rate Ratio (High Gun : Low Gun)
Total population, 2002-2011	196 million	207 million	
Homicides			
Gun homicides	3266	1123	3.1
Non-gun homicides	2647	2186	1.3
Total	5913	3309	1.9
Suicides			
Gun Suicides	4508	616	7.7
Non-gun Suicides	5831	5680	1.1
Total	10339	6296	1.7
Unintentional/Undetermined firearm deaths	396	48	8.7
Total Firearm Deaths	8183	1796	4.8

SUICIDE

- More than a dozen case-control studies
- Ecological studies (across regions, states, cities)

Case-Control – Western PA (47 cases, adolescents)

	<u>Cases</u>	<u>Controls</u>	
		Suicide attempters	Psych In-Patient Never-Suicide
Firearm in home	72%	37%	38%
Handgun	55%	20%	17%

Brent et al. JAMA 1991

A Gun in the Home: increases risk of suicide:

- Gun owner
- Gun owner's spouse
- Gun owner's children

1. Suicides often impulsive

2. Risks Transitory

3. Guns are highly lethal

Impulsive?

Nearly Lethal Suicide Attempts (Houston)

N=153 (ages 13-34)

Time between thinking about suicide and taking action:

<5 minutes	24%
<20 minutes	48%
<1 hour	70%
<8 hours	86%

Risks Transitory?

What Percent of Survivors of Near-Lethal Suicide Attempts Eventually Complete Suicide?

- 10%
- 25%
- 50%
- 75%
- 90%

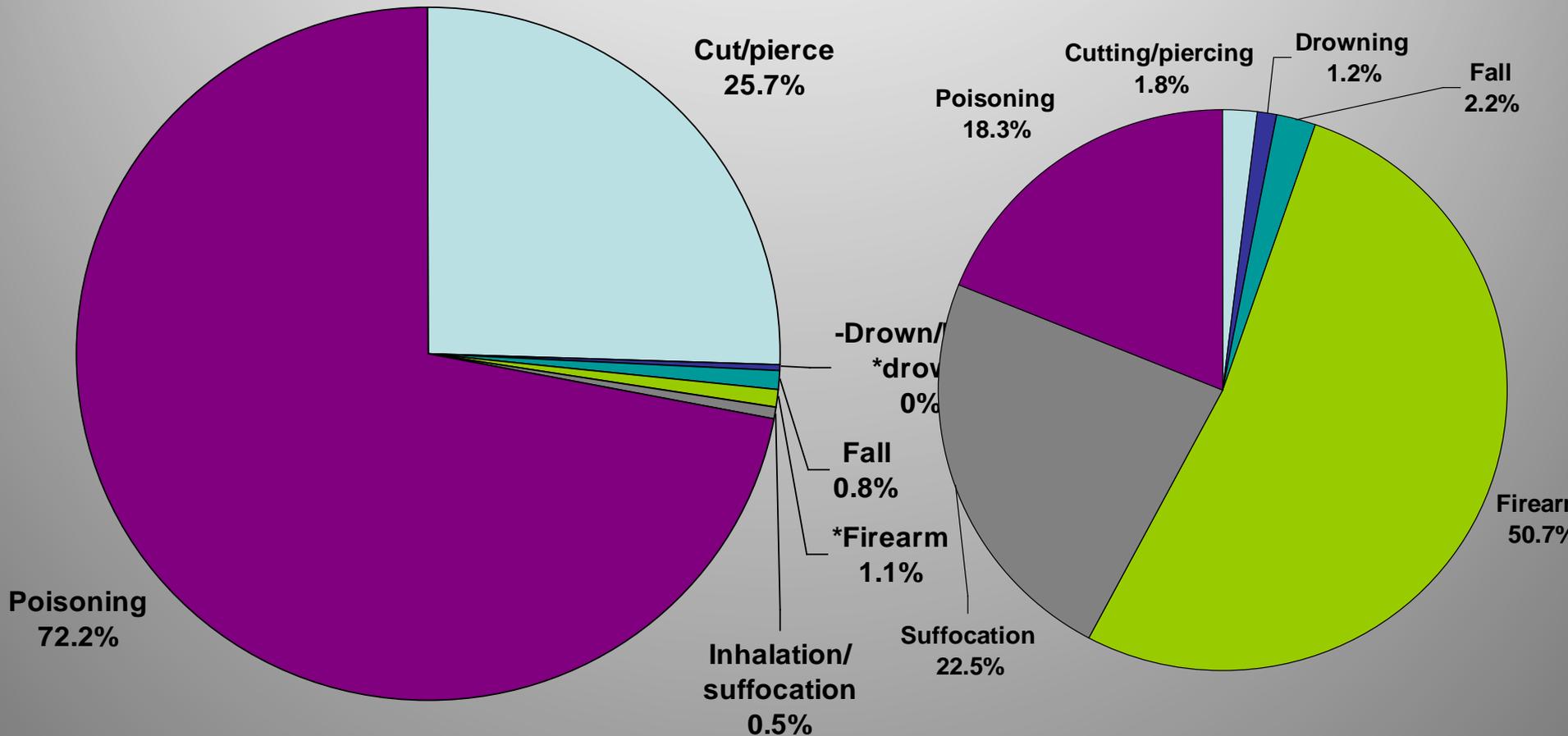
< 10 %

*of survivors of near-lethal suicide attempts
commit suicide*

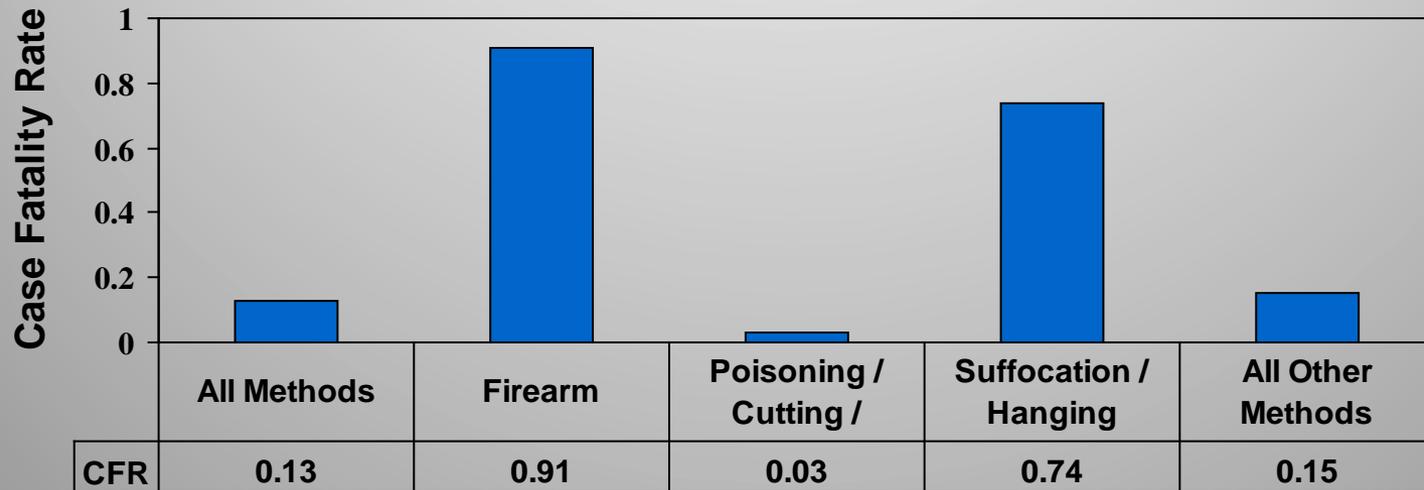
Lethality

Non-fatal Self-Harm (ED data)
n = 299,816

Suicide
n = 32,026



Case Fatality Rates



A gun in the home

- Increases risk of femicide
- Increases risk of gun accidents

Benefits of Guns?

1. Deterrence?

Benefits of Guns?

1. Deterrence?

Where more guns, more burglaries

2. Thwarting Crime?

Self-Defense Gun Use (NCVS 2007-2011)

- Rare: Fewer than 1% of victims in contact crimes use a gun. In sexual assaults, 0/337)
- Half of all sdgu in non-violent crimes (verbal threats; property crimes)
- Most by men. 2/3 of sdgu away from home

2.Thwarting Crime?

Self-Defense Gun Use: Effectiveness

Percent of Victims Physically Injured after Self-Defense (2007-2011 NCVS)	
Type of Victim Action	
Call Police	2.2
Run Away	2.4
Threaten/Attack w/ Gun	4.1
Threaten/Attack w/ other weapon	5.3
All	4.2

Policy

Public Health Approach

- Prevention (upstream if possible)
- Population-based (not named individuals)
- Systems Approach
- Broad and Inclusive
- Not Blame but Shared Responsibility

Motor Vehicle Injuries One of 10 great public health accomplishments of 20th Century (CDC)



Key Insight: Don't have to change people

Create a system

- Hard to make mistakes
- Hard to behave inappropriately
 - If do, no one seriously injured

Want to live with motor vehicles, not die from motor vehicles.

Similarly with guns

Policy Examples

Manufacturers:

A) Reduce Crime

1. Unique serial numbers
2. Hard to obliterate
3. Ballistic fingerprinting

Policy Examples

- Manufacturers (2)

- B) Reduce Accidents

1. Guns can't go off when dropped
2. Child-proof guns
3. Magazine safeties

- C) Reduce Crime, Accidents, Suicide

1. Personalized guns

Policy Examples

Distributors:

Universal background checks

One gun per month laws

Dealers use best methods to reduce
straw purchases, theft

Sting operations for scofflaw dealers

Dealers in Massachusetts

- Require Dealer Licensing (1 of 16 states)
- Ban Residential Dealers (1 of 1)
- Require Security Measures (1 of 9)
- Require Theft/Loss Reporting (1 of 3)
- Retain record of firearm sales (1 of 12)
- Require Warnings to Purchasers (1 of 15)
- **No requirement of employee background check (5 others do)**
- **No background checks for private sales**

Policy Examples

Owners:

(Every gun began as a legal gun)

Safe storage

Licensing

Registration

Training

Strict Liability

Insurance

Surveys

- Overwhelming majority of Americans favor such specific proposals
- Large majority of gun owners favor almost all of them
- Most NRA members favor most of them

Gun Manufacturers and Dealers Protections

- 1) No agency has oversight for safety
- 2) Almost impossible to sue
- 3) ATF hands tied in numerous ways

Restrictions on Data and Research

- NVDRS
- BRFSS
- ATF tracing data

- Very Little money for research
- (from government or foundations

- CDC afraid to say the word “guns”

Changing Social Norms

- (Drunk Driving example)
- Theft: Gun Storage
- Trafficking: Victims Parents at Court Cases
- Selling to stranger with no background check
- Response to Dis: (Dueling example)

Social Norms about Suicide: Means Matter Campaign

- Reducing suicide by limiting a suicidal person's access to lethal means
- To overcome the mistaken belief that only intent matters

Means Matter Strategy:

- Improve data (National Violent Death Reporting System)
- Expand and summarize scientific evidence
- Disseminate evidence
 - Journal articles
 - Presentations
 - Graduate training
 - On-line trainings

Convince

- State suicide prevention planning groups

Ecological Studies (e.g. New England))

Suicide Rate 1996 – 2000
per 100,000

State	Households with Firearms (%) 2001 BRFSS	Overall	Firearm	Non-Firearm
VT	42%	12.3	8.0	4.3
ME	41%	13.3	7.8	5.5
NH	30%	11.7	6.2	5.5
CT	17%	8.5	3.3	5.2
RI	13%	8.3	3.0	5.3
MA	13%	7.5	2.1	5.4

Source: Miller et al., J Trauma, 2004.

Ecological Studies (e.g. New England))

Suicide Rate 2007 – 2011
per 100,000

State	Households with Firearms (%)	Overall	Firearm	Non-Firearm
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VT	40%	14.9	7.6	7.3
NH	30%	13.6	6.3	7.3
CT	17%	9.1	2.8	6.3
RI	13%	10.5	2.6	7.9
MA	13%	8.4	1.8	6.6

Source: Miller et al., J Trauma, 2004.

Top-down Dissemination

- National Strategy for Suicide Prevention
- National Action Alliance for Suicide Prevention
- U.S. Army
- Veterans Administration
- American Foundation for Suicide Prevention

Bottom-up Dissemination

- First Responders (police, EMTs)
- Physicians
 - Emergency Department
 - Pediatricians
 - Internal Medicine
 - Psychiatrists

Key stakeholder collaborations

- Gun ranges
- Gun dealers
- Gun trainers
- Gun rights activists

Gun ranges

- Recognizing potentially suicidal people
 - 1) by themselves
 - 2) need to rent firearm
 - 3) no prior experience with firearm

NH Firearm Safety Coalition

Gun Dealers

Guidelines on how to avoid selling to a suicidal customer

“Your Vigilance Could Save a Life”

Tips: no knowledge/interest in guns; doesn't care which gun s/he purchases; mentions crisis...)

(NH: half of gun shops cooperated)

(17 states/counties implement similar strategy)

Gun Trainers

- Develop a brief module on suicide prevention to incorporate into the gun safety portion of their classes.
- New MA law

CALM Training

- Counseling on Access to Lethal Means
- Reduce access to guns during suicidal crisis

Change social norms

- Know to get gun out of house during crisis (e.g., child going through rough patch; or adult just divorced, drinking, talking crazy)
- As “Friends don’t let friends drive drunk”
- Many gun owners already do this
- 11th commandment of gun safety

Approach to help reduce suicide

- Could help prevent another Newtown
- Law of unintended consequences

Huge Problem

Lots of Aspects

- If Not Now, When?
- Other developed nations respond to their mass killings

Importance of Data Systems

National Violent Death Reporting System: Pop Quiz

- Did the percent of homicides from assault weapons increase, decrease, or stay level following passage of the federal ban?
- What proportion of gun homicides are committed with “junk guns”
- What are the three most common circumstances leading to fatal gun accidents?
- From where do teen firearm suicide victims obtain their guns?

Answers:

NO ONE KNOWS

NO ONE KNOWS

NO ONE KNOWS

NO ONE KNOWS

The NVDRS Advantage: Type of Firearm in Suicide

	Youth (<18)	Adult
Long Gun	54%	40%
Hand Gun	46%	60%

The NVDRS Advantage: Youth – Gun Access

Source of Suicide Gun:

Over 92% from family

Parent	81%
Other Family	4%
Self (Gift from Parent)	8%
Other	8%

HOMICIDE | suicide

<i>Victim Category</i>	<i># of incidents</i>	<i># of suspects committing suicide</i>	<i>%</i>
All homicides	534	31	6%

HOMICIDE | suicide

<i>Victim Category</i>	<i># of incidents</i>	<i># of suspects committing suicide</i>	<i>%</i>
All homicides	534	31	6%
Intimate partner	76	28	37%
Female by male	58	27	47%

HOMICIDE | suicide

<i>Victim Category</i>	<i># of incidents</i>	<i># of suspects committing suicide</i>	<i>%</i>
All homicides	534	31	6%
Intimate partner	76	28	37%
Female by male	58	27	47%
Female by male with firearm	32	22	69%

The NVDRS Advantage: Unintentional Gun Shootings

- National Center for Health Statistics data are accurate for overall gun deaths.
- National Center for Health Statistics data are **INACCURATE** for unintentional gun deaths—miss many child gun accidents.
- Median age of victims from WISQARS: 33
- Actual median age: 23

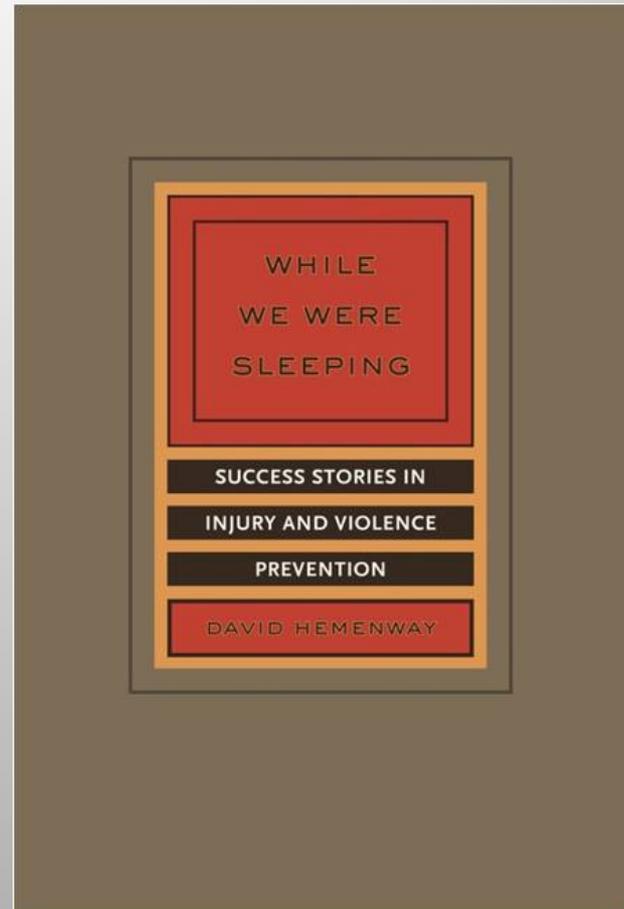
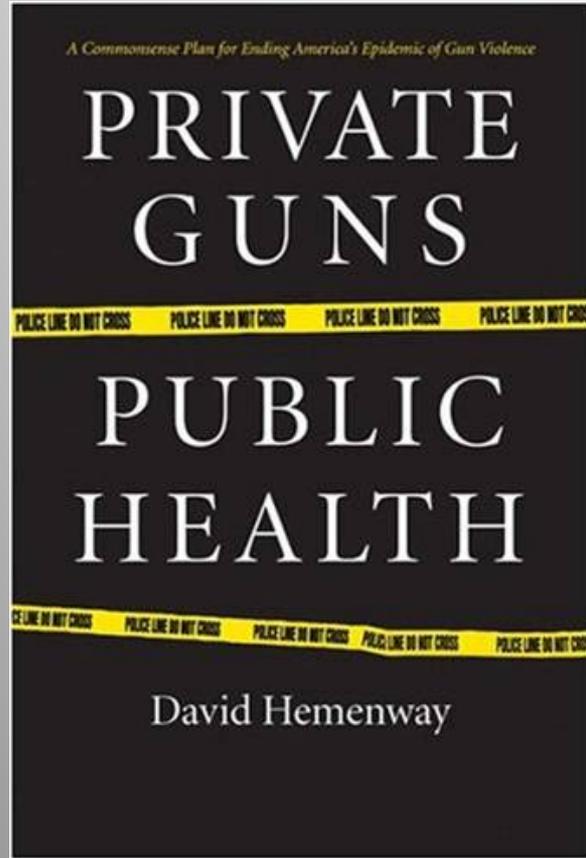
The NVDRS Advantage

Unintentional Firearm Death Victims

Age	N	% Other Inflicted
0-14	72	78%
15-24	121	60%
25-54	127	33%
55+	43	19%
Gender		
Male	330	47%
Female	33	73%

Shooters in Other-Inflicted

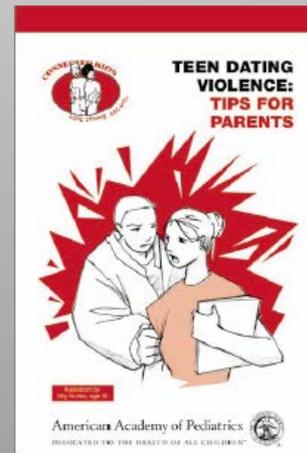
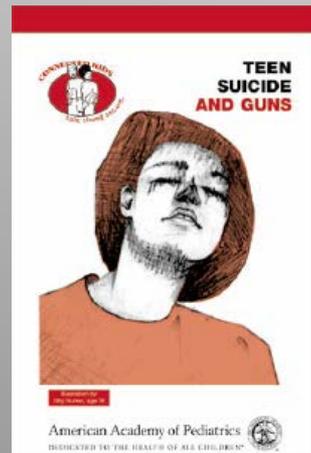
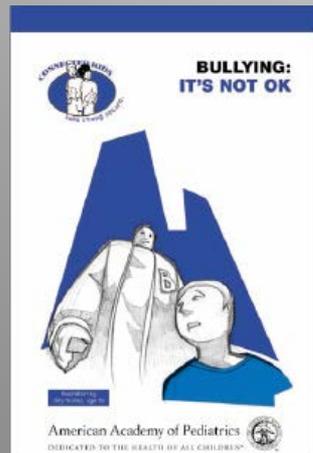
Age	% of Total
0-14	35%
15-24	46%
25-54	14%
55+	4%
Gender	
Male	92%
Female	8%



Harvard Youth Violence Prevention Activities

Work with physicians

Create materials to help other physicians (e.g. guns, corporal punishment; bullying)



Work with Non-profits

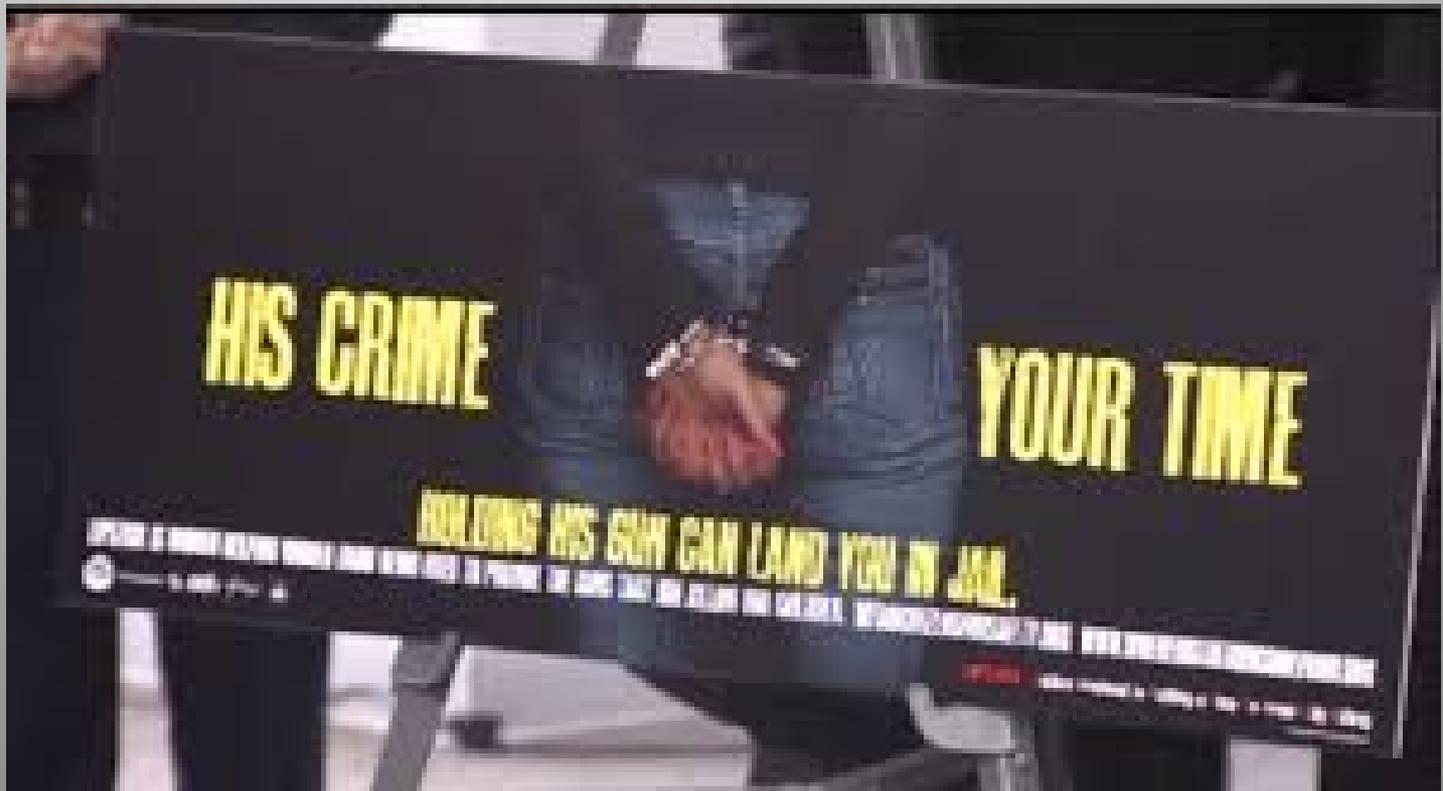
e.g. to change media role (Hollywood; reporters)
("Where did the gun come from?")



<http://www.wheredidtheguncomefrom.com/>

Work with Non-profits

To enlist female help and reduce female involvement (straw purchasers)



Nonprofits: Evaluate the ASK campaign

- Before the playdate, the gun talk



Creating a Youth Violence Data System

- Boston Data Project
 - High Schools surveys
 - Adult surveys
 - Assemble existing data

Findings:

Fear

Fear

	% Feel Unsafe*
Home	
School	
To/from school	
On your street	
Neighborhood	
Public Transportation	

*rarely/never feel safe

Fear

2006

	% Feel Unsafe*
Home	3
School	10
To/from school	16
On your street	19
Neighborhood	21
Public Transportation	30

*rarely/never feel safe

Findings:

Soda

The 'Twinkie Defense': the relationship between carbonated non-diet soft drinks and violence perpetration among Boston high school students

Victims

	Soft drink consumption in past 7 days			
	≤1 can (N=722)	2-4 cans (N=414)	5-7 cans (N=237)	14+cans(N=245)
Carried gun or knife	23%	33%	38%	43%
Violent towards peers	33%	46%	55%	59%
Violent in dating relationship	15%	18%	25%	27%
Violent towards children in family	25%	30%	39%	45%

Findings:

Gun Carrying

(misperceptions)...like alcohol, tobacco, and sex.

Peer Perceptions of Gun Carrying

Gun Carrying Overestimates

Self-reported Carrying	5.5%
Mean estimate of classmates carrying	15.9%
Mean estimate of neighborhood carrying	32.6%

Gun Carrying Overestimates

	Overestimates of Peer Carrying (>15%)	Overestimates of Peer Carrying (<15%)
Self-reported Carrying	7.8%	2.2%

Difficulty for Teenagers to Get a Gun

	EASY	DIFFICULT	IMPOSSIBLE
Estimated Difficulty for OTHER KIDS to get gun	68%	24%	8%
Estimated difficulty of SELF to get gun	39%	24%	36%
Ideal world- How easy for teens to get a gun	18%	14%	68%