

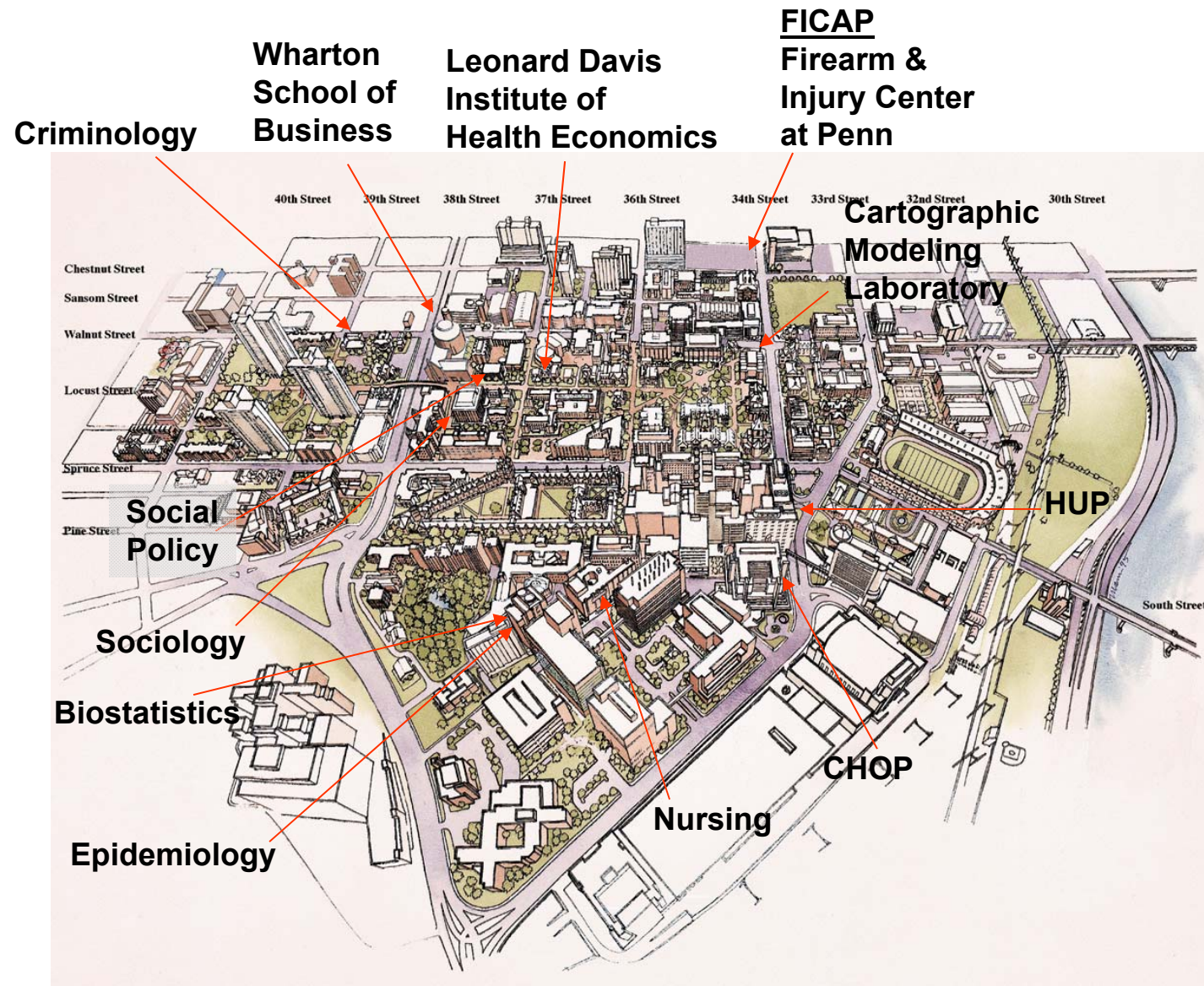
Firearm Violence: A Public Health Issue

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University of Pennsylvania

9/29/14



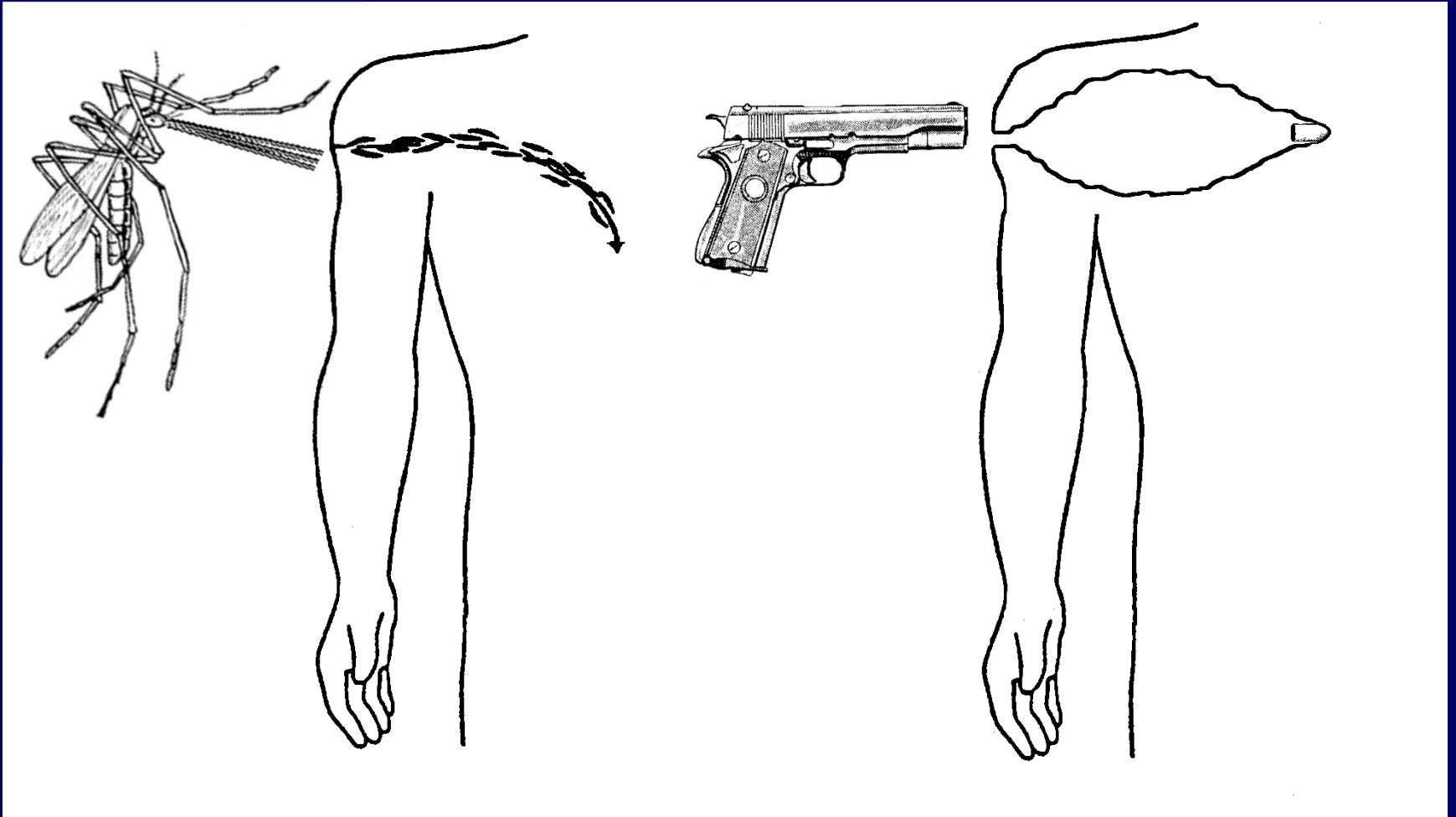


FICAP: Interdisciplinary Research

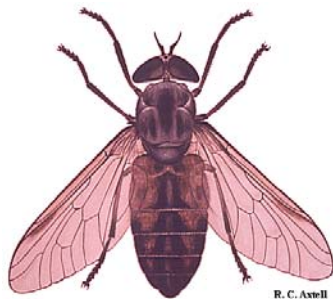
Epidemiology

The study of the distribution and determinants of disease in populations, and the application of this study to the control of disease.

Vector, Agent & Host in Environment



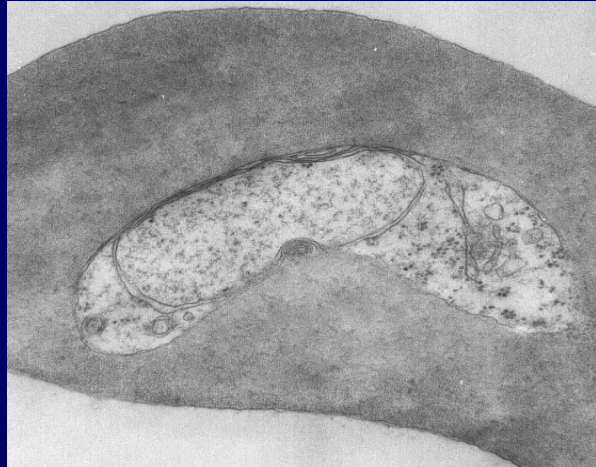
Vectors



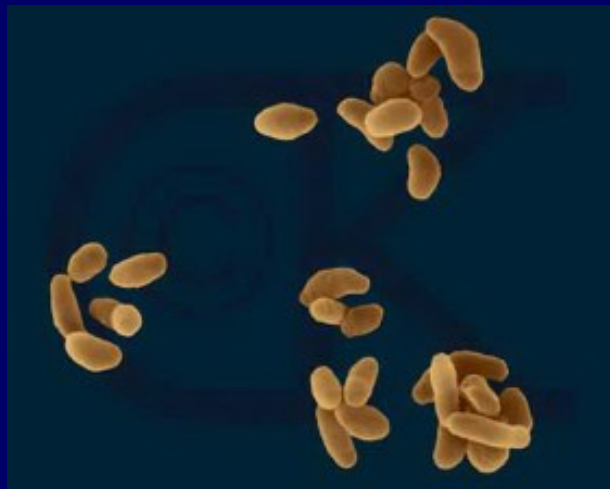
R. C. Axwell



Agents



P. falciparum



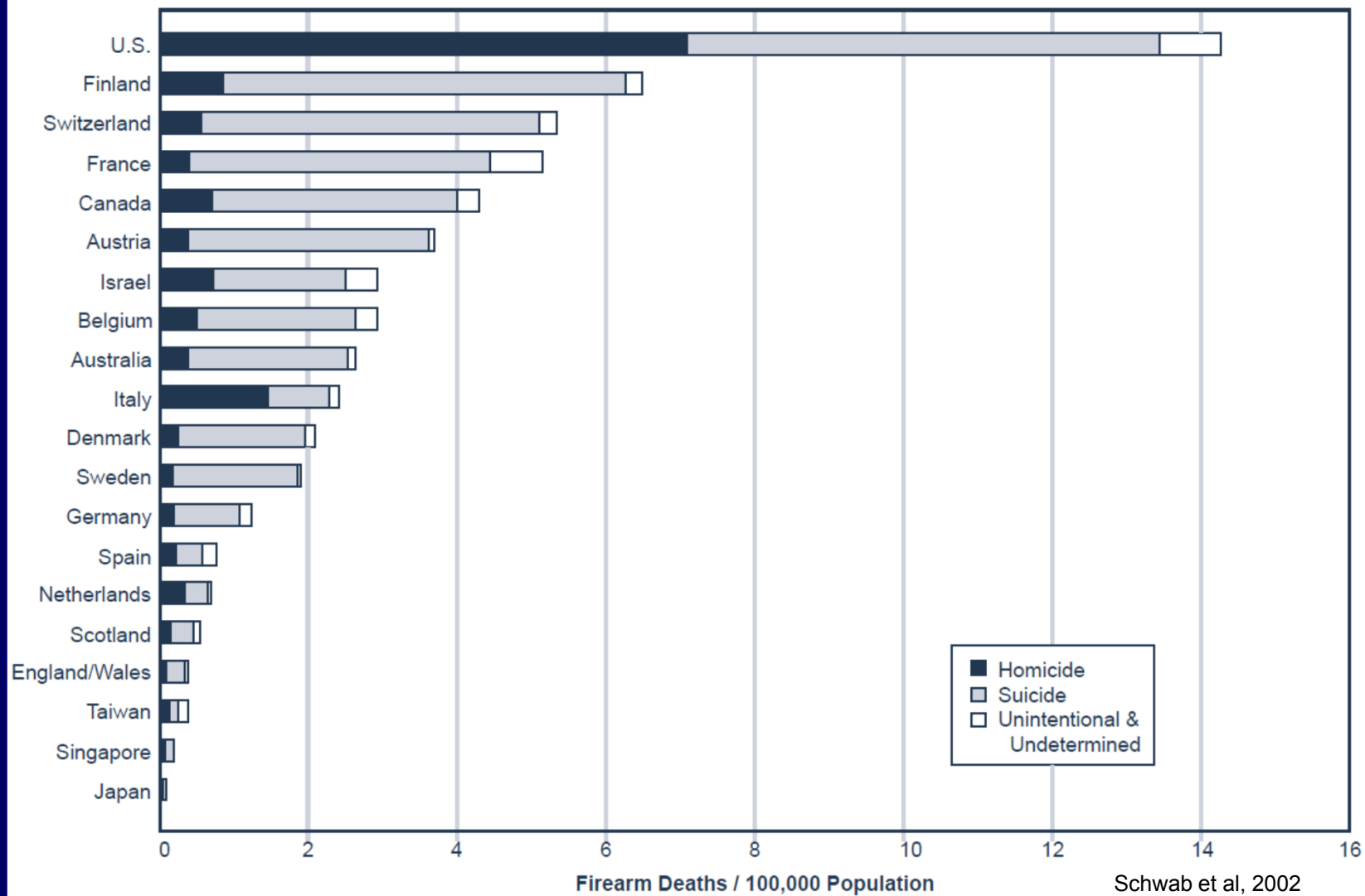
F. tularensis



Environments



**Age-Adjusted Firearm Mortality Rates for "High Income" Nations of 5 Million or More
Based on single year available data between 1990 and 1995**



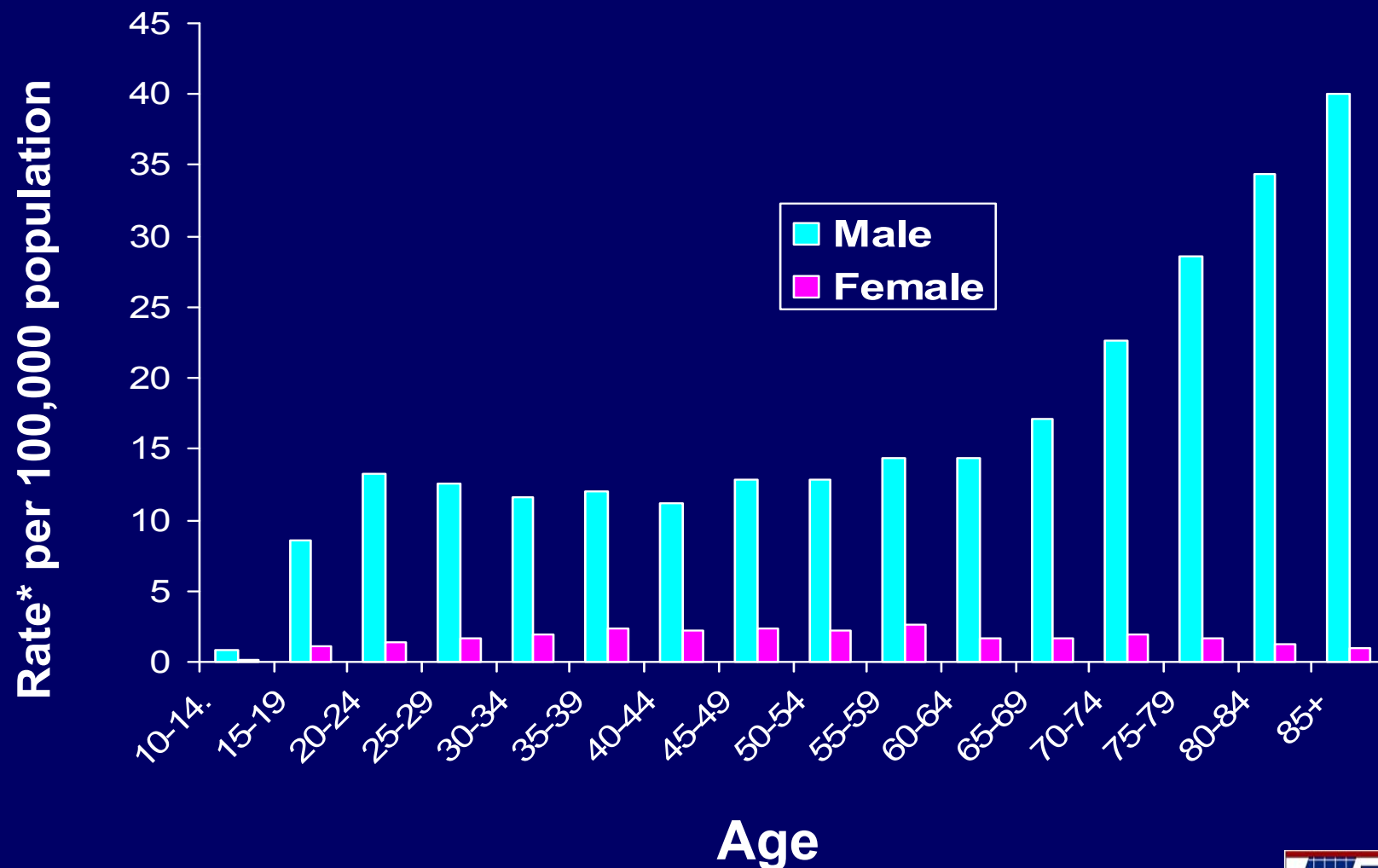
United States Firearm Death Profile

	Number	Rate*
Total Firearm Deaths	31,224	10.3
Suicides	17,352 (56%)	5.6
Homicides	12,632 (40%)	4.2
Unintentional	613 (2%)	0.2
Legal Intervention	351 (1%)	0.1
Undetermined	276 (<1%)	0.09

*Death rate per 100,000 population.

Source: National Vital Statistics Report, CDC

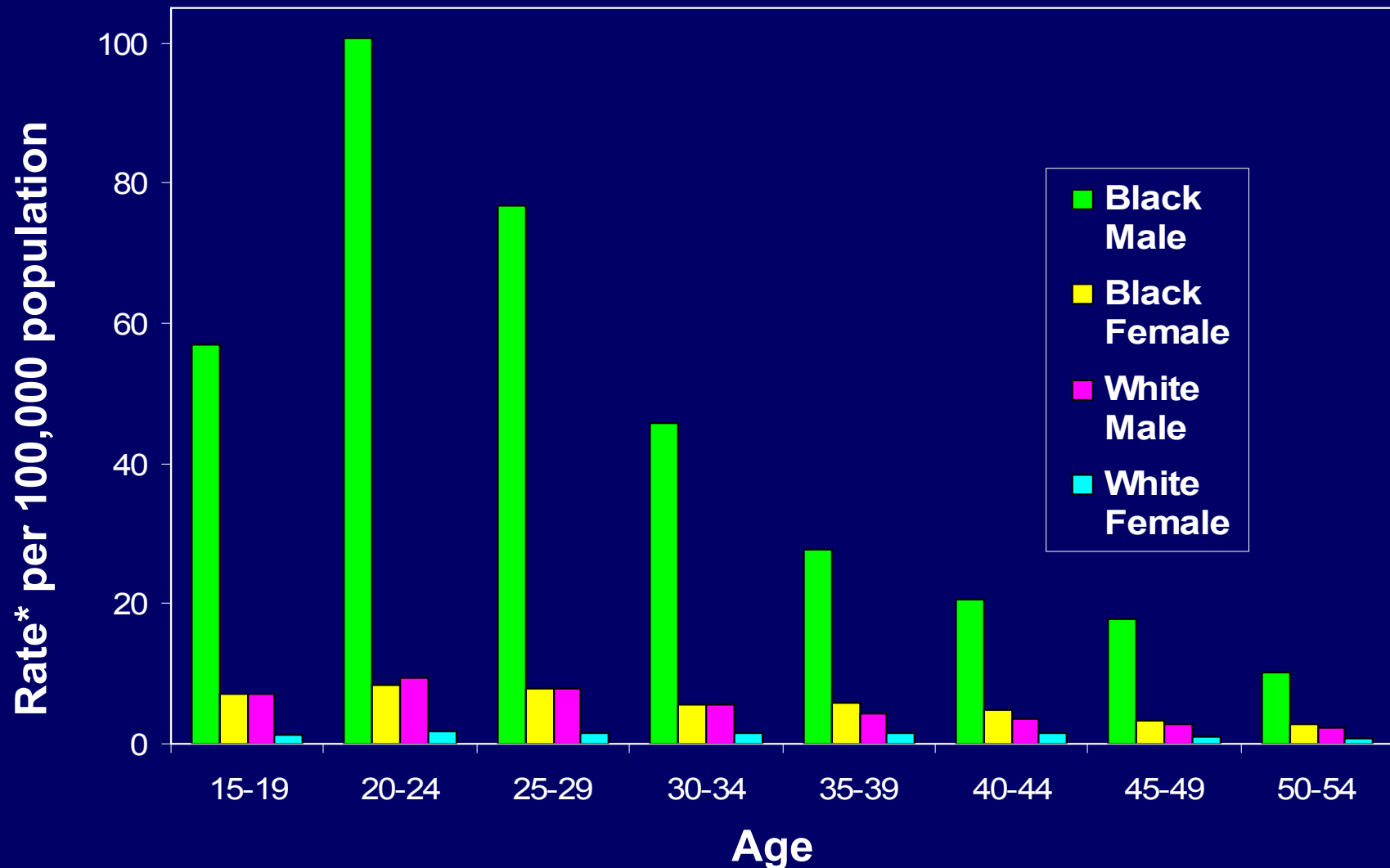
Firearm Suicide Rate Gender and Age – U.S.



Source: National Center for Injury Prevention and Control, CDC

*Age-adjusted rates per 100,000 population based on year 2000 standard

Firearm Homicides by Age, Race, and Sex



Source: National Vital Statistics Data, CDC

*Age-adjusted rate per 100,000 U.S. standard population based on year 2000 standard.

Firearms in the U.S.



X 65 million



X 70 million

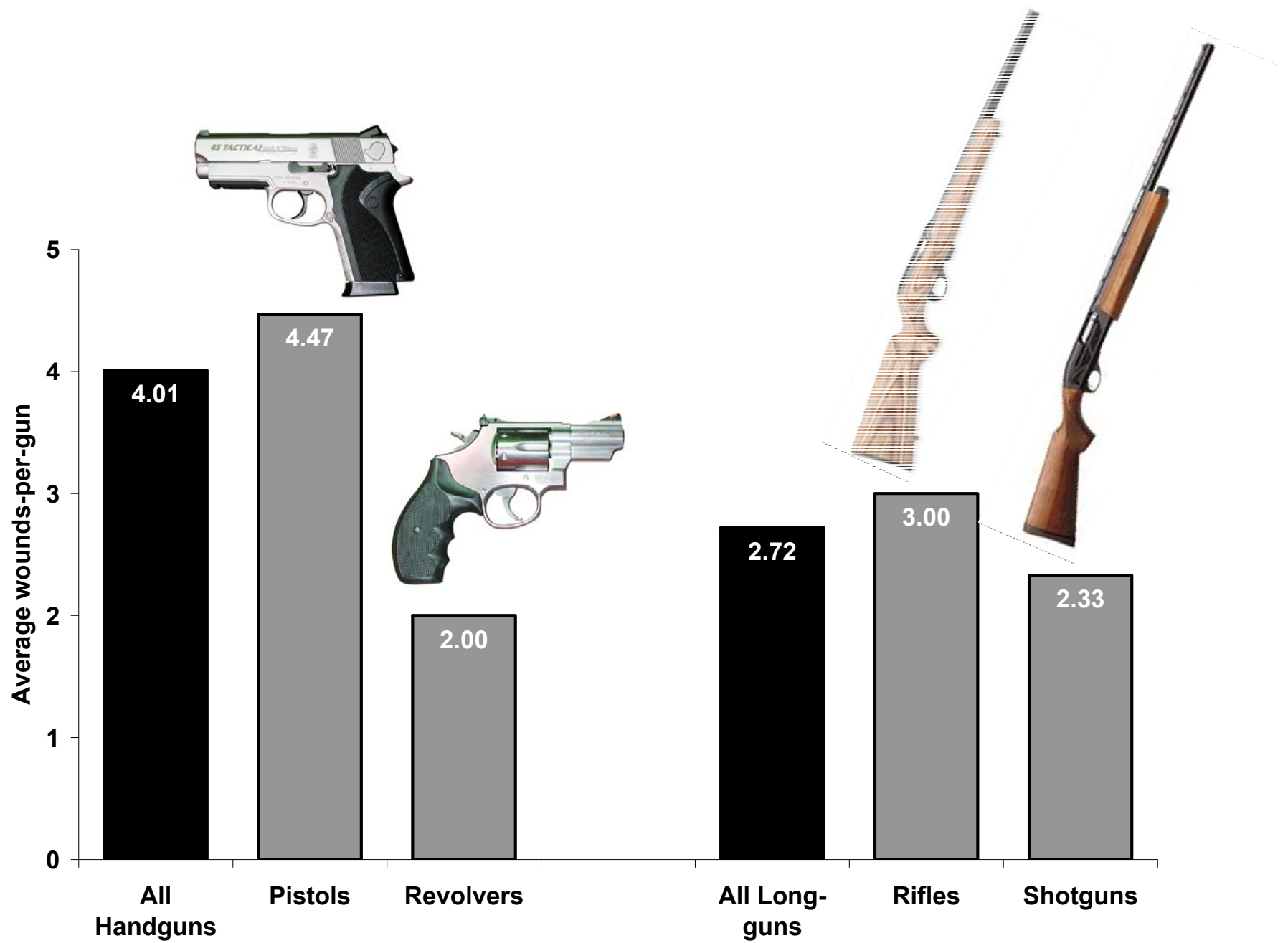


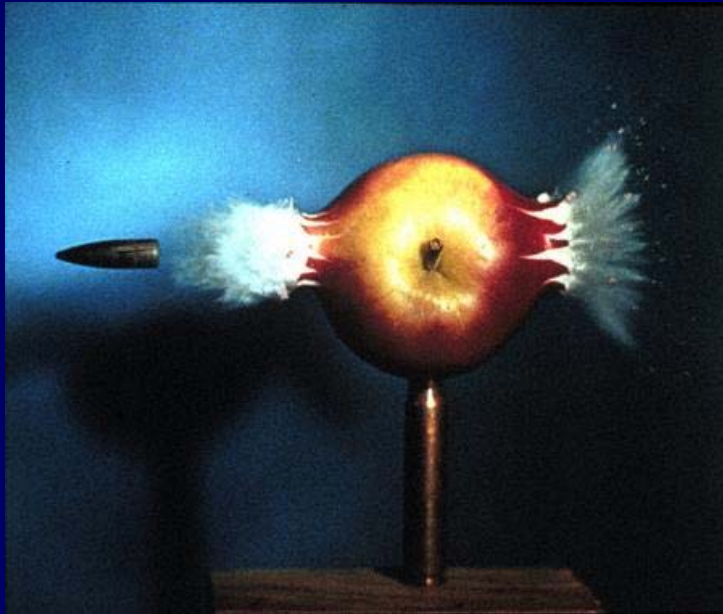
X 49 million



X 8 million

> 200 million





Fatalities: Tip of the Iceberg



Nonfatal unintentional gunshot injuries outnumber fatalities by 16:1

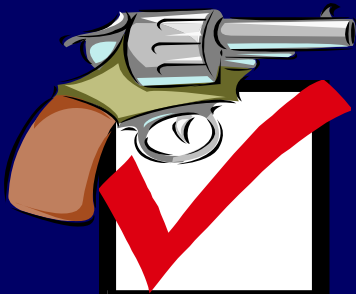
Nonfatal firearm assaults outnumber gun homicides by 4:1

In contrast, firearm suicide attempts result in death in approximately 85% of cases

Medical costs of gunshot injuries

- 140,000 gunshot injuries in US annually
- Mean medical cost per injury = \$17,000
- Gunshot wounds (GSW) produce \$2.3 billion in lifetime medical costs
 - 49% is paid by US taxpayers
- Assault-related GSWs accounted for 74% of total costs

Firearms in Households



One in every three households contains a firearm(s)

Who Owns Guns and Why?

National Survey of Private Ownership of Firearms:



For
protection

41%

67%



Q: Do you have guns at home?

A: Y / N (depends on whom you ask)

- When asking husband-wife pairs:
80% of husbands reported guns in the home,
vs 72% of wives
- Most often, the husband owned the guns

Coyne-Beasley et al Pediatrics 2005
Ludwig et al Am J Public Health 1998
Azrael et al Pediatrics 2000





Homicide Deaths in 2006: Who Was Killed and How?

	Homicides	% by Gun	% by Intimate	% by Intimate Using Gun
Female	3,945	1,795 (46%)	1,247 (32%)	735 (19%)
Male	12,820	9,006 (70%)	440 (3%)	226 (2%)

Centers for Disease Control,
Bureau of Justice Statistics



Case-Control Study of Homicide

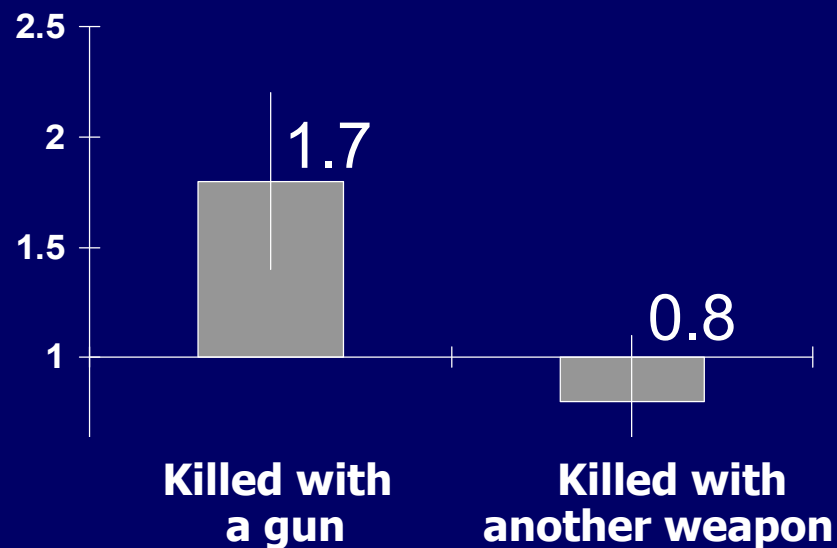
- Method (case-control)
 1. Identify Cases: persons killed (homicide) at home
 2. Identify Control: living persons
 3. Compare: did gun ownership differ between groups?
- United States population samples
 - National Mortality Followback Survey (cases)
 - National Health Interview Survey (controls)
- Exposure: presence of gun(s) in the home

Wiebe. Annals Emerg Med 2003
Wiebe. Accid Analysis Prev 2003

Homicide:

Gun in Home as Risk Factor

Mortality odds ratio (95% CI)
associated with having a gun in home



Wiebe. Annals Emerg Med 2003

CAUSE AND EFFECT

Linking Guns and Gun Violence

People with guns in their homes are almost twice as likely to be killed by guns as people who do not keep them at home, researchers reported yesterday in The Annals of Emergency Medicine.

And, the researchers found, people with guns are 16 times as likely to commit suicide using guns.

The explanation may lie in the unforgiving nature of firearms, said the author of the study, Dr.

Douglas J. Wiebe, who conducted the research at the University of California at Los Angeles and is now at the University of Pennsylvania.

"People who are shot are substantially more likely to die than people injured with nongun weapons," Dr. Wiebe said.

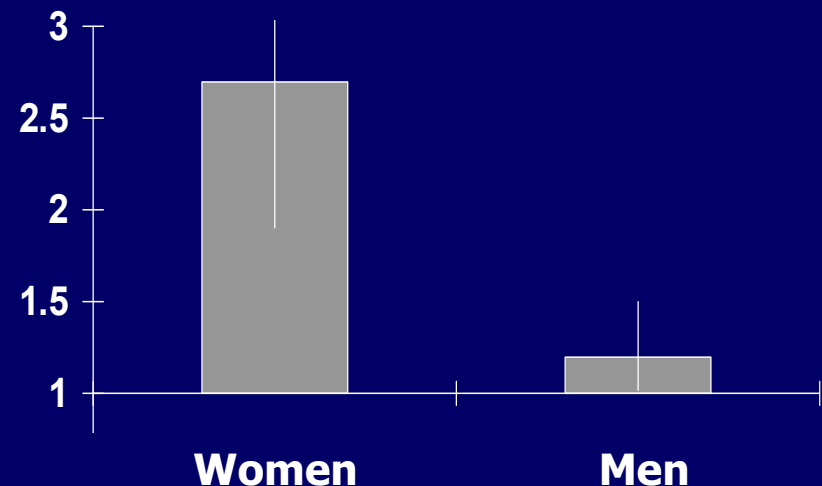
The study was based on a review of the deaths of 1,720 homicide victims and 1,959 suicide victims and a sampling of American adults.

It found that most of the victims, over 56 percent, knew their assailants. A fifth of the homicides occurred during robberies, 6 percent during drug deals and about 15 percent during family arguments.

The study also found that women were significantly more likely than men to be victims of gun homicides. "This likely reflects the singular danger faced by women in abusive relationships," Dr. Wiebe wrote.



Homicide Risk Significantly Higher Among Women



Odds ratio (95% CI)
for gun in the home

Variation in Pediatric and Adolescent Firearm Mortality Rates in Rural and Urban US Counties

AUTHORS: Michael L. Nance, MD,^a Brendan G. Carr, MD, MS,^{b,c} Michael J. Kallan, MS,^b Charles C. Branas, PhD,^b and Douglas J. Wiebe, PhD^b

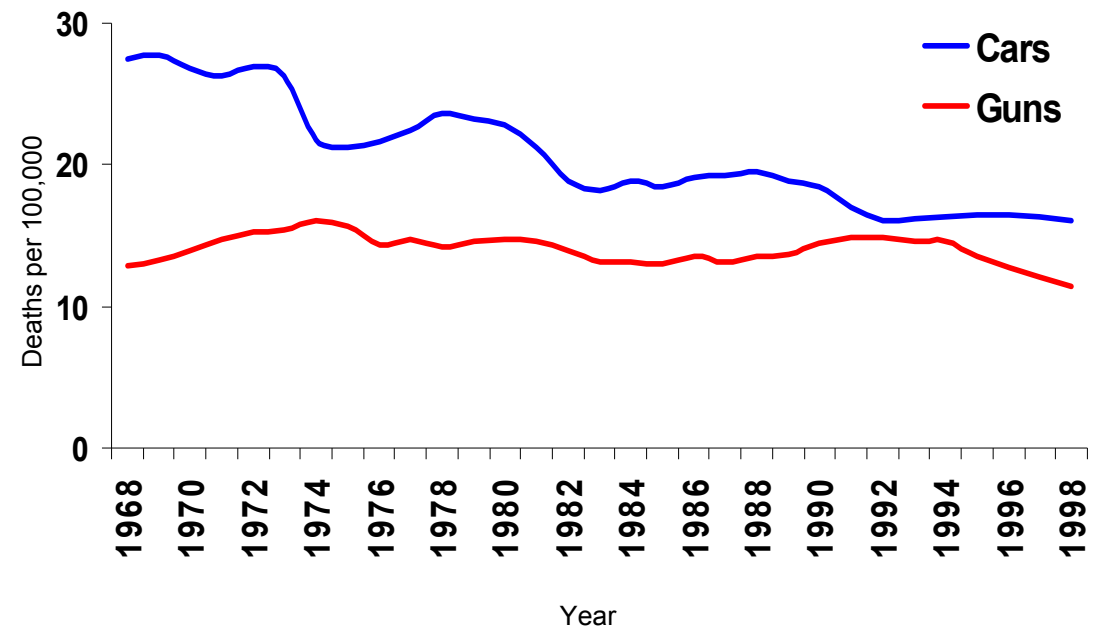
CONCLUSIONS: Children in the most-rural US counties had firearm mortality rates that were statistically indistinguishable from those for children in the most-urban counties. This finding reflects a greater homicide rate in urban counties counterbalanced by greater suicide and unintentional firearm death rates in rural counties. Nonfirearm mortality rates were significantly greater outside the most-urban US counties. *Pediatrics* 2010;125:1112–1118

10 Leading Causes of Death, US 10-19 years old

1. Unintentional Injury	8,679	(Guns, 2%)
2. Homicide	2,108	(Guns, 82%)
3. Suicide	1,773	(Guns, 46%)
4. Malignant Neoplasms	1,258	
5. Heart Disease	568	
6. Congenital Anomalies	466	
7. Chronic Low. Resp. Disease	188	
8. Influenza & Pneumonia	128	
9. Cerebro-vascular	111	
10. Septicemia	102	

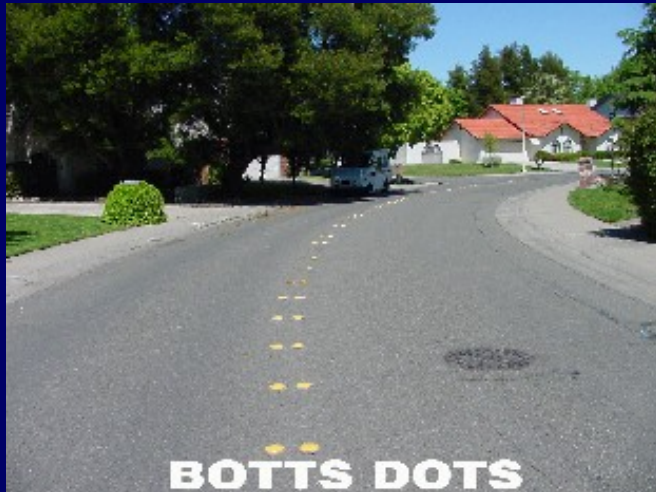


Deaths from motor vehicle crash and
gunshot injuries, US (all ages)








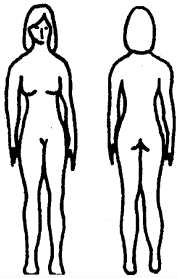
Motor Vehicle Crash Prevention: example of a “passive intervention”





Bott's Dots

Haddon Matrix

	Host	Equipment	Environment Physical	Environment Social
Pre-Event				
Event				
Post-Event				



Department of Health and Human Services

Centers for Disease Control and Prevention

“None of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention may be used to advocate or promote gun control CDC’s funds may not be spent on political action or other activities designed to affect the passage of specific Federal, State, or local legislation intended to restrict or control the purchase or use of firearms”.

Kassirer JP. A partisan assault on science--the threat to the CDC.
N Engl J Med 1995;333:793-4.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Table 1 Major NIH research awards and cumulative morbidity for select conditions in the US, 1973–2002

Condition	Total cases	NIH research awards
Cholera	373	101
Diphtheria	1337	54
Polio	266	106
Rabies	55	59
Total of four diseases	2031	320
Firearm injuries		

Branas, Wiebe, Schwab, Richmond. Getting past the “f” word in federally funded public health research. *Injury Prevention* 2005; 11:191-192.

Syllabus

NOTE: Where it is feasible, a syllabus (headnote) will be released, as is being done in connection with this case, at the time the opinion is issued. The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Timber & Lumber Co.*, 200 U. S. 321, 337.

SUPREME COURT OF THE UNITED STATES

Syllabus

**MCDONALD ET AL. v. CITY OF CHICAGO, ILLINOIS,
ET AL.**

**CERTIORARI TO THE UNITED STATES COURT OF APPEALS FOR
THE SEVENTH CIRCUIT**

No. 08–1521. Argued March 2, 2010—Decided June 28, 2010



HELPING TO BRIDGE THE DIGITAL DIVIDE. LEARN MORE

COMCAST NBCUNIVERSAL

Strict Gun Laws in Chicago Can't Stem Fatal Shots



Scott Olson/Getty Images

The funeral for a 14-year-old boy who was killed Jan. 11 in Chicago, where there were more than 500 homicides last year and at least 40 killings already in 2013.

By MONICA DAVEY
Published: January 29, 2013 | 522 Comments

CHICAGO — Not a single gun shop can be found in this city because they are outlawed. Handguns were banned in Chicago for decades, too, until 2010, when the United States Supreme Court ruled that was going too far, leading city leaders to settle for restrictions some describe as the closest they could get legally to a ban without a ban.

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 - Advocates for News Media to Meet Turkish Officials

Firearm & Injury Center at Penn - Mozilla Firefox

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...creating safer communities through the systematic reduction of injury and its repercussions to the individual, family and society.

Home
Firearm Injury in the US

Research
FICAP Forum Series

Resources
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Pilot Projects
Issue Briefs & Updates
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Calendar
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Links

Welcome to the Firearm & Injury Center at Penn (FICAP)

Please use the navigation menu to your left, or the links below, to navigate our site.

C. William Schwab, MD, FACS is featured in Penn Medicine.

Mission & Goal

The mission of FICAP is to create safer communities through the systematic reduction of injury and its repercussions to the individual, family, and society. FICAP seeks to achieve its mission by stimulating firearm and injury research, supporting efforts to translate research

Highlights

Click [here](#) for a transcript of FICAP Program Director, C. William Schwab's testimony before the U.S. House of Representatives Committee on Oversight and Government Reform about the emergency care crisis

Click [here](#) for a transcript and video link of testimony by FICAP associate Susan Sorenson before the U.S. House of Representatives Domestic Policy Subcommittee

Listen to a [podcast](#) of FICAP's Penn Provost Interdisciplinary Seminar Series for *Stress and Injury: Integrating Environment, Biology and Behavior* with Andrew Newberg and Lawrence W. Sherman.

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