Survey of the American College of Surgeons Committee on Trauma Members on Firearm Injury: Consensus and Opportunities

Deborah A. Kuhls MD, Brendan T. Campbell MD, MPH, Peter A. Burke MD, Lisa Allee LICSW, MSW, Ashley Hink MD, Robert W. Letton Jr. MD, Peter Masiakos MD, Michael Coburn MD, Maria Alvi MHA, Trudy J. Lerer MS, Barbara A. Gaines MD, Michael L. Nance, MD, Douglas J.E. Schuerer MD, Tina L. Palmieri MD, James W. Davis MD, Douglas M. Geehan MD, James K. Elsey MD, Beth H. Sutton MD, Mark P. McAndrew MD, Ronald I. Gross MD, Donald N. Reed Jr. MD, Donald H. Van Boerum MD, Thomas J. Esposito MD, MPH, Roxie M. Albrecht MD, Babak Sarani MD, David S. Shapiro MD, Katie Wiggins-Dohlvik MD, Ronald M. Stewart, MD

American College Of Surgeons Committee on Trauma

Injury Prevention & Control Committee

AMERICAN COLLEGE OF SURGEONS

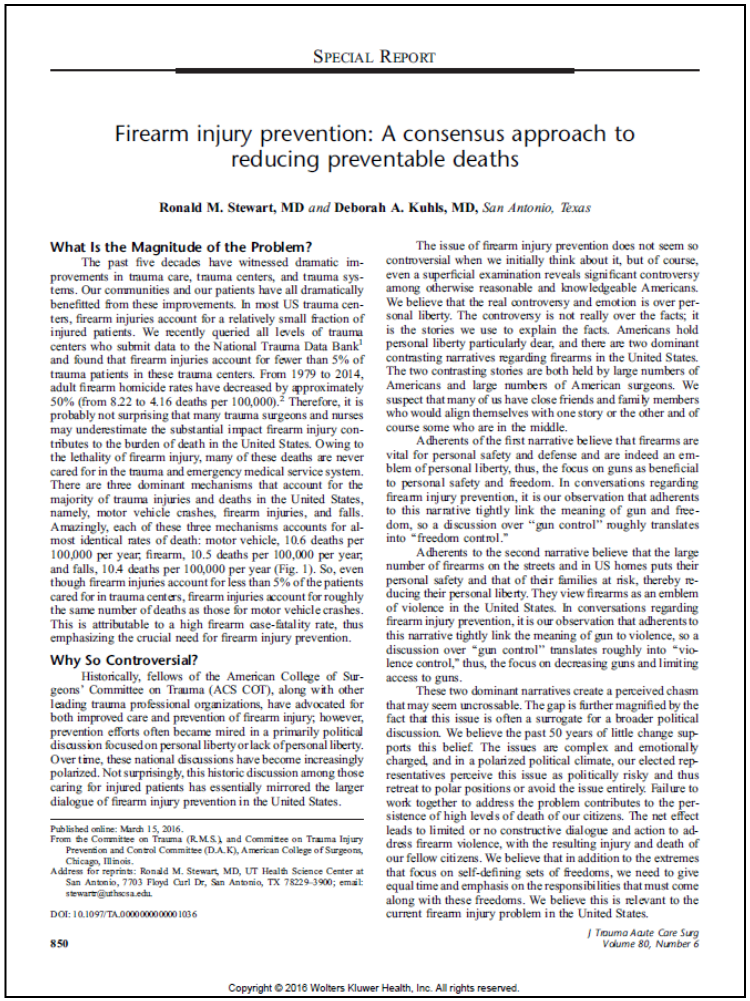
Inspiring Quality:
Highest Standards, Better Outcomes

100+years

THE COMMITTEE ON TRAUMA

Published in the Journal of Trauma and Acute Care Surgery

- COT survey findings published in June 2016; Volume 80, Issue 6
- **"Firearm injury prevention: A consensus approach to reducing preventable deaths"**
- Authors: Ronald M. Stewart, MD and Deborah A. Kuhls, MD



SPECIAL REPORT

Firearm injury prevention: A consensus approach to reducing preventable deaths

Ronald M. Stewart, MD *and* **Deborah A. Kuhls, MD,** *San Antonio, Texas*

What Is the Magnitude of the Problem?

The past five decades have witnessed dramatic improvements in trauma care, trauma centers, and trauma systems. Our communities and our patients have all dramatically benefitted from these improvements. In most US trauma centers, firearm injuries account for a relatively small fraction of injured patients. We recently queried all levels of trauma centers who submit data to the National Trauma Data Bank[1] and found that firearm injuries account for fewer than 5% of trauma patients in these trauma centers. From 1979 to 2014, adult firearm homicide rates have decreased by approximately 50% (from 8.22 to 4.16 deaths per 100,000).[2] Therefore, it is probably not surprising that many trauma surgeons and nurses may underestimate the substantial impact firearm injury contributes to the burden of death in the United States. Owing to the lethality of firearm injury, many of these deaths are never cared for in the trauma and emergency medical service system. There are three dominant mechanisms that account for the majority of trauma injuries and deaths in the United States, namely, motor vehicle crashes, firearm injuries, and falls. Amazingly, each of these three mechanisms accounts for almost identical rates of death: motor vehicle, 10.6 deaths per 100,000 per year; firearm, 10.5 deaths per 100,000 per year; and falls, 10.4 deaths per 100,000 per year (Fig. 1). So, even though firearm injuries account for less than 5% of the patients cared for in trauma centers, firearm injuries account for roughly the same number of deaths as those for motor vehicle crashes. This is attributable to a high firearm case-fatality rate, thus emphasizing the crucial need for firearm injury prevention.

Why So Controversial?

Historically, fellows of the American College of Surgeons' Committee on Trauma (ACS COT), along with other leading trauma professional organizations, have advocated for both improved care and prevention of firearm injury; however, prevention efforts often became mired in a primarily political discussion focused on personal liberty or lack of personal liberty. Over time, these national discussions have become increasingly polarized. Not surprisingly, this historic discussion among those caring for injured patients has essentially mirrored the larger dialogue of firearm injury prevention in the United States.

Published online: March 15, 2016.
From the Committee on Trauma (R.M.S.), and Committee on Trauma Injury Prevention and Control Committee (D.A.K), American College of Surgeons, Chicago, Illinois.
Address for reprints: Ronald M. Stewart, MD, UT Health Science Center at San Antonio, 7703 Floyd Curl Dr, San Antonio, TX 78229-3900; email: stewartr@uthscsa.edu.
DOI: 10.1097/TA.0000000000001036

The issue of firearm injury prevention does not seem so controversial when we initially think about it, but of course, even a superficial examination reveals significant controversy among otherwise reasonable and knowledgeable Americans. We believe that the real controversy and emotion is over personal liberty. The controversy is not really over the facts; it is the stories we use to explain the facts. Americans hold personal liberty particularly dear, and there are two dominant contrasting narratives regarding firearms in the United States. The two contrasting stories are both held by large numbers of Americans and large numbers of American surgeons. We suspect that many of us have close friends and family members who would align themselves with one story or the other and of course some who are in the middle.

Adherents of the first narrative believe that firearms are vital for personal safety and defense and are indeed an emblem of personal liberty, thus, the focus on guns as beneficial to personal safety and freedom. In conversations regarding firearm injury prevention, it is our observation that adherents to this narrative tightly link the meaning of gun and freedom, so a discussion over "gun control" roughly translates into "freedom control."

Adherents to the second narrative believe that the large number of firearms on the streets and in US homes puts their personal safety and that of their families at risk, thereby reducing their personal liberty. They view firearms as an emblem of violence in the United States. In conversations regarding firearm injury prevention, it is our observation that adherents to this narrative tightly link the meaning of gun to violence, so a discussion over "gun control" translates roughly into "violence control," thus, the focus on decreasing guns and limiting access to guns.

These two dominant narratives create a perceived chasm that may seem uncrossable. The gap is further magnified by the fact that this issue is often a surrogate for a broader political discussion. We believe the past 50 years of little change supports this belief. The issues are complex and emotionally charged, and in a polarized political climate, our elected representatives perceive this issue as politically risky and thus retreat to polar positions or avoid the issue entirely. Failure to work together to address the problem contributes to the persistence of high levels of death of our citizens. The net effect leads to limited or no constructive dialogue and action to address firearm violence, with the resulting injury and death of our fellow citizens. We believe that in addition to the extremes that focus on self-defining sets of freedoms, we need to give equal time and emphasis on the responsibilities that must come along with these freedoms. We believe this is relevant to the current firearm injury problem in the United States.

AMERICAN COLLEGE OF SURGEONS
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

Current COT Approach to Firearm Injury Prevention

- Advocating for a public health/trauma system approach to firearm injury prevention
- Implementing evidence-based firearm violence prevention programs through our network of trauma centers
- Fostering and providing a forum for a civil, collegial and professional dialogue within the COT – goal of moving towards a consensus regarding interventions aimed at reducing firearm injuries and deaths
  - Host a Town Hall on Firearm Injury
  - In preparation, survey COT members
  - Actively avoiding discussions in forums or outlets which may lead to conflict and polarization

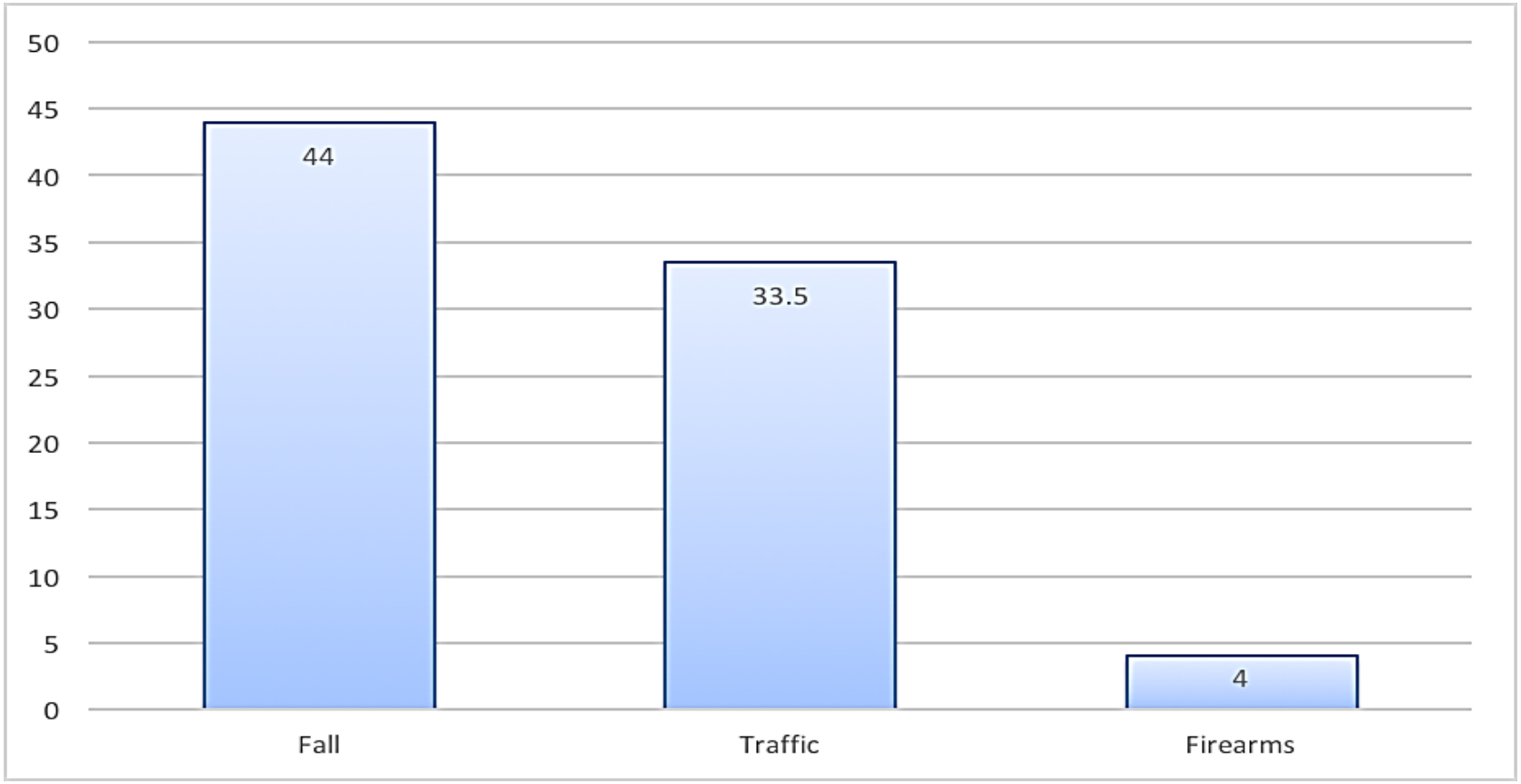
Background

- Personal liberty and personal safety – highly valued
- Polarized views on firearms:
- Freedom & Safety

  - OR -

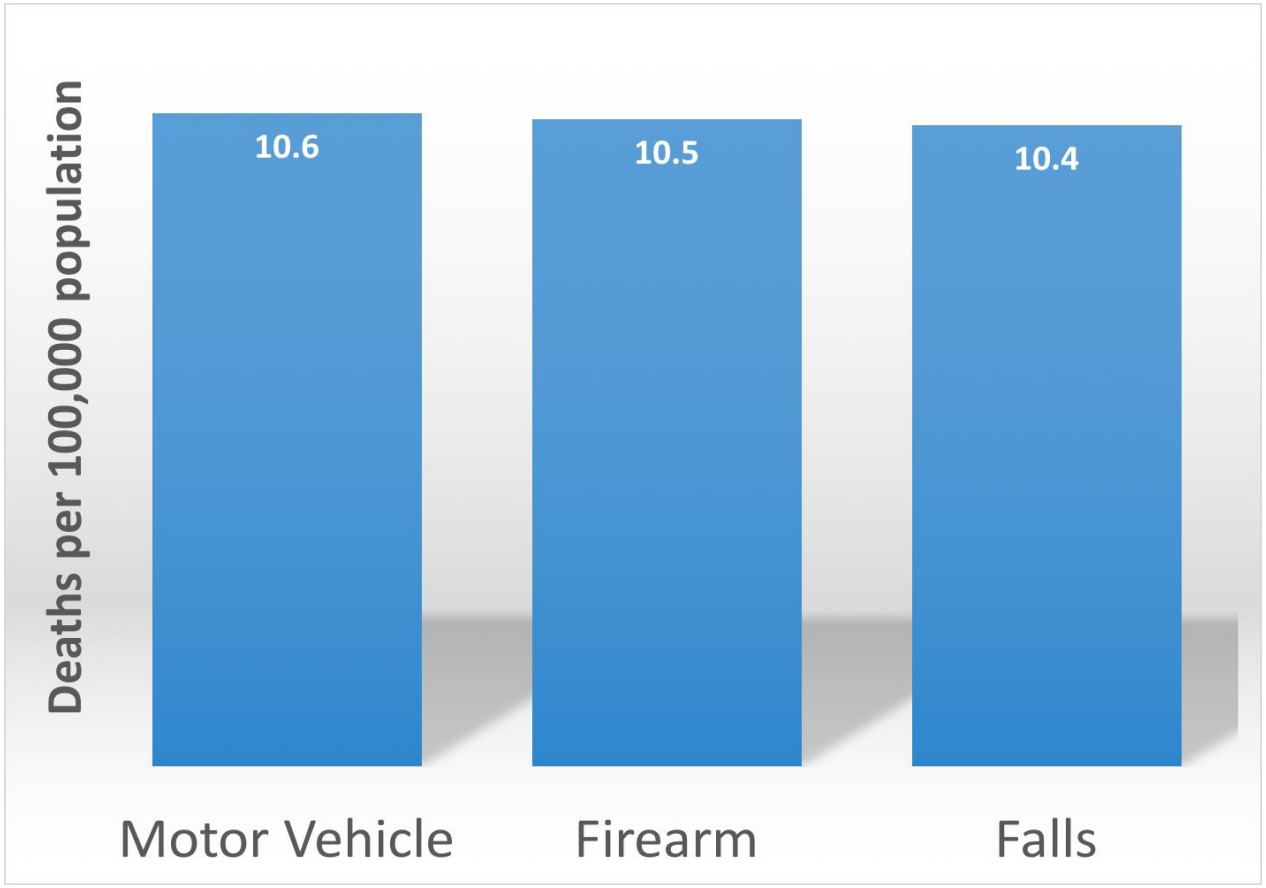
- Limitation of Freedom & Violence

What patients do our trauma centers see?



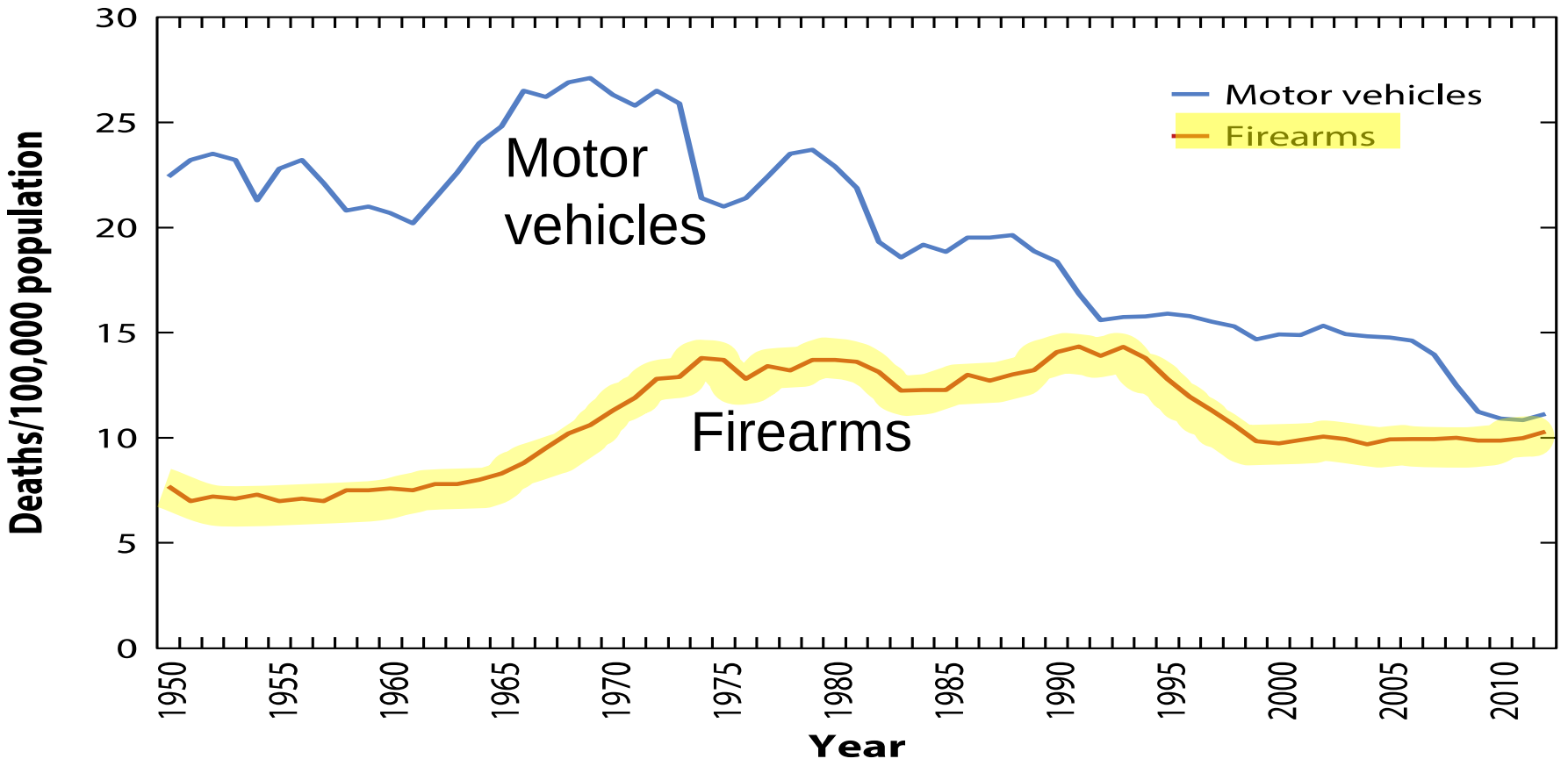
Percentage of 2014 NTDB/TQIP Patients by Mechanism, N = 818,212

What is the burden of death in the U.S. by mechanism of injury?



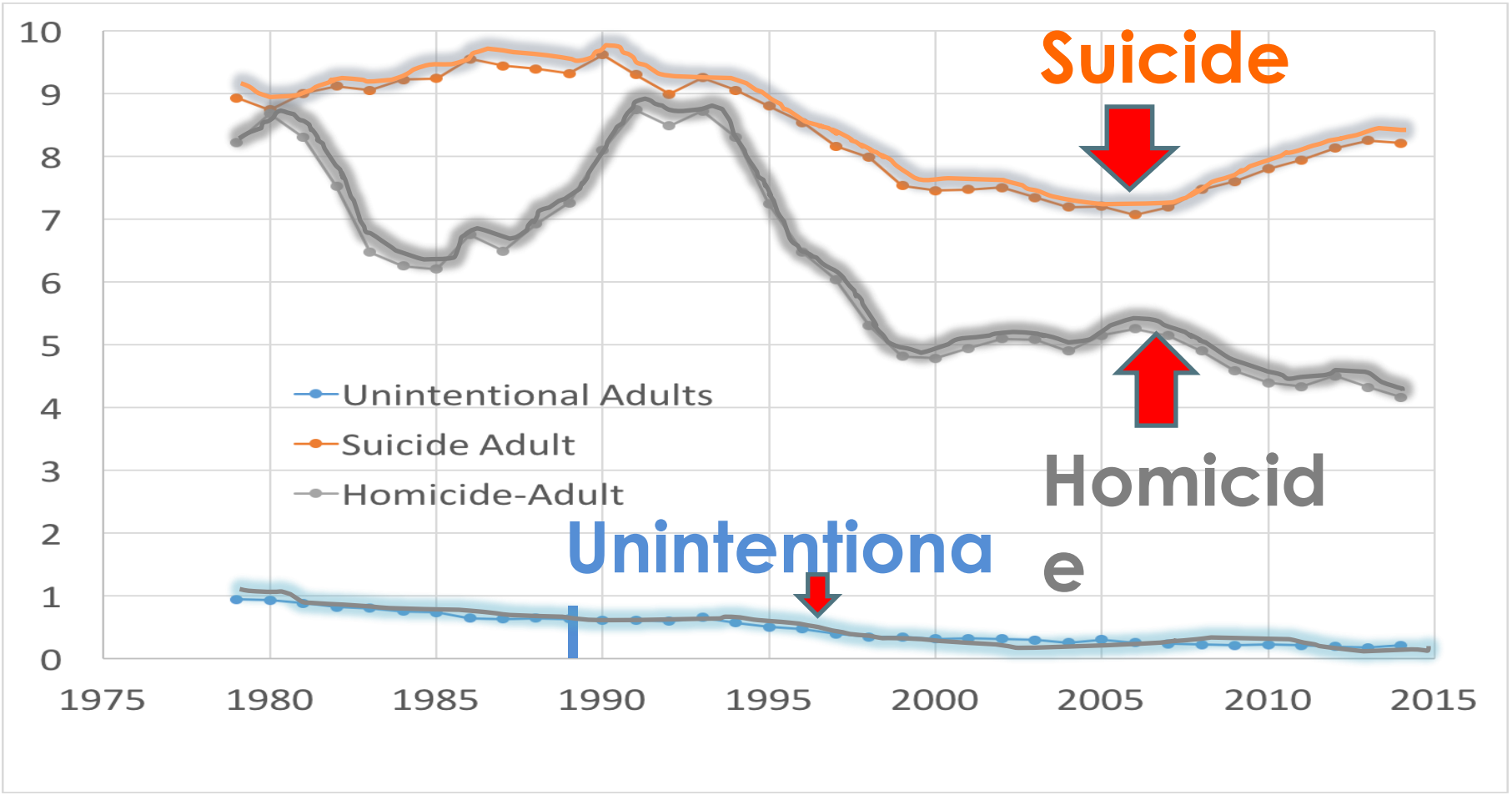
CDC National Center for Health Statistics, 1999-2014

Motor Vehicle versus Firearm Deaths



The Epidemiology of Firearm Violence in the Twenty-First Century US Garen J.Wintemute, 10.1146/annurev-publhealth-031914-122535

Adults - Firearm death all intents (Age 15-85+)

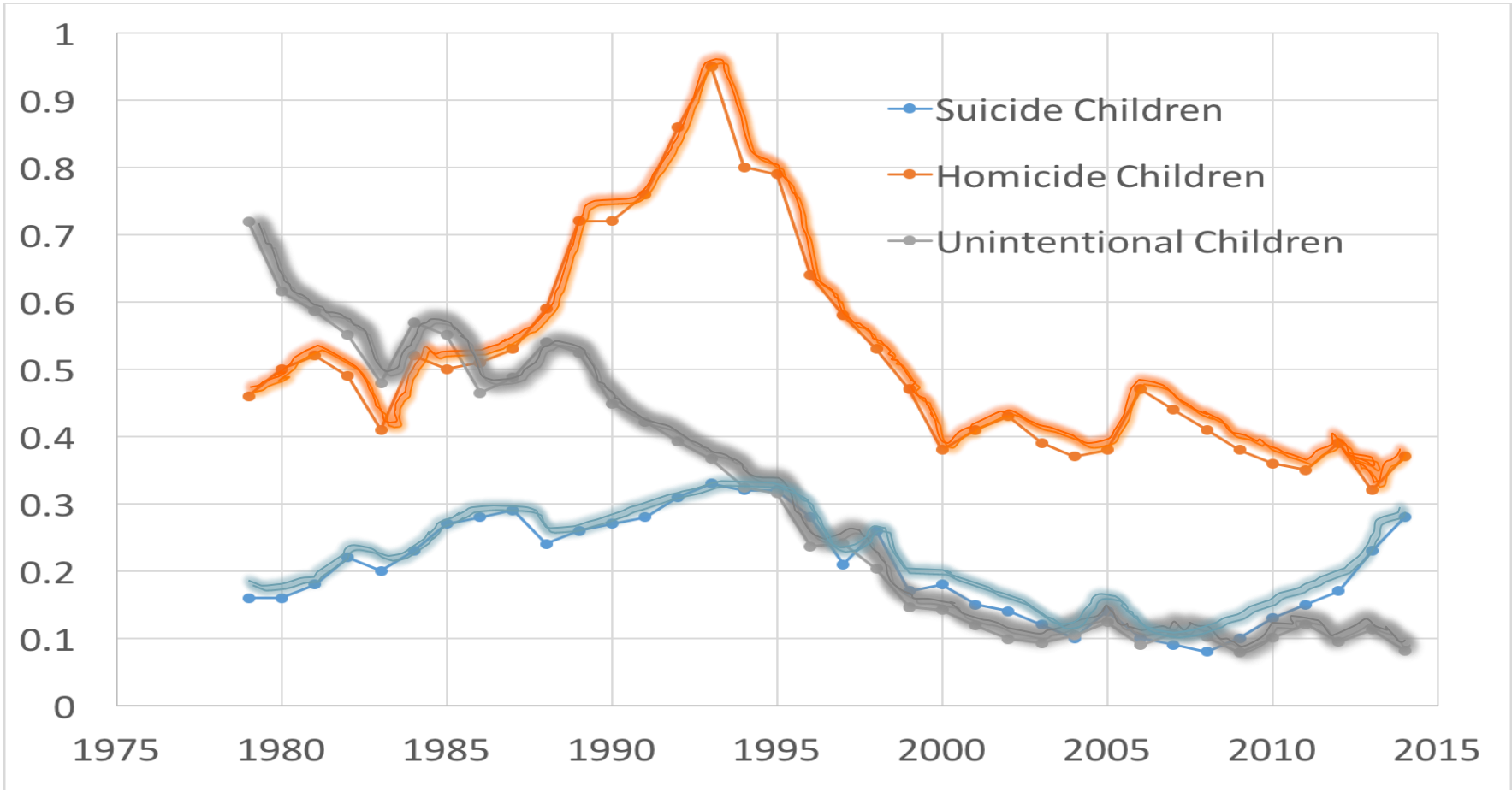


CDC Wonder 2014 Accessed February 2016, crude rates per 100,000

American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

Children – Firearm death all intents (Ages 0-14)

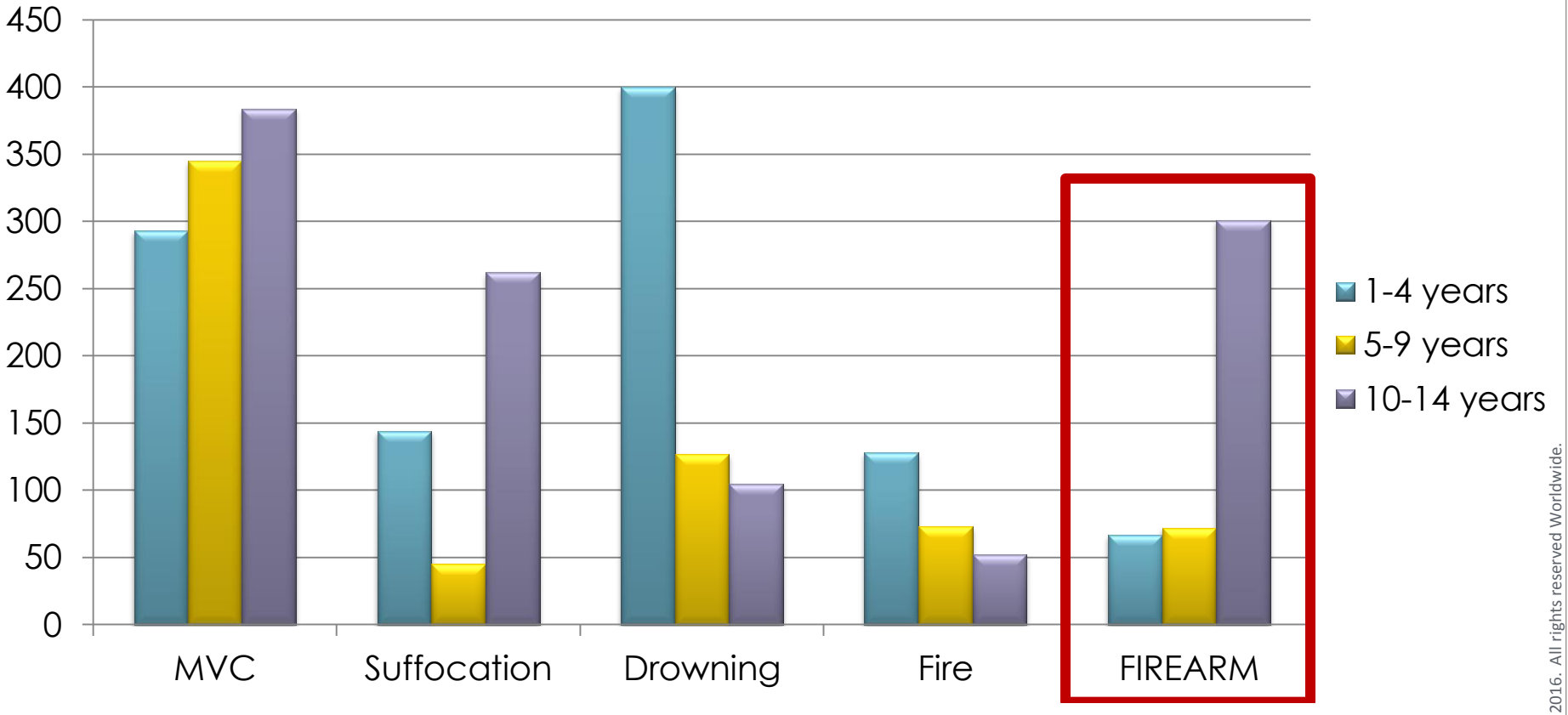


CDC Wonder 2014 Accessed February 2016, crude rates per 100,000

American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

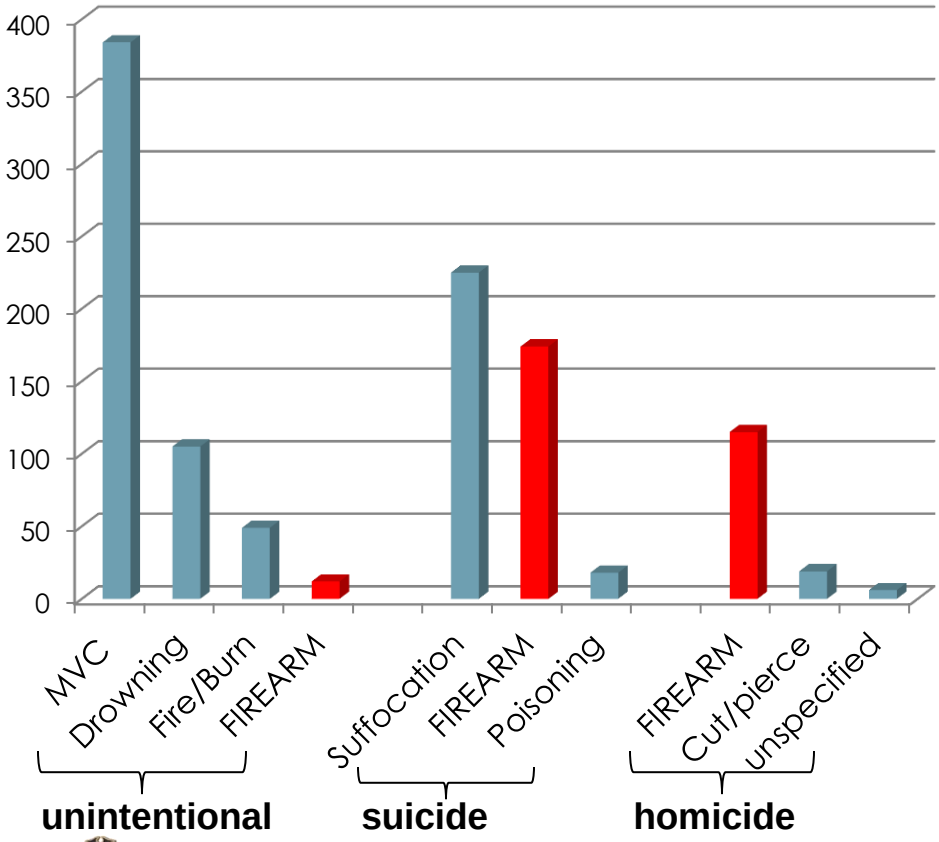
Cause of death, ages 1-14 years, 2014

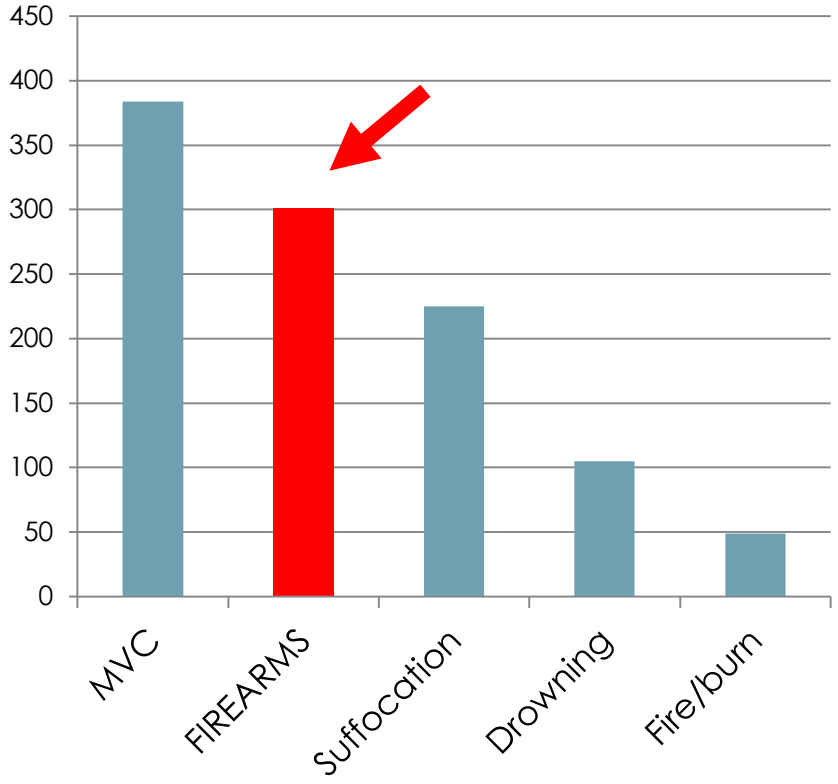


As children age, and intentional mechanisms of injury become more prominent, the rate of firearm injuries increase

Fatal injuries, ages 10-14 years, 2014

FIREARMS are the **second leading mechanism** of fatal injury in 10-14 year old children





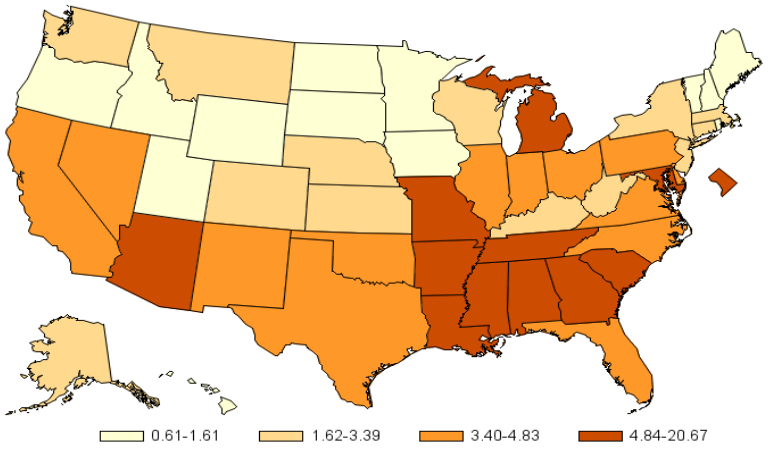
American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

THE COMMITTEE ON TRAUMA

Incidence and intent of firearm fatalities by location

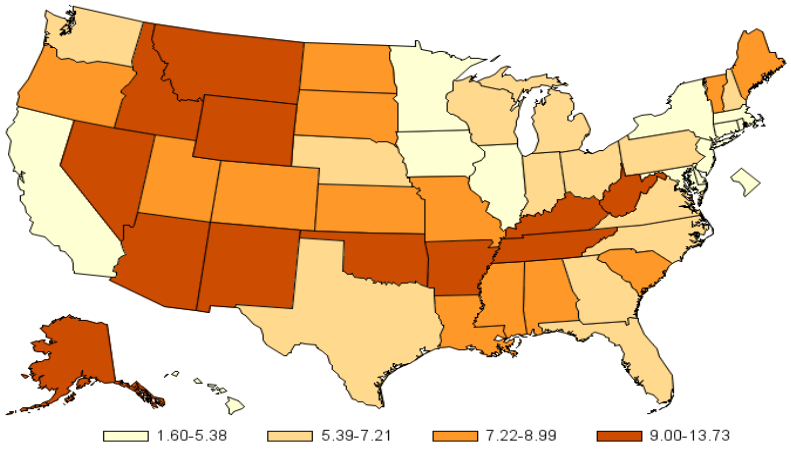
Homicide



Reports for All Ages include those of unknown age.
* Rates based on 20 or fewer deaths may be unstable. States with these rates are cross-hatched in the map (see legend above). Such rates have an asterisk.

Produced by: the Statistics, Programming & Economics Branch, National Center for Injury Prevention & Control, CDC
Data Sources: NCHS National Vital Statistics System for numbers of deaths; US Census Bureau for population estimates.

Suicide



Ages include those of unknown age.
or fewer deaths may be unstable. States with these rates are cross-hatched in the map (see legend above). Such rates have an asterisk.

the Statistics, Programming & Economics Branch, National Center for Injury Prevention & Control, CDC
NCHS National Vital Statistics System for numbers of deaths; US Census Bureau for population estimates.

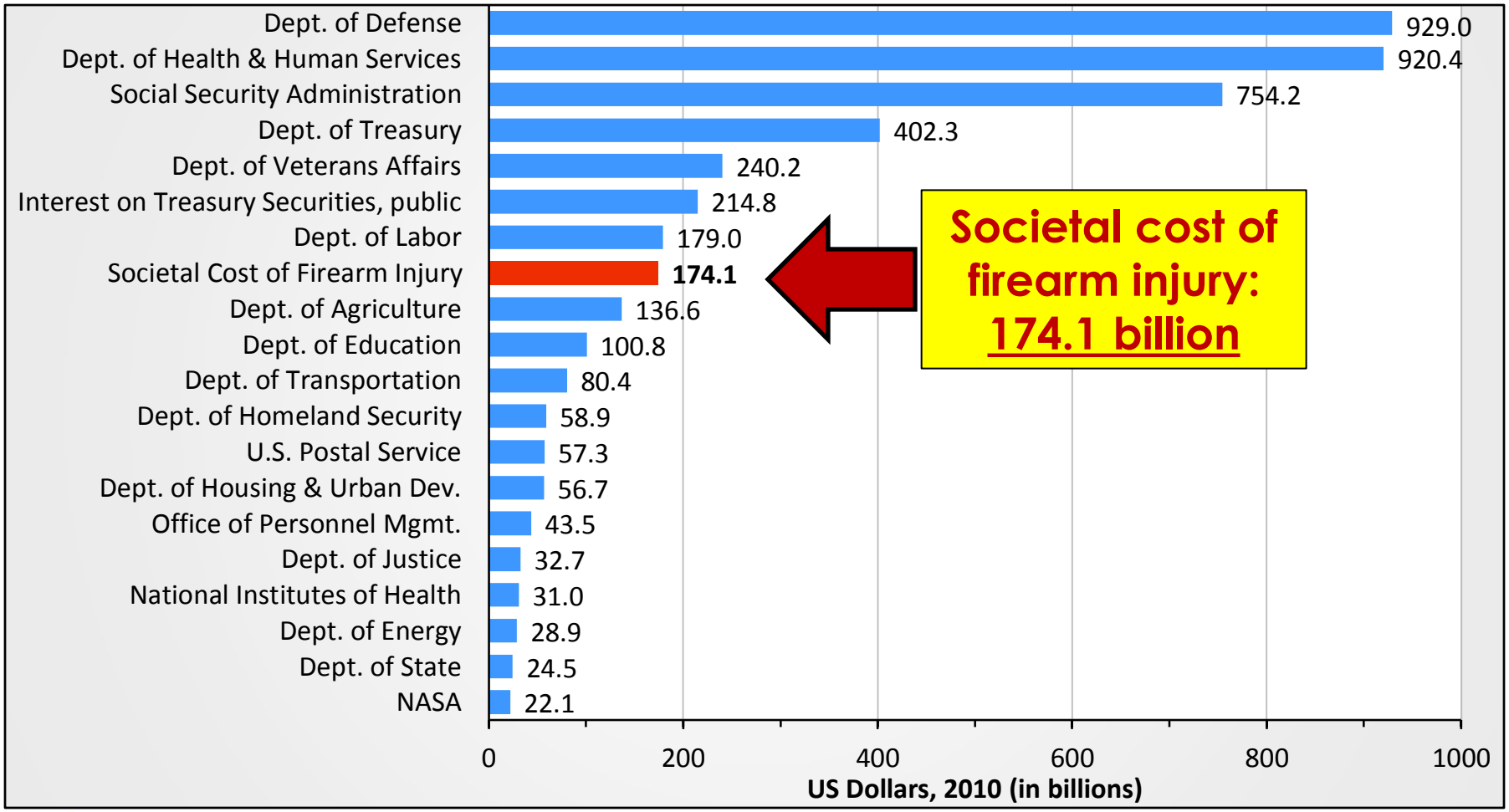
2004-2010, death rates per 100,000 population

- High
- Moderate
- Low

American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

Cost of Firearm Injuries



American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

Lee J, Quraishi SA, Bhatnagar S, Zafonte RD, and Masiakos PT The economic cost of firearm-related injuries in the United States from 2006 to 2010. Surgery. 2014 May; 155(5):894-898. doi: 10.1016/j.surg.2014.02.011. Epub 2014 Feb 22.

THE COMMITTEE ON TRAUMA

Annals of Internal Medicine

MEDICINE AND PUBLIC ISSUES

Firearm-Related Injury and Death in the United States: A Call to Action From 8 Health Professional Organizations and the American Bar Association

Steven E. Weinberger, MD; David B. Hoyt, MD; Hal C. Lawrence III, MD; Saul Levin, MD, MPA; Douglas E. Henley, MD; Errol R. Alden, MD; Dean Wilkerson, JD, MBA; Georges C. Benjamin, MD; and William C. Hubbard, JD

Annals of Internal Medicine

ORIGINAL RESEARCH

Internists' Attitudes Toward Prevention of Firearm Injury

Renee Butkus, BA, and Arlene Weissman, PhD

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™

Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

POLICY STATEMENT

Firearm-Related Injuries Affecting the Pediatric Population

AMERICAN COLLEGE OF SURGEONS

Inspiring Quality: Highest Standards, Better Outcomes

100+years

THE COMMITTEE ON TRAUMA

Addressing the Challenge

- COT Survey Goals:
  - Evaluate member opinions about firearm *ownership, freedom, responsibility, and policy development*
  - Identify areas of agreement and disagreement within COT
  - Develop consensus-based approach to decreasing firearms injuries and death *leveraging trauma centers* in collaboration with community organizations
  - Use survey results to guide firearm injury policy development

Methods

- IRB Approval
- 32 item anonymous survey, Qualtrics
- 254 US COT members
- December 2015 - February 2016
- Results extracted by ACS Staff
- De-identified
  - State information removed; coded to CDC Region

Data Analysis

- SPSS for Descriptive Statistics
  - χ^2, Fisher's exact test (categorical)
  - Nonparametric test (ordinal)
  - Statistical significance <.05

- Qualitative analysis of open-ended question
  - Two independent reviewers

Results

- Response rate 93% (237 of 254)
  - 88% Male; Mean age 52
  - 85% White
  - 88% Married
  - 58% Children in home
  - 29% Military experience
  - 88% Acute Care, Trauma, General or Pediatric Surgery
  - **43% Firearm(s) in home**
  - **33% *Personal experience* with family or friend injured or killed from firearm injury**

Demographic Characteristics of COT Members with Firearms in the Home

Demographic Variable	Firearm in Home (n)	Firearm in Home (%)
Male	90/207	**43.5%**
Female	11/29	**37.9%**
White	91/201	**45.3%**
Black	2/10	**20%**
Asian	3/13	**23.1%**
Other race	5/13	**38.4%**
Hispanic/Latino	0/8*	**0%***
Not Hispanic/Latino	94/213*	**44.1%***
Married	90/209	**43.1%**
Not Married	10/23	**43.5%**

Demographic Variable	Firearm in Home (n)	Firearm in Home (%)
No Military Experience	62/168**	**36.9%****
Military Experience	39/69**	**56.5%****
Northeast	5/35***	**14.3%*****
South	44/78***	**56.4%*****
Midwest	27/56***	**48.2%*****
West	25/66***	**37.9%*****
Experience Firearm Injury/Death	41/78*	**32.9%***
No Experience Firearm Injury/Death	60/159*	**59.4%***

American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

*$p<.05$, **$p<.01$, ***$p<.001$, comparing *No* to *Yes*.
Red text indicates where *p* was significant.

THE COMMITTEE ON TRAUMA

Level of Priority ACS Should Give to Reducing Firearm Injuries

- → **88%** indicated *High or Highest* Level
  - Varied by Military Experience (77.9%)
  - Varied by Firearms in the Home (74.7%)

Private Ownership of Firearms

- **28.7%** Beneficial/critical liberty/right
- **24.3%** Generally beneficial/important liberty

} **53%**

- **16.5%** No opinion
- **22.6%** Generally harmful/limits liberty
- **7.8%** Harmful/critically limits liberty

} **30%**

- Varied by Military Experience
- Varied by Firearms in the Home

Healthcare Professional Right to Counsel Patients

- Should healthcare professionals be allowed to counsel patients (or parents of patients) about how to prevent gun-related injuries?
  - **95% YES**
  - No difference when analyzed by gender, military experience, or firearm in the home

Research Funding

- Should the NIH, CDC, and other sources of research funding be allowed to fund research on the epidemiology and prevention of gun-related injuries?
  - **96% Yes**
  - Varied by Firearm in the Home (90.7%, p<.001)
  - Did not vary by gender or military experience

Rate Opinion on the ACS Initiating Efforts to Advocate for or Support Legislation in 15 Areas:

- **Analyzed Results by:**
  - Firearms in Home
  - Gender
  - Military Experience

- Mann Whitney U Test where significance is $p<.05$

Advocacy Initiatives and Agreement among COT Members Across Demographic Groups

% COT members who strongly agree/agree with advocacy in the following areas	All COT Members	No Home Firearm	Yes Home Firearm	No Military	Yes Military	Male	Female
Improve mental health screening & treatment to reduce suicides & gun violence	**93%**	95%	91%	95%	89%	94%	90%
Identify & implement evidence-based injury prevention programs	**93%**	**97%***	**87%***	99%	85%	92%	96%
Mandatory prosecution of convicted felons who attempt to purchase a firearm	**92%**	93%	91%	93%	90%	92%	93%
Increase penalties when guns provided to others illegally including dealers	**92%**	**98%***	**85%***	95%	86%	92%	93%
Prevent people with mental health illness from purchasing Firearms	**92%**	**96%***	**87%***	93%	88%	93%	86%

American College of Surgeons
Inspiring Quality: Highest Standards, Better Outcomes
100+years

p<.05: **Firearm* vs *No Firearm* in Home; ***Military* vs *No Military Experience*; ****Male* versus *Female*. Red text indicates areas where *p* was significant.

THE COMMITTEE ON TRAUMA

Advocacy Initiatives and Agreement among COT Members Across Demographic Groups

% COT members who strongly agree/agree with advocacy in the following areas	All COT Members	No Home Firearm	Yes Home Firearm	No Military	Yes Military	Male	Female
Make funds available for research to understand and prevent gun violence	**92%**	**99%***	**82%***	92%	91%	91%	93%
Preserve the right of health care providers to counsel patients on safe Firearm ownership	**90%**	**95%***	**84%***	92%	85%	90%	90%
Background checks & license/permit for purchases including shows & private sales	**86%**	**96%***	**72%***	87%	83%	**85%*****	**93%*****
Prevent people who are on the US No Fly list from purchasing Firearms	**84%**	**88%***	**79%***	83%	90%	82%	90%
Require safety features, including child-proof locks & "smart gun" technology	**83%**	**96%***	**66%***	92%	86%	81%	93%

American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

p<.05: **Firearm* vs *No Firearm* in Home; ***Military* vs *No Military Experience*; ****Male* versus *Female*. Red text indicates areas where *p* was significant.

THE COMMITTEE ON TRAUMA

Advocacy Initiatives and Agreement among COT Members Across Demographic Groups

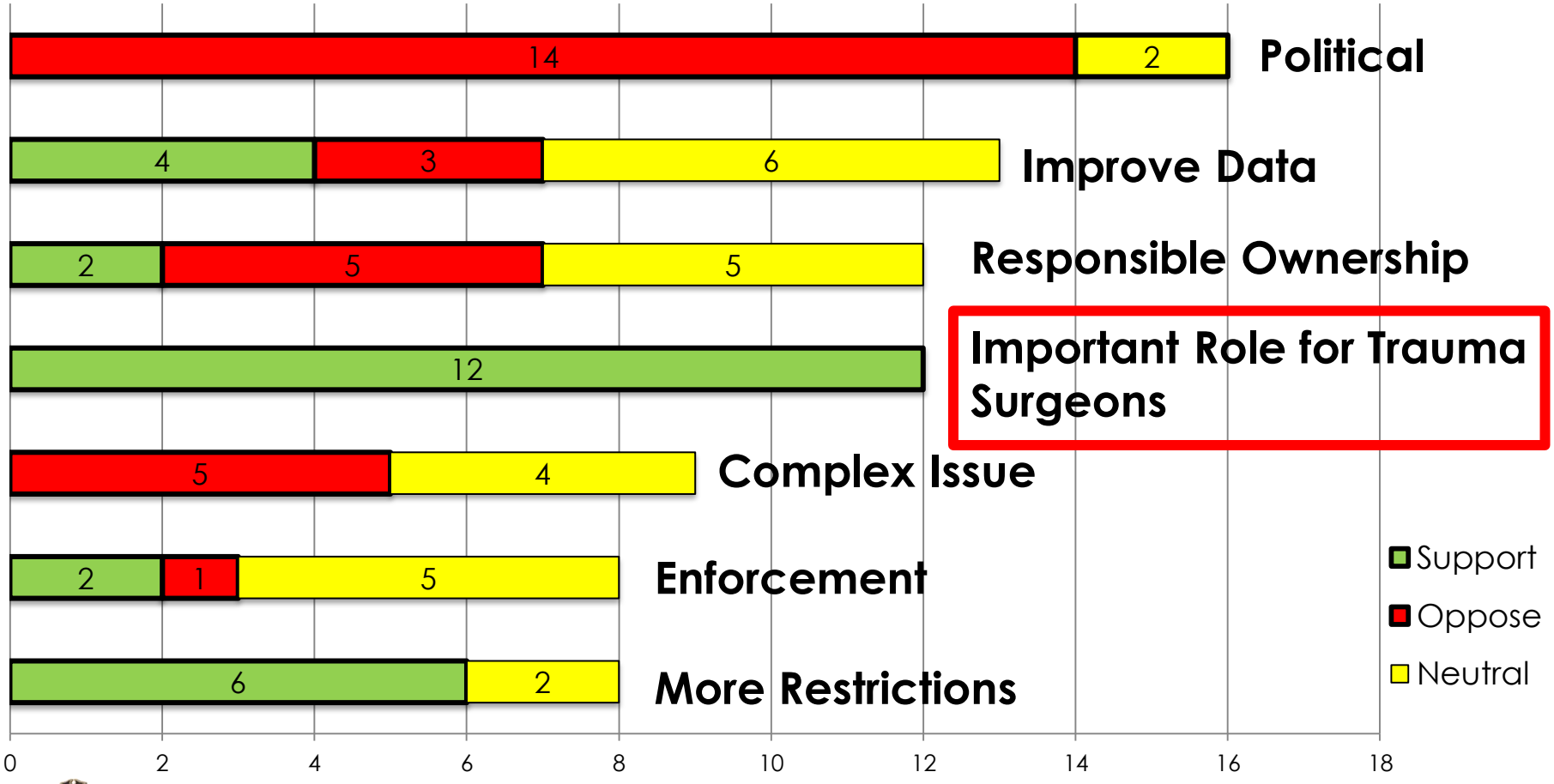
% COT members who strongly agree/agree with advocacy in the following areas	All COT Members	No Home Firearm	Yes Home Firearm	No Military	Yes Military	Male	Female
Limit civilian access to ammunition designed for military or law enforcement use	**76%**	**93%***	**54%***	**80%****	**68%****	74%	90%
Encourage development/use of technology that identifies ammunition purchaser	**75%**	**90%***	**55%***	**71%****	**67%****	74%	79%
Restrict civilian access to assault rifles (magazine fed, semi-automatic, i.e. AR-15)	**70%**	**90%***	**44%***	**76%****	**55%****	**67%*****	**90%*****
Create a federal database to track firearm sales	**70%**	**83%***	**52%***	71%	85%	69%	72%
Require firearms owners to be 21 years of age or older	**58%**	**71%***	**41%***	59%	55%	57%	52%

AMERICAN COLLEGE OF SURGEONS
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

p<.05: **Firearm* vs *No Firearm* in Home; ***Military* vs *No Military Experience*; ****Male* versus *Female*. Red text indicates areas where *p* was significant.

THE COMMITTEE ON TRAUMA

Most Common Themes



American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

Qualitative Analysis of Responses

- **Other common themes (>4 responses):**
  - We should focus on mental health, suicide prevention
  - Guns don't kill people – people kill people
  - We should address our country's propensity for violence
  - This will be divisive amongst the ACS members
  - These efforts seem more about gun control
- **Notable comments:**
  - Gun ownership ("rights") and the regulation of firearms is a political issue, not a medical one.
  - We have an obligation to research this area that affects the health of our patients and families.
  - I believe that gun ownership is a constitutional right but also believe that it critically hinders personal safety and liberty in today's society.

Conclusions

- 88% indicated High or Highest Level of Priority

Support for Policy Initiatives:

- >90% support – 7 of 15
- 80%-90% support – 3 of 15
- 70%-80% support – 4 of 15
- Less than 70% support – 1 of 15

Limitations and Next Steps

- Limitations: survey; initial step
- Survey ACS BOG, International Committee
- Implementation plan that leverages consensus in four pillars: advocacy, quality, systems, education
- Partner with others to develop concrete action steps
- Disseminate the information – publish, ACS Clinical Congress
- Continue the conversation

COT Injury Prevention Committee, Special Guests and ACS Staff

Deborah A Kuhls
Michel Aboutanos
Roxie M Albrecht
Darrell C Boone
Peter Burke
Brendan Campbell
Mark Cipolle
Michael Coburn
Jim Davis
Corey Detlefs
Barbara Gaines
Doug Geehan
Ronald Gross
Ashley Hink (RAS)

Fernando Joglar
Bob Letton
Peter Masiakos
Mark McAndrew
Leon Moores
Tina Palmieri
Don Reed
Dave Shapiro
Tom Esposito
Mike Nance
Douglas Schuerer
Ronald Stewart
Don Van Boerum
Sonlee West
Babak Sarani

Jim Elsey – Regent Representative
Beth Sutton – Regent Representative
Dr. Michael Rotondo
Dr. Ronald Stewart
Katie Wiggins – RAS Liaison

Guests:

Lisa Allee
Trudy Lerer

ACS Staff:

Tamara Kozyckyj
Holly Michaels
Maria Alvi
Justin Rosen
Matt Coffron

American College of Surgeons
Inspiring Quality:
Highest Standards, Better Outcomes
100+years

THE COMMITTEE ON TRAUMA

Questions?

- Please direct any questions related to the presentation content to the **ACS Committee on Trauma:** COT@facs.org