

Pediatric Gun Violence: Starting the Conversation

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Riley Children's Health
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Disclosure Statement

- I have no relevant financial relationships to disclose.
- Any opinions expressed are my own and do not necessarily reflect the views of any organization or company.

- I am not an expert.



Learning Objectives

- Understand the magnitude of childhood death or injury due to firearms in our state and country.
- Recognize the risks and role of guns in adolescent suicide.
- Gain confidence in providing patient education on secure gun storage.



Gun Violence: A Public Health Crisis



321 AMERICANS DIE
FROM A GUN EVERY DAY
IN OUR COUNTRY.



5 DEATHS/DAY IN
CHILDREN < AGE 18



12-13 DEATHS/DAY
+ 18-21 YEAR OLDS



8300 CHILDREN ARE
TREATED FOR GUNSHOT
WOUNDS EACH YEAR.



Cost of Pediatric Gun Violence

- > \$270 million per year (pediatric)
 - Emergency and inpatient care
- Additional costs
 - Rehabilitation
 - Long term therapy
 - Loss of work wages
- Estimated \$8 billion/yr in US
- Psychological consequences
 - Short and long term
 - Anger, withdrawal, PTSD, depression, suicide risk
 - ACE score: seeing parent threatened with a gun +1



WHAT IMPACT DO ACEs HAVE?

As the number of ACEs increases, so does

In an average year,
gun violence in America
**kills more than
40,000 people,**
wounds nearly twice
as many, and costs our
nation **\$557 billion.**

EVERYTOWNRESEARCH.ORG/COST-OF-GUN-VIOLENCE



Heart disease



Cancer



Stroke



COPD



Broken bones

Ripple Effect of Gun Violence

- Short bowel syndrome, gun shot wound as a child
- Anxiety, weight loss: fear of school shootings
- Teenager with depressed mood: suicidal ideation
- Single mom with young children: co-parent killed



Types of Firearm Deaths in Children

The News&Observer

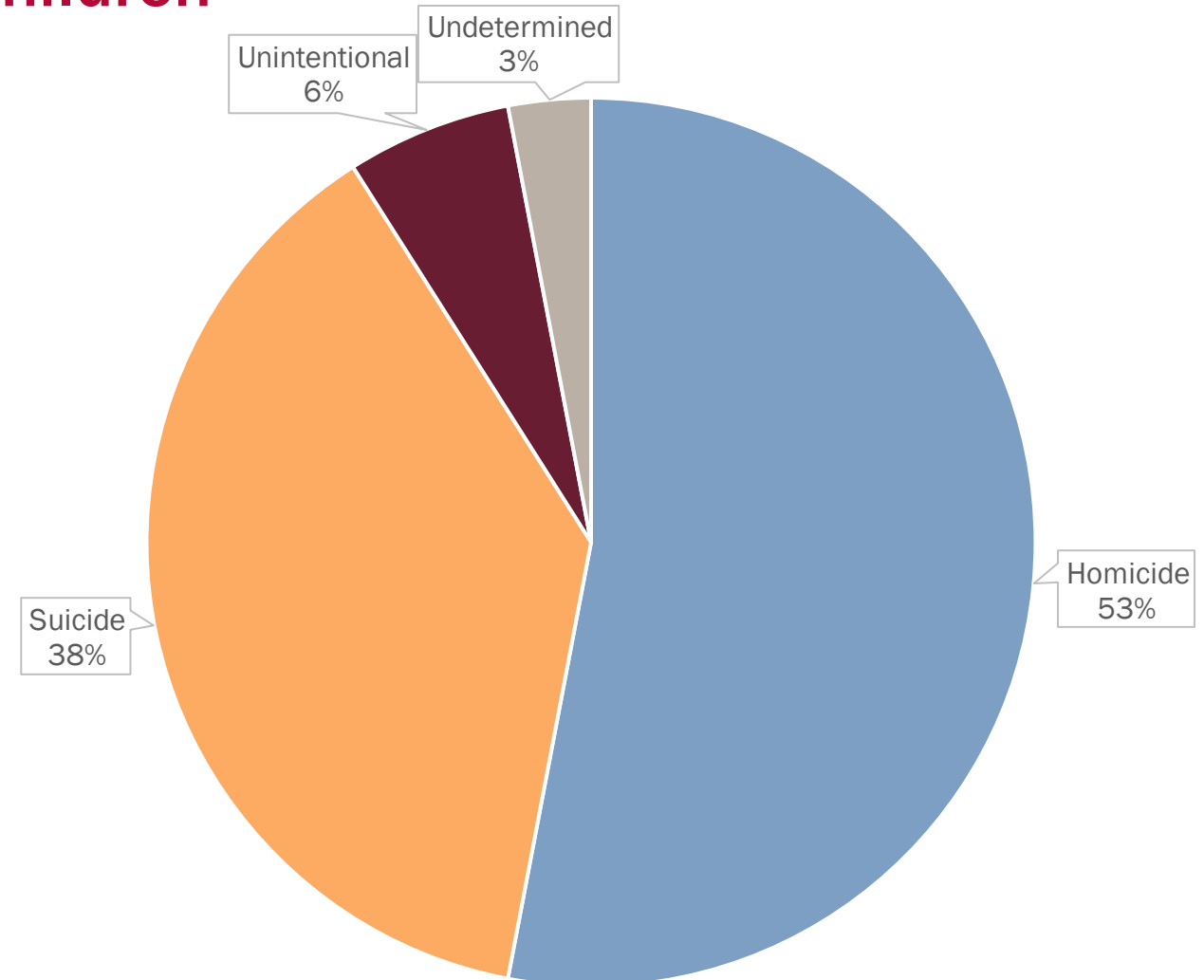
CRIME

2-year-old boy fatally shot was playing with loaded handgun, NC sheriff's office says

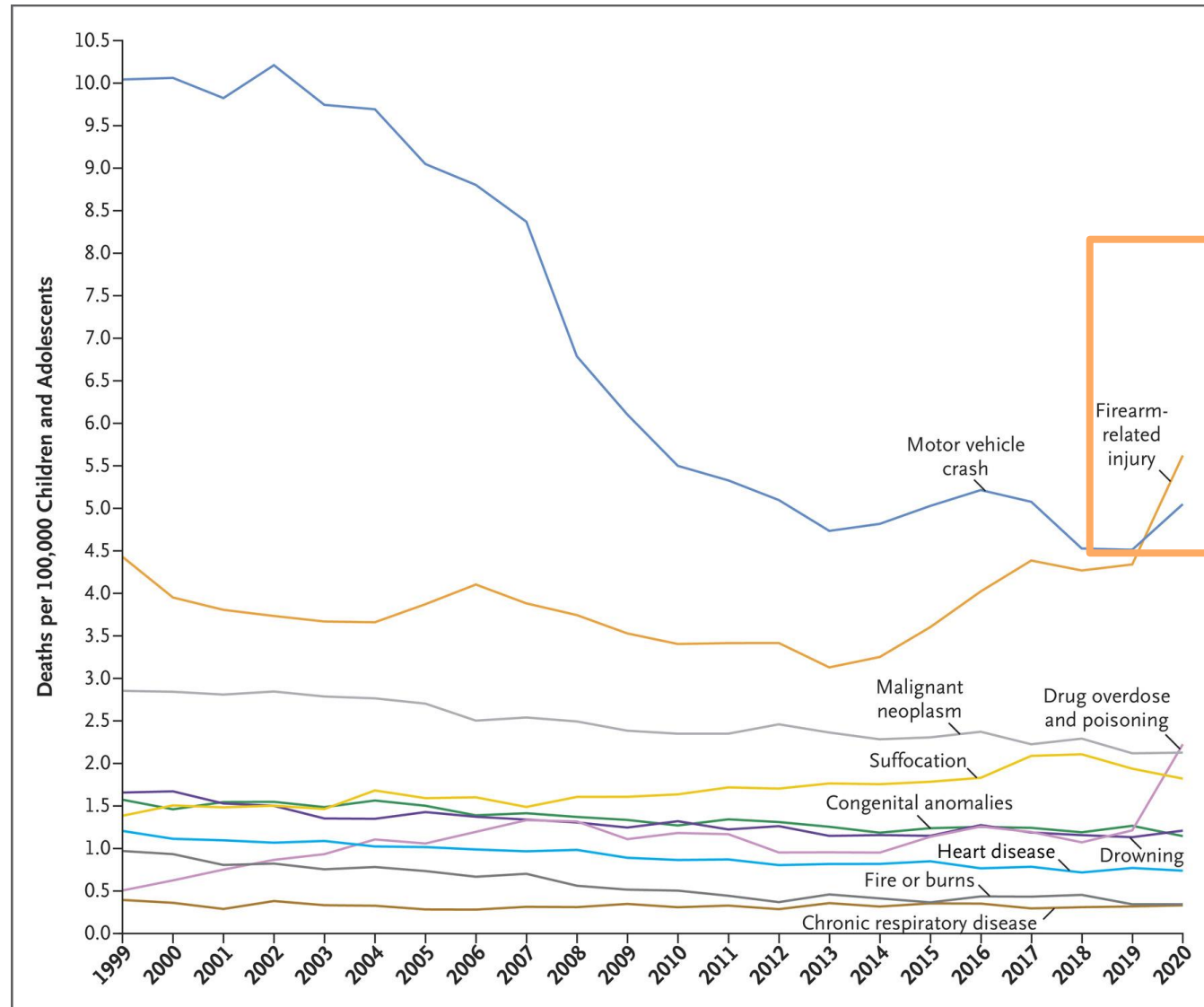
BY AARON SÁNCHEZ-GUERRA AND KRISTEN JOHNSON



Johnston County Sheriff's Office is investigating after a 2-year-old was shot and killed Sunday evening, Oct. 16, 2022, in Benson. Our media partner, ABC11 Eyewitness News reports that authorities say they are not looking for a suspect in this case. BY ABC11



Causes of Pediatric Death: Recent Trends



Firearms Injuries Involving Young Children in the United States During the COVID-19 Pandemic

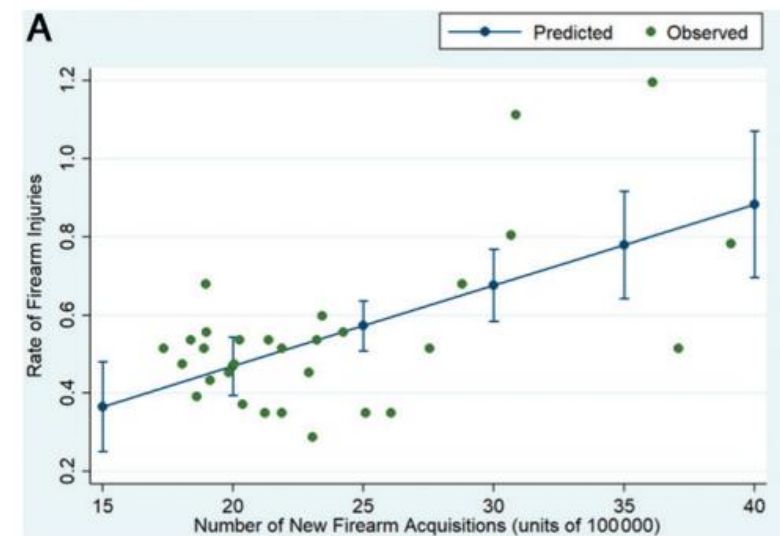
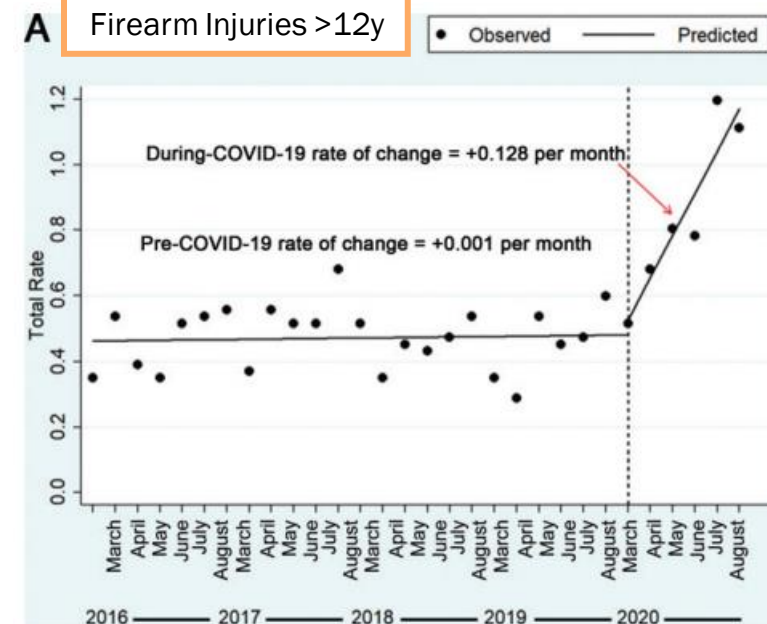
Joanna S. Cohen, MD,^{a,b,c} Katie Donnelly, MD, MPH,^{a,b,c} Shilpa J. Patel, MD, MPH,^{a,b,c} Gia M. Badolato, MPH,^a Meleah D. Boyle, MPH,^a Robert McCarter, ScD,^{b,d} Monika K. Goyal, MD, MSCE^{a,b,c}

The COVID factor



2020, 5100 children <18y shot
1000 more than at any point in data collection

2021, as of September
13% more than prior year
Children <12
- 1st 6 months of pandemic: 247 firearm injuries (89 fatal)
- Prior years 6mo avg: 137.5



PEDIATRICS Volume 148, number 1, July 2021:e2020042697



The absence of guns in homes and communities is the most reliable and effective measure to prevent firearm-related injuries in children and adolescents.

To prevent gun-related death and injuries, the AAP recommends that pediatricians provide firearm safety counseling to patients and their families.



AAP Position on Firearm Safety



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Counseling

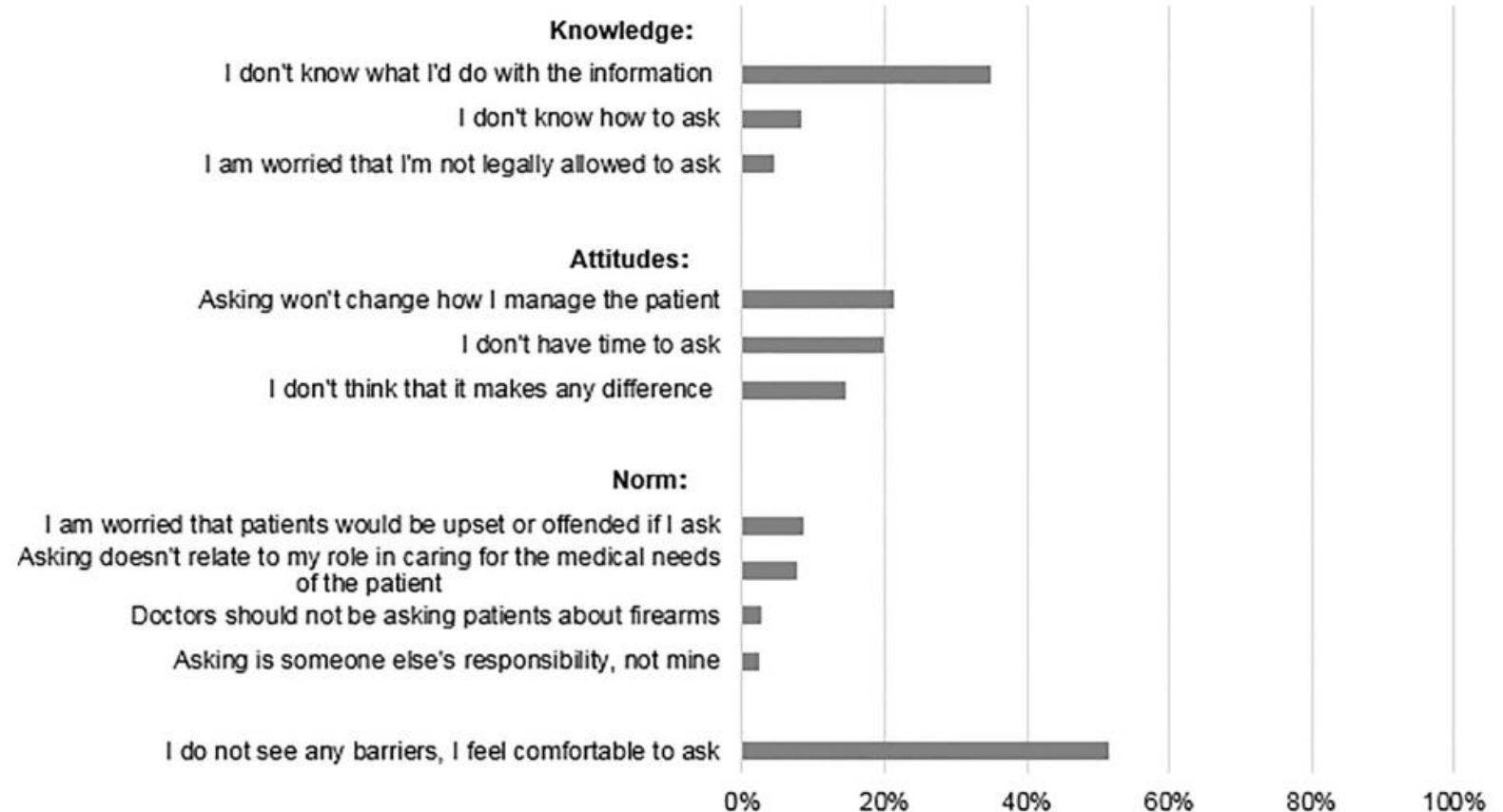


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Counseling about Guns

- 2017 survey of 185 pediatric ED
 - Compared to other injury prevention topics
 - 35% firearm prevention
 - “sometimes”
 - “frequently”
 - Barriers
 - Political concerns
 - Lack of awareness
 - Legal constraints
 - 1/3 unsure if state laws permit discussion



Firearm Owner's Privacy Act

Florida in 2011

Prohibited doctors from “*making written inquiry or asking questions concerning the ownership of a firearm or ammunition by the patient or by a family member of the patient.*”

- Blocked shortly after passage

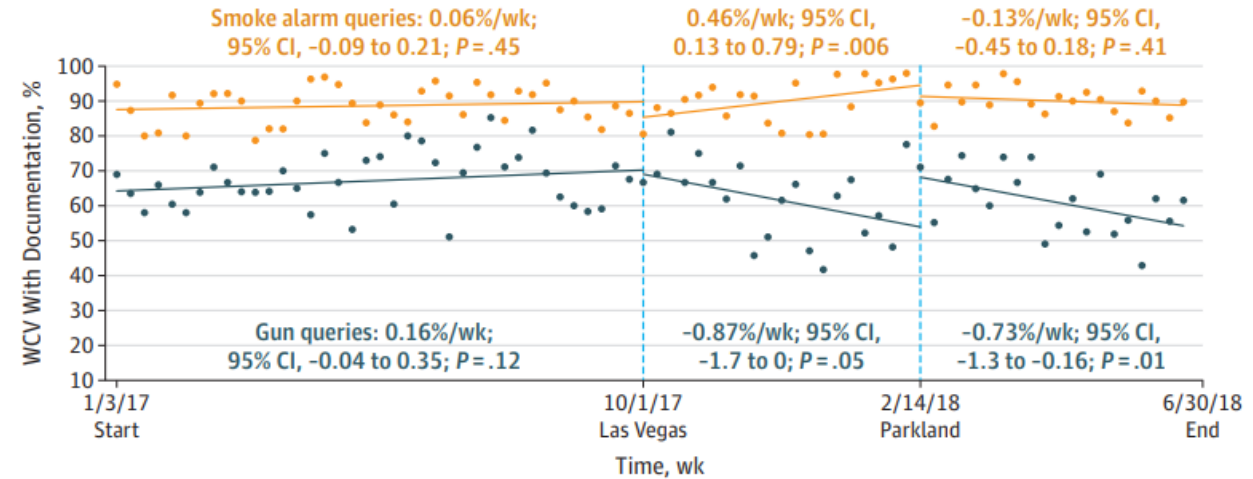
Court system

- 2014, 3-judge circuit court of appeals ruled to uphold
- 2017, 11-judge full U.S. Circuit Court of Appeals
 - Act violates physician's 1st Amendment rights
 - Doctors must be allowed to discuss guns with their patients

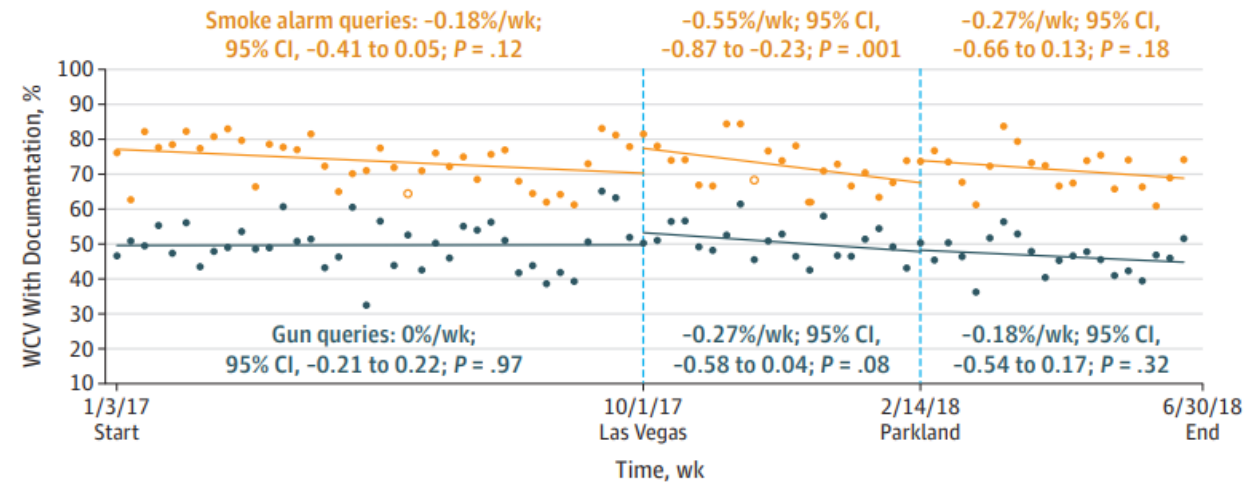
Counseling about Guns

- Large academic pediatric hospital (Utah)
- 1/2017: EHR template additions
 - 1.5 y follow-up
- Smoke detectors 78%
- Gun safety 54%
 - Infants < adolescents

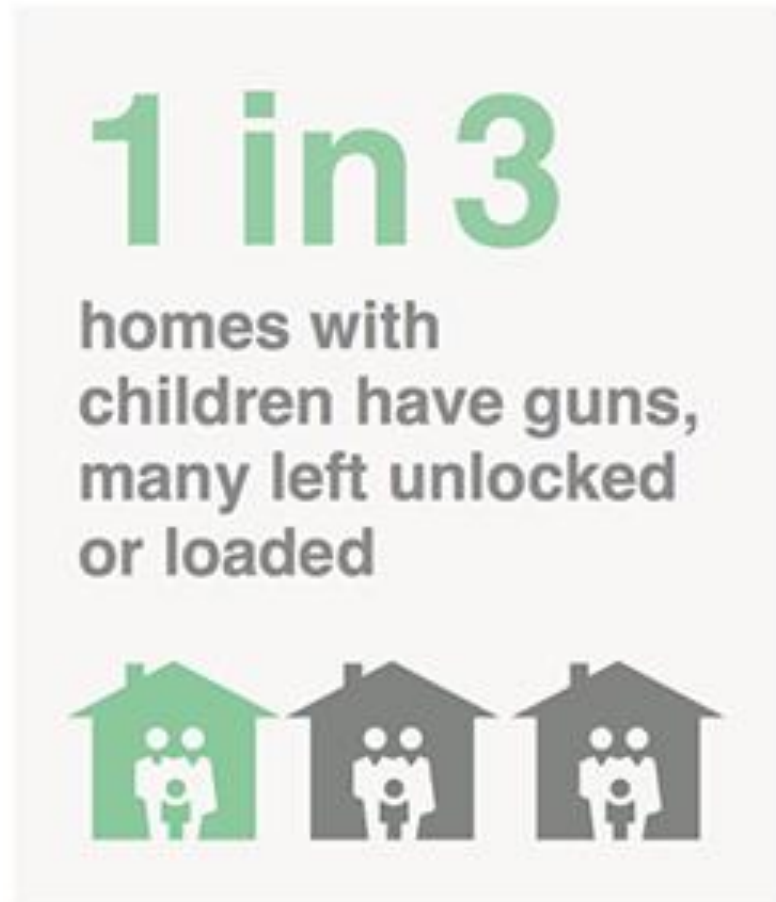
C Interrupted time series for residents



D Interrupted time series for faculty



What's the Reality?



**4.6 million children
in the US live in a
household with at
least one loaded,
unlocked gun.**

**Don't let your child
be one of them.**

**BE
SMART**

Learn more about secure gun storage
BeSMARTforKids.org

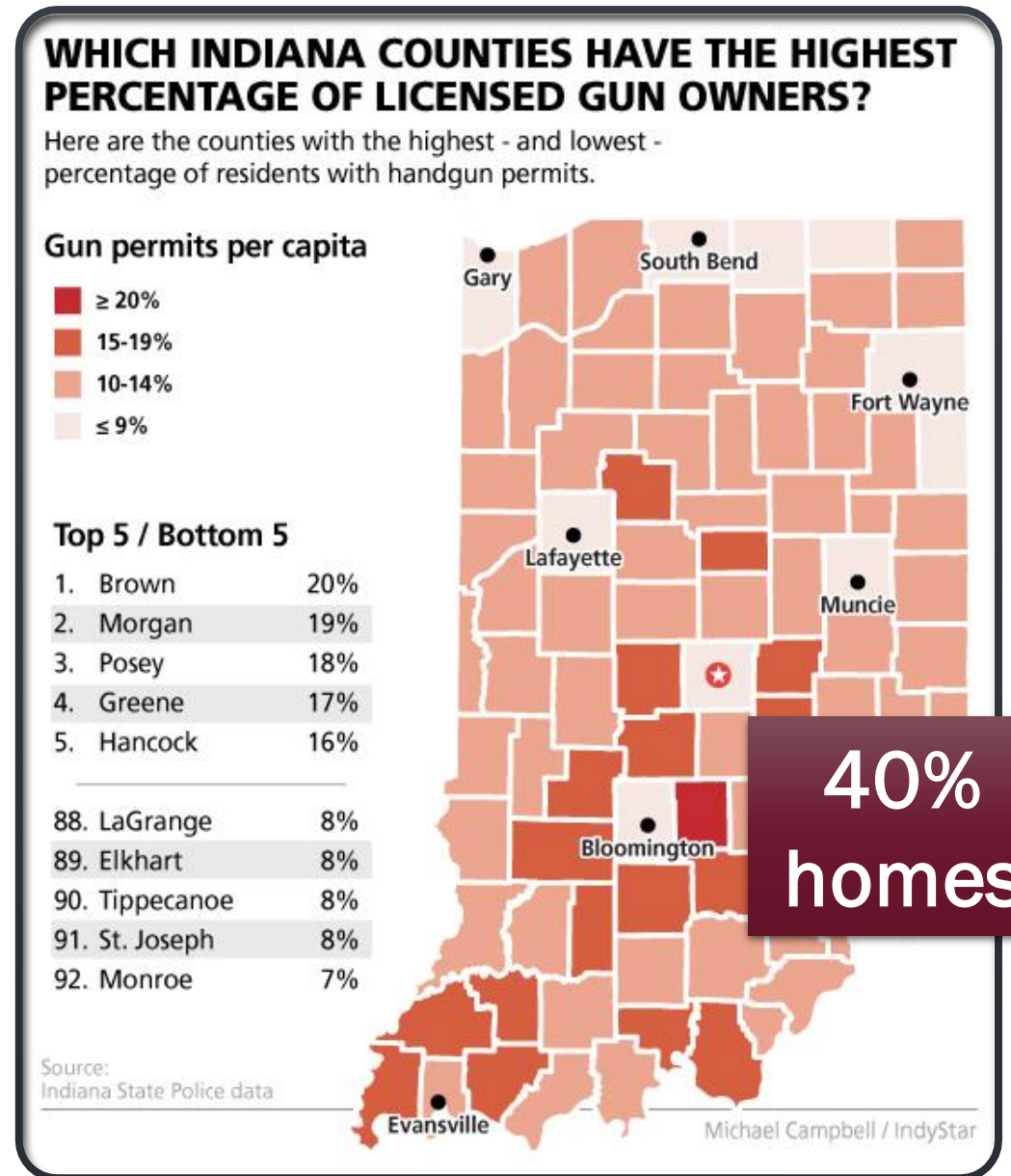
Matthew Miller and Deborah Azrael, "Firearm Storage in US Households with Children:
Findings from the 2011 National Firearm Survey," JAMA Network Open 5, no. 2 (2022): e2148823.



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Hoosier data

- 2020 Indiana data
 - 17th gun death rate in the country
 - 11th exported crime guns
- Currently, no:
 - Gun owner license requirement
 - Universal background checks
 - Waiting periods
 - Assault weapon restrictions
 - Large capacity magazine ban
 - Concealed carry law
- July 1, 2022: House Enrolled Act 1296
 - “no longer require a handgun permit to legally carry, conceal or transport a handgun within the state.”



Minors and IN Gun Laws

- Minimum age to purchase a handgun: 21
- Minimum age to purchase a long gun or rifle: 18
 - UNLESS with proper consent by parent or guardian
- Minors can possess a firearm
 - Supervised hunting course
 - Supervised target range
 - On premises of own home or property with parent/guardian permission

Child Access Prevention Laws

PUBLIC SAFETY

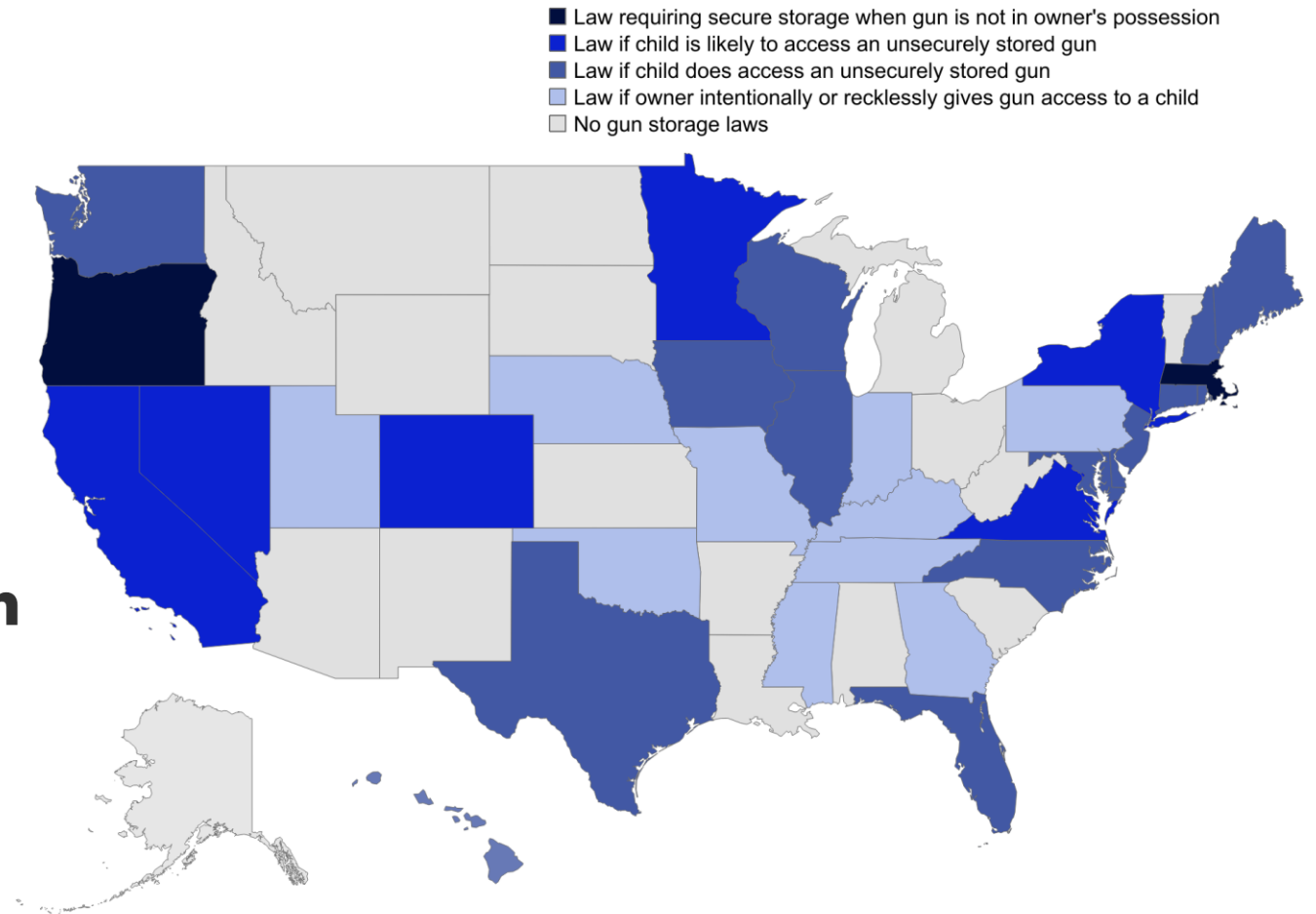
Child finds handgun, fires a shot in Fishers Ikea



Justin L. Mack

IndyStar

Published 3:23 p.m. ET June 25, 2018 | Updated 9:52 a.m. ET June 26, 2018



- Allows a gun owner to be charged if a child accesses a poorly stored gun
- Varying strength
- IN: charged only if gun provided to their child knowing a substantial risk the gun would be used to commit a crime or violent act

Firearm Storage Practices

	Homes + High Risk Children	Homes – High Risk Children
Unlocked and loaded	11.6%	20.3%
Locked and loaded Unloaded Unlocked	53.5%	48%
Locked and unloaded	34.9%	31.9%



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Scott et al. Pediatrics 2017.

Possible Outcomes of Unsecured Firearms

Unintentional shooting

- Gun Violence Archives: Jan 1, 2014 – June 30, 2016
- Indiana: 7th highest per capita rate (unintentional shootings involving children)

Homicide

- Since 1999, 80% of guns in school shootings
- Taken from shooter's home or friend/relative

Suicide

- Youth suicides by firearm
- 75% gun owned by child's parents

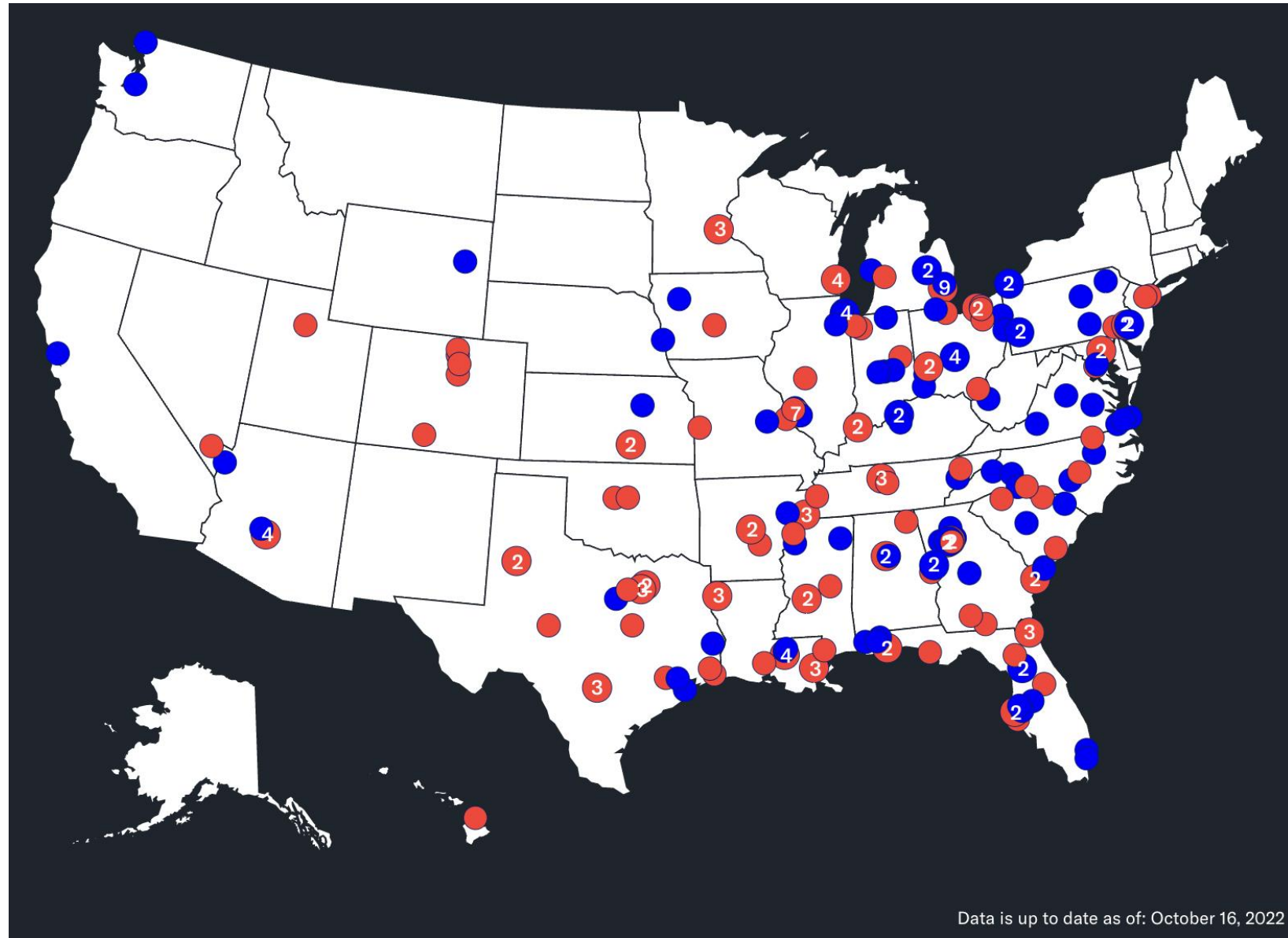
3/4

of school shooters
acquired their firearm
from the home of a
parent or close relative.

#NotAnAccident

Year of 2022 to date

238 unintentional shootings by children
106 deaths



Data is up to date as of: October 16, 2022



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● Death

● Injury

#NotAnAccident

Year of 2022 to date

238 unintentional shootings by children
106 deaths

2015 – 2022

94 unintentional shootings by children
33 deaths



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4-year-old boy fatally shot himself with gun left on dollhouse in Indiana, police say



Douglas Walker
Muncie Star Press

Published 10:37 a.m. ET Nov. 16, 2022 | Updated 12:07 p.m. ET Nov. 16, 2022



● Death

● Injury

Unintentional Shootings by Children

Shootings by children most often also shootings of children

- 91% those killed/injured <18

7/10 occurred in homes

- Most often on weekend, summer, school holidays

Most common age groups

- 14-17y
- <6y

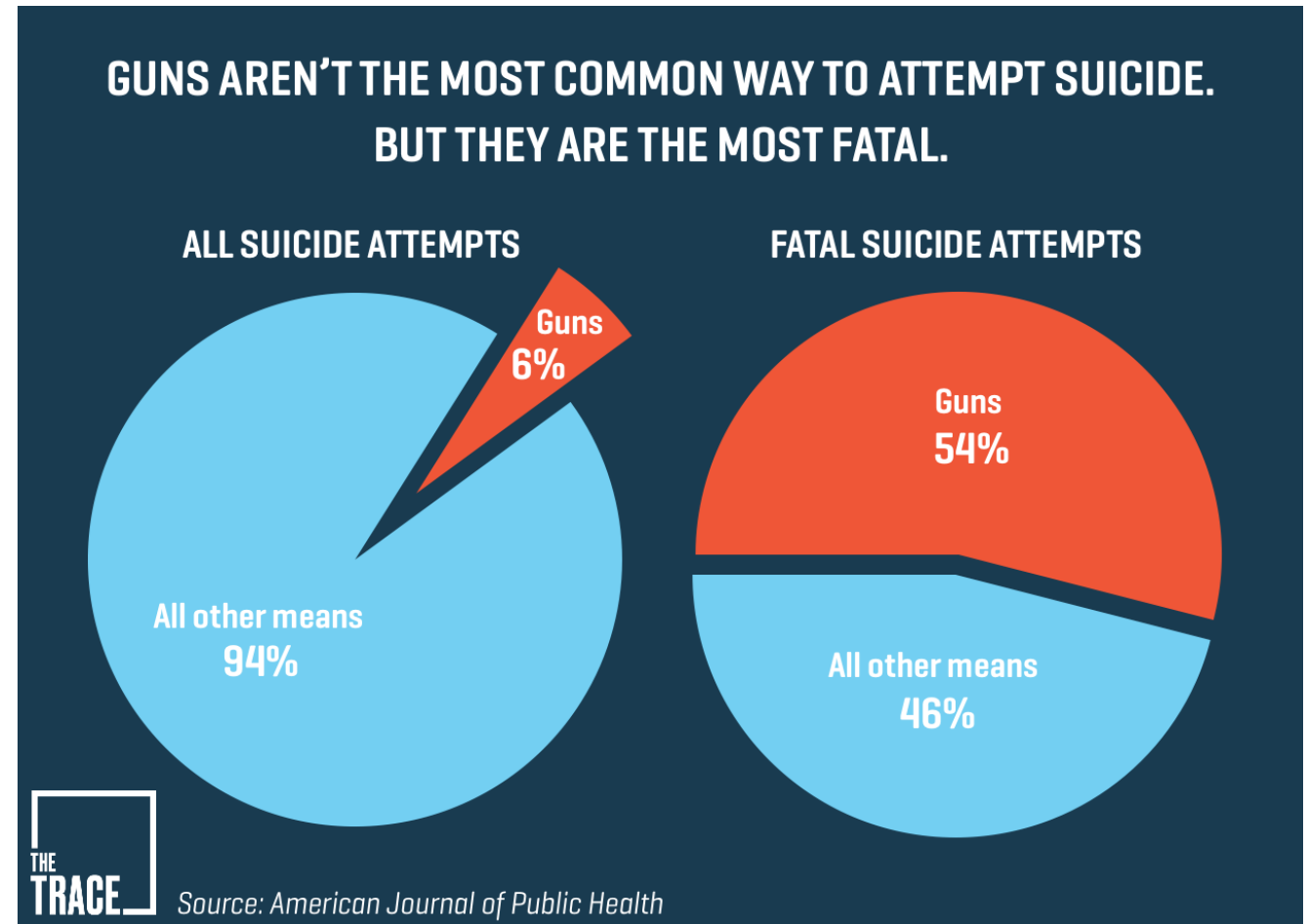
Every year, nearly **350 children** under the age of 18 unintentionally **shoot themselves or someone else**—most often another child or teen under 18.

EVERYTOWNRESEARCH.ORG



Adolescent Suicide in Indiana

- >50% completed suicides are by firearm
- Indiana State Department of Health
 - Suicide in Indiana report 2011-2015
 - #1 state: teens who consider suicide
 - #2 state: teens who attempt suicide
- 2021 Youth Risk Behavior Survey (IN high schoolers)
 - 46.7% “feeling sad or hopeless almost every day ... up to 2 weeks in a row”
 - 27.7% - seriously considering attempting suicide.
 - 22.2% - made a plan about attempting suicide.
 - 11.8% - attempted suicide during the preceding 12 months.



Adolescent Suicide

Impulsivity

<10min
deliberating
decision

Availability of
lethal means



3X

Access to a firearm
in the home triples
suicide risk

Bigger risk than
known history of
mental health
disorder

IN Firearm Seizure and Detention Law

- “Red Flag” law since 2005
 - 1 of 14 states
- Law enforcement can remove firearms from “dangerous individuals” and keep until hearing is held
 - Person at imminent risk to self or others
 - OR
 - Risk of personal injury to self or others in future
 - AND
 - Mental illness without willingness to take medication or violent or emotionally unstable behavior
- Hearing must be within 14d, followed by judge determination

Making the Ask



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Asking About Guns

Do you own any weapons?

Do you have a gun in your home?

How do you store your gun?

Asking vs. Talking about Guns

- Gun violence – complex and polarizing
- Individual beliefs on guns and gun ownership
- “Sacred Value”
 - Set of values or principles that individuals hold dear to their idea of right or wrong
 - Defines who they are and help guide their daily lives
- Focus on the “**why**” and “**how**”

If asking is difficult, make the assumption that guns are in the home.

“

If you are a gun owner and you have children in your home,
the gun needs to be unloaded, locked away, with the
ammunition stored separately.

”



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When to Talk about Guns

With each new developmental milestone

- Newborn
 - Home safety checklist
- Toddlers
 - Gross motor skills
 - Lack the concept of danger
 - Can pull a trigger
- Preschool/School age
 - Good motor skills
 - Poor judgment
 - Understanding if/then consequences

Early and Often

- Older school age
 - Concrete thinking
 - Still poor cause/effect
 - Media violence exposure
- Adolescents
 - Impulse, risk taking
 - Exploring independence
 - Mood swings

GUN SAFETY and CHILDREN



Children as young as **3 years** may be strong enough to **pull the trigger** on a handgun.



Special Risk Factors

- ADHD
 - Aggression, behavioral disorders
 - Family history of violence
 - Mood disorders
 - Alcohol use
 - Bullying
- Discuss with all weapons
 - Knives
 - Medication



Outside the Home

**Ask About
Firearms
Before a
Playdate**

**If it's not safe,
invite their child over
to your home instead**

 **healthychildren.org**
Powered by pediatricians. Trusted by parents.
from the American Academy of Pediatrics

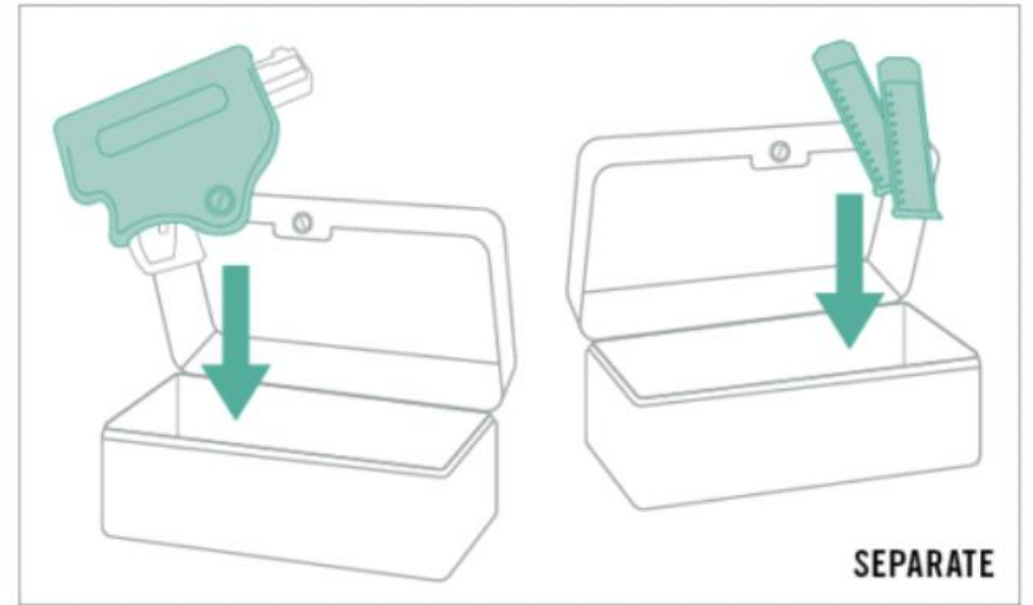
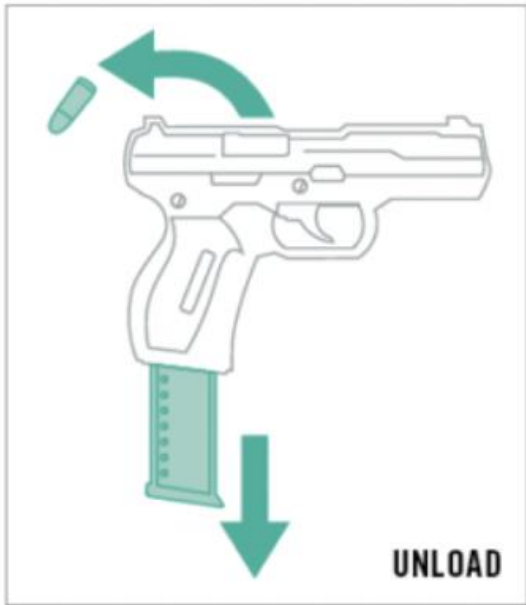
American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN® 



- Playdates
- Friends and Relatives

Secure Storage: What Does This Mean?

Assume children and teens can find guns. Store firearms unloaded, locked, and separate from ammunition.



Gun Locks

- Cable or loop lock
 - Threaded through barrel to prevent loading
 - Can be cut, keys stored nearby
 - Often available for free (police dept, safety fairs)
- Trigger lock
 - Covers trigger
 - Key or code
- Lock box
 - Key or code
 - Fast access, often stored loaded
- Gun vault
 - Large, heavy, more expensive
 - Digital code, keypad
- Personal lock
 - Fingerprint, other unique ID mechanism



Does Secure Storage Work?

- Mathematical modeling prediction
 - 20% increase in secure storage = 72-135 deaths prevented
 - 50% increase = 204-289 deaths prevented per year
- Overall, 6-32% deaths preventable

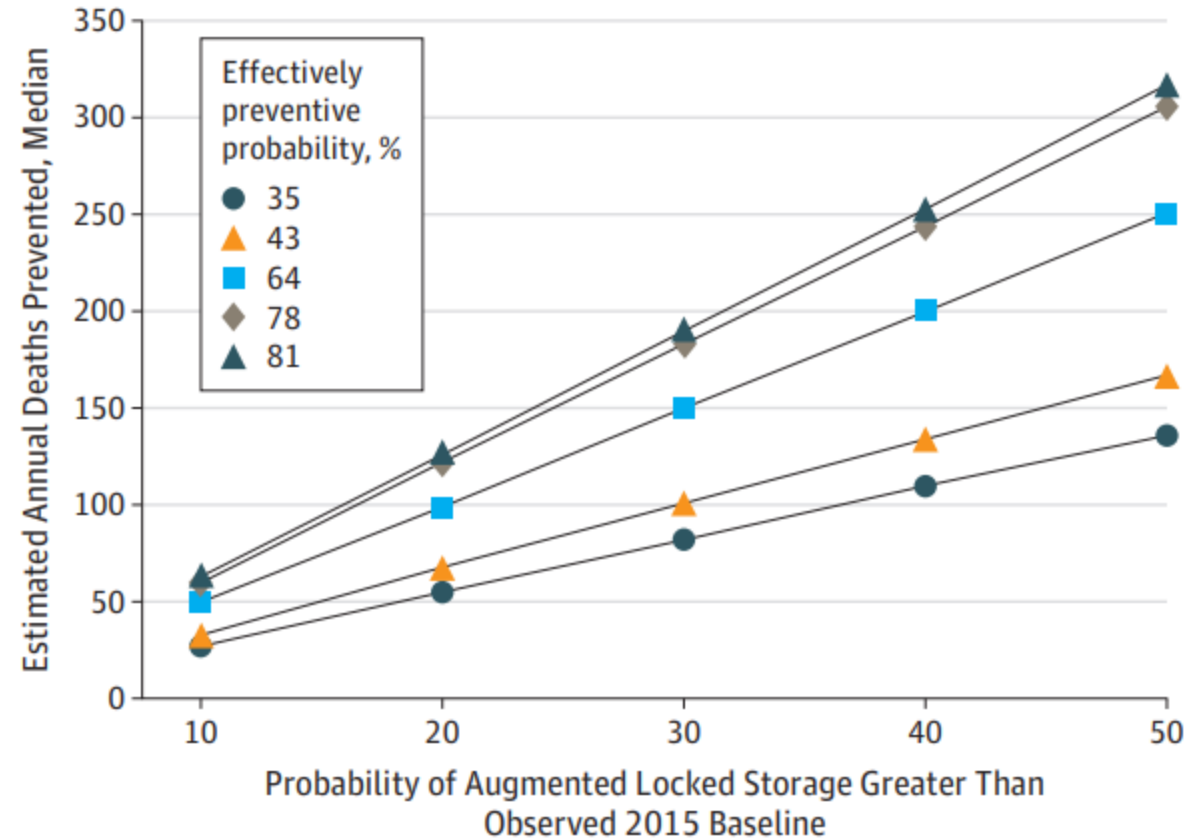
Secure gun storage can reduce the risk of self-inflicted gun injuries among children and teens by 78 percent.

BE SMART

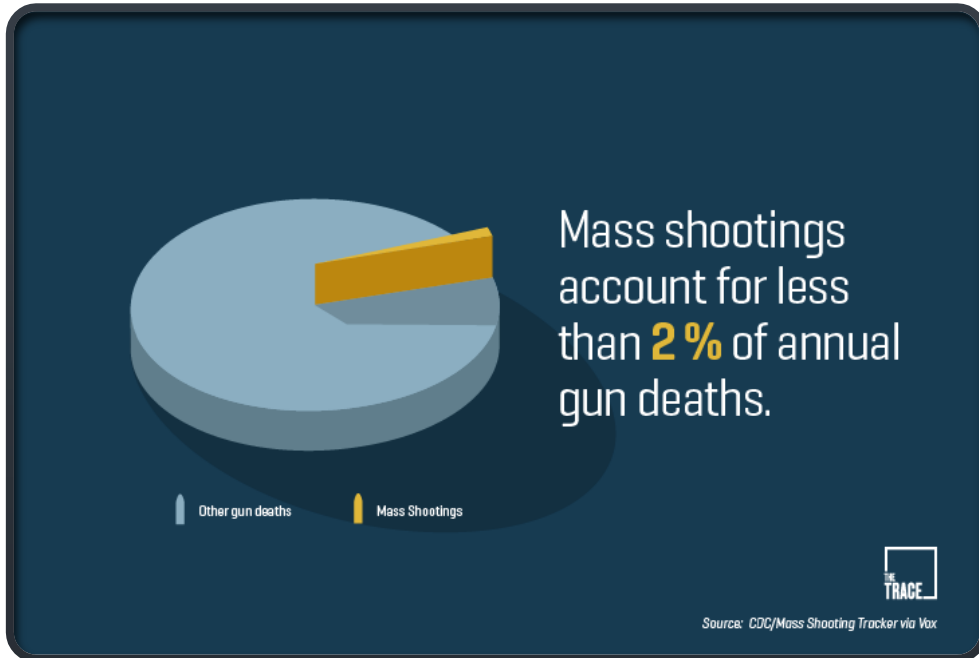
Grossman et al., "Gun Storage Practices and Risk of Youth Suicide and Unintentional Firearm Injuries," JAMA (2005)

Learn more
BeSMARTforKids.org

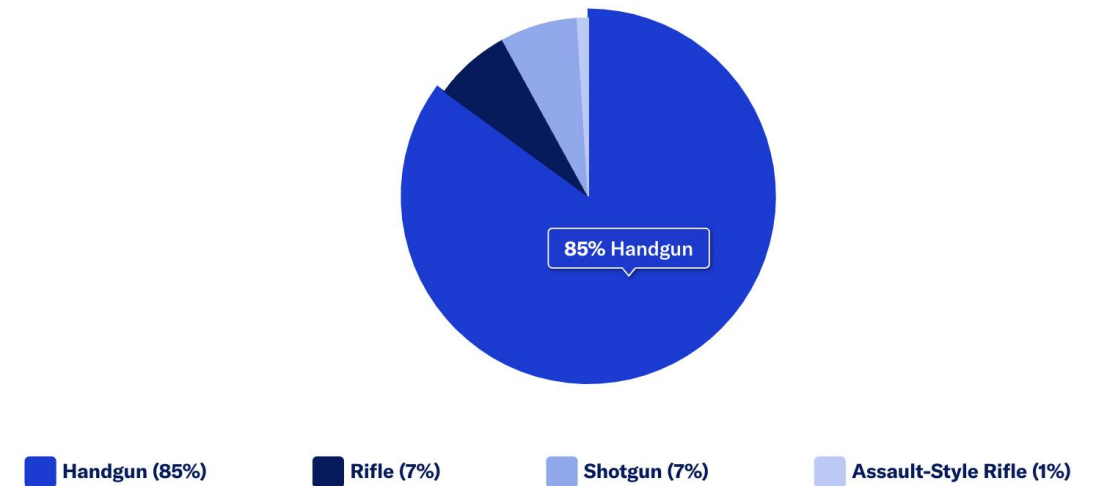
Figure. Estimate of Median Deaths Prevented, Stratified by Probability of Augmented Locked Storage and Effectively Preventive Probability



Myth: Most firearm deaths are caused by mass shootings by the mentally ill.



Handguns Account for the Bulk of Gun Types Accessed by Children in Unintentional Shootings



Myth: A firearm in the home makes the household safer.


A firearm used in the home is


22 times

more likely be used for an unintentional shooting, homicide, or suicide than it is for an incident of legally justifiable shooting (i.e. self-defense)

Crandon, Rellermann, Arthur, L.M.D., M.D., et al. "Injuries and Deaths Due to Firearms in the Home." Journal of Trauma, Injury, Infection, and Critical Care 45 (1998): 263-67.

#WearOrange on June 2 for National Gun Violence Awareness Day

NCJ 



Myth: My kids don't know where the gun is, and they wouldn't touch it.

- When parents were wrong
 - 40% know gun location
 - 20% had accessed it



Lack of Evidence Based Research

- 1996 Dickey Amendment
 - Prohibits CDC from using federal funding to advocate or promote gun control
- 2018 U.S. congress bill
 - Clarifies original amendment does not prohibit federal funding of research on causes of gun violence
- 2018 May
 - >150 medical, public health, research groups advocacy work
 - Requested \$50 mil for gun violence prevention research
 - Approval \$25 mil

AAP Gun Safety and Injury Prevention Initiative

AAP News™

Call to action: New AAP research initiative aims to protect children from firearm injuries

March 16, 2018

- 3 year initiative
- Expert Summit (May 2019)
- Research
- Dissemination, Implementation, Evaluation





On June 25, 2022 President Biden signed a bipartisan gun safety bill.



This bill is the **most significant federal legislation to address gun violence** to pass after contested roll-call votes since the assault weapon ban of 1994.

What is Covered Under this Legislation?



Expanded Background Checks

For the first time, juvenile records, including those regarding mental health, will be required in federal background checks for gun buyers under the age of 21 years old. The maximum time for gathering criminal background records has now been extended to ten days.





Be SMART is a program developed by Moms Demand Action for Gun Sense in America to bring together parents and all adults concerned about kids, guns and safety.

BeSMARTforKids.org



THE NUMBERS

More than
1,600

children under the age of 18
are killed with guns in the US
every year—an average
of 5 children every day.¹

1. CDC, Underlying Cause of Death. 2015-2019.



THE NUMBERS

**In incidents of gunfire
on school grounds, up to**

80%

**of shooters under the age of 18
obtained the gun(s) they used
from their home or the homes
of relatives or friends.¹**

1. Everytown, AFT, & NEA, "Keeping Our Schools Safe: A Plan for Preventing Mass Shootings and Ending All Gun Violence in American Schools," 2020.



THE NUMBERS

**A survey of high school
students found that**

17%

**had seriously considered
attempting suicide
within the last year.¹**

**And one study
showed that**

41%

**of adolescents in gun-owning
households report having
“easy access” to the guns
in their home.²**

1. Kann L, et al. Youth Risk Behavior Surveillance — United States. 2017.

2. Simonetti JA, et al. Psychiatric comorbidity, suicidality, and in-home firearm access among a nationally representative sample of adolescents. *JAMA Psychiatry*. 2015.



BE SMART



SECURE
all guns in
your homes
and vehicles

MODEL
responsible
behavior

ASK
about
unsecured
guns in
other homes

RECOGNIZE
the role
of guns
in suicide

TELL
your peers
to Be SMART



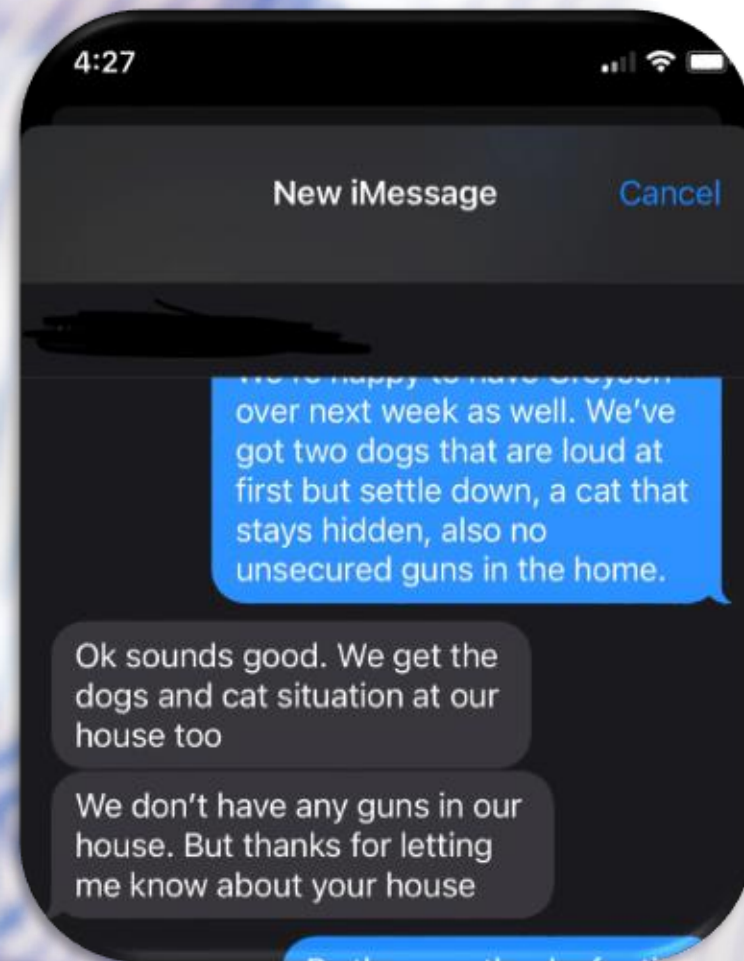
EXAMPLE

He isn't allergic to anything.

One other safety question.
Do you guys have guns in
the home? I know kids are
curious & just want to make
sure if you do have any that
they are securely stored.

Screen time is ok? Just in case
they want to play and we have
time. If not then that's ok too.
No guns.


Great! Yes. Video games are ok.




Additional Resources


- Besmartforkids.org
- Bulletpointsproject.org (UC Davis)
- AAP Gun Violence Prevention Advocacy Toolkit






The safest way
to store a firearm is







locked up using a **locking device**



unloaded





separate from ammunition




with the keys and combinations to locking devices
inaccessible to children and others at risk

If you are a parent
or caregiver





assume that children know
where firearms and ammunition are kept



ask
if there's a firearm in any home
where your children play or spend time

FOR MORE INFORMATION VISIT
bulletpointsproject.org

Thank you!

tz20@iu.edu

@xtzhang

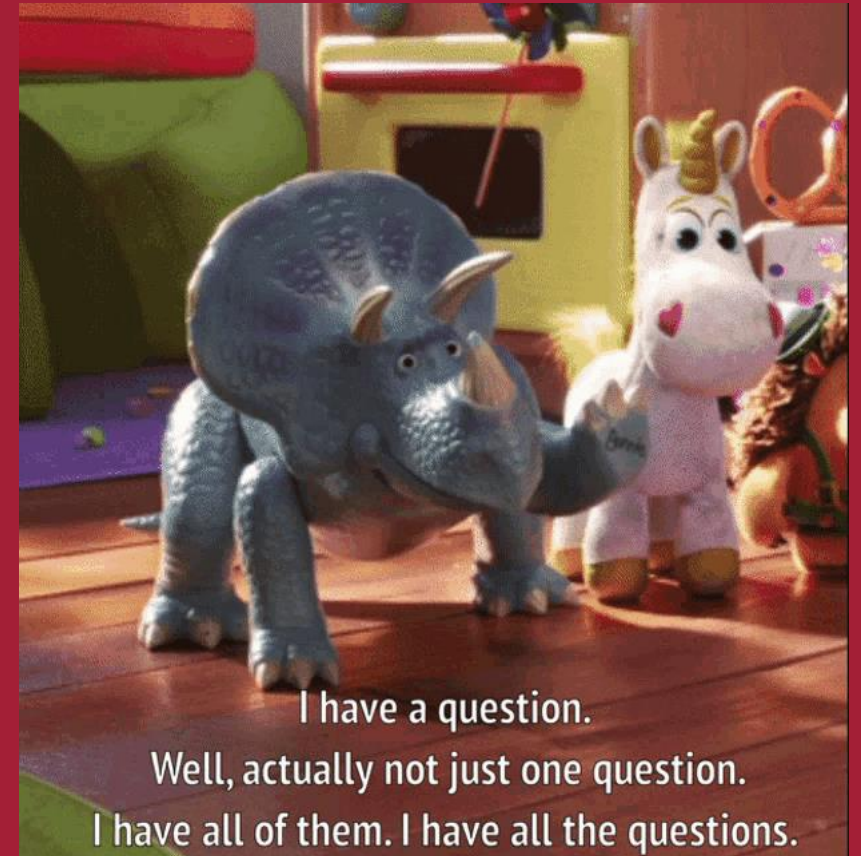
Riley Hospital for Children

Indiana University School of Medicine

Department of Pediatrics, Division of Gastroenterology



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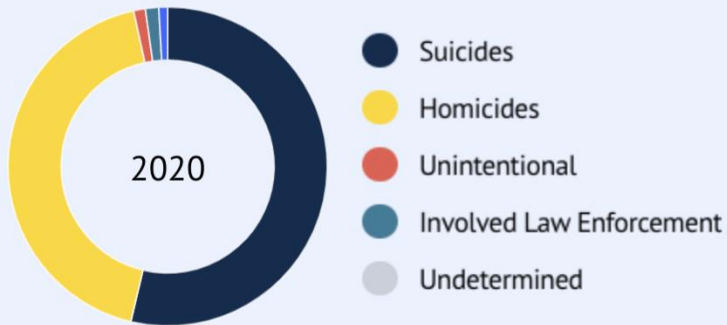


A Public Health Crisis



Gun violence is a major public health problem,
a leading cause of premature death.

In 2020, **45,222 people died** in the United States from gun related injuries, more than any other year on record.



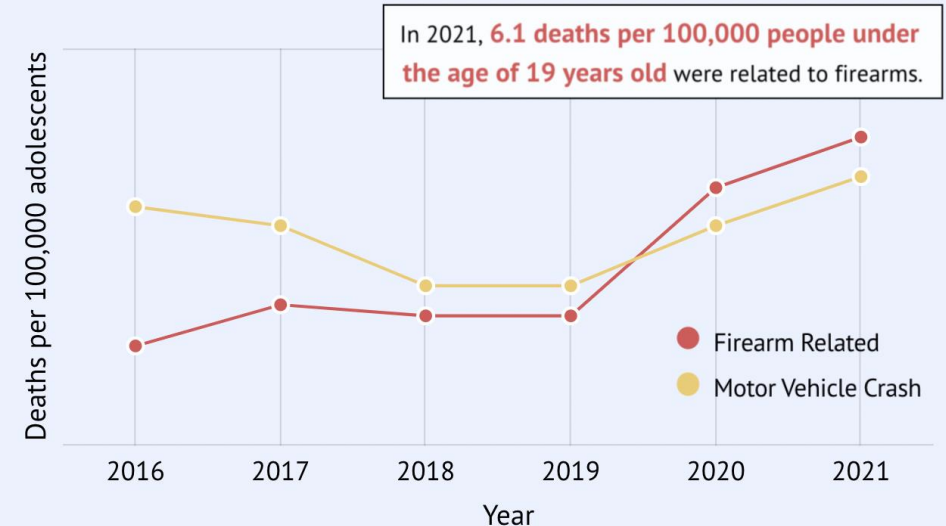
Every day, **at least 321 people are shot** across the US, resulting in **over 117,000 people a year**. For every individual who dies by firearm, more than two **survive**, often with expensive and long-term mental and physical injuries.



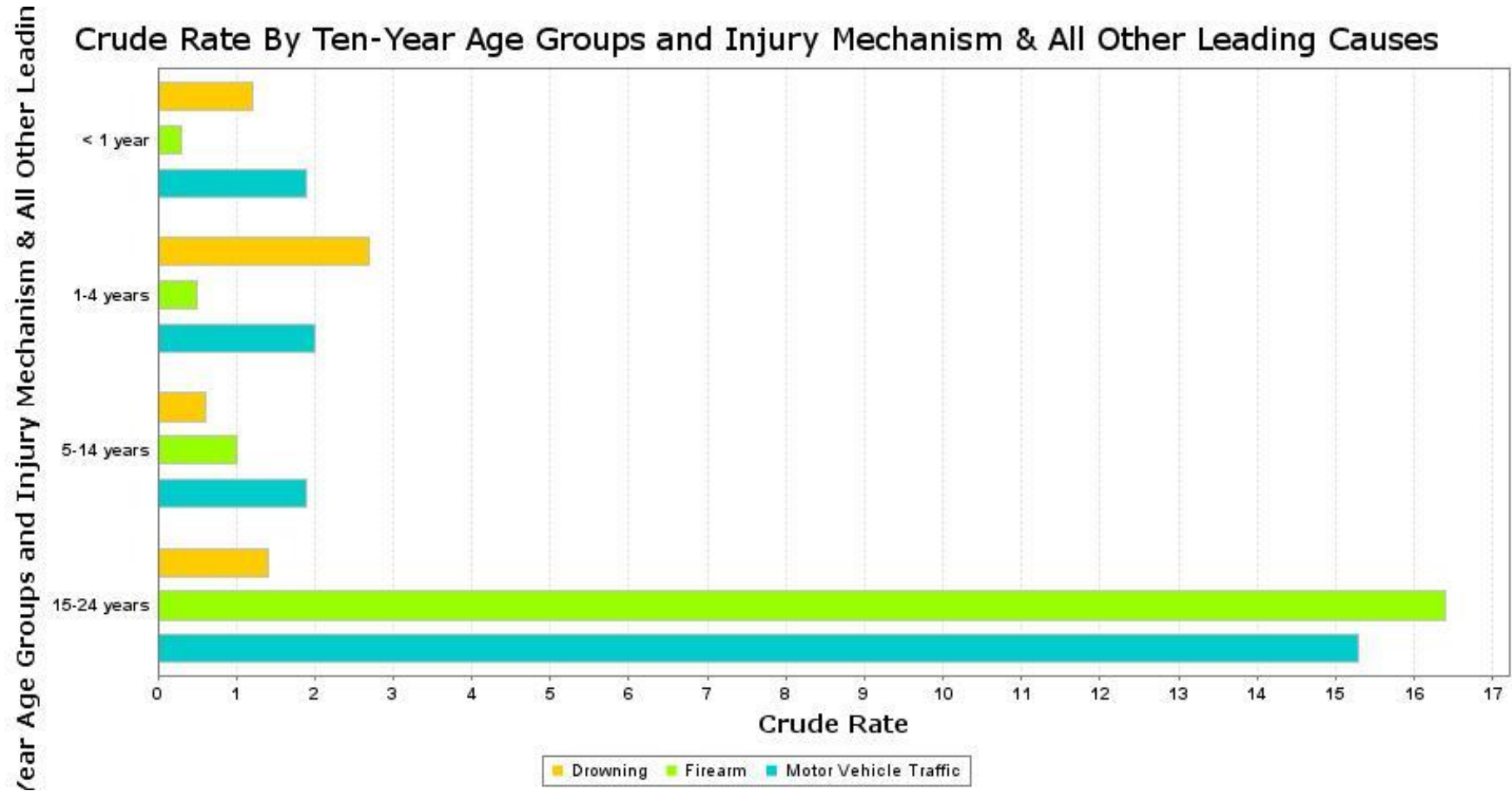
Guns have become the leading cause of death for children and adolescents in America.



For the first time, gun-related deaths surpassed motor vehicle accidents as the top cause of death for those under 19 years old.



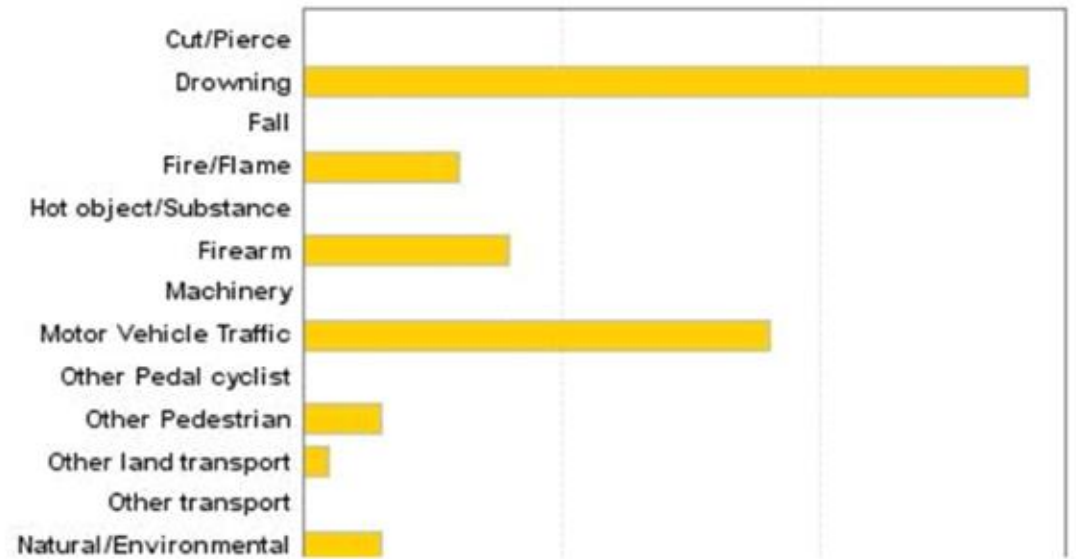
Causes of Death, ages up to 24



Causes of Death, ages 1-4

- Accidents (unintentional injury)
- Congenital malformation
- Homicide

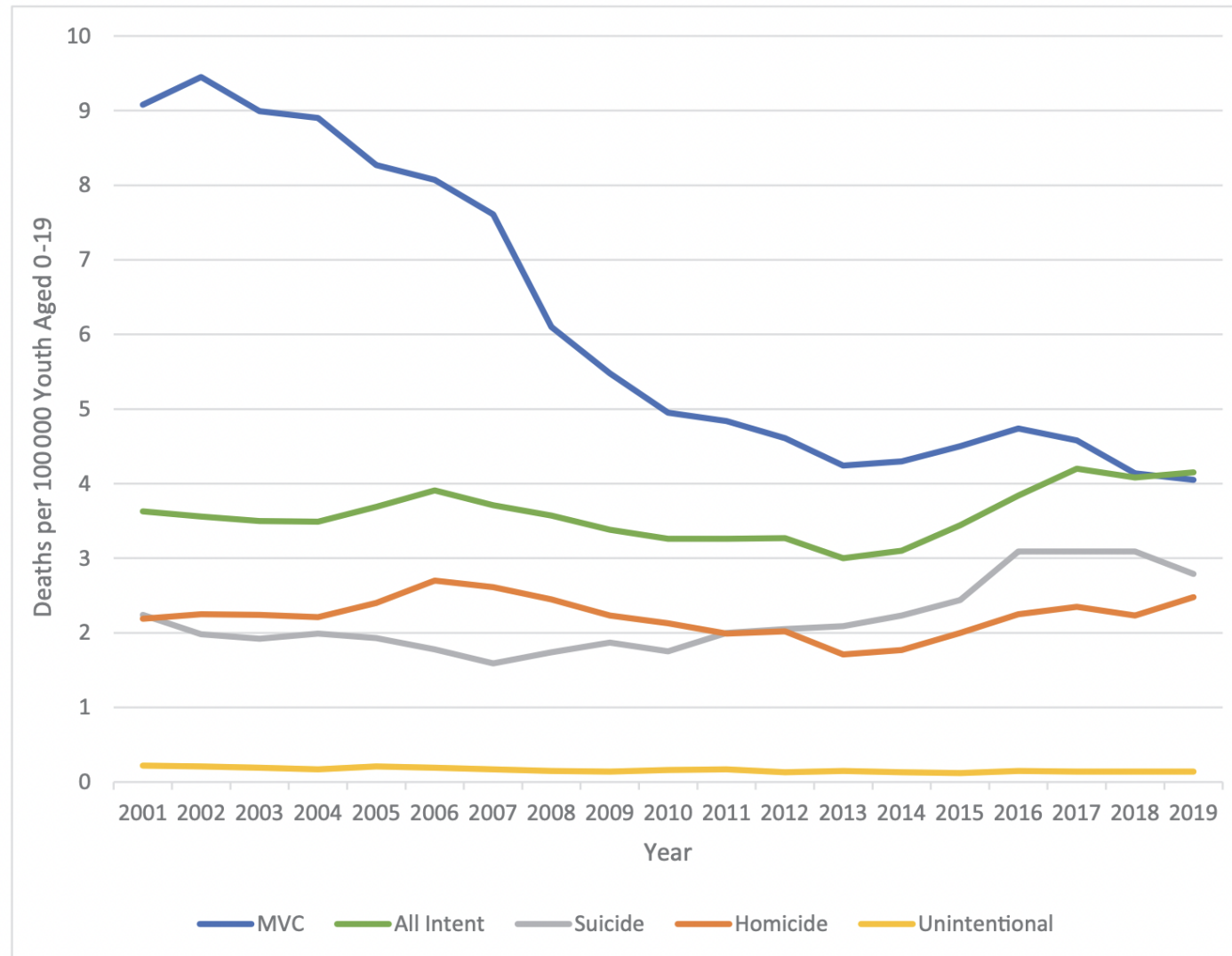
Crude Rate By Injury Mechanism & All Other Leading Causes



Firearm-related Injuries and Hospitalizations



Causes of Pediatric Death: Recent Trends



Andrews et al. 2022 Pediatrics.



Possession of Firearm on School Property

- Not permitted on school property except by
 - Law enforcement agent
 - Approval by local school board
 - Member of shooting sports team with principal's approval
 - Grounds of house of worship, allowing possession

- Legally possess firearm and
 - Locked in trunk of car
 - Stored in glove compartment in locked vehicle
 - Stored out of plain sight in locked vehicle