

Pediatric Firearm Injuries: Examining Trends and Opportunities for Harm Reduction

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I have nothing to disclose



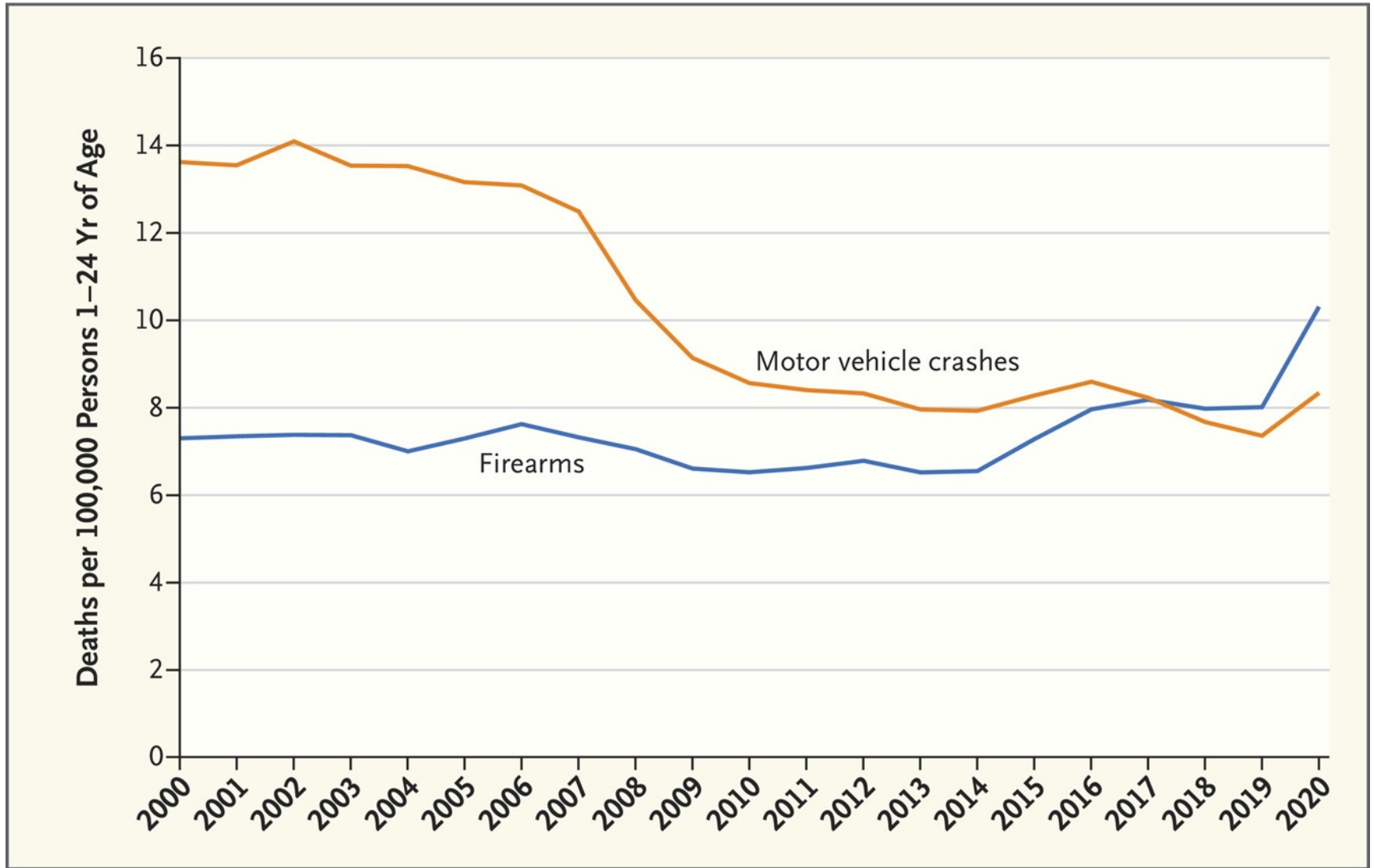




Objectives

- Define the scope of the pediatric firearm epidemic
- Highlight high-risk populations
- Distill harm reduction measures into actionable guidance
- Empower you to engage with your patients

DEFINING THE PROBLEM NATIONALLY







Firearm Mortality Age 0-19

Total <i>N</i> (Crude Death Rate)	2018	2019	2020	2021
Total firearm deaths	3342 (4.1)	3390 (4.2)	4368 (5.4)	4752 (5.8)

Mortality by Intent

Total <i>N</i> (Crude Death Rate)	2018	2019	2020	2021
Intent				
Homicide	1831 (2.2)	2023 (2.5)	2811 (3.5)	3057 (3.7)
Suicide	1297 (1.6)	1167 (1.4)	1293 (1.6)	1421 (1.7)
Unintentional	116 (0.1)	117 (0.1)	149 (0.2)	168 (0.2)
Undetermined/other	98 (0.1)	83 (0.1)	115 (0.1)	106 (0.1)

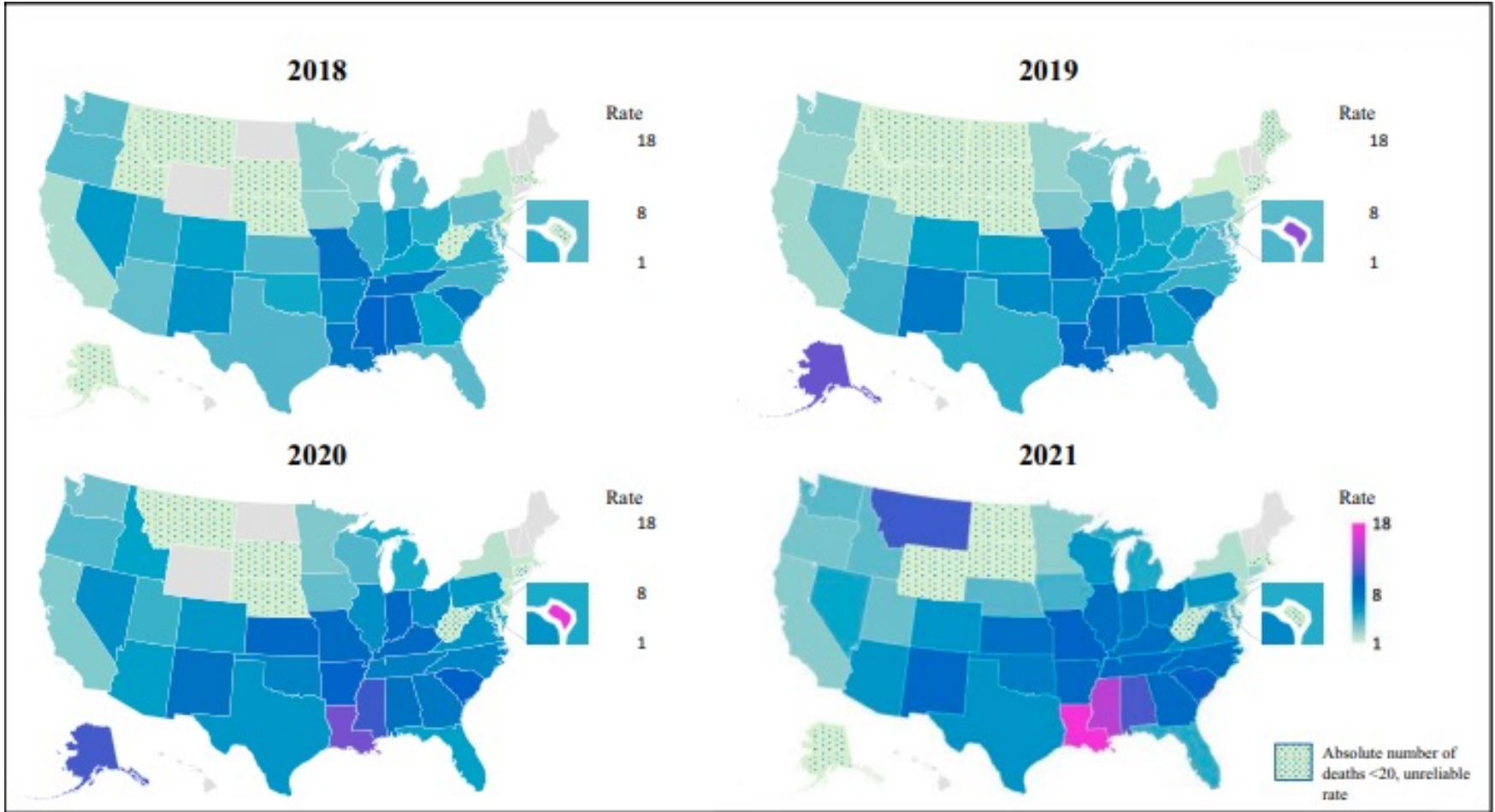
Mortality by Age

Total <i>N</i> (Crude Death Rate)	2018	2019	2020	2021
Age				
0–4 y	91 (0.6)	86 (0.4)	135 (0.7)	153 (0.8)
5–9 y	70 (0.3)	82 (0.4)	122 (0.6)	138 (0.7)
10–14 y	367 (1.8)	342 (1.6)	494 (2.4)	534 (2.5)
15–19 y	2807 (13.3)	2880 (13.7)	3617 (17.3)	3927 (18.2)

Mortality by Race, Ethnicity, and Gender

Total <i>N</i> (Crude Death Rate)	2018	2019	2020	2021
Race				
White	1791 (3.0)	1686 (2.9)	2067 (3.6)	2123 (3.6)
Black	1346 (10.9)	1478 (12.0)	2056 (16.6)	2369 (18.9)
Ethnicity				
Hispanic	553 (2.7)	578 (2.8)	790 (3.8)	834 (4.0)
Non-Hispanic	2785 (4.5)	2808 (4.6)	3751 (5.9)	3911 (6.4)
Gender				
Male	2858 (6.8)	2904 (7.0)	3772 (9.1)	4031 (9.6)
Female	484 (1.2)	486 (1.2)	596 (1.5)	721 (1.8)

Mortality by State



Fatal vs. Non-fatal Injuries



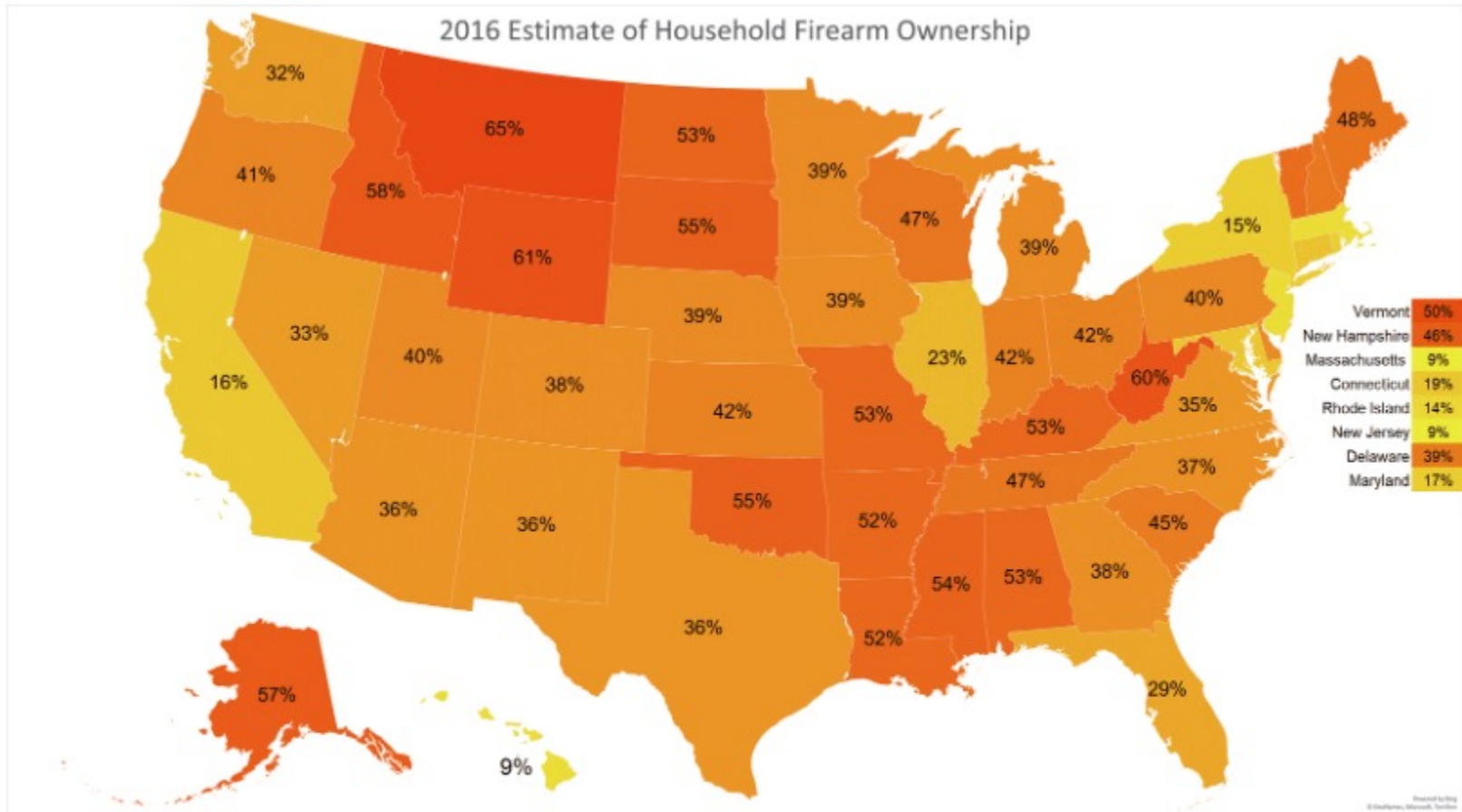
DEFINING THE PROBLEM LOCALLY

Q: How common is firearm ownership in Los Angeles County?

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A: 15% of Los Angeles County homes have at least one firearm.

Firearm Ownership in California



Developed using State-Level Estimates of Household Firearm Ownership, by Terry L. Schell, Samuel Peterson, Brian G. Vegetabile, Adam Scherling, Rosanna Smart, and Andrew R. Morral. Estimates of household firearm ownership rates were constructed using a structural equation model. <https://www.rand.org/pubs/tools/TL354.html>

Pediatric Firearm Injuries in Los Angeles

- Age 0-18 presenting to Los Angeles County trauma centers from 2010-21
- 1377 injuries
 - Incidence 4.9/100,000
 - Peak 22.5 in Non-Hispanic Black
- 124 deaths
 - Incidence 0.4/100,000
 - Peak 1.7 in Non-Hispanic Black

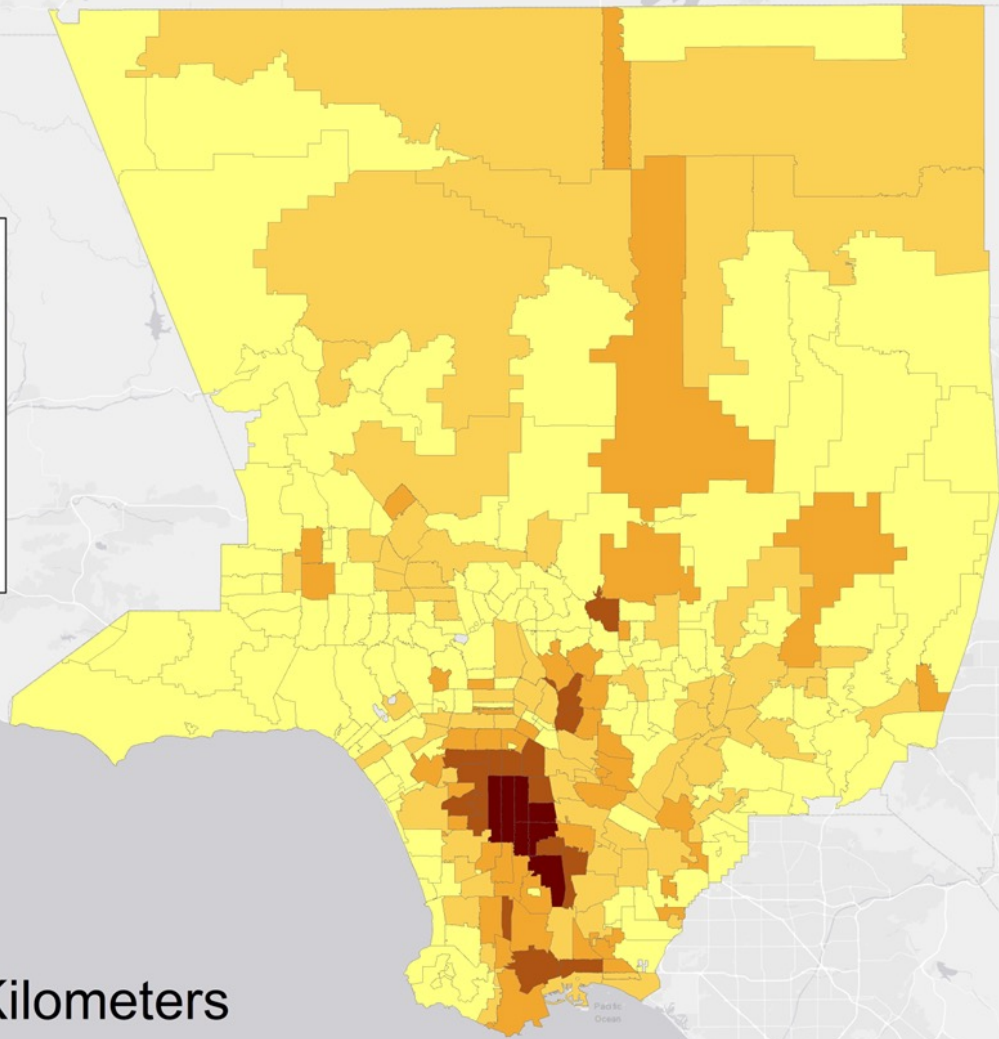
Los Angeles County Firearm Incidence by Zip Code



Legend

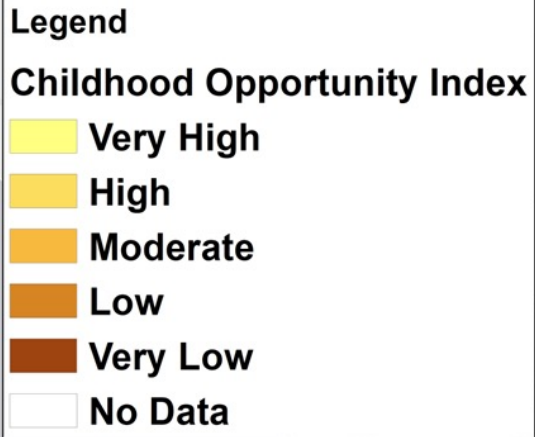
Firearm Injury Incidence per 100k

- 0.0 - 1.6
- 1.7 - 5.1
- 5.2 - 10.2
- 10.3 - 18.7
- 18.8 - 27.1



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Los Angeles County Childhood Opportunity Index by Zip Code



Firearm Injury by Childhood Opportunity Index

Childhood Opportunity Index	Frequency (%)	Incidence per 100,000 Children	Odds Ratio (95% CI)
Very Low	867 (62.7%)	116.6	19.9 (12.5-31.7)
Low	312 (22.6%)	56.5	9.6 (6.0-15.5)
Moderate	145 (10.5%)	33.4	5.8 (3.6-9.3)
High	41 (3.0%)	13.9	2.4 (1.4-4.1)
Very High	18 (1.3%)	5.9	Reference

FAST FACTS FOR PATIENTS

- Every week 100 children are injured or killed by firearms
- Risk is higher in male, non-Hispanic, black adolescents
- Risk is concentrated in neighborhoods with lower childhood opportunity index

HARM REDUCTION TENETS

Conversation Enders

- Lack of knowledge
- Perceived Judgement
- Paternalism

Opening Gambit

“Firearms are the leading cause of death in children today. Similar to how wearing a helmet or locking up poisons can help keep your child safe, I would like to open a dialogue on how to keep your child safe from firearm injuries.”

Opening Gambit

“If firearms are present where your child lives or plays, how are they stored?”

NOT “Do you have firearms in the home?”

Q: Are education programs that teach young children not to touch firearms effective?

Q: Are education programs that teach young children not to touch firearms effective?

A: No, they are not.

Teaching is NOT Enough

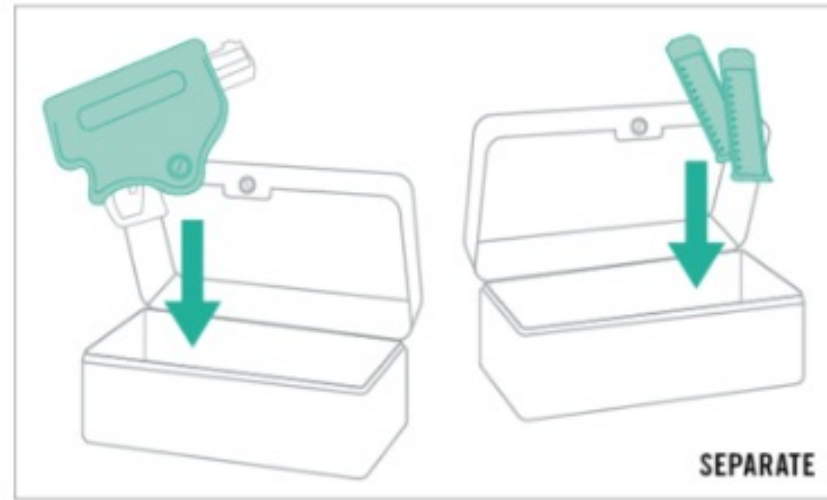
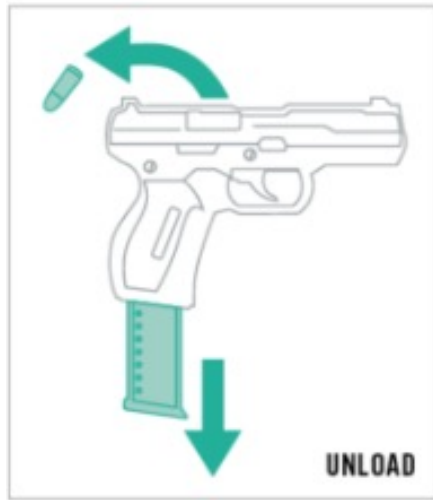


Q: If there are firearms present in the home,
what is the safest way to secure them?

Q: If there are firearms present in the home, what is the safest way to secure them?

A: All firearms in your home should be locked and unloaded, with ammunition locked separately.

UNSEAL: UNloaded, SEparate Ammunition, Locked



Q: How would you respond to a parent who says they need to keep a firearm unlocked for personal protection?

Q: How would you respond to a parent who says they need to keep a firearm for personal protection?

A: Are there ways you can think of that would decrease access to a firearm for your children?

Firearm Safety for Families



Studies show children are naturally curious, even about a firearm they've been warned not to touch.



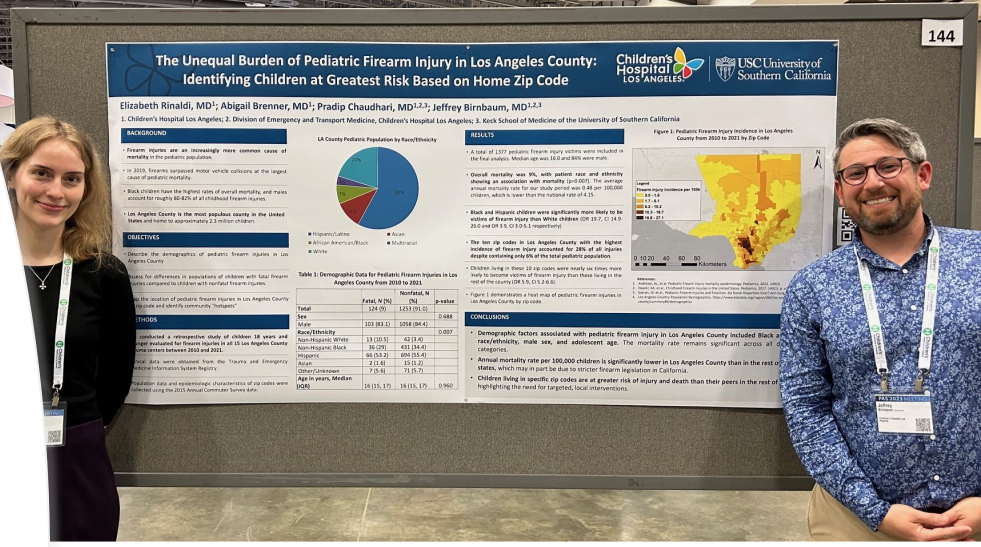
Kids are safer when: Firearms are in a lockbox or safe, unloaded. Ammunition is locked away separately.



Kids are safest when: firearms are stored outside the home.

Acknowledgements

- Pradip Chaudhari
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References

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Questions?

Fatal vs. Non-fatal by Intent and Age

	Nonfatal Injuries; n (%)	CR Per 1 Million	Fatal Injuries; n (%)	CR	<i>P</i>
0-5 yr					
Assault	863 (25.2)	2.99	851 (24.9)	2.95	0.844
Unintentional	1082 (31.6)	3.75	363 (10.6)	1.26	—
Self-harm	36 (1.1)	0.12	0	0	—
Other/undetermined	182 (5.3)	0.47	44 (1.3)	0.15	—
6-11 yr					
Assault	1296 (32.1)	4.40	878 (21.7)	2.98	0.687
Unintentional	1299 (32.2)	4.41	174 (4.3)	0.59	—
Self-harm	50 (1.2)	0.17	94 (2.3)	0.32	—
Other/undetermined	204 (5.1)	0.51	44 (1.1)	0.15	—

Fatal vs. Non-fatal by Intent and Age

	Nonfatal Injuries; n (%)	CR Per 1 Million	Fatal Injuries; n (%)	CR	<i>P</i>
12-14 yr					
Assault	3358 (39.2)	22.47	1118 (13.1)	7.48	0.001
Unintentional	1710 (20.0)	11.44	174 (2.0)	1.16	—
Self-harm	289 (3.4)	1.93	1471 (17.2)	9.84	—
Other/undetermined	351 (4.1)	1.69	85 (1.0)	0.57	—
15-17 yr					
Assault	21,660 (54.2)	142.08	7040 (17.6)	46.18	<0.001
Unintentional	3517 (8.6)	23.07	363 (0.9)	2.38	—
Self-harm	879 (2.2)	5.77	4810 (12.0)	31.55	—
Other/undetermined	1421 (3.6)	6.75	265 (0.7)	1.74	—