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BLOOMBERG SCHOOL
of PUBLIC HEALTH

Meeting the Challenge of Rising Gun Violence with Evidence-Based Public Health Solutions

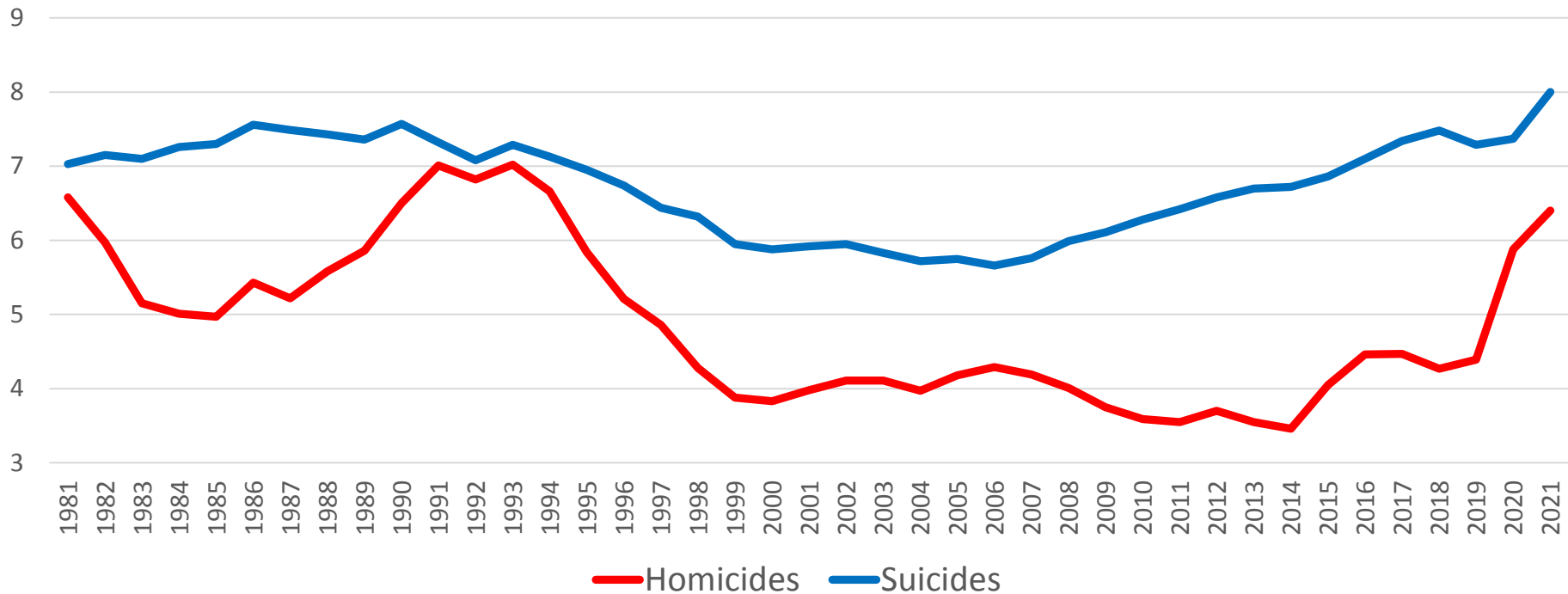
Daniel Webster, ScD, MPH

Johns Hopkins Center for Gun Violence Prevention & Policy

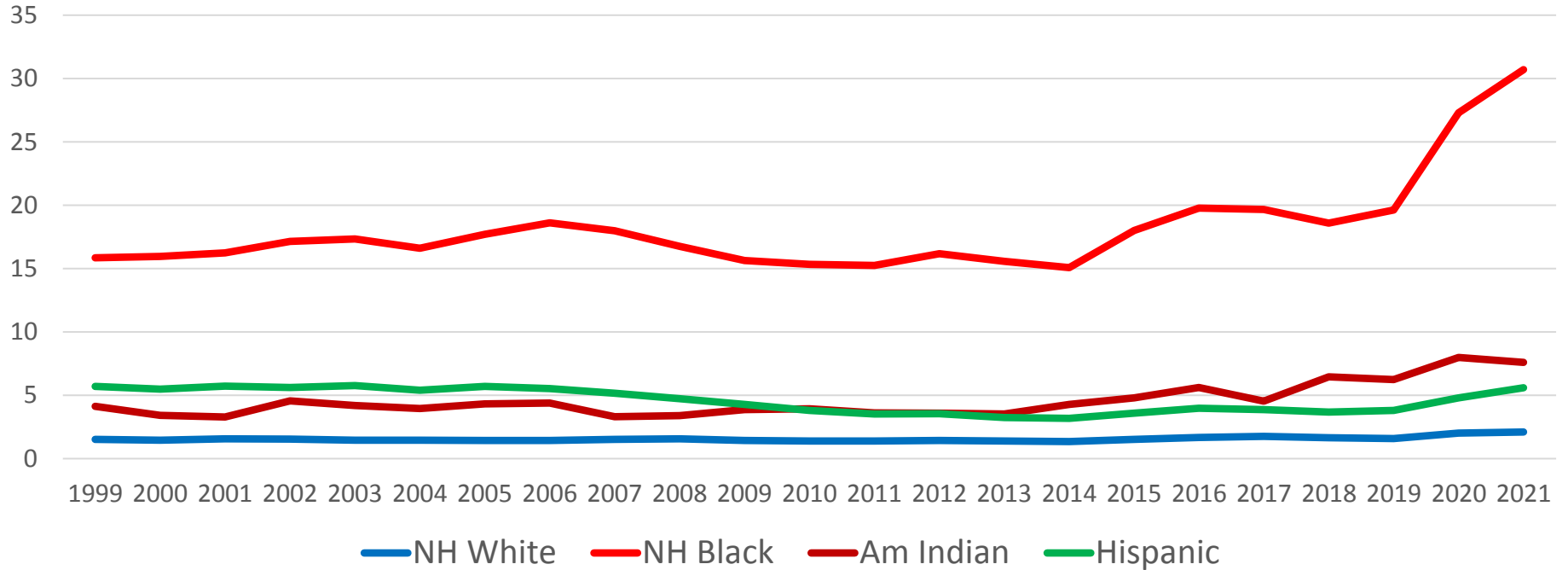


dwebster@jhu.edu

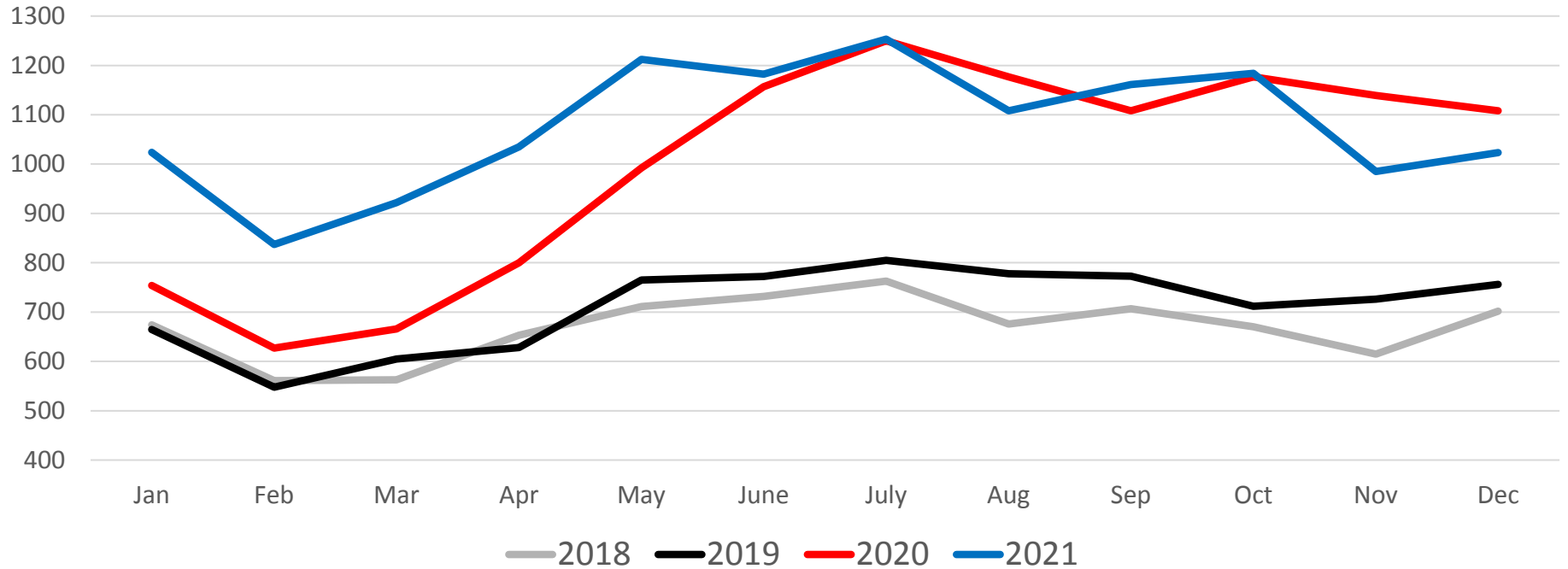
US firearm mortality rates, 1981-2021*



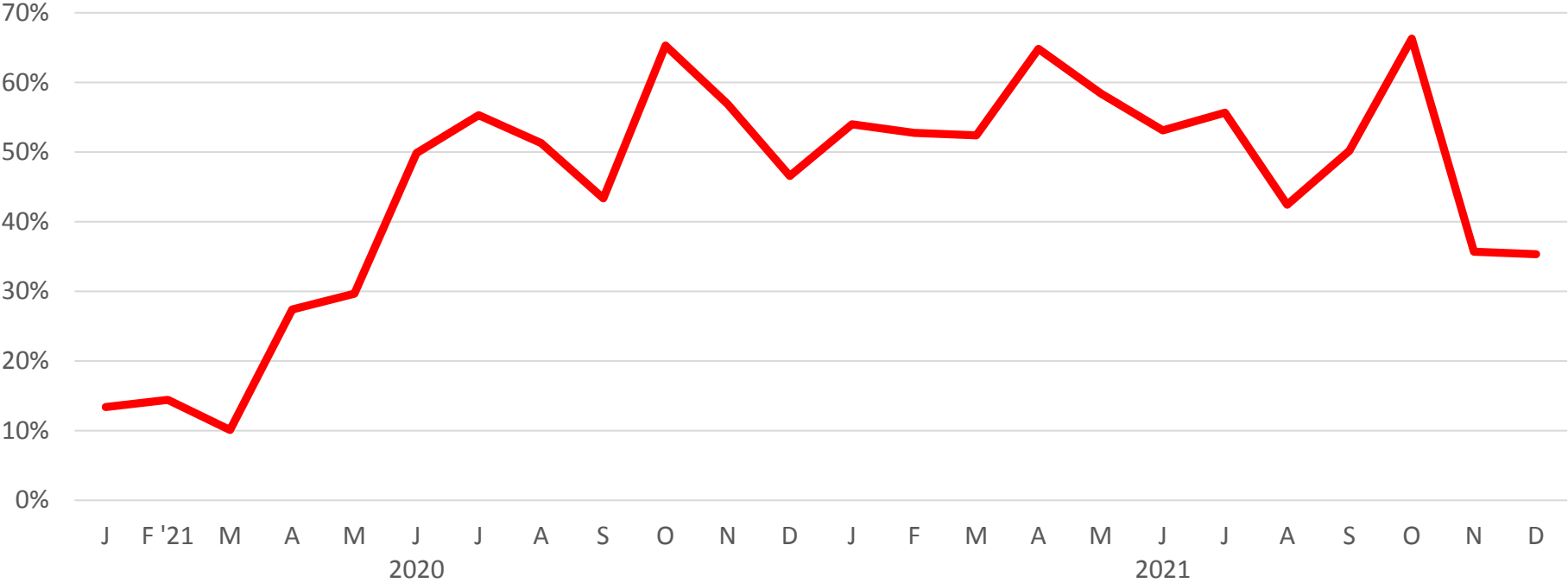
Firearm homicide rates by race, ethnicity, 1999-2021



Firearm homicides of Black people by month and year, 2018-2021



% higher firearm homicide rates relative to 2019 among Black people







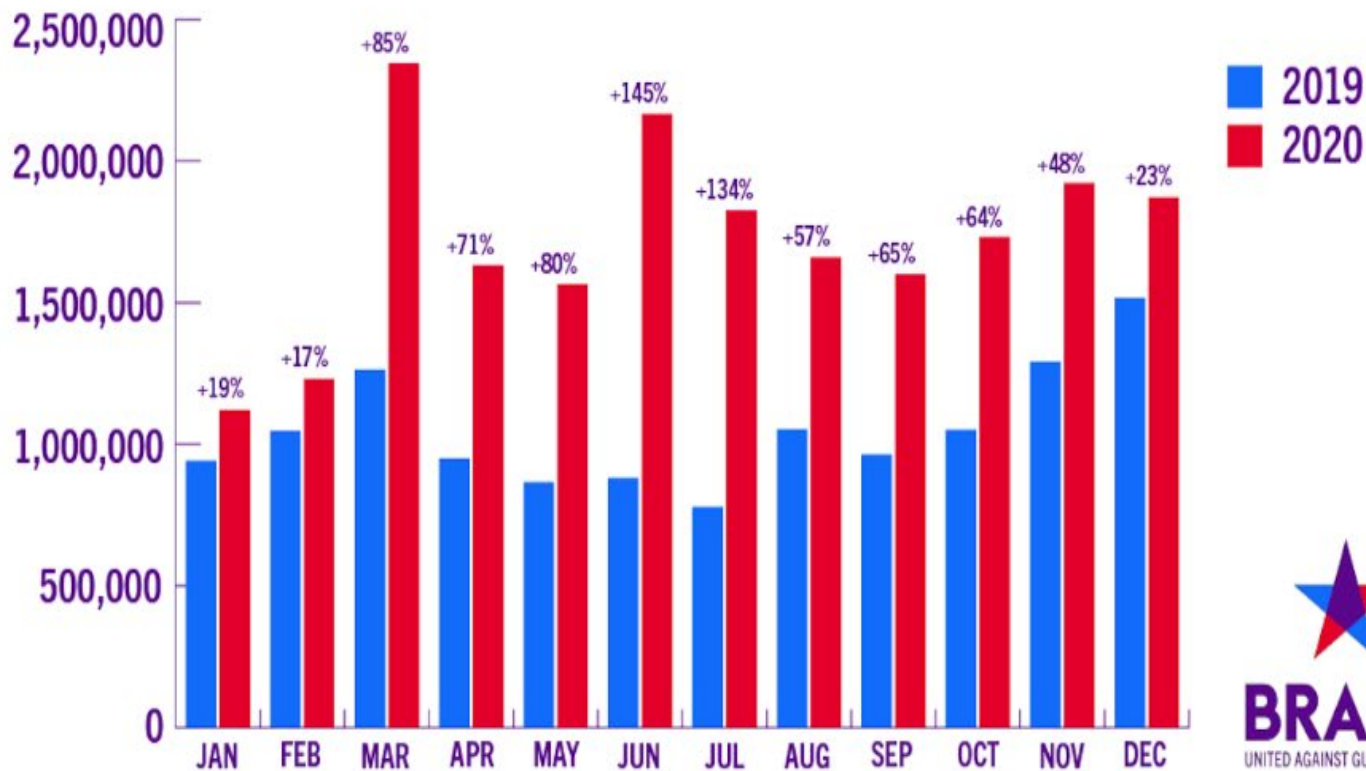




NATIONAL INSTANT CRIMINAL BACKGROUND CHECK SYSTEM

ESTIMATED FIREARM SALES

EST. NUMBER OF GUN SALES



Firearm purchases: pre-pandemic vs. pandemic

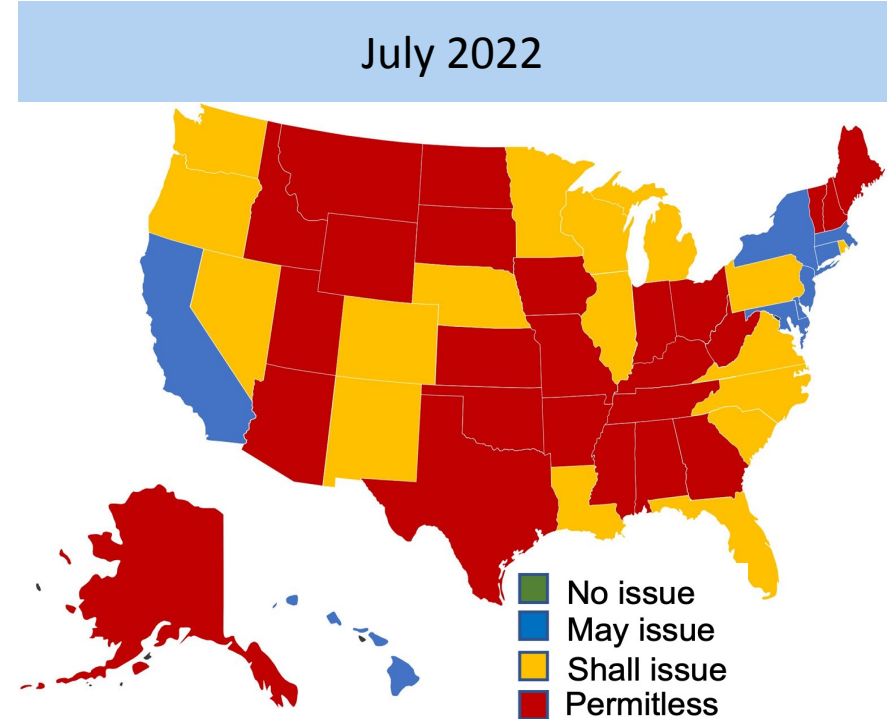
Miller, Zhang, & Azrael, 2022

National surveys in January 2019 and April 2021

- ▶ 2021: 2% (5.4M) acquired a firearm who had previously not lived in a home with a gun.
- ▶ 11 million additional people in a home with a firearms who previously weren't.
- ▶ ½ of new firearm owners were women – no change from 2019.
- ▶ 20% new owners were Black and 20% were Hispanic – no change from 2019.

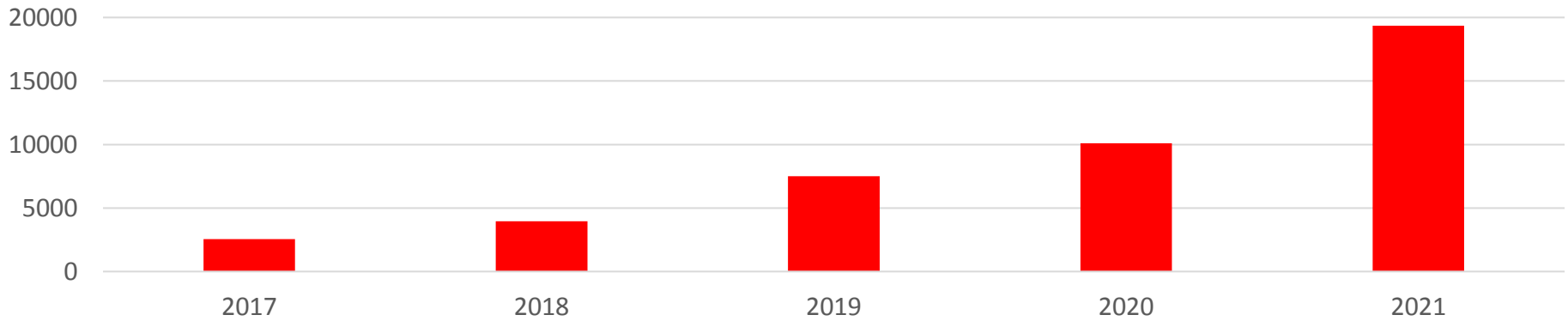
Concealed carry laws in 2022

- 8 states with May Issue laws that will become Shall Issue after SCOTUS ruling on *NYSRPA v. Bruen* (2022)
- 17 states with shall issue laws
 - 9 require live fire training, but not much rigor
- **25 states allow permitless carry**
- **16 states went permitless since 2016**

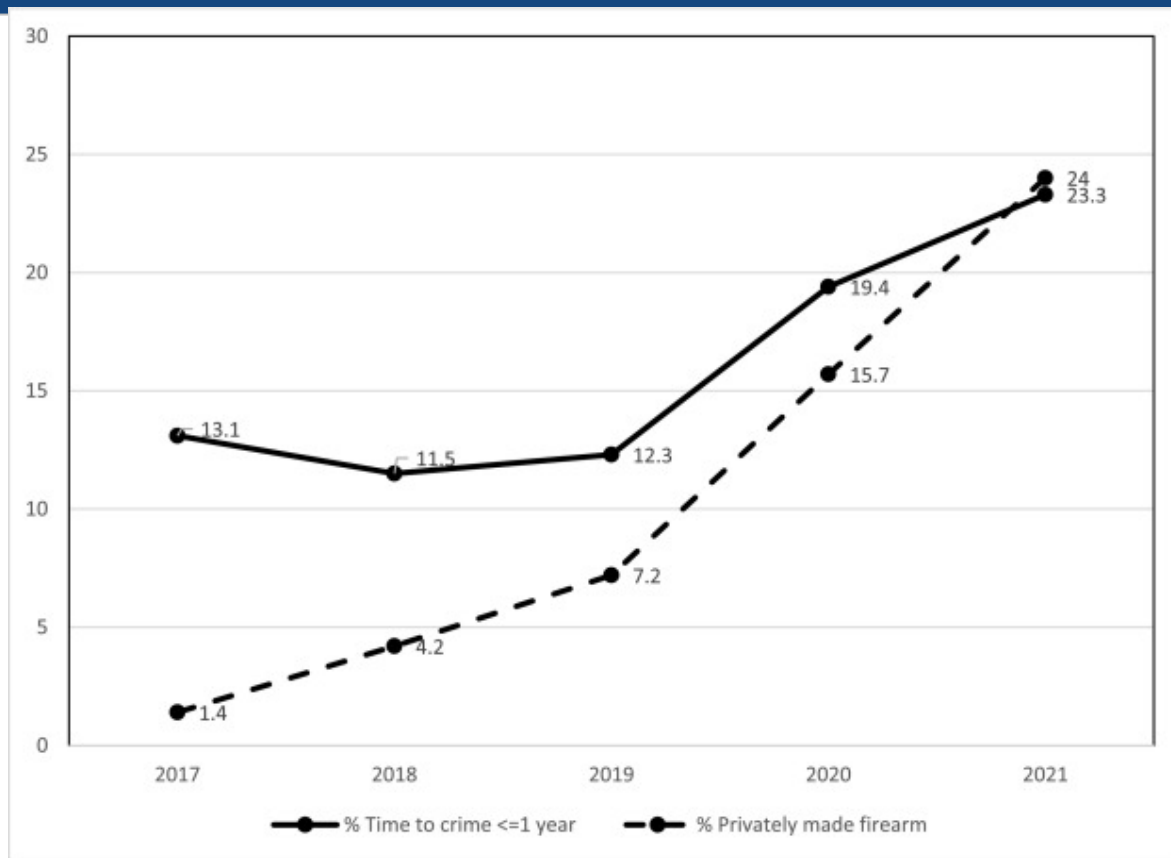


Other factors increasing gun access for crime

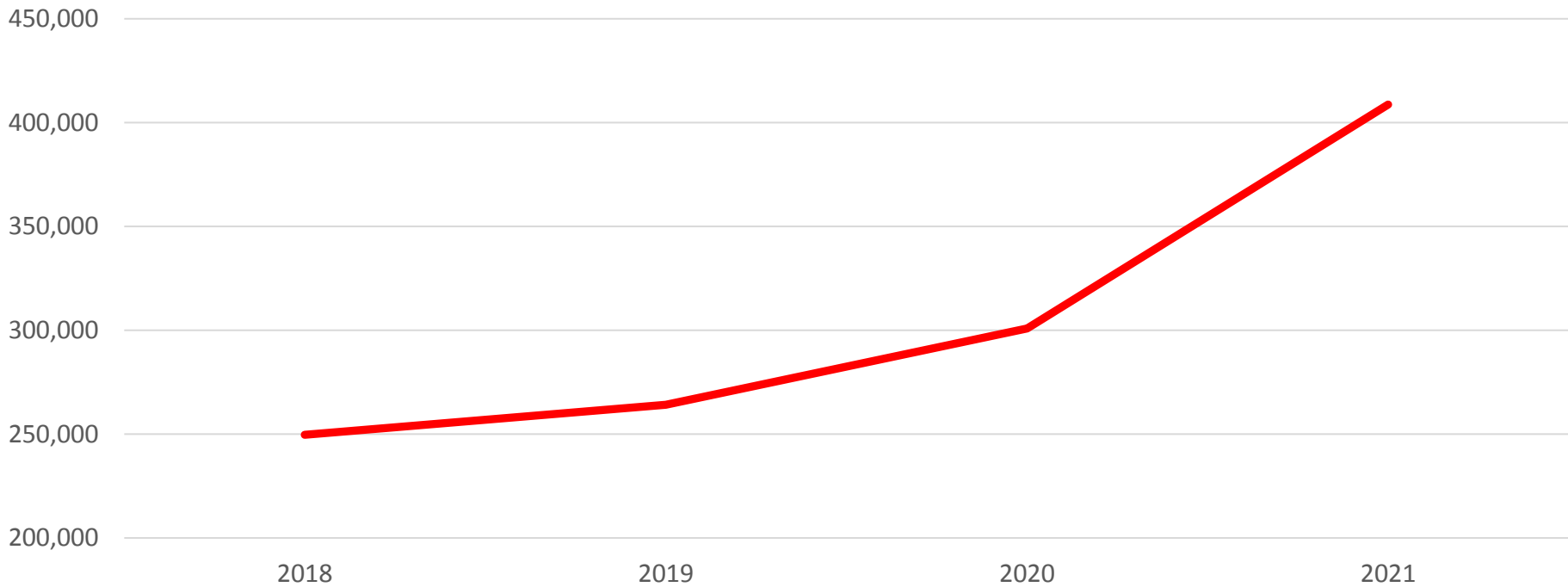
- ▶ Right to Carry laws estimated to increase gun thefts by 35% ¹
- ▶ Ghost gun recoveries increased 157% from 2019 to 2021 ²



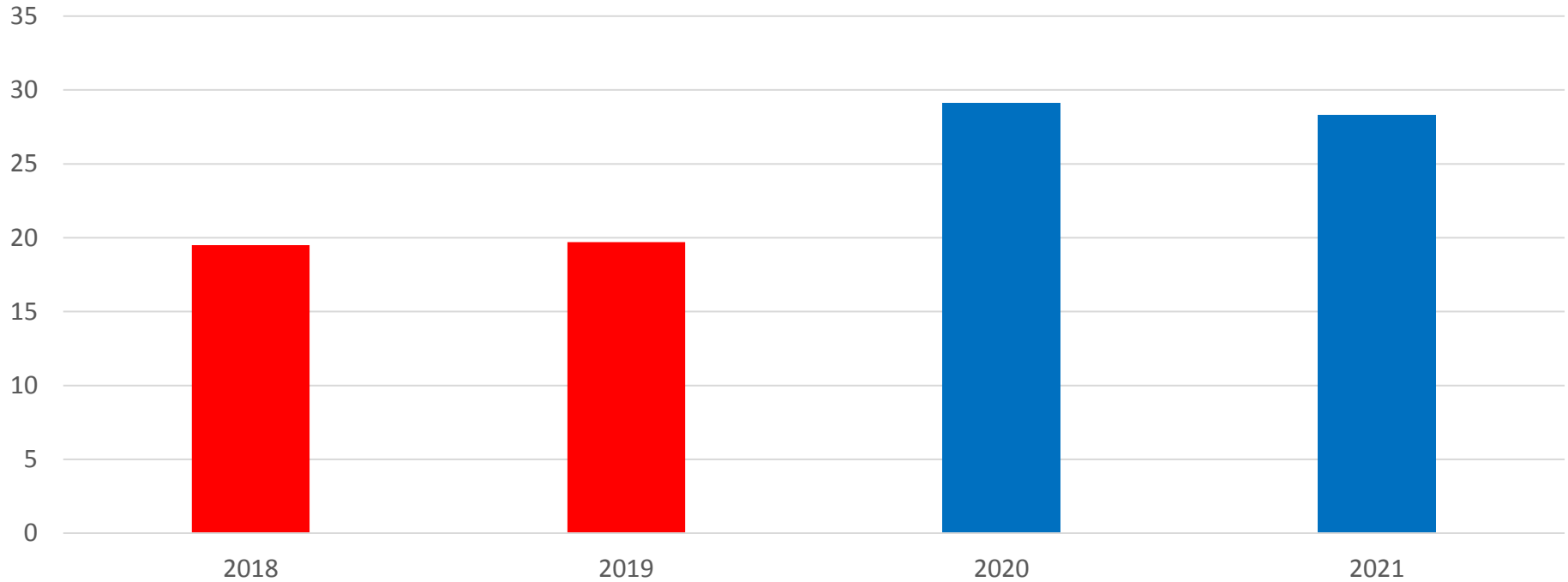
% of Oakland, CA crime guns that were privately made or had sale-crime interval under 1 year. Braga et al., Prev. Med. 2022



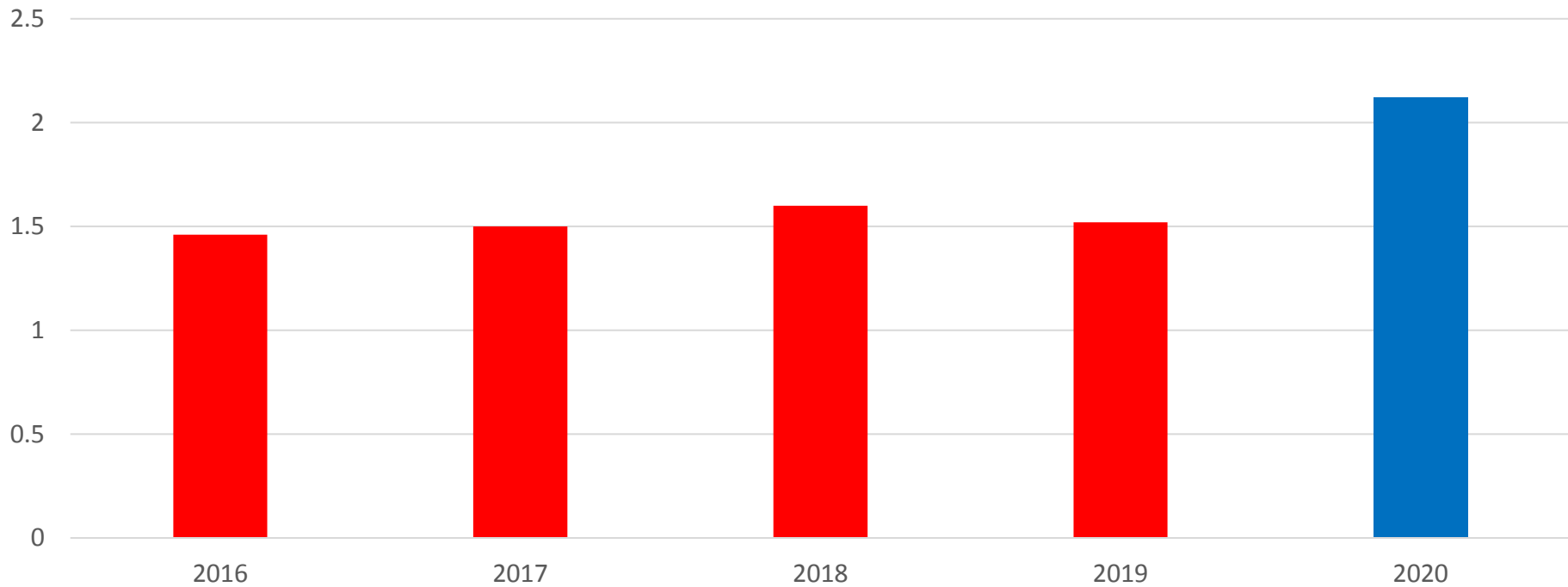
Recovered crime guns with sale-crime interval under 12 months, US, 2018-2021



Percentage of recovered guns in US with sale-crime interval under 12 months, 2018-2021.



Percentage of arrests that were for weapons violations, US, 2016-2020, FBI UCR



Political Responses to Surge in Gun Violence

- ▶ Republicans in 2020: “Back the Blue.” Trump: “send in the Feds to clean up Democrat-led cities.”
- ▶ Progressives in 2020: Defund the police, give more authority to non-police agencies, invest in public health approaches often as alternatives to police.
- ▶ Biden: Fund the police and historic investments in community violence intervention programs.

What is a Public Health Approach to Reducing Gun Violence?

- ▶ Data-driven and pragmatic to solve problems efficiently and justly
- ▶ Focused on changing unhealthy or unsafe environments as well as risky behaviors
- ▶ Reforms systems that create violence-producing conditions.
- ▶ Smart laws and enforcement can advance reduce gun violence; but we must minimize exposure to incarceration.
- ▶ Appropriately targeted efforts that invest in and support individuals and neighborhoods at greatest risk for involvement in gun violence can save lives and reap impressive ROI



Milwaukee Homicide Review Commission

- ▶ Mission: Reduce violence through data-driven interagency collaboration
- ▶ Vision: A community where residents, CBOs, and law enforcement work together to decrease violence
- ▶ Goals:
 - 1) Understand homicide through strategic problem analysis
 - 2) Develop data-informed prevention strategies
 - 3) Focus prevention and intervention resources

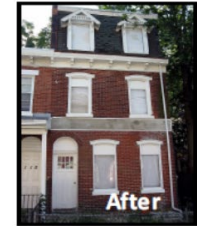
Reducing Violence Without Police: A Review of Research Evidence

Butts, Branas, ..., and Webster, 2020

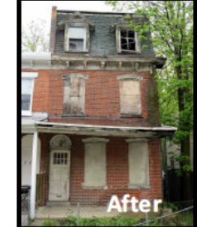
- ▶ **Create physical environments that reduce violence with cost-effective, place-based interventions that are structural, scalable, and sustainable.**

Fixing Abandoned Buildings

n = 676



n = 676



- Significant **-39% drop** in gun violence
- Every \$1 in **returns \$5.00**



Reducing Violence Without Police: A Review of Research Evidence

Butts, Branas, ..., and Webster, 2020

- ▶ ***Timely and targeted financial assistance to those in need.***
- ▶ Violent crime rates 19% higher in surrounding areas after foreclosed homes became vacant. Cui, Lin & Walsh (2015). Foreclosure, vacancy and crime. J Urban Economics, 87, 72-84.
- ▶ Philadelphia Basic Systems Repair Program grants up to \$20,000 to low-income owners for structural repairs to electrical, plumbing, heating, and roofing. BSRP associated with declines in crime (-22%), assaults (-19%), robberies (-23%), and homicide (-22%). South EC et al., 2021, JAMA Network Open

Reducing Violence Without Police: A Review of Research Evidence

Butts, Branas, ..., and Webster, 2020

- ▶ Increase alcohol tax and constrain alcohol sales hours, expand drug treatment.
- ▶ Reduce harms of justice system, increase objectivity and transparency
- ▶ **Credible messengers to mediate conflicts, increase pro-social bonds, promote anti-violence norms.**
- ▶ **Policies to keep firearms from people inclined to violence.**

Recipe for successful gun violence prevention

- ▶ Learn from the past, but innovate for the future:
 - ▶ Don't selectively look at the data.
 - ▶ Learn from things that didn't work.
 - ▶ Is the evidence outdated?
 - ▶ Blend quantitative science with qualitative evidence from those closest to problems and work
- ▶ Help individuals, but transform systems.

Cure Violence Strategy:

- ▶ Outreach to high-risk individuals with credible messengers
- ▶ Promote nonviolent responses to conflicts
- ▶ Conflict mediation
- ▶ Community mobilization and public education



Summary of Estimates of Cure Violence Impacts on Gun Violence

City	Estimated Program Effect on GV vs. Controls
Chicago 1 (Skogan, 2009)	reductions 4 of 7 sites
Chicago 2 (Henry 2014)	-15% shootings, -38% homicides over 4 sites
N. Philadelphia (Roman 2017)	-30% over 3 police posts
Trinidad and Tobago (Maguire et al. 2018)	-39% shootings

Evaluations of Cure Violence – NYC

NYC Community	Estimated Program Effect on GV vs. Controls	
Crown Heights (Picard-Fritsche 2013)	-20%	
2 sites in Brooklyn, 1 in West Harlem (Butts 2015)	-18% shootings -21% homicides	
Mayor’s Office adds Crisis Management System (Delgado et al. 2017) East NY South Bronx	Gun injuries -50% vs. -5% control -37% vs. -29% control	Shooting victims No difference -63% vs. -17% control

Methodological Issues with CVI evaluations

- ▶ No randomized trials
- ▶ Potential selection biases.
- ▶ Minimal statistical controls for other factors influencing violence.
- ▶ Only 2 evaluations in peer-reviewed journals.
- ▶ Parallel trend assumptions addressed in only 1 study (Buggs, Webster & Crifasi, *Injury Prevention* 2021)

Augmented synthetic control estimates Safe Streets effects – truncated at 4 years – Webster et al. in progress.

	Homicides	Nonfatal Shootings	Homicides + NFS
McElderry Park 2007-2011	-40%	+152%	-8%
Cherry Hill 2008-2012	-51%	-27%	-27%
Mondawmin 2012-2016	-25%	-7%	-4%
Park Heights 2013-2017	-49%	-23%	-27%
Sandtown-Winchester 2016-2020	-3%	-37%	-40%

Augmented synthetic control estimates of % change through May '22

	Homicides	Nonfatal Shootings	Homicides + NFS
McElderry Park 2007-2022	-23%	+37%	24%
Cherry Hill 2008-2022	-13%	-9%	-3%
Park Heights 2013-2022	-45%	-34%	-38%
Sandtown-Winchester 2016-2022	+15%	-50%	-40%

Augmented synthetic control estimates for SSB sites opened in 2019 and 2020.

SSB Neighborhood	Homicides + NFS
Belair Edison	+26%
Penn North	-10%
Woodbourne	-5%
Franklin Square	-48%
Brooklyn	+31%
Belvedere	+134%

Take-aways from Baltimore Safe Sts evaluations

- ▶ Diff.-in-diff. regression produces similar pattern of results as synthetic control estimates – 3 of 11 sites with favorable results on GV.
- ▶ 3 additional sites shut down < 2 years with poor implementation and outcomes.
- ▶ Reduced effectiveness when underfunded and poorly managed w/ minimal investment in workers' pay and training (2014-2019). 3 workers murdered in 14 months 2021-2022.
- ▶ Even with large federal grants and a mayor committed to public health approaches, no progress yet in evolving to a system of CVI. Plan is to increase connections with HVIPs.

Lessons from violence interrupters

Whitehill, Webster, Frattaroli & Parker, 2013

- ▶ “... **hardest conflicts to mediate involve retaliation for a previous homicide.**”
- ▶ VI’s stress risk of incarceration for violence when mediating conflicts and persuading against retaliation.
- ▶ Baltimore staff noted difficulty preventing shootings when shooters came from non-Safe Streets neighborhoods. In Chicago, VI’s benefited from networks of VI’s across 18 neighborhoods to quell cross-border conflicts.

Hospital-based Violence Intervention Programs

- Intervene with patients injured in assaults
- Combine trauma-informed care in hospitals with community-based partners
- “Teachable moment”



Review of Research on the Effects of Hospital-Based Violence Intervention Programs on Risks for Future Violence with Recommendations for Future Practice and Research – forthcoming in ANNALS of Social and Political Sciences

Daniel Webster, ScD, MPH¹

Joseph Richardson, Jr., PhD²

Christopher St. Vil, PhD³

Nicholas Meyerson, MS¹

Rachel Topazian¹

¹ Johns Hopkins Center for Gun Violence Solutions

² University of Maryland, College Park

³ University of Buffalo

Summary of Findings from HVIP evaluations

- ▶ Needs and risks of survivors are substantial.
- ▶ 1 of 5 RCTs revealed lower risk in treatment group in hospital-treated injuries for violence (Cooper, Eslinger, & Stolley, 2006).
- ▶ 2 of 3 RCTs showed lower rates of criminal offending (Cooper, Eslinger, & Stolley, 2006; Cheng et al., 2008).
- ▶ Efficacious txt with those on probation/parole in collaboration with CJ.
- ▶ 2 of 7 non-RCTs showed lower repeat injury risks (2 from the same program). 2 of 2 non-RCTs show protective effects on future offending.

Key Limitations of HVIPs Evaluations

- ▶ **Selection bias.** No ITT estimates of effects. Refusers, less compliant, dropouts often excluded even with studies using administrative data. Lack of reporting on nonparticipants.
- ▶ Historical confounders in non-RCTs
- ▶ Small sample sizes and short follow-ups esp. for RCTs.
- ▶ Concerns about scalability of some efficacious interventions.
- ▶ External validity of Cooper (2006) that involved probation/parole officers.

Recommendations for HVIP Design and Implementation

1. **Broader partnerships between HVIPs and CVI programs.**
2. **Relocation assistance if the patient's life is in immediate danger.**
3. Expand **behavioral change methods based on cognitive behavioral theory** or other evidence-based methods. (e.g., READI Chicago's success)
4. Hire, train, and support **credible messengers** in HVIPs.

READI Chicago



- ▶ Individualized, intensive outreach - Outreach workers find men, convince them to join
- ▶ Supported, tiered employment for 18 months - 29.5 hours per week entry level increasing pay and responsibilities
- ▶ Behavior change methods grounded in cognitive behavioral theory (individual and group), personal coaching, wrap-around services (legal, housing, mental health)

READI RCT evaluation ITT estimates over 20 months

N=2,456

	change	p-value	FWER
Shooting & homicide victimization	-20%	0.341	0.569
Shooting and homicide arrests	-65%	0.042	0.119
	Lower	Higher	
Benefit-cost ratio	3.8:1	18:1	



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Stronger Measures to Reduce Firearm Access to Persons with History of Violence



Role of scofflaw/ negligent gun dealers in supplying the underground gun market

GUN STORE FOUNDERS



Mick Beatovic,
former co-



Walter Allan,
former co-
owner of
Badger Guns
& Ammo and
Badger Out-
doors, in 1999



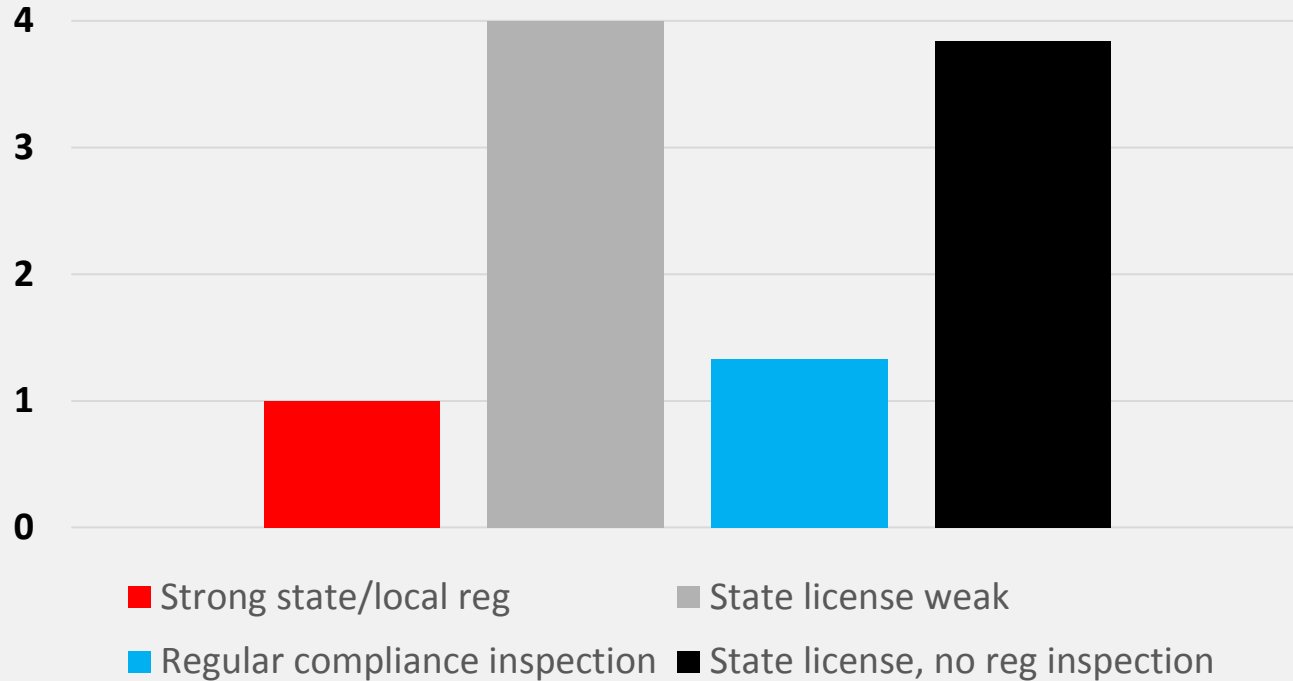
Curtis Beatov-
ic, former
Badger Guns
& Ammo
co-owner, in
1999

- ▶ 1% of licensed dealers accounted for 57% of crime guns (ATF, 2000)
- ▶ Dealers play a prominent role most guns in trafficking investigations
- ▶ Baltimore underground market survey: 31% of those active in underground mkt reported certain gun shop employees sell guns off the books or facilitate straw purchasers. 24% reported gun shops known to make it easier to get guns without a background check (Crifasi et al., 2020)



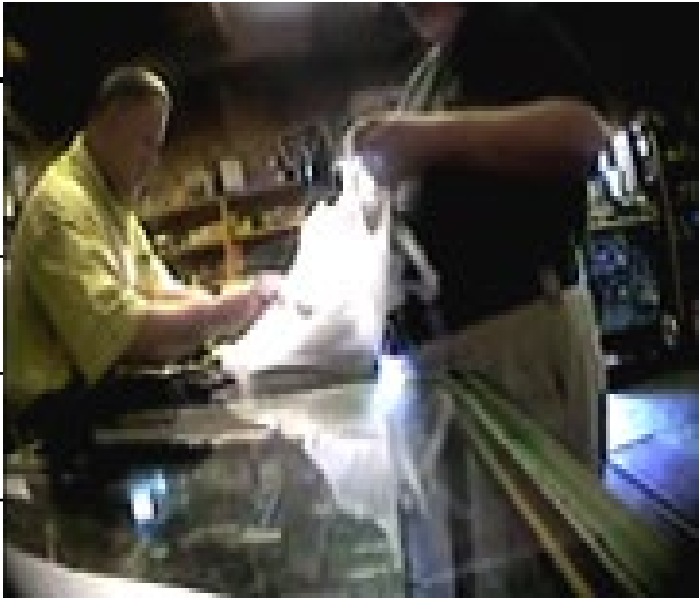
% of intra-state crime guns diverted <1 year of retail sale by state regulation and oversight of gun dealers

Webster et al., J Urban Health, 2009

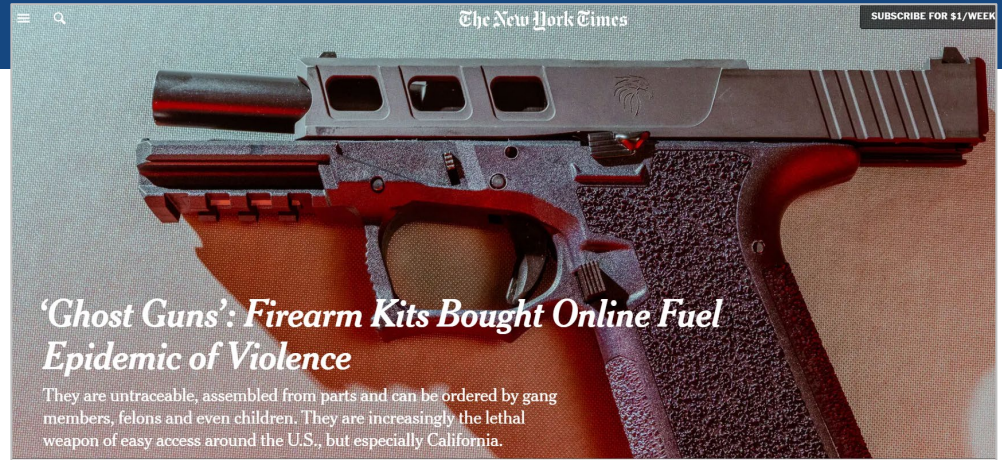


Effects of stings + lawsuits against gun dealers on flow of new guns to criminals (Webster 2006, 2013)

	in-state dealers % change
Chicago	-62
Detroit	-36
New York City	out of state dealers sued -82%



Regulating Privately Made Firearms



- ▶ Frame and receiver rule defining a firearm to include 80% receivers with kits to build a firearm partial and temporary fix.
- ▶ Successful lawsuits could curtail
- ▶ Fed and state legislation needed to treat anything marketed to create a firearm as if it was a finished firearm or prohibit marketing of gun parts to anyone who isn't a licensed dealer. Penalties for possession.

Handgun Purchaser Licensing

- ▶ Prospective purchasers apply to state or local law enforcement
- ▶ Some require applicants submit fingerprints
- ▶ Time to process application on average 30 days
- ▶ Duration of the license, law enforcement discretion, and whether safety training is required varies between states

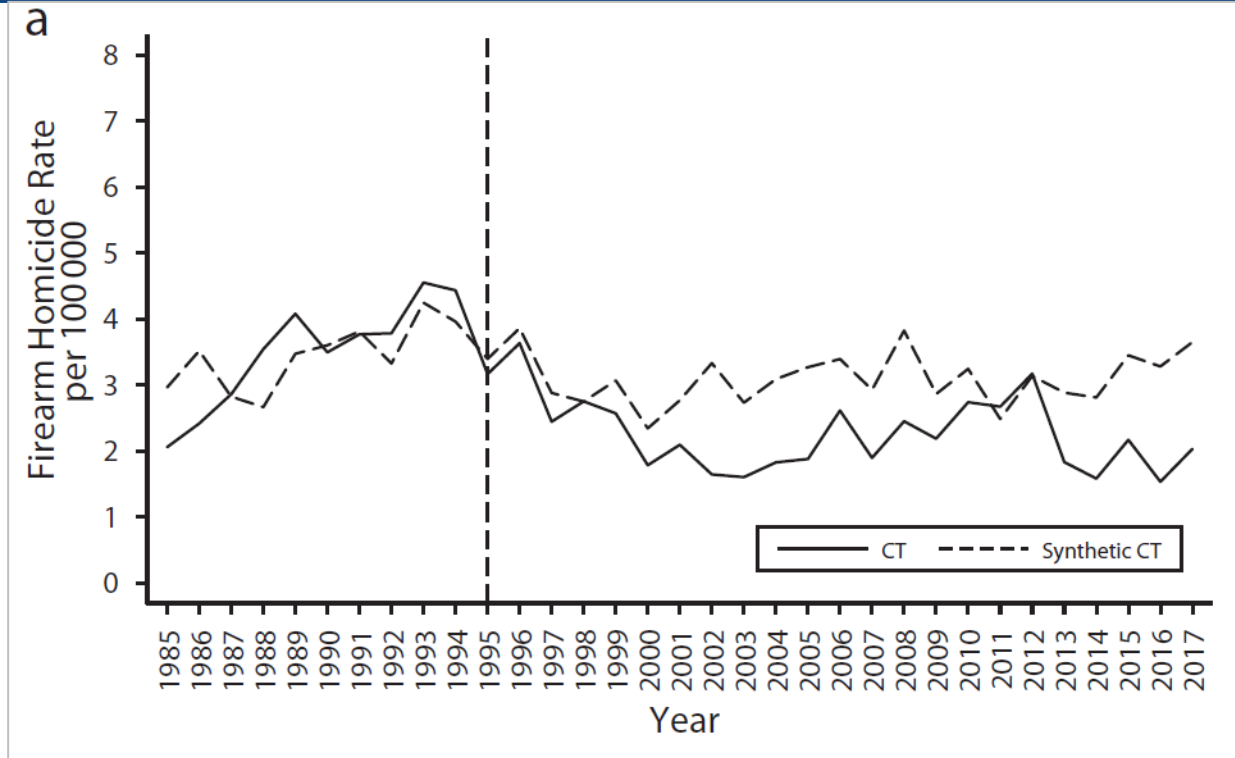


Purchaser Licensing Laws in Connecticut and Missouri

- ▶ Connecticut – enacted handgun purchaser licensing law in October 1995
 - ▶ Mandated license for all handgun transfers contingent upon passing fingerprint-based background check
 - ▶ In-person application
 - ▶ 8-hours of Safety training
 - ▶ License good for 5 years, revoked if holder becomes disqualified

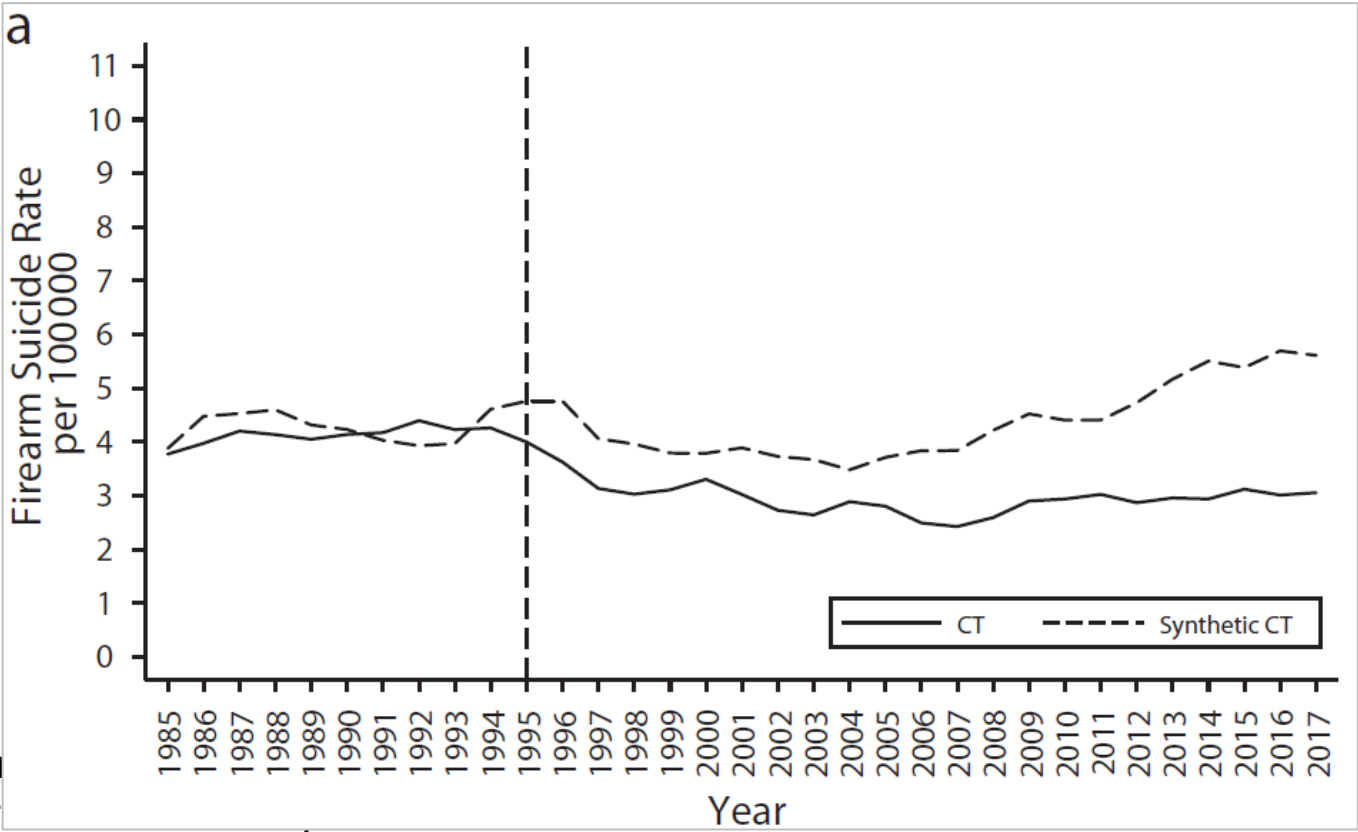
- ▶ Missouri – repealed licensing law in August 2007
 - ▶ Required license for all handgun transfers contingent upon passing background check
 - ▶ In-person application
 - ▶ License good for 30 days

Firearm homicide rates 28% lower than counterfactual over 22 years after Connecticut's handgun purchaser licensing law. (McCourt et al. 2020)

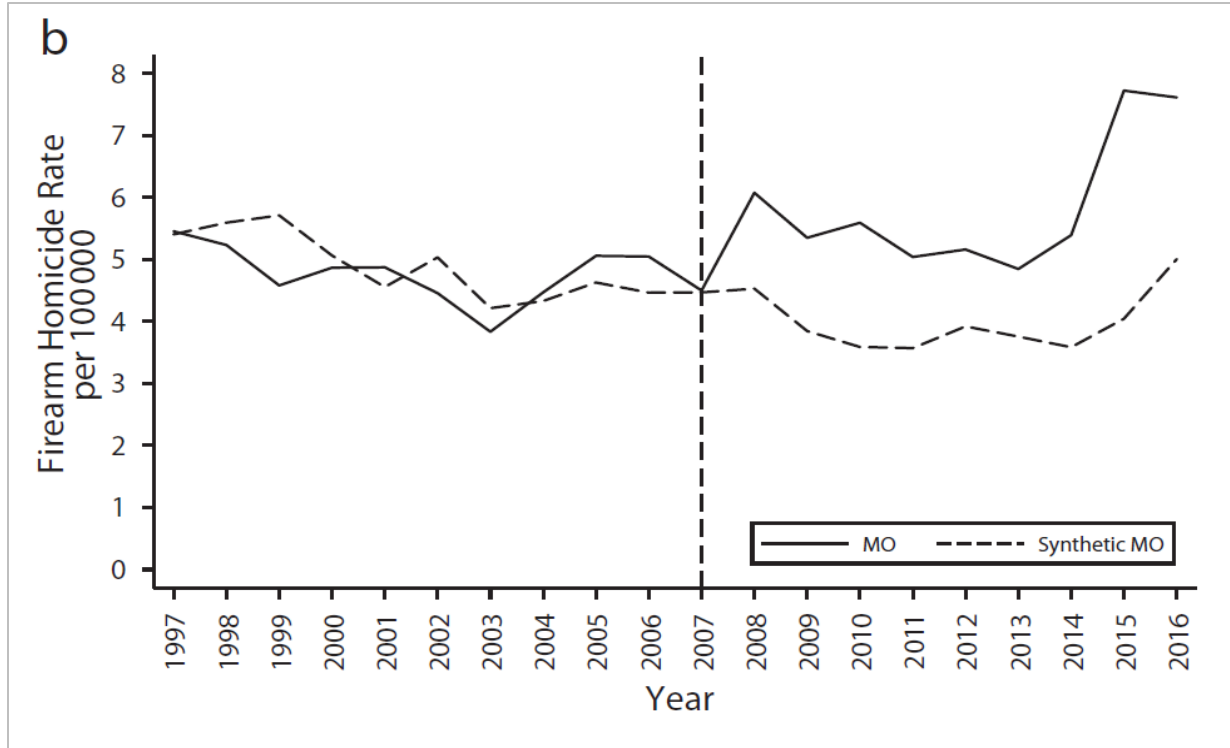


None of 32 comparison states had larger declines over this period relative to their synthetic controls.

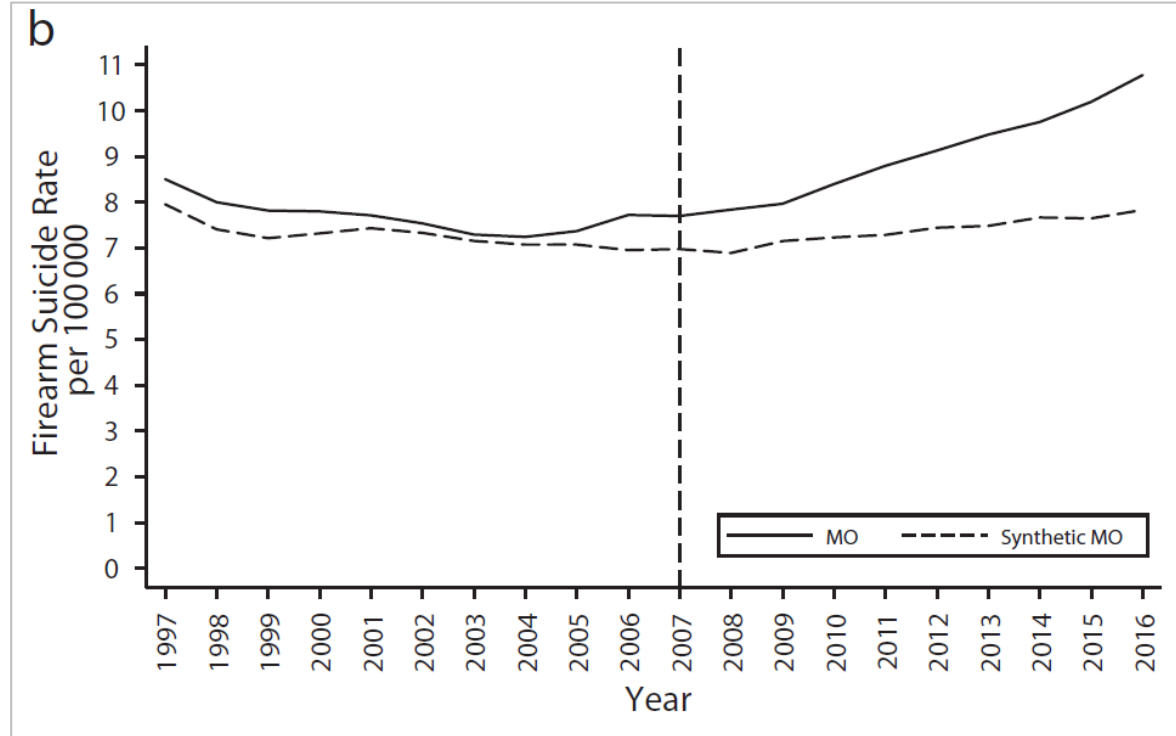
Firearm suicide rates 33% lower in Connecticut after handgun purchaser licensing law. (McCourt et al., Am J Public Health, 2020)



Firearm homicide rates 47% higher than counterfactual in Missouri after handgun purchaser licensing law repealed, 2008-2016.



Firearm suicide rates 24% higher in Missouri after handgun purchaser licensing law repealed, 2008-2017. (McCourt et al., Am J Public Health, 2020)



Key Mechanism for Purchaser Licensing Impact on Gun Violence – Detering Illegal Transfers

- ▶ guns < 12 mo. sale-to-crime increased 2-fold after Missouri licensing law repeal (Webster et al. 2013) and declined 76% for Baltimore crime guns initially sold in MD (Crifasi et al., 2017)
- ▶ 40% on parole or probation in Baltimore said law made it harder to get a gun (Crifasi et al., 2017).

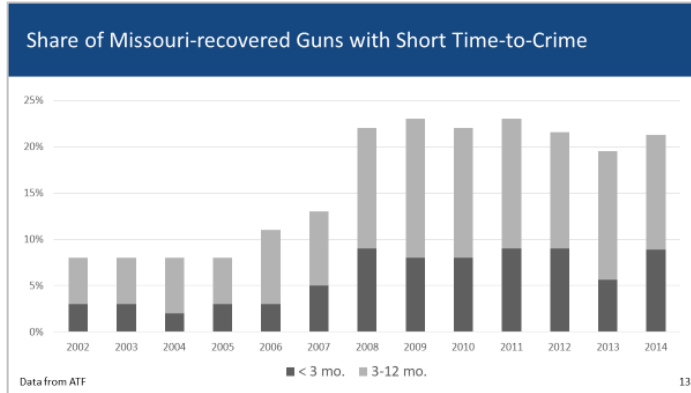
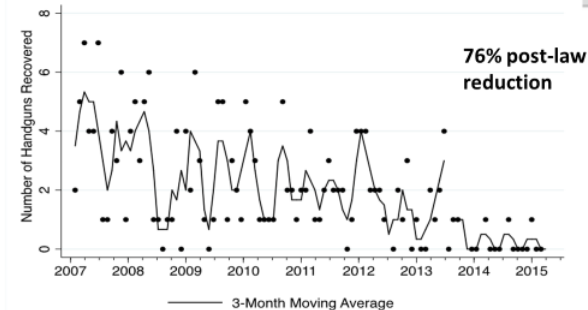
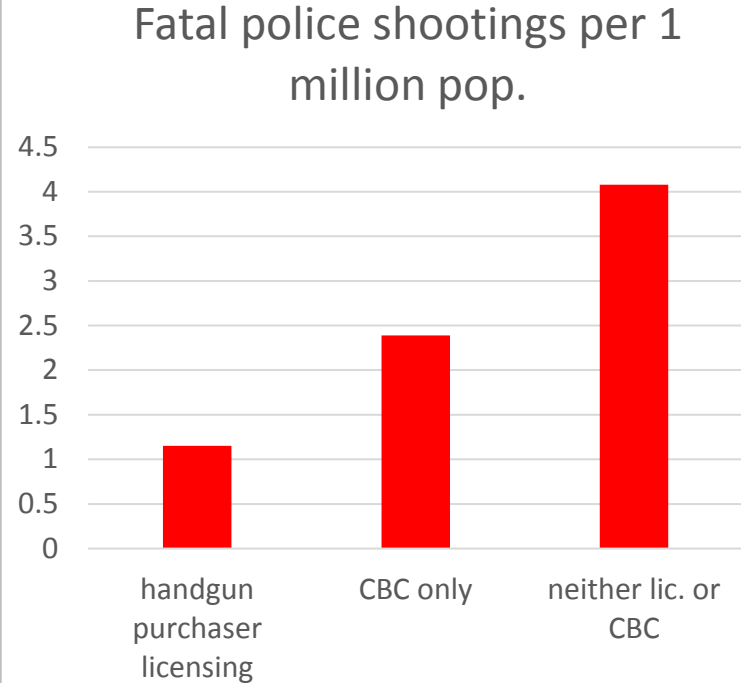


Figure 2. Three-month moving average of handguns originally sold in Maryland and recovered within 1 year of retail sale; purchaser different from possessor.



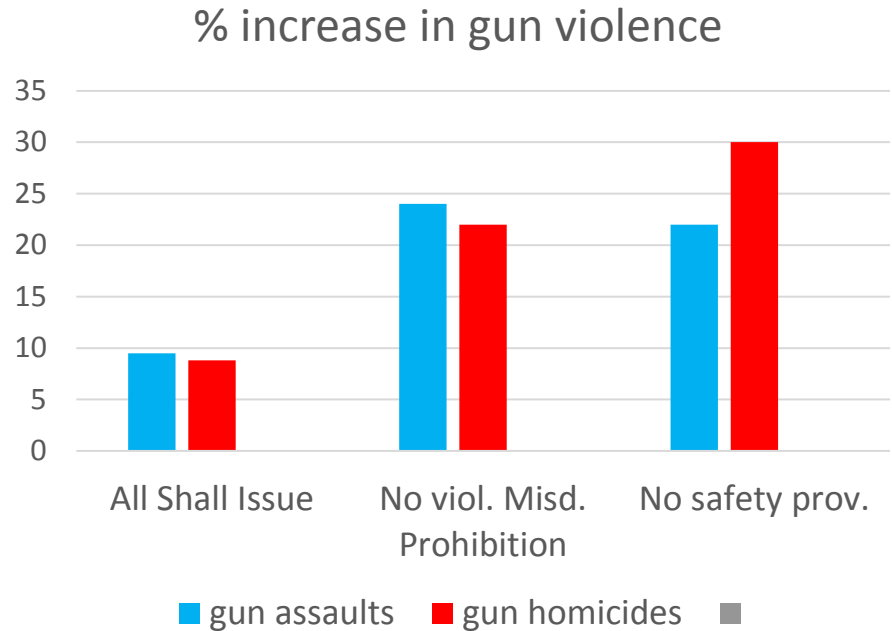
Handgun purchaser licensing laws associated with reductions in mass shootings and shootings involving law enforcement.

- ▶ Handgun purchaser licensing linked to lower rates of fatal mass shootings (Webster et al., 2020)
- ▶ Handgun purchase licensing changes in CT and MO associated with LEOs shot in line of duty (Crifasi, Pollack, & Webster, 2015)



Effects of moving from May Issue to Shall Issue concealed carry licensing on gun violence based on key provisions. Doucette, ...Webster 2022

- ▶ First study to examine specific provisions of Shall Issue laws and their effects on gun violence.
- ▶ Prohibitions for violent misdemeanants
- ▶ “Dangerousness” and “suitability” discretionary prohibitions



REDUCING VIOLENCE AND BUILDING TRUST

Data to Guide Enforcement of Gun Laws in Baltimore

Daniel W. Webster, ScD, MPH | Cassandra K. Crifasi, PhD, MPH

Rebecca G. Williams, MSPH | Marisa Doll Booty, MHS | Shani A. L. Buggs, PhD, MPH

SCOTUS 2A decision and Safer Community Act of 2022

Webster & Gostin, JAMA 2022

- ▶ SCOTUS struck down NY State law requiring “proper cause” to get concealed carry license.
- ▶ Created new test of Constitutionality of gun laws that rests on the law being consistent with or analogous to the text, history, traditions during late 1700s and early 1800s. Public safety justification of current or new is no longer relevant.
- ▶ SCA is primarily a spending bill to support crisis response including ERPO law implementation, mental health supports, school security, and CVI.
- ▶ Extends prohibition for misdemeanor battery convictions to dating relationships, requires a license to sell guns for a profit and background checks, creates gun trafficking violation.