Changes to the legal landscape for civilian gun carrying and impacts on violent crime

Alexander McCourt, JD, PhD, MPH
Assistant Scientist
Department of Health Policy & Management
Johns Hopkins Bloomberg School of Public Health
Acknowledgments

- **Co-authors**
  - Mitchell L. Doucette, Julie A. Ward, Cassandra K. Crifasi, Daniel W. Webster

- **Funding**
  - Joyce Foundation
  - Funders had no role in study design, analysis, or presentation of this research

- No conflicts of interest to disclose
Outline

• Background

• Legal Mapping and Analysis
  • Concealed carry policy, 1980–2021

• Quantitative Analysis
  • Concealed carry policies and violent crime

• Discussion: Conclusions and Implications
Outline

- Background

- Legal Mapping and Analysis
  - Concealed carry policy, 1980–2021

- Quantitative Analysis
  - Concealed carry policies and violent crime

- Discussion: Conclusions and Implications
Four types of state concealed carry law

- Most states require a permit or license to carry a concealed gun and articulate specific permitting criteria.

- State concealed carry laws can be sorted into four broad categories:
  - No Issue (ban)  
  - May Issue  
  - Shall Issue  
  - Permitless carry

- Shall issue and permitless laws are also called “Right-to-Carry” (RTC) laws.

- Strict and Lenient categories:
  - Strict
  - Lenient
State laws governing public use are hotly debated

► Initial work in the 1990s (Lott & Mustard 1997)
  ● More guns, less crime
  ● Argued that violent crime would decrease if states made it easier to get a permit
  ● Flawed

► Newer studies (e.g., Donohue et al. 2019)
  ● Improved methods, show that states that made it easier to get a permit saw elevated violent crime rates
  ● Potential flaws in legal analysis in some studies

► RAND summary report on gun policy evaluated studies of RTC laws
  ● Several studies with many outcomes, strengths, and weaknesses

https://www.rand.org/research/gun-policy/analysis/concealed-carry/violent-crime.html
These laws have not been adequately studied

- The newer studies are generally better, but still limited
  - Often focus on RTC laws, improperly combining shall issue and permitless laws
  - Focus on overall policy categories, not specifics

- Specific permitting standards may help reduce violence
  - May keep high-risk applicants from acquiring permits
  - May encourage responsible gun ownership and use
Research question

Are state concealed carry policies associated with violent crime rates and do specific permitting standards affect that association?

Two pieces:

- Longitudinal legal mapping and analysis
- Quantitative policy evaluation
Outline

• Background

• Legal Mapping and Analysis
  • Concealed carry policy, 1980–2021

• Quantitative Analysis
  • Concealed carry policies and violent crime

• Discussion: Conclusions and Implications
Legal mapping

- Legal research questions
  - How are states regulating concealed carry?
  - What specific permitting standards do states have?
  - How have state laws changed over time?

- Standard search terms in Westlaw, HeinOnline, Lexis, and state websites

- 50 states, 1980–2021

- State laws coded for overall permitting policy and for specific permitting standards
Concealed carry policies in 1980 and 1990

1980

1990
Concealed carry policies in 2000 and 2010

2000

2010

[Map showing concealed carry policies in 2000 and 2010, with states colored to indicate different levels of policy enforcement.]
Concealed carry policies in 2021

- All states allow concealed carry
- 8 states with may issue laws
- 21 states with shall issue laws
- 21 states allow permitless carry

October 2021
Specific permitting standards

► Collected laws were reviewed and analyzed to identify specific permitting standards

► Several common standards relevant to violence prevention
  ● Violent misdemeanor prohibitions
  ● Training requirement
  ● Live fire requirement
  ● “Dangerousness” evaluation
  ● Other broad “suitability” requirements

► Shift to shall issue
  ● Additional permitting standards
  ● Less discretion for law enforcement
Specific permitting standards

Of states with a permit requirement in 1980 and 2019:

<table>
<thead>
<tr>
<th></th>
<th>1980 (n=28)</th>
<th>2019 (n=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>May issue</td>
<td>Shall issue</td>
</tr>
<tr>
<td></td>
<td>(n=24)</td>
<td>(n=4)</td>
</tr>
<tr>
<td>Violent misdemeanor</td>
<td>12.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Training</td>
<td>12.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Live fire</td>
<td>4.2%</td>
<td>25.0%</td>
</tr>
<tr>
<td>Dangerousness</td>
<td>4.2%</td>
<td>0%</td>
</tr>
<tr>
<td>Other suitability standard</td>
<td>75.0%</td>
<td>75.0%</td>
</tr>
</tbody>
</table>
Outline

1. Background
2. Legal Mapping and Analysis
   - Concealed carry policy, 1980–2021
3. Quantitative Analysis
   - Concealed carry policies and violent crime
4. Discussion: Conclusions and Implications
Research question & design

- Research question
  - What is the relationship between concealed carry policy and violent crime?

- Two pieces to quantitative analysis:
  - Interrupted time series approach
  - Augmented synthetic control + random effects meta-analysis

- Dependent variables (1980–2019):
  - Aggravated assault with a firearm, robbery with a firearm (FBI UCR)
  - Firearm homicide, nonfirearm homicide (NCHS)
Interrupted time series regression

- Negative binomial regression with state and year fixed effects
  - Independent policy variables: CCW policy (see next slide)
  
  - Legal covariates: permit to purchase, point of sale background check, stand your ground, violent misdemeanor prohibition (possession)
  
  - State demographic covariates (percent living in MSA, proportion black males 15–19, proportion white males 20–39, unemployment rate, poverty rate, ethanol consumption, incarceration rate, police employees per capita, per capita income)
Regression: independent CCW policy variables

- Several different models to evaluate different aspects of CCW policy

1. Broad CCW policy category

2. Shall issue with permitting standards (relative to SI w/o standard)
   a) Training
   b) Live fire training
   c) Any VM-related prohibition
   d) Suitability requirement
   e) Dangerousness evaluation
Augmented Synthetic Control Method

- Augmented synthetic control (state-specific) + random-effects meta-analysis (average)
  - Extension of the synthetic control method (SCM)
  - Creates synthetic state—weighted combination of untreated states that approximates covariates and outcomes in pre-law period
  - Compare difference between treated state and synthetic state in post-law period
  - Outcome model to minimize pre-law root mean square prediction error

- Identical covariates, 10-years pre- and post-law change for each state
## Results: May Issue

### Regression

- Across all models, states with may issue laws saw a lower level of violent crime relative to states with shall issue laws.

- In the model with no permitting standards:
  - Agg. Assault with firearm: IRR = 0.73*
  - Robbery with firearm: IRR = 0.76*
  - Homicide with firearm: IRR = 0.94*
  - Nonfirearm homicide: IRR = 0.94*

### ASCM

- Results are largely consistent with regression.

- Aggregate results show moving from may issue to shall issue is associated with increases in assault and homicide (rates per 100,000):
  - Agg. Assault with firearm: ATT = +15.2*
  - Robbery with firearm: ATT = -5.6
  - Homicide with firearm: ATT = +0.3*
  - Nonfirearm homicide: ATT = +0.12

---

- p<0.05
- NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.
### Results: Permitless

<table>
<thead>
<tr>
<th>Regression</th>
<th>ASCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permitless laws were less consistent, but states generally saw lower level of assault and robbery and no change in homicide relative to shall issue laws</td>
<td></td>
</tr>
<tr>
<td>In the model with no permitting standards:</td>
<td></td>
</tr>
<tr>
<td>- Agg. Assault with firearm: IRR = 0.80*</td>
<td></td>
</tr>
<tr>
<td>- Robbery with firearm: IRR = 0.81*</td>
<td></td>
</tr>
<tr>
<td>- Homicide with firearm: IRR = 1.02</td>
<td></td>
</tr>
<tr>
<td>- Nonfirearm homicide: IRR = 1.07</td>
<td></td>
</tr>
</tbody>
</table>

- Results are similar to regression results, with some differences.

- Aggregate results show moving from shall issue to permitless is associated with no significant change (rates per 100,000):
  - Agg. Assault with firearm: ATT = -3.2
  - Robbery with firearm: ATT = -1.3
  - Homicide with firearm: ATT = -0.05
  - Nonfirearm homicide: ATT = -0.1

- p<0.05

NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.
## Results: Shall issue with live fire

<table>
<thead>
<tr>
<th>Regression</th>
<th>ASCM</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Shall issue with live fire training, relative to shall issue with no live fire training:</strong></td>
<td><strong>Move from may issue to shall issue without live fire requirement:</strong></td>
</tr>
<tr>
<td>● Agg. Assault with firearm: IRR = 1.07</td>
<td>● Agg. Assault with firearm: ATT = 8.31*</td>
</tr>
<tr>
<td>● Robbery with firearm: IRR = 1.24*</td>
<td>● Robbery with firearm: ATT = 5.69</td>
</tr>
<tr>
<td>● Homicide with firearm: IRR = 1.03</td>
<td>● Homicide with firearm: ATT = 0.42*</td>
</tr>
<tr>
<td>● Nonfirearm homicide: IRR = 1.03</td>
<td>● Nonfirearm homicide: ATT = 0.22*</td>
</tr>
<tr>
<td><strong>Move from may issue to shall issue with live fire requirement:</strong></td>
<td><strong>Move from may issue to shall issue with live fire requirement:</strong></td>
</tr>
<tr>
<td>● Robbery with firearm: ATT = 2.87</td>
<td>● Robbery with firearm: ATT = 2.87</td>
</tr>
<tr>
<td>● Homicide with firearm: ATT = 0.17</td>
<td>● Homicide with firearm: ATT = 0.17</td>
</tr>
<tr>
<td>● Nonfirearm homicide: ATT = 0.05</td>
<td>● Nonfirearm homicide: ATT = 0.05</td>
</tr>
</tbody>
</table>

- p<0.05
- NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.
# Results: Shall issue with VM prohibition

<table>
<thead>
<tr>
<th>Regression</th>
<th>ASCM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shall issue with VM, relative to shall issue with no VM:</td>
<td>Move from may issue to shall issue without VM:</td>
</tr>
<tr>
<td></td>
<td>Agg. Assault with firearm: IRR = 0.82*</td>
</tr>
<tr>
<td></td>
<td>Robbery with firearm: IRR = 0.87*</td>
</tr>
<tr>
<td></td>
<td>Homicide with firearm: IRR = 0.93*</td>
</tr>
<tr>
<td></td>
<td>Nonfirearm homicide: IRR = 0.92*</td>
</tr>
<tr>
<td></td>
<td>Agg. Assault with firearm: ATT = 16.58*</td>
</tr>
<tr>
<td></td>
<td>Robbery with firearm: ATT = 7.84</td>
</tr>
<tr>
<td></td>
<td>Homicide with firearm: ATT = 0.39</td>
</tr>
<tr>
<td></td>
<td>Nonfirearm homicide: ATT = 0.32</td>
</tr>
</tbody>
</table>

- Move from may issue to shall issue with VM: |
  - Agg. Assault with firearm: ATT = 2.80 |
  - Robbery with firearm: ATT = 3.33 |
  - Homicide with firearm: ATT = 0.28 |
  - Nonfirearm homicide: ATT = 0.08 |

- p<0.05
- NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.
Results: Shall issue with Suitability

**Regression**

► Shall issue with suitability req, relative to shall issue with no suitability req:
  - Agg. Assault with firearm: IRR = 0.78*
  - Robbery with firearm: IRR = 0.91*
  - Homicide with firearm: IRR = 0.94
  - Nonfirearm homicide: IRR = 0.93*

**ASCM**

► Move from may issue to shall issue without suitability req:
  - Agg. Assault with firearm: ATT = 6.82*
  - Robbery with firearm: ATT = 3.84
  - Homicide with firearm: ATT = 0.38*
  - Nonfirearm homicide: ATT = 0.11

► Move from may issue to shall issue with suitability req:
  - Agg. Assault with firearm: ATT = 6.07
  - Robbery with firearm: ATT = 5.37
  - Homicide with firearm: ATT = -0.25
  - Nonfirearm homicide: ATT = 0.15

• p<0.05
• NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.
Results: Shall issue with Dangerousness

<table>
<thead>
<tr>
<th>Shall issue with dangerousness eval, relative to shall issue with no dangerous eval:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Agg. Assault with firearm: IRR = 0.94</td>
</tr>
<tr>
<td>● Robbery with firearm: IRR = 0.79*</td>
</tr>
<tr>
<td>● Homicide with firearm: IRR = 1.02</td>
</tr>
<tr>
<td>● Nonfirearm homicide: IRR = 0.98</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Move from may issue to shall issue without dangerousness eval:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Agg. Assault with firearm: ATT = 7.64</td>
</tr>
<tr>
<td>● Robbery with firearm: ATT = 1.57</td>
</tr>
<tr>
<td>● Homicide with firearm: ATT = 0.35</td>
</tr>
<tr>
<td>● Nonfirearm homicide: ATT = 0.20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Move from may issue to shall issue with dangerousness eval:</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Agg. Assault with firearm: ATT = 6.37</td>
</tr>
<tr>
<td>● Robbery with firearm: ATT = 7.99*</td>
</tr>
<tr>
<td>● Homicide with firearm: ATT = 0.28</td>
</tr>
<tr>
<td>● Nonfirearm homicide: ATT = -0.03</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NOTE: Regression produces incidence rate ratio (IRR) and ASCM produces Average Treatment Effect on the Treated (ATT). These are different measures of effect estimate.</th>
</tr>
</thead>
</table>
Outline

- Background
- Legal Mapping and Analysis
  - Concealed carry policy, 1980–2021
- Quantitative Analysis
  - Concealed carry policies and violent crime
- Discussion: Conclusions and Implications
Implications, concerns, and continuing work

- Legal mapping reveals important nuances in state concealed carry policies

- May issue laws appear to be protective relative to shall issue laws, even with addition of specific provisions

- Permitting standards may hold promise as a mechanism for reducing or preventing increases in violence
  - Some differences between regression and ASCM results, but in general, VM- and training-related provisions may be protective
Implications, concerns, and continuing work

► Permitless results were somewhat unexpected. What could explain this?
  ● More firearms $\rightarrow$ crime deterrent? Probably not
  ● Omitted variable
  ● Permitless states may differ in important ways from states that have not adopted permitless carry (% rural, % gun owners, etc.) $\rightarrow$ adoption of permitless law may not have changed behavior
  ● Data limitations
Implications, concerns, and continuing work

- Shall issue laws may increase violence

- Specific permitting standards within shall issue laws may be protective
  - But need to evaluate equity and impact
  - Some provisions may open the door to de facto or de jure discrimination
  - More qualitative and quantitative work needed

- More quantitative analysis needed to fully understand relationship between permitting standards and fatal outcomes
Thank you!

Alex McCourt
amccour1@jhu.edu
@admccourt
References


