Discussion of 2021-1750

STATE GUN LAW GRADES AND IMPACT ON MASS SHOOTING EVENT INCIDENCE: AN 8-YEAR ANALYSIS

**DR SAMIR M FAKHRY** (Nashville, TN): I would first like to congratulate Dr Duchesne and colleagues for their investigation into the relationship between state gun laws and Mass Shooting Events (MSEs) in the US. This subject is both difficult to study and controversial especially in the current socio‑political environment.

Using 2014‑2020 data obtained from the Gun Violence Archive and Giffords Law Center, the authors identified 2,736 recorded MSEs**,** and noted a two-fold increase in incidence from 272 in 2014 to 626 in 2020. They could not demonstrate a relationship between the strength of state gun law grades and MSE incidence and conclude that “legislation by itself is not an effective prevention measure and other broader and meaningful primary gun violence interventions are needed”. At the risk of exposing my biases, I will not comment on whether I think that is good or bad!

You address the issue regarding the definition of MSEs in your manuscript. This is a very important part of any research in this area as definitions can materially affect the reported results. I would strongly urge anyone interested in this subject to spend a little time learning about these definitional challenges to allow more objective interpretation of the data. As such, I wanted to ask you whether it would it have made any difference in your results if you had analyzed mass killings as opposed to mass shootings? Or analyzed what the FBI defines as active shooter events, which the FBI reports have increased 100% between 2016 and 2020 (from 20 to 40)?

Can you comment on the relationship, if any, between gun sales volumes and state gun law grades and MSEs?

Since state gun laws changed during the period of the study, it may be worth performing a sensitivity analysis to separately examine states where laws did not change and those where laws changed.

Every time I learn about this subject, I am always impressed by the consistent finding that US firearm suicide deaths are approximately double firearm homicide deaths and both are substantially larger numbers than MSEs. Did your analysis include murder‑suicide events? Would it be relevant to perform your analysis of the relation of state gun laws to firearm suicide rates? Along the same lines, should the analysis examine the relationship of state gun laws to all firearm related deaths as opposed to just MSEs?

HL Mencken once said, “For every complex problem, there is an answer that is clear, simple and wrong”. Is it possible that the analysis you performed should have included other variables that may affect MSE incidence by state such as gun sales volumes, socio‑economic variables such as income inequality, other population characteristics, law enforcement activity, varying application of existing laws, etc?

**DR DAVID V FELICIANO** (Edgewater, MD): The US is essentially a third world country when one discusses the absence of laws regulating the purchase, registration, training before ownership, carrying and punishment for committing crimes with firearms. There are 300 gunshot injuries per day in this country resulting in 109 deaths, and, as stated, 40,000 deaths per year. The most nauseating statistic of all is as follows: From the War of Independence in 1776, to Operation Iraqi Freedom, there were 1.2 million deaths in US military conflicts compared to 1.4 million civilian gunshot wound deaths in this country.

In this heavily researched paper, the authors have documented that the incidence of multiple shooting events, a uniquely American phenomenon, is not affected by the strictness of state gun laws, but the deaths per event is. This is not surprising as emotionally disturbed or evil individuals or their parents do not follow the laws that the rest of us do.

Your own state of Louisiana received a grade of F from the Giffords Law Center. In addition to all the recommendations from the American College of Surgeons' Committee on Trauma Firearm Strategy Team in 2018, what specifically would your first recommendation be to a legislator in your home state to affect the incidence of multiple shooting events?

My personal choices in answer to my own question, would be to reinstate and strengthen the assault weapons ban that was passed in 1994 and expired, as all of you know, in 2004, and to renew the 10‑round limit on ammunition magazines. Any chance that either of these would pass a national referendum?

After my trauma training at Detroit Receiving Hospital, the state of Michigan passed a felony gun law that mandated 2, 5, or 10‑year prison sentences for assailants committing a felony with a gun on the first, second, or third occasion. No surprise, the incidence of gunshot wounds in Detroit, Michigan, plummeted. So, while this would not specifically target multiple shooting events, it would surely affect all other non‑suicide gunshot related crimes. Your opinion of this?

Finally, if I may make an editorial comment after 43 years in the field of trauma, the use of the term "mass" in triage refers to local medical facilities being unable to care for the injured from an event. What you and the Giffords Center and the FBI are talking about is, of course, a multiple casualty event that can easily be handled by a local healthcare system. Good luck in trying to change that terminology.

All of us should be saddened by the feckless nature of state and federal elected officials in the United States regarding gun control.

**DR R STEPHEN SMITH** (Gainesville, FL): I want to compliment you on a very nice paper and can confirm the pertinence of this having worked in California previously and now being in Florida.

Did you find that the grade of the gun laws made a difference in the type of firearm used in the mass shooting events? Another way of asking this, did it make a difference on percentage of these mass shootings that were caused by rifles versus shotguns versus pistols?

**DR PATRICIA BYERS** (Miami, FL): I enjoyed your presentation very much, but I have some grave concerns. First, the idea that as the mass shootings increase, the gun laws increase, seemingly puts an inherent bias to the study. In addition, the parameters you studied seem to be a moving target with the population, the mass shootings, events, and the laws changing over time. So, how are these more granularly evaluated? As a public health model, it seems, I am not familiar with this law grading and am curious, because we never say that antibiotics did not work to treat an infection without knowing what antibiotics we were using to treat what bacteria. So, I am wondering if there is another way to obtain more granular information on what these gun laws really were before we throw them out with the bathwater.

**DR KANIKA A BOWEN‑JALLOW** (Prosper, TX): My state of Texas received an F on the table you provided. I personally have been involved in 2 mass shootings and surgical care of those patients, so I find this topic very interesting. A law really means nothing unless it is enforced. Is there any way to track the enforcement of current laws in the state?

Did any of the mass shootings that were mentioned in the talk today include children from grades K through 12?

DR JUAN C DUCHESNE (New Orleans, LA): Thank you for everyone's comments, and the purpose of this presentation is exactly this, to have an open discussion and try to find a solution as a team.

Regarding questions from Dr Samir, mass killing vs mass shooting, we did not look at the FBI data. The FBI data will look only specifically at killing, and I think that by itself is a different study that we need to look at as well. We wanted to incorporate everyone involved, and that is why we did not use FBI data, because it was just somewhat restrictive. Regarding gun sales volume and state gun grade and MSE, that is an amazing question. There is definitely a correlation between them. Lowered state gun grades, you are going to see more high velocity guns for sale and higher volume sale. Regarding our results, there was no real increase in the incidence of mass shooting events.

Regarding sensitivity, yes, that is an analysis that needs to be done regarding the relationship with murder‑suicide. We only looked at homicide, but we need to take into consideration suicide as well.

Socioeconomics and other factors are definitely something that we presented that I think is part of the solution and is part of the discussion.

Dr Feliciano, regarding our amazing state of Louisiana, and its grade F, there is not that much I can do at this point. I have a wish list, like anyone else. I think the key concept here besides open discussion, is accountability. We have a huge lack of accountability, not only from the sellers but the owners of these guns. If we cannot track where these guns go, how are we going to study this? That is our first recommendation.

The second recommendation is to create a waiting period for any human being that wants to purchase any kind of gun. There is no need to sell a gun right away, delay time to ownership has been studied and has been actually of help.

I agree with the limitation of the amount of rounds. There is no need to buy more than 10 rounds. For those of us that know guns, as a responsible owner I know how to use them, I took the course. I believe that if you do things safely, you should be in a very safe environment. That being said, there is no need to have more than 10 rounds for any high velocity weapon. It does not make any sense.

Regarding high velocity weapons ban, any hope? I agree, I think that it works, I do not see any problem with that. I think that is an open discussion that needs to be of bipartisan support. Escalation of charges, I love it. I wish we could do something like that. We will see an escalation of charges not on just the felony but on what kind of felony was done.

Regarding the grade of gun laws and the type of gun used, did it make a difference? I do believe that there is, like I previously stated, there is an increase in high velocity for low grade states.