

## US Senate announces planned gun reforms after latest school shooting



Nearly 3 weeks after the country's most recent mass school shooting, a bipartisan group of US senators announced on June 12, 2022, an agreement to draft new legislation to strengthen background checks for gun buyers younger than 21 years old, and to provide new funding for mental health care and school security.

President Joseph Biden welcomed the deal, calling it an important step forward. The senators, 10 Democrats and 10 Republicans, announced the agreement 19 days after the Robb Elementary School shooting in Uvalde (TX), where 19 children and two teachers were killed, and nearly a month after a white supremacist murdered 10 African Americans at a Buffalo (NY) grocery store. Both shooters were 18-year-old men who used recently purchased AR-15 style assault rifles. On June 1, a disgruntled 45-year-old former patient shot and killed his surgeon and three other hospital staff at Saint Francis Hospital in Tulsa (OK), also using an AR-15 style assault rifle he'd purchased earlier that day.

The Senators' intended legislation falls well short of reforms passed a week earlier by the Democrat-controlled House of Representatives. The House bills have slim chance of passing the closely divided Senate but would prohibit the sale of semiautomatic firearms to people younger than 21 years, would ban some high-capacity ammunition magazines, and create a national so-called red flag law allowing family members or police to petition courts for the temporary removal of guns from people threatening to kill themselves or others. The Senate deal would give money to states for red-flag laws of their own but wouldn't create a national law. It would also expand a current prohibition on married domestic abusers' access to firearms to include unmarried abusers who have attacked dating partners.

The American Thoracic Society (ATS) and other professional medical organisations called for gun reform in the days after Buffalo and Uvalde, including renewed funding for research by government scientists. "As clinicians working in intensive care units (ICUs) across the USA, we see first-hand the death and destruction caused by gun violence", said ATS President Gregory Downey. Though encouraged by the "tentative progress" in the Senate, Downey said more needs to be done, including an assault weapons ban or raised minimum age of purchase, a ban on firearms with "features designed to increase their rapid and extended killing capacity", comprehensive criminal background checks for firearm purchases, and more research on firearm injury and death.

Definitions vary but one widely used criterion for mass shootings is a shooter's killing or wounding of at least four other people. By that measure, the USA has had mass shootings each week in 2022, killing at least 256 people and injuring more than 1000, according to the *Washington Post*. The USA has seen at least 15 mass shootings at schools since the 1989 Columbine High School massacre in Littleton (CO). School shootings with fewer than four victims are far more ubiquitous; there were 42 in 2021 alone.

The deadliest mass school shooting was in 2007 at the Virginia Tech in Blacksburg (VA), where 32 students and teachers were killed, and 17 others were wounded by an undergraduate with semi-automatic pistols. Kristina Anderson Froling (Koshka Foundation for Safe Schools, Seattle, WA), then 19 years old, was shot three times in a Virginia Tech lecture hall. She lost most of her right kidney, parts of her large and small intestines, and her gallbladder. "It happened very, very quickly", Anderson Froling recalled. Students heard the opening volley of gunfire in the hallway,

but the classroom door had no lock and could not be secured. "He burst in and shot my professor first", she said, before moving down the rows of student seats, shooting students one after the other. "It was very methodical. He killed 11 of my classmates." When first responders arrived, one approached Kristina and called out "yellow", but quickly changed his assessment to "red." "I started panicking because you know it's not a good thing to escalate from yellow to red", Anderson Froling told *The Lancet Respiratory Medicine*. "I was losing consciousness but that always stayed with me. We remember what people say to us in those first moments and it's so critical for first responders, for emergency medical services and nurses, to be mindful of that." "She was the most critically injured student who survived", surgeon Randall Lester told *The Lancet Respiratory Medicine*. "She had the most horrible injuries."

When she awoke in the ICU, Anderson Froling saw a long line of stitches on her abdomen and didn't initially understand what had happened. But the television was turned to CNN and she saw an image of herself being carried out of the lecture hall. The constant noise of the ICU was frightening. Slammed doors reminded her of gunshots. It would be 2 and a half months before she was able to walk.

The Virginia Tech shooting happened on a weekday morning, so the emergency department, operating rooms, and ICUs were fully staffed at Montgomery Regional Hospital (now LewisGale Hospital Montgomery), where the initial wave of victims were taken, Lester recalled. "If that happened on a Saturday night or midnight, who knows", he said. The hospital was designated a level 3 trauma programme 2 weeks before the shooting and had recently reviewed mass casualty protocols, Lester said. Clinicians knew and had worked with one another.



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For more on **US mass shootings thus far in 2022** see <https://www.washingtonpost.com/nation/2022/06/02/mass-shootings-in-2022/>

To read about **the number of American youth who have been exposed to school shootings** see <https://www.washingtonpost.com/graphics/2018/local/school-shootings-database/>

To read the **2020 study of distances from mass shooting events to trauma centres and non-trauma hospitals** see *JAMA Surg* 2020; **155**: 446–47

Today, many US hospitals face persisting staff shortages compounded by the COVID-19 pandemic. Many rely on travel nurses who have not trained extensively with local staff. Misinformation about COVID treatment options led to patient hostility toward clinicians, leaving some feeling unsafe, noted Michelle Harkins (University of New Mexico, Albuquerque, NM, USA).

Most people wounded in mass shootings are initially treated at local non-trauma centre hospital emergency departments. A 2020 study found that the average distance from a mass shooting to an adult trauma centre in the USA is more than 13 miles, and that distances to paediatric trauma centres are much farther: nearly 44 miles, on average.

The trauma of mass shootings moves through families, hospitals and communities, and it persists. The *Washington Post* reports that more than 311 000 US students have been exposed to gun violence in their schools since the 1989 Columbine shooting. Reactions vary and can be subtle. Survivors sometimes feel guilt or shame, notes David Schonfeld (National Center for School Crisis and Bereavement, Children's Hospital Los Angeles, Los Angeles, CA, USA). They also frequently experience post-traumatic stress and grief.

Shootings can also traumatise family members and members of local communities. Military veterans often struggle with headlines about mass shootings, noted Dona Upson (New Mexico Veterans Affairs Health Care System, Albuquerque, NM, USA). Her father, now age 93, was a physician during the US conflict in Vietnam and remains traumatised by patients' assault weapon wounds, she said.

In the weeks and months after the Virginia Tech shooting, university officials "dropped the ball" when it came to providing comparable care to survivors who were not physically wounded, Anderson Froling said: "They saw the crime scene when they were

evacuated. The university provided care for those of us who were physically wounded, but not those who were not shot. There are many who have really severe exposures [but] we don't treat them as survivors because they weren't shot."

Securing school buildings should be job one, Lester said. Perpetrators are frequently known to the authorities before mass shootings, he added. The gunman in the Buffalo grocery store shooting had made a threat about school shootings last year, according to police. And the 23-year-old Virginia Tech shooter expressed suicidal thoughts and had stalked and harassed female students, and his class writings had alarmed some professors. (Most mass shooters have not been diagnosed with a psychiatric disorder.) Expanded background checks, age limits, and red-flag laws, could help prevent some mass shootings, Lester said.

Conservative lawmakers are calling for more armed guards and police to be stationed in US schools, and to arm teachers and school officials. On June 13, Ohio Governor Mike DeWine signed a law slashing the training required for teachers to carry firearms in schools, from 700 h to no more than 24 h of training. But there's little evidence that more guns in schools will prevent mass shootings. Uvalde's school district has its own police force and had doubled security spending after the May 2018 Santa Fe, Texas school shooting. The Uvalde school district had threat assessment teams, fencing, and a locked doors policy, noted Paul Reeping (Columbia Mailman School of Public Health, New York, NY, USA). Heavily armed police waited to confront the shooter for more than an hour, reportedly awaiting protective gear. One of those killed in the Buffalo, New York shooting on May 14, Aaron Salter Jr, was a former police officer working as a store security guard. Armed teachers, security guards, active shooter drills, and police training do nothing to prevent these attacks, and instead

are implemented to stop an already occurring event, Reeping noted. "We also know that permissive gun laws are associated with both mass and school shootings."

Laws raising the age for buying guns, requiring universal background checks and safe firearms storage, and bans on assault weapons and large-capacity magazines would all help prevent school shootings and other mass shootings without harming students, Reeping believes.

"Building schools that look more like minimum-security prisons can create the illusion of safety while not actually improving safety for students and staff within the school", Schonfeld said. "And severely restricting access to classrooms might also cause unintended consequences such as complicating first responders' access to students and staff in other medical emergencies." Schonfeld served on the Sandy Hook Advisory Commission after the 2012 Sandy Hook Elementary School shooting in Newtown, CT.

Other solutions are similarly fraught. Expanding mental health services in the USA is critical but shouldn't be viewed primarily as a means to prevent mass shootings, Schonfeld said. "The problem is, when you say shootings are 'due to mental illness,' that tends to stigmatise those with mental illness—decreasing their likelihood of accepting the services—and blames them when they are more likely to be hurt by the violence of others than to harm others themselves."

As more details about Senate legislation become better known and as the gun lobby responds with its opinion influence campaigns, widespread public support for new laws might wane. "America's been so divided over COVID, over guns", Harkins said. "Background checks, secure storage, age limits, they seem simple but they're all just one tiny piece of what we need to do as a nation."

*Bryant Furlow*