

Stop the bleed: When gunshots ring out, the first five minutes are pivotal to survival

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Credit: Pixabay/CC0 Public Domain

Parkland, Pulse nightclub—and now Hollywood Beach.

Floridians know firsthand that any [public place](#) can instantly turn into a

shooting range, where multiple victims are wounded or killed. Such incidents have been escalating in the United States, which has more [mass shootings](#) than any other country.

Surviving a gunshot often depends on what happens in the first five minutes after a bullet enters the body and where the metal lodges.

The Memorial Day incident on Hollywood Beach in which nine people were shot illustrates just how much those initial minutes count.

Sean Bennett had been eating at Hollywood Beach on Memorial Day when he heard multiple gunshots and saw a teenage boy drop to the ground. He approached the boy, 15-year-old Kyan Reddix, and asked if he was OK. "I've been shot," Reddix replied.

Bennett quickly jumped into action, rolling the teenager onto his back and putting his hand over the chest wound from which blood gushed out. Reddix also had a small hole on the side of his stomach. "I shouted out to people around me for a clean towel, and when that filled up with blood, I asked for another," Bennett said. "Even though there was a whole lot of blood, I kept the pressure on."

Within minutes, a Hollywood police officer, equipped with a tourniquet, chest seal, and quick clot, arrived and worked with Bennett to control the blood loss. Hollywood Fire & Rescue eventually brought the teenager, shot four times, to Memorial Regional Hospital and after surgery, he survived.

The others who were shot also benefited from good Samaritans and [police officers](#) working quickly to control bleeding. They, too, survived. On Friday, all but two had been released from the hospital, including a 1-year-old boy.

"Everyone thinks the ER docs save the lives of gunshot victims, but that's false," said Dr. Peter Antevy, EMS medical director in Broward and Palm Beach counties and an emergency physician. "It's everything that happens before someone gets to the ER. If you have an arterial bleed and pressure is not applied before you get to the ER you are not going to make it."

Gunshots more common, but survivable

In an average year, 2,849 people die and 5,267 are wounded by guns in Florida, according to EveryStat.org's analysis of CDC data.

Nationally, more than 320 people a day are killed or wounded by a gun, the CDC's WONDER online database shows.

More Americans died of gun-related injuries in 2021 than in any other year on record. That included record numbers of both gun murders and gun suicides, the CDC data shows.

Experts believe 2022 and 2023 will surpass those records. On May 31, the 150th day of 2023, there have been 263 mass shootings (incidents with four or more people shot) reported in the U.S., with 327 victims killed—the highest ever recorded this early in a year.

While firearm deaths and injuries already were rising in the United States, the pandemic fueled more gun ownership and more casualties.

Studies show that victims can survive gunshots, even those to the head, heart or torso. Most victims of fatal firearm injuries, however, die at the scene of the shooting, which is why new efforts have focused on the immediate response.

If someone has life-threatening bleeding, all of their blood can come out

of their body in three to five minutes, said Candace Pineda, trauma administrative director for Memorial Regional Hospital. "So that's why the moment anyone recognizes that there's bleeding, they have to take the initiative right then to get it to stop,"

"The only place that is a little tricky is your abdomen," she said. "If you have an injury in your chest or your abdomen the only way we can get bleeding to stop is for somebody to go inside ... If you are at the scene, just cover it and get them to the hospital as soon as possible."

Over the last few years, bleeding control kits have been placed next to AED defibrillators in airports, schools, malls and other public places where there are more than 100 people. "There's a big push to put the kits where they need to be," Antevy said.

Minutes—actually seconds—count.

If there isn't a kit around, which happened at Hollywood beach, the first step is to apply direct pressure and then, with shots to the legs or arms, look for something to use to make a tourniquet high up on an extremity to cut off circulation, like a belt or rope, said James Roach, Broward Health chief of emergency medicine and Broward Sheriff Office's EMS medical director for Fort Lauderdale and Sunrise.

"The bystanders and police need to do something immediately to stop bleeding," Roach said. The next step is a quick transport. "You want the victim to be off-scene in 10 minutes and on their way to the hospital."

In most cities, 911 operators have been trained to instruct callers how and where to apply pressure to a gunshot wound and how to use a bleeding control kit. Police officers, who typically arrive before fire rescue, now come with kits that include tourniquets, chest seals, and packing gauze.

On Memorial Day, when 911 calls came in about the beach shooting, officers "immediately responded," said Deanna Bettineschi, a spokeswoman for the Hollywood police department. "They found the nine victims with gunshot wounds. They immediately rendered aid." Bettineschi said all officers arrived with a tourniquet, chest seal, and quick clot. Videos and photos show police officers using their bleeding kits on the injured people before the arrival of EMS.

What happens in the golden hour

With a gunshot, emergency responders will take victims to a level one [trauma center](#). Broward has three: Memorial Regional in Hollywood, Broward General in Fort Lauderdale and North Broward Hospital in Deerfield Beach; Palm Beach County has two: Delray Medical Center and St. Mary's Medical Center in West Palm Beach.

While the first five minutes are key, the first hour is important, too. The "golden hour" is the period of time immediately after a traumatic injury during which there is the highest likelihood that prompt medical and surgical treatment will prevent death. Trauma teams are well aware of the ticking clock.

At Memorial Regional, where the nine gunshot victims arrived on Memorial Day, a team of 20 trauma-trained medical professionals awaited in designated bays where multiple people can be treated at the same time. "As soon as we get that call, a notification goes out to the entire trauma team," Pineda said.

A variety of factors influence the level of bodily damage: the caliber of the bullet, the location of the impact, the distance from which the gun was shot. "All of that makes a difference in how much damage there is," Roach said.

Inside the trauma bay

On Memorial Day, the nine injured people included five adults, ranging in age from 25 to 65. The four wounded youth ranged in age from 1 to 17 years old. All were transported to Memorial where the trauma team—with about five minutes' notice—awaited.

"The rooms were warmed, the equipment was set up for blood, for fluids, and we had equipment ready to see if they had had severe bleeding or something life-threatening," Pineda said.

"Typically if someone is bleeding internally inside their body, the only way to get it to stop is to go inside their body and do surgery, so patients with gunshot wounds specifically in their chest or abdomen usually they're only in the trauma bay three minutes and then they are taken to the OR," Pineda said.

Some of Monday's gunshot victims fell into that category: "Some patients had injuries more central to their body and therefore needed surgery," she said. One patient was critical. The youngest patients were then transferred to Joe DiMaggio Children's Hospital for recovery.

Dr. Matthew Chatoor, a general surgeon and trauma specialist at Memorial Regional, said not everyone with a gunshot wound arrives by ambulance. Some arrive to the ER on their own or are dropped off by a family member or friend. Upon arrival, an assessment happens quickly. "We get to work doing our respective roles to make quick decisions that honestly are life-and-death decisions."

Chatoor says the scenes on television of doctors removing a bullet and tossing it into a bowl aren't real.

Often, Chatoor said, the doctors leave the bullet in. "Unless it's in your

line of sight, you don't go chasing for it."

Shots to crucial organs typically are deadly, but anyone who arrives at the hospital with their bleeding controlled has a good chance of survival, he said, noting how important the "stop the bleed" campaign has become.

The doctor, who is treating some of the recovering patients, said he saw the videos on social media of bystanders and police officers applying pressure to the wounds at Hollywood Beach within minutes of the shooting,

"That's exactly what they should be doing, I am sure lot of injuries were mitigated."

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