

THE ORLANDO NIGHTCLUB SHOOTING

FIRSTHAND ACCOUNTS AND LESSONS LEARNED



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These emergency physicians describe what it was like in the ED on the night of the Orlando mass-casualty incident, and what they learned from the experience that can help other EDs.

Orlando Regional Medical Center (ORMC) is an urban, academic, Level 1 trauma center with an ED that treats in excess of 85,000 patients each year. There are more than 4,500 annual trauma admissions, including penetrating and blunt mechanism injuries. We have a 3-year emergency medicine (EM) residency program, originally established in 1986, that now has 14 residents per year. The events that we experienced on the early morning of June 12, 2016 were tragic and unexpected and tested our community, our teams, and our organization. The following is a description of activity perspectives, personal reflections and feelings, and important lessons learned from which other EDs may benefit.

Prehospital/Rescue Period

The prehospital approach to a mass-casualty incident (MCI) caused by gunfire has changed significantly over the last decade, with lessons gleaned from the experience of military and domestic attacks. The Orange County (Florida) Emergency Medical Services (EMS) System, including the agencies involved in the response to the June 12, 2016 Pulse nightclub shooting incident (Orlando Fire Department, Rural Metro Ambulance, and Orange County Fire Rescue), have trained specifically on the evolving priorities during an active shooter incident. This includes targeted hemorrhage control, swift extrication, minimal



Left to right: Christopher H. Ponder, MD; Amanda F. Tarkowski, MD; Kathryn J. Bondani, MD; Gary A. Parrish, MD; Amanda M. Stone, MD; Tory L. Weatherford, MD; and Thomas N. Smith, MD.

interventions, and immediate transport to the appropriate receiving center. In June 2015, 1 year prior to the Pulse nightclub shooting, a protocol variance was written by medical directors, explaining that “EMS providers may engage in initial patient care with only the supplies deemed absolutely necessary for rapid evaluation and removal into a safe triage zone.” This variance applies when there is an active shooter scenario. In addition, in 2014, 2015, and 2016, we conducted large scale, multiagency community exercises, encompassing shooting/active shooter scenarios and drills.

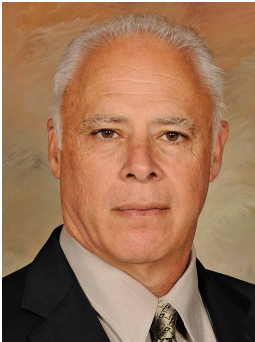
On June 12, 2016, EMS units were on

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scene of the Pulse nightclub in downtown Orlando less than 5 minutes after shooting began. It became immediately obvious that additional resources would be necessary. Soon after the incident, an MCI alert was activated from the Orlando Fire Department Communications Center, utilizing a software system to notify area hospitals and the medical directors that up to 20 patients had been shot, and requesting status on bed availability. Christopher L. Hunter, MD, PhD, one of our associate EMS medical directors, was working in the ED at a hospital several miles away from the incident and began coordinating efforts to distribute patients to the appropriate destination via radio and phone communication between the scene, the communications center, and the trauma center.

On scene, a group of law enforcement officers were engaging the shooter while others assisted in extracting victims from the club and surrounding area. Injured victims were brought to a casualty collection point, under cover, across the street and were transported as units became available. Initially, law enforcement vehicles and ambulances would make the two-block drive from the scene to ORMC carrying as many patients as they safely could, and return immediately after offload. Per previous training, minimal interventions were performed, and unlike standard procedure, EMS could offer no prearrival report to the hospital. The decision was made to triage only patients meeting Florida's state trauma alert criteria to ORMC, and funnel other patients to nearby nontrauma centers. Dr Hunter attempted to notify the hospitals of patients as they were transported off the scene; however, the extremely short transport times made this process difficult.

Over the course of the incident, on-scene commands designated a casualty collection point, a transport unit staging area, and a hospital liaison. Emergency medical service responders cooperated with law enforcement to transport injured patients throughout the response. By the end of the event,

nearly 100 EMS providers utilizing dozens of vehicles had responded to the scene.

The ED Period

The overnight shift of Saturday, June 11 was slower than usual in the ORMC ED, and triage housed the typical Saturday-night complaints. One of our mid-level providers, Brian Clayton, ARNP, worked in the fast track pod treating lower acuity illnesses, while the four senior residents discussed who might receive the honor of leaving early. Even the senior attending, Gary A. Parrish, MD, wrapped up his patients and was ready to leave right on time. The 11:00 PM to 7:00 AM attending, Kathryn J. Bondani, MD, was looking forward to an easy shift with four graduating senior residents. We had just called in an order from a popular nearby sandwich shop when suddenly, a slew of police cars flew past the hospital—not unusual given our proximity to downtown. The radio squawked “Multiple gunshot wounds en route.” Someone said “a club downtown got shot up.” In anticipation of multiple patient arrivals, resident Amanda M. Stone, MD, and the attending hurried to the trauma/resuscitation bay. Another resident, Amanda F. Tarkowski, MD, called the trauma attending to rally his team downstairs, informing him that “A club downtown has a shooter and we have multiple patients with a 2-minute ETA.” Multiple gunshot wounds (GSWs) at once is not unusual for our Level 1 trauma center.

The first patient arrived shortly after 2:00 AM and had multiple GSWs to the abdomen, but was awake and talking. He was mildly tachycardic, but his blood pressure (BP) was stable. We all gaped at the fist-sized wound on his back—some of us had never seen a GSW like this before. It was apparent that he needed to go to the operating room, but before preparations could be made, three more patients rolled into the ED. Instead of our usual organized, methodical EMS report, these patients were dropped off by a police pickup truck and rolled in

on our own stretchers by nurses and technicians. Soon, all six of our trauma bays were filled with critical patients. Christopher H. Ponder, MD, recalled, “I heard an overhead page for ‘all available trauma nurses to the trauma bay’ shortly followed by a more concerned-sounding ‘all available staff to the trauma bay.’” All four senior EM residents, both EM attendings, the trauma attending, four trauma residents, multiple ED nurses, technicians, and various ancillary staff quickly descended on the patients. Chest tubes were placed, and multiple patients were intubated. Several thoracotomies were performed at the initial point when the team was unaware of the exact number of patients who would ultimately follow. Blood bags were hung and tranexamic acid was administered liberally. Unfortunately, some of these initial attempts were unsuccessful, as the first wave contained the most critically injured patients.

We barely had time to reflect on the dead as more patients filled the hallways. In the midst of all of this, triage decisions came quickly—awake and talking patients with an acceptable BP were moved out of the trauma bay in favor of less stable patients. Intubation and chest-tube placement decisions were made instantly. There was no time for routine X-rays or laboratory evaluation. Nurses, technicians, and doctors crowded the trauma bay desperately trying to stabilize the critically injured. Vital signs were taken manually. Dr Ponder called his colleague Thomas N. Smith, MD, who was also a graduating senior EM resident, and who happened to be staffing the children’s ED across the street that night. “Is there any way you can make it over here right now?” he shouted into the phone. Dr Smith quickly grabbed several trauma supplies and hitched a ride with security to the ORMC ED to assist. He was confronted with the scene of the previously mentioned “first wave” and grabbed an ultrasound machine to help triage these unfortunate patients. In addition to Dr Smith, unit clerks continued making

calls to additional off-duty medical, nursing, and support staff. Critical care attendings and fellows responded from upstairs to assist in the ED. The Hospital Incident Command System (HICS) was initiated to provide hospital and corporate coordination of services. Timothy B. Bullard, MD, another EM attending physician and medical staff director of HICS, was en route to the ED to assist in the response.

Amidst the overwhelming mass of mortally and critically wounded patients, we were told stories of terror from just down the road. The sense of horror was almost contagious, and we all wondered if the violence would spread to the hospital.

About an hour into the ordeal, we heard another page overhead “Code Silver, ED Triage. Code Silver, ED Triage.” Everyone in the trauma bay froze. We heard someone shout from the hallway “Shots fired in triage!” After a few seconds, those nearest the trauma bay doors pushed them shut. One of the trauma surgeons shouted, “Keep caring for your patients, push the portable X-ray machines in front of the doors.” That is exactly what happened, and we worked in the barricaded trauma room for the longest few minutes of the night. We would later learn that this report was false, but fearing for our own lives as well as the lives of our patients is an experience that few, if any, of us had previously been through. The fact that we continued to work in such a situation illustrates everyone’s dedication to their patients and mission.

After the first wave of patients, it was clear that reassessing patients was now our greatest challenge. There were multiple patients with stable vital signs but who had GSWs to the abdomen, pelvis, and thorax and required surgery. Having realized that the ultrasound machine and focused assessment with sonography for trauma (FAST) examinations were the most practical rapid imaging modality, Drs Tarkowski, Ponder, and Smith grabbed the machine and went from room to room repeating the FAST examinations, vital



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Amanda F. Tarkowski, MD

signs, and assessments for missed wounds. A portable computer allowed us to order X-ray orders for patients with extremity wounds. Several patients who initially had negative FASTs had a repeat examination that was positive for free fluid. The operating room triage list shuffled based on these examinations.

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At this point, there seemed to be a never-ending list of “Doe” names on the electronic medical record (EMR) tracking board. Tracking the location of patients was a dynamic process, and updating the tracking board was difficult. Patients were continually cycled in and out of the trauma bay, shuffled in and out of treatment rooms, lined up in the hallways, and transported up to the intensive care unit (ICU). Some of those “Doe” names belonged to patients who had succumbed to their injuries. Some patients had empty, bloody charts next to them on their stretcher. Every patient had a wristband. Dr Tarkowski improvised a rapid documentation system using quarter sheets of scrap paper that were taped either to the stretcher or door with a patient name, brief list of injuries, FAST examination result, pending tests, and medications given. This system was an efficient way of identifying which patients had been evaluated, what had been done, and what was pending.

While we were “rounding” on our patients, down the street, law enforcement

had broken down the club’s wall, and a second wave of patients began to arrive. Two residents completed the secondary evaluations while the other three resuscitated new patients. The second wave seemed like a repeat of the first. Several extremity-only injuries were triaged directly to the hallways to be seen by the two residents outside of the trauma bay. By this time, the orthopedic surgery service had come down to the ED and was washing out wounds, splinting, and making plans for surgery. The internal medicine service and the medical critical care team were helping reassess patients as well.

There were many emotional moments. Dr Ponder remembered, “One of the first few patients I saw was pulseless, and as I went to start chest compressions, I was stopped by a trauma surgeon who said, ‘He’s gone, focus on the ones we can help.’ That’s when I realized the gravity of our situation. For almost 2 hours, each resident cycled through patients.” Dr Stone recounted, “I just went down the line of patients, from head of the bed to head of the bed, some patients still on EMS stretchers, intubating many of them. It was surreal to see that many severely injured in one place.” Tory L. Weatherford, MD, recalled, “It was controlled chaos. My training kicked in, and it became about just trying to do anything possible to help.”

Dr Bondani, the overnight attending, said she does not remember many specifics from the event. “Faces and injuries blurred together. I remember looking in one young man’s eyes and telling him, ‘We are going to help you, just hang in there,’ and telling another panicking woman, ‘You’re talking, you can feel pain, you’re alive. Calm down.’ It was organized chaos as we swept from patient to patient moving as quickly as possible. Your training kicks in and you do what needs to be done in the moment.”

We were fortunate to have the EM team we did, and to be in the place that we were. On duty, we had five senior graduating residents, essentially with attending-level

skills and training, who had been together since day one. “We gave everything we had; there was no time to stop. We went where our hands could be helpful—it didn’t matter if it was your traditional role or not,” said Dr Weatherford.

Dr Tarkowski remembered what it was like leaving the walls of the ED later that morning. “Leaving the hospital didn’t feel like a success. We knew the work we did was good, that we did everything we could, but it didn’t feel like it. It felt heavy. It felt empty.” Afterward, the emotional toll set in. We gathered up the names of the deceased and looked at a status board littered with “Doe” names, and we tried hard not to break down at the violence and the pain we witnessed.

Immediate Recovery Period (Prehospital Setting)

In the aftermath of the initial rescue operation, stabilization of injured victims, and demobilization of resources, a second “event” unfolded—hundreds of family members flooded to ORMC looking for unaccounted loved ones. At this point, there were dozens of deceased and critically injured patients who remained unidentified, and addressing the needs of both the victims and the families was becoming overwhelming. With the cooperation of federal, state, county, city, and private resources, a family reunification center (FRC; a family staging area/family reception center) was created and managed initially within the hospital. At this site, grief counselors, victim advocates, law enforcement and medical examiner’s officials, hospital chaplains, and translators gathered with the loved ones of those missing to synchronize efforts to identify and reunite them. The Emergency Operations Center quickly created a telephone hotline and Web site to guide those in need to this resource. Food and housing for those in need were provided by the generosity of our community—which cannot be overstated in the wake of this tragedy. As days passed, the FRC

transitioned to a new location as the Orlando United Assistance Center, and will continue to serve as a navigation point for those who are and will be affected by the event for months to come.

Hospital Incident Command System

The HICS was activated shortly past 3:00 AM, just after the initial wave of victims flooded our ED and the gravity of the situation became apparent. The ED and trauma services were already near full staff due to timing, rapid response, and communication between the traumatologists, as well as a bit of luck. Because of the time of the disaster, our normal notification process for incident command and all personnel was severely limited. In retrospect, this turned out to be a blessing. While everyone who normally would respond to HICS was not available, individuals serving in key positions were reached by personal phone calls and were on-site quickly. One of the main functions of HICS is to control the internal chaos that arises when a disaster occurs and all personnel want to assist in some manner. We have spent hours during drills crafting communications that target key personnel necessary to meet the mission, while controlling well-intentioned but unnecessary personnel. In our drills, this is not an issue because everyone knows the exercise is not reality; however, in a real disaster, everyone wants to help. This was confirmed by the guilt that so many of our team members expressed at not being involved that Sunday.

With an initial skeleton crew in incident command, it was easy to focus on the immediate needs of patient care. The strong leadership and cool heads of our incident command leadership led to rapid role definition and responsibility, and set forth an easy path for execution. Hospital command personnel adapted their usual roles and performed functions and assignments as needed. Many HICS staff had direct face-to-face contact with frontline providers in the ED and other vital areas. This was pos-



Salvatore Silvestri, MD



Amanda M. Stone, MD



Thomas N. Smith, MD



Tory L. Weatherford, MD

sible because of the close proximity of the hospital command headquarters to the ED. The need for additional resources was rapidly identified, and the hospital command leaders assumed direct responsibility for procuring them instead of delegating. A great example of this was when Orlando Health's chief executive officer and chief operating officer went to our nearby hospitals to gather additional chest tubes after learning that we were running in short supply. Their main responsibilities lay ahead of them, and they were willing to help in any manner they could at the time. Some of the medical personnel were able to switch roles and pitch in to treat the second wave of victims that arrived at around 5:00 AM.

As the flow of victims to the ED subsided and order began to be restored, HICS shifted gears and took on a much broader role: coordinating activities with multiple agencies, including local law enforcement, the Federal Bureau of Investigation, news media, and an array of patient and family services. Again, the timing of this tragic event allowed the needs and functions of our hospital command to concentrate the focus in a more structured manner than might have been possible during regular operational hours.

Lessons Learned and Recommendations

As with any MCI, it is important to perform after-incident debriefings to reflect upon the prehospital, ED, and hospital care to assess for areas in need of improvement. Obviously, depending on the number and type of patients who are received and the resources available at the institution, such events can stress EDs that are already at or above their capacity. At the time of this writing (less than 2 months after the incident), although we are still in the early stages of our post-incident debriefing process, we offer the following suggestions and recommendations that we believe will be a benefit to other institutions faced with similar challenges.

Dedicated Disaster Preparedness Program

Depending on the size of the institution and whether or not it is a trauma-receiving center, it is vitally important to have a team of individuals dedicated to the development and maintenance of a disaster readiness program. Eric Alberts, manager of Emergency Preparedness at Orlando Health, emphasized the need to harness and leverage preparedness efforts and relationships with community partners, law enforcement, and EMS. In addition, he noted that these trained individuals can provide education and coordination for mass-casualty drills, assist in developing and maintaining policies and protocols, and coordinate with hospital incident command during actual events.

Practice, Practice, Practice

In order for medical staff, nursing staff, and support personnel to understand their roles and responsibilities if an MCI occurs, they must practice simulated drills. Tabletop and full-scale emergency intake drills, with a range of scenarios occurring at different times of the day and night, will improve teamwork and coordination. At least once a year, a large, full-scale community exercise that involves scene casualty collection points, law enforcement and EMS involvement, multiple EDs, and hospital-wide integration will educate staff members on their duties. There should be enough patients in these drills to stress the entire system—both ED and in-hospital. Physician involvement in these exercises is crucial. In March 2016, a full-scale community exercise was performed in the Central Florida area in which more than 500 volunteers, 50 agencies, and 15 hospitals participated. A segment of that exercise involved an active shooter impersonating a patient brought to the ED. We feel this recent exercise, and others like it, were helpful in managing our actual mass casualty event.

Notification

When the shootings at the Pulse nightclub started, we were advised that there

might be as many as 20 victims, but over the next few hours, we received more than twice as many injured patients. In any scenario where it is felt additional ED resources and personnel are needed, it is advantageous to begin the notification process as early as possible. Ideally, there are redundant methods in place to notify in-house and off-duty personnel, preferably in a multilayered system of electronic and voice communications that provides feedback as to staff availability. During daytime hours, it is easier for off-duty staff to learn of an event through news and social media. However, during early morning hours, such as when these shootings occurred, it may be difficult to notify sleeping staff that they are needed. With the trend of using mobile devices instead of landline phones, and with the ability to silence those devices during nighttime sleep hours, it has become increasingly difficult to “break through” the silence. In our event, group e-mail notifications were activated, but individual phone calls were also required. Initially, some calls to staff went to voice mail rather than being answered directly.

Communication

Communication is an area of opportunity for improvement in almost any mass-casualty event. Redundant methods of electronic, voice, telephone, and radio communications are crucial for personnel to coordinate efforts. It is imperative that HICS and ED personnel receive updates about events on the scene and the status of potential incoming patients. An infrastructure of communications is paramount for the coordination that is needed between prehospital, ED, and in-house resources.

Throughput

Facilitating ED and hospital throughput and improving operational efficiencies are regular topics of discussion in most busy EDs. However, when it becomes necessary to intake large numbers of patients in an

ED within a short period of time, the need to move patients out of the department intensifies. In many cases, to continue intake of patients, it will be necessary to quickly find areas outside of the ED—such as operating rooms, ICUs, and general floors—to transport patients to. At our facility, we

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normally have two operating rooms staffed throughout the night for traumas. On the night of the shootings, a total of six operating rooms were activated quickly to manage the penetrating injuries of these patients. Previously admitted medical patients were retrieved by in-house nursing staff to free up ED beds.

Media

It is important to recognize the intense social, print, online, and television media exposure that will occur with such tragedies, and have personnel and systems in place to manage it. The Pulse nightclub is located only a few short blocks south of ORMC, and the majority of all injured patients, including those with the most severe injuries, presented to our facility. As a result, the intense media coverage at our hospital physically overlapped the intense media coverage at the scene. Nearby businesses were shut down, access to several main thoroughfare roads were blocked, and some individuals mistakenly thought the hospital was closed. Our media relations department felt the most efficient way to manage information dissemination was to hold a “presser”—a press conference with a few of the health professionals involved in the care of the patients. The press con-

ference helped to relieve some of the media presence and pressure, and provided welcomed transparency to the community.

Expect the Unexpected

Even when physicians and staff conduct regular training exercises and are familiar with policies and procedures, the controlled chaos that is typical of a true mass-casualty event will likely result in some unexpected occurrences. After injured patients began arriving at our ED, during a period when patient influx and medical care was intense, there was a brief time when we were concerned an active shooter



was also in our ED. Since the mass shootings were only a few blocks from the ED, and we did not know the scope or number of shooters, it was a reasonable assumption that a perpetrator could present to the ED as a patient or active shooter. During an event such as this, it is the practice at ORMC to have security officers place the facility on lockdown; however, the added concern that an active shooter was physically present in the ED required additional law enforcement officers to methodically search the entire facility until the threat

of a shooter was eliminated. Although this did not directly impact patient care, it did create another level of complexity and stress to the already challenging situation.

Emotional Impact

One should not underestimate the emotional impact of a mass-casualty event. Emergency physicians and personnel are well equipped to manage illness, injury, and death. However, an event of this magnitude, with the number and manner of injuries and deaths that presented to our ED, along with the closeness to a scene of bloodshed where many young lives were taken in a senseless act of violence, will likely have a lasting impression on many staff members. Any institution encountering such an event should have behavioral health and support counselors readily available as soon as possible.

Conclusion

When patients present in truckloads, as they did in our ambulance bay in the early hours of June 12, an ED may be inundated with injured patients without notice or preparation. Teams need to trust their instincts, their training, and one another. It is unlikely that your normal ED practice patterns will be sufficient to take care of a large surge of patients, and you will need to turn to your ingenuity, creativity, and resourcefulness to do what you think is best to save the lives of as many patients as possible. As Sarah Duran, BSN, the trauma nurse who was working as the ED charge nurse the night of the shootings, stated, "I don't think anyone can fully prepare for anything on the scale of what happened in Orlando, but with a good foundation of protocols in place, strong set of staff, constant vigilance, and great teamwork, any hospital can be successful in handling a mass casualty incident."