

July 14, 2016, Terror Attack in Nice, France



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ABSTRACT

On July 14, 2016, a terrorist attack by truck occurred in Nice, France, during the traditional fireworks for Bastille Day. The authors present the point of view of the doctors from Lénval University Children's Hospital, which is located near the attack place and which had to manage 47 casualties, including 12 adults.

ACADEMIC PEDIATRICS 2018;18:361–363

ON JULY 14, 2016, a terrorist attack by truck occurred in Nice, France, during the traditional fireworks for Bastille Day, at which more than 30,000 people were present, including many families. Eighty-six people died and more than 500 were injured, which required an unprecedented health care response from our institution, the Lénval University Children's Hospital (LUCH), located about 200 m from the attack.

LUCH is a pediatric hospital and the only level 1 (the highest level) trauma center for children on the French Riviera. It has a pediatric emergency room (ER) that receives about 60,000 emergencies per year but few severe casualties (about 10 per year), a pediatric intensive care unit (PICU), a child psychiatry department, and a surgical department with pediatric surgeons of each specialty (general, ear–nose–throat, orthopedic, and neurologic) on call from home after 7 PM.

During the summer of 2016, the European Soccer Championship had 3 games scheduled to be played in Nice. Well aware of the risk of mass casualty incidents (MCI) that can occur with sporting events, we upgraded LUCH's disaster plan and assumed we would be able to handle about 10 severe and 30 to 40 moderate pediatric casualties. Since January 2016, we have had in place a specific training plan for handling trauma, including conferences and simulation drills to be able to activate the technical and human resources needed to face a potential MCI involving children at the earliest possible moment.

At the beginning of the attack at 10:20 PM, the ER was staffed normally, with 2 pediatricians (with moderate experience in severe trauma), 1 critical care physician (CCP), 2 medical residents, 1 surgical resident, and 1 psychiatry resident. The operating room was open because an appendectomy was in progress with 1 surgeon and 1 additional surgical resident, Joseph Carboni. Unclear and dramatic news about the nature of attack and the number of casualties spread on social networks before any official information was broadcast. The first patients reached LUCH at 10:42 PM for mild injuries; they told us about the incident. Once MCI was strongly suspected, we opened the crisis unit and triggered the disaster plan at 10:50 PM, recalling staff to cope with a large influx of casualties. We immediately cleared beds in the PICU, with ward beds being available for pediatric or adult patients. All discharged patients received expedited discharge instructions and seemed to understand the seriousness of the situation. In the meantime, the ER team quickly dispensed with noncritical patients. The first severe casualty was operated on for major pelvic trauma at 11 PM by both a pediatric surgeon, Prof Jean Bréaud, and an orthopedic surgeon, Dr Edouard Chau. Simultaneously, on-duty staff sent calls and text messages to colleagues at home, who promptly returned to the hospital. Furthermore, many doctors and nurses arrived spontaneously, including residents and private doctors. (Formal calls from crisis units did not arrive until 12:17 AM, although the highest influx of severe casualties arrived between 11 PM and 12:30 AM.) Communication both inside and outside the hospital was chaotic, but despite unclear information and close proximity to the attack scene, no one who was asked refused to come to LUCH. All together, we had 12 pediatricians, 9 pediatric surgeons, 5 pediatric anesthesiologists, 3 pediatric CCPs, and 5 child psychiatrists that night, including us (the authors), who represented the medical and surgical specialties involved. The disaster plan was stopped at 4:30 AM after the end of emergency surgeries and the last ER admission.

Overall, LUCH managed 47 casualties, including 12 adults. The first severe casualties arrived at 11 PM in car trunks

without prehospital management, which our disaster planning had not anticipated. More than 20 patients total arrived without prehospital management, while others were transported by ambulances, firefighters, or the police.

Once the anesthetist, Dr Gilles Brézac, achieved anesthesia for the appendectomy, he joined the ER, where the only CCP on duty at that time, Dr Audrey Dupont, was managing 3 severe casualties who had not received prehospital management. This situation was the opposite of our usual practice, where a (rare) severe pediatric patient is typically surrounded by doctors and nurses. Meanwhile, the 2 pediatricians were handling many moderate casualties.

Similarly, the child psychiatrists had to manage a large influx of psychological emergencies, which is unusual in current practice, during which each severe psychic trauma in a child takes several hours of management.

However, hospital staff became too numerous after the last reinforcements arrived, between 2 AM and 4 AM, although their arrival was still critical in order to avoid a lack of refreshed staff for managing the day after.

Casualties were triaged depending on the need for immediate resuscitation. After additional staff arrived by 1 AM, triage was performed following the usual methods by both a surgeon and an anesthetist to evaluate together the priority in which each patient would go to the operating room, computed tomographic scanner, and PICU, while CCPs were managing critical patients in the PICU and ER. Among the 47 patients, 6 required surgery and 3 were hospitalized in the PICU without a need for surgery. After first aid and triage, adult victims were released or hospitalized in LUCH or transferred to an adult hospital if specialized care was indicated, such as surgery or psychiatry. Five patients died at LUCH, 1 during surgery, 2 in the PICU, and 2 in the ER.

During this event, we faced unfamiliar injuries including pelvic disjunctions (we see less than 1 case every 5 years in our institution), severe vascular injuries (less than 1 per year), and compartment syndrome (about 1 per year). Among severe casualties, head trauma was present in 78% of cases and lower limb fractures in 44%.

We had trouble identifying and tracking patients through clinical reports because some patients arrived completely anonymously, and the admissions office was unable to quickly insert patients into the management software as a result of the mass influx. In addition, the operational capacity of our IT server was quickly saturated, which surely increased confusion and difficulties in care.

For both somatic and psychological injuries, each victim was followed for as long as we thought necessary. We aimed to provide personalized and benevolent care for all victims and families, which required a great deal of time—more than for our usual patients. For example, psychological assessment for trauma took 40 to 50 minutes for each Bastille Day victim in order to respond to their questions and address their fears, whereas typical cases with the same physical injuries usually need only about 10 minutes.

Social disruption and prolonged hospitalization occurred in 2 children with severe trauma, requiring surgery

and hospitalization in the PICU. In both cases, the parents were hospitalized for severe injuries in another hospital or had died, and the rest of the family lived abroad. The child psychiatrist, Dr Arnaud Fernandez, observed in both patients various manifestations of acute stress requiring psychotropic medications and psychological support. All hospital staff promoted the contacts among these patients and their relatives and friends. Fortunately, their stress symptoms progressively improved until complete recovery at discharge.

All survivors with major traumas (6 patients) received psychological support and follow-up in order to try to prevent posttraumatic stress disorder, which was eventually diagnosed in one child whose relatives were not directly affected but who may have previously had an anxiety disorder. This patient was still symptomatic in January 2017, 6 months after the attack.

Because we anticipated increased activity in the days after the attack, we canceled and postponed all elective surgeries on Friday, July 15, but the ones scheduled for the next week were unchanged. In addition, each unit reorganized night shifts and team rotations to allow team members to rest. Most of us did not rest, however, and instead stayed awake to assist victims and help colleagues. The doctors who ended up not coming to help, even those who were asked to stay home or who were away, reported feeling frustrated by their inability to contribute.

All hospital staff showed various degrees of psychological impact from the terror context and high workload, in some cases requiring psychological support, with sick leave for the most severe. The stress was exacerbated in the early days as we searched for parents of victims and, conversely, were solicited by parents to search for their missing children. Moreover, some of us received voluminous requests from the media inquiring about the most bloody details, evoking unpleasant, even horrific, memories. Six months later, some nurses were still suffering from anxiety, emotional lability, and mood disorder (but to our knowledge no diagnosed posttraumatic stress disorder), especially during the emotionally intense Christmas holiday season.

We also observed strong manifestations of solidarity among staff and received support from parents of patients who had nothing to do with the Bastille Day attack, other doctors, authorities, and even people abroad. The next week, we debriefed both the technical and psychological aspects. In retrospect, we should have limited health care activity to emergency cases in the week after the attack to save staff time and energy for meetings, psychological support, and rest.

For the event's first anniversary in 2017, an official commemoration was organized at the LUCH. The week before the anniversary, many staff again manifested negative emotional states, including anxiety and attempts to avoid reminders.

We hope that each hospital prepares using protocols, efficient alert systems, and drill response training to face MCI and receive unusual patients in terms of age (eg, adults in a pediatric hospital) and types and severity of injuries (eg, severe pelvic traumas).

ACKNOWLEDGMENTS

We thank Stéphanie Simpson and Charles Musoff for proofreading; and Florence Askenazy, Floriana Zennaro, Hervé Haas, François De La Brière, and Virginie Rampal for scientific support; and Arnaud Pouillard for review.

The authors thank all health care and administrative staff of the LUCH, especially Drs Jean-François Lecompte, Ronny Bensaid, Diane Demonchy, Claire Kosok, Corinne Boyer, Christian Richelme, Olivier Rosello, and Ioana

Oborocianu, and residents Jérémy Allia, Pauline Gastaldi, and Christophe Muccioli for their hard work during and after the Bastille Day attack; private doctors Edouard Chau, Fabrice Renaud, Nicolas Rocher, and Marianne Picon-Bourrier who came to help; and child psychiatrists from Paris, Marseille, and Avignon for clinical support. The *Lancet* published a letter containing our first impressions: Haas H, Fernandez A, Bréaud J, et al. Terrorist attack in Nice, France: central role of a children's hospital. *Lancet*. 2017;389:1007.