SPECIAL ARTICLE

The 2017 Barcelona terrorist attack: Real-time appropriateness and lessons learned from the management of an intentional vehicle-ramming mass-casualty incident

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Objectives. To describe the appropriateness of triage according to safety conditions, incident characteristics, and observed injury patterns in an intentional vehicle-ramming (VR) mass-casualty incident (MCI).

Methods. We conducted a retrospective observational study of the intentional VR-MCI that occurred on August 17th, 2017, in Barcelona (Spain). Data were collected from emergency medical services and hospital records regarding decision-making processes, triage strategies, and hospital diagnoses.

Results. A total of 153 victims were attended, including 14 fatalities (9%) and 139 injured patients (91%), across a large affected area of 13,608 m^2. Initially, due to compromised safety conditions and the high number of casualties, a triage strategy based on expert visual assessment using surgical priority criteria (VIVE-Q) with immediate transport was implemented. Once safety in the healthcare area was established, the advanced prehospital triage model (META) was applied. Both triage strategies allowed appropriate prioritization and correct destination assignment in 98.1% of patients, with no associated in-hospital mortality. Assistance time was shorter in patients triaged with VIVE-Q vs META [19 (IQR 21) vs 28 (IQR 47) minutes; P = .001]. Regarding injury patterns, 25% of the injured patients were categorized as severe (red), with 87% presenting ≥ 2 injuries, predominantly involving the head and thoracoabdominal regions.

Conclusions. Security compromise during an intentional VR-MCI required adaptation of emergency response and triage plans, which proved to be effective.

Keywords: Mass-casualty incidents. Emergency response planning. Terrorism. Emergency medical services.

Atentado terrorista de Barcelona en 2017: adecuación a tiempo real y lecciones aprendidas de la gestión de un incidente con múltiples víctimas intencionado por un vehículo a motor

Objetivos. Describir la adecuación del triaje en función de la seguridad, las características y el patrón lesional observado en un incidente con múltiples víctimas intencionado (IMVi) por un vehículo a motor (VM).

Métodos. Estudio observacional retrospectivo del IMVi-VM, del 17 de agosto de 2017 en Barcelona. Se recogió información mediante registros del sistema de emergencias médicas y de los centros sanitarios sobre la toma de decisiones, triajes y diagnósticos hospitalarios.

Resultados. Se atendieron a 153 víctimas, 14 (9%) fueron fallecidos y 139 (91%) heridos en un área afectada extensa de 13.608 m^2. Inicialmente, debido al compromiso de la seguridad y el elevado número de heridos, se utilizó una estrategia de triaje basada en la valoración inicial visual experta con criterios de prioridad quirúrgica (VIVE-Q) y traslado sin demora. Cuando se estableció la seguridad en el área sanitaria se utilizó el modelo extrahospitalario de triaje avanzado (META). Las dos estrategias de triaje permitieron priorizar y adecuar el destino sanitario de forma correcta en un 98,1% de los pacientes, sin producir una mortalidad hospitalaria asociada. El tiempo de asistencia fue menor en los pacientes triados con VIVE-Q respecto a META [19 (RIC 21) vs 28 (RIC 47) min., p = 0,001]. En cuanto al patrón lesional, el 25% de los heridos fueron graves (rojos) con 2 o más lesiones el 87% de ellos, predominantemente en zona cefálica y toracoabdominal.

Conclusiones. El compromiso de la seguridad en un IMVi-VM requirió una adecuación del plan de emergencias y triaje que resultó ser efectivo.

Palabras clave: Incidentes de Múltiples Afectados. Plan de emergencias. Terrorismo. Servicios de emergencias médicas.

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Introduction

Intentional mass casualty incidents (IMCi) are events caused with the aim of generating the greatest possible harm. For the health care system, they represent a major challenge, as they create an initial imbalance between health care demand and available health care resources in an environment where the safety of health care professionals may be compromised.[1,2] In recent years, these incidents have increased in frequency, and motor vehicles (MV) are the most widely used weapon type in IMCi in Europe.[2-4] In 2024, 8 MV-IMCi were recorded worldwide (3 in Europe), and 16 more during the first 6 months of 2025 (4 in Europe).[3] Furthermore, MV-IMCi present a mechanism of injury with high damaging capacity and a large number of affected individuals, ranging from 5 to 544 victims and between 0 and 86 deaths per incident.[1,3,5,6]

In the prehospital management of an IMCi, triage is performed to prioritize patient care and evacuation. In a safe zone, basic triage followed by advanced triage is recommended to improve sensitivity and specificity. Basic triage was designed for non-health care personnel, prioritizing simplicity and speed over the accuracy and expertise required for advanced triage performed by health care professionals.[7-10] The prehospital advanced triage model (META) identifies patients with surgical priority criteria (Q), prioritizes care and transport within the Red category, assessing 3 different subcategories (A, B, C), and within this category provides a sensitivity and specificity of 100% and 96%, respectively.[9,11-13]

In an unsafe zone, recommendations are to perform rapid (bipolar or basic) triage at the risk of increasing overtriage, undertriage, and patient mortality.[14,15] Even so, in different publications on real incidents, emergency systems acknowledged not having a specific triage system to operate in unsafe zones within their protocols and indicated that formal triage systems, both basic and advanced, were not used and are not recommended when safety is not guaranteed. Most reported improvising a rapid triage system carried out by senior physicians with experience. The objective was to identify patients with absolute emergencies, apply life-saving measures, and avoid delaying their extraction. Unlike the objective of triage in safe zones, they emphasized not categorizing patients using four-level triage, which, in addition to being slower, requires obtaining physiological variables that are difficult to assess in an unsafe environment.[14-19]

There are some examples. The London IMCi in 2005, where established 4-level triage was simplified and converted into bipolar triage (very severe or deferrable).[17] In Utoya (2011), the physician in charge decided to rely on personal experience to prioritize care and transport, with correct outcomes.[15,19] In the 2015 Paris attacks, a simple initial bipolar triage was performed by senior physicians, distinguishing between absolute and relative emergencies, followed by advanced triage in a safe zone.[18] Finally, in the San Bernardino incident in 2015, the Simple Triage And Rapid Treatment (START) triage indicated in the protocol was discarded, and a simple triage guided by expert physicians was improvised.[15,16]

Multiple studies show that triage based on expert judgment may be faster and equally sensitive and specific vs standardized basic triage systems.[20-22] However, the characteristics of MV-IMCi and the initial triage strategy when environmental safety is compromised have been scarcely described previously.[4,7] The objective of this study is to describe the adequacy of initial triage according to safety level, as well as the characteristics and injury pattern observed in an MV-IMCi.

Method

We conducted an observational and retrospective study of the IMCi on August 17th, 2017, in Barcelona (Spain). The *Sistema d'Emergències Mèdiques* (Emergency Medical Services [EMS]) *de Catalunya* is part of the public health care system, and at that time the city had 35 basic life support (BLS) units and 12 advanced life support (ALS) units.

Victims of intentional vehicle-ramming attended and recorded by emergency teams, primary care centers, and the hospital network were included. For the analysis of injury patterns, the diagnosis of patients treated in health care centers after the first 24 hours of the incident was used.

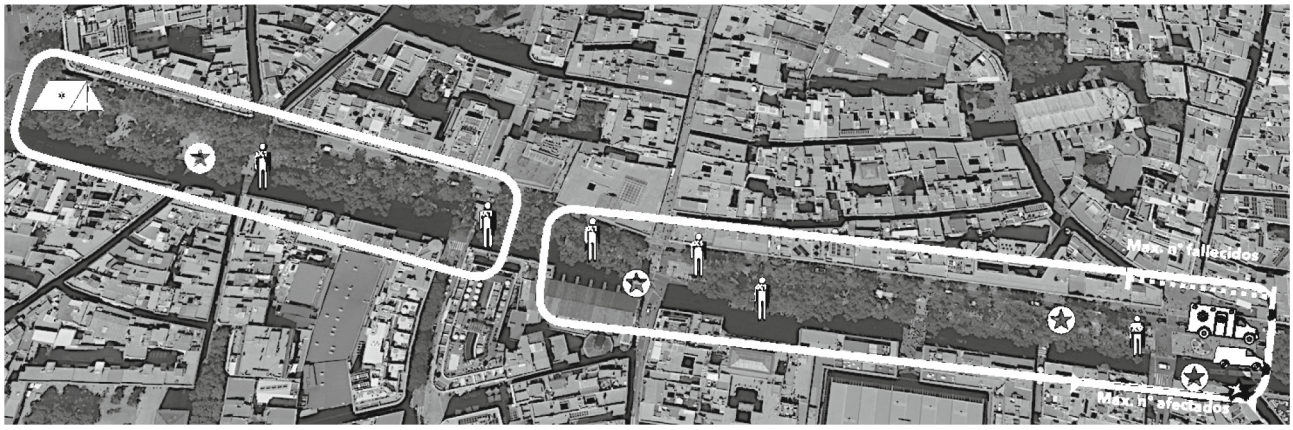
The necessary information was obtained from different sources: EMS clinical reports, records from the health care coordination center (HCC) software, and the TRAUMACAT registry. Furthermore, data on decision-making were collected using qualitative methodology through structured debriefing review, narratives from responders, and review of security camera footage obtained from the emergency coordination center.

The variables collected included the number and type of prehospital resources mobilized, arrival times, triage-care times, evacuation and hospital transfer times according to ambulance and zone, number of injured and deceased individuals, description of injury types, receiving center and unit, and hospital diagnosis.

To establish the injury pattern and care needs in this type of incident, triage categories were retrospectively assigned based on the META method[9] using specific hospital diagnoses and the type of admission unit or discharge for each patient.

The necessary information to reconstruct severity categories and the decision-making tree of IVAE-SP triage was obtained from the debriefing phase and interview with the expert physician who performed triage in the unsafe zone after closure of incident management.

In the descriptive statistical analysis, qualitative variables were expressed using absolute values and percentages, and quantitative variables using medians and IQR. To analyze the possible relationship between elapsed time and the type of triage performed, the Mann–Whitney U test was used. The threshold for statistical significance was established at $P < .05$. The statistical package IBM® SPSS Statistics Version 26 was used.



	Number of deceased and location	14 in total
	Health care area	1st location
	Health care Zone 1	First third of the affected area (235 meters)
	Health care Zone 2	Second and third thirds of the route (463 meters)
	Vehicle used as a weapon	Fiat Talento van
	ALS responsible for initial triage (unsafe zone)	Final location of the route
	Section with the highest density of affected individuals	Last 60 meters
	Section with the highest number of deceased	Last 40 meters
	Sheltered cluster of injured individuals	Inside a building

Figure 1. Location of the 2 health care zones, the health care area, and its area of influence in relation to injured and deceased individuals.
ALS: advanced life support.

The study was approved by *Institut d'Investigació Sanitària Pere i Virgili* Research Ethics Committee (TRAUMACAT REGISTRY, Reference CEIM: 166/2022).

Results

Initial description of the incident

At 16:55, an alert was received at HCC regarding a multiple vehicle-ramming incident on La Rambla in Barcelona, a pedestrian street considered a major tourist attraction and highly crowded. The prehospital emergency plan was activated with an initial scale for 20 affected individuals. Initially, 4 ALS units, 4 BLS units, and a command vehicle were deployed, with suspicion of a terrorist attack. The response time of the first unit was 5 minutes.

An access point to the incident was established coinciding with the beginning of the aggressor vehicle's route, although some EMS units accessed from the opposite end (Colón area) of La Rambla. The attacker drove a 1,781 kg van at 80 km/h, traveling 698 meters in a zigzag pattern and occupying the width of a pedestrian walkway, affecting an area of 13,608 m^2.

The first ALS unit found a dispersion of victims without prior triage and without full visualization of the affected area, where safety was not guaranteed. They decided to follow the vehicle's path from the beginning, where they established the health care area (HA) in health care zone (HZ) 1. Initial triage was performed, transferring some injured patients directly to the designated hospital or to the HA via ambulances (small shuttle system). HZ 2 was larger and the area where the highest number of severely injured patients and deaths were attended, with 9 of 14 deaths occurring in the last 40 meters of the route. The location of deceased individuals within the affected area and details of the health care zones are shown in Figure 1.

A progressive de-escalation occurred, with closure of the incident at 03:00 on August 18. Table 1S of the supplementary data (https://revistae-mergencias.org/extra/5252.pdf) describes the prehospital management of the incident chronologically. The health care system responded to 153 victims of an MV-IMCi, including 139 injured and 14 deceased individuals.

Safety in the area

An MV-IMCi was suspected from the outset due to the visualization of live images through HCC security cameras. EMS units entered the affected area after be-

ing requested by security forces (SF) to assist the victims. In the initial phase, the level of safety was not communicated, nor was there an assessment regarding the possible presence of attackers or weapons that could generate a second incident. The vehicle used was not inspected either. Safety in the area was a dynamic and changing concept during incident management.[8]

The HA was initially located outdoors, with subsequent relocation for safety reasons (threat of an active shooter, later proven false) to a safer area. The location of the advanced command center (EMS, SF, and firefighters) also changed twice for the same reason. It was decided to increase the level of safety by identifying a building with controlled access to locate both the HA and the advanced command center (Figure 1S, supplementary data https://revistaemergencias.org/extra/5252.pdf). Outside the HA, EMS professionals adapted triage and care to an unsafe environment due to the risk of a second incident. Transfers were carried out without escort or secured corridors.

Prehospital triage and care of victims

Two different triage strategies were carried out. The EMS commander in the unsafe zone was an expert physician in advanced trauma life support (ATLS) with more than 30 years of experience in prehospital emergency care. Initially, due to dynamic safety conditions and the number of injured individuals dispersed over a large area, the physician decided to improvise and perform rapid triage different from that described in the protocol (START triage), based on initial visual assessment and experience (IVAE). Visual assessment of altered consciousness, breathing, or circulation allowed identification of severely injured patients (Red). Additionally, surgical priority (SP) criteria from META triage[9] were incorporated (Figure 2), and priority was given to immediate transport with minimal stabilization of Red and Red (SP) patients, most of whom did not pass through the HA. Subsequently, the safe establishment of the HA allowed standard META triage and stabilization of patients before transport. This area received most patients from HZ 1 and some from HZ 2, who were transported there by ambulance (small shuttle system).

The median care time was shorter in patients triaged in the unsafe zone vs the HA [19 (IQR, 21) vs 28 (IQR, 47) minutes], $P = .001$. Figure 3 illustrates the flow of treated patients. Only 2 patients required a second transfer to a higher-level center.

Communications

HCC was split, dedicating one team exclusively to incident management. There were difficulties in communication between both HZ due to overload of command functions on site, as continuous monitoring was not possible. Communication problems were recorded between EMS teams and HCC due to saturation of the Terrestrial Trunked Radio (TETRA) network and the shortage of portable radios. These difficulties did not prevent hospital activation and pre-alert.

Distribution of resources

A total of 51 ambulances were activated, including 20 BLS and 17 ALS units, consuming 50% of resources in Barcelona and part of the metropolitan area, in addition to 6 logistical support units. In HZ 1, a greater number of resources were deployed vs HZ 2, despite the latter having a higher number of severely injured patients and fatalities. HCC managed 548 emergencies in Barcelona simultaneously with the incident (from 17:00 to 23:00), of which 184 required vehicle mobilization; in 48 cases (26%), an ALS unit was deployed.

Transfers to health care centers

HCC pre-alerted 23 centers, including 14 hospitals and 9 primary care emergency centers (PCEC), of which 17 received patients (8 hospitals and 9 PCEC). Transfers were carried out according to priority within the triage category. Thus, the first Red patient was transported at 17:05 (10 minutes after the alert), and the first Q patient at 17:19 (24 minutes post-alert), entering the operating room at 17:30. Due to lack of safety in the area, transfer of some patients triaged as Red in the HA was delayed by up to 30 minutes, following orders from SF, who also closed traffic on main routes.

A total of 30% of Red patients were managed by the tertiary referral center closest to the incident, while the remainder were proportionally distributed among centers in the metropolitan area. Four rounds of transfers to hospital centers were performed, mostly by BLS units, reserving ALS units for patients requiring assisted transport. Five collective transport units were used to optimize the transfer of mildly injured patients. At the time of hospital handover, the absence of triage tags in some patients required oral transmission of information regarding examination and treatment performed.

Injury pattern and hospital needs

Hospital diagnostic records were obtained for 140 affected individuals (91.5%): 123 injured, 3 uninjured, and 14 deceased. According to retrospective META triage, 63 patients were categorized as Green (51.2%), 30 as Yellow (24.4%), and 30 as Red (24.4%), 13 of whom (10.6%) had Q priority. Among the 123 injured patients, 69 had > 1 injury (56.1%). Of the 54 patients with a single injury, 4 (7.4%) were categorized as severe (Red) without SP. A total of 70.8% of patients with 2 injuries and 100% of those with > 2 injuries were categorized as Red or Q, with a predominant diagnosis of traumatic brain injury (TBI), abdominal trauma, and thoracic trauma (Figure 4 and Table 1). Of the 30 Red patients, 29 required admission to a critical care unit; 19, conventional hospitalization (18 Yellow and 1 Red), while all Green patients were discharged from the emergency department (Table 1).

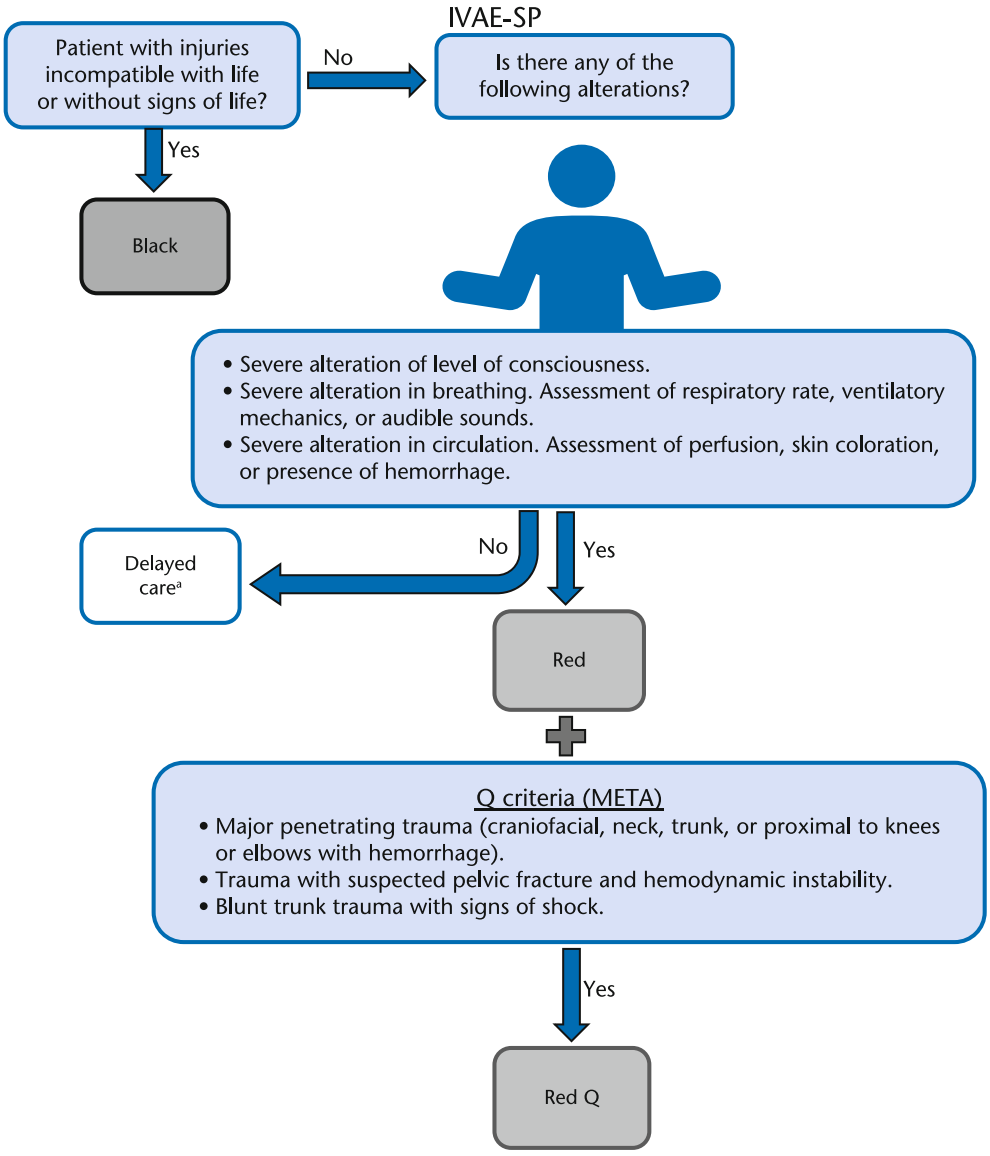


Figure 2. Suggested IVAE-SP triage in an unsafe zone.
*Combination of triage based on expert initial visual assessment (IVAE) and surgical priority criteria (Q) from advanced META triage. Patients with SP criteria are prioritized over those triaged as Red. Self-created image. Q criteria[9].
[a]Delayed care includes yellow and green categories.

Discussion

The MV-IMCi that occurred in Barcelona has been one of those with the highest number of affected individuals according to the reviewed literature.[1,3,5] Its detailed description has, for the first time in literature, allowed assessment of the effectiveness of 2 differentiated prehospital triage strategies (META and IVAE-SP) applied jointly according to the level of safety, and to infer a series of recommendations as lessons learned (Table 2).

IVAE-SP has proven to be a rapid and effective triage option, applicable in both urban and rural settings, for detecting and prioritizing critically ill patients and adapting the selected hospital destination to their needs, without associated hospital mortality. This novel finding opens the door to future research due to its potential to replace recommendations for the use of traditional bipolar triage in IMCi where safety is not guaranteed and triage is performed by an expert in ATLS.

Initially, the number of potential affected individuals was underestimated at 20 by HCC, whereas the final number was 153. This has been described in other MV-IMCi, such as in Berlin (2016), where the initial estimate was 50% lower than the actual number.[7] Even so, the concentration of EMS units in an urban environment of a large city allowed over-dimensioning of activated resources. Different studies show that this over-dimensioning may negatively impact the appropriate response to emergencies occurring outside the incident.[23] To avoid this, the use of tools to estimate the

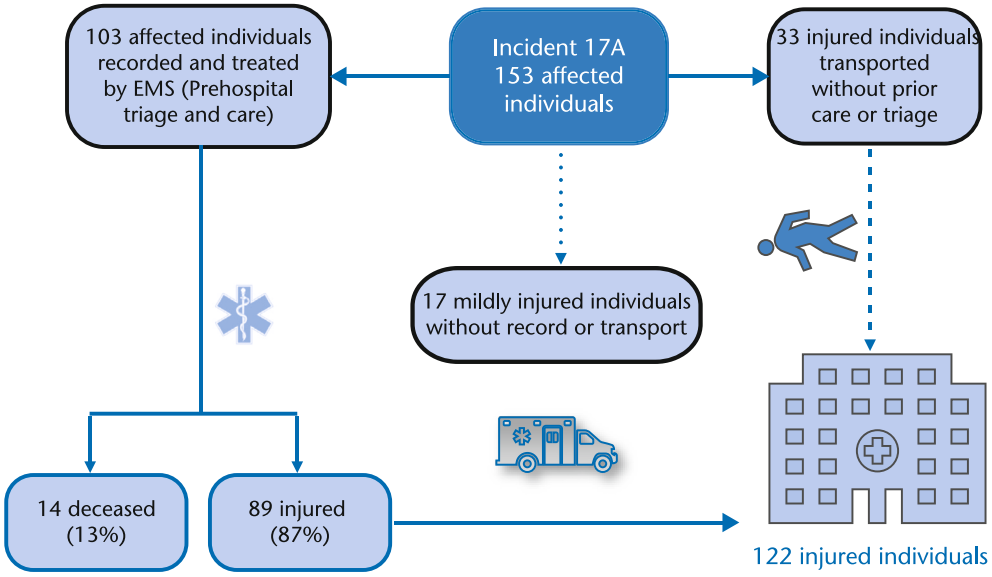


Figure 3. Flow and traceability of patients treated in the intentional mass casualty incident with motor vehicle (MV-IMCi) in Barcelona.
EMS: Emergency Medical Services.

number of affected individuals and required resources based on the characteristics of the MV-IMCi is recommended.[1,23-25]

The safety of patients and health care teams is a priority.[15] The grouping of resources at a defined meeting point with SF minimizes exposure to potential risks. Continuous assessment of dynamic safety by responders and the placement of the HA and command post in previously identified buildings with controlled access by SF should be mandatory. Teams should avoid proximity to vehicles or spaces where the presence of weapons or attackers has not been ruled out by SF.[8,25,28]

Incidents of this nature involve mobility restrictions imposed by SF, which may lead to negative outcomes for patients.[7] In the described case, this caused delays in transport after clinical decision-making, without being associated with hospital complications.

Emergency teams worked at times in potentially unsafe zones. This resulted in different triage and care strategies being applied within the same incident. The availability of a safe environment in the HA allowed advanced META triage with stabilization prior to transport. This enables a more thorough assessment, correct prioritization of critically ill patients, and a reduction in overtriage associated with basic triage (> 50% according to existing literature).[9,10,13]

A notable element of this incident was the response during the initial sweep of the route in an unsafe environment. In such situations, bipolar or basic triage is suggested to allow rapid decision-making, prioritizing responder safety.[7,8] Lessons learned from previous incidents indicate that no specific triage for unsafe environments was included in protocols; therefore, medical teams improvised a triage different from that indicated in emergency plans for safe zones. They recognized the need to adapt triage to make it faster and simpler, using their knowledge and experience in managing critically ill patients as the main tool.[14-19]

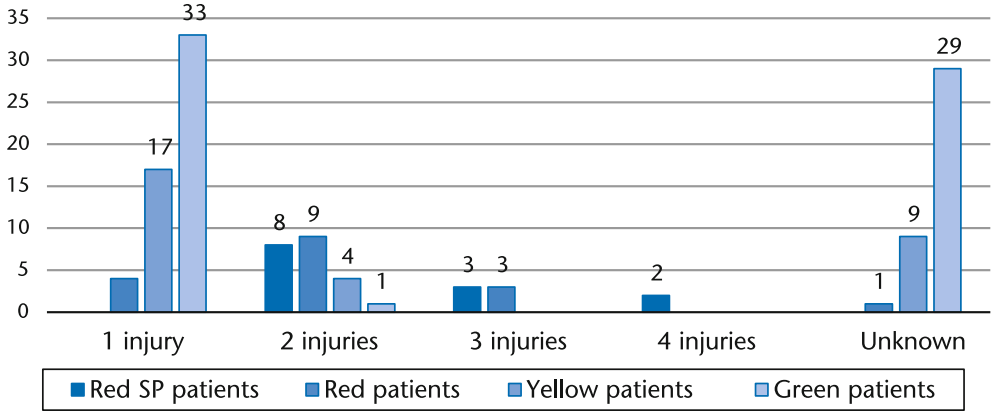


Figure 4. Frequencies of the different injuries found in the same patient according to retrospective META triage category.

In the Barcelona La Rambla attack, the physician in charge in the unsafe zone determined that formal triage systems indicated in the protocol could not be applied, as they were designed for safe environments. Rapid identification of critically ill patients and evacuation with minimal stabilization was required. Thus, the procedure was adapted to the situation, and a triage system based on experience was improvised, as had been done in previous incidents. A IVAE triage combined with surgical priority detection from META triage[9] (IVAE-SP) was performed, with immediate evacuation and care during transport of prioritized patients.

We believe that this decision enabled rapid identification of critically ill patients and accelerated transport decisions, as reflected in the comparison of triage/care times. Time to operating room was < 35 minutes in the first patient categorized as Red SP using this system, and none exceeded 90 minutes. This decision may have helped minimize deaths among transported patients, as the main cause of preventable death is exsanguinating hemorrhage.[9,28] At the same time, patient transfers were appropriate to the most suitable center for most patients, and only 2 secondary transfers to another center occurred due to underestimation of needs, despite one-quarter of patients being critically ill. We consider that, in an unsafe environment where full patient assessment is not possible, the person performing IVAE-SP triage must be an expert in the evaluation, treatment, needs, and therapeutic timelines of critically ill patients for it to be an effective tool.

Regarding the observed injury pattern, the proportion of deaths relative to injured patients was 9.2%, the lowest among MV-IMCi in Europe with published data (16% in Nice and 18% in Berlin in 2016).[5,7,25,29,30]

A high percentage of patients required surgery and admission to critical care units, especially among those with > 1 type of injury. This is due to the large number of intracavitary injuries, severe TBI, and fractures predominantly affecting the lower extremities. This finding is consistent with injury patterns described in incidents in Berlin and Nice in 2016.[4,25,30,31] Therefore, it would be advisable to increase surgical capacity by expanding the number of operating rooms in use and applying damage control surgery to reduce operating time.[29]

On the other hand, more than half of the injured individuals were mildly injured patients, but with a significant emotional impact. Therefore, it is essential to ensure immediate psychological care with planned follow-up for post-traumatic stress.[32]

One of the main limitations of the study is the difficulty of data recording during the prehospital phase. This leads to deficits in identifying assigned triage, diagnosing affected individuals using triage tags, and tracking patients and their outcomes. Therefore, we could not determine under- and overtriage rates. However, triage and care times could be measured, and prioritization of critically ill patients and referral to appropriate-level centers could be analyzed. Thus, further studies are needed to determine the sensitivity and specificity of IVAE-SP triage in unsafe environments and its subsequent validation. Many emergency systems continue working to address these limitations through technological support and procedural improvements. Another limitation is related to hospital transport of injured individuals, generally with minor injuries, by their own means without prior triage or care. This is an unavoidable characteristic of MV-IMCi and may significantly affect hospital response.[4,25,29]

In conclusion, the clinical and organizational management of an MV-IMCi must adapt to a dynamic concept of environmental safety, the specific characteristics described, triage according to safety level, and the observed injury pattern. IVAE-SP triage can be an appropriate alternative when safety is not guaranteed and triage is performed by expert ATLS personnel. A

Table 1. Injury pattern and hospital diagnosis according to META triage category and associated recorded hospital needs

Hospital META triage category	Hospital diagnosis	N	Receiving hospital unit
Total Red		**30**	
Red Q	Severe thoracoabdominal trauma	7	ICU/Resuscitation
	Polytrauma (TBI + thoracoabdominal trauma)	5	Admission/DIVAS
	Severe TBI	1	ICU/Resuscitation
Red A	Polytrauma (TBI + thoracoabdominal trauma)	3	ICU/Resuscitation
	Severe TBI with cerebral hemorrhage	2	ICU/Resuscitation
Red B	Rib fractures + additional fractures	2	ICU/Resuscitation
	Rib fractures + pneumothorax + pulmonary contusion	2	ICU/Resuscitation
Red C	Complex fractures	6	ICU/Resuscitation/ Emergency Department
	Polytrauma	2	ICU/Resuscitation
Total Yellow		**28**	
Yellow D	TBI	2	Hospitalization
Yellow	Limb fractures	9	Hospitalization
	Polytrauma	4	Hospitalization
	Clavicle/scapular/nasal fractures	4	Discharge
	Contusion	4	Discharge
	Not specified	2	Discharge
	Pelvic fracture	1	Hospitalization
	Thoracoabdominal trauma	1	Hospitalization
	Rib fractures	1	Hospitalization
	Pregnancy loss	1	Discharge
	Presyncope	1	Discharge
Total Green		**63**	
Green	Minor trauma[a]	32	Discharge
	Not specified	18	Discharge
	Anxiety episode	10	Discharge
	Decompensation of chronic disease	2	Discharge
	Simple fracture	1	Discharge

[a]Minor trauma is defined as mild trauma/contusion, minor incised wound, and simple multiple contusions.
*123 injured patients with recorded diagnosis were registered. Three records corresponded to uninjured individuals and 14 deaths at the scene.
ICU: intensive care unit; TBI: traumatic brain injury; DIVAS: Digital Intravenous Angiography System.

Table 2. Recommendations for intentional mass casualty incidents

Management phases	Recommendations in MV-IMCi*
Estimation of incident magnitude	**Information gathering:** – Incoming calls: targeted questions. – Security camera images/use of drones. **Calculation and estimation of affected individuals:** use of estimation tools. **Affected individuals adapted to injury pattern:** 9% deceased, 11% injured (50% Green, 25% Yellow, 25% Red).
Safety	**Resource activation and meeting point from HCC** – Concise initial information: intentional incident with risk to responders' lives. – Inform all local resources and define the threat area. – Establish a safe meeting point with SF. – Maintain a dynamic safety assessment throughout the incident. **Arrival at the meeting point** – Agree with SF on access, triage zone, and healthcare area. – Inspection of the vehicle used as a weapon by SF. – Keep distance from the vehicle. Rule out a second attack. **HA/command center inside a building with controlled access** – Access control. Single entry/exit point. – The attacker may be among the injured. Control belongings. **Evacuation routes. Safety corridors** – Agree with SF on safety corridors for patient evacuation and supply of material and human resources. – Information on blocked routes and alternatives.
Prehospital triage	**Recommended triage according to safety level in the area** – Unsafe zone[a]: IVAE-SP[b] triage with life-saving measures if possible. – Safe zone: basic triage followed by advanced triage within the health care area.
Hospital recommendations	**Safety measures** – Limit access doors with security control and registration. – Consider management of the attacker in the emergency plan. **Management of patients arriving by their own means** – Define triage prior to the emergency department for patients without prior triage or care. – Hemorrhage control kits in the triage area. **Identified care needs** – Increase surgical capacity. Consider damage control surgery. – Increase capacity in critical care units. – Establish referral pathways to primary care for mildly injured patients. **Establish interhospital transfer circuits with the local EMS.**

[a]An unsafe zone is considered one in which there is no imminent risk, but due to the characteristics of the environment, there may be a sudden change in responder safety.
[b]IVAE-SP: triage based on expert initial visual assessment and surgical priority criteria of META triage.
Own creation. Source: analysis of the incident of 17-08-2017 and bibliographic references.[1,8,23,25,26]
IMCi: intentional mass casualty incident; HCC: Healthcare Coordination Center; SF: security forces; HA: healthcare area; EMS: Emergency Medical Services.

significant reduction in triage-care time, correct prioritization of critically ill patients, and appropriate referral to receiving centers without associated in-hospital mortality in an IMCi with a high number of critical patients has been demonstrated. Finally, we consider it essential, first, to adapt emergency plans to the response required for IMCi in consensus with all responding stakeholders and, second, to ensure continuous interdisciplinary training.

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