A New Triage Support Tool in Case of Explosion

Olivier Yavari-Sartakhti, MD;[1] Frédérique Briche, MD;[1] Daniel Jost, MD;[1] Nicolas Michaud;[2] Michel Bignand, MD;[1] Jean-Pierre Tourtier, Prof.[1]

1. Paris Fire Brigade – Emergency Medical Department, Paris, France
2. Paris Fire Brigade – Communication Department, Paris, France

Correspondence:
Olivier Yavari-Sartakhti, MD
Paris Fire Brigade - Emergency Medical Department
1, Place Jules Renard
75017 Paris, France
E-mail: olivier.yavari@pompiersparis.fr

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Abstract

Deafness frequently observed in explosion victims, currently following terrorist attack, is a barrier to communication between victims and first responders. This may result in a delay in the initial triage and evacuation. In such situations, Paris Fire Brigade (Paris, France) proposes the use of assistance cards to help conscious, but deafened patients at the site of an attack where there may be numerous victims.

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Introduction

The threat of terrorism has led in recent years to changes in prehospital medical practices. Experiences reported by professional rescuers have directly influenced methods in patient care.

Attacks can take various forms: suicide bombings, shootings, hostage-taking, and more. In the case of explosions, several issues can be identified: confined attacks kill more people than in an open environment[1] and with higher levels of severity.[2] In the case of injury due to an explosive device, the head region is the most commonly affected area[3] with a primary blast causing, in particular, otologic lesions. This is particularly true in a closed environment.[2,4,5] Forty percent of persons exposed to bomb blasts and up to 67% of the most severely injured patients suffer otologic lesions.[6] Exposure also causes problems ranging from isolated tinnitus to complete deafness. The result is a loss of conductive hearing, perception, or a combination of both.[4,7] Up to one-third of the victims of suicide attacks in Pakistan between 2007 and 2010 were affected by this condition.[8]

The impact of hearing loss on initial triage and evacuation of victims has not been studied. First aid responders consistently report deafness in explosion victims rendering them unable to communicate, which results in a disruption of triage and evacuation, particularly with regard to conscious victims who may be potential survivors.[6] Feedback from the Brussels (Belgium) bombings in Zaventem Airport demonstrated the inefficiency of traditional triage methods, where confused and disoriented victims could not understand simple instructions and were even more difficult to manage as a result of being deafened. This factor consumed both the time and attention of emergency workers at the scene.

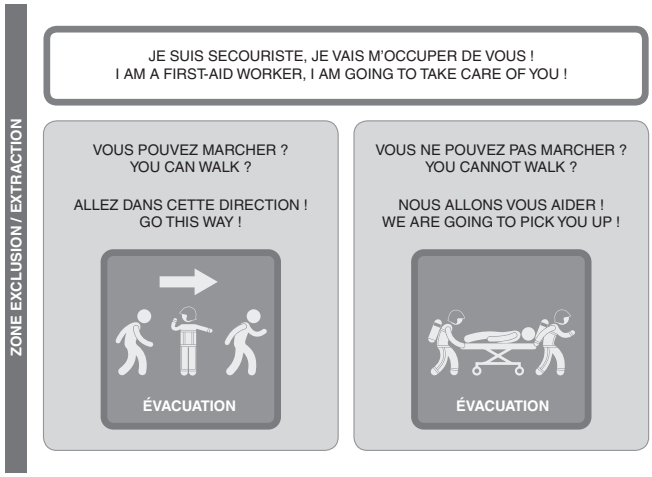
Report and Discussion

To overcome this problem, Paris Fire Brigade (Paris, France) has deployed communication cards using keywords and colorful universal pictograms as a tool for the first responders. All cards are written both in French and English. This tool is used initially in an "exclusion zone" to ensure the rapid evacuation of conscious victims. This first deployment of the cards with clear directional instruction benefits the initial triage (Figure 1).

A second series of cards has been designed for the "controlled area" or "gathering point for victims." Their purpose is to assess the injuries, reassure the victims, and explain their management. Finally, a card is deployed to inquire of possible victim's companions.

This tool was originally developed in partnership with personnel from the 3rd Marine Infantry Regiment. All first responders from the Paris Fire Brigade have been equipped

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Figure 1. Evacuation Cards.

with it since 2016. It comes in a pocket-sized format and can be carried in the responder's uniform. It remains optional and available to the first commander of operations who solely decides on the advisability of implementation.

Conclusion

Given the current persistence of the terrorist threat and the diversity of modes of action, it is essential to innovate in the design of new adaptive and evolving responses. Communication cards are one of Paris Fire Brigade's operational responses to this necessary adaptation.

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