



## Importance of Site Selection for Stockpiling Field Hospitals for Upcoming Disasters

Mohammad Javad Moradian<sup>1</sup>, Ali Ardalan<sup>2\*</sup>, Amir Nejati<sup>3</sup>, Ali Darvishi Boloorani<sup>4</sup>, Ali Akbarisari<sup>5</sup>, Behnaz Rastegarfar<sup>2</sup>

<sup>1</sup>Trauma Research Center, Shahid Rajaee (Emtiaz) Trauma Hospital, Shiraz University of Medical Sciences, Shiraz, Iran

<sup>2</sup>Department of Disaster Public Health, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran

<sup>3</sup>Department of Emergency Medicine, Emergency Medicine Research Center, Tehran University of Medical Sciences, Tehran, Iran

<sup>4</sup>Department of Remote Sensing & GIS, University of Tehran, Tehran, Iran

<sup>5</sup>Department of Health Management and Economics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran

\*Corresponding author: Ali Ardalan

Address: Department of Disaster Public Health, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran. Tel: +98-912-3050192

e-mail: aardalan@tums.ac.ir

Received: April 20, 2016

Revised: April 22, 2016

Accepted: April 30, 2016

**Keywords:** Disaster; Field hospital; Preparedness phase; Site Selection; Stockpile.

Please cite this paper as:

Moradian MJ, Ardalan A, Nejati A, Darvishi Boloorani A, Akbarisari A, Rastegarfar B. Importance of Site Selection for Stockpiling Field Hospitals for Upcoming Disasters. *Bull Emerg Trauma*. 2016;4(3):124-125.

Disasters have always posed a great challenge to human beings [1]. An immediate impact of most disasters on the local health care system is the huge number of casualties that outstrip their capability to provide the required care [2]. A timely summoning of field hospitals (FH) especially in large-scale disasters can significantly contribute to the process of surge capacity [3]. A Field hospital is defined as a “mobile, self-contained, self-sufficient health care facility capable of rapid deployment and expansion or contraction to meet immediate emergency requirements for a specified period of time” [4].

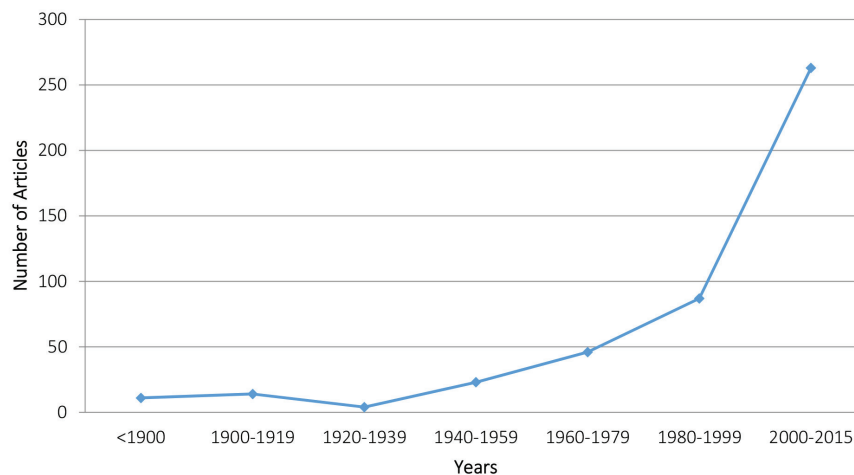
Since purchasing and maintaining a FH is costly [5,6], some experts believe that mobile hospitals are not cost effective due to their late arrival even after the last casualties are evacuated in some cases. The most influential factor leading to this delay is the distance between the location where the FH is stockpiled and the destination (impact area) [6]. The stockpiling location of FHs not only affects the arrival

time, but also increases the risk of damage to the FH itself during disasters. Therefore, FH financing would raise the question where to stockpile it for effective maintenance and quick deployment [7].

The answer might lie in a “site selection” process to spot proper locations to reserve the FH. “Site selection” refers to a process trying to select a proper potential location to establish a specific structure out of available candidate sites. With a proper FH site selection process, increasing efficacy would be possible despite its costly maintenance [5,6]. Furthermore, appropriate site selection for stockpiling FHs would make the health system capable of budget management and efficient utilization simultaneously.

Literature shows that addressing the subject of FH in disasters are increasing (Figure 1), but up to February 2014 out of 455 scholar articles regarding FH, in four electronic databases namely PubMed, Science Direct, Google Scholar, and Scopus, even not a single one had addressed site selection of a field hospital.

In addition, search in the grey literature showed that



**Fig. 1.** Trend of published articles about field hospitals in the English literature.

only four articles had mentioned the word “place” in their titles. The first article had addressed the issue of a proper location for FHs after the disaster strike [7]; the second one concerned the location of the operating room in a FH [8]. The third article had applied the word “place” referring to the “position” of a FH in the general national defense system [9] and the last one had addressed the location of surgical

care when needed [10].

As mentioned above, so far no study appears to address FH site selection stockpiling. Further evidence-based studies as well as cost-effectiveness studies are needed to help define the appropriate scope and application of FHs in different settings.

**Conflict of Interest:** None declared.

## References

1. Andrews RJ, Quintana LM. Unpredictable, unpreventable and impersonal medicine: global disaster response in the 21st century. *EPMA J.* 2015;**6**(1):2.
2. Peleg K, Kellermann AL. Medical relief after earthquakes: it’s time for a new paradigm. *Ann Emerg Med.* 2012;**59**(3):188-90.
3. Bar-On E, Abargel A, Peleg K, Kreiss Y. Coping with the challenges of early disaster response: 24 years of field hospital experience after earthquakes. *Disaster Med Public Health Prep.* 2013;**7**(5):491-8.
4. In: World Health Organization--Pan American Health Organization. WHO/PAHO Guidelines for Use of Foreign Field Hospitals in the Aftermath of Sudden-Impact Disasters. [Online]; 2003 [cited 2014 May]. Available from: <http://www.paho.org/english/dd/ped/FieldHospitalsFolleto.pdf>.
5. Ciottone GR, Philip D, Erik A. Disaster Medicine. 3<sup>rd</sup> ed. Elsevier Health Sciences; 2006. p. 106, 171, 308.
6. de Goyet CdV. Editorial Comments- Foreign Field Hospitals in Sudden-Impact Disasters (SID): Editorial Comments. *Prehospital and Disaster Medicine.* 2008;**23**(02):152-3.
7. Vafaei N, Oztaysi B, editors. Selecting the Field Hospital Place for Disasters: A Case Study in Istanbul. Group Decision and Negotiation 2014 GDN 2014: Proceedings of the Joint International Conference of the INFORMS GDN Section and the EURO Working Group on DSS; 2014: EWG-DSS.
8. Percq V, Lassalle X. The place of operating room nurses in the establishment of a field hospitals operating room. *Oxymag.* 2010;**23**(113):14-17.
9. Vojvodic V, Miletic M. The place and role of mobile field hospitals in the system of the general national defense of Yugoslavia. *Voen Med Zh.* 1990;**(9)**:30-3.
10. Fenton R, Daily RK. Cases requiring treatment at the front or in field hospital or base hospital, as well as the time and place for surgical care when needed. *FM Crage Klinika Oczna.* 1938;**16**(pt6):739.