

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/344418053>

The gap of knowledge and skill – One reason for unsuccessful management of mass casualty incidents and disasters

Article in *The American journal of emergency medicine* · September 2020

DOI: 10.1016/j.ajem.2020.09.068

CITATIONS

6

READS

197

3 authors:



Krzysztof Goniewicz
Military University of Aviation

88 PUBLICATIONS 427 CITATIONS

[SEE PROFILE](#)



Frederick M Burkle
Harvard University

634 PUBLICATIONS 5,851 CITATIONS

[SEE PROFILE](#)



Amir Khorram-Manesh
Clinical Sciences Sahlgrenska Academy University of Gothenburg

126 PUBLICATIONS 1,798 CITATIONS

[SEE PROFILE](#)

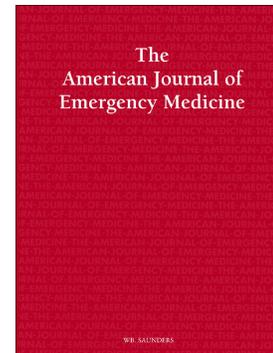
Some of the authors of this publication are also working on these related projects:



Role of Poland in building national and regional initiatives to mitigate weather related disasters [View project](#)



Disaster Response in Poland [View project](#)



The gap of knowledge and skill – One reason for unsuccessful management of mass casualty incidents and disasters

Krzysztof Goniewicz, Frederick M. Burkle, Amir Khorram-Manesh

PII: S0735-6757(20)30863-9

DOI: <https://doi.org/10.1016/j.ajem.2020.09.068>

Reference: YAJEM 159438

To appear in: *American Journal of Emergency Medicine*

Received date: 8 September 2020

Revised date: 15 September 2020

Accepted date: 25 September 2020

Please cite this article as: K. Goniewicz, F.M. Burkle and A. Khorram-Manesh, The gap of knowledge and skill – One reason for unsuccessful management of mass casualty incidents and disasters, *American Journal of Emergency Medicine* (2020), <https://doi.org/10.1016/j.ajem.2020.09.068>

This is a PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article. Please note that, during the production process, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

The Gap of Knowledge and Skill – One reason for unsuccessful management of Mass Casualty Incidents and Disasters

Krzysztof Goniewicz^{1*}, Frederick M. Burkle² and Amir Khorram-Manesh^{3,4}

¹ Department of Aviation Security, Military University of Aviation, 08-521 Dęblin, Poland;

² Harvard Humanitarian Initiative, T.H. Chan School of Public Health, Harvard University, Boston, MA 02115, USA;

³ Institute of Clinical Sciences, Department of Surgery, Sahlgrenska Academy, Gothenburg University, 413 45 Gothenburg, Sweden;

⁴ Research Advisor, Department of Development and Research, Armed Forces Center for Defense Medicine, Gothenburg, 426 76 Västra Frölunda, Sweden

* Correspondence: k.goniewicz@law.mil.pl

The Gap of Knowledge and Skill – One reason for unsuccessful management of Mass Casualty Incidents and Disasters

Despite several reports confirming the requirements for a successful management of disasters and major incidents (MIDs), the available literature indicates vulnerabilities in both structural and non-structural parts of healthcare systems (1-2). The former includes the need for alternative medical facilities, and related critical infrastructure and the latter presence of qualified staff (3-4). Effective preparedness to respond to any emergency requires a well-planned and integrated effort by all personnel, who, equipped with the needed expertise and skills, can deal with crisis. However, not all specialists are trained for this, and some do not have the necessary knowledge and experience. Therefore, a set of clear, concise and precise training standards has been drawn up, that can be used to equip health care professionals with the necessary skills [4-5].

Most of studies evaluating the effectiveness of training programs related to MIDs emphasize on the importance of the organizational competence of employees, as well as their individual skills and collaborative abilities. In these programs, leaders are supposed to demonstrate leadership, as well as, conflict diagnosis, and management skills [6-8]. An important part of a training is evaluation, which normally takes place immediately after the completion of the session, as well as periodically, at a later stage, and measures the performance and competences, either by observational methods or quantitatively by measuring performance indicators [4, 9]. Although both the training and the test play important roles in the process of knowledge and skills acquisition and evaluation of the trained response effectiveness, they only measure and simulate the current state of knowledge and skills of health care workers, and fail to increase the future ability of collective response to crisis, since no further education is offered to the whole group but in particular to the weakest in the group [10].

A chain is as strong as the weakest link [10]. Staff who are confident in their own high level of competence, are more likely to react effectively and more often in real crisis [11-12]. However, the outcome of MIDs' management does not only rely on an individual performance but the whole team, with various functions and abilities. Therefore, prior to any training, it is worth to define the goals and competences that need to be developed, and at the same time evaluate the gap in knowledge that exists among all participants, from diverse disciplines and with varying backgrounds. Otherwise, it is difficult to determine the content and methodology of the proposed training. Well formulated competences constitute the basis for building effective and targeted training. The teaching and training of competences is based on widely integrated medical and non-medical education, and the number of competence profiles for health care professionals may vary depending on the profession being trained [1]. In particular, the basic competencies in training concerning MIDs should include the recognition of potential critical events, implementing actions, understanding institutional plans for crisis situations and demonstrating skills and knowledge required to perform particular tasks, and the ability to collaborate [13-14].

It is then logical to assume that trainings for MIDs management should be periodic, with particular emphasis on the members of the health care staff with the shortest length of service, and poorest knowledge of MID management. It should be tailored towards specific medical professions (nurses, doctors, paramedics), but also other employees within the specific hospital [1]. Furthermore, besides personal knowledge and skills, a minimum set of knowledge should be mandatory to all staff in order to standardize the basic knowledge need. Such knowledge can be consisted of items that

enable each staff to be familiar with the standard operating procedures, the persons responsible for directing actions, the appropriate logistic resources in the workplace, and their role in the response chain. The provision of training should be mandatory, as should the participation of employees (verified by the employer). All training courses for MID management should be subject to ongoing, not only periodic, evaluation, in order to assess the training requirements in this respect.

These steps not only enable identification of the gaps in the management system and the weakest link, they also adjust individual ability to concert with other individuals in the team and consequently increase the ability and capability of the crisis management.

References

1. Khorram-Manesh A., Lupesco O, Friedl T, et al. Education in disaster management: what do we offer and what do we need? Proposing a new global program. *Disaster medicine and public health preparedness*, 2016, 10.6: 854-873.
2. Labarda C, Labarda MDP, Lamberte EE. Hospital resilience in the aftermath of typhoon Haiyan in the Philippines. *Disaster Prev Manag Int J*. 2017;26(4):424–36.
3. Glantz V, Phatthapornjaroen P, Carlström E, Khorram Manesh A. Regional Flexible Surge Capacity- A flexible Response System. *Sustainability* 2020;12(15): 5984
4. Phatthapornjaroen P, Glantz V, Carlström E, Dohle Holmqvist L, Khorram-Manesh A. Alternative Leadership in Flexible Surge Capacity – The Perceived Impact of Tabletop Simulation Exercises on Thai Emergency Physicians capability to Manage a Major Incident. *Sustainability* 2020;12(15); 6216
5. Hall ML, Lee AC, Cartwright C, Marahatta S, Karki J, Simkhada P. The 2015 Nepal earthquake disaster: lessons learned one year on. *Public Health*. 2017; 145:39–44.
6. Jafar E, Taneja U. Business continuity planning—a survey of hospitals in Delhi. *J Public Health*. 2017;25(6):699–709.
7. Goniewicz, K., Osiak B, Pawłowski W, et al. Bioterrorism preparedness and response in Poland: prevention, surveillance, and mitigation planning. *Disaster medicine and public health preparedness*, 2020, 1-6.
8. Walsh L., Subbarao I, Cobble K., et al. Core Competencies for Disaster Medicine and Public Health *Disaster Med Public Health Prep*. 2012 Mar;6(1):44-52.
9. Nilsson H, Vikström T, Jönsson CO. Performance indicator for initial regional medical response to major incidents: A possible quality control tool. *Scand J Trauma Resusc Emerg Med* 2015;20(1):81
10. Salinsky E. “Strong as the Weakest Link: Medical Response to a Catastrophic Event”. National Health Policy Forum. *Health Sci Res Commons* 2008:212. Available from: https://hsrc.himmelfarb.gwu.edu/sphhs_centers_nhpf/212
11. Goniewicz K., Goniewicz M. Disaster preparedness and professional competence among healthcare providers: pilot study results. *Sustainability*, 2020, 12.12: 4931.
12. Olu O. Resilient health system as conceptual framework for strengthening public health disaster risk management: an African viewpoint. *Front Public Health*. 2017; 5:263.
13. Goniewicz, K., Misztal-Okońska, P., Pawłowski, W., et al. (2020). Evacuation from Healthcare Facilities in Poland: Legal Preparedness and Preparation. *International Journal of Environmental Research and Public Health*, 17(5), 1779. doi:10.3390/ijerph17051779
14. Lane S.J., McGrady E. Measures of emergency preparedness contributing to nursing home resilience. *J Gerontol Soc Work*. 2018;61(7):751–74.