

Promoting quality of care in disaster response: A survey of core surgical competencies

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Background. Recent humanitarian crises have led to a call for professionalization of the humanitarian field, but core competencies for the delivery of surgical care have yet to be established. The objective of this study was to survey surgeons with experience in disaster response to identify surgical competencies required to be effective in these settings.

Methods. An online survey elucidating demographic information, scope of practice, and previous experience in global health and disaster response was transmitted to surgeons from a variety of surgical societies and nongovernmental organizations. Participants were provided with a list of 111 operative procedures and were asked to identify those deemed essential to the toolset of a frontline surgeon in disaster response via a Likert scale. Responses from personnel with experience in disaster response were contrasted with those from nonexperienced participants.

Results. A total of 147 surgeons completed the survey. Participants held citizenship in 22 countries, were licensed in 30 countries, and practiced in >20 countries. Most respondents (56%) had previous experience in humanitarian response. The majority agreed or strongly agreed that formal training (54%), past humanitarian response (94%), and past global health experiences (80%) provided adequate preparation. The most commonly deemed important procedures included control of intra-abdominal hemorrhage (99%), abdominal packing for trauma (99%), and wound debridement (99%). Procedures deemed important by experienced personnel spanned multiple specialties.

Conclusion. This study addressed specifically surgical competencies in disaster response. We provide a list of operative procedures that should set the stage for further structured education programs. (*Surgery* 2015;158:78-84.)

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AN INCREASING NUMBER OF SURGEONS and trainees from high-income countries are expressing interest in international volunteerism and humanitarian response.¹⁻³ The majority of conflicts and disasters

occur in low-income settings,^{4,5} where pathologies and case mixes may differ considerably from higher resource settings.⁶ Evidence suggests that surgical assistance in these settings encompasses a broad range of procedures, and standard surgical training may not prepare surgeons adequately for disaster responses.⁷⁻⁹

Recent humanitarian crises, most notably the 2010 earthquake in Haiti, have revealed the absence of standardization and quality control in this domain and have led to a call for professionalization of the field of humanitarian aid.¹⁰⁻¹² Minimum standards in humanitarian response and core humanitarian competencies have been established by The Sphere Project and the Consortium of British Humanitarian Agencies, respectively.^{13,14}

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Furthermore, the World Health Organization has recently put forward minimum standards for foreign medical teams in the event of a sudden onset disaster,¹⁵ but core competencies for the delivery of surgical care in these settings have yet to be established. Although the World Health Organization has also established a list of essential procedures that should be provided by any district surgical practitioner,¹⁶ surgical competencies specific for disaster response remain undefined.

The identification of key surgical skills required to be proficient in humanitarian response is, therefore, essential to the standardization of this domain and to the development of a training curriculum geared specifically toward attaining surgical competencies in disaster response. Hence, the objective of this study was to survey surgeons with interest and experience in disaster response to identify key surgical competencies and training to be effective in these settings, to guide future education and certification programs.

METHODS

Survey development. Institutional Review Board approval was obtained from the Research Ethics Board of the McGill University Health Center. The survey was developed using an online survey tool (SurveyMonkey, Inc, Palo Alto, CA). Basic demographic information was collected, including age, sex, surgical specialty, type of practice, and countries of citizenship, licensure, and primary practice.

To elucidate the level of humanitarian experience, respondents were questioned regarding any previous disaster response or global health fieldwork, or any formal training in humanitarian aid. Humanitarian relief/disaster response was defined as clinically based activities responding acutely to war/conflict/natural disaster where there was a sudden surge of victims overwhelming local surgical capacity. Global health/surgery-related activities were defined as activities in resource-limited settings during baseline functioning, targeted to address capacity building through a variety of interventions, such as education, research, and activities not generally meant to deliver a clinical service by donor institutions.

Participants with previous experience in humanitarian response were asked to quantify the number of deployments; those with previous global health fieldwork experience were asked to estimate the average annual time spent abroad. Formal training was defined as any organized instruction leading to certification or a formal degree with a focus in humanitarian-related subjects. Respondents with

previous humanitarian experience were also asked to what extent the following experiences provided adequate training to be competent in the humanitarian relief and disaster response settings: medical school, residency, fellowship, formal training, previous humanitarian response experience, and previous fieldwork in global health.

Participants were then provided with a list of 111 operative procedures and were asked the following question: "To what extent do you agree that the following procedures should be a part of the toolset of any surgeon, expected to provide general surgical care, as the primary, frontline surgeon in humanitarian relief/disaster response?" Answers were provided via a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). This scale was chosen because it provides an objective measure of a subjective answer and has been used extensively in surgery education.^{17,18}

The list of operative procedures was developed to cover a wide variety of settings. To do so, we consulted a number of documents, notably accreditation standards from the Royal College of Physicians and Surgeons of Canada¹⁹ and resident logs from the Accreditation Council for Graduate Medical Education,²⁰ surgical manuals for low-resource settings, including War Surgery from the International Committee of the Red Cross (ICRC)²¹ and Essential Surgical Skills from the Canadian Network for International Surgery,²² and finally, the membership examination procedures from the College of Surgeons of East, Central & Southern Africa.²³ We also included more subspecialized interventions, such as pancreatoduodenectomy and cardiac valve replacements and repairs. We hypothesized that these procedures would be considered less relevant and would serve to calibrate our scale.

Data collection. To obtain a variety of participants, including surgeons from academic, community, and nongovernmental organization settings, the survey was transmitted electronically to surgeons around the world including but not limited to members of the American College of Surgeons, the Trauma Association of Canada, and the ICRC. Iterative e-mail reminders were sent out via the respective organizations. No monetary compensation was provided for the completion of the questionnaire. Informed consent was obtained electronically before each survey and was available in both French and English. Data collection occurred from February 1, 2014, to May 10, 2014.

Data analysis. Descriptive statistics were performed for respondent demographics. Mean values,

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