

A Holistic Approach to Disaster Medical Education

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Abbreviations:

CBRNE: chemical, biological, radiological, nuclear, and explosive
ICS: Incident Command System
MCI: Mass-Casualty Incident
NIMS: National Incident Management System

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We read the recent manuscript by Smith et al¹ with great interest. Disaster medicine education is an enormous challenge and is indispensable for supporting robust disaster preparedness and response across the country.

We agree that medical schools should aim to develop and implement a disaster medicine curriculum. They should be at the forefront of development of the universal set of information used to educate medical students and practitioners. At a bare minimum, this effort needs to be standardized among allopathic and osteopathic medical schools. Additionally, an all-hazards approach would ensure that all aspects of disaster medicine are included in any curriculum design. We also believe that such a curriculum could serve to educate providers across the medical and public health response communities. This curriculum could then be modified for education of other health care providers such as Physician Assistants, Nurse Practitioners, Nurses, EMTs, paramedics, and others.

An effective curriculum developed for medical students/practitioners would be evidence-based, although a robust scientific basis may not be available for such rare incidents as chemical, biological, radiological, or nuclear releases. Recognized experts from professional, private and/or governmental bodies involved in disaster health care are needed to provide input using their expertise as the basis for content development in the proposed curriculum. The curriculum for all levels of health care professions would be similar; however, the content details vary considerably depending upon the target audience. Ideally the curriculum should include modules dealing with:

- Man-made incidents (war, civil unrest/disobedience, terrorism);
- Natural disasters (flood, earthquake, fire, tsunami, tornado, hurricane);
- Chemical, biological, radiological, nuclear, and explosive (CBRNE) incidents;
- Evacuation, shelter-in-place recommendations;
- Decontamination for various hazards;
- Command and control;
- Incident Command System (ICS) and National Incident Management System (NIMS);
- Mass-Casualty Incident (MCI) triage and management;
- Life-saving emergency and individual treatment under disaster conditions;
- Medical care in the austere environment and altered/crisis standards of care;
- Legal aspects of emergency response to disasters; and
- Psychosocial issues – professional ethics, stress responses.

The study referenced addresses a critical need in our disaster medical competency. While it did not define precisely what disaster medical education was provided in the schools surveyed, in what time-frame, or in what format, as a pilot study it does open a window on the types of curricula available in respondent schools, and the amount of time allotted for these studies. The present study contains two methodological red flags. First, targeting education liaisons at allopathic schools presented a selection bias that may skew the internal and external validity of the study. Research design methodology needs to utilize sampling methods that will minimize potential biased reporting. A survey presented to individuals familiar with the curriculum but not subject to representing the school's best interests would help with this potential error bias. Second, a response rate of 25% leaves the authors with a margin of error of approximately 15%, assuming a 95% confidence level, thereby weakening the reliability of the results provided. The findings may be more dire than inferred where only 15% of allopathic schools could be incorporating disaster education and 49% not offering any disaster education at all. It would be very helpful for the authors to publish the

specifics of their survey. Absence of details on the sampling instrument inhibits full assessment and validation by the greater research community, and use as a model for future inquiries.

We commend and thank the authors for initiation of this critical, much-needed avenue of investigation in an essential, yet apparently neglected, area of medical and public health training. The noted design modifications could easily be implemented. By identifying educational gaps, the authors' model could be adapted for medical provider disaster education research. We hope their efforts will serve as the springboard for a comprehensive inquiry into the elements of an ideal curriculum, such as the one proposed by Subbarao et al.² We echo their findings and further assert that disaster education is a necessity for all health care providers if we are to successfully mitigate the effects of disasters.

References

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Disclaimer

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We appreciate the comments by Parrillo et al in regard to our recent manuscript examining disaster medical education, and we agree that any curriculum for medical students should be evidenced based and provide students with objectives that meet an agreed upon set of common competencies. We believe a set of core competencies exists for disaster medical education and should align with educational goals for all healthcare providers. An important hurdle in the development and adoption of disaster and emergency public health curriculum in medical education is the cooperation of stakeholders including national regulatory organizations and medical schools themselves. Without stakeholder buy-in, curricula are unlikely to be implemented despite being evidenced based and academically sound in design.

We do have several comments regarding the feedback on instrument design and reporting. We acknowledge the potential for bias is present in the survey and utilized anonymous reporting to overcome this as much as possible. In addition, while the specific questions contained in our survey do not appear in our manuscript, they were described in detail in the results section. The topics covered in the disaster curricula are also listed. We also acknowledge the response rate of 25% is low; however, given the overall lack research in this area, we felt our findings to be worthy of sharing, as evidenced by attention this article has received.

We echo the notion that a curriculum could be developed for medical students and may be modified for other health providers including Physician Assistants, Advanced Practice Nurses, Nurses, EMS providers and others. However, we would offer caution to ensure while core competencies may remain the same, such curricula should be further tailored to the scope and practice of each discipline. Also of interesting note, in a study of osteopathic medical students conducted by our research team, an overwhelming desire for additional education in disasters and emergency public health was indicated.¹

Reference

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