

EDITORIAL

From the Editor-in-Chief

James J. James, MD, DrPH, MHA

The lead article in this issue of *Disaster Medicine and Public Health Preparedness* by Dallas et al can be used to inform discussion on many important issues that are influencing the evolution of disaster medicine and public health preparedness (more generally referred to as disaster medicine). One such issue that I am consistently asked about by private and public groups when addressing disaster preparedness and response is “Are we better prepared?” To this query, my usual response is, “Prepared for what?” Unfortunately, before we can begin to answer the first question with some degree of objectivity and measurement, we must come to grips with the latter.

Attempting to answer the second question requires consensus among multiple stakeholders. I submit that this can best be answered through definition of the mission and goals of the nascent but evolving discipline of disaster medicine. Consider, for example, one of the critical conceptual benchmarks underpinning preparedness, which is an expanded understanding of surge capacity. If a community can respond to a given event utilizing its inherent resources, then “internal” surge capacity is sufficient and the event is manageable using extant response disciplines, agencies, and systems. If the event requires resources that exceed internal capacity, then we have an “external” surge requirement, which falls within the domain of disaster medicine.

By extrapolation, this discipline is focused on preparing for and responding to significant and potentially catastrophic events, which allows us to address the question of “prepared for what?” To date, we have tended to focus our planning and preparedness resources against specific scenarios, such as smallpox or dirty bomb attacks. To me, this approach is short-sighted. The number of scenarios that need to be addressed is essentially limitless, especially when considered against the axes of magnitude, geo/climatic variation, demographics, and time. From an operations research perspective, we are essentially maximizing our ability to respond to low probability (albeit potentially high consequence) events. I surmise that the best approach is to optimize our ability across scenarios. This is inherently more logical and consistent with the all-hazards framework being promulgated by the Department of Homeland Security and other federal agencies, and which is providing the basis for the development of competencies-based education and training in this field.

From a practical perspective, we cannot predict the future, we cannot be fully prepared for all possible events, and we must, therefore, develop models to address the complexities of seemingly unmanageable events. Through application of Occam’s razor, I believe we can design the necessary models and systems to accom-

plish this goal. The essence of this approach is that the simplest of competing theories or models is preferred to the more complex, and to this end the following premise is offered for study and debate:

In any disaster, a least common denominator exists that transcends all risk scenarios; that denominator being human or population outcomes. In a mass casualty event, fatalities must be dealt with, survivors need to be effectively managed and monitored, and injured or ill people must be treated and rehabilitated expeditiously. It is the latter group that is the immediate focus of medical and public health disaster response. Regardless of event, casualties can be sorted into discrete categories (eg, traumatic injuries, burns, psychiatric problems, infections), which have predictable treatment protocols and clinical resource requirements.

Realizing that casualty totals and the coefficients of specific patient categories will vary for given events, we can identify critical needs across categories that are, to a large extent, scenario independent (eg, number and types of clinical personnel needed, quantity and types of pharmaceuticals needed, number of ventilators required). Methodologically speaking, given the difficulty of conducting robust research in this field, it is imperative that we collect and collate epidemiological data from real events to inform scenario-specific predictive modeling efforts. This will allow us to better estimate the required mix of deployable resources to optimally respond to an event. Such an approach was used in the article by Dallas et al and represents a sound methodological approach for the emerging science of disaster medicine and public health preparedness.

As data continue to accumulate, we will be better able to answer the question “prepared for what?” and with increasing certainty. With such data, we also can begin to address the more inevitable but elusive question “are we prepared?” with validity against predefined benchmarks. In this issue and in subsequent volumes of this journal, we remain committed to publishing the best available evidence on which to base such answers, as well as to promote the translation and integration of such knowledge into everyday practice.

About the Author

Dr James is Director, Center for Public Health Preparedness and Disaster Response, American Medical Association, Chicago.

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