Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Re-Envisioning Mass Critical Care Triage as a Systemic Multitiered Process

To the Editor:

The article by Devereaux et al[1] has made a valuable contribution through the provision of detailed guidelines for mass critical care practice. However, it is important to further contextualize critical care triage as a core component of a broader triage system. Envisioning triage as systemic process emphasizes the crucial interrelationships among patient care, the process of central decision making, and triage implementation itself.

Large-scale catastrophic events require a crucial shift from individually based care to population-based care through the adoption of an operational process that influences critical decision making at all points of contact.[2] This can be viewed as a multitiered process that incrementally addresses mass critical care decision making under significant resource constraints. When necessary, decisions at each point of contact must ensure that only appropriate patients are directed to a critical care site for final disposition critical care site. This systemic process relies on first-order triage practices to interface with the community to reduce risk exposures and define appropriate standards of care for the affected population; second-order triage at the prehospital/staging facility level to sort casualties for treatment and transport; third-order triage at the hospital level to optimize patients' opportunities for survival within the constraints of available resources and procedures; and lastly, fourth-order triage at the regional level to provide system-wide oversight and resource support of the public health response. Such a process is inherently dynamic, with casualty prioritization remaining subject to change based on timely implementation of a central command structure, the availability of accessible resources, the accuracy and timeliness of situational awareness, and the efficacy of risk communications. The seamless integration of this systems-based model, coordinated through the incident command system and a deployed Health Emergency Operations Center[3] will ensure that treatment prioritizations are undertaken in a manner that is effective and equitable.[4]

Ultimately, critical care decision making and outcomes are only as good as the underlying triage-management system. The incorporation of a systemic triage protocol will alleviate the patient care burden at each subsequent tier and reduce the overall need to ration care. Accordingly, triage management can no longer be thought of as an isolated department- or hospital-level process.

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REFERENCES

1 Devereaux A, Christian MD, Dichter JR, et al. Summary of suggestions from the Task Force for Mass Critical Care Summit, January 26–27, 2007. Chest 2008; 133(suppl):1S-7S
2 Bostick N, Subbarao I, Burkle F, et al. Disaster triage systems for large-scale catastrophic events. Disaster Med Public Health Prep 2008; 2:S35–S39
3 Burkle FM, Hsu EB, Loehr M, et al. Definition and functions of health unified command and emergency operations centers for large-scale bioevent disasters within the existing ICS. Disaster Med Public Health Prep 2007; 1:135–141
4 Burkle FM. Population-based triage management in response to surge-capacity requirements during a large scale bioevent disaster. Acad Emerg Med 2006; 13:1118–1129

Response

To the Editor:

We appreciate and agree with the triage concepts put forth by Subbarao and his distinguished coauthors.[1] Prior to the framework proposed by the Task Force for Mass Critical Care, regional coordination of individual ICUs in the United States had undergone limited conceptual development. Much detailed guidance was needed for critical care professionals to enhance surge capability and optimally allocate scarce life-saving interventions during disasters. This was the focus of the framework of the task force, but, for clarification, we agree that critical care triage should not happen in isolation. Instead, the framework was intended to be integrated into a broader triage system.[2–6]

Given the experience with severe acute respiratory syndrome (or SARS) a few years ago and the burgeoning concern about a

serious influenza pandemic, we focused primarily on disasters causing numerous medically critically ill victims. The composition of our group was deliberately conceived to bring medicine, ethics, and public health experts together to collaboratively develop pragmatic, optimal clinical guidance. We knew that future work on critical care surge capability and triage for pediatric and trauma issues would be necessary, and work by Subbarao and colleagues[7] has advanced additional, essential elements of triage planning.

The challenges of optimal triage across the entire health-care system spectrum are many. Even the goals of triage, such as mortality vs life-years saved or other outcomes, have not received sufficient professional consideration or input from community members. Furthermore, health system situational awareness (*ie*, patient needs and resource availability) needs much more real-time and detailed clinical information to optimally inform centralized triage recommendations. The capability to rapidly understand the course of a disease, identify prognostic variables, and determine treatment effectiveness across the entire health-care system remains elusive for most communities. This information will be essential for sustained-response events such as epidemics, when data-driven revisions of triage guidance would be expected to ensure that our community members get the best possible care in resource-limited circumstances. Finally, regional coordination of health-care system triage will require input from many different clinical specialties and professions as well as from nonclinical community members, such as elected officials, community advocates, and at-large community members, among whom are many of the same people who must provide consultation during responses. The majority of communities must still further develop their regional health-care system coordination infrastructure to assure such clinical expert involvement.

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References

1 Subbarao I, Bostick NA, Burkle FM, et al. Re-envisioning mass critical care triage as a systemic multitiered process [letter]. Chest 2009; 135:1108
2 Devereaux A, Dichter JR, Christian MD, et al. Definitive care for the critically ill during a disaster: a framework for allocation of scarce resources in mass critical care. Chest 2008; 133(suppl):51S–66S
3 Christian M, Devereaux A, Dichter J, et al. Definitive care for the critically ill during a disaster: current capabilities and limitations. Chest 2008; 133(suppl):8S–17S
4 Rubinson L, Hick J, Hanfling D, et al. Definitive care for the critically ill during a disaster: a framework for optimizing critical care surge capacity. Chest 2008; 133(suppl): 18S–31S
5 Rubinson L, Hick J, Curtis JR, et al. Definitive care for the critically ill during a disaster: medical resources for surge capacity. Chest 2008; 133(suppl):32S–51S
6 Devereaux A, Christian M, Dichter J, et al. Summary of suggestions from the task force for mass critical care summit. Chest 2008; 133(suppl):1S–7S
7 Bostick N, Subbarao D, Burkle FM, et al. Disaster triage systems for large-scale catastrophic events. Disaster Med Public Health Prep 2008; 133(suppl):S35–S39

Reflections From the Field Regarding the Clinical Commentary for Augmentation Therapy in the MZ Phenotype

To the Editor:

We read with interest and great anticipation the clinical commentary in a recent issue of *CHEST* (October 2008)[1] regarding α_1-augmentation therapy for PI MZ heterozygotes, but disagree with the conclusions reached by the Medical and Scientific Advisory Committee of the Alpha-1 Foundation in the strongest terms.

The authors acknowledged, although their evidence is somewhat anecdotal, the existence of patients with MZ phenotype who have severe obstructive disease despite being nonsmokers. They also acknowledged the difficulties involved in enlisting a subset of rapidly declining MZ phenotype patients in a trial to be "daunting." There are also no data available that have looked at the quantity of Z or M α_1-antitrypsin (AAT) within a given patient and the protectiveness of the level of each subtype in preventing disease.

The authors reiterated the fact that physicians legally enjoy the privilege of prescribing medications that have not been approved by the US Food and Drug Administration. They failed to realize that the physician is the greatest advocate for their patients, and that the doctor-patient relationship is an ethical one that is above any legal obligations and goes beyond any approval by a third party. We have for centuries advocated for our patients and have not placed an economic value on each individual's life, though it is common knowledge that third-party payers have done so.

Given this background and the bleak prospects for any new knowledge being imminently available in a randomized prospective trial, we believe that the interim recommendation to clinicians by Sandhaus et al[1] to avoid prescribing augmentation therapy for MZ heterozygotes is a disservice to patients and physicians alike. Patients who in today's economy can hardly afford to reach the office (due to gasoline prices and increasing rates of copays) will never be able to reach specialists with experience in treating AAT deficiency (whatever the definition of an AAT deficiency specialist might be), and it is fair to say that deserving patients will be denied treatment based on this article.[1]

To ask the insurance industry to closely evaluate reimbursements for such a scenario is at the least an irresponsible recommendation after a doctor-patient relationship has been set up and a decision to treat has been made based on the best available knowledge. To our knowledge, this is the first time in a