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## **Hospital Boarding Creates Critical Shortcomings in Disaster Preparedness**

A Position Statement from the Society for Academic Emergency Medicine (SAEM) Disaster Medicine Interest Group (DMIG)

### **Introduction:**

Hospital patient boarding has reached crisis levels throughout the United States, as described by the American College of Emergency Physicians (ACEP), the Emergency Nurses Association, and the National Alliance on Mental Illness (1,2). ACEP convened a summit in September 2023 to bring stakeholders together to address the issue, as evidence consistently demonstrates that boarding and crowding adversely affect patient care in multiple ways. Increased Emergency Department (ED) crowding has been associated with increased wait times, lengths of stay, delays in care, morbidity, mortality, and higher rates of patients leaving without being seen by a physician (3-5). Recent literature has even identified increased costs associated with boarding (6). In addition to the impacts of boarding on everyday patient care, increased hospital crowding severely threatens the ability of the healthcare system to respond effectively to incidents producing unexpected surges of ill and injured patients. Numerous recent events have highlighted the major challenges related to surge capacity in EDs nationwide. The tremendous demands that the novel coronavirus disease 2019 (COVID-19) pandemic placed on hospitals are difficult to overstate. However, the smaller but still impactful Mpox outbreak also significantly strained hospital EDs - particularly in urban centers such as New York City and Los Angeles (cite). While these two examples showed the strain that infectious disease outbreaks can have on the healthcare system, the impact of no-notice Mass Casualty Incidents (MCIs), including but not limited to mass shootings and natural disasters, can be even worse for acutely affected hospitals. To make our health system more resilient in the face of such threats, we must increase our capacity to provide care at any moment - particularly through increased funding for the development and implementation of evidence-based strategies to combat boarding time, and greater support from hospital and health system leadership to support that this is not an emergency department centric challenge but rather weighs on the larger healthcare system.

### **Concurrent Threats to Healthcare Preparedness:**

Alongside elevated levels of boarding, rates of mass casualty events in the United States have increased significantly over the past two decades. Tracing data from the Centre for Research on the Epidemiology of Disasters' International Disaster Database demonstrates a 10% increase in natural disaster events in the US over the past five years compared to the previous five, and this is likely only to increase as a result of more severe weather events due to climate change (7). Mass shootings have similarly nearly tripled in the US over the past decade as compared to the prior one, and the rate of serious infectious disease outbreaks has risen due to population growth

and an increased incidence of human-animal contact. As the frequency of large-scale disaster events rises, our healthcare system relies on its emergency departments to care for surges of patients, often with little or no notice. This capability requires sufficient space, staff, supplies, and systems to examine and treat a large number of patients quickly and flexibly. Yet, with most emergency departments routinely overcrowded, many patients currently wait hours for care and even then receive it in hallways and chairs because of insufficient care space availability; care sites already bursting at the seams are ill-prepared to accommodate large unexpected patient influxes from mass casualty incidents. And while some disasters are short-lived, such as mass shootings or building fires, others like earthquakes and pandemics can last days, weeks, or months. The current capacity crisis jeopardizes our readiness for both short- and long-term events.

The healthcare system receives varying levels of notice for different types of disasters. According to the United States (US) Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO) Country Office in China was first informed about pneumonia cases in Wuhan on December 31, 2019 (8). Nearly 2.5 months later, on March 13th, 2020, the US government declared a nationwide emergency and non-citizen travel ban. The next pandemic will likely also take weeks or months to be recognized, with delays in mitigation strategy implementation. For severe weather events, the National Hurricane Service offers storm surge, hurricane, and tropical storm warnings within 36 hours of impact, allowing healthcare systems and residents to evacuate and prepare for a storm's impact (9). In contrast, current early-warning alerts for earthquakes only sound three to five seconds after a quake begins, meaning those within 10 miles of the epicenter receive no warning. Terrorist attacks, school shootings, and other mass casualty incidents often also have limited warning, with hospital notification often taking over 30 minutes from an incident occurring and patient volumes surging within 60-90 minutes or sooner (10,11). While any event that requires hospital surge capacity threatens healthcare stability, it is clear that unexpected or "no notice" events offer limited preparation for facilities; the boarding crisis will particularly hamper the ability of hospitals to manage patients effectively in these circumstances.

Yet another factor overlaid on the boarding crisis is healthcare consolidation, which might subject more hospitals to profit-driven reductions in beds, staffing, and overall capacity to be more "lean." Between 1998 and 2021, 1,887 hospital mergers occurred, decreasing the number of American hospitals from 8,000 to 6,000. These mergers have contributed to a decrease in the staffed bed capacity of the US, which has dropped nearly 15% from 1995 to 2021. One hundred ninety-one rural hospitals have closed since 2005, further reducing healthcare access for patients across the country and limiting available options in the event of disasters (15). Nearby referral centers are already feeling the daily strain and regions lack the infrastructure to transport, house, and provide ancillary services to large numbers of potential victims long distances from home. This drop in capacity has also overlapped with .....and contributed to a decline in employed healthcare staff below expected levels, with predicted shortages of 200,000 nurses and 124,000 physicians by 2030 (12, 13). Few of these healthcare mergers are challenged by the Federal Trade Commission, hinting that the trend may continue unabated in coming years (14).

### **Benefits of Preparedness**

Disaster events are often high-consequence but low-probability. Preparedness efforts commonly face resistance from those who view such catastrophic scenarios as unlikely. However, such a mindset fails to recognize the value of proper preparedness efforts; preparedness programs that engage stakeholders across the health sector can improve patient and staff safety, save lives,

improve daily operations, and demonstrate beneficial returns on investment (ROI). When the Center for Global Development investigated the ROI of pandemic preparation, their models found that every dollar spent on preparedness could lead to over \$1,100 economic gain in averted gross domestic product loss, and approximately \$1,700 health gain due to averted deaths (16). Investments in other areas of preparedness may have similar results, as seen in responses from hospital executives in a recent study (17). Response efforts in real time alone, particularly given the lack of coordination within and across most health systems regionally, will be insufficient for future crises. Preparation for these high-acuity low-occurrence events are key to overcoming their challenges and meeting the needs for patient care.

### **Call to Action: Research, Recognition, and Planning**

EDs are facing a dual challenge of coping with the daily demands of patient care and the need to be prepared for the threats of patient surges from MCIs and other disasters. The current setting of extreme hospital crowding exacerbates this challenge, as it reduces an ED's capacity to accommodate and properly care for patients from a significant MCI surge event, compromising the quality and safety of care. To overcome this challenge, health systems and governmental agencies must implement strategies to reduce patient boarding, enhance MCI preparedness, and strengthen regional collaboration and integration. Some strong contingency plans, including those provided by ASPR TRACIE, have already been developed to guide hospitals in surging their capacity (18-20). The recent announcement of a National Boarding Task Force within the Agency for Healthcare Research and Quality, at the request of ACEP, is an excellent step forward (21). However, this federal effort must be complemented by:

- (1) additional research by academic centers and respective funding to support these efforts,
- (2) greater recognition among hospital leadership of the threat that hospital boarding poses to disaster scenarios, and
- (3) widespread development of hospital-based, regional plans for mass-casualty incident response that are more effective in the context of extreme boarding.

While boarding is often referred to as “ED boarding” as patients remain in the ED, it must be noted that this challenge is not a result of inefficiency within the ED. Boarding reflects a throughput failure at the hospital or healthcare system level and requires all involved parties to help solve. We propose that the term “ED boarding” be rephrased as “hospital boarding.” All departments within a hospital or healthcare system play a role in addressing these challenges. For example, data has shown improvements when hospitalists provide support by creating their own “Incident Commander of Admissions.” This could be an attending, resident or advanced practitioner, with the role to stay in the ED during high volume hours and track possible admissions. Their presence has been demonstrated to expedite admission consults and improve communications and teamwork between the ED and admitting services (22).

Decisions around boarding and disaster preparedness should be evidence-based, just as they are in other medical disciplines. Healthcare leaders ought to dedicate sufficient attention and funding to these concerns, as some of the consequences and potential solutions have yet to be determined (23). Federal agencies should offer grant support that targets the current boarding crisis, both through adaptations of existing grant programs and through the offering of additional funding opportunities, in addition to assuring national reach for Regional healthcare preparedness programs that coordinate and support effective response. Academic researchers could utilize focused grant

support to further identify cost-effective and practical solutions, and consolidate or rate existing evidence on the topic to highlight gaps in the literature.

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