Emergency Department Overcrowding is a Public Health Crisis: Detailing the Causes, Consequences, and Potential Solutions

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Abstract

The long-standing issue of Emergency Department (ED) boarding and overcrowding continues to persist despite public calls to action from emergency physicians and numerous studies detailing patient safety risks and poorer health outcomes. ED boarding is associated with increased in-hospital mortality, higher probability of patients leaving the ED against medical advice, and increased adverse events and preventable errors. Some key factors contributing to this issue include financial incentives that set up hospitals for ED overcrowding, nursing and staffing shortages, and lack of healthcare facilities for safe discharge of admitted patients. Ultimately, meaningful intervention to the public health crisis of ED boarding needs to occur at the federal public policy level in order to protect our nation's patients and physicians.

On November 7, 2022, the American College of Emergency Physicians (ACEP) along with over thirty medical organizations addressed a letter to President Biden urging the Administration to take action on a long-standing public health emergency known as 'boarding.' Boarding can be defined as when a patient remains in the Emergency Department (ED) after being admitted to the hospital because there are no inpatient beds available. When patients are held in the ED in these circumstances, it leads to ED overcrowding and contributes to well-documented safety risks for these patients, with the Joint Commission stating that patient boarding should not exceed 4 hours (ACEP, 2022). Given that EDs essentially represent a safety net for the broader health care system, it has been frequently posited that ED boarding and overcrowding is indicative of our widespread inability to meet the healthcare needs of our society (ACEP, 2022; Kelen et al., 2021; Trzeciak and Rivers, 2003).

ED boarding is not a novel issue; it has been described in literature and discussed at national conferences and forums for decades. However, physicians in the recent letter stress that the issue has become increasingly untenable, to the point that our nation's safety net has reached its breaking point. Anecdotally, the number of boarded patients often exceeds the number of beds and hallway stretchers in EDs, and emergency physicians routinely provide

patient care in waiting rooms and admit patients to hospital floors and intensive care units (ICUs) directly from the waiting room (ACEP, 2022). Emergency physicians are therefore providing care for an increased volume of sicker, higher-acuity patients for a longer period of time in suboptimal settings, a challenge which is further exacerbated by nursing and staffing shortages. This is not only detrimental to patient care, but also leads to alarming rates of physician and nurse burnout. The purpose of this article is to detail some of the key issues contributing to ED boarding, discuss the impact of ED boarding on patient care, and provide potential targeted and systemic solutions to this public health crisis.

Historical Context of ED Overcrowding

A central tenet of emergency medicine is providing basic health care to any patient regardless of their ability to pay. In general, patients provide insurance information before seeing a physician, but the Emergency Medical Treatment and Labor Act (EMTALA) in 1986 mandated that the ED cannot turn away patients regardless of payer status because doing so would be an unsafe practice (Trzeciak and Rivers, 2003). As such, ED services are guaranteed by law and the ED meets the Institute of Medicine (IOM) definition of a safety net provider (Trzeciak and Rivers, 2003). Apart from basic medical services, EDs provide "24/7" access to comprehensive hospital services including subspecialty care and represent a viable option for underserved or vulnerable patient populations who have no other option for medical care (Trzeciak and Rivers, 2003). Therefore, EDs collectively have come to provide more safety net healthcare than any other safety net provider in the United States (U.S.) (Asplin, 2001).

This has manifested in continual increases in ED patient volume year after year, despite trending closures of urban area EDs due to lack of economic viability (Di Somma et al., 2014). While ED visits declined during the height of the COVID-19 pandemic as patients avoided hospitals and healthcare settings in general, data from multiple industry surveys and reports (Advisory Board, McKinsey & Company, etc.) suggest that ED volumes have since returned to pre-pandemic levels and will continue to rise moving forward. Long-standing systemic healthcare factors such as resource constraints, lack of primary care appointment availability, provider burnout, staffing shortages, and increasing patient complexity all contribute to high patient volumes in EDs. Many of these factors relate to ED input and throughput; however, boarding is more a function of output factors (Kelen et al., 2021)

Causes and Consequences of ED Boarding and Overcrowding

While traditional thinking incorrectly assumes that ED crowding stems from an uninsured population that uses the ED for non-urgent, primary care complaints, the more likely explanation for overcrowding and boarding is that hospitals remain unable to provide inpatient beds to patients who require admission for management of care (Rabin et al., 2012). A key source of

inefficiency in hospital flow is due to the discrepancy between the ED's ability to triage and admit patients at all hours of the day compared to the availability of other hospital services and providers needed for diagnostic testing, necessary medical procedures, and administrative support (Rabin et al., 2012). This is exacerbated by the lack of healthcare facilities available for the safe discharge of admitted patients. Inability to place patients in skilled nursing facilities, short-term rehabilitation centers, and other care settings make it difficult for hospital floors to open available beds, further backlogging hospital throughput.

As one might imagine, ED boarding presents patient safety risks and challenges to providing quality care, resulting in poorer health outcomes for patients and excessive costs for the health care system. Studies indicate that the duration of boarding in the ED is associated with longer inpatient stays and increased in-hospital mortality (Boudi et al., 2020). ED crowding in general is associated with an increased risk of in-hospital mortality, longer times to treatment for patients with serious conditions including pneumonia and acute pain, and a higher probability of patients leaving the ED against medical advice (Bernstein et al., 2009). Additionally, overwhelmed emergency departments have increased adverse events and preventable errors (Kelen et al., 2021).

While a simplistic, intuitive solution to mitigate resource constraints might be to expand ED capacity or hire additional staff support, this does not address the underlying causes of ED boarding and overcrowding. For example, it has been demonstrated that expanding ED capacity does little to reduce time to admission; instead, it increases the ED's availability to hold more boarded patients (McKenna et al., 2019). A potential explanation for the seeming persistence of ED boarding is rooted in our healthcare system's structure and economics. Financial incentives exist that encourage hospitals to set inpatient occupancy to above ninety percent, which essentially guarantees ED boarding and resulting overcrowding (Kelen et al., 2021). ED boarding ensures that a higher proportion of sick patients with eventual high-cost inpatient admissions occupy the ED, as opposed to the average ED patient who is expected to generate lower revenue. Furthermore, even if inpatient beds are available, hospitals may keep these beds open and reserve them for elective admissions related to profitable procedures, despite overcrowded EDs (Weiner and Venkatesh, 2022).

Potential Solutions

As detailed above, making a meaningful impact on the ED boarding crisis in the U.S. requires the understanding that ED boarding is not an issue with emergency departments; rather, it is an indicator of broader healthcare system functioning (ACEP, 2022; Kelen et al., 2021). Budget requirements and financial considerations often lead hospitals to routinely set their inpatient census goals at levels that predictably result in ED gridlock (Kelen et al., 2021). Targeting hospital inpatient census to an optimal level such as 85% may

effectively balance financial considerations with ED overcrowding. While there would still be upward pressure on the inpatient census for hospital leadership, this could be addressed by creating new financial incentives and penalties anchored on boarding, and/or implementing healthcare reform that requires hospitals to set their inpatient census threshold at a given rate (Weiner and Venkatesh, 2022). While previously met with varying levels of success for other metrics, Centers for Medicare and Medicaid Services (CMS) pay-for-performance programs targeting boarding metrics may be a mechanism by which these incentives and penalties could be implemented.

Another broad solution that would require both hospital leadership buy-in and a reorganization of operations is expanding functional hospital capacity. This could include making inpatient ancillary services accessible around the clock, better distributing surgical schedules throughout the week, or moving boarded ED patients to inpatient hallways (Kelen et al., 2021). These measures work both in theory and practice to relieve inpatient access block and alleviate ED boarding. While this may require other services and specialties within the hospital to adjust their working hours and workflow, it should be noted that the practice of emergency medicine itself has evolved to mitigate the consequences of boarding and overcrowding, such as the development of ED-ICUs and ED observation units. In the interim, additional training in intensive care management, psychiatric and behavioral healthcare, and observation medicine may equip emergency physicians with more tools to manage boarded patients and improve clinical outcomes.

More broadly, there is a well-documented need for the U.S. healthcare system to evolve and adapt to meet the demands of a growing and rapidly aging population. Data suggests that over time, elderly patient utilization of the ED has increased, resulting in more hospital admissions, readmissions, and intensive care unit stays (Pines et al., 2013). Separately but related, a disproportionate amount of healthcare expenditure is spent in patients' final years of life, prompting nationwide discussions on the quality of end-of-life care, which extends to the ED. Allocating resources to community-based health care and increased investment in primary care and preventive services may lead to utilization of more appropriate care settings and result in improved outcomes for these elderly patients.

Conclusion

This article briefly touches upon some of the key causes and consequences of ED boarding and overcrowding. Apart from increased advocacy and awareness serving as an impetus for policy change from hospital leadership, regulatory bodies should address the underlying causes of boarding. For example, imposing penalties on hospitals that set their target inpatient census to levels that ensure ED boarding at baseline may lead to revised hospital policies that increase inpatient capacity and alleviate some of the

strain on EDs. Targeted funding and resource allocation into community-based healthcare may have an impact on both reducing ED input volumes and perhaps more importantly, increased options for safe post-discharge care. Commitment to physician and health care provider wellness by focusing on these systemic issues may not only reduce burnout but also improve nursing shortages because of better working conditions. Ultimately, meaningful intervention to the public health crisis of ED boarding needs to occur at the federal public policy level in order to protect our nation's patients and physicians.

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