Boarder Patrol: A Reform Policy for America's Paralyzed Emergency Departments

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The story is not new. America's emergency departments (EDs) are frequently overcrowded, their ability to provide high quality emergency care compromised by lack of space and required attention to admitted patients boarding in the ED, awaiting a hospital bed upstairs.

We first experienced ED boarding as residents where sign-outs were along the lines of: "Sixty-year-old male, sign-out of a sign-out, admitted, boarding for the past 48 hours, chest pain patient, I think." To an ED resident, the problem was clear. Later, at a California Chapter of the American College of Emergency Physicians (Cal/ACEP) meeting, we were surprised when a visiting state representative, asked about her approach to ED boarding, replied, "What's boarding?" We realized that many of our elected representatives, patients, and hospital leaders are not aware of the true cause of ED crowding. With the support of Cal/ACEP, we developed a short video to explain to the layperson what boarding is, its causes, consequences, and possible solutions (availble under "Supporting Material" of the article at http://escholarship.org/uc/uciem_westjem).

The Problem and Consequences

What we saw in our training program is actually a national problem. According to the National Hospital Ambulatory Medical Care Survey, 87% of large, high volume EDs board patients, and 83% of EDs overall board patients.[1]

A growing body of evidence shows that ED crowding negatively impacts patients' health. According to a recent Government Accounting Office (GAO) report, the average wait time for a critical patient that should be seen IMMEDIATELY was 28 minutes.[2] Crowding has been shown to increase the rate of medical errors,[3] and studies suggest an increased mortality of 30%[4,5] and a doubling of the rate of serious complications from acute coronary syndrome.[6] Recent studies have also shown an association between ED crowding and delay or failure to receive antibiotics or pain medications.[7-9] Even more concerning, a 2007 study of ICU boarders found that they had 30% higher mortality than non-boarders, after adjustment for severity of illness.[10] This suggests that boarding critically ill patients, in terms of mortality, may be equivalent to withholding aspirin from patients having heart attacks.

The Causes

The causes of crowding are complex; however, studies have repeatedly shown that the major driver of ED crowding is lack of inpatients beds for admitted ED patients.[11,12] These "boarders" spend hours to days in the ED, taking up space where new patients should be seen.

Some common misconceptions about ED crowding are worth clarifying. Uninsured patients are ***not*** the driver of ED crowding; growth in ED visits is actually due to insured individuals.[13] Moreover, the problem is not one of inadequate ED beds. Although 45 hospitals and 44 EDs closed in California between 1996 and 2007, existing EDs have expanded beds by 26%,[14] at a rate outpacing population growth. The ratio of ED beds to patient visits has actually improved.

Finally, the issue is not one of EDs being crowded by non-emergent patients. In fact, the true cause of crowding and boarding is that the EDs are crowded by sicker patients. In 2002 in California, 48% of total ED visits were urgent or non-urgent. In 2007, the proportion of these lower acuity patients fell to 33%, leaving more moderate, severe, or critical acuity patients.[14] With sicker patients presenting to the ED, it makes sense that the admission rate climbed as well, contributing to more patients boarding in the ED.[14]

Possible Solutions

With costs to build new hospital inpatient and ED beds approximately $1 million per bed, new construction is an untenable short-term solution.[15] The key to alleviating

crowding is improving patient flow, from ED entry to in-patient bed and ultimately to appropriate discharge, requiring the commitment and cooperation of leadership and staff throughout the hospital. One effective strategy at State University of New York-Stony Brook relocates admitted patients during times of ED and hospital crowding to inpatient wards regardless of bed availability. This strategy has reduced ED crowding and is preferred by patients.[16,17] Even a bed in a hallway upstairs on an inpatient unit is preferable to the chaos and noise of the ED. At Los Angeles County+USC Medical Center, a hospital-wide surge plan is routinely activated as their hospital or ED reaches threshold crowding levels. Hospital resources are successively mobilized, including inpatient hallways, to maximize ability to delivery patient care.[18] Other creative approaches include inpatient discharge lounges, streamlining nurse sign-outs, reducing specialty consultant response times, encouraging timely patient discharge, and improving admission and discharge processes.[14,19]

CONCLUSION

The "Boarder Patrol" video complements recent popular press and review articles and represents our effort to inform non-emergency caregivers on how ED boarding plays a significant role in ED crowding and increases patient morbidity and mortality.[20,21] Emergency physicians can be leaders, guiding efforts to reduce ED crowding using evidence-based practices. We highly encourage policy makers to enact legislation, such as California's AB-911,[22] enabling and encouraging hospital administrations to bring about critical and necessary structural and cultural changes to help admitted patients depart the ED so patients in waiting rooms and in ambulances can be seen promptly. California's overcrowding bill was unfortunately vetoed because the Governor apparently misunderstood that emergency physicians and hospitals were aligned in the goal to decrease boarding admitted patients in the ED when in fact hospitals may have a perverse financial incentive to divert inpatient beds for patients undergoing elective procedures.[23] Increased public pressure on hospitals, The Joint Commission, governors and legislators demonstrates that boarding is an unacceptable practice.

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REFERENCES

1. Nawar EW, Niska RW, Xu J. National Hospital Ambulatory Medical Care Survey: 2005 emergency department summary. *Adv Data*. 2007; 386:1-32.
2. US Government Accounting Office. Hospital emergency departments: crowding continues to occur, and some patients wait longer than recommended time frames. *GAO-09-347*. April 2009. Available at: http://www.gao.gov/new.items/d09347.pdf. Accessed August 6, 2009.
3. Weissman JS, Rothschild JM, Bendavid E, et al. Hospital workload and adverse events. *Med Care*. 2007; 45:448-55.
4. Richardson DB. Increase in patient mortality at 10 days associated with emergency department overcrowding. *Med J Aust*. 2006; 184:213-6.
5. Sprivulis PC, Da Silva JA, Jacobs IG, et al. The association between hospital overcrowding and mortality among patients admitted via Western Australian emergency departments. *Med J Aust*. 2006; 184:208-12.
6. Pines JM, Pollack CV Jr, Diercks DB, et al. The association between emergency department crowding and adverse cardiovascular outcomes in patients with chest pain. *Acad Emerg Med*. 2009; 16:617-25.
7. Fee C, Weber EJ, Maak CA, et al. Effect of emergency department crowding on time to antibiotics in patients admitted with community-acquired pneumonia. *Ann Emerg Med*. 2007; 50:501-9,509e.1.
8. Pines JM, Hollander JE. Emergency department crowding is associated with poor care for patients with severe pain. *Ann Emerg Med*. 2008; 51:1-5.
9. Pines JM, Localio AR, Hollander JE, et al. The impact of emergency department crowding measures on time to antibiotics for patients with community-acquired pneumonia. *Ann Emerg Med*. 2007; 50:510-16.
10. Chalfin DB, Trzeciak S, Likourezos A, et al. Impact of delayed transfer of critically ill patients from the emergency department to the intensive care unit. *Crit Care Med*. 2007; 35:1477-83.
11. Hoot NR, Aronsky D. Systematic review of emergency department crowding: causes, effects, and solutions. *Ann Emerg Med*. 2008; 52:126-136.
12. Khare RK, Powell ES, Reinhardt G, et al. Adding more beds to the emergency department or reducing admitted patient boarding times: which has a more significant influence on emergency department congestion? *Ann Emerg Med*. 2009; 53:575-85.
13. Newton MF, Keirns CC, Cunningham R, et al. Uninsured adults presenting to US emergency departments: assumptions vs data. *JAMA*. 2008; 300:1914-24.

14. California HealthCare Foundation. Is California's Hospital-Based ED System Eroding? July 2009. Available at: http://www.chcf.org/documents/hospitals/EDSystemCapacityDemand.pdf. Accessed August 6, 2009.
15. Gregor A. Hospitals merge design and building to cut costs. *New York Times*. April 15, 2009:B7.
16. Garson C, Hollander JE, Rhodes KV, et al. Emergency department patient preferences for boarding locations when hospitals are at full capacity. *Ann Emerg Med*. 2008; 51:9-12,12 e.11-13.
17. Walsh P, Cortez V, Bhakta H. Patients would prefer ward to emergency department boarding while awaiting an inpatient bed. *J Emerg Med*. 2008; 34:221-6.
18. Celentano C. LAC+USC Medical Center surge plan. July 10, 2008. Available at: http://www.calacep.org/pdfs/surgeplan_2008.pdf. Accessed August 6, 2009.
19. ACEP Task Force on Boarding. Emergency department crowding: high-impact solutions". April 2008. Available at: http://www.acep.org/workarea/downloadasset.aspx?id=37960. Accessed August 6, 2009.
20. Meisel Z and Pines JM. Weaiting doom: how hospitals are killing ER patients. *Slate*. 2008.
21. DeLia D and Cantor J. Emergency department utilization and capacity. July 2009. Available at: http://www.rwjf.org/files/research/072109policysynthesis17.emergencyutilization.pdf. Accessed August 6, 2009.
22. Lieu, California Legislature. Assembly Bill No. 911. February 26, 2009. Available at: http://leginfo.ca.gov/cgi-bin/postquery?bill_number=ab_911&sess=CUR&house=B&author=lieu. Accessed August 6, 2009.
23. Schwarzenegger A. Bill nubmer: AB 911, vetoed. Letter to the members of the California State Assembly. October 12, 2009. Available at: http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0901-0950/ab_911_vt_20091012.html. Accessed November 16, 2009.