

patients in many ways—from the ultimate delay that may result in an inadvertent patient death to a delay that causes added discomfort or anxiety for patients and their families. ED physicians and nurses are just as frustrated by delays in care as patients are and certainly want the delays to be addressed sooner rather than later and in an appropriate manner. Yet they may also have limited ability to mitigate the downstream bottlenecks that could be directly or indirectly contributing to care delays.

Boarders and ED Diversion

Delays in transferring patients to an inpatient unit from the ED, a postanesthesia care unit (PACU), an outpatient cardiac catheterization laboratory or radiology procedure, or an observation unit frequently present challenging situations to the staff and unsatisfactory experiences for the patients. If delays in moving patients into an inpatient bed are significant, patients are held in these areas as boarders. The situation of temporarily holding or boarding a patient in an area until an appropriate bed is available creates concerns for patients, families, and staff. ED diversion, when hospitals determine that their EDs can no longer accept ambulance patients for a designated amount of time because of overcrowding, is often associated with the boarding of patients. Figure 1-4 (below) demonstrates the LOS for each patient boarded in one acute care ED during a one-month time frame.

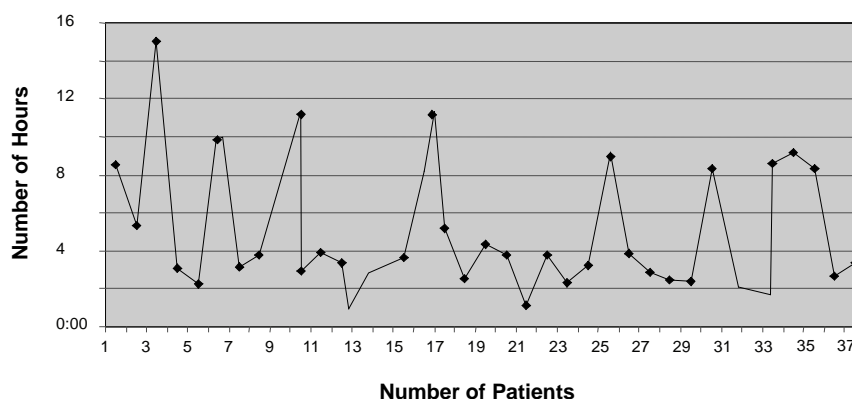
The boarding of patients can potentially lead to quality of care and safety issues, breeches in standards of care, treatment delays, privacy concerns, and errors for the patients being boarded and for the other patients also being served in crowded or suboptimal

settings. In view of the safety concerns associated with a crowded ED, some hospitals have determined that boarding patients in hallways of inpatient units is preferable to boarding patients in the ED. The rationale for this decision is that sending patients to an inpatient unit is preferred because caring for one patient in a less-than-ideal setting (a hallway) is less risky than caring for numerous boarded patients in an already overcrowded and extremely busy ED. For example, 540-bed Stony Brook University Hospital, which has instituted hallway boarding, has found that the vast majority of patients prefer to wait for a bed on the inpatient unit rather than in the ED.¹⁴

Boarded ED patients may increase ED nurse-to-patient staffing ratios considerably, whereas placing a single patient in a hallway for one nurse to care for on an inpatient care unit may not significantly increase the nurse-to-patient ratio. The pros and cons of boarding patients in hallways have been much debated, and organizations are making what they consider to be the best decisions as these situations arise. Yet boarders, whether in the ED or in hallways, are still a considerable source of frustration for caregivers and administrators, and they generate concerns regarding patient safety.

Another decision that comes into play when ED overcrowding and boarding occur is whether to invoke diversion status when the ED can no longer accept ambulance arrivals because of very high utilization or overcrowded conditions in the ED and/or inpatient areas. Interestingly, as Eugene Litvak and colleagues have demonstrated, boarding is likely to be more rather than less prevalent when the ED is on diversion status. In comparing the average number of boarders in the ED during nondiversion and diversion

Figure 1-4. Length of Stay (Hours) for Patients Boarded in an Emergency Department (ED)



The length of stay, shown in the y axis, for 38 patients (x axis) boarded in one acute care ED during a one-month time frame is shown. Used with permission.

hours, they found that across two hospitals, EDs in nondiversion averaged 4.03 patient boarders per hour, while EDs in diversion averaged 7.16 patient boarders per hour, a 78% increase.¹⁵ Not surprisingly, this tells us that during diversion hours, about one-third of ED bed capacity was taken up by boarded patients. Furthermore, as shown in Figure 1-5 (right), as the number of patients boarding in the ED increases, so does diversion. Litvak et al. suggest that boarders may be the most significant contributing factor to ED diversion.¹⁵

Nurse leaders of inpatient PACUs and surgical departments report in personal conversations an increase in boarding of postoperative surgical patients in the PACU for a few hours to overnight. Many organizations attribute PACU boarders to high surgical volumes and to the inability to transfer patients to appropriate units because inpatient beds are not available when needed. Lack of availability of critical care beds for postoperative patients creates a significant change in PACU work flow and increases the risk to boarder patients.

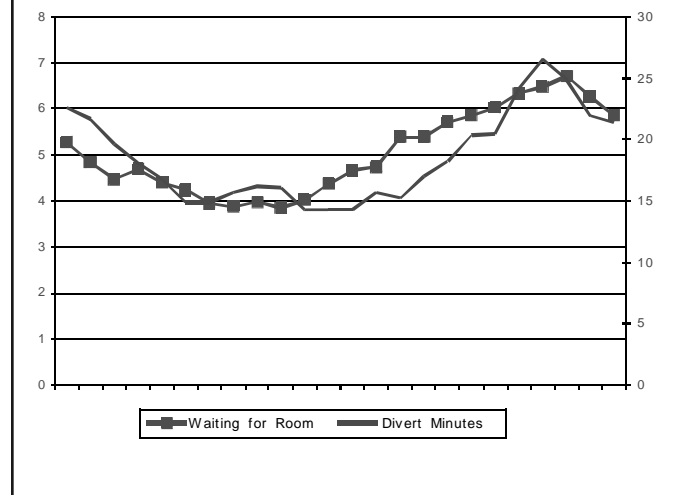
Patient diversions, both internal and external, as well as boarding of patients create stress in hospital systems. As in the ED, boarding patients in a PACU generates concerns related to staffing, resource consumption, added costs, and, of course, patient, staff and physician satisfaction. Rendering care to patients in a less-than-ideal setting by boarding them is not the preferred or chosen manner in which to deliver services, but boarding in PACUs, EDs, and hallways may continue to occur as long as census peaks and valleys and the causative factors of patient flow variability are tolerated and not fully addressed.

Left Without Being Seen

Patients who present to the ED expect to be seen and treated by a health care professional expeditiously. In an ED boarding situation, the majority of patients who are boarded choose to remain in the hospital and tolerate the boarding until a bed becomes available. On the other hand, waiting ED patients, not having received care in a time frame acceptable to them, may tire of further waiting for care and then leave the ED before receiving treatment. These patients are categorized as LWBS.

The quality and safety implications for LWBS can range from patient dissatisfaction and deterioration in the patients' condition to delays in care or care that is never provided to patients in need. Hospital administrators find this to be a particularly disturbing occurrence from a quality and safety perspective and also realize the possible revenue and legal implications, including possible violation of the patient anti-dumping statute.¹⁶

Figure 1-5. Hospital A: Emergency Department (ED) Diversion Versus Patients Waiting for Inpatient Beds



As the number of patients boarding in the ED increased, so did diversion.

Source: Litvak E., McManus M.L., Cooper A.: A Root Cause Analysis of Emergency Department Crowding and Ambulance Diversion in Massachusetts. Boston University Program for the Management of Variability in Health Care Delivery, Report to the Massachusetts Department of Public Health, Oct. 2002. http://www.mass.gov/Eoohs2/docs/dph/quality/healthcare/ad_emergency_dept_analysis.doc.

Like diversion and boarding, LWBS occurrences may reflect ED overcrowding. According to one survey, 2% of patients leave the ED without being seen by a health care provider.¹⁷ According to a U.S. General Accountability Office report (2003), LWBS ranges from 3% to 5%.¹⁸ Figure 1-6 (page 11) shows one hospital's monthly LWBS data, representing an average of 4.3% for this hospital.

Most acute care EDs have some experience with the LWBS population. According to an ED spokesperson at one hospital, "overcrowding, long waits, and frustrated staff and patients had become commonplace." That hospital's LWBS rate was about 3%—at the low end of LWBS range compared to the example above—but still sufficient to be of concern to administrators. David Kish has said the following about the LWBS population:

It is tempting to say, and I've heard comments such as "If they left without being seen, they couldn't have been that sick." In reality, many patients who leave without being seen are sick. Patients come to the emergency room because they feel that they have no other recourse or they aren't sure of the severity of their illness. That is why we are there as health professionals. Furthermore, from a financial standpoint, the lost revenue from LWBS patients can be significant.¹³

In addition to the quality and safety issues associated with