EMERGENCY NURSES ASSOCIATION
SAFE PRACTICE, SAFE CARE

Position Statement

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Crowding, Boarding, and Patient Throughput

Description

An emergency department (ED) is "crowded" when the need for services exceeds the department's available resources for timely patient care.[1] ED crowding is a major problem worldwide and has been associated with a variety of deleterious patient care and outcomes, including increased patient mortality, increased rates of medical errors, increased numbers of delayed or missed orders, increased total length of stay, decreased door-to-imaging times for stroke patients, poorer outcomes for chest pain patients, increased times to surgery, analgesia, antibiotics, and critical severe sepsis therapies, decreased patient satisfaction, and increased rates of patients leaving without being seen.[2-10,85] Crowding has also been implicated in increased nursing workload, burnout, and staff turnover.[11-14] The impact of a crowded ED extends to the Emergency Medical Services (EMS) system as a whole, increasing ambulance diversion (i.e., when an ED closes to ambulance traffic) and patient offload time (i.e., the time that EMTs and paramedics spend waiting for an ED bed to open so that they can return to service).[15]

"Boarding" is a major cause of ED crowding.[16] Boarded patients are those who have been admitted to an inpatient unit in the hospital but continue to wait in the ED for a bed to become available. (This bottleneck is often referred to as "access block" in European and Australasian literature.)[16-20] Boarding, which is caused by a hospital operating close to capacity and hospital-wide inefficiencies,[21,30] is associated with increased patient mortality and has been shown to extend a patient's total length of stay rather than being incorporated into it.[18,19,21-26] Boarded patients ultimately go to inpatient units staffed by nurses who are specifically trained to treat their condition, but as long as they are boarded in the ED they are cared for by nurses who are specialists in emergency nursing, who have not been trained in all of the protocols and procedures of all of the different specialty units. For the more critical patients this often means that while they are boarded in the ED their nurse has more patients to care for and less access to specialized equipment than will their nurse on the unit.

Another consistent cause of ED crowding in many hospitals is a lack of psychiatric resources that can facilitate the timely disposition of behavioral health patients who present to the ED for care. Up-to-date nationwide data were unavailable at the time of this writing, but in 2007 these patients composed 12.5% of U.S. ED visits (up from 5.4% in 2000), and studies in 2012 found that they spent almost three times longer in the ED than non-psychiatric patients.[27-29]

Although boarding is caused by hospital-level problems, it must be noted that EDs have partial or complete control over some aspects of ED throughput (e.g., door-to-provider times, total length of stay for discharged patients, etc.).[84] Although studies have shown that the presence of boarded patients decreases ED-specific throughput efficiency, they have also shown that many EDs are not implementing viable solutions to correct the problems that are within their control.[31,87] If crowding and boarding are to be mitigated, the problems must be identified and addressed at both the ED and the hospital level.

Unfortunately, there is no one set of solutions to crowding and boarding problems. The degree to which a given hospital experiences crowding or boarding, and the range of solutions available to it, are determined by its location, academic affiliation or lack thereof, certifications (e.g., stroke, cardiac, trauma, etc.), size, demographics

of the surrounding community that influence mean patient acuity, availability of psychiatric resources, engagement of leadership, and many other factors.[31-37,81] As a result, before any solution can be implemented, the particular problems that contribute to that specific ED's and hospital's throughput must be identified using quality data, and those problems must drive the solutions.[83]

ENA Position

It is the position of the Emergency Nurses Association that:

1. Deleterious patient outcomes, including but not limited to increased rates of mortality and increased nursing workload and burnout, have been associated with ED crowding and the boarding of admitted patients in the ED.

2. Data are key to both understanding and conveying the factors that cause ED crowding and boarding. Measurement using rigorous metrics and communicating these data to all stakeholders is necessary to identify and address clinical process variations and to evaluate process improvements.

3. There is no single solution to ED crowding or boarding that will work for all hospitals. Data-driven problem identification must be the first step that precedes the implementation of solutions that are specific to the demographics and resources of the ED and hospital.

4. Boarding admitted patients in the ED is a hospital-level administrative problem that requires hospital-level solutions. It cannot be effectively addressed without attention and continuous support from hospital administrators and non-emergency nurses, staff, and physicians.

5. Interdisciplinary teams that include nurse representatives from all departments affected by potential solution strategies be formed to drive quality improvement processes that address hospital-wide patient flow.

6. EDs can also establish permanent teams to identify and solve problems that are within their full or partial control using quality improvement and process improvement approaches.

7. Hospitals and healthcare systems advocate for initiatives that decrease the boarding time of and provide optimal care to psychiatric patients in the ED.

Background

Both crowding and boarding are daily problems in EDs worldwide.[38-45] As of the time of this writing, most publicly accessible U.S. data on ED visits dated to 2011-2013; nevertheless, it is clear that the rate of ED visits over the past 15 years has outpaced population growth in the U.S., increasing at double the expected rate between 1997 and 2007, and continued to grow through 2011.[46-48,81] By law EDs must provide care to all patients regardless of citizenship, legal status, or ability to pay;[52-54] as a result, EDs routinely treat the non-emergent and

primary care needs of those who cannot access a primary care provider.[55-56] It is estimated that Emergency departments provided more than 47% of all hospital-associated healthcare in the United States between 1996-2010.[95] Coupled with an increased closure of EDs nationwide, this situation has created a substantial mismatch between the need for emergency services and the available resources to provide that care.[49-50]

Patient flow in both the ED and the hospital as a whole can be conceptualized in terms of intake, throughput, and outflow.[57] The throughput and outflow rates of patients who are ultimately discharged from the ED is largely controlled by the ED itself, while the throughput and outflow rates of patients who are admitted to the hospital is entirely dependent on the *hospital's* throughput rate. When either the ED's or the hospital's outflow becomes clogged, the ED becomes crowded and its patients experience the negative outcomes listed above.

Patients with behavioral health problems contribute substantially to ED crowding in many hospitals.[28,58] The etiology of this problem is complex, but in the U.S., it is due in part to vastly decreased numbers of psychiatric beds across the country. In 1955 there were 558,922 patients in psychiatric hospitals,[59] but between 1970 and 2002 the total number of mental health beds – including hospital inpatient and residential treatment – decreased by more than 50% (from 524,878 to 211,199) and the number of state and county mental health beds decreased by 86% (from 413,066 to 57,263).[60] Meanwhile, the nation's population increased by more than 85,000,000 (a 42% increase).[61,62] ED visits by behavioral health patients increased 75% between 1992 and 2003,[63] and by 2007 one in eight ED visits was for mental health or substance abuse, accounting for nearly 12 million ED visits per year.[27] Various studies of population sub-groups have found that these patients are boarded in the ED on average from between 4.4 and 34 hours in the U.S.,[28,64-66] while anecdotal evidence indicates that some of these patients are boarded in the ED for days.[82] These extended lengths of stay can substantially contribute to ED crowding.

Rigorous metrics are fundamental to identifying and addressing clinical process problems with intake, throughput, and outflow, and to evaluating process improvements. Sharing the results of departmental and multi-unit initiatives through any means possible helps to support a culture of change and improvement. Some of the metrics that the Centers for Medicare & Medicaid Services requires (namely, the "Timely and Effective Care" category of data) can be used for this purpose.[80] Once problem areas have been identified, solutions can be implemented. It is important to note, however, that solutions for decreasing boarding nearly always require improving patient flow throughout the hospital, rather than within an isolated unit, and necessitate a systems-level understanding of variations of capacity, demand, and the specific consequences of misalignment of these variables.[67] Nurses can initiate and drive hospital-wide change to mitigate ED crowding and boarding, but buy-in from hospital administrators who are committed to solving the problem is requisite.[67,93]

Many hospitals and EDs have found process improvement teams that employ methodologies like Lean and Six Sigma® to be extremely helpful in identifying problems and generating viable solutions.[71-79,89-91,94] There are numerous evidence-based solutions for problems of patient flow. Information about many of them can be obtained online from organizations such as Agency for Healthcare Research & Quality (AHRQ),[68] the Institute of Healthcare Improvement (IHI),[67] Urgent Matters,[69] ACEP,[92] and ENA.[70,88] In addition, those willing to invest some time to search databases like PubMed (www.pubmed.gov) or other internet search engines with targeted keywords will be able to find research on approaches that best fit the particular problem that they want to solve.

Every ED, hospital, county, and region presents a different set of variables that contribute to ED crowding and boarding.[86] There is no one-size-fits-all solution, and all solutions must be data-driven and problem-oriented in order to be successful.

Resources

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