ACEP TASK FORCE REPORT ON BOARDING

Emergency Department Crowding: High-Impact Solutions

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Emergency Department Crowding: High-Impact Solutions

The American College of Emergency Physicians (ACEP) in August 2007 established a task force to develop three to five low-cost or no-cost solutions to the practice of "boarding," or holding, patients admitted to the hospital in the emergency department, which is the primary cause of overcrowding. The task force was charged with proposing solutions to address the growing crisis that is harming the public's access to lifesaving emergency care. For the purposes of this report, a boarded patient is defined as a patient who remains in the emergency department after the decision to admit him or her to the hospital has been made.

OVERVIEW

Many emergency departments in America are critically overcrowded and unable to respond to day-to-day emergencies, let alone disasters and acts of terrorism. Crowding is a crisis that results from the practice of "boarding," or holding, emergency patients who have been admitted to the hospital in the emergency department. Crowding occurs when no inpatient beds are available in the hospital, not because of too many patients with nonurgent medical conditions seeking emergency care. The practice of boarding endangers patients and results in delays in care and ambulance diversion.

When emergency patients are boarded, they lie on gurneys or sit on chairs in the emergency department, often filling every available space, including the hallways. This has a significant negative effect on patient safety, comfort and satisfaction, as well as ties up resources, rendering emergency staff unable to care for additional patients from the waiting room or from an ambulance. These boarded patients wait, sometimes for days, for inpatient beds in a chaotic and unpredictable environment where children may witness a resuscitation or an elderly woman might witness a psychiatric emergency. When ambulances are diverted, critically ill patients must travel farther for care, which delays their treatment, when seconds count.

Emergency department crowding is an institutional problem that goes well beyond the emergency department. Only when all stakeholders agree that the problem is systemic and hospital-wide, can solutions be implemented that will improve patient flow from triage to discharge and protect everyone's access to emergency care.

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To begin to solve the problem, "boarding" must at a minimum be spread throughout the hospital by moving patients out of the emergency department as soon as they are admitted. This will provide a decompression valve to help alleviate the bottleneck caused by emergency patients waiting for inpatient beds. In addition, the health care industry must realign its operations to meet patients' needs. Hospital resources must be available seven days a week in sufficient quantity. Surgical procedures and other activities, such as radiological services and physical therapy, should be scheduled so that these services are available seven days a week, thus eliminating the backlogs of emergency patients and ensuring continuity of care

High-Impact Solutions

The following solutions would have significant impact on reducing boarding and improving the flow of patients through emergency departments:

- **Move emergency patients who have been admitted to the hospital out of the emergency department to inpatient areas, such as hallways, conference rooms and solaria** (see Full Capacity Protocol at www.hospitalovercrowding.com). If each hospital unit would care for a small number of additional patients, the burden of boarding would be more evenly spread across the hospital, thus freeing the emergency department to function effectively, without unduly stressing the inpatient units.
- **Coordinate the discharge of hospital patients before 12 noon. Research shows that timely discharge of patients can significantly improve the flow of patients through the emergency departments by making more inpatient beds available to emergency patients.** However, the discharge process has grown in complexity, and discharging patients by 12 noon will require leadership and a change in culture and process that needs to involve physicians, nurses and staff from ambulances, nursing homes, social work, care management, pharmacy, radiology, lab and housekeeping.
- **Coordinate the scheduling of elective patients and surgical patients.** Studies demonstrate the uneven influx of elective surgical patients (heaviest early in the week) is a prime contributor to hospitals exceeding their capacity.

Additional Solutions

Improving the flow of patients through emergency departments can save time, but often adds significant costs. Methods of improving flow, such as using scribes, adding nurses and support personnel, improving turnaround time for lab and X-ray (including the use of point of care testing), establishing electronic records, installing registration kiosks and allowing nurses to order tests at triage (advance triage) may decrease triage to discharge time. However, the costs to implement these procedures often exceed the amount of savings they generate.

The following are additional solutions that would improve the flow of emergency patients, along with the pros and cons of each:

- **Bedside Registration.** Registering patients at the bedside or eliminating triage altogether (by placing patients directly in beds) can decrease wait times from triage to emergency bed and provide a small savings in time, depending on the time currently devoted to this process. However, more personnel typically are required, and eliminating triage is possible only if empty beds exist.
- **Fast Track Units.** Triaging patients with nonurgent medical conditions to a separate area of the emergency department for care, a practice known as "fast-tracking," often requires more personnel, but also gives staff the ability to more quickly handle low-acuity patients. However, further partitioning the emergency department into separate units may not be helpful and also will create silos and obstacles to patient flow.
- **Observation Units.** Hospitals that have added observation areas have reduced crowding, but not without significant construction and personnel costs.
- **Physician Triage.** Involving a physician in the triage process is a costly way to discharge low-acuity patients quickly, which depending on the number of low-acuity patients, may be helpful. However, referring patients away from the emergency department will require adequate options for such referrals.
- **Cancelling elective surgeries.** This practice can greatly reduce the demand for inpatient beds, but the lost revenue is not usually offset by the care of additional emergency patients.

Solutions That Are Not Effective

Some hospitals have expanded their emergency departments as a means of increasing their capacity to care for patients. However, this does not solve overcrowding. With less pressure on the system, the hospital may simply expand into the additional space, increasing rather than decreasing the number of admitted patients who are boarded. A more effective solution would be to add an observation area.

In addition, having specified areas for discharged patients on inpatient floors tends not to be used by the inpatient nurses except when the full capacity protocol places stress on their parts of the system.

Some hospitals have employed the used of hospitalists to coordinate patient care. Using hospital-based physicians, such as hospitalists and intensivists, has been shown to decrease hospital lengths of stay, but not emergency department waiting times.

Finally, while ambulance diversion does effectively notify the hospital and staff of the crisis in the emergency department, ambulances often continue to arrive. It is likely that a crowded waiting room 'diverts' more ambulatory patients than "going on diversion" diverts ambulances.

The Impact of Emergency Department Overcrowding on Patient Care and Survival

The news media have given great attention to the crowding "crisis" in emergency departments, as if this were a recent development. However, as far back as 1987, after sustained and unsolvable problems with crowding, the first statewide conference on crowding was held in New York City, involving the New York chapter of ACEP, Emergency Medical Services, the New York State Department of Health and legislators. At that time, the issue was clearly delineated, but no clear solutions were forthcoming. Since then, hospital and emergency department overcrowding have had cyclical media attention, albeit with very little done to "fix" the problem.

How did emergency departments get so overcrowded?

Hospitals in the 1960s were, in large part, places for elective admissions of patients (or scheduled surgeries), with only a small percentage of patients being unscheduled, or "emergent" (seeking care for medical emergencies). Hospitals also typically had substantial capacity to allow for system-wide inefficiencies. During this time, hospitals operated primarily as 9 to 5, Monday through Friday businesses, with skeleton crews on evenings, nights and weekends.

Fast-forward to 2008, where dramatic changes have occurred in the health care system. The number of emergency visits has climbed dramatically, and the majority of emergency visits and hospital admissions are unscheduled, and the majority of hospital admissions are unscheduled. The patient population also is much sicker. At the same time, the route of entry into the hospital has shifted, with the majority of patients entering through the emergency department, and with most coming in the afternoons and evenings.

Yet despite this significant shift, hospitals have not adapted to the changes and continue to function as 9 to 5, Monday through Friday, institutions, with skeleton crews on evenings, nights and weekends. This has resulted in a mismatch of resources versus needs, generating serious lack of capacity issues, which perhaps explains in part why higher death rates for strokes and heart attacks occur among patients admitted on weekends versus weekdays.

In addition, contrary to the conventional wisdom that emergency patient volume is highly unpredictable, the number of admissions per day now can be predicted with remarkable accuracy. However, hospitals still do not anticipate and prepare for the next day's volume and admission through the emergency department.

So how does the institutional structure create capacity issues by design? A classic example is in the coordination of surgical procedures, which are not scheduled smoothly throughout the week, but rather are front-loaded on Mondays through Wednesdays.

Why? Often because of critical follow-up care demands. For example, an orthopedist knows that a patient undergoing hip replacement is critically dependent upon physical therapy in the days immediately following surgery, to prevent life-threatening postoperative complications and to optimize recovery of functional capacity. So if the hospital's physical therapy staff is small or nonexistent on weekends, the orthopedist has little choice but to schedule as much surgery as possible at the beginning of the week.

How can this problem be solved? Simply by expanding capacity beyond the 9 to 5 weekday schedule. As proof in point, when an institution in Massachusetts, which had struggled with capacity issues for years, changed to a smooth surgical schedule, their capacity issues disappeared.

Overcrowded Emergency Departments

As part of the problem-solving process, it is important to distinguish what crowding means in the emergency department versus the inpatient units of most hospitals. Inpatient units, when their normal patient beds are full, are considered "full" and thus not "capable" of taking more patients. Emergency departments are considered "full" when all their rooms are full; all their hallway stretchers are full; and all their chairs are full. Thus, there is a striking contrast between the emergency department and the inpatient units in their respective views of what constitutes "at capacity," or being crowded.

Four Questions

The answers to four questions will provide insight into the causes of and solutions to crowding.

(1) Emergency Department Crowding: What Is It? Various studies have developed definitions of crowding, but in its simplest form, it exists when there is no space left to meet the timely needs of the next patient who needs emergency care. If the care

of urgent problems is delayed due to congestion, then crowding exists.

(2) What Causes Crowding? Recently, there has been greater understanding of why boarding is the primary cause of overcrowding — the practice of holding admitted patients in the emergency department when there is no "proper" space within the institution to send these admitted patients to. Over the years, the reasons for crowding have included seasonal illnesses and visits by the poor and uninsured who have nowhere else to turn except the "safety net," provided by emergency departments. This latter trend has resulted from the Emergency Medical Treatment and Labor Act (EMTALA), which requires hospital emergency departments to medically screen and stabilize all patients with medical emergencies, regardless of their ability to pay.

Much of the research about "unnecessary" visits was published in the 1980s and early 1990s and consisted of retrospective reviews of the final diagnoses of emergency patients, not their symptoms. Once the diagnoses were known, researchers concluded the visits did not constitute emergencies and were unnecessary. Based on this research , there was a growing sense that many emergency patients were seeking emergency care frivolously, giving rise to attempts to restrict visits, increase co-pays, institute phone screening prior to visit, and other interventions.

However, many people experience the symptoms of a medical emergency, but after a medical examination and diagnostic testing, it is determined they do not have medical emergencies. These visits should not be classified as unnecessary. Just as a "spot" on the lung may mean nothing or may mean a malignancy, a child with a fever may have a simple cold or have severe sepsis or meningitis. A "simple sore throat" may be viral, or it may represent impending airway obstruction from epiglottitis – what the patient experiences is the same: a sore throat.

During the 1990s, the American College of Emergency Physicians began to advocate for a national "prudent layperson standard," which bases health care coverage on a patient's symptoms, not his or her final diagnosis, since the general public should not be expected to self-diagnose their medical conditions. In a study by Franacek (1983), patients were asked at triage to assess whether their problem was critical, urgent or routine. Of the patients who the physician determined to be critical, 25 percent believed their problem was routine. Other studies have shown that barriers to care (phone screening, increasing co-pays, etc.) affect those with real emergencies as much as those with more minor problems.

The critical question to ask regarding "unnecessary" visits is "Do nonemergent patients interfere with the care of urgent patients?" Recent studies closely examine the effect of nonemergent patients on the care of critically ill patients and concluded the impact essentially is nonexistent.

How do EMTALA, the poor and the safety net role of emergency departments contribute to crowding? EMTALA requires patients to be medically evaluated, and if there is a medical emergency, to provide whatever treatment is required to stabilize them, regardless of their ability to pay. Thus EMTALA concerns, as well as issues related to the poor and the uninsured, are issues of finance, not crowding. No evidence supports or refutes the effects of these issues on crowding, other than the well-documented increase in serious medical problems in patients having no health insurance.

Do seasonal variations contribute to crowding? More patients do seek emergency care during a flu epidemic. However, this is a problem that is layered on top of a chronic, day-to-day, month-to-month issue with crowding. Crowding is a year-round phenomenon, not a transient problem caused by seasonal variation.

> The clearest cause of crowding is the boarding of admitted patients.

A number of recent studies show a direct and strong correlation between the number of admitted patients being boarded in the emergency department and crowding, making it clear beyond question that this is the number one cause of overcrowding. In short, it is not the emergency department that is causing the crowding. It is the hospital that is unable to accommodate more inpatients.

(3) What are the Consequences of Crowding?

A wealth of research demonstrates the severe consequences of emergency department crowding on patients and physicians. Among the findings are:

- **Sick people wait too long to receive emergency care.** The Centers for Disease Control and Prevention found, for patients judged by the triage nurse to be critical, more than 10 percent waited more than an hour to see a physiciani in the emergency department. This is a critical problem, because many illnesses are time dependent, and early intervention gives rise to better outcomes. Late diagnoses may be too late,

with permanent consequences of disability or death.[2] Waiting times can be reduced by reducing access block.[3]

- Another study examined the complication rate of patients with acute coronary syndrome and found a significant increase in serious complications (approximately 6 percent versus 3 percent incidence of death, cardiac arrest, heart failure, late MI, VTach or VFib, SVT, bradycardia, stroke, or hypotension) in patients seeking emergency care during times of crowding.[4]
- **Boarding increases the total length of stay in the hospital, further worsening access to emergency care.** Several studies document a total hospital length of stay to be a full day longer among patents boarded in the emergency department versus patients with similar illnesses promptly placed in the inpatient units.[5, 6, 7]
- **Boarding increases walkouts**. The longer people wait, the more people will leave prior to care.[8] Unfortunately, the percentage of patients with serious illness differs little between patients who left and those who awaited care. A number of these walkouts subsequently require admission.[9]
- **Overcrowding increases medical errors.** A number of articles document the increase in medical errors associated with boarding and crowding.[10] Many of these are errors of omission, and not commission, since the emergency staff must simultaneously care for inpatients and focus on the new emergencies coming in the door.[11] According to The Joint Commission, 50 percent of sentinel events causing serious injury or death occur in the emergency department, and approximately a third of these are related to crowding.[12]
- **Overcrowding causes deaths.** The emergency medicine community has long been aware of the dangers of crowding and delays in care. Several recent studies, looking at large databases that compare mortality rates in patients seeking emergency care during times of crowding versus times of no crowding, conclude that the rate of death is higher during times of crowding. This effect (hazard ratio for death of approximately 1.3)[14, 15] offers a target larger than those of other initiatives given great importance, such as the administration of antibiotics for pneumonia patients within 4 hours, which now is a performance measure by which hospitals are paid. Compliance with this initiative is estimated to reduce the number per 100 who would have died to 93. Crowding studies estimate that deaths would be reduced from 100 to a range estimated between 75 and 83. These are substantial numbers and apply to a very large population. As such, crowding appears be a far more important issue to resolve.
- Chalfin and colleagues (2007) looked at outcomes for intensive care unit (ICU) patients subjected to a delay of >6 hours in transfer to an ICU, and found increased hospital length of stay (7 versus 6 days) and higher mortality rates (10.7 percent versus 8.4 percent) for these patients.[16]
- **Crowding causes ambulance diversion.** According to the CDC, approximately 50 percent of emergency departments experience crowding, and one-third of U.S. hospitals have experienced ambulance diversion.[17] Ninety percent of emergency department directors report crowding as a recurrent problem,[18] and other studies have reported ambulance diversion in up to 50 percent of emergency departments.[19] Such crowding and diversion have raised an alarm regarding the ability of the health care system to respond to catastrophe.[20]
- Interestingly, there is scant evidence that ambulance diversion actually works,[21] although evidence exists for delayed care in the face of ambulance diversion.[22] In this regard, study author Nicholl demonstrated an increased mortality rate with prolonged transport times.[23]
- What is clear is that ambulance diversion is driven by the boarding of admitted patients, and not otherwise related to issues of staffing or space within the emergency department itself.[24]
- **Boarding of inpatients interferes with the patient centered care model.** Many hospitals are adopting patient centered care where continuity teams care for the patient during their stay. Intuitively, if patients spend a portion of their stay in the emergency department, rather than on an appropriate floor, continuity is impossible.
- **Crowding increases medical negligence claims, which increases health care costs for everyone.** The frequency of medical liability lawsuits filed against emergency physicians is increased by a factor of five, simply based on whether the patient waited more than, rather than less than, 30 minutes to be seen by the physician.

Most importantly, patient care is worsened by boarding and the following evidence-based research demonstrates that boarding results in the following:

- Delays in care
- Ambulance diversion
- Increases hospital lengths of stay
- Medical errors
- Increases patient mortality
- Financial losses to hospital and physician
- Medical negligence claims

(4) What Can Be Done To Reduce Crowding?

This section is divided into actions and processes to solve overcrowding within and beyond the emergency department. Because crowding is a hospital problem, the greatest gains will occur by working on flows within the hospital. Improving flow through the emergency department can save small amounts of time, but often adds significant cost. That being said, emergency department processes can be improved, but are likely to have little effect on crowding unless matched with successful inpatient flow initiatives.

Internal Emergency Department Actions and Processes That Will Improve Access and Flow

- **Bedside registration** is a fundamental concept of process improvement, which seeks to streamline and increase efficiency wherever possible. Many emergency departments will triage, then register, and finally place patients in a bed. Virtually all emergency patients have some waiting time during which they could be registered at the bedside, eliminating the need to wait in line to register. In adopting bedside registration, there will be a need for patients to have a "quick reg," i.e., a basic, quick set of identifiers to register them into the hospital's computer system. The complete registration can then accomplished at the bedside.
- **Limit triage to what is crucial and bypass triage altogether when beds are available.** Many emergency departments have a triage process that applies to all patients, regardless of severity. As a result, a line forms at triage, defeating the very purpose of triage, which is to sort out rapidly which patient needs what and where. Some examples of ways to streamline triage:
  — Patients who look well, with obvious low-risk problems, such as sprains and lacerations, should be sent directly to the area where they will receive care (e.g., a fast track area) without delaying triage by obtaining vital signs and/or other information that rarely results in a change at triage. Patients who appear critical should be sent directly to the appropriate area without delay. Thus, triage can focus more time on those patients who require more evaluation and judgment to determine the severity of their medical conditions.
  — If emergency beds are available, allow the patient to bypass triage and go directly to the waiting bed. When there are staff and space to see new patients, there is no value added in delaying care at triage.
- **Develop a "fast track" for treating simple fractures, lacerations, sore throats, etc.** Removing patients who can be "fast tracked" from the mainstream of patients helps to open space and allow resources to be directed toward sicker patients, facilitating the care of all patients. Fast track areas should be staffed consistently and appropriately.
- **Minimize silos within the department.** Although the value of "fast tracks" is well established, subdividing the emergency department can create obstacles to flow. As much as possible, maximize the use of space and increase the flow of patients by using beds for all purposes.
- **Expand the practice of observation medicine.** Particularly in the face of capacity limitations driven by the boarding of admitted patients, treatment of patients who could possibly avoid admission via extended observation, diagnosis and treatment in the emergency department will help decrease capacity needs. One area of great potential for emergency physicians is the establishment of advanced chest pain protocols to improve the diagnostic process for those patients with higher risk, and to discharge patients with minimal risk. Note that the practice of observation medicine or establishment of protocols to rule out acute coronary syndrome (ACS) protocols in the emergency department does not require that a particular space be sequestered for such a practice, although that may be ideal. Overall, the greater the capacity issue, the more the emergency department, the hospital, and the patients are served by establishing such protocols in the emergency department, by reducing the number of patients who will need hospitalization. The observation unit should be under the control of the emergency department in order to maximize its effectiveness.

- **Establish clearly defined turn-around-time (TAT) goals** in the emergency department for admitted and discharged patients, and commit as a department to identifying and correcting all obstacles to the realization of these TAT goals.
- **—Carefully evaluate staffing needs**. Although many staffing models exist, the same principles apply. Old staffing patterns are driven by the question "How few resources can I possibly get by with?" As the emergency department evolved, sicker patients, more comprehensive workups, and expansion of observation medicine have driven a reconsideration of staffing needs. The simplest measure of staffing is whether patients' needs can be met in a timely fashion. Such measures as door to EKG time, door to antibiotics, and door to pain medication can be used as a proxy for adequate staffing. The temporal distribution of staff should match the flow of patients in the emergency department. As a rough rule, in order to provide reasonably timely care, no nurse should be managing more than four patients simultaneously. For the sicker patients, a nurse should care for no more than two patients.
- Also, consider the types and distribution of staff. Emergency departments tend to be top-heavy with physicians and nurses, with inadequate support staff. Any work that can be done by someone other than a physician or nurse should be shifted to support staff.
- **Use scribes for documentation.** The average emergency physician spends no less than 90 to 120 minutes in 8 hours just on documentation. Using scribes can reduce or eliminate this task for physicians, allowing them to see more patients in a timely fashion. With appropriate attention to proper documentation, a scribe program will easily pay for itself. The use of scribes for nurses is unstudied, although few would question the burden of documentation borne by the nursing staff.
- **Decrease turnaround times associated with ancillary services.** Effective service for patients means rapid turnaround times for lab and radiology tests. Consider that, for an emergency department that sees 200 patients per day, decreasing the mean emergency department length of stay by 7.2 minutes per patient equates to having an extra bed in the emergency department. Small improvements in high-volume services can significantly impact emergency department capacity.
- **Close the waiting room.** Do not place patients in the waiting room after triage, even if there is no bed for the patient in the clinical space. Bring all patients waiting to be seen into the emergency department. These patients can be watched and reprioritized and will get into a bed more quickly for examination. Only patients who must remain in a bed should "own" that bed during their stay.
- **Use protocols and order sets** for uniformity and to ensure all needed tests and interventions occur at the earliest possible point in the patient's stay.
- **Electronic medical record (EMR).** Carefully consider the value added from an EMR versus the additional staff time required to enter information. If paper records are used in the emergency department, a local scanning solution can serve as the EMR so that charts from prior visits are available. Although emphasis is placed on the benefits of having an EMR, substantial time is diverted from the patient's bedside to the computer. Consider expanded use of scribes to ensure that physicians and nurses are functioning effectively.
- **Define response times for both initiation and completion of consultations.** Measure these times as an institutional policy and identify mechanisms to decrease TAT for physicians on call.
- **Triage protocols**. Initiation of protocols at triage has been shown to facilitate more timely post-triage care. However, use of protocols must be done in such a way as not to usurp the primary purpose of triage: To identify those in greatest need of timely treatment.
- **Physician at triage.** In departments with overwhelming capacity issues, placing a physician at triage can streamline the discharge of minor patients and help initiate care for sicker patients. In general, this requires an additional physician to staff the emergency department, and consideration of the cost involved should be factored into the decision to institute this practice. As previously noted, the primary triage function should not be usurped.
- **Monitor individual practitioners in the emergency department** with regard to overall TAT, numbers and types of tests ordered, and percentage of patients admitted. Such data can be used to identify physician practices that need closer monitoring and/or improvement.
- **Deferred care of nonurgent patients.** Although practiced in some areas, there are few data

to support the safety of deferring non-urgent patients to other facilities. Physicians report that, in order to determine that a patient is nonurgent, they have to do enough of an evaluation to make a diagnosis. Once the diagnosis is made, then what's the point of deferral/referral? Note also the research (cited previously) that nonurgent patients are NOT creating delays for urgent patients needing to be seen. This process of deferral of care should not be considered without first assuring certain follow-up for the patient.

- **Expand the size of the emergency department.** Having appropriate space and staff to match the volume of emergency patients are critical to proper functioning of the emergency department. With the rapid growth of emergency patient volume, physical expansion may be necessary. Note that space increases either by increasing the physical space or by decreasing average TAT. Process improvement is substantially cheaper, and probably more effective in the long run, compared with space expansion. If the need for space is driven by boarding of admitted patients, increasing the space is likely simply to increase the amount of boarding, and thus be self defeating.
- **Ambulance diversion.** This option is used by many emergency departments, but it is increasingly evident that in most circumstances, it simply doesn't work. Also, a growing amount of research substantiates the harm to patients whose care is delayed because of being diverted to hospitals farther away. The research suggests the practice is both unsafe and ineffective and should be abandoned as an option for addressing the problems of hospital crowding. Some systems that have eliminated diversion as an option have not seen a worsening of crowding.
- **Provide additional staff during times of increased volume.** This may be accomplished by on-call physicians and nurses or by scheduling shorter shifts with the expectation that staff can be asked to come in 1-2 hours early or stay 1-2 hours late, as capacity demands. The trigger in such a system should clearly be defined by objective criteria, rather than being left to interpretation.
- **Have a clear understanding of the financial power of the emergency department** and its impact on the overall fiscal health of the institution. All stakeholders should have a clear understanding of the benefits of a well run emergency department and the institutional damage from a poorly functioning emergency department.

Hospital Actions and Processes That Will Improve Access and Flow

- **Creation of an institutional awareness of the dangers associated with emergency department crowding due to boarding of emergency patients.** Solutions can be found when there is a hospital-wide cultural awareness that crowding is a problem to be shared and solved through the efforts of the entire institution.
- **Match resources to needs.** Staffing should match the needs of patients. Often the evenings represent the time of greatest activity for both discharging and admission of hospital patients, which may not be matched by nursing staff, housekeeping or other needed services. Also, weekends tend to be understaffed when matched against patient needs.
- **Move toward a 24/7 operational culture.** Weekends are dangerous at hospitals, so again, match resources to patient needs. Examine patient discharges on weekends, which tend to be lower due to covering physicians who do not know the patient, and the lack of other resources on weekends (e.g., stress testing). Implement processes to improve care and facilitate discharges on weekends. Expand services and staff where needed.
- **Coordinate the scheduling of elective patients and surgical cases.** Studies demonstrate that the uneven influx of elective surgical patients (primarily earlier in the week) is a prime contributor to exceeding capacity in the emergency department.
- **Address delays in moving emergency patients admitted to the hospital caused by nursing reports.** It is paramount for communication to occur when nursing shifts change and different staff "take over" for caring for patients. However, 'lock-outs' in terms of when a patient report can be provided or a patient admitted to the inpatient unit must be eliminated.
- **The discharge process has dramatically grown in complexity.** Examine the discharge process and measure all reasons for delays in discharge of the patient. Do not assume the cause is known without actually measuring it. The roles and timely functions of physicians, nurses and staff from ambulances, nursing homes, social service, care management, pharmacy, radiology, lab, other ancillary services, and housekeeping all affect the discharge process and should be examined.

- Identify the parts of the discharge process that can be initiated early on in anticipation of discharge. The institution must be committed to taking actions on the findings and improving the timeliness of the discharge process. Specifically, the institution must successfully maximize timely discharge to improve bed availability for those in need.
- One practice, reported as an Institute for Healthcare Improvement initiative, is the use of a discharge whiteboard. A small whiteboard at the head of each patient bed outlines what has to take place before the patient is discharged (e.g., physical therapy consultation, dietary consultation, etc.) This practice informs the family, the patients and the staff of what needs to happen, and they become the drivers for each process.
- **Have all inpatient services managed by hospitalists, and have all ICUs managed by intensivists.** This results in both better care and shorter lengths of stay.
- **Use discharge lounges for patients awaiting discharge.** Consider moving the entire inpatient discharge process to a discharge area, so that beds can be made available for patients needing admission.
- **Admitted patients boarding in the emergency department** because of lack of available beds on the inpatient units should be redistributed to the inpatient units, to hallways, conference rooms, or solaria (e.g., full capacity protocol, www.hospitalovercrowding.com). With each unit taking a small number of patients, the emergency department can continue to function to care for emergencies, without unduly stressing the inpatient units.
- **Hire a "bed czar."** This person should command all hospital bed use and be responsible for the appropriate and timely matching of bed resources to patient needs. Ideally, the "bed czar" is independent of hospital departments and reports to senior administration.
- **Consider an express admission unit.** For emergency patients admitted to the hospital, consider having a place away from patient care areas in the emergency department to do the paperwork for processing the admissions, which can take time. This can be coupled with an express admit team from the emergency department dedicated to getting patients upstairs.
- **Consider the use of a generic admission order set initiated by the emergency physician.** This order set would be limited to basic orders, such as activity, diet, allergies, DNR [do not resuscitate] status, and perhaps a single order for pain medicines. It is not effective for the emergency physician to be responsible for writing comprehensive treatment orders for admitted patients.
- **Establish hospital-wide protocols for addressing capacity issues in the emergency department and implement an alert system when the hospital is over capacity.** Identify circumstances for alerts, and actions to be taken. Measure the success, and use the measurements to modify and improve the alert system.
- **Cancel elective admissions when hospital capacity is at maximum.**

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