ED Overcrowding in Massachusetts - Broadening the Quality Chasm in Health Care

During the first two months of 2005, a quarter of Massachusetts' acute care hospitals were diverting ambulances from their emergency department (ED) more than 5% of the time, the equivalent of 3 full days. Several hospitals were closed to ambulance arrivals 1 of every 5 hours during this period. The problem occurred throughout the state but was mostly concentrated among hospitals in the Greater Boston area.

Ambulance diversion, as it is commonly called, is not new nor is it a problem limited to Massachusetts. Hospitals throughout the country are experiencing similar problems associated with overcrowded emergency departments. It was a serious problem in the late 1980s in Massachusetts and has plagued and perplexed the Commonwealth for the past six years. Fundamentally, it amounts to recurring situations in which a need for hospital services cannot immediately be met.

The effects of ED overcrowding are not limited to the diversion of ambulances. The same inability to provide timely care to patients arriving by ambulance also affects patients that are able to make it through the hospital doors by other means of transportation. Delays in getting assessed and treated also occur and the "boarding" of patients who are waiting to be cared for in a hospital bed is thought to be an even greater problem than diversion, but one that is largely unmeasured and generally hidden from broad public view. Occasionally a glimpse of the problem is provided by ED Directors expressing their frustration with their inability to move patients up to floor beds.

This seemingly intractable and pervasive problem in providing routine and timely care is rooted in hospitals' inability to consistently match demand for their services with available capacity. In large part this is due to the failure to apply readily available tools and techniques of Operations Management (OM) to the delivery of hospital care services in order to achieve that goal. Doing so would go a long way in addressing and eliminating a public health problem that continues to plague the Commonwealth.

The inability of our hospitals to provide timely and appropriate care to those citizens who seek that care by coming to the hospital ED is not simply a problem of lost time and inconvenience. By and large, people come to the emergency department because they are acutely ill or injured. In fact, the Emergency Medical Technicians (EMTs) who work on the ambulances are generally instructed to bring patients to the closest hospital exactly because of the importance of providing timely care. Even though EMTs do their very best to make sound judgments and to provide quality prehospital care to patients, they have limited training, and their skills are no substitute for the type of care that can only be provided in a hospital. In reality, every time an ambulance is diverted or a patient is boarded, definitive care has been delayed.

There has been no lack of discussion and debate these past six years about the effects, the causes and the possible solutions to these problems. Yet despite genuine efforts on the part of many to understand and to address these problems, collectively, we have largely

failed. ED overcrowding, ambulance diversion and patient boarding have not been resolved and, in fact, appear as prevalent as ever, as reflected in the most recent data collected by authorities (http://www.mass.gov/dph/dhcq/diversion_hours.htm).

What has not been widely discussed is how our inability to solve these particular problems reflects the larger failure of our health care system. One reference point for that discussion lies in the widely applauded and cited report published in 2001 by the Institute of Medicine (IOM), *Crossing the Quality Chasm: A New Health System for the 21st Century.* The IOM committee that issued the report proposed six specific "aims" to improve the health care system. These are:

- *Safe*- avoiding injuries to patients from the care that is intended to help them.
- *Effective*- providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and overuse, respectively).
- *Patient-centered*- providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.
- *Timely*- reducing waits and sometimes harmful delays for both those who receive and those who give care.
- *Efficient*- avoiding waste, including waste of equipment, supplies, ideas, and energy.
- *Equitable*- providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.

Our inability to solve the problems of ED overcrowding and our collective acceptance of its consequences as part of the present status quo, represent violations of each of the aims set out for our 21st century health care system. Consider each in the context of ED overcrowding and its consequences:

1) *Safety*- In health care, as in other fields, the inability to control the work environment has consequences, not the least of which is errors. Errors made in a hospital can have harmful affect on patients. Under conditions in which providers have control of their work environment, care is provided in a deliberative and safe manner. When demand overruns available time and outstrips capacity, providers do things differently. They have less time for thoughtful consideration. They hurry, forget details, cut corners and make mistakes. They lose the control they once had. On a good day, work conditions in an ED are challenging enough because of the urgent need for care and the unpredictable and variable demand for services. Under conditions of ED overcrowding, the consequences on both patient and provider safety are real and serious. It is widely acknowledged that the shortage of nurses in the hospital setting is due, at least in part, to a working environment that results in burnout and in a real fear of liability for mistakes made. Who can argue that patient and provider safety are not threatened when

psychiatric patients are boarded in emergency departments for hours, if not days, awaiting placement in a facility that can appropriately care for them?

2) *Effectiveness*- One way to judge the effectiveness of our hospital care delivery system is to ask whether or not the system is able to provide appropriate and timely care to all those who need and seek services. For acute care hospitals, one reasonable measure of the effectiveness in meeting the community's health care needs can be found in the hospital's ability to consistently provide timely and quality care to those who seek services through the emergency department. Emergency care services are, after all, an integral component of hospital care and the ED is the portal of entry to inpatient services for 2 of every 5 patients. It is not unreasonable, furthermore, to expect the effectiveness of care to be reflected in its quality and clinical outcomes. Judged by these terms, ED overcrowding and the attending problems of diversion and patient boarding reflect a hospital care system that is not effective at assuring appropriate, consistent and timely care. Its failure on all measures of effectiveness undoubtedly impacts quality of care and clinical patient outcome. That ineffectiveness is tied to service delivery at both the hospital and system level. The problem of ED overcrowding has its roots in the inability of hospitals to manage patient flow. It is further exacerbated by a system that is ineffective in assuring timely, appropriate and coordinated care among various system components. Many patients come for care to the ED because of the inability or unwillingness to seek primary care in a community-based setting. And when they leave, they too often have no source of follow up primary or preventive care that avoids return ED visits. As the majority of patients who seek admission for inpatient services through the ED have chronic medical conditions, the ineffectiveness in coordinating acute care with community-based care contributes to the growing demand for hospital services. We see ineffectiveness at all levels including the inability to discharge patients timely to step-down facilities. The lack of effective coordinated care between the primary, acute, and post-acute care sectors of the health care system contributes to ED overcrowding

3) *Patient-centered*- When the emergency department is overcrowded, attention focuses away from individualized care to managing a system on the verge of crisis. The ability to provide responsive and respectful care to patients is hampered. Individual patient needs are placed secondary to maintaining a basic assurance of stability for the system as a whole. The fragility of the situation often demands that attention be focused on matters vital to maintaining control of the system, which can run counter to patient preference, needs and values. For example, when an ambulance is diverted from its intended destination, it is often from the hospital to which the patient prefers to go or the one at which she normally receives care. Provider judgments and decisions about the type of care a patient needs are undoubtedly affected when the system is under stress. The result can be not just delayed care, but also denied care. For example, a patient who would normally have been admitted for inpatient care may be judged able to be discharged in situations when there are no available inpatient beds or the patient faces being boarded in the ED for an indeterminate period of time. Few would

argue that a system that allows patients needing ICU services to lie on a hallway stretcher for hours awaiting placement in an inpatient bed is one that is patient-centered.

4) *Timely*- Waiting has become what is expected of the hospital experience. Almost everyone has either directly experienced the waiting and delays themselves or knows of someone who has gone through it. The lack of timeliness and coordination of care pervades the entire system. Diversion of ambulances from intended destinations represents only one example of the delay in definitive care. Even when the ED door opens to an ambulance, transfer of care from the EMTs to hospital staff may be delayed, affecting the ability of the ambulance to respond to the next call. Others who arrive on foot are subject to delays and waiting as well. At every stage of the continuum of hospital care, there are no assurances that the care received will be timely, affecting even patients who were scheduled for admission or who are awaiting discharge to home, a skilled nursing facility or a rehabilitation hospital. The lack of continuity and coordination between hospital care and community-based care also adds to delays in care. Our general inability to assess and measure the impact of delays in care should not lead us to assume no harm has resulted. On the contrary, if we are to assume anything, it should be that patients have been harmed. In matters of acute illness or injury, care that is timely is of the essence. Lack of timely care for conditions that require immediate treatment can, and quite logically will, result in the deterioration of a patient's condition.

5) *Efficient*- Efficiency is at the heart of the debate between providers and payers as to the causes and the solution for ED overcrowding. Hospital representatives argue that the problem stems from lack of resources. They point to the downsizing of the hospital industry and the belt-tightening that hospitals have gone through as evidence that whatever inefficiency may have previously existed has been wrung out of the system. Their answer is to add resources, preferably through higher reimbursement, so that hospitals can add the necessary staff and beds. But others, including the payers of health care, do not buy that argument. For them, the problem would be solved if hospitals managed their existing resources more efficiently. Neither side is able to make its case convincingly. Hospitals are unable to quantify exactly what they do need in the way of additional resources. Payers are unable to point out where the inefficiencies lie and what operations can be reasonably improved. It is, therefore, no surprise that payment systems hardly reward efficiency. No acute care hospital should be expected to be 100% efficient. The unpredictable demand for services for those who seek care through the ED represents a variability that must be managed and cannot be eliminated. Furthermore, asking hospitals to be prepared for extraordinary events (e.g. major multiple casualty incidents) comes with a price tag for having a surge capacity to handle major emergencies. That surge capacity represents a day-to-day inefficiency that we should collectively choose to have and for which we should collectively pay. The evidence, nevertheless, indicates that there is considerable inefficiency in the present system: inefficiency that has little to do with the efforts

of individual practitioners but more so with management of hospital operations and the inability to manage or eliminate variability.

6) *Equitable*- Given that ED overcrowding, ambulance diversion and boarding of patients in hallways, day to day, throughout Massachusetts, has persisted for these past six years, it would be logical to assume that problems so pervasive and intractable affect us all. That is not the case, however. While anyone might need ED care unexpectedly, these problems are ones that disproportionately affect the poor, the uninsured, and the elderly. The problems associated with ED overcrowding occur most often when insufficient numbers of inpatient beds are available to meet demand. That situation plays out as a competition for beds between those patients scheduled for admission and those unscheduled patient admissions entering through the ED. In that competition, those seeking inpatient services through the ED usually lose out. Ambulance diversion and boarding of patients are problems that exclusively impact those seeking services through the ED. We rarely hear complaints on behalf of those scheduled for elective inpatient procedures about cancellation of surgery to accommodate an admission through the ED. Those who seek admission for inpatient services through the ED as a group are different than those who are scheduled for admission. They most often are elderly Medicare patients, Medicaid patients or the uninsured, many with chronic medical conditions. Those admitted directly as scheduled, elective admissions are more often privately insured, younger and seeking surgical services. The burden created by our inability to solve the problems associated with ED overcrowding falls disproportionately on the shoulders of our elders, the poor and the uninsured.

These past several years, mild influenza seasons have mitigated what would otherwise have been overwhelming additional demands on a system of hospital care ill-prepared to cope. During that time, little progress has been made in addressing the underlying problems associated with ED overcrowding. The efforts of individual hospitals are disjointed and fail to provide systemic improvement. Other efforts are focused on managing the problem day to day or preparing for a gridlock situation, not at finding permanent solutions.

What Can Be Done

The first necessary step to resolving these problems lies in acknowledging that the primary cause of ED overcrowding and its consequences is to be found in hospital operations and the way care is delivered. The inability to properly manage patient flow is at the heart of the matter and reflects an industry unable to properly align its capacity with variable demand. That same challenge has been successfully confronted by countless other service industries that have recognized the inextricable link between the cost and quality of their services and how those services are delivered. The link between ED overcrowding and management of patient flow has been recognized by JCAHO and reflected in the new Leadership Standard that took effect this past January. Better management of patient flow through the use of Operations Management (OM) principles

and practices is the only solution to the problem of ED overcrowding that stays true to the IOM aims and does not require a tradeoff between cost and quality of care.

Hospitals must begin by committing themselves to provide timely and quality care at all times for those who seek hospital services through the emergency department. To achieve that goal, they must assess and manage variability in demand as an integral component of hospital operations. Genuine efforts to achieve operational efficiency must be the demonstrated norm among hospitals and not the exception. In addition, hospitals need to reach outside their walls to achieve a level of coordination with community-based providers that promotes the appropriate use of emergency departments and manages care for chronic conditions in the most cost-effective manner. Hospitals should not face the challenge alone. In the long run, addressing the problem of ED overcrowding will require the sustained and collective effort of providers, payers and policy makers.

Payers must reexamine their own role in addressing these public policy issues. It is not enough to view themselves simply as the payers of services. They must give voice to the needs and expectations of their members. Payers need to establish contracts that reward efficiency and punish inefficiency, and to reexamine reimbursement systems that make care of acute injury and chronic illness less attractive than elective surgical procedures. They need to recognize that not all variability in hospital operations can be eliminated and that hospitals may indeed need additional resources to address the natural variability that is inherent in emergency department demand for services, especially during extraordinary events that result in multiple casualties and/or illnesses.

Policymakers, especially elected officials, need to speak out loud and clear about government's expectations for the quality and timeliness of care to be provided by hospitals to the community. Without that representation individual citizens are left alone to fend for themselves in a system of hospital care that is currently unable to fulfill any of the aims set out in the IOM report for our 21st century health care system.