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Medicine and society
Crowded conditions: coming to an ER near you
by Jessamy Taylor

Most people expect that their local emergency department will have the resources to give them high quality care in a timely manner when they are in urgent need. But, in reality, urban emergency departments (EDs) report difficulty in providing such care consistently. In many ways, EDs serve as a barometer of the state of the health care system, and their crowded conditions may represent not only the hospital's inefficiencies but also larger problems in access to primary and specialty care. The Institute of Medicine published a three-report series on the state of the U.S. emergency care system in June 2006 and concluded that hospital-based emergency care is "at the breaking point" [1].

Crowded conditions
ED crowding has several contributing causes: volume of visiting patients, the capacity of EDs to handle them, the acuity of cases, the efficiency of EDs in treating patients and the ED's ability to move admitted patients to other units of the hospital. Within each of these areas a number of other factors are at play. Visit volume, for example, is influenced by the number of hospital EDs in a given geographic area and the resources of each, the number of inpatient beds in the local health care market, community access to primary and specialty care (including mental health services), insurance coverage rates, the community's overall health status and the hospitals' obligations under the Emergency Medical Treatment and Active Labor Act (EMTALA) [2]. ED efficiency is affected by staffing levels of nurses, emergency physicians and on-call specialists, and by the turnaround time for diagnostic tests and lab work. The efficient transfer of patients from the ED depends on the availability of inpatient beds—especially intensive care unit beds—as well as the efficiency of the hospital's inpatient staff.

Demographics
Demand for emergency services is up while the number of emergency departments is down. Between 1994 and 2004 the annual number of patient visits jumped by 18 percent to 110 million. The visit rate per 100 persons rose 6 percent during that decade, whereas the number of EDs declined by 7 percent [3].

Conventional wisdom holds that more uninsured than insured patients use the ED for care. In reality, privately insured patients account for most visits, followed by those with Medicaid, the uninsured, and lastly, those with Medicare. However, when

looking at the number of visits per 100 persons with given insurance status, a different picture emerges. Medicaid beneficiaries have the highest visit rate (80.3 visits per 100), close to double that of the uninsured (44.6 visits per 100) and more than three times that of the privately insured (20.3 visits per 100) [4].

A significant percentage of ED visits are for nonurgent conditions that could be treated in other settings. In 2004 about 14 million visits, or 12.5 percent of all visits that year, were classified as nonurgent (requiring care within 2 to 24 hours) and thus treatable in the primary care setting. Another 22 percent of visits were considered semiurgent (requiring care between one and two hours) and thus potentially appropriate if the ED was visited outside of normal physician office hours [3].

Causes of crowding

One of the key reasons for boarding patients in the ED is a lack of inpatient beds for those who need to be admitted to the hospital; total staffed inpatient beds have dropped by about 13 percent across the country in the last 15 years [5]. Prospective payment systems (PPS) were implemented by Medicare for inpatient care in 1984. With a PPS, hospitals receive a predetermined payment rate for an entire episode of care. Private payers also began seeking and receiving PPS arrangements. These revenue constraints created an environment in which hospitals could earn profits by operating more efficiently. At the same time, clinical practice advancements shifted care to outpatient settings, thereby reducing the need for inpatient admissions. Together these trends produced an excess supply of beds that hospital administrators addressed by staffing fewer beds.

At many hospitals the surgery schedule limits inpatient bed availability, particularly intensive care beds. Scheduled surgeries are often bunched in the middle of the week, which creates an increased demand for operating room space and inpatient beds and leaves little inpatient capacity for emergency cases. Hospital administrators also blame staffing shortages, especially a lack of nurses, for their capacity problems.

It has been assumed that having a primary care physician or stable source of care reduces inappropriate ED use. A recent analysis, however, found that persons "without a usual source of care were less likely than those with a usual source of care to have had an ED visit," and "persons without insurance were no more likely to have had an ED visit than those with insurance" [6]. Use of the ED for nonurgent care by those with a "medical home" appears to stem from dissatisfaction with their physicians. Long waits before getting an appointment or difficulties reaching their physician on the phone strongly correlate with ED use for nonurgent care. Private practices and primary care clinics typically offer little in the way of evening or weekend office hours. Community health centers can be equally limited in their after-hours availability. This barrier makes the no-appointment, "24/7" nature of the ED a relatively convenient and, in some cases, necessary place to receive primary care.

Many hospitals have difficulty complying with EMTALA because it means having appropriate specialists on-call for ED patients. EMTALA requires that all hospitals screen and stabilize any patient who comes to the ED regardless of that patient's insurance status or ability to pay. Hospitals, ED physicians and on-call specialists are typically paid separately, so all bear the financial losses of providing care to the uninsured and underinsured under this act. Hospital administrators face the challenge of balancing hospital finances, quality patient care and regulatory demands with physician compensation and lifestyle preferences.

Consequences

The consequences of crowded EDs for quality of care have not been studied comprehensively, so little scientific evidence is available to confirm the widely held assumption that crowding adversely affects the quality of patient care. The literature on crowding highlights potential negative consequences such as delayed treatment and prolonged pain and suffering for those who leave the ED before being seen and for those who stay and experience long waits, increased time in transport when ambulances are diverted to less crowded EDs and more waiting in hallways for inpatient beds. Overcrowding also adds to frustration among staff. One recent study of heart attack patients found that ED crowding delayed the administration of life-saving medications, resulting in quantifiable increases in mortality. Further study is needed to measure the effects of crowding both on the health of individuals and on overall public health in light of discussions about the adequacy of emergency capacity to respond to natural disasters, epidemics and terrorist events.

Solutions

Addressing ED crowding at the national policy level is challenging because crowding varies by geographic area and hospital, but a number of ideas have been discussed in the literature. Strategies intervene at different points in the flow of patients through the system—*input* or demand; *throughput* or ED procedures; and *output*, the ability of ED staff to admit, transfer or discharge a patient.

- One proposed intervention at the point of input is reducing demand for ED services by improving access to primary and specialty care and chronic disease management for the highest users—Medicaid beneficiaries. Medicaid reimbursement rates are relatively low, so improving them could encourage more provider participation [7].
- In the area of throughput, fast track-urgent care centers could be established for patients with less acute conditions. Dedicating lab and x-ray staff and equipment for the sole use of the ED would also improve throughput [1].
- A key solution for the output end of the problem would be to schedule surgeries more evenly throughout the week to allow for operating room space and inpatient beds for ED patients [8].

Conclusion

Preserving the adequacy and quality of emergency care is a community-wide concern. Many emergency departments across the country are struggling to meet

daily demand and have little surge capacity to handle a bioterrorist attack or influenza pandemic. Thoughtfully untangling and addressing the confluence of factors that creates crowded EDs is critical to preserving EDs and the safety net they provide for everyone.

Notes and references

1. Committee on the Future of Emergency Care in the United States Health System Board on Health Care Services. *Hospital-Based Emergency Care: At the Breaking Point*. Washington, DC: National Academy Press, Institute of Medicine; In press.
2. The most significant change in emergency treatment policy took place in 1986 when Congress passed the Emergency Medical Treatment and Active Labor Act (EMTALA). The law was enacted in response to highly publicized cases of hospitals turning away or inappropriately transferring patients who could not pay for their care, a practice known as "patient dumping." Although there has been debate and litigation interpreting the statutory and regulatory language, broadly EMTALA creates an individual right to emergency services in Medicare-participating hospitals. The act applies to anyone presenting to the ED of a Medicare-participating hospital, not just Medicare beneficiaries. This instance of a legal right to health care for individuals is unique in the United States.
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4. American Hospital Association. TrendWatch chartbook 2006. Available at: http://www.ahapolicyforum.org/ahapolicyforum/trendwatch/content/ CB06Appendices15.PPT#337,6,Slide 6. See specifically slides 2.1 and 3.3. Accessed October 5, 2006.
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