

HOW ERs ARE MANAGING OVERCROWDING:

Appointing bed czars // instituting an electronic bed-tracking system // parking patients in other departments // improving triage // and other small but significant changes.

Sick of Waiting

■ BY LINDA KESLAR // PHOTOGRAPHS BY JESSICA DIMMOCK

It's a gray Monday in March, just past noon, and Alasdair Conn, the emergency room chief at Boston's Massachusetts General Hospital, is facing the daily crunch. He has almost two dozen patients languishing in the ER, and although he'd like to send several upstairs to one of the patient care units, no beds are available. There isn't any particular reason for the gridlock, no horrible traffic accident or flu outbreak. The hospital is routinely swamped, and the ER must compete for inpatient beds that are also needed for admissions from other departments, particularly surgery. There's also a constant influx of patients transferred from outside facilities.

"We're at nearly 100% capacity all the time, and there's just nowhere to put anyone," says Conn, who runs one of the busiest ERs on the East Coast. It logs an average of 225 patients a day, about one in three of whom is sufficiently ill or injured to be admitted to inpatient or observation units. Today, all of the ER's 49 beds have been filled for hours, and more than a dozen less critically ill patients are parked in beds along the hallways. The waiting room, too, is crammed, and the ER is turning away ambulances. "I ask myself every day how we will work through this," says Conn, whose greatest fear is that someone will die waiting for care. "It keeps me up at night."

This kind of traffic jam is typical for hospital emergency rooms, particularly in metropolitan hospitals, almost two-thirds of which experienced overcrowding in 2003 and 2004, according to a report by the U.S. Centers for Disease

Control and Prevention. But things are often just as bad at suburban and even rural ERs. "Emergency rooms are mobbed all over the country," says Jesse Pines, an assistant professor at the University of Pennsylvania School of Medicine and a physician in the ER of the university's inner-city Philadelphia hospital.

That's hardly news to the approximately 114 million patients who seek treatment in ERs each year. Some are rushed in with grievous injuries or illnesses and may get immediate care, but many others arrive with less obviously urgent problems, and they know it could take hours to be seen. Yet in numerous cases, because they lack health insurance or can't find a primary care doctor, they continue to go to the ER. They're often joined by a growing population of older patients who have fallen or have chest pain and were told by their regular physicians to get checked out at the hospital.

That adds up to an emergency care system that is stretched to the breaking point, according to three reports published in 2006 by the Institute of Medicine, an arm of the National Academy of Sciences. The IOM found that ER visits grew by 26% from 1993 to 2003, while the population increased just 12%, and the United States suffered a net loss of 703 hospitals and 425 emergency departments. The problem is exacerbated, according to the IOM, by a shortage of nurses and a lack of specialists willing to be on call for emergencies.

Sometimes, delays in overstretched ERs prove fatal. In a recent survey of 1,496 emergency department physicians by the American College of Emergency Physicians, about 13%



All night, every night, like overcrowded emergency rooms across the country, the ER at the Massachusetts General Hospital serves as a haven for the sick and injured, such as Guy Orgis, who was suffering back pain.

of respondents said they knew of a patient who had died after waiting too long for care. And a recent Harvard Medical School review of more than 90,000 emergency room visits across the country from 1997 through 2004 found that one in four heart attack patients had to wait almost an hour to see a doctor—even though any delay in treating a heart attack greatly increases the risk of death. According to the IOM reports, most ER departments are particularly ill prepared to cope with large-scale disasters. “You can’t help fearing a flu pandemic,” says Sandra Schneider, the former chief of emergency care at Strong Memorial Hospital at the University of Rochester Medical Center in New York.

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Expanded facilities might help relieve the bottleneck, and the MGH is building a \$495 million, 10-story facility that will increase total beds to 1,052 and expand ER capacity by 15 when it opens in 2011. But many hospitals can't afford that kind of investment or can't get regulatory approval for expansion.

Lacking big fixes, many hospitals are experimenting with modest approaches, and some have made significant progress with innovations that might be blueprints for other ERs. “Whatever you put in place has to work for your department, because all ERs have different staffs, populations and cultures,” says Stephen Schenkel, chief of emergency medicine at Mercy Hospital in Baltimore, who recently led a coalition of Maryland hospitals that examined ER patient safety. While these tentative solutions may not be universally applicable, they do provide a menu of possibilities that other institutions can use. And they seek to improve a department that is increasingly central to hospitals' missions. “To a large degree, the crowding is an acknowledgment that ERs offer something the rest of the system doesn't,” Schenkel says. “They provide access to immediate care.”

In 2001 some 55,000 patients were treated at Strong Memorial's 59-bed emergency room; by 2007, the total had ballooned to 93,000. “Like many ERs that have experienced growth, we weren't built to hold 120 to 140 patients at a time,” Schneider says. “There aren't enough beds, chairs, pillows or even toilets for patients when we're full.” Even on easier days, the institution has patients not only in the ER but also in the catheterization lab, the surgical recovery room and a holding unit in an area that once housed faculty offices.

Compounding the problem is the fact that hospitals themselves are often full up, leaving patients who need inpatient beds waiting in the ER. As a result, for many emergency

departments, creatively using a range of facilities has been crucial to ensuring that patients get the care they need. One increasingly common tactic is to move admitted patients to hallways of inpatient units. That relieves ER crowding without unduly burdening the floors on which these patients are “boarded.” Peter Viccellio, vice chairman of the department of emergency medicine at Stony Brook University Hospital in New York, has been an advocate of this solution, which he estimates is being tried by some 10% of the nation’s hospitals.

At Stony Brook, which has used the approach since 2001, a maximum of two patients are allowed to board in any other hospital unit. “It reduces the burden on the ER staff and adds

reluctant to board patients who come in through the ER in other departments, largely because staff members resist. There are safety issues too. “Suppose something acute happens,” says the MGH’s Conn. “In the ER we’re ready to intervene, but on other floors, physicians and nurses may not be available.”

Though many ER patients may truly need emergency care, others don’t, and William Beaumont Hospital, a 1,061-bed teaching facility in Royal Oak, Mich., now uses a 21-bed observation unit to supplement its 70-bed ER. Patients with less severe conditions—for example, an infection that can be treated with antibiotics—are assigned to the “obs” unit, where their progress can be monitored. “It’s a fantastic alternative,” says Jedd Roe, chair of Beaumont’s emergency department. “The patients we put there have a 90% probability of getting sent home without being admitted to the hospital. That frees up an ER bed.”

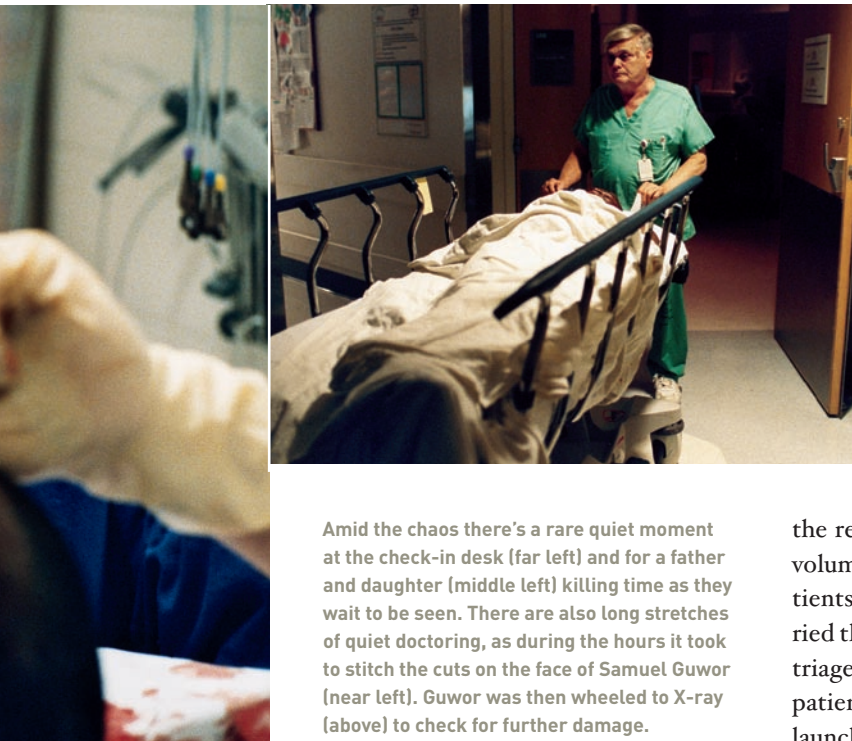
Despite this innovation, the ER, which has seen visits increase by more than a third during the past 10 years, still suffers chronic overcrowding. Though the ER also routinely boards admitted patients on inpatient floors, 20 to 30 patients are usually waiting for a bed. “The good news is that they don’t have to wait as long now,” Roe says.

Other emergency rooms are revamping treatment areas to relieve backlogs. The ER at Vanderbilt University Hospital in Nashville, for example, acts as the region’s Level 1 trauma center. In recent years, the daily volume in the 46-bed ER has soared to as many as 200 patients, says emergency medicine chairman Corey Slovis. Worried that someone would die before treatment, Slovis set up a triage team, including a physician and nurse who sort arriving patients according to the urgency of their needs. The hospital launched this team-triage approach in 2005 and spent about \$150,000 to create five small exam areas in which noncritically ill patients can be assessed and given blood tests, X-rays and other evaluations.

Staffed from 11 a.m. until 11 p.m., the triage area has proved ideal for patients who come in with routine sprains, flu and other easily treatable conditions. “Not every patient needs an ER bed, but team triage helps us make sure the sickest people receive care without delay,” Slovis says. On very busy days, the triage team may treat 30 patients who can be discharged without moving on to the ER. But increased efficiency comes at a price. “The cost of an additional ER physician alone can average \$150 to \$200 an hour,” says Schneider, formerly of Strong Memorial, which tested and then decided against

only slightly to the work on other floors, where a team of nurses may have to care for 32 patients instead of 30,” Viccellio says. And although the hospital’s 60-bed ER still has patients parked in its hallways, there are now usually only seven or eight rather than twice that number.

As long as they have a privacy screen and a call button, most patients prefer to wait in the quieter hallways of inpatient units, Viccellio says, and studies have shown that these patients generally get beds more quickly than when they’re out of sight in the ER. What’s more, since Stony Brook adopted this innovation, the hospital has never had to divert ambulances elsewhere. Yet many hospitals are unable or



Amid the chaos there’s a rare quiet moment at the check-in desk (far left) and for a father and daughter (middle left) killing time as they wait to be seen. There are also long stretches of quiet doctoring, as during the hours it took to stitch the cuts on the face of Samuel Guwor (near left). Guwor was then wheeled to X-ray (above) to check for further damage.

physician-led triage, mostly because of the additional strain it put on the hospital budget.

Technology, too, can play a role in relieving gridlock. The MGH and the hospital at the University of Pennsylvania, among others, have purchased tele-tracking devices designed to monitor the status of patient beds. Icons, color codes and text displayed on screens can tell the ER and other departments where patients are, how long they've been there and whether they're being moved to another part of the hospital.

"But these systems are only as good as the data that's entered," says the University of Pennsylvania's Pines, who notes that there are often problems during shift changes, when staff members are busy with paperwork and other tasks. "Even if housekeeping cleans an empty bed and it's ready for a new admission, unless someone enters the data into the system, the bed is effectively in use," Pines says. "So we still end up waiting hours to transfer an ER patient to an inpatient bed."

One solution that some hospitals have tried is to crown a "bed czar," usually a nurse, whose chief responsibility is monitoring patient flow and helping to eliminate delays. Another is to discharge patients early in the day to open up beds. But that can be difficult to coordinate, and family members often can't

Traffic Patterns //

26 Percentage increase in ER visits from 1993 to 2003

2/3 Approximate proportion of metropolitan hospitals that reported ER overcrowding from 2003 to 2004

1/3 Approximate proportion of U.S. hospitals that diverted ambulances to other ERs from 2003 to 2004 because of overcrowding or staffing shortages

11 Percentage increase in ER visits by people ages 65 to 74 from 1995 to 2005 (expected to rise as the population grows older)

2007 Year when the Access to Emergency Medical Services Act was introduced, which includes a call to develop standards for ambulance diversion and patient boarding. The latter—the practice of leaving admitted patients for extended stays in the ER until inpatient beds become available—is the primary cause of ER crowding.

Even a concerted team effort (below) couldn't save a man brought in after a heart attack. But Keith Russell (near right), brought in at 2:30 a.m. after a car accident, had a better outcome, as did Patricia Desmond (middle), in a bed parked in an ER hallway; she was ready to be discharged after treatment for pneumonia. Cleanup (far right) often must wait until the crisis passes.



take patients home until after work. Some hospitals, including William Beaumont, have created discharge lounges, comfortably furnished areas in which stable patients can wait to be picked up and get prescriptions filled.

Surgical smoothing may sound like some kind of cosmetic procedure, but it's actually an innovative method for addressing ER overcrowding. It was pioneered at Boston Medical Center, New England's largest Level 1 trauma center, which treats more than 132,000 ER patients annually. Eugene Litvak, who heads Boston University's Health Policy Institute, has studied the flow of patients in and out of hospitals and brought a simple concept to the project. Because emergency rooms compete with surgical admissions for inpatient beds—and because elective surgery tends to be scheduled for the first few days of each week—why not look for ways to smooth out peaks and valleys in the overall schedule to create a more predictable flow of patients?

Boston Medical Center decided to concentrate on the two surgical specialties, vascular and cardiac, that contributed the bulk of surgical intensive-care-unit admissions. By distributing elective procedures in those specialties more equally, Monday through Friday, the hospital opened up beds for patients admitted from the ER. That helped shave 50 minutes off the typical wait in the ER. And because the hospital designated one operating room to handle emergency cases exclusively, it also helped reduce the number of elective procedures that had to be delayed and/or canceled—from 771 the year before surgical smoothing was implemented to a total of 16 for the last three years.

Although many U.S. hospitals are aware of the benefits of



surgical smoothing, very few have been able to implement it, much to Litvak's dismay. "ER crowding and patient bottlenecks have to be addressed by the entire hospital," he says. "That's what smoothing of elective admissions does." But many hospitals have trouble pushing through this approach—in large part because it asks surgeons, who may bring in much of a hospital's revenue, to change their schedules. "It takes determined leadership to make this happen," says Litvak. "If a CEO isn't behind it, it's not going to work."

In the end, individual hospitals can't solve the problem of ER crowding on their own, and one IOM report emphasized the need for better regional and statewide coordination of trauma and emergency services. Maryland, for example, has created a central communications center that monitors ER bed availability in real time and can direct ambulances to hospitals with the shortest waits. San Diego and Houston are also testing regional approaches.

Congress, too, may get into the act, with legislation that would provide additional funding for physicians offering emergency care while also requiring hospitals to report publicly their typical boarding times. The heightened accountability might spur further innovation, but some physicians worry about the unintended consequences of a system in which hospitals must improve their performance at all costs. "Time measures could wind up encouraging policies that may not be the right answers," says Schenkel of Baltimore's Mercy Hospital.

This remains an intractable problem, says David Hnatow, chief of emergency medicine at University of Texas Health Science Center in San Antonio, whose frustration is echoed by

many of his counterparts across the country. During his 15-year tenure, he has tried every innovation he could come up with to ease overcrowding of the hospital's 44-bed ER, which must cope with 70,000 annual visits, twice the facility's intended capacity. He has established observational and transitional patient units, created a special unit for psychiatric patients (a source of special treatment and security problems), appointed a bed czar and instituted an electronic bed-tracking system. He has also worked with the San Antonio public health system to provide alternatives to the ER for patients needing primary care.

"But more and more patients keep walking through the door," Hnatow says. His hospital, as a Level 1 trauma center, serves a region of 25,000 square miles and must handle a growing population of uninsured patients. "I'm willing to try anything," he says. "But all the vital signs say we're still in critical condition, and I don't know what it's going to take to get people's attention and really do something about this crisis." ■

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1. *Future of Emergency Care*, Institute of Medicine, 2006. A collection of three comprehensive reports examining the challenges and potential solutions to ER overcrowding.
2. urgentmatters.org. This Website for Urgent Matters, a national initiative funded by the Robert Wood Johnson Foundation and dedicated to easing ER overcrowding, offers valuable reports, Webinars and best-practices information.
3. "Bursting at the Seams: Improving Patient Flow to Help America's Emergency Departments," by M. Wilson, K. Nguyen, The George Washington University Medical Center, 2004 [urgentmatters.org/reports]. An account of how 10 U.S. ERs developed and tested strategies to reduce patient flow bottlenecks, with varying results.