

**Introduction**

*Annals* News and Perspective explores topics relevant to emergency medicine, in particular those in which our specialty interacts with the political, ethical, sociologic, legal and business spheres of our society. Discussion of specific clinical problems and their

management will be rare. By design, it will not be a “breaking news” section with the latest (and undigested) developments, but instead a reflective investigation of recent and emerging trends. If you have any feedback about this section, please forward it to us at [annalsnews@acep.org](mailto:annalsnews@acep.org).

0196-0644/\$-see front matter

Copyright © 2007 by the American College of Emergency Physicians.

## EMERGENCY DEPARTMENT FLOW AND THE BOARDED PATIENT: HOW TO GET ADMITTED PATIENTS UPSTAIRS

Jan Greene

*Special Contributor to Annals News & Perspective*

It seemed like a simple idea to Peter Viccellio, clinical director of the emergency department at Stony Brook University Hospital in New York. Instead of boarding waiting inpatients in the halls of the emergency department (ED), just send them up to the units' hallways until a bed is ready. His theory was that patients could get more appropriate care from nurses on the floor.

“Anyone outside the hospital industry, they look at me dumbfounded that this would be at all controversial,” said Viccellio of the idea that he believes has spread to 400 to 500 hospitals in the years since he began speaking publicly about his own hospital's success. “You're just moving patients from a crowded noisy hallway to a quiet peaceful hallway.”

### A SIMPLE SOLUTION?

Simple enough, but given the long-standing hospital culture of just leaving admitted patients in the emergency department, the idea of sending a problem upstairs can ruffle feathers. It was widely assumed in the hospital industry that moving patients elsewhere was against some regulation; although, no one could ever seem to find the regulation. Viccellio checked with New York state officials who told him there was no legal reason patients couldn't be boarded in medical units.

The next objection was that “we just don't do it that way.” But “we” do, he pointed out. Obstetrics doesn't require women in labor to stay in the ED. “The model was already there,” he argued. Ultimately, Stony Brook implemented his “adopt-a-boarder” initiative, also known as a full capacity protocol, and found that patients moved to unit hallways didn't stay there long, since staff were motivated to find beds quickly.

“I expected a lot more grief than we got,” Viccellio recalled. “We didn't get it because once you actually saw it and saw how little it was, it wasn't worth making a fuss over.”

It also became obvious to all that this was better for the patient, Viccellio said, and what the patient wanted.

Bolstered by increasing evidence that boarding patients in the ED is a patient safety risk, more hospitals are making changes to relieve crowding. There may be myriad societal problems that will keep the patients coming—uninsurance, lack of primary care, fewer EDs—but there are internal changes hospitals can make to keep the crisis at bay.

This movement recognizes something that has irritated ED leaders for years: the general sense that crowding is the ED's problem, and it is up to ED managers to fix it.

### FLOW AND THE MEDICAL FLOORS

Instead, the concept of “flow” acknowledges that patients get stuck in the ED in great part because there are no inpatient beds to put them in. It states the bottleneck isn't necessarily caused by inefficient or overwhelmed ED clinicians but by the inability to get new patients into beds on the medical floors.

Improving patient flow is one of those quality improvement concepts first adopted by academics and organizations like the Institute for Healthcare Improvement. But it is gaining ground in the mainstream, receiving extensive attention in the Institute of Medicine's June report titled *Hospital-Based Emergency Care: At the Breaking Point*.

For the hospitals involved in the Institute for Healthcare Improvement's flow initiative, established 4 years ago, the first thing they learn is that the influx of patients into the ED isn't random—there may be some variability, but it can easily be charted and planned for. Memorial Regional Hospital in Hollywood, Florida, joined the initiative in May 2006 and within several months had seen results after adopting a more data-driven approach. Hospital leaders took a closer look at trends in ED patients and found them surprisingly predictable.

“I know that on Mondays I’ll need 65 inpatient beds, and on Friday I’ll probably need only 50, and we can start planning for that,” says Melinda Stibal, administrative director of emergency and trauma at Memorial Regional Hospital. “I know how many patients we’ll see on a Monday within a 10% wiggle on either side.”

For many hospitals, late afternoon and evening shifts are the busiest. For some, the busy days are Monday and Tuesday; for others it is later in the week. But once that pattern is established in a given ED, it is relatively simple to staff up both the ED and its support system—laboratory services and radiology—during those hours.

At Memorial Regional Hospital, for instance, staff has been beefed up in radiology, transportation, and environmental services for the 3PM to 11PM shift. A dedicated phlebotomist was added when it was recognized that the laboratory result delay was not caused by the laboratory turning tests around slowly—it managed to do so on average in 30 minutes—but because nursing and tech staff were too busy to get labs drawn quickly.

## SLOW TO SEE THE CHANGE

Viccellio argues that hospitals, slow to change, still haven’t adjusted to a 24/7 schedule. In the 1960s, the vast majority of patients came to the hospital for elective surgery, so it could operate from 9AM to 5PM. But since then a much larger percentage of patients come in through the ED—50%, in fact, while 35% are there for an elective procedure.

Because hospitals are worried about alienating surgeons, who can take their elective patients elsewhere, they tend to give wide latitude in choosing when they schedule operations. Surgeons often choose Monday or Tuesday for a block of procedures so their patients can recover and leave by the weekend. But that bumps right into the busiest time of the week for the ED, and so they end up competing for beds.

At Bellin Hospital in Green Bay, WI, total joint procedures were limited to a certain number per week to keep operating rooms open for emergency patients.

“We will never say no to a surgery here, but we want (doctors) to understand their patients need a place to go,” explained Andrea Werner, officer of innovation for the 160-bed community hospital. “They want them on the unit of choice, so we focus on getting the right patient in the right bed.”

Convincing internists, surgeons, and specialists to round early in the day so patients can be discharged in the morning is a common technique among hospitals focusing on their flow.

## A HOLISTIC APPROACH

Flow affects every part of the hospital, including housekeeping and transport. At University Hospital in San Antonio, TX, the housekeeping staff came up with a simple and effective approach to getting beds turned over more quickly. They proposed a 2-jar system in each unit—a jar containing red slips of paper representing beds needing to be cleaned and a jar containing green slips of paper for open beds. The new system reduced a 160-minute average wait for a clean room to 35 minutes.

The San Antonio public hospital’s staff brainstormed and came up with lots of other home-grown ideas, some of which worked and some of which did not, reported David Hnatow, MD, chief of emergency medicine for the hospital. Among the most effective was stationing a physician’s assistant at triage in the ED to siphon off minor complaints and establishing a 23-hour observation unit to free up telemetry beds.

The hospital also established urgent and crisis care clinics nearby to care for patients who really needed a setting other than the ED. The Crisis Care Center is for mentally ill patients, including people who are under arrest, suicidal, or violent. Several primary care centers cater to people with minor complaints, including one next door to the ED, open 8AM to 11PM.

“My volume has kind of flattened off because I provide alternative places for people to go,” Hnatow said.

Outdated design and cramped spaces can be an issue, but Albert Einstein Medical Center in Philadelphia, PA, found that even revamping the ED to double its capacity is not the answer if flow is not taken into account—even after doing so, the hospital was ringing up 100 to 150 hours of diversion every month.

“No one was happy. . . The physicians were unhappy, the ED staff was constantly overwhelmed, patients were unhappy,” explained Cindy McGlone, vice president for Albert Einstein Health care Network in Philadelphia. “We had this beautiful ED, but we couldn’t get patients through it and into beds.”

## HOW TO AVERT DIVERSION

A number of changes reduced divert hours to just a handful each month:

- An electronic bed tracking system that pictures empty beds and better plans discharges;
- Daily 11AM bed briefing among nurse managers to review pending discharges, surgical schedule, and priorities for the day;
- Patient flow coordinator position who scouts for beds for ED patients and goes up to help free up a bed if the unit is having trouble doing so;
- Physician working group that reviews variances and educates doctors on the need for timely discharge.

Hospitals can choose from a wide variety of changes that can make patient flow through the ED and hospital work better. Memorial Hospital started placing patients in the halls when they are ready for discharge but awaiting transportation. Medical staff approved order sets, which they called advanced nursing interventions, for 15 common diagnoses in the ED to speed diagnostic testing. Within a few months, the hospital had reduced ED waiting times by 25 minutes and shaved an hour off the time it took to get an inpatient bed.

The quick success of the program, Stibal says, is in large part thanks to strong support at the executive level. Top leaders, recognizing that the problem with crowding in the ED was a hospital-wide issue, chose to move some outpatient services to another location to open up inpatient beds. Their commitment

paid off with a huge improvement in patient satisfaction with the ED. Press Ganey scores went from 30% to over 95%.

At the same time, these kinds of initiatives require constant vigilance and commitment over time. The daily bed review huddles at Albert Einstein Hospital have to keep going or those gains will be lost.

“You can’t fall back to the way you did things before,” McGlone said. “If you’re not vigilant it all falls apart.”

## THE IOM WEIGHS IN

Still, in the big picture, managing flow could make or break an emergency care system that is already highly stressed. In the Institute of Medicine report on emergency care released in June, a subcommittee examined hospital-based care and recognized the value of many of these flow-related innovations. Overall, the committee recommended that:

- Hospital CEOs should adopt enterprise-wide management to improve quality and efficiency of emergency care.
- The Medicare system should change reimbursement policies to allow for payment for clinical decision units, where ED patients can stay for several hours for observation without taking up inpatient beds.
- Professional organizations and accreditors should promote training in operations management, an umbrella term for the whole-hospital flow approach.
- Hospitals should end the practice of boarding patients in the ED and stop ambulance diversion except in the case of a community mass casualty event.
- The Joint Commission on Accreditation of Healthcare Organizations should reinstate strong standards to sharply reduce and ultimately eliminate ED crowding, boarding, and diversion.

That last recommendation refers to the original draft of a patient flow standard developed by the Joint Commission on Accreditation of Healthcare Organizations in 2004 that would have required hospitals to take serious steps to fix the problem. Instead, the final standard focused more on requiring leadership to address the flow issue.

A Joint Commission on Accreditation of Healthcare Organizations spokesperson, asked about the Institute of Medicine recommendation, sent along a statement that did not directly address the recommendation but reiterated the importance of having hospital leaders accountable for improving patient flow.

## A SEA CHANGE

It is hard to know how many hospitals have actually addressed patient flow from the whole hospital point of view—some have done it with help from consultants (several dozen are involved in the Institute of Health Initiative collaborative) and another 10 participated in the Urgent Matters project. These hospitals tend to be those that readily adopt change in general and promote innovation and quality initiatives, acknowledged Bruce Siegel, MD, a longtime health care administrator and

policymaker and now a research professor at George Washington University in Washington, DC. He heads the Urgent Matters project.

“I see a lot of hospitals that really desperately need to make changes and have a hard time, and they tend to have a hard time with improvement in general,” he said.

The problem, he believes, is not that hospitals have tried to improve patient flow and failed. “It’s that this has not been done in any great context of organizational change. Maybe they try adopt-a-boarder or a bed czar, but they don’t routinely measure their flow. And secondly, top leadership hasn’t sent a message that this is important.”

It can be easy for hospitals to forgo the kind of organizational changes required both because they ruffle feathers and appear to threaten the bottom line—inpatients coming through the ED are seen as more expensive to treat compared with those being admitted for elective procedures. On the other hand, proponents point to shorter length of stay and greater number of overall patients seen when efficiencies in flow are implemented.

## A BAND-AID ON A HEMORRHAGE?

Ultimately, it is difficult for those on the front lines to forget that their efforts at quality improvement are simply stemming a tide prompted by thorny societal problems such as uninsurance and lack of primary care access. Changes made by San Antonio’s public hospital allowed it to maintain a 70,000 patient per year flow through its ED rather than experience the big increases of other inner city hospitals.

“To me they’re all band-aids,” San Antonio medical director Hnatow said of all the multiple innovations his hospital has made to improve patient flow. “There’s still an overwhelming need out there, and it grows. Until we finally deal with it, it’s just going to get worse.”

doi:10.1016/j.annemergmed.2006.11.020

## FURTHER READING

1. Institute of Medicine (IOM), *Hospital-Based Emergency Care: At the Breaking Point*, Future of Emergency Care Series, June 14, 2006.
2. Hospital Overcrowding. A site dedicated to our patients, their care, and their safety. Available at: <http://www.hospitalovercrowding.com>. Accessed November 29, 2006.
3. Urgent Matters. Bursting at the seams, improving patient flow to help America’s emergency departments. Available at: <http://www.urgentmatters.com>. Accessed November 29, 2006.
4. Liu SW et al, Frequency of Adverse Events and Errors among Patients Boarding in the Emergency Department, *Academic Emergency Medicine* Vol. 12 No. 5 suppl. 1, 49-50.
5. American College of Emergency Physicians. Emergency department crowding information paper. Available at: <http://www.acep.org/NR/rdonlyres/1FDC6583-A6F6-4022-95DF-92FCFFEE77F3/0/empcCrowdingPPR.pdf>.
6. Kellerman A. Crisis in the emergency department. *New England Journal of Medicine*, 2006;355:13.
7. Institute of Health Initiatives. Improving flow through acute care settings. Available at: <http://www.ihl.org/IHI/Topics/Flow>. Accessed November 29, 2006.