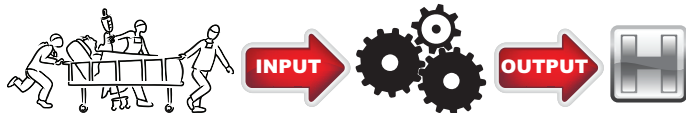


# Cracking the Code: Fixing the Crowded Emergency Department, Part 1 — Building the Burning Platform

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This is the first in a three-part series looking at crowding as a critical ED operations issue. In the submission that follows, we will explore the management failures that lead to this phenomenon. In the final installment, I hope to show that this issue is not without a solution if one understands demand and variance, and applies commonly accepted demand management tools.

The emergency department can be thought of as a factory in which work flow is described as “a patient arrives, stuff happens, and the patient leaves.” Of course we all know it’s much more complex than that, but it is important that we understand throughput in emergency medicine and break work flow down into three basic components: input, through-put, and output.

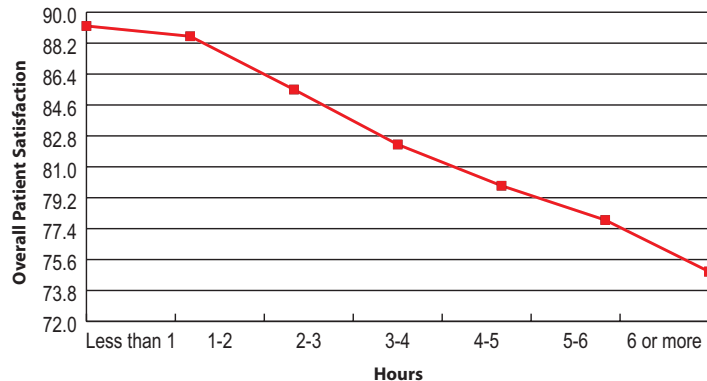


In this series, I will focus on various input models that have been deployed in an attempt to solve the problem of ED crowding, an issue well-known to all of us who practice contemporary emergency medicine. Has the cost of fixing this problem prevented us from successfully addressing it? Have we priced ourselves out of good care, good service, and good quality? Are capital and labor costs simply too high to meet the demands of the ED without going broke? The answer that we must face: if we continue to design operations using traditional staffing and work flow models, then we have indeed priced ourselves out of business from a service and quality perspective. I include quality in that equation, because I will show that meeting the time demands of our patients is part of quality. Because of cost, the traditional operations model does not allow for adequate resources to meet the goal of providing care on demand. This means “no waiting” for emergency services — regardless of acuity. It is imperative that we take a totally new approach to the way we process patients in the emergency department, and this will require adopting new models of care related to how we manage demand. Specifically, how we deploy and utilize space and staff in our departments.

To understand the solution that I will propose in a later part of this series, change management must be understood. The proposed solution will require significant change in how we practice emergency medicine. As Joseph Kotter wrote in his work on managing change, the first step is creating urgency — a “burning platform” for identifying common goals and fostering a sense of shared purpose among stakeholders. In the case of health care, this means we must first create “a sense of need ... a sense of importance to the matter and come to an understanding that it is the right thing to do for our patients ... thus ‘the burning platform.’”

Let’s start with patient satisfaction and the well-known fact that the patient experience is tightly linked to wait times. The graph below shows the predictable linear relationship between waiting and patient satisfaction in the ED.

**Patient Satisfaction by Time Spent in ED**



Health Leaders Media surveyed hospital leaders in 2011, asking them to rank clinical areas in terms of difficulty in achieving improved efficiency and cost reduction. The top-ranked “most difficult” clinical area in that survey was the emergency department, as voted by 65% of respondents. A follow-up question asked for the greatest strategic challenge for the ED, and the number one challenge — ranked by 43% of respondents — was “patient flow.” Putting all this together, it is clear that hospital leaders consider throughput in their EDs to be their number one management problem.

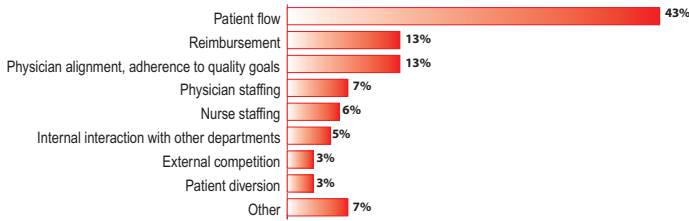
**Please rate the following clinical areas on the difficulty of achieving results in improved efficiency and cost reduction.**

	Very difficult 1	2	3	4	Not at all difficult 5
Emergency department	30%	35%	23%	10%	1%
Surgery	19%	29%	30%	19%	3%
Inpatient/med-surg/critical care	13%	37%	33%	14%	2%
Imaging	8%	20%	39%	28%	6%
Pharmacy	6%	25%	34%	28%	8%
Lab	4%	19%	42%	28%	6%
Outpatient/ambulatory	4%	21%	40%	28%	6%

Base = 250

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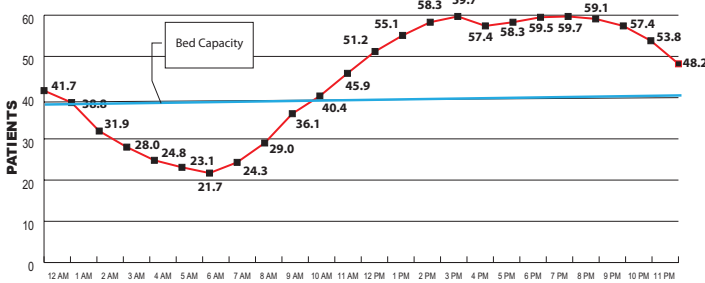
### What is the greatest strategic challenge regarding your ED?



Base = 250

This has huge implications for physician groups, both corporate mega-groups and independent democratic groups that want to remain competitive. Solving this problem requires visualizing that burning platform for change.

First we must understand the capacity constraint, classically represented by the graph below.



On any given day in most EDs, the actual census (defined as patients “between the front door and the back door,” or between arrival and discharge) can be 50 to 100% larger than capacity (defined as the number of physical beds). The graph above shows an actual ED with a bed capacity of 40 and nearly 60 patients at peak census. Where are those extra 20 patients? The waiting room, of course. The objective is to create more space for patient encounters without going broke, or better yet without any additional cost at all. But creating additional physical capacity at little or no cost is only part of the solution. Just as important is creating a staffing model (labor capacity) that can take advantage of the extra physical capacity, resulting in improved service to patients. That means a bed utilization and staffing plan that can adapt to a highly variable but still predictable service demand environment, an environment that exists in other industries besides our own.

How urgent is this? In 2012 the *Annals of Emergency Medicine* published “Impact of Emergency Department Crowding on Outcomes of Admitted Patients,” an article that confirmed that overcrowding was growing at a significant rate across the United States, in that the number of EDs reporting this problem had grown twice as fast as ED volume. This means that something in the way we practice emergency medicine has changed and is aggravating ED crowding. The authors of that article also noted that mortality in EDs identified as being crowded was moderately higher than in those that were not identified as being crowded.

Last year two high-profile stories were published, one in the *New England Journal of Medicine* and the other in *The New York Times*. The first, by Dr. John Maa, details the death of his mother due to delays in care in the emergency department. Dr. Maa says that we must confront our “unwillingness, not inability, to reduce the waits and delays that bedevil emergency care that are harming and even killing our patients.”

The second tells the story of Sabrina Seelig, who died of an overdose in a New York hospital. Seelig’s mother frames it in a way just as poignant as Dr. Maa, saying, “No one should go to a hospital without someone with you. Don’t go unless someone at least knows you’re there.” How telling is that statement about the perception of care in our emergency departments?

Dr. Maa’s and Ms. Gibson’s statements were published in two of the most influential publications in our country. We must do something to improve both the reality and the perception of care in crowded emergency departments in the United States.

Dropping this emotional angle, let’s look at another issue: money, and the cost of doing nothing. The chart below shows that in an ED with 50,000 visits per year and an average payer mix, the net revenue loss for every 1% of patients who leave without being seen (LWBS) is about \$450,000 per year. Considering that crowded EDs can have LWBS rates in the range of 3 to 5%, the amount of lost revenue in just one such ED is measured in millions of dollars.

- Net revenue (actual LWBS payor mix)
  - Outpatient facility net revenue @ **\$300/visit discharge** (90% of visits)
  - Inpatient facility net revenue @ **\$5,000/visit admission** (10% of visits)
  - Professional provider net revenue @ **\$125/visit** all (100% of visits)
- 1% LWBS @ 50,000 visits = **500 visits**
- Lost opportunity net dollars for every 500 visits LWBS
  - **\$135,000** facility outpatient revenue (450 pts x \$300)
  - **\$250,000** facility inpatient revenue (500 pts x \$5,000)
  - **\$62,500** professional revenue (500 pts x \$125)
- Cost of 1% LWBS AT 50,000 volume = **\$447,500**

Another factor to consider: at 50,000 visits per year, with an average visit lasting three hours, a one-hour improvement in length of stay creates the capacity for 20,000 more patients per year and results in \$10 million in additional net revenue.

- 60,000 ED Visits x 1 Hr LOS reduction = 60,000 hrs bed capacity
- 2 Hours/Visit = 30,000 potential new visits
- 3 Hours/Visit = 20,000 potential new visits
- 20,000 new visits x \$100/Visit = \$2,00,000 pro fees
- 20,000 new visits x \$400/Visit/Facility = \$8,000,000 facility fees

In addition, the city of New York has decided to create 13 performance indicators for its public hospitals, one of which links reimbursement to how quickly patients get from triage to the ED bed. That puts more money on the line.

Further linking pay to performance, CMS will look at throughput efficiency as part of its performance incentive package. Specific factors include LWBS percentage, elapsed time from arrival to the decision to admit, and elapsed time from that decision to actual admission. The point is that there is more than one way to lose money from poor throughput. Payers are beginning to pay less based on the failure to meet emergency department service metrics.

Finally, the Studer Group published an interesting analysis showing that malpractice risk is four times greater in emergency departments with an

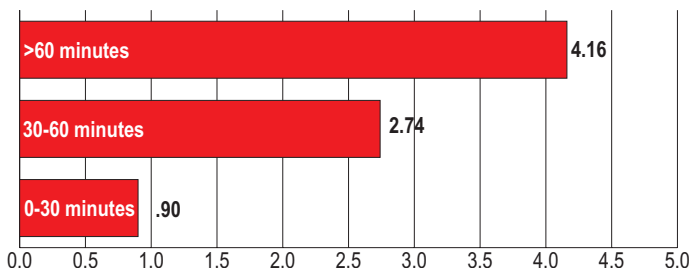
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average wait greater than 60 minutes, compared to EDs with an average wait of less than 30 minutes.

**Shorter ED Wait Times Reduce Malpractice Claims**

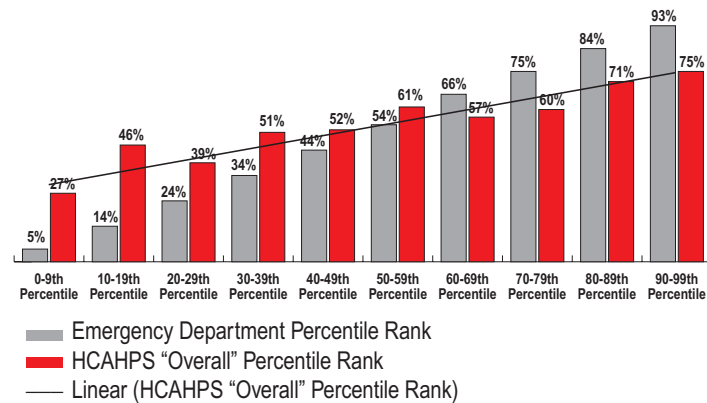
Patients at emergency departments with an average wait time of more than 60 minutes were more than four times as likely to file a malpractice claim than patients at emergency departments who waited less than 30 minutes. *Courtesy of CEP America Physician Partners, Emeryville, CA, 2006*

Claims per 25,000 patient visits



Not only is poor throughput linked to morbidity and mortality; to direct financial risk from LWBS patients; to indirect financial risk through pay for performance; and to higher malpractice risk; it is also linked to low patient satisfaction, as shown in the graph below, and to lower overall organizational and hospital satisfaction, as well as lower HCAHPS percentile ranks. The HCAHPS (Hospital Consumer Assessment of Healthcare Providers and Systems) survey is a standardized survey instrument and data collection methodology, that has been in use since 2006 to measure patients' perspectives on hospital care.

**Relationship: ED And HCAHPS "Overall" Percentile Rankings**



The bottom line: a hospital cannot do well financially — or from a credibility and reputation standpoint — without a well-run, highly efficient emergency department.

Understanding this reality should create a sense of shared purpose between hospital administrators, emergency physicians, hospital employees, and the entire medical staff in addressing this critical issue.

In part two of this series on improving ED operations, we will look at defining emergency medicine based on clinical data. This will lead to an understanding of the fundamental flaw in demand management that creates crowding. In part three we will look at a solution to the crowding that endlessly befuddles ED managers and administrators. See you next time. ■



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