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, throughput, 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.

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.

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

Base = 250

Continued on next page
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 = $2,000,000 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...
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_

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.

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