

managing the margin

...strategies for generating new revenue and controlling costs

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Capturing ED Revenue Opportunities

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The major point of entry for most hospitals is the emergency department (ED). Yet how frequently is managing this service line's capabilities, capacity, and efficiency made a top priority? The degree to which the ED is effectively managed can have significant implications for the financial health of your organization.

Several factors only add to the importance of optimizing ED revenue opportunities.

Rising demand for services. ED service needs are increasing, with no end in sight. The rate of ED visits per 1,000 people in the United States rose from 347 in 1997 to over 370 in 2001, an increase of 7 percent. Combined with population growth of 6 percent over the same period, ED visits increased 14 percent (from 93 million to 106 million).

Industry experts have noted a continued rise in volume over the past several years, and they anticipate further growth in the years ahead. Contributing factors include the shortage of primary care physicians, the increasing uninsured population, stricter enforcement of Emergency Medical Treatment and Active Labor Act (EMTALA) regulations, and an aging population.

Major source of inpatients. Typically, 50 percent or more of a hospital's admissions originate from the ED. Effective management of this base can create significant revenue potential downstream.

Entry point for key service lines. For many hospitals, the ED provides important clinical capabilities and serves as a gateway for other clinical service lines, such as cardiology, orthopedics, and pediatrics.

Increasing consumer expectations. The rise of consumerism and the availability of quality information have led to increased focus on patient satisfaction and the need to deliver timely, patient-centered care in the ED. What's more, because the ED is the principal point of contact with a hospital for many patients, it plays a disproportionate role in defining the organization's image and reputation.

Cost and productivity imperative. The ED must operate efficiently and provide high-level service to effectively meet the challenges posed by ED overcrowding, costly operations, and patient demands for timely care.

Contribution to Profitability

Further underscoring the importance of the ED to the financial health of most hospitals is a 2003 study published by the California HealthCare Foundation. This study found that nontrauma EDs in California generated 20 percent of the hospitals' profits. Although, on average, ED visits accounted for a loss of \$84 per patient, this loss was more than offset by an average of \$1,220 in profit generated by the average patient admitted from the ED. (These financial results will vary by hospital depending on case mix, payer mix, and other factors.)

EDs that are frequently on diversion can cause hospitals to lose significant revenue. ED diversion has been an increasing problem in many markets; a recent GAO report indicated that nearly one quarter of the more than 1,400 hospitals surveyed were on diversion 5 percent or more of the time, and 70 percent were on diversion at least sometimes. One hospital located in the Northeast estimated that it lost 450 admissions to its competitors as a result of being on diversion 600 hours one year—which translated into a loss of nearly \$3 million in net revenue and at least half

of that in contribution margin.

At a community hospital located in a highly competitive urban market in the Midwest, poor service levels in the ED dissuaded many private community physicians from referring their more acutely ill (and insured) patients to the hospital. Patients were dissatisfied with the long wait times and perceived the ED physicians as being of poor quality. As a result, ED visits at the hospital leveled off over a two-year period while visits to other hospitals in the community increased substantially. During the same period, admissions from the community hospital ED declined 40 percent, overall admissions declined more than 10 percent, and the payer mix worsened considerably—all of which adversely affected the hospital's financial performance.

In some markets, hospitals have experienced a worsening payer mix and an increase in bad debt as a result of the increasing number of uninsured individuals, who are the most likely to use the ED for primary care. A few of these hospitals are reducing bad debt associated with the uninsured by initiating new payment policies requiring

some type of payment or payment plan before the patient leaves the ED.

ED Specialty Services

Hospitals are increasingly offering services in the ED to broaden and deepen the capabilities of high-priority service lines and expand market share. According to a 2001 survey by the Emergency Nurses Association, more than 60 percent of EDs provided some type of specialty services. Services in the ED most frequently offered included:

- Sexual assault intervention (33 percent)
- Trauma program (23 percent)
- Pediatrics (20 percent)
- Mental health services (16 percent)
- Chest pain center (15 percent)

Chest pain units associated with the ED, especially with angioplasty capabilities, are an important entryway into the cardiac service line. Angioplasty is becoming the standard of care for patients with acute myocardial infarction (MI). EDs that can diagnose and transfer patients with acute MI immediately to the catheterization laboratory will attract more cardiac patients and market share than those that do not and will also benefit from a significant boost to the overall service line for follow-up care.

The high percentage of pediatric cases often seen in the ED (20 percent nationally) provides an opportunity to establish pediatric expertise in a new way, particularly with so many smaller community hospitals having eliminated dedicated inpatient pediatric units due to declining census. In many EDs, physicians and nurses can maintain their competency in pediatric care. Some

organizations have added pediatric observation, surgical recovery, and even limited inpatient care in pediatric units located in the ED to take advantage of this expertise and offer more acute pediatric care to the community.

Improving Efficiency

The ED needs to be able to treat patients quickly yet effectively to maximize its capacity while managing its costs. Several measures that indicate that ED operations need improvement are increasing ED lengths of stay (LOS), decreasing patient satisfaction scores, an increasing percentage of patients leaving without being seen, and ever-increasing hours on diversion (see Exhibit 1 for selected benchmarks).

ED LOS often can be reduced by addressing internal operations, such as facility size and layout, registration and triage, staffing, and communication.

One way to reduce visit duration and improve patient satisfaction among the rising number of minor care patients is by developing a dedicated fast-track program, leveraged by physician extenders and focused on quick turnaround time.

Other strategies to address internal operations include implementing bedside registration, matching staffing patterns to typical patient volume, and providing tools to improve communication throughout the ED (e.g., computerized patient tracking, wireless phones, and standardized chart placement).

Efficient ED operations also may be affected by factors external to the department, such as ancillary turnaround,

Measure	Benchmark
ED Length of Stay by Patient Type	
Fast Track	< 1 hour
Treat and Release	2.5 hours
Admitted	3.5 hours
Patients Left without Being Seen	< 1.25 %
<i>Source: Health Strategies & Solutions, Inc.</i>	

physician response time, inpatient bed availability, and admission processes.

Addressing operational issues that stem from external factors often requires a systemwide approach. A shortage of available in-patient beds is frequently a major cause for backups in the ED, which in turn prevents the efficient use of treatment space for incoming patients. According to a 2002 GAO survey of ED crowding, 90 percent of the hospitals surveyed "boarded" patients in the ED for more than two hours while waiting for an inpatient bed (typically a telemetry or critical care bed). To address this issue, some hospitals have initiated navigator services that identify inpatient beds that can be turned over as quickly as possible.

Timely ancillary turnaround is another key facet of efficient ED operations. The feasibility of dedicating staff and equipment for ancillary services, such as laboratory and radiology, is frequently questioned when examining ED operations.

In a typical ED, general radiology exams are ordered for more than 50 percent of ED patients, and an additional 10 to 15 percent of ED patients receive a CT scan. If an ED patient has to wait for transport or access to an imaging room, the ED treatment room is occupied longer than necessary. For larger ED programs, placing

one scanner within the ED should be considered, particularly if the ED is not adjacent to radiology. Locating one or more dedicated general radiology (or X-ray) rooms within the ED can improve turnaround time. Some hospitals have realized staffing efficiencies by using the ED-based imaging satellite after hours for inpatients.

Slow laboratory test turnaround is another frequent factor in inefficient ED operations. Satellite laboratory services in the ED are less prevalent than dedicated imaging services, largely due to concerns about regulations associated with the Clinical Laboratory Improvement Amendments (CLIA), staff competency, and quality assurance. Many hospitals rely on pneumatic tube systems or stat courier services to minimize transport time. The caliber of point-of-care testing equipment is improving, however, and may support more widespread consideration of the on-site location of testing services. At a minimum, the ED should target and monitor service standards for timely turnaround of results (typically between 30 and 40 minutes for most tests) for both laboratory and imaging services.

Capacity Planning

ED expansion projects are under way across the country in response to surging patient volumes and the increasing importance

of the ED as a gateway to the hospital. The major driver of ED size and the capital costs associated with renovation and expansion is the number of ED treatment rooms or beds.

Industry standards for average visits per ED bed typically range from 1,200 to 1,800 visits per bed. However, using such standards without clearly understanding the underlying operational assumptions can lead to an incorrectly sized department and poorly planned capital investment. The key factors that must be considered in determining ED capacity requirements are projected activity levels, LOS, desired room availability, and interchangeability of certain types of rooms.

ED volume projections should be based on expected population growth, changes in ED use rates in the service area, and targeted market share for the organization (within certain geographic limits). In addition to considering the impact of expanding the ED's scope of services on future visit volumes, this analysis should consider local market dynamics and the availability of alternative delivery sites, especially for urgent care.

Given the significant role the ED plays in generating admissions, it is critical to understand the impact of ED volume growth on inpatient bed capacity. For example, one community hospital planning an ED expansion to accommodate 15,000 additional ED visits also estimated the need for 60 more beds to house the

Exhibit 2: Emergency Department Bed Requirements at One Community Hospital*

Room Availability	No Change Length of Stay (2.4 hours)		Reduced Length of Stay (2.0 hours)	
	Dedicated Psychiatry	Inter-changeable	Dedicated Psychiatry	Inter-changeable
90%	22	21	18	17
95%	24	22	20	19
99%	28	25	24	21

*Based on needs for an emergency department with 39,000 visits during prime shift and peak month.

incremental 3,000 admissions those visits would generate. Projecting and planning additional capacity for a sizeable increase in ED visits without a strategy for handling the downstream admissions will only lead to further bottlenecks.

Treating patients in less time will increase the ED's capacity overall. A targeted reduction in ED LOS, achieved by more efficient facilities and operations, can significantly reduce the number of beds required or allow for additional volume to be handled in existing beds. For example, a capacity analysis for one community hospital with 39,000 visits determined that the ED would require 22 beds, assuming its current average LOS of 2.4 hours (see Exhibit 2 on page 4). If LOS could be reduced to 2.0 hours, the hospital could reduce the treatment capacity by 3 beds (a 15 percent reduction) or it could handle an additional 5,000 visits within the 22-bed complement, assuming 95 percent room availability and complete interchangeability of rooms in both cases.

The desired room availability has an equally measurable impact on ED capacity requirements. Availability is

defined by the percentage of time an arriving patient will have a room (and presumably staff) available for treatment. A higher confidence level that a room will be available will require more rooms barring any other changes.

Exhibit 2 shows that the hospital has a four- to six-bed swing (20 to 25 percent of total beds) in capacity requirements depending on the desired level of room availability. While planning for the highest availability percentage might seem desirable to minimize ED crowding, the tradeoffs include lower average occupancy rates of ED rooms overall and the additional capital cost required to operate at this high level of service. On an incremental basis, the capital costs for each additional ED bed (and related support space) can cost a minimum of \$150,000.

Finally, the more discrete and the less interchangeable different types of patient treatment rooms are, the greater the capacity needed. Additional beds may be required to preserve dedicated psychiatry beds. Besides behavioral health, other patient populations that are typically considered for dedicated rooms include

trauma, pediatrics, and fast track/urgent care. Many organizations choose to create some distinct patient care areas through the ED design while preserving flexible rooms to optimize the use of available space.

A Pivotal Role

The ED's pivotal role in the financial health of a hospital or healthcare system cannot be overlooked. By effectively managing services and operations, the ED represents a significant opportunity to increase revenues and margin and improve the hospital's ability to deliver high-quality care to the community. ■

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