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THE ED LABORATORY

The emergency department (ED) is a unique clinical environment affected by a number of elements that make the safe and efficient delivery of healthcare seem an impossible proposition. It has been called a “laboratory for error,” where time-pressured work is performed in an atmosphere of uncertainty. Devising strategies to improve safety and minimize risk in the emergency department requires a thorough understanding of its unique features and elements:

\[
\text{Time-pressured work} + \text{Environment of uncertainty} = \text{Laboratory for error}
\]
THE PATIENT

The patient seen in the ED has characteristics not usually found in patients in other settings. The patient arrives for unscheduled healthcare, and there is little or no information about him. The patient is under stress, is often in pain, and may have conditions that alter his mental status. Language barriers are common in the ED. Many ED patients lack identification, and some are intoxicated and uncooperative. Additionally, patients with mental health problems are a growing burden to the ED. In many communities this accounts for up to 6 percent of all ED volume, which is comparable to the frequency of chest pain presentations (Welch 2006). Mental health patients are among the most difficult patients to manage. But all ED patients share one thing in common: They need urgent if not emergent care. This immediate need requires that all these obstacles be overcome. The challenges of the ED and the constant pressure to deal with them mean the ED is loaded with risk and the possibility of errors.

The Patient

**Given**

- Appears randomly, not on a schedule
- Is stressed and in pain
- Requires urgent or emergent care

**Possibilities**

- Is inebriated, intoxicated, or uncooperative
- Carries no identification
- Does not speak English
- Has mental health issues
- Brings along minimal health information

THE ILLNESS

The patient presenting for emergent or urgent care may have any number of illnesses or injuries. The presentations of these maladies may be atypical and unpredictable, but they generally require some rapid diagnostic and therapeutic intervention. Many critical illnesses can present innocently (e.g., serious infectious diseases
that appear minor at first), and minor illnesses can mimic serious illnesses (e.g., acid reflux appearing as an acute myocardial infarction). Serious illnesses and the treatments they require are inherently risky.

THE UNIQUE CLINICAL WORK

Unlike other clinical specialties, the practice of emergency medicine involves unbounded clinical entities, and there are no limits on the number of patients who can present for care at a given time. The multitasking and interruptions are unique to this setting, and several studies have shown that the intensity of the clinical work is greater in the ED than in other medical office or clinic environments. As Exhibit 1.1 shows, the ED physician has more than three times the number of interruptions in an hour. She also has seven “breaks in task” an hour. The ED doc is almost always caring for three or more patients at once while the office physician spends only five minutes per hour tending to three patients at once.

There is no context for either the provider or the patient in an ED encounter. Two strangers attempt to find explanations for the patient’s subjective complaints in an information vacuum. There is little opportunity to establish a significant relationship in a three-hour ED encounter. These factors make it easy for expectations to be unmet and for patients to be upset and hold the ED accountable for perceived lapses in care. Finally, providers must toggle between the “horizontal patient,” who may have serious illnesses that need minute-to-minute management, and the so-called “vertical patient” with high service quality expectations. Compare this to any other specialty: The office physician manages all vertical patients and the hospital-based physician, especially the ICU intensivist, manages all horizontal patients. This variation in the ED is unique and is quite different from other clinical settings.

<table>
<thead>
<tr>
<th>Exhibit 1.1: Comparison of Interruptions by Practice Location</th>
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<tbody>
<tr>
<td><strong>Interruptions and Multitasking</strong></td>
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<tr>
<td>Interruptions per hour</td>
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<td>Caring for 3 or more patients</td>
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SOURCE: Data from Chisholm (2001).
SENSE MAKING VERSUS DIAGNOSING

Physicians are trained in medical school and residency at diagnosing, but the skill that may be even more critical to the practice of emergency medicine is sense making. At its most basic, sense making means “how people make sense of events,” but it is more complicated than that. Sense making theory looks at how individuals or groups notice and interpret what is happening around them and how they translate this into action. Sense making means asking these two questions: (1) What is going on here? and (2) What do I do next? A key element in sense making is the practice of stopping and incorporating new information again and again to make sense of a situation.

While diagnosing involves choosing among diagnostic possibilities, sense making involves deciding which information even gets considered. In the emergency department, where patients present out of any context and symptoms may evolve over time, the physician must constantly be engaged in sense making and his care plan must be an iterative process. Effective sense making requires that the team engaged in the care of the patient constantly share their assessments and revise their approaches. Communication must be effective and frequent among team members. The physician must articulate his expectations for test results and the patient’s responses to treatment. If those expectations are not met, the team—led by the physician—should consider that the earlier sense making was incorrect.

THE ED ENVIRONMENT

The factors coming to bear on the ED and medicine at large appear to be building into a perfect storm.

The Perfect Storm

The following elements contribute to the perfect storm looming over the ED:

- The changing demographic: EDs are seeing older, sicker, more medically complex patients.
- The fluctuating nursing shortage is threatening staffing levels.
- Many EDs are staffed with younger, less experienced workers who do not stay in one job for long.
• A physician shortage, particularly in primary care, is growing; this may cause patients to wait longer to seek care, resulting in sicker people in the ED.
• The on-call crisis affects nearly every medical subspecialty now, which has led to an inability to get timely consultations for patients in the ED.
• There is growing pressure to keep patients out of the hospital.
• More diagnostics can be done in the ED, creating longer ED stays.

Exhibit 1.2 shows a graph from Peter Sprivulis at the Institute for Healthcare Improvement showing the complexity of acute healthcare needs in patients as they age. As the baby boomers become senior citizens—the number of citizens over age 65 will double by 2030 (He et al. 2005)—their healthcare needs will increase: Emergency department personnel will do more to them, for them, and with them.

Though much has been made of the nursing shortage, the physician shortage that is just beginning also will have a significant impact on EDs in the United States. Since the 1980s, when the Association of American Medical Colleges predicted an oversupply of physicians, medical school graduation rates have been flat (Alberti 2011). The curves representing supply and demand suggest a crisis that will know no boundaries: The shortage will cross political and geographic borders and medical specialty boundaries. A 2010 article in the *Journal of the American Medical Association* noted that physicians had decreased their hours worked by 7.2 percent.

**Exhibit 1.2: Complexity of Healthcare Needs in Patients as They Age**

![Graph showing the complexity of healthcare needs in patients as they age.](source)

and the biggest decreases were among the younger physicians (Staiger, Auerbach, and Buerhaus 2010). At the same time the number of physicians retiring is higher than was anticipated. Further, the younger physicians do not want to work the hours that physicians of previous generations worked. This younger workforce has more female physicians, who tend to work fewer hours while balancing medicine and motherhood, and is smaller relative to the patient population.

These trends will compound the already existing shortage of trained emergency physicians. This shortage is particularly acute in rural areas. The shortages across other specialties will exacerbate the on-call crisis and add to the already stressful work environment of the specialty.

The shortage of primary care physicians, the characteristics of younger physicians and their work habits, and the aging demographic requiring more healthcare services will make it even more difficult to obtain routine primary care. Difficulties in seeking primary and preventive care will mean that patients will present to the ED later in the course of their diseases and outcomes will suffer accordingly. Some have predicted that a three- to four-month wait to see a primary care physician is not that far off, considering all of these factors (Ruiz 2008).

Finally, technology has allowed for more diagnostic testing in the ED, and this takes time. The Emergency Department Benchmarking Alliance (EDBA), a non-profit organization with almost 500 ED members, noted in its 2006 survey that the number of CT scans and MRI scans performed in the ED increased 400 percent between 2000 and 2006. Utilization of imaging, and complex diagnostic testing such as cardiac stress testing, continues to rise. This increased diagnostic testing also means the physicians and nurses working in the ED and in other parts of the

**Exhibit 1.3: Healthcare Encounters per Year by Age**

![Bar chart showing healthcare encounters per year by age](source: Hsiao et al. (2010).)
hospital are in danger of information overload. One study revealed that 61 percent of inpatients and 75 percent of ED patients were discharged without receiving test results (Henson 2011).

THE ROLE OF EXECUTIVE LEADERSHIP

The role of executive leadership in managing the risk in the ED has not been widely and fully articulated in most healthcare organizations. Yet the effective strategies for managing risk in the ED can’t be successfully implemented without this leadership. Many physician and nurse leaders do not have the training or the tools to adequately address these issues. This book explores ways executives can design systems that minimize risk at the front lines. Imagine your organization establishing systems that make it impossible for the front lines to do the wrong thing. Though executives are not healthcare providers, they can influence behavior along many fronts in ways that will lead to a safer, more reliable healthcare environment. With an eye always on systems and processes, not people, and with the will to address these difficult issues articulated from the top of the organization down, gains can and will be made.

In addition to making specific changes at the front lines, the executive leadership should seize the opportunity to influence culture, which not only results in measurable improvements but sets the stage for ongoing improvements in quality, safety, and risk management.

Case Study

In the 2009 EDBA Benchmarking Survey, hospitals were grouped by volume and studied along operating characteristics such as admission rate, transfer rate, and acuity. It was clear that the census could be stratified into quintiles: volume bands of fewer than 20,000 visits; 20,000–40,000; 40,000–60,000; 60,000–80,000; more than 80,000 visits. Performance on operating characteristics such as length of stay, door-to-physician time, and left-without-being-seen varied among the volume bands. In 2008 the alliance consisted of 172 hospitals. In 2009 Hospital Corporation of America (HCA) joined the alliance, adding more than 150 hospitals to the database. Suddenly the variation in performance at the volume band level dropped. HCA hospitals were performing better than other hospitals within each volume band. How did they do it?

(continued)
An interview with Suzanne Stone-Griffith, vice president of quality at HCA, told the story. “We measure and monitor everything to do with ED performance. We have articulated that we expect EDs to perform well and to constantly be improving. We look for best practices and try to share them among the organization. We have complete alignment from the executives to the frontline workers, and the culture supports the work!”


Strategies for Healthcare Executives

- Understand and recognize the unique factors inherent in the ED that lead to risk.
- By understanding these factors, systems approaches can be adapted to reduce the risk.
- The specifics of new strategies will come from the clinicians and the front lines, but the will must come from the executive suite.
- A cultural change must occur to launch this work successfully.

Recommended Readings


