

# The emergency care system in the United States

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## Introduction

Over the past 4–5 decades, care in hospital-based emergency departments (EDs) has undergone a fundamental transformation. Emergency care of the 1960s and 1970s in the United States was delivered in the “emergency room” or “ER”: literally, a small location or room within the hospital where a limited number of after-hours emergencies were seen. Then, the rest of the hospital was basically closed. ERs of the past had no legislative requirement to see patients who could not pay, and providers who worked there were not formally trained in emergency care.

Fast forward to 2013 and the large EDs of today are very different: sprawling departments with 50–100 separate patient rooms, immediate access to advanced technology, highly trained staff, and a federal mandate that all patients require medical screening examinations regardless of their ability to pay. The twenty-first century ED serves as the staging area for the critically ill and injured, an always-open location that provides high-quality acute unscheduled care, and has a critical role in the nation’s safety net. While the ERs of the past arguably played a small part in the public’s health, the ED of today plays a critical one, and the role seems to expand year after year. EDs are increasingly the “front door” of the hospital, currently the source of approximately half of inpatient admissions to US hospitals.<sup>1</sup> EDs are the critical pivot point where patients from all walks of life have life-threatening diseases excluded or receive prompt treatment.

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#### 4 The US emergency care system

Today's US EDs have tremendous diagnostic therapeutic tools, resources (such as computed tomography (CT), ultrasound, and laboratory testing), and expertise at their disposal to deliver high-quality care. Yet, EDs simultaneously suffer from the wider systemic problems in the US health care system.

- ED care is highly fragmented. Often, ED providers have little knowledge of patients' medical history beyond what patients can recount, or what information resides in their local hospital records. It is not uncommon that patients' primary care providers (PCPs) never receive the clinical information of an ED encounter.
- The past decade has seen dramatic increases in the use of diagnostic technology in the ED, namely CT scans and laboratory testing. A recent study found that the number of CTs grew 330% from 3.2% in 1996 to 13.9% in 2007.<sup>2</sup> While the CT has been transformational in the practice of emergency care, dramatic increases also mean there may be overuse. This is a particular issue in trauma patients, and in some trauma centers the CT seems to have replaced a careful physical examination.
- ED crowding is a major problem that exists in more than 9 out of 10 US hospitals. ED care delivered during these more crowded periods has been associated with several negative clinical outcomes including poorer patient satisfaction, higher rates of complications and mortality, and lower quality of care.<sup>3</sup> Several solutions exist that can improve crowding, and in some cases eliminate it, yet these interventions are underused.<sup>4</sup>
- Electronic health records (EHRs) – which are now being woven into the fabric of US hospitals – solve many problems such as doctors' poor handwriting. Yet, at the same time, many EHRs are often difficult to use and can dramatically hinder ED performance during their implementation. Some create systematic errors, and most systems are not interoperable: information kept in one system cannot be shared with other systems easily.<sup>5</sup>

The objective of *Emergency Care and The Public's Health* is to offer readers a guided tour through the history and current state of America's EDs, with a glimpse into emergency care systems from other parts of the world. This book describes the successes of emergency care, and also provides an honest appraisal of what can be improved.

This book started as a collaboration among ED physicians, the Health Policy, Engineering, and Law faculties at the George Washington University in Washington, DC, who came together in 2011–2012 to present a University Seminar Series aimed at exploring the major issues in emergency care and public health. The book is the result of that Seminar Series; it is not intended to be comprehensive, but rather a primer for emergency

care providers, researchers, policymakers, and other interested stakeholders into the details of what really happens every day in EDs, and how it can be improved.

## **A journey through the myths and misconceptions of emergency care**

Before launching into any discussion about emergency care, it is first vital to dispel common myths and misconceptions about the ED. Ask an average American about ED care and conventional wisdom is that EDs are overrun primarily with the uninsured, homeless, and immigrant populations, who mostly use EDs for unnecessary “inappropriate” reasons. In reality, a low proportion of ED care is for low-acuity illness, and the demographics of the ED resembles the insurance makeup of the country and local community. Most patients seen in the ED, in fact, have private health insurance. The problem is that many of the EDs portrayed on TV tend to be in poorer socioeconomically disadvantaged areas.

For example, *The Waiting Room* (2012), a documentary that depicted the triumphs and sorrows of ED care at Highland General Hospital in Oakland, California, focused on care for the disadvantaged, uninsured, and downtrodden. The movie was compelling, but nevertheless propagated the myth that EDs are about poor people. In fact, America’s EDs are about everyone: the insurance mix of an ED tends to reflect the insurance mix of the community that surrounds the hospital, which can give false impressions about who actually uses the ED.

Myths about frequent users are also common. People think that those who repeatedly use the ED do not have their own doctors. In reality, frequent users of ED care are frequent users of overall health care, including PCPs.

Several other misconceptions abound, such as the ability to determine the “appropriateness” of ED care, who needs to be in the hospital, and whether there is robust quality measurement for most care delivered in the ED.

## **A look at international emergency care**

While it may be difficult to change how the average American sees the ED, one lens to change perspectives is to explore care delivered outside the United States. Some emergency care systems resemble that in the the United States, such as Australia, New Zealand, Canada, and the United Kingdom, where EDs are organized within hospitals. Yet, in those countries, there is a much greater focus on ensuring – in fact

requiring – patients to move in and out quickly. France has a much greater emphasis on treating ambulance patients in the field, where anesthesiologists and nurse anesthetists commonly staff ambulances and can treat and release patients outside of the hospital setting. Less developed countries, such as Iran and India, have plans in place to enhance the workforce and emergency care capacities across the pre-hospital and ED systems. The common theme across many countries is continued development of emergency care systems, including enhancements in pre-hospital services, expanding the capacities of EDs, and improvements in the workforce where more highly trained staff are available in EDs to treat broadly heterogeneous conditions.

### **First generation ED electronic health records 1.0**

A major change in the past decade in the United States has been the proliferation of EHRs. EHRs are designed to manage patient data and records. The idea is that instead of combing through mountains of paper, providers can retrieve up-to-date records about patients with a simple keystroke. Medication errors – such as a patient receiving magnesium in place of morphine because of illegible scrawl by the doctor – would be eliminated. But the history of EHRs in the ED is not a simple one, and is rapidly evolving. While EHRs have solved some problems, they create others. Circa 2013, hospitals have rapidly installed EHRs from various vendors, who viciously compete for market share with one another, yet have not figured out ways in which systems can share data easily. How issues of interoperability and usability get resolved in the marketplace and by government regulation will determine whether EHRs in the ED are a net benefit or just a time-consuming distraction that takes providers away from the bedside.

### **The human factor in emergency care**

Conceptualizing the benefits and potential problems of EHRs is about understanding how human beings interact with their environments. EDs and ED care is extraordinarily complex: ED providers are required to manage multiple complex tasks simultaneously, but are frequently interrupted. Medical errors are a major problem in US hospitals, and EDs are no exception. The question is how researchers can identify and overcome these problems. Human factors engineering focuses on understanding the capabilities of the human user – the ED provider – and applies this

knowledge to improve the tools they use (such as devices), machines, and systems (such as EHRs) with which the user and provider interact. The goal is to enhance the safety and efficiency of the process of providing care in the ED and understanding human factors is an important step to achieving that goal.

### **Evolving technology: Telehealth and simulation**

Two areas where technology has become increasingly important and will likely grow dramatically in the next decade in the ED are telehealth and simulation. Telehealth comes in multiple flavors, such as telemedicine, where real-time remote diagnostic services are changing the care of stroke patients. In some communities, tele-medicine provides rural hospitals with access to expert specialists, such as neurologists, to help them decide which stroke patients require thrombolytic therapy. Other technologies are evolving, such as store and forward technology, where clinicians can view data or images remotely to make recommendations. The major benefit of these remote technologies is that they provide critical access. Finally, mobile health or “mHealth,” which uses smart phones, will likely become much more important in emergency care in the future, particularly in keeping track of patients after they leave the ED, transmitting health information, and gathering survey data. Simulation is vitally important because on-the-job training cannot adequately prepare ED providers for the variety of clinical presentations they are expected to manage. Simulation – and practice – is necessary to ensure providers are able to perform rare emergency procedures safely (e.g., cricothyroidotomy), appropriately evaluate complex presentations requiring coordination of multiple providers, and make decisions in resource-limited situations such as mass casualty events.

### **What the future holds for the ED workforce**

ED use has grown tremendously over the past few decades in the United States. Current expectations are that demands will continue to rise with an aging population, an increased focus on high technology medical care which is only available in the ED, and policy changes – such as the Affordable Care Act – which will result in millions more Americans with health insurance coverage. With current training programs in emergency medicine and projected retirements of emergency physicians, there is likely to be a shortage of trained emergency physicians for decades.

The shortage of emergency physicians will continue to expand the role of physician extenders – including physician assistants and nurse practitioners. In addition, new practice models for emergency care will need to be developed to meet these demands.

### **Role of the ED in national preparedness**

EDs and ED providers have been central in helping manage and mitigate the effects of disasters, and influencing how the nation responds to such events. The concept of emergency public health has emerged recently as a distinct discipline. Public health traditionally uses addresses population health issues and uses more traditional strategies such as using empirical research to drive policy change. Emergency public health has incorporated new methodologies and has emerged as a distinct discipline. Certain common public health practices related to crisis communications, epidemiologic investigations, and biosurveillance are vitally important during an emergency. However, principles of emergency management and medical care that distinguish preparedness and response actions and for managing rapidly evolving, unusual emergency situations are also being adopted to address population health during disasters.

### **Evolving role of the ED in care coordination**

Care coordination is emerging as a major concept in new health reform efforts. The goal is to ensure that, “patients’ needs and preferences for health services and information sharing across people, functions and sites are met over time.”<sup>6</sup> Care delivered in EDs has traditionally been a series of isolated provider–patient interactions that involve little interaction with other providers or elements of the healthcare system. The result is fragmentation and a lower quality of care because information is often lost, tests are sometimes duplicated, and care within episodic settings like EDs may not fit well into the larger plan of care, particularly when end-of-life goals are not communicated or available to ED providers. With greater emphasis on value, care coordination in the ED will become much more important in the future; specifically, with how ED providers coordinate care with each other, with other hospital-based providers, and across communities. Improved care coordination will be created through the development and promulgation of new quality metrics that ensure communication and information transfer at important pivot points (e.g., an ED visit or hospitalization). There are several models of care coordination, primarily

involving improved communication across providers, ensuring interoperability across EHRs, and taking a more longitudinal approach to emergency care, where patients are called back after their ED visit and unmet needs addressed.

### **How new payment reform policies will impact emergency care**

Care coordination will be a centerpiece of how ED care will fit within the future “accountable” world of care in the United States, specifically the role of ED providers in enhancing the value of care delivered. This has been a major focus of provisions of the 2010 Affordable Care Act, which seek to expand access to care by expanding insurance coverage, through expanding the role of quality measurement, and using new models to pay for care. When it comes to acute and emergency care, enhancing value has not been a major focus, specifically through the structure of the fee-for-service (FFS) payment system. In the future, as new payment models become more prevalent, such as accountable care organizations, bundled payments, and episode-based payments, there will be increasing pressure on emergency care providers to take a closer look at the value of care provided. Attention will likely be focused on several areas that serve as major costs drivers: the role of the ED in admissions, and re-admissions, the expanding use of observation care, and on indications for advanced radiography use in the ED, along with efforts to bolster care coordination efforts.

### **Legal issues in emergency care**

One of the most important health care statutes in the United States has direct application to the ED: the Emergency Medical Treatment and Labor Act (EMTALA). EMTALA was the product of a long evolution which started at the turn of the twentieth century when physicians operated under the “no duty of care” common law principle. However, by the 1950s, the courts and legislatures were increasingly rejecting this principle, especially when it came to ED care. This was a reflection of both the unique vulnerability of ED patients – with EDs being the place where the public turned for acute health care when there was no other option – and the increasing power of the hospital industry. Today, EMTALA’s screening, stabilization, and transfer requirements are established in common law and state law precedents. However, EMTALA continues to be controversial as it is often referred to as the archetypal “unfunded mandate” and it continues to evolve and to involve legal

challenges as technology has improved and standards for emergency care have changed over time.

## **Charting a course for the future of emergency care in the United States**

Over the past decades, emergency care has undergone revolutionary changes in its structure, staffing, quality, and expectations – both medical and legal. In this ever-changing environment, emergency care leaders must develop robust adaptive organizations that provide future emergency physicians with the clinical and practice skills required for twenty-first century medical practice. It is likely that the 2013 practice of emergency care looks considerably different from how care will look in future decades because of changing payment and clinical models of care. The success of emergency medicine, especially compared with other medical specialties, will depend on how current leaders position the field in this rapidly changing environment.

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