Overcrowding Crisis in Our Nation's Emergency Departments: Is Our Safety Net Unraveling?

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http://pediatrics.aappublications.org/content/114/3/878.full.html
ABSTRACT. Emergency departments (EDs) are a vital component in our health care safety net, available 24 hours a day, 7 days a week, for all who require care. There has been a steady increase in the volume and acuity of patient visits to EDs, now with well over 100 million Americans (30 million children) receiving emergency care annually. This rise in ED utilization has effectively saturated the capacity of EDs and emergency medical services in many communities. The resulting phenomenon, commonly referred to as ED overcrowding, now threatens access to emergency services for those who need them the most. As managers of the pediatric medical home and advocates for children and optimal pediatric health care, there is a very important role for pediatricians and the American Academy of Pediatrics in guiding health policy decision-makers toward effective solutions that promote the medical home and timely access to emergency care. Pediatrics 2004;114:878–888; access to emergency care, ambulance diversion, emergency medical services for children, EMTALA, emergency department overcrowding.

INTRODUCTION

Much has been written about the use of emergency services. A prophetic 1958 study examining a significant increase in emergency department (ED) utilization suggested that physicians and hospitals should plan for the future by increasing the number of emergency facilities. Since that time, the number of ED visits in the United States has increased more than 600%, with an estimated 108 million ED visits in 2000. Thirty million of those ED visits were for children 0 to 18 years of age.

Over the past 2 decades, there has been increasing concern about this dramatic growth in ED visits. During the mid-1980s and early 1990s, many health care policy analysts viewed these increases as evidence of overutilization of EDs, specifically for nonemergent problems. Armed with data suggesting that care provided in the ED was more expensive and perhaps less effective, policy-makers and managed care organizations worked to limit patients’ access to emergency care. This perception was perhaps best summarized in 1993 by President Clinton, who in a nationally televised speech to Congress and the nation referred to EDs as “the most expensive place of all” to get care.

In the past decade, physicians and administrators responsible for the management of municipal emergency medical services (EMS) systems and hospital EDs have been voicing their concern regarding the capacity of their services. Their concern has been driven by an increasingly familiar phenomenon, overcrowding of EDs, which has worsened to the point of crisis in certain communities. Surprisingly, this saturation of emergency services is not primarily a result of excessive, inappropriate use of the ED by those with nonemergent problems. It is a byproduct of increasing numbers of patients with serious illnesses or injuries requiring hospital and/or intensive care unit admission. Evidence of the severity of the problem may be found in numerous articles in the lay press and in publications from the American College of Emergency Physicians (ACEP), the Emergency Nurses Association, and the American Hospital Association (AHA) and in peer-reviewed journals such as Academic Emergency Medicine, which recently devoted an entire issue to this crisis and its related problems. The US Senate has commissioned a study of ED overcrowding, as reported by the US General Accounting Office (GAO) in March 2003. This problem has also garnered the attention of the Joint Commission on Accreditation of Healthcare Organizations, which developed a standard regarding overcrowding for publication in the 2004 Hospital Accreditation Manual.

So, how did this happen, what are the implications, and what can pediatric health care professionals do to help? ED overcrowding has evolved from a complex series of problems. An understanding of the key legislative, social, and health care economic factors that have led us to where we are today is warranted before considering potential solutions.

THE EMERGENCY MEDICAL TREATMENT AND ACTIVE LABOR ACT: THE UNDERFUNDED FEDERAL MANDATE FOR UNIVERSAL HEALTH CARE

The Emergency Medical Treatment and Active Labor Act (EMTALA) was enacted in 1985 as part of the
Consolidated Omnibus Budget Reconciliation Act. Its purpose was to protect the rights of indigent patients seeking emergency care. The law was a response to the practice of patient “dumping,” the refusal of a hospital (and/or hospital-based physicians) to provide emergency care for patients who could not pay for their care. This regulation requires all Medicare-participating hospitals to provide a medical screening examination (MSE) for all patients who present for care to the ED regardless of their ability to pay.

Subsequent revisions, reinterpretation, and increased enforcement of this law over the past decade have expanded the reach of EMTALA, delineating the responsibility of hospitals, EDs, and their physicians to provide services to all patients who request them in a nondiscriminatory and consistent manner. The law specifies that the scope of the MSE should include all ancillary services routinely available to the ED, such as physician consultation and inpatient care, if required. In the absence of a national universal health benefits program, hospital EDs are essentially the only place in our current health care system at which all patients are guaranteed medical care.

Although clearly intended to promote the public good, EMTALA poses a profound economic challenge for hospitals and emergency care professionals, because this mandate for care does not carry with it a mandate for reimbursement for services rendered. Nationwide, EMTALA requirements are estimated to cost emergency care professionals more than $425 million annually. Mitchell and Remmel projected the financial impact of uncompensated emergency care in the state of Florida to reach an annual cost of $100,000 per emergency physician. This “free care” was estimated to be 5 times the amount provided by primary care physicians in that state. National data from 1998 suggest that the total direct expense for emergency physician services provided to uninsured patients approximated $1 billion. Hospital facility costs for this group of patients exceeded another $2 billion. This incredible economic burden is exacerbated by insufficient Medicare reimbursement, which frequently fails to cover the direct costs of either the hospital facility or the emergency physician. In most states, services provided under Medicaid are reimbursed at 30% to 50% less than the same services provided under Medicare, creating an even greater funding gap for those providing care to our nation’s 44.3 million Medicaid recipients.

It is little wonder that these financial stresses have resulted in the closure of nearly 500 hospitals and more than 1000 EDs over the past decade. More recently, the Centers for Medicare and Medicaid Services published a set of rule changes that seem to be an effort at moving the law back toward its original intent as well as giving the courts clearer guidance for enforcement. The new rules clarify that a hospital must maintain an on-call physician list “that best meets the needs of the hospital’s patients.” Physicians no longer have to be available all the time, but the hospital must have a written policy on how to deal with times when the on-call specialist is unavailable. Although this seems to be good news for rural and smaller hospitals and their medical staff members who have struggled to provide 24-hour coverage, this relaxation ultimately could contribute to a greater reliance on hospitals that suffer the most from overcrowding: large urban tertiary care centers, trauma centers, and academic medical centers.

Although EMTALA interpretation and enforcement has become increasingly punitive, EMTALA is arguably more important today than when it was first enacted. With growing numbers of uninsured Americans, more physicians opting not to provide services to Medicaid and Medicare beneficiaries, and a failing public health and social welfare network, the ED has become one of the few reliable points of health care access in an unraveling safety net.

The Expanding Role of the ED in a Shrinking Public Health Safety Net

Hospital EDs hold a very strategic position in the continuum of care in our society. Accessible and always open, the ED remains one of the few institutions available to aid all persons. Services are provided regardless of economic or social status and without an appointment. As previously noted, this societal responsibility has been both affirmed and mandated through federal legislation.

The importance of the ED’s role has increased over the past decade as other public health and social care programs have eroded. Many people in need do not qualify for public support or are unable to take advantage of services to which they are entitled, including several million uninsured and underinsured children who could qualify for Medicaid or State Children’s Health Insurance Program (SCHIP) benefits. Disadvantaged Americans may pass through the entrance of an ED more than any other public institution. Some have suggested that this represents a remarkable opportunity for EDs to serve the needs of the disadvantaged by developing their full potential as social welfare institutions.

In 2000, the Institute of Medicine (IOM) published a report titled America’s Health Care Safety Net: Intact but Endangered. The goal of the IOM was to “examine the impact of Medicaid managed care and other changes in health care coverage on the future viability of safety net providers operating primarily in ambulatory and primary care settings.” In its report, the IOM panel expressed grave concern for the current and future state of our nation’s unraveling health care safety net and the vulnerable populations it serves. The report described several trends that seem to threaten the viability of safety net providers. These trends include inadequate monitoring of safety net viability and function, poor integration of services, financial instability of core safety net providers, and rapid shifts to Medicaid managed care. Although this report did not specifically focus on the role played by EDs, it is clear that EDs meet the defining characteristics of core safety net providers: 1) maintenance of an open-door policy, offering ser-
vices to patients regardless of their ability to pay; and 2) caring for a patient mix with a substantial share of Medicaid, uninsured, and other vulnerable populations.52

The number of uninsured Americans has grown steadily every year, even during the economic boom of the 1990s. In our nation of amazing wealth, there is also great poverty. There were approximately 43.6 million uninsured Americans in 2002, including 12.5 million children through 21 years of age. In fact, the proportion of the nonelderly American population (younger than 65 years) with health insurance coverage decreased in 2002 to a post-1987 low of 82.7%.53 Although difficult to assess, there are between 4 and 13 million homeless persons in America.54

More than 30% of children younger than 21 years (24.2 million) receive their health care benefits through the Medicaid program.37 Although there are data showing that the Medicaid program has significantly improved the primary care access of impoverished children,46,47,56 the program has fallen far short of creating equity between Medicaid beneficiaries and children living above the poverty line.46,47,55–57

An analysis of data from the 1988 National Health Interview Survey provides additional insight into the problem. Indigent children with Medicaid insurance were more likely to have a regular source of health care than those without Medicaid coverage. However, in comparison with children living above the poverty line, poor children with Medicaid were less likely to receive routine care in a physician’s office, were more likely to lack continuity between their usual sources for sick and well care, and were more likely to identify hospital EDs as their preferred source for sick care.46 In all, the survey determined that 6 million children lacked a usual source for primary care, and 12 million had not made a timely visit for preventive health care.46 Although studies a decade later indicated significant improvement in access to care for Medicaid beneficiaries, these children are still less likely to have a consistent source of health care and are 3 times more likely to have unmet health needs than are nonpoor children with private insurance.57,58 Recent studies by the GAO indicate that less than half of Medicaid and SCHIP recipients have received early and periodic screening, diagnosis, and treatment services and that most states are doing little to monitor the use of primary or preventive health care services in this vulnerable population.59,60

In Michigan, Williams found the marginal cost (the cost of seeing 1 additional patient). In a study of 6 EDs, it stood through an analysis of marginal cost, or the cost, the relative cost of ED care may be best estimated for nonurgent ED visits between 1996 and 2001 (Fig 1).73

A primary influence for the great attention and concern regarding ED utilization by these populations is the well-held perception of a relatively high cost for those services. Various studies have suggested cost differentials between ED care and the same care in a doctor’s office to be between 50% and 100%.1 Although charges are a poor reflection of true cost, the relative cost of ED care may be best understood through an analysis of marginal cost, or the cost of seeing 1 additional patient. In a study of 6 EDs in Michigan, Williams found the marginal cost (the direct cost incurred from providing care for 1 additional patient) of an urgent ED visit to be $148, whereas for nonurgent visits, that cost was only $24, an amount likely less than the marginal cost associated with keeping a doctor’s office open after regular office hours for nonurgent patient visits. In other words, EDs may be a cost-effective solution for certain components of after-hours ambulatory care.

DEFINING ED OVERCROWDING

Although the subjective assessment that a particular ED (or any public facility) is overcrowded may be inherently obvious to the average observer, objective and generalizable indicators of ED capacity and precise patient volume or acuity thresholds consistent with saturation of ED resources have proven to be difficult to define scientifically.14 ED overcrowding is defined by the ACEP as a situation in which the identified need for emergency services outstrips available resources in the ED (the Appendix contains a list of terms and metrics typically used in describing ED overcrowding and their definitions). In fact, part of the problem faced by those who manage emergency care systems is that there is not a universally held gold-standard definition for ED overcrowding.45 Some have described overcrowding on the basis of excessive waiting times to see an ED physician or by treatment time delays in the ED. Others have based the definition on delays in the movement of admitted ED patients to inpatient beds. For some, the definition is based on the number of patients versus the number of available ED treatment stations (beds) or the forced use of nontreatment areas (eg, the ED hallway) to care for or hold ED patients. Others have attempted to define overcrowding on the basis of an assessment of patient acuity in the ED in relation to staffing resources. Finally, some link ED overcrowding to the need to divert incoming ambulance transports.43

SURVEYS OF ED DIRECTORS

Surveys of ED medical directors have identified a number of commonly held definitions for overcrowding, including patients placed in hallways, all ED beds occupied for more than 6 hours per day, a full ED waiting room for 6 hours or more per day, physicians feeling rushed for 6 hours or more per day, and acutely ill patients who wait more than 60 minutes to see a physician.7,74 To better understand increasing demand for emergency services, pursue multicenter or regional research on overcrowding, and plan for future ED resource needs, some have proposed the use of standard formulas to assess ED capacity (Table 1).75

STUDIES ON ED UTILIZATION AND OVERCROWDING

ED overcrowding is an obvious, almost predictable symptom of steadily growing demand that has exceeded available resources. ED visits have increased nearly 20% over the past decade. In 1988, 5200 US hospitals had 86 million ED visits. A decade later, emergency care was provided for 103 million encounters, but by this time only 4700 hospital EDs provided emergency care.17 Many EDs are experiencing significant increases in their patient volumes because of regional population growth, an increasing number of visits from uninsured and underinsured patients, and decreased access to primary care services. In general, the pace and extent of facility and personnel resource expansion in the remaining EDs has not kept up with patient volume and acuity increases.

As the prevalence and severity of the phenomenon has grown, so have the number of descriptive reports and studies attempting to assess overcrowding. A decade ago, only a small percentage (less than 10%) of ED directors, mostly those from urban public hospitals, reported concerns about overcrowding.19 More recent studies find nearly all ED medical directors reporting at least periodic ED saturation, with a steadily increasing number of directors reporting it as a frequent problem.7,8,10,12,16,22,26,74,76,77

Derlet et al26 conducted a national random survey of 575 ED directors in 1998–1999 regarding the definition and extent of ED overcrowding and factors associated with it. Ninety-one percent of the responding medical directors reported ED overcrowding, with 53% reporting overcrowding occurring several times a week and 39% stating that it was a daily

<table>
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<tr>
<th>TABLE 1: Calculations to Assess ED Overcrowding</th>
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<td>Bed ratio (BR): the relationship between the number of ED patients and the number of treatment stations (beds) in the ED at any given time.</td>
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<td>BR = (number of patients in ED + predicted arrivals − predicted departures)/ED beds</td>
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<td>Acuity ratio (AR): a measure of total patient acuity in the ED at a given point in time</td>
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<td>AR = sum of patient triage category/number of patients or sum of all triage scores/number of patients</td>
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<td>Provider ratio (PR): the relationship between patient arrivals and ED physician staff, specifically the number of patients per hour (PPH) that each provider can manage</td>
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<td>PR = arrivals per hour/sum of PPH for each physician</td>
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<td>Demand value (DV): an overall measure of ED demand, including bed capacity, total patient acuity, and provider resources</td>
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<td>DV = (BR + PR) × AR</td>
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problem. Overcrowding problems were similar (more than 90%) in academic and private hospitals, although hospitals serving populations of greater than 250,000 had higher rates of overcrowding than did hospitals serving smaller populations (96% vs 87%). One third of the directors reported that patients had experienced poor outcomes as a result of overcrowding. Most frequently cited causes for overcrowding were high ED patient acuity, hospital bed shortage, high ED patient volume, ancillary service delays, and insufficient ED space.

The AHA surveyed member hospitals regarding ED capacity and overcrowding in November 2001. A total of 1500 hospitals responded. ED visit volume had grown by 5% over the previous year. Overall, 62% of respondents reported that they were either at or above the operating capacity of their ED, with 80% of teaching hospitals and urban hospitals and 90% of level I trauma centers experiencing this problem. One third of all hospitals experienced “ED diversion,” with more than half of the urban hospitals reporting some time on diversion. One third of urban hospitals reported being on ambulance diversion at least 10% of the time, with 1 of 8 reporting time on diversion at 20% or greater. Lack of available, staffed critical care beds was the number one reason cited by hospitals for ED diversion.

Lambe et al conducted an analysis of the changes in California’s hospital ED capacity between 1990 and 1999. Over the decade, the number of EDs in California decreased by 12%. The total number of ED treatment stations (ED beds) increased by 16%, but there was a 27% increase in visits per ED, with disproportionately greater volume increases in public versus private hospitals. In regard to patient acuity, critical care visits per ED increased by 59%, and nonurgent visits decreased by 8%. The combination of volume and acuity increases was hypothesized to be the source of ED overcrowding. A 1999 survey of California ED medical directors found that 96% reported overcrowding as a problem, and 28% reported daily overcrowding. The most frequently cited causes for overcrowding were increasing patient acuity and volume, hospital bed shortage, laboratory delays, and nursing shortage.

A 2001 survey of ED medical directors in the state of Washington revealed that 100% of large hospitals and 91% of small hospitals reporting overcrowding problems. Frequent overcrowding (more than 3 times per week) was reported by 59% of large hospitals. On average, hospitals were on ambulance diversion 18 times per month, with an average time on diversion of 7.5 hours. The 3 most common reasons cited for overcrowding were volume overload, full hospital capacity, and nonphysician staff shortages.

ED medical directors in Massachusetts were surveyed in 2000 regarding the causes of ambulance diversion. Diversion was attributed most often to a lack of inpatient bed capacity and increased numbers of high-acuity patients in the ED. Nearly 90% reported facing a nursing shortage, which contributed to the problem. Seventy-two percent of the medical directors believed that patient care was compromised in some manner by overcrowding, and 21% reported adverse patient outcomes directly attributable to overcrowding.

In response to numerous anecdotal reports in the news media, the Committee on Government Reform of the US House of Representatives commissioned a study on ambulance diversion in 2000. In their report, National Preparedness: Ambulance Divergions Impede Access to Emergency Rooms, the committee found ambulance diversion impeding timely access to metropolitan emergency services in 22 states, affecting nearly 75 million Americans residing in those areas.

The GAO, commissioned by the US Senate Committee on Finance to study ED overcrowding, conducted a national survey of more than 2000 hospital EDs in 2001. Two of every 3 EDs reported diversion at some point during that year. ED overcrowding and diversion was reported to be more common by hospitals located in areas with larger populations or those with high rates of population growth and by hospitals in areas with higher-than-average proportions of people without health insurance. Overcrowding was also more prevalent at trauma centers and teaching hospitals. Although no single factor stood out as the primary reason for ED overcrowding, the factor most commonly associated with overcrowding was the inability to transfer existing ED patients to hospital inpatient beds. Ninety percent of the surveyed hospitals reported “boarding” of admitted patients in their ED, with nearly 50% indicating an average boarding time of 2 hours or longer. Inpatient beds in greatest demand were intensive care unit and other monitored beds.

**KEY FACTORS CONTRIBUTING TO ED OVERCROWDING**

Although increasing demand and fewer EDs are part of the problem, as indicated in the GAO report, many experts feel that the primary source of ED overcrowding is the increasing difficulty that most EDs face in moving acutely ill “admitted” patients from ED beds to inpatient beds. Intense economic pressures over the past 2 decades have forced most hospitals to decrease inpatient care capacity, leaving many with an inadequate number of inpatient beds or insufficient qualified nursing staff to handle fluctuating levels of demand. According to the AHA, there were 1.36 million inpatient beds in 693 hospitals in 1981, 927,000 staffed beds in 3370 hospitals in 1991, and 829,000 beds in 4956 hospitals in 1999.

With nearly all hospitals running at a higher census, it has become more difficult to admit patients. This seems especially true for patients (including children) who require admission on an unscheduled or emergency basis and compete for a limited number of beds with scheduled inpatient procedures and semielective admissions. Tertiary and critical care beds are particularly in short supply. With no other place to move seriously ill or injured patients in need of admission, EDs must hold these patients for increasingly greater periods of time until an inpatient bed is available. These admitted patients, commonly referred to as “ED boarders,” require ongoing care, consuming already taxed ED resources. Boarders es-
sentially shrink the capacity of the ED and compromise its ability to provide timely care for incoming ambulance cases as well as acute patients who are still waiting to be seen. Although not conclusive, risk-management studies suggest that overcrowding and boarded inpatients pose considerable risk for medical errors.43 ED overcrowding also has a deleterious effect on the teaching missions of academic medical centers, with more than 90% of teaching hospitals reporting overcrowding.79

Adding to the mismatch between a steadily growing patient demand and relatively fixed ED capacity is a shortage of qualified ED staff. Real shortages exist in the supply of residency-trained emergency physicians80 and subspecialty-trained pediatric emergency physicians. The effects of new residency training rules and the reduction of trainee work hours on both hospital and ED capacity at teaching hospitals are yet to be appreciated. Among all the supply shortages in health care professional groups, the greatest deficiency is found within the ranks of registered nurses. Experienced ED nurses are truly the backbone of emergency care. Nationwide, there is a well-recognized deficiency of nurses, with vacancy rates in some states as high as 18%.81 Annual turnover rates in high-stress practice settings such as EDs can be 30% or higher. Added to the dilemma of a small workforce is the fact that this workforce is aging steadily. The latest studies indicate an average age of 46 years for the nursing workforce, with only 9% of nurses now younger than 30 years of age, a 40% decrease from 1983 to 1998. One study projects a deficit of nearly 300,000 registered nurses by 2020.82

Another notable problem that threatens the viability of our emergency care system and the well-being of the patients it serves is a decreasing number of medical and surgical subspecialists who are willing or available to provide consultative backup to the ED.83,84 A growing number of hospitals no longer have a “full panel” of on-call specialists who, because of the EMTALA mandate, are expected to provide consultative support to the ED. This problem has grown beyond small rural hospitals to affect large urban hospitals, including trauma centers. This problem will likely spread further in the wake of the November 2003 revisions to EMTALA that relax on-call physician requirements.

Global shortages in key medical subspecialties and surgical specialties and variations in geographic availability are both long-standing contributors to ED overcrowding, particularly for rural hospitals. More recently, 2 pressing issues are driving this growing deficiency. The first is a recent and alarming increase in professional liability insurance premiums. A recent American Medical Association study identified 44 of 50 states as having a current or impending liability crisis, with premiums for some subspecialists increasing as much as 25% to 50% annually.85 Physicians who provide ED or trauma on-call services typically pay higher liability insurance premiums than those who do not. Many subspecialists have concluded that they can no longer afford to provide ED on-call services. The second issue is the increasing percentage of uninsured or underinsured ED patients and managed care barriers, all of which contribute to poor reimbursement for the mandated emergency services provided by these on-call specialists.

Numerous other factors have contributed to the overcrowding crisis (Table 2). Although some problems are internal to the ED, most are not. Insufficient access to primary and subspecialty care services and barriers to follow-up care each contribute significantly to the problem. The ED has been characterized by some as the proverbial “canary in the coal mine,” with ED overcrowding representing a warning sign of growing distress within hospital and primary care delivery systems and a fraying health care safety net.

**DELETERIOUS EFFECTS OF ED OVERCROWDING**

Overcrowding of EDs produces a series of negative effects. First and foremost is that overcrowding places all involved parties, both patients and health care professionals, at risk. Excessive clinical demands on an already saturated ED often lead to medical errors and poor outcomes.43 Overcrowding has promoted the expansion of ED facility capacity through increased utilization of hallways and other suboptimal, poorly equipped locations as patient treatment areas, challenging patient comfort, care satisfaction, and confidentiality and adding additional risk for error.26 The only way busy clinicians faced with too many patients can care for all is to spend less time with each patient. The fine line between a highly efficient assessment and an incomplete assessment is easily crossed, generally at the expense of the patient. In teaching-hospital EDs, effective clinical teaching is an early casualty of excessive patient volumes.79 The high-stress environment of a crowded ED is one that also contributes mightily to staff burnout, higher turnover rates, and worsening deficiencies in clinical staffing.

Lengthy waiting times also promote patient dissatisfaction. More importantly, for patients with acute injuries and other painful conditions, it means prolonged pain and needless suffering. For others, inappropriately long waiting times pose an even greater risk if the acuity of their condition was underassessed during triage or if there has been signif-

**TABLE 2. Causes of ED Overcrowding**

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<td>Increased ED patient volumes</td>
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<td>Increased ED patient acuity</td>
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<td>Increased complexity of diseases and associated evaluations</td>
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<td>Lack of inpatient hospital beds and related resources</td>
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<td>Nursing shortage</td>
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<td>Physician shortage</td>
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<td>On-call physician/consultant availability</td>
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<td>Insufficient physical plant space for the ED</td>
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<td>Ancillary service (eg, lab, radiology) delays</td>
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<td>Reduced access to primary care services</td>
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<td>Reduced access to subspecialty care services</td>
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<td>Difficulty in arranging follow-up care</td>
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<td>Language and cultural barriers</td>
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<td>Increased medical record documentation requirements</td>
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<td>Medical liability issues</td>
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<td>Uninsured and underinsured patients</td>
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<td>Inadequate funding for emergency services</td>
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icant progression of illness during a lengthy stint in the waiting room.

ED patient safety concerns aside, perhaps the most prominent deleterious effect of overcrowding is ambulance diversion. As suggested by survey data, ambulance diversion has become an increasingly common solution pursued by overcrowded EDs. Diversion had previously been confined to large urban teaching hospitals, timed with peak winter influenza outbreaks. Ambulance diversion now has become a year-long phenomenon, affecting more than two thirds of US hospitals in urban, suburban, and rural settings. It is now fairly common for numerous hospitals within the same city or state EMS region to be on ambulance diversion at the same time. Many EMS systems have reacted to this by eliminating diversion as an option for overcrowded EDs during periods of peak patient volumes or when more than a certain number of institutions are saturated.

When most or all major hospitals in an area are “on diversion,” an entire municipality’s EMS system can be paralyzed. This represents failure of the health care safety net at a rudimentary level, one that affects all economic and social strata. With saturated EDs on bypass, ambulance patients with true emergencies are forced to travel to more distant and perhaps less appropriate facilities. For an adult with a myocardial infarction or a stroke or a child with respiratory failure, the additional time to definitive care necessitated by ambulance diversion is a very meaningful factor. For children with special health care needs, this may limit their access to specialized EDs or tertiary care professionals who are familiar with their condition. Once an acutely ill patient is in the back of an ambulance, neither socioeconomic status nor special health care needs may have any bearing on disposition when diversion is in place.

SOLUTIONS TO ED OVERCROWDING: WHAT CAN PEDIATRICIANS DO TO HELP?

The ED overcrowding crisis did not mysteriously appear and, in reality, has been lurking in the shadows for some time. It is attributable, in part, to the absence of a coherent national health policy to create a comprehensive health care and social services delivery system for all Americans. For many adults and children, the ED has become and still remains the access point to health care by default. Intense economic pressure over the past decade has forced a reduction in the capacity of all aspects (primary care through tertiary care) of the American health care system. The result in certain communities is a dangerously overburdened and underfunded EMS system, with our nation’s EDs sustaining the brunt of the problem.

The definitive solutions to ED overcrowding are complex, resource intensive, and expensive. Hospitals must improve their inpatient capacity, particularly the number of staffed critical care beds. Hospitals must also become better prepared to manage seasonal variations in acute illness and coordinate elective and nonelective admissions. Existing inpatient beds must be managed in a manner that promotes efficient utilization. Effective use of observation units may help to maximize availability of limited inpatient beds. If the hospital capacity problem can be remedied, one of the root causes of ED overcrowding will have been addressed.

Hospital EDs must also adapt to meet growing patient demand. In the face of steadily growing utilization, there must be a corresponding expansion in the number of ED treatment stations and in the levels of physician and nurse staffing. Of course, this may be easier said than done considering current workforce shortages. Hospital EDs must also strive to improve the efficiency of the care provided to all patient acuity levels, both emergent/urgent and non-urgent groups. Improving ancillary service support will also help to make the ED more effective.

RECOMMENDATIONS

Pediatricians must serve as powerful advocates for improved health care for all children. The problem of ED overcrowding cannot be solved without solutions in our current health care systems that will provide an accessible and comprehensive medical home. There are some specific actions that both primary care pediatricians and pediatric subspecialists can pursue to address this growing problem.

1. Include the management of acute illness or injury and the utilization of emergency services in anticipatory guidance. The best time to educate families about the appropriate use of an ED, calling 911, or calling the regional poison control center is before the emergency occurs. Although parents will continue to view and respond to acute medical problems as laypersons, they may make better-informed decisions if they are prepared.

2. Work with emergency care professionals to make every ED experience an educational opportunity for the patient and family. Components of this education should include: (a) clear instructions for the illness or injury of immediate concern; (b) instructions regarding the management or maintenance of chronic conditions and special health care needs; (c) preventive health education; and (d) guidance about EMS and ED utilization and available sources of primary and specialty care.

3. Connect patients to a fully functional medical home, thereby improving access to office-based acute care and coordinating utilization of after-hours clinical services. Although it would be unreasonable to expect a physician’s office to be available 24 hours a day, pediatricians should take a critical look at the accessibility of their practice to patients with acute (nonscheduled) complaints. Hours of operation, same-day appointments, walk-in visits, the function of the practice’s answering service, and the application of telephone triage systems should be scrutinized carefully. It might be especially helpful to interview families who have sought emergency care during office hours or those who have visited the ED without first calling the doctor’s office to determine if communication or access was an issue in choosing to use the ED. An effective
primary care delivery system may prevent ED visits for low-acuity complaints and may enable timely interventions that prevent low-acuity illnesses from becoming high-acuity illnesses.

4. Coordinate effective follow-up care for ED visits. Even with optimal access to primary care and the medical home, patients will still require access to emergency services. Pediatricians should work closely with local institutions and providers of emergency services to ensure coordination of effective primary and subspecialty follow-up care. This communication and coordination of care is especially important for children with special health care needs.

5. Advocate for improved Medicaid reimbursement. On average, Medicaid reimbursed pediatricians for only 68% of the amount that would be paid under Medicare. Many pediatricians are already doing more than their fair share, devoting a significant amount of their practice to the care of underserved and underfunded populations. In fact, pediatricians’ average Medicaid caseload increased from 24.3% in 1983 to 30.0% in 2000, according to American Academy of Pediatrics survey data. Health services research data suggest that we need more pediatricians and other pediatric care professionals to follow suit. We must strongly advocate for fair Medicaid reimbursement rates so that more pediatricians will have the financial incentive to care for these patients. Until then, many Medicaid and uninsured patients will continue to use EDs in the absence of a functional and accessible medical home.

6. Encourage SCHIP enrollment. There is a growing number of children from low-income families who are uninsured or underinsured who would qualify for SCHIP or Medicaid benefits. Because many of these patients have no medical home, pediatricians should partner with their community EDs to identify opportunities to enroll eligible children and families who pass through the ED. Facilitating the enrollment of these children into SCHIP will not be successful in improving their access to a medical home if the SCHIP or Medicaid reimbursement is not sufficient to encourage the participation of pediatric care professionals.

7. Become familiar with local hospital ED and EMS services and their constraints. Pediatricians can play an important role as “consumers” in advocating for expansion of hospital services. Pediatric centers are not immune to overcrowding and now experience many of the same problems as larger adult facilities. This may be an even greater problem for acutely ill or injured children, because many communities are served by a single pediatric tertiary care center. Pediatricians should play a direct role in addressing pediatric inpatient bed (particularly critical care beds) and ED capacity concerns at both their local community hospital and at regional pediatric tertiary care centers.

8. Support advocacy efforts directed toward medici


ED overcrowding: a situation in which the identified need for emergency services exceeds the available resources in the ED. Evidence of ED overcrowd-
ing is typically found when the number of ED patients receiving care exceeds the number of staffed ED beds, which may lead to the use of hallways and other nontreatment areas to assess or monitor patients and is usually associated with lengthy waiting times for treatment.

ED saturation: a situation in which patient needs, including timely evaluation and treatment, as defined by patient acuity or triage level, cannot be met for existing or new patients because of fully committed ED resources.

ED treatment station (ED bed): a gurney or bed in a space designed to be a treatment area in the ED. Beds in such areas as the hallway, waiting room, conference rooms, etc. are not ED beds.

ED boarder: a patient who remains in the ED beyond the time of disposition after the decision has been made for either inpatient admission or transfer to another facility.

ED boarding time: the time interval between the acceptance of an admission or transfer request for an ED patient and the time the patient actually leaves the ED.

Boarding burden: the proportion of the ED functional treatment spaces or beds occupied by boarding patients.

Hospital ED or ambulance diversion: a situation in which a hospital has determined that it does not or will not have the required capacity or capability to accept additional patients from prehospital or EMS ambulance transports. Diversion can be for a specified category of patients (eg, trauma, critical care) or all prehospital or interhospital ambulance transfers.

Left prior to triage: a patient who has been logged as having arrived in the ED requesting medical care yet leaves prior to the triage assessment.

Left without being seen: a patient who has been triaged but leaves the ED prior to receiving an MSE by the ED physician or other qualified personnel.

Refusal of MSE or treatment: a patient presenting to the ED requesting medical evaluation who subsequently declines additional evaluation or treatment prior to the completion of care (also known as leaving against medical advice).

Waiting room time: the time interval between the completion of the triage assessment and placement of that patient in a waiting area and the time at which the patient is placed in a treatment bed.

REFERENCES

5. Clinton WJ. Televised address to the joint session of Congress and the nation [transcript]. September 23, 1993
75. Reeder TJ, Garrison HG. When the safety net is unsafe: real-time assessment of the overcrowded emergency department. *Acad Emerg Med.* 2001;8:1070–1074

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