# The Future of Emergency Care in the United States Health System: An Institute of Medicine Report

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The Institute of Medicine (IOM), established in 1970, is a member of the National Academies of Sciences and provides independent, unbiased, evidence-based advice to policy makers, health professionals, industry, and the American public. In 2006, the IOM produced a report on the *Future of Emergency Care in the US Health System*[5] that addressed the critical status of emergency care in this country today. The report strives to define the problems and makes specific recommendations for solutions.

Central to this crisis in emergency care is the uncertain availability of surgical specialists, including neurosurgeons, in our Emergency Departments (EDs) and Trauma Centers. This presentation to the Congress of Neurological Surgeons, General Scientific Session IV, on October 12, 2006, described the IOM report and discussed the provision of emergency neurosurgical care in this country.

The motivation for the IOM study was a culmination of factors including:

1) Crowded EDs.
2) Ambulance diversions.
3) The increasing burden of uncompensated care.
4) Decreasing physician reimbursement.
5) The fragmentation of our emergency care systems.
6) Inadequate surge capacity.
7) Personnel shortages, which include the shortage of surgical specialists such as neurosurgeons.
8) Rising malpractice costs.
9) Limited data on quality outcome measures.
10) Inadequate research funding and infrastructure.
11) Limited preparedness for pediatric patients.

As the IOM study was conducted, it became apparent that the crisis in Emergency Medical Services (EMS) is "under the surface" and that much of the American public believes that the status and availability of emergency and trauma care is what they see on popular television programs. For example, a recent Harris Poll[4] showed that approximately one in three Americans believe that the hospital nearest to them is a trauma center, when, in fact, less than 8% of hospitals actually have a trauma center. It was also revealing in this same poll that 8 in 10 Americans indicate that having a trauma center nearby is equally or more important than having a fire or police department.

EMS in the United States, currently, are overwhelmed, underfunded, and fragmented.

## Overwhelmed

ED visits increased by 26% during the decade from 1993 to 2003. However, during the same period, the number of EDs declined by 425, along with the closure of 703 hospitals, with the resultant loss of 198,000 beds.[2] A consequence of the overcrowding of our EDs is often inordinately long wait times that range from hours to, in some extreme cases, days. A further consequence of overcrowding is the inability of the EDs to receive emergency patients, and, therefore, the diversion of ambulances at a rate of one diversion every minute of every hour in this country (approximately 500,000 ambulance diversions in 2003).

## Underfunded

We have a growing gap between charges and payments for emergency services. A Medical Expenditures Panel Survey[6] revealed that 73% of hospitals lose money providing emergency care for Medicaid patients, and 58% lose money on providing emergency care for Medicare patients. With Centers for Medicare and Medicaid Services being a major payer, and given the losses incurred in providing for these Centers for Medicare and Medicaid Services patients, we have a growing financial crisis.

Our EMS systems are the "Safety Net for the Safety Net" for uncompensated care, and this safety net is tenuous and severely threatened.

## Fragmented

In many parts of this country, the regional flow of patients is managed poorly and individual patients may have to be taken to facilities that are not optimal given their medical needs. A factor in this maldistribution may be the unavailability of the appropriate surgical specialist in the receiving ED or Trauma Center. A fundamental dictum of trauma systems has been to strive to get the right patient to


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the right place in the right time. However, with fragmentation, we may, in fact, take the wrong patient to the wrong hospital in the wrong time. This scenario may have a profound negative impact on the quality of care delivered.

## THE "PERFECT STORM"

The shortage, relative and absolute, of surgical specialists is a critical factor in the analysis of the future of emergency care. It is fundamental that a patient with a surgical emergency have rapid access to the appropriate surgical specialist. These emergencies may be either trauma or nontrauma surgical emergencies. For example, in neurosurgery, the immediate need for a neurosurgeon could be a traumatic brain injury with an epidural hematoma, or a ruptured intracranial aneurysm. This shortage of surgical specialists adds the final piece to a multifactorial situation that might be described as the "Perfect Storm," which includes:

1) Financial impact of decreasing reimbursement.

2) Increasing burden of uncompensated care.

3) *Absolute* decrease in the available number of surgical specialists (diminishing number of residency graduates coupled with the aging/retiring population of practicing surgeons).

4) *Relative* decrease in the available number of surgical specialists caused by lifestyle changes of younger surgeons with desire for more control and a decreased number of work hours.

5) Rising malpractice threats and insurance premiums.

6) Implications of Emergency Medical Treatment and Active Labor Act regulations.

An informal survey, by this author, of the Chairs of the various Boards of surgical specialty organizations (Orthopedic, Neurosurgery, General Surgery, etc.), at a 2004 meeting of the American College of Surgeons Board of Regents, revealed that all of them believed that their specialty will likely be unable to provide adequate coverage for our EDs and Trauma Center call panels in the next 5 years. This reenforces the crisis of the mounting "Perfect Storm" of a physician shortage in this country.

The American College of Surgeons conducted an Emergency Care Workforce Survey, 2006.[7] One of the questions (Question 19) asked "What is the main problem leading to inadequate ED call coverage in your surgical specialty in your respective hospital?" 43% of respondents said "Inadequate supply of surgeons in specialty," and this exceeded all other reasons, including low reimbursement and lifestyle issues. This survey also asked whether surgeons had been sued by a patient first seen in the hospital ED, and 39% responded yes. This was consistent with other recent surveys, including one by the American Association of Neurological Surgeons.[1]

The aging of our surgeon population was confirmed in an American Medical Association report titled, *Physician Characteristics and Distribution in the US*, 2006 edition.[3] Table 2, "Percentage of Emergency Department Surgeons Age 55 Years or Older" showed that 34% of neurosurgeons were 55 years or older—second only to Plastic surgeons, at 35%.

An added dimension to the shortage of surgical specialists available for emergency call coverage is the threat of a disaster, either natural (earthquakes, hurricanes, floods) or terrorist in origin. If the latter, disaster could be caused by noxious agents that are:

- Nuclear
- Biological
- Chemical
- Incendiary
- Explosives

Conventional wisdom would suggest that terrorist bombings are a very likely scenario, and, if such occurred, the need for surgical specialists to care for the victims is apparent. The importance of EMS/Trauma Centers Systems has been largely overlooked in many disaster preparedness planning efforts and funding programs. The IOM Report addresses this shortcoming and makes some strong recommendations to rectify the situation.

The management of trauma patients has historically been strongly influenced by lessons learned in military conflicts and wars. There is no single better example of this than the observations, writings, and teachings of neurosurgeon Harvey Cushing during World War I. Today is no exception, and the current war in Iraq has led to many significant advances in trauma care, particularly in extremity injuries, immediate treatment of shock in Forward Surgical Units, and homeostasis (i.e., the use of Factor Vll A). Through trauma organizations such as the American Association for the Surgery of Trauma, there is an ongoing two-way exchange of information, training of military surgeons in our civilian trauma centers, and "visiting professorships" of civilian trauma surgeons visiting the Army hospital in Landstuhl Germany.

In summary, the IOM Report on "The Future of Emergency Care in the US Health System" proposed a Vision for the Future of Emergency Care which is:

1) *Coordinated:* coordination between pre-hospital providers and EDs and Trauma Centers.

2) *Regionalized:* the best model being American College of Surgeons-verified Trauma Centers incorporated in regional Trauma Systems

3) *Accountable:* developing the databases to measure and stand accountable for our emergency care quality outcomes.

Regionalization is probably the most important concept in the IOM Report, in terms of dealing with the crisis of the shortage of surgical specialists available to provide coverage to our EDs and Trauma Centers. Because we clearly do not

have enough specialists to supply every ED in the country, the most obvious solution is to ensure that patients with surgical emergencies are taken to facilities with the resources to provide optimal care. I have summed it up this way: critically ill and injured patients must be ensured of being transported, expeditiously, to the level of care commensurate with their degree of emergent illness or injury. This is an achievable goal with the development of a coordinated, regionalized, and accountable EMS system in this country.

## REFERENCES

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2. American Hospital Association: Hospital Statistics 2006, Health Forum LLC, 2006.
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4. Harris Interactive: The American Public's Views of and Support for Trauma Systems—A Congressional Briefing: Survey Conducted for The Coalition for American Trauma Care, March 2, 2005. Results available online at http://www.facs.org/trauma/traumasystems.html.
5. Institute of Medicine of the National Academies: *Future of Emergency Care in the US Health System*, June 14, 2006.
6. Medical Expenditures Panel Survey data is based on Tsai et al., 2003 and calculations by McConnell and Lindrooth, reported in their commissioned paper for this study, *This Financing of Hospital-Based Emergency Department Services and Emergency Medical Services*.
7. Online survey conducted by the American College of Surgeons, February 2006.