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AMBULANCE DIVERSIONS: WHAT THEY ARE, WHY WE CARE, & WHAT TO DO

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Every minute in the United States, an ambulance is turned away from a hospital because of a practice known as ambulance diversion.[1] Diverting ambulances away from emergency departments (EDs) poses a serious threat to the health outcomes of both the insured and uninsured population. Ambulance diversions also indicate a struggling health system in need of comprehensive delivery system reforms.

WHAT IS AN AMBULANCE DIVERSION?

An ambulance diversion occurs when a hospital ED cannot care for additional emergency patients. When a hospital is "on diversion" it redirects ambulances from their ED to another hospital or medical facility.[2]

For example, consider a scenario where two hospitals—A and B—are 10 and 20 minutes away from an accident site respectively. If Hospital A is on divert status, the patient is taken to Hospital B, despite Hospital A's proximity to the accident. As a result, the patient faces double the transport time.

There is no standard criterion for when a hospital can divert ambulances from its ED. Each hospital, county, or state has it's own set of measures for determining when a hospital may go on diversion, including: the number of staff on duty, bed capacity, and the number of walk-ins in the ED waiting room.

Despite the lack of attention paid to diversion standards, ambulance diversion happens consistently in the United States. In 2004, almost half of all hospitals and close to 70 percent of urban hospitals reported at least some time on diversion.[3]

WHY DO DIVERSIONS MATTER?

Ambulance diversions pose a health risk to anyone who needs immediate medical attention. Furthermore, ambulance diversions are an indication that individuals are using EDs for their primary care, and that hospitals have inadequate bed capacities, and/or are being poorly managed.

Effects on Our Health: Ambulance diversions have an alarming effect on patient care. Anyone, regardless of insurance status, can be diverted from a hospital in an emergency. Ambulance diversions impact both emergency trips to the hospital and transports from one hospital to another.

- **Ambulance diversions hurt the quality of emergency care:** A study from New York City boroughs found the mortality rate from heart attacks increased by 47 percent on days when hospitals were on diversion.[4] Additionally, patient care suffers when more than one hospital in a given area is on diversion. One study found that when more than 60 percent of area hospitals are on diversion, median treatment time for heart attacks increased by almost 10 minutes.[5]
- **Diversions affect the ability of patients to get needed care from another hospital:** In Houston, the mortality rate of patients with severe injuries requiring inter-hospital transfer was more than 10 percent higher on "high-diversion" days—14 percent on low diversion days, and 25 percent on high diversion days.[6]

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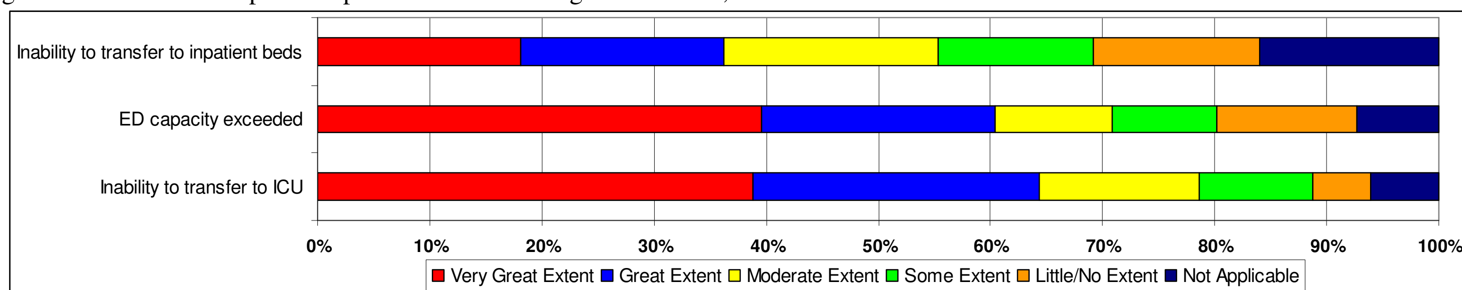
Causes of Diversion: There are several reasons why EDs put themselves on diversion, including: misuse of EDs for primary care and hospital bed capacity that is either insufficient or unstaffed. The number and designation of beds restricts patient movement from ambulance, to admission, to treatment. If hospitals could more efficiently and effectively manage patients and capacity, diversions could be reduced.

- **EDs have become a major source of primary care:** Recent research by the New England Healthcare Institute found that roughly one-quarter of all emergency-room visits were non-urgent, and another quarter could have been addressed (or prevented) by a visit to a doctor's office.[7] In addition, the uninsured are twice as likely to visit an ED for a chronic condition that could be treated by a primary care physician.[8] This misuse of EDs makes it more likely that a hospital will have to divert ambulances.
- **The number of patients that can be admitted to an ED is dictated by the number of *staffed*[9] beds (beds attended to by hospital staff on duty) in a given hospital.** Available hospital beds can only be utilized for new patients when the appropriate staff is available to monitor them. Hospitals will ask EMS providers to divert ambulances to other medical facilities if their emergency department staff is occupied and unable to promptly care for new arrivals.[10] Lack of staffed beds is a particular problem in urban hospitals that handle a high volume of patients.
- **Inefficiencies in patient flow within a hospital often cause the hospital's ED to go on diversion.** According to the GAO, 50 percent of hospitals reported that the inability to transfer emergency patients from the ED to other inpatient beds within the hospital contributed to diversion. As the graph below shows, this inability to transfer patients efficiently was a major factor causing diversions 17 percent of the time.[11]

Figure 1. Conditions Hospitals Reported as Contributing to Diversion, FY2001



Source: General Accounting Office, "Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities," 2003.

What Can we do to Fix this Problem?

There are two major possible policy solutions for ED diversion:

- **Standardizing Ambulance Diversion Criteria**
- **Covering the Uninsured**

Standardizing Ambulance Diversion Criteria: Standard criteria for when a hospital can put itself on diversion should be established and adopted by all hospitals. These criteria might include: percentage of hospital beds currently in use, the number of staff on duty, and, the number of people in the ED waiting room. Hospital accountability for reporting and abiding by diversion stipulations would be tied to a hospital's receipt of federal funding. Failure to report diversion rates in a timely manner would jeopardize hospital funding. A comprehensive, national study to assess the actual state of hospital capacity nationwide, and the possible effects of capacity on ambulance diversion would provide a better understanding and possible solutions to the problem of ambulance diversions.

Covering the Uninsured: The large number of uninsured patients causes increased strain on already over-taxed emergency departments. Making sure all Americans have quality, affordable health coverage will help keep patients out of the hospital for non-emergent treatment and allow EDs to function at their highest level when patients need them the most. Ambulance diversions are further evidence that covering all Americans is a necessary step toward improving the overall quality of patient care in the U.S.[12]

ENDNOTES

[1] Institute of Medicine, *Hospital-Based Emergency Care: At the Breaking Point,* (Washington, D.C.: National Academy Press, 2006).
[2] Our own definition with help from: General Accounting Office, "Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities " (Washington, D.C.: Report to the Ranking Minority Member, Committee on Finance, U.S. Senate, 2003); Institute of Medicine, *Hospital-Based Emergency Care: At the Breaking Point,* (Washington, D.C.: National Academy Press, 2006); and Linda R. Brewster and Laurie E. Felland (2004) "Emergency Department Diversions: Hospital and Community Strategies Alleviate the Crisis" Issue Brief No. 78, Center for Studying Health System Change.
[3]Catherine Burt, Linda F. McCaig, and Roberto Valverde, (2006) "Analysis of Ambulance Transports and Diversion Among U.S. Emergency Departments" *Annals of Emergency Medicine* 47 (4): 317-326.
[4] Glied, S., Grams, S., and Green, L., (2005) "Ambulance Diversion and Myocardial Infarction Mortality" Columbia University, Columbia Business School: Working paper.
[5] Julius Cuong Pham, Ronak Patel, Michael G. Millin, Thomas Dean Kirsch, Arjun Chanmugam, "The Effects of Ambulance Diversion: A Comprehensive Review," *Society for Academic Emergency Medicine* 13, no. 11 (November 2006): 1220–1227.
[6] C.E. Begley, et al., (2004) "Emergency Department Diversion and Trauma Mortality: Evidence from Houston, Texas" Journal of Trauma 57: 1260-126. *Not statistically significant ($p<0.11$)
[7] New England Healthcare Institute, "Emergency Department Overuse: Providing the Wrong Care at the Wrong Time" (2008); Scott Kirsner "The ER's in urgent need of a fix" *Boston Globe,* August 25, 2008.
[8] Commonwealth Fund, "Biennial Health Insurance Survey," *Commonwealth Fund*, (2005).
[9] *Staffed* beds refer to the number of beds in use in a hospital at any given time. This differs from *licensed* beds in a hospital which refers to the total number of beds physically in a hospital. With these distinctions, it is very possible for a hospital to have more licensed beds than staffed beds—when it comes to diversion, staffed is the number that matters; the beds in use.
[10] General Accounting Office, "Hospital Emergency Departments: Crowded Conditions Vary among Hospitals and Communities," (Washington, D.C.: Report to the Ranking Minority Member, Committee on Finance, U.S. Senate, 2003).
[11] Ibid.
[12] In an effort to examine a possible correlation between the uninsured and diversion hours, we contacted the 20 largest U.S. cities to obtain their diversion statistics and uninsured rates. The data we were able to collect came in various forms (making it nearly impossible to standardize). For example, New York City gave us the total number of hours on diversion for a three-month period, while Houston reported the percentage of time hospitals were on diversion, and Los Angeles tracked the number of hours on diversion in a given year *per* 1,000 members of the population. In addition, our research emphasized the overall lack of knowledge about ambulance diversions (one state hospital association did not know what divert status and diversion hours were). These anecdotal findings suggest that lawmakers should consider standardizing the definition, measurement, and monitoring of ambulance diversions.

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