

Calculating the Cost of Emergency Care

Arthur L. Kellermann, MD, MPH From the Department of Emergency Medicine, School of Medicine, Emory University, Atlanta, GA.

0196-0644/\$-see front matter

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doi:10.1016/j.annemergmed.2005.02.009

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[Ann Emerg Med. 2005;45:491-492.]

Americans will visit hospital emergency departments (EDs) more than 110 million times this year. Federal statistics document a steadily increasing rate of ED use, especially among persons older than 44 years.¹ The cost of providing emergency care to this many people is substantial—both in human and in economic terms.

But is it excessive?

In this issue of *Annals*, 3 Rand economists present an analysis of the marginal cost of an ED visit in relationship to ED volume.² This is the same trio who recently described California's ED market as "robust" and declared that ED crowding in California is not a problem.^{3,4} In this new study, the authors had 2 goals. The first is to determine if higher volumes of ED use are associated with "economies of scale." The second was to calculate the marginal cost of an outpatient ED visit.

Two different approaches were used to derive these estimates: a descriptive analysis of publicly available accounting data and a more complex, "statistical" approach that used cost models estimated from a 9-year panel of hospital data. Neither approach is described in much detail. Before conducting either analysis, the authors excluded ED visits that resulted in immediate hospitalization. The explanation, in their own words, is that, "For the most part, emergency patients who end up being admitted through the ED do not constitute a misuse of ED resources."² Readers can decide for themselves whether this statement reflects a degree of bias on the part of the authors.

Once this subset of ED visits was excluded, a large and heterogeneous array of "outpatient" visits remained. At one end of the disease spectrum are ill and injured patients with complex and challenging problems. Patients like these frequently require careful evaluation, diagnostic tests, and lengthy periods of treatment before they can be safely discharged home. At the other end of the spectrum are the least urgent ED visits—the sort insurance executives want us to steer to primary care settings rather than treat in the ED. Because the authors had no way to subdivide their database by triage severity or visit complexity, they don't know how many patients fell at either end of the spectrum, or somewhere in between.

Averaging the cost of treatment across this highly diverse group of ED visits produced 2 estimates: a "low side," accounting-based estimate of US\$126 to US\$192 per visit to a "nontrauma" or "trauma" ED, respectively, and a "high side,"

statistically driven estimate of US\$295 to US\$412 per visit. The only figures included in the authors' abstract were the "high side" estimates.

According to the authors, no evidence of economies of scale was found. By that, they mean that the average cost of an "outpatient" ED visit to a large-volume ED (trauma or nontrauma) was not appreciably less than the average cost of an outpatient visit to a low-volume ED of the same type.

Few emergency physicians will be surprised by this finding. Whether a workup is done in a big ED or a small one doesn't make much difference if both EDs evaluate patients the same way and treat a similar case mix of patients. The more germane question is whether the cost of treating low-triage severity patients in either setting is excessive, compared with the available alternatives (if any). The article is silent on this point.

Should people be concerned by the high average cost of an "outpatient" ED visit? Perhaps, but it is important to realize that there is a big difference between an "average" ED visit, and one that is truly "minor."⁵ Every time an emergency physician encounters a patient with chest pain suggestive of acute coronary syndrome and orders serial ECGs, cardiac enzymes, and perhaps a risk stratification test to evaluate it, this process generates costs. Every time an elderly woman presents with abdominal pain and tests are ordered to exclude the possibility of bowel perforation or mesenteric ischemia, it generates costs. Every time a lumbar puncture is performed to evaluate a patient complaining of the "worst headache in his life," it generates costs. Complex workups drive up the "average" cost of ED visits, but they are necessary to detect life-threatening problems. Many of these workups prevent the need for an even more costly hospitalization.

Obviously, not every ED encounter is this challenging. Some are relatively straightforward. According to the Centers for Disease Control and Prevention's National Center for Health Statistics, approximately 1% of ED visits nationwide in 2002 required immediate attention (ie, patient unconscious or needed resuscitation). Of the remainder, 22.3% were classified as emergent (must be seen in <15 minutes), 34.2% as urgent (must be seen in 15 to 60 minutes), and 18.5% as semiurgent (must be seen in 1 to 2 hours). Only 10.2% were classified as nonurgent (can be seen in 2 to 24 hours).¹

The fundamental flaw in Bamezai et al's² analysis is that they conflate low-triage severity ED visits—the only ones that might plausibly be redirected to a primary care clinic—with the far more numerous (and costly) semiurgent and urgent ED visits.

Although higher–triage severity visits are more costly to evaluate and treat, most of these patients can still be sent home after ED care. Nationwide, only 12% of ED visits require immediate hospital admission.¹

Readers who lack an advanced degree in economics will have a tough time deciding if the authors' cost estimates are valid. However, even if one accepts their claims on faith, it doesn't mean much unless one can also show that: (1) the vast majority of patients, including those who are uninsured, can easily gain access to alternative sources of care outside the ED and (2) the cost involved in providing unscheduled and "after hours" access to primary care, including the extra staff, security, and health care workers required to meet patients' needs, compares favorably with the cost of providing these services and resources in existing EDs.

Unfortunately, the evidence is overwhelming that tens of millions of Americans lack adequate access to primary care. This is particularly true for the uninsured. An Institute of Medicine Committee on which I served documented that uninsured Americans receive, on average, about half the medical care that insured Americans get.⁶ Also, Medicaid patients and members of minority groups face formidable barriers to care.^{7,8} Inadequate primary care explains why so many low-income and minority patients with "ambulatory care sensitive" conditions such as asthma, diabetes, and congestive heart failure end up in EDs and frequently require emergency hospitalization.^{9,10}

Many who use the ED as their primary or only source of medical care do so because they aren't welcome elsewhere. In some communities, the ED is the only viable option for "after hours" care of those who cannot afford to miss a day of work.¹¹ Few patients with painful or worrisome symptoms are willing to wait days or weeks for an appointment.⁷ A surprising number of patients are sent to the ED by health care professionals, often for reasons that have little to do with the severity of the patient's condition.^{7,11,12}

By now, everyone knows that EDs are legally required to provide a medical screening examination to every patient who seeks care, without regard for his or her ability to pay.¹³ Efforts to regulate ED use by retrospectively denying reimbursement to hospitals for "inappropriate" visits do little more than give payers an excuse to duck the bill. When this strategy was implemented by the state of Arkansas more than a decade ago, it cut Medicaid payments to hospitals, but did nothing to reduce ED visits.¹⁴

Increasing use of ED is a legitimate concern, but this is not the fault of EDs. Rather, it reflects the failure of our ambulatory care system to meet the needs of its patients.^{15,16} Locking the doors of EDs won't fix this problem. Expanding access to primary care might.

Dr. Kellermann is Professor and Chairman of the Department of Emergency Medicine, Emory School of Medicine, a member of

the Annals of Emergency Medicine Editorial Board, and a member of the Board of Directors of the American College of Emergency Physicians. Between 2001 and 2004, he served as Co-Chair of the Committee on the Consequences of Uninsurance for the Institute of Medicine.

Funding and support: The author reports this study did not receive any outside funding or support.

Publication dates: Available online April 2, 2005.

Reprints not available from the author.

Address for correspondence: Arthur L. Kellermann, MD, MPH, Department of Emergency Medicine, The Emory Clinic, Inc, Suite B6200, 1365 Clifton Road, NE, Atlanta, GA 303029; 404-778-2600; E-mail akell01@emory.edu.

REFERENCES

1. McCaig LF, Burt CW. *National Hospital Ambulatory Medical Care Survey: 2002 Emergency Department Summary*. Advance Data From Vital and Health Statistics; No. 340. Hyattsville, MD: National Center for Health Statistics; 2004.
2. Bamezai A, Melnick G, Nawathe A. The cost of an emergency department visit and its relationship to emergency department volume. *Ann Emerg Med*. 2005;45:483-490.
3. Melnick GA, Nawathe AC, Bamezai A, et al. Emergency department capacity and access in California, 1990-2001: an economic analysis. *Health Aff (Millwood)*. 2004;(March 24):136-142.
4. Kellermann AL. Emergency care in California: no emergency? *Health Aff (Millwood)*. 2004;(March 24):149-151.
5. Williams RM. The costs of visits to emergency departments. *N Engl J Med*. 1996;334:642-646.
6. Institute of Medicine, Committee on the Consequence of Uninsurance. *Care Without Coverage: Too Little, Too Late*. Washington, DC: National Academies Press; 2002.
7. The Medicaid Access Study Group. Access of Medicaid recipients to outpatient care. *N Engl J Med*. 1994;330:1426-1430.
8. Institute of Medicine. Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academy Press; 2002.
9. Oster A, Bindman AB. Emergency department visits for ambulatory care sensitive conditions: insights into preventable hospitalizations. *Med Care*. 2002;41:198-207.
10. Kellermann AL, Haley L. Hospital emergency departments: where the doctor is always "in." *Med Care*. 2002;41:195-197.
11. Young GP, Wagner MB, Kellermann AL, et al. Ambulatory visits to hospital emergency departments: patterns and reasons for use. *JAMA*. 1996;276:460-465.
12. Kellermann AL. Nonurgent emergency department visits: meeting an unmet need. *JAMA*. 1994;271:1953-1954.
13. Dame LA. EMTALA: the anomalous right to health care. *Health Matrix*. 1998;8:3-28.
14. Kusserow RP. *Controlling Emergency Department Use: State Medicaid Reports*. Washington, DC: US Department of Health and Human Services, Office of the Inspector General; 1992.
15. Emergency departments: an essential access point to care. *AHA Trendwatch*. 2001;3(1):1-8.
16. Institute of Medicine, Committee on the Consequences of Uninsurance. *A Shared Destiny: Community Effects of Uninsurance*. Washington, DC: National Academy Press; 2003.