Nearly 130 million visits to emergency departments (EDs) occur every year in the United States (1). Whether patients should have gone to the ED in the first place is frequently debated, because the ED is often viewed as an overcrowded, overused, misused, and costly resource. Yet patients rarely present to the ED for unnecessary reasons (2). Judging appropriateness of ED visits often suffers from hindsight overuse, misuse, and costly resource. Yet patients rarely appropriateness of ED visits often suffers from hindsight bias or misapplication of methods to judge appropriate use (2–4). Although emergency care may be more expensive than office-based care, when the populations served, patient complexity, 24/7 access, and proportion of total healthcare costs are considered, emergency care adds value, and would be costly to replace (5). Yet there remains ample room to improve the acute care for many conditions. One critical area of focus is on whom to admit versus discharge. Although only 13.3% of U.S. ED patients were admitted in 2010, the ED is the source of more than one-half of hospital admissions—the most expensive resource in healthcare (1,6).

Heart failure (HF) is the most common and costliest reason for admission for older Americans (7). In this issue of JACC: Heart Failure, Storrow et al. (8) report that nearly 84% of patients who present to the ED with acute heart failure (AHF) are admitted. Do EDs admit too many patients with AHF? If so, what can be done about it? Utilizing the Nationwide Emergency Department Sample (NEDS) database from 2006 to 2010, the authors provide a much-needed contemporary analysis of emergency AHF care. Although the ED serves as the primary portal of entry for the vast majority of AHF admissions, surprisingly little is known about this initial phase of care compared with inpatient or chronic HF management.

We highlight a few of the authors’ important findings. First, despite a slight decrease in overall length of stay, the financial costs of initial AHF care has increased over time. Second, geographic variations in care were observed, most notably in admission rates, ranging from nearly 90% in the Northeastern United States to 79% in the West. Academic hospitals were more likely to admit than nonacademic hospitals. Third, and most striking, are the findings related to uninsured patients, who were defined as self-pay or no charge, compared with all others. Uninsured patients were nearly 25 years younger, more likely to have hypertension, but less likely to have coronary artery disease. After accounting for these differences, uninsured patients were far more likely to be discharged from the ED, but when admitted, had a shorter median length of stay and underwent a greater number of diagnostic and therapeutic procedures. These findings should provoke further investigation, especially if outcomes differ. Given their younger age, one possible explanation is that uninsured patients appeared less sick, but once hospitalized, the potential lack of follow-up for these patients prompted a more in-depth assessment. A better understanding of these differences is needed to determine whether they represent disparities in quality of care or just in utilization. These findings should be interpreted within the context of the study’s limitations, however.

The NEDS includes only the limited data available on a hospital billing record. Specifically, measures of clinical severity such as vital signs and respiratory status and measures of disease severity such as New York Heart Association functional class and recent hospitalizations are lacking. Second, the authors use a novel method for risk adjustment, including just 4 comorbidities (chronic hypertension, coronary artery disease, diabetes mellitus, and kidney disease). Validated risk adjustment tools such as the Elixhauser score (9) or the hierarchical condition categories (HCC) may have moderated the variation found. The Centers for Medicare & Medicaid Services (CMS) uses the hierarchical condition categories system to risk adjust 30-day mortality and readmission measures for HF (10). Finally, as Storrow et al. (8) themselves note, without clinical outcomes such as in-hospital mortality or 30-day mortality, it is difficult to interpret the role of variation in utilization or insurance status in the value of care for AHF.

It is tempting to assume that any variation in care is an opportunity to improve value. However, we must first better understand whether regional differences reflect broad patterns across areas or if such differences hide much wider

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variations in care at the hospital level. If there is dramatic variation between hospitals in the rate of AHF patients admitted from the ED, it suggests that some may have best practices that others can adopt. Alternatively, minimal hospital-level variation may reflect differences such as regional preferences for care or how ambulatory care is delivered, which may be more difficult to change.

How should we envision the ED’s role in AHF care in the future? Two broad themes generally recur: avoid the ED or improve it. “Common sense” strategies to avoid ED visits, such as patient education or retail clinics, have shown mixed results when rigorously evaluated (11). New healthcare coverage may actually increase ED visits, despite increased access to primary care (12). In the face of a growing public health burden of AHF, a population that increasingly desires immediate answers, and increased access to care through insurance, we would propose that a robust partnership with the ED, a center open 365/24/7, is the best solution. The most successful answers, and increased access to care through insurance, we would propose that a robust partnership with the ED, a center open 365/24/7, is the best solution. The most successful partnerships will look both “upstream” and “downstream” of the ED; at prevention, appropriate use, treatment, disposition, and costs, with the resultant accountability and authority, to accurately risk stratify patients appropriately.

The primary challenge for ED care of AHF lies in identifying those patients who can be rapidly and safely discharged or observed for a brief period, rather than admitting them. Previous analyses suggest nearly 50% of AHF patients could be discharged home or managed in an observation unit (OU) (13). In small studies, HF OUs have managed patients safely and at less cost than inpatient care (14–16). National efforts to decrease HF readmissions have received enormous support and focus (17,18). Why not an ED-to-home initiative or ED-to-OU-to-home strategy? Although robust evidence to support such initiatives is not yet available (14), a lack of evidence has not hindered implementation of strategies to decrease readmissions after hospitalization (19). Absent evidence, there is a role for using expert consensus to identify best practices and establish benchmarks upon which hypotheses can be tested (20).

We highlight a few areas of investigation that are critical if we are to reduce the admission of ED patients with AHF, adding or building upon the authors’ recommendations:

1. **Defining low risk.** Paradoxically, it is less cognitively challenging for emergency physicians to determine an appropriate disposition for high-risk patients: they are admitted. However, absence of high risk does not equal low risk (21). The high post-discharge event rate of AHF paired with emergency physicians’ low tolerance for risk contributes to the high admission rate (22). At present, no simple, validated methods to assess low-risk AHF in the ED exist (21).

2. **Observation pathways for AHF.** A short period of observation can facilitate risk stratification and allow for ongoing assessment of response to initial therapy. Protocol-driven care over 24 to 48 h of observation, often in a dedicated unit provides opportunities to assess and address immediate medical needs as well as self-care, literacy, adherence, caregiver strain, and dietary education along with psychosocial and socioeconomic issues (14,23). Additionally, this time can be used to ensure high-fidelity transitions of care. Many hospitals, in efforts to reduce readmissions, have implemented strategies to improve follow-up. The ED or OU could leverage this existing infrastructure. Such a strategy could be tested as a low-cost, pragmatic trial. Issues with patient-borne costs for observation care, however, still need to be addressed (24).

3. **Lack of modern day evidence for early management.** Perhaps the single greatest contributor to the high admission rate is the lack of robust evidence on how to manage AHF in the ED. Because initial therapeutic management has changed little in 40 years, one can see great opportunity or believe that current ED AHF management has peaked; no greater improvements are possible (25). Exciting new therapies are currently being tested, as well as novel investigations of traditional treatments. Early patient enrollment has a much greater role than in the past, suggesting timely intervention may be important (26). Early interventions should be studied for traditional outcomes, but other outcomes such as quality of life are equally important. Patient-centered outcomes regarding ED AHF goals of management have been understudied. Although living longer remains a key goal, so is living better.

4. **Identifying successful strategies to avoid admission.** Storrow et al. (8) analyze the variation in admission across broad geographic regions and hospital types, but do not perform small-area variation analysis. Similar to HF readmissions across hospitals, it is likely that among the almost 5,000 EDs in the United States, admission rates for AHF differ significantly, even after adjustment for patient and hospital factors. We can learn from EDs with low admission rates and good outcomes. Innovative outpatient management pathways, quality improvement programs, novel methods of electronic health record utilization, or even the way cardiology, internists, hospitalists, and emergency medicine departments are structured and reimbursed may all play a role. Bradley et al. (27) have successfully used small-area variation and the study of “positive deviation” to identify best practices for the use of beta-blockers in acute myocardial infarction, time to reperfusion in ST-segment elevation myocardial infarction, and readmissions in HF. This model could be extended to ED AHF admissions.

As the burden of AHF continues to grow, the role of the ED should be closely scrutinized within the overall context of the AHF episode of care. What is clear is that doing the same thing over and over again will not lead to different results (28).
REFERENCES


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