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Measuring the Value of a Senior Emergency Department: Making Sense of Health Outcomes and Health Costs

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In 2009, adults aged 65 years and older made 20 million visits to US emergency departments (EDs), a 25% increase from 2001.¹ Older ED patients are more likely to be admitted to the hospital (39% versus 12%) and to the ICU than younger patients (5% versus 1%).^{1,2} Older adults are not just sicker than younger patients but also have more chronic medical problems, receive more medications, and are more likely to depend on others for essential activities. In the face of the daunting task of addressing all issues, extensive testing and hospital admissions often become the norm.

Because extensive testing and admission can be avoided for some older ED patients if sufficient effort is made to collect information, discuss options, and identify outpatient resources, there is considerable potential to improve the quality and decrease the cost of geriatric emergency care. Such improvements are of national importance: a recent Institute of Medicine report found that differences in the use of acute and post-acute care services are key drivers of variation in Medicare spending.³ Emergency providers stand at the intersection of many critical decisions affecting the care of older patients, including the intensity of diagnostic evaluation in the ED, the decision to admit them to the hospital, and the treatment and coordination of care for those discharged from the ED.^{4,5}

One approach to meeting the challenge of providing excellent emergency care for older patients is creating a senior ED, typically defined as a senior-friendly space (eg, handrails, less noise) staffed by providers with specific training in geriatric care and supported by social workers and pharmacists who provide care in concert with physicians. In this issue of *Annals*, Keyes et al⁶ report the results of a before-and-after study of a senior ED in which all patients aged 65 years and older are screened for fall risk, depression, alcoholism, delirium, and cognitive and functional impairments, and at-risk patients are provided with additional resources. Although Keyes et al⁶ found no effect of the senior ED on hospital length of stay or return visits to the ED, they did find a lower rate of hospital admission for patients receiving care after versus before the opening of the senior ED (44.3% versus 47.4%, respectively; relative ratio [RR] = 0.93; 95% confidence interval 0.89 to 0.98). At the study-site ED, which receives 7,500 visits by older adults each year, this 3% difference corresponds to approximately 230 fewer admissions a year. With an average cost of a US

hospital admission of \$10,000,⁷ the direct savings from this intervention would more than pay for the social workers and pharmacists needed to run such a program.

The 3% decrease in admissions in the senior ED might be due to chance or a secular trend. Assuming this difference can be replicated and generalized to other senior EDs, several questions remain unanswered. First, what is the mechanism by which the senior ED might reduce admissions? Possible mechanisms include identification of additional in-home resources, more clarity about patient and family preferences, or better coordination with primary providers.

Second, does this senior ED benefit all older patients or just a subset who are frail or have multiple comorbid conditions?

Third, do fewer admissions mean better care?

Efforts to measure the value of care in senior EDs occur within the context of a larger paradigm shift in defining value in health care. At the core of this shift is the insight that the goal of health care is to maximize value for patients by achieving the best outcomes at the lowest cost.⁸ The numerator of this value equation is composed of health outcomes that assess the effect of a health condition and its treatment from the patient perspective. For an older ED patient with acute congestive heart failure, the key outcomes might be survival, quality of life, and functional status at 6 months. For a nursing home patient with dementia who is sent to the ED for agitation, the key outcome might be quality of life during the following month, as measured by agitation, sleep quality, and ability to spend time with family. Methods for selecting these outcomes have been described and are now part of a national focus to support clinical decisionmaking.⁹ The denominator of the value equation is all health care costs related to the patient's condition. In the context of this equation, the results of the study by Keyes et al⁶ suggest that senior EDs might decrease health care costs by decreasing admissions; the results don't tell us whether senior EDs improve the value of emergency care.

Using this measure of value as a research outcome and a guide to improving clinical care has 2 important benefits. First, hospital admissions and return ED visits are no longer absolute negatives. Rather, these forms of health care use are costs that might add value if they lead to improved health outcomes.

Second, this measure of value creates an incentive for emergency providers to think creatively and seriously about how we can best help our patients during the long term. A key component of these efforts will be to organize care around the patient's medical condition.¹⁰ Keyes et al⁶ do this by embracing the help of social workers and pharmacists; improved communication with primary providers is an obvious additional step. Adopting this measure of value also creates challenges. Measuring patient-reported outcomes on all ED patients, or even the broader population served by the ED,¹¹ is a lot of work. Furthermore, because the unit that provides health care is not a single ED but instead a network of EDs, hospitals, and outpatient clinics, attributing improved outcomes to just the ED becomes more difficult.

Even if value can be demonstrated, it will be important to address the financial implications and sustainability of dedicated senior EDs, particularly in the context of the predominantly fee-for-service reimbursement environment. In a typical Centers for Medicare & Medicaid Services (CMS) Shared Savings Program, reducing hospital admissions generates savings for both the accountable care organization and CMS. But in a fee-for-service system, decreasing admissions could reduce hospital revenue. This was the case for one of the top-performing accountable care organization in CMS's Pioneer program, which achieved a 10% reduction in fee-for-service Medicare admissions in 2012, yet experienced a 0.7% decrease in revenue through the first 6 months of 2013.¹² Until all payers make the shift to value-based reimbursements, the financial effect of reducing admissions will vary, depending on the types of insurance held by local populations and the types of value-based reimbursement models in place. One advantage of senior EDs is that the dominant payer for this population is Medicare, which simplifies projections of financial influence and makes it easier to explore new payment models. However, most Medicare reimbursement is still fee for service. Even for health care systems that make the switch to a shared savings program, it may be hard to make senior EDs profitable within the first 3 years because of the large, up-front investment that may be required.¹³

This study is clearly a step in the right direction, and we commend the authors for their efforts. We suggest several next steps. First, future research should test the effect of geriatric-focused emergency care on both long-term health outcomes and health costs. This research will require developing patient-centered outcomes for conditions that are common among older ED patients and strategies to consistently measure them. We also need to define which subpopulations (eg, the frail elderly) benefit most from ED-based interventions and which elements of a senior ED (eg, physical modifications, specific care pathways) yield the highest value. Such efforts will require investments in both research and development, with the National Institutes of Health (NIH), the Patient Centered Outcomes Research Institute, and the NIH Office for Emergency Care Research playing key roles.¹⁴

Second, new partnerships are needed among providers, patients, and payers (especially Medicare) in a way that gives sufficient incentive to provider organizations to implement new, geriatric-focused emergency care models. Given the high costs faced by private companies providing health care coverage for retired employees, new ventures could also take the form of public-private partnerships.

Third, we need to support innovation in these new models, especially in ways that may disrupt our current care paradigms. The CMS Innovation Center and multicenter academic and community collaborations will be critical to these efforts.

Fourth, further work is needed to break down silos in health care and more fully integrate clinical care for the elderly; high-quality emergency care for seniors will require a multidisciplinary approach that includes physicians, nurses, pharmacists, and case managers.

During the next 20 years, the proportion of the population aged 65 years and older will increase from 13% to 20%. Much of the burden of how best to care for these patients will fall on the shoulders of emergency physicians. Although the transition to a value-based

health care system is still a work in progress, the time has come for emergency physicians and researchers to help lead efforts to ensure value in health care.

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