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Direct admission to hospital: an alternative approach to hospitalization

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Abstract

Appropriate use of emergency departments (ED) is a focus of national healthcare reform efforts, and patients requiring hospital admission account for a substantial proportion of ED utilization. Despite this, little attention has been paid to evaluating direct admission to hospital as an alternative to hospital admissions beginning in the ED. In this *Perspective*, we discuss the role of hospital medicine in the changing epidemiology of hospital admissions, the potential risks and benefits of direct admission to hospital, and the need for research to evaluate the safety and effectiveness of this admission approach. We propose that transitions of care research and quality improvement, historically focused on hospital-to-home transitions, be expanded to address transitions *into* the hospital.

Keywords

hospital admission; transitions of care; direct admission; patient-centered outcomes

Increasing use of emergency departments (EDs) throughout the United States has become a focus of national healthcare policy and reform efforts. ED growth continues to outpace population growth, with the Institute of Medicine describing our ED systems as *fragmented*, *overburdened*, and *at the breaking point*.¹ Associations between ED crowding and patient dissatisfaction, delays in treatment, medical errors and patient mortality speak to the urgency of systems improvements.² One major factor contributing to ED volumes is the growing number of hospital admissions that begin in EDs - from 1993 to 2006, the proportion of hospitalizations originating in EDs increased from 33.5% to 43.8%, with more than 17 million hospital admissions originating in EDs annually.^{3,4} Despite these challenges,

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discussions about alternative approaches to hospital admission remain at the periphery of healthcare policy conversations.

Direct admission to hospital, defined as hospitalization without first receiving care in the hospital's ED, is an alternative approach to hospital admission, and may be a vehicle to both observation and inpatient hospital stays. Direct admissions account for 25% of all non-elective pediatric hospitalizations and 15% of non-elective adult hospitalizations in the United States.^{5,6} This admission approach was considerably more common in the past, facilitated by primary care providers (PCPs) or specialists who provided both outpatient and hospital-based care for their patients.⁴ However, as the number of hospitalists in the United States has grown over the last 30 years, the number of direct admissions has decreased concurrently. In fact, from 2003 to 2009, the number of direct admissions from clinics and physicians' offices decreased by a total of 1.6 million.⁴ Although this decline is undoubtedly multifactorial, hospitalists may have contributed, both deliberately and inadvertently, to the shifting epidemiology of hospital admissions. While many factors influence the source of hospital admissions and admission processes, direct admission has two important prerequisites: patients require timely access to outpatient providers for acute care, and hospitals, in partnership with outpatient-based clinics and practices, require systems to safely and efficiently facilitate admissions without ED involvement. However, we know little about hospital admission systems, developed in the era of hospital medicine, to facilitate admissions independent of the ED.

Direct admission offers a number of potential benefits for both patients and healthcare delivery systems including reductions in the number of sites and providers of care, improved communication and coordination between outpatient and hospital-based healthcare providers, greater patient and referring physician satisfaction, and reduced ED volumes and subsequent costs.⁷ However, there are also risks and potential harms associated with direct admission, including potential delays in initial evaluation and management, inconsistent admission processes, and difficulties determining direct admission appropriateness, all of which could adversely impact patient safety and quality of care.⁷⁻⁹ One study of adults with sepsis found that direct admission was associated with increased mortality compared to ED admission, which the authors speculated to be related to less timely care.⁹ Similarly, a study of unscheduled adult hospitalizations found that patients admitted directly had higher mortality for time-sensitive conditions such as acute myocardial infarction and sepsis than patients admitted through EDs, differences not observed among adults admitted with pneumonia, asthma, cellulitis and several other common, yet frequently less emergent, reasons for hospitalization.⁸ Among children with pneumonia, the most common reason for pediatric hospitalization, direct admission has been associated with significantly lower costs than admissions originating in the ED, with no significant differences in rates of transfer to the intensive care unit or hospital readmission.¹⁰

There is significant variation across both diagnoses and hospitals in rates of direct admission, raising questions about the contextual factors unique to hospital medicine programs that perform a substantial proportion of direct admissions.⁵ This variation also highlights opportunities to identify the populations, conditions, and systems that facilitate safe and effective direct admissions. Certainly, direct admission is unlikely to be appropriate

for all populations or conditions. Patients requiring emergent care or rapid diagnostic imaging are likely to receive more timely care in the ED; sepsis, AMI and trauma are but a few examples of conditions for which rapid ED care decreases morbidity and mortality. Similarly, patients for whom the need for hospitalization is uncertain – for example, dehydration, asthma – may be more appropriate for initial ED management followed by re-evaluation to inform the need for hospitalization. Finally, patients for whom the admitting diagnosis is uncertain and who require consultation for several subspecialists may be more efficiently evaluated in EDs. In our national survey of pediatric direct admission guidelines, less than one-third of hospitals reported having formal criteria to assess the appropriateness of direct admissions, and respondents' perspectives regarding populations and diagnoses appropriate for this admission approach varied considerably.⁷ These results point to the need for further research and quality improvement initiatives to inform the development of direct admission guidelines and protocols.

During the last decade, hospitals' discharge processes have been the focus of tremendous research, policy, and quality improvement efforts. The phrase “transition of care” is now widely understood to describe the changes in patient care that begin with discharge planning, and conclude when patients' have established care at home or another healthcare facility. Transitions of care have been a focus of the Journal of Hospital Medicine since its inception, including publication of the Transitions of Care Consensus Policy Statement in 2009, as well as numerous other studies highlighting both risks associated with transitions of care as well as methods to address these.¹¹⁻¹⁶ Similar to hospital discharge, hospital admission is an inherent feature of every hospitalization, and admission and discharge processes share many commonalities. Both involve transitions in sites of care, and handoffs between healthcare providers. Most involve changes in medical therapies, including both the addition of new medications and changes to existing treatments. And both are associated with significant stress to patients and their families. As a result, hospital admissions expose patients to many of same risks that have been the focus of hospital discharge reform: unstructured patient hand-offs, poor communication between healthcare providers, and costly, inefficient care. The Society of Hospital Medicine has been a leader in articulating the importance of patient-centered, clinically relevant medication reconciliation across the health care continuum.¹⁷ However, with the exception of this important work, research and policy focused on understanding and improving transitions of care into the hospital have received disproportionately little attention.

To facilitate research and quality improvement efforts focused on hospital admission, we suggest that the transitions of care framework, typically discussed in the context of hospital discharge, be expanded to reflect the different origins of hospitalizations and multiple transitions that can be experienced by patients as they enter the hospital. A broadening of the transitions of care framework to incorporate hospital admissions brings numerous questions previously addressed in hospital-to-home transitions to the forefront. How do transitions into hospital impact patients and healthcare systems? When is direct admission safe and effective, and how does this vary across conditions and hospital settings? What protocols and tools might optimize the associated transitions and reduce the risks of error and harm? There are numerous stakeholders who will undoubtedly bring diverse perspectives to these

questions – patients and their families, hospital-based healthcare providers, PCPs and specialists, ED physicians and payors.

Increasing ED volumes, long wait times, and rising ED costs speak to the importance of better understanding hospital admission alternatives and the associated risks and benefits. Encouraging more direct admissions may be a solution, but evidence to guide best practices must precede this. The growing presence of round-the-clock pediatric and adult hospitalists across the country creates unique opportunities to transform hospital admission systems for the vast number of patients who do not require emergent care. The Affordable Care Act's expansion of insurance coverage and incentivized coordinated care within patient-centered medical homes creates a unique opportunity for this broadened view of transitions of care. This suggests that the time is ripe for pursuing strategies that will both improve patients' transitions from outpatient to inpatient care and reduce stress on our overburdened emergency departments.

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