

Hospital at Home and Emergence of the Home Hospitalist

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Ms. P., an 86-year-old woman with a history of hypertension, hyperlipidemia, coronary artery disease, and transient ischemic attack, presents to the emergency department with a three-day history of cough, fever, purulent sputum, fatigue, and dyspnea on exertion. Her vital signs are notable for a fever of 39.0°C, blood pressure 136/92, pulse 102, respiratory rate 30, and room air oxygen saturation of 91%. She looks ill. She has a white blood cell count of 16,000, lactate 1.9, and a right lower lobe infiltrate on imaging. The emergency department attending physician presents the case to you for admission, and you accept the patient into your inpatient hospitalist service.

Now, let's imagine a different future in which you are the attending hospitalist on your institution's Hospital at Home (HaH) service, where you will provide hospital-level care to Ms. P. in the comfort of her own home. Hospitalists should prepare for this paradigm shift.

WHAT IS HOSPITAL AT HOME?

HaH provides hospital-level care in a patient's home, for those with qualifying acute illnesses and appropriate degrees of acuity, as a substitute for traditional inpatient care.¹ This is achieved by bringing the critical elements of hospital care to the home—physician and nursing care, intravenous medications and fluids, oxygen and respiratory therapies, basic radiography and ultrasound, durable medical equipment, skilled therapies, and more.²

All hospitalists have cared for patients like Ms. P., and she and many patients like her will have a straightforward hospital trajectory: initial evaluation in the emergency department, inpatient care provided by a hospitalist inpatient service, a few days of intravenous antibiotics and other hospital services, and finally, discharge to home.

A SHARED RATIONALE FOR HOSPITAL MEDICINE AND HOSPITAL AT HOME

However, not all patients will experience a smooth, or safe, hospital course. Studies that launched the hospital safety movement also provide the rationale for HaH, namely, that hospitals are often dangerous environments for patients.³

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A complementary approach to improving outcomes for patients at high risk of iatrogenic illness such as functional decline, falls, delirium, adverse drug events, and hospital-associated disability syndrome,⁴⁻⁶ is to care for patients outside the traditional inpatient hospital environment. Over the past 20 years, many studies—including dozens of randomized controlled trials and several meta-analyses—have shown better outcomes for patients cared for in HaH: decreased length of stay, decreased incidence of adverse events (including substantially lower six-month mortality), better patient and caregiver care experiences, lower caregiver stress, and lower costs.⁷⁻⁹ A recent Center for Medicare and Medicaid Innovation (CMMI) Demonstration conducted at the Mount Sinai Health System found similar results.¹⁰

GROWING INTEREST IN HOSPITAL AT HOME AND CHALLENGES TO DISSEMINATION

Interest in HaH has increased markedly over the past few years with increased penetration of Medicare and Medicaid managed care, the development and spread of accountable care organizations (ACOs), and a shift in focus among some health systems towards value-based care, population health, and community-based care. Recently, commercial entities have entered the HaH space and have raised substantial capital to fund development. Despite this growing interest in HaH and substantial evidence of its effectiveness, HaH has not been widely implemented or scaled in the United States.

Widespread dissemination and implementation of HaH has been hampered by several barriers. First, despite growing interest in HaH, the culture of healthcare and health system leadership, for the most part, remains focused on facility-based care.¹¹

Second, while HaH makes financial sense in the managed care arena, given the strong evidence for high-quality, lower-cost care, there is currently no standard payment mechanism for HaH in fee-for-service Medicare or in the commercial insurance space. However, there are indications that this may soon change. In the fall of 2017, a proposal for a bundled payment mechanism for acute HaH care plus 30 days of postacute care was unanimously approved by an Advisory Committee to the Secretary of the Department of Health and Human Services (HHS).^{12,13} The HHS Secretary recently noted that "the Department of Health and Human Services is keenly interested in ideas for home-based, hospital-level care, and agrees ... that this proposal holds promise for testing."¹⁴

Third is the need to create the logistics and supply chain to support HaH. There currently exists a well-established supply

chain for providing hospital care. A hospitalist orders a dose of intravenous antibiotic or oxygen, and it is supplied in a timely manner. Similarly, the postacute sector of healthcare has a robust supply chain, though it operates on a somewhat different clock from the acute care setting. However, there is currently no easily replicable supply chain to meet the needs of providing acute care in the home. Each HaH has had to create its own system of logistics with the existing healthcare assets in its local environment. Developing this capacity at scale will require significant capital investment.

There are examples where HaH has scaled. Beginning in 1994, in the state of Victoria, Australia (population 6.3 million), the health authority reimbursed HaH care at the same rates as traditional hospital care. At last report, HaH provided approximately 5% of all hospital bed days of care in Victoria. Providing HaH on this scale helped avoid the need to build a new 500-bed hospital to care for those patients.¹⁵ The avoided costs of building new hospital beds (and the ongoing need to fill those beds) represents significant societal return on investment attributable to HaH.

EMERGENCE OF THE HOME HOSPITALIST?

A key element in implementing a HaH program is its physician staff in terms of the types of doctors who provide HaH care, how they are organized, and how they interact with patients. To date, HaH physicians have been predominantly geriatricians, but internists and family medicine physicians, employed as full-time members of a dedicated HaH team, also provide care by physically visiting patients in their homes. The reason for significant involvement of geriatricians in HaH may relate to the fact that geriatric fellowship training includes training in home-based medical care, whereas this is less common in family medicine and internal medicine residency training programs.

In order to provide HaH on a nationwide scale, there will be a need for a larger workforce. There is an opportunity here to leverage existing hospital physician staff, such as hospitalists. In addition, while there is significant value in physicians seeing patients in their homes, more scalable versions of HaH are being developed and implemented that leverage biometrically enhanced telemedicine approaches for a dedicated physician component of care, with in-person visits provided by other members of an interdisciplinary team.

We believe that hospitalists can play a key role as HaH physicians as the HaH model continues to evolve and expand. Hospitalists bring valuable expertise relevant to HaH care delivery, including extensive experience with the triage of acutely ill patients, an understanding of the natural course of acute illness and team-based care, and for some, experience with telemedicine care.

While a hospitalist providing HaH care would leverage many of the competencies of the traditional hospitalist, we suggest that such a provider should receive additional training and clinical experience in home-based medical care to help them better understand the unique aspects of providing care in patients' homes.¹⁶ Such training could include experience in mak-

ing house calls, which can be a transformational experience in helping physicians improve their skills in dealing with social determinants of health, diagnosing and managing geriatric syndromes, and mobilizing community resources in the care of their patients, as well as managing care transitions. Hospitalists delivering care in HaH may also need to upgrade specific clinical skills commonly addressed by home-based medical care providers: wound care, caregiver-related issues, social and ethical issues specific to home-based care, problems with functional status, psychiatric and cognitive issues, management of gastrostomy tubes and bladder catheters, dermatologic problems, as well as palliative care and end-of-life symptom management. These skills are slightly different from the usual realm of the typical hospitalists' wheelhouse. However, it is all learnable.¹⁷ Similarly, geriatricians can learn from hospitalists as the HaH model evolves; there are HaH programs in existence today that take care of a sicker tranche of patients than earlier versions of HaH, with continuous telemonitoring of patients and the ability to rapidly deploy providers, labs, imaging, and medications. Going forward, as healthcare organizations begin to develop HaH programs staffed by hospitalists, it is probably wise for hospitalists and geriatricians to collaborate on the optimal physician models for HaH.

There may emerge a new specialty. Ticona and Schulman described a "home intensivist" with competencies including informatics of remote monitoring technology, leadership of multidisciplinary care teams, and the interpersonal skills required for compassionate end-of-life care.¹⁸ We prefer the term Home Hospitalist. Home Hospitalists would develop an enhanced understanding of the transitions of care and social determinants of health, and they would gain valuable knowledge about the social and environmental challenges many patients face after discharge from the hospital.

When this vision is realized, there will be enormous benefits to both HaH and Hospital Medicine. HaH could tap into a large and competent workforce to enhance its implementation and dissemination. Hospital Medicine would gain a new pathway for its providers and could develop new collaborative efforts with geriatric, internal, and family medicine.

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