

## Acute Medical Care in the Home

During the first half of this century, physicians routinely made house calls delivering care in a patient's home. A physician could carry the entire effective pharmacopoeia in his or her talismanic black bag: morphine, insulin, digitalis, and adrenaline. However, except for the physician's presence and counsel, relatively little was offered to the patient.<sup>1</sup> With the explosion of biomedical knowledge and technology in the latter half of this century as well as the growth of third party payers, increased access of patients to a burgeoning medical system, and heightened liability concerns, care shifted from the home to the hospital.<sup>2</sup>

The hospital has become the standard venue for the treatment of serious, and occasionally not so serious, ailments. Intuitively, the development and rise of the modern hospital makes sense. It is a convenience for physicians because more patients can be seen more efficiently. Patients are closer to sophisticated medical technology and the subspecialist consultants who often direct its use. Though there are few data to demonstrate its efficacy, the hospital represents the current paradigm and gold standard of care.

In time, however, patients, especially older ones, some physicians, and many payers have come to recognize that the hospital is not an ideal care environment. Hospital treatment often deprives patients of their dignity and humanity. Iatrogenic complications are common and increase in incidence with age.<sup>3</sup> Older patients often suffer significant functional declines, which can precipitate a "cascade to dependency."<sup>4</sup> In addition, there is increasing evidence that the culture of care in the acute hospital is often at odds with the wishes of patients<sup>5</sup>; one writer has suggested that for certain patients to maintain their autonomy in the face of significant illness they must "get out of the hospital."<sup>6</sup>

Home care programs can help move or keep patients out of the hospital by providing postacute hospital care, by focusing home care efforts on patients with chronic illness at high risk of hospital readmission, and by providing home hospice care. The home care component of Medicare expenditures is the fastest growing portion of the Medicare budget. It has grown fivefold in the past 5 years and is projected to reach \$20 billion by 1998.<sup>7</sup>

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Home Hospital (HH) represents another care option that could help certain patients avoid inpatient hospitalization altogether. In this model the critical elements of hospital care, physician and nursing care, medicines, and technology, are brought home to the patient. HH has been implemented successfully and studied for specific conditions such as myo-

cardial infarction in the prethrombolytic era.<sup>8</sup> However, in recent years, it has been overlooked. A recent New England Journal of Medicine editorial describing the potential of home care made no mention of the possibility of HH.<sup>9</sup> Clearly, however, improvements in medical technology, such as intravenous infusion pumps and telemedicine, as well as economic pressures have made and will make HH increasingly feasible. This model demands thoughtful study inasmuch as economic considerations alone may force its use without proper validation as health care delivery moves increasingly toward capitated models of care.<sup>10</sup>

There is little HH literature. The best studies come from Britain in the 1970s where randomized controlled trials compared home with hospital treatment for acute uncomplicated myocardial infarction.<sup>8,11</sup> These studies benefited from examination of a discrete, diagnostically crisp illness, which most physicians believe, a priori, requires inpatient treatment, and they demonstrated that HH treatment was comparable to usual hospital care. Recent randomized trials comparing hospital with primarily home treatment of proximal deep venous thrombosis demonstrated that home therapy was feasible, safe, and effective.<sup>12,13</sup> There have been efforts initiated recently to develop a HH program for older people as an alternative to hospitalization for acute medical illnesses such as community acquired pneumonia, congestive heart failure, and obstructive pulmonary disease.<sup>14-16</sup>

There are inherent difficulties in home hospital care and in the design of studies to evaluate it. Patient selection can be especially difficult. Patients cared for in HH must be neither so sick that an ICU is required nor so well that health care providers stack the HH deck with patients who never needed hospital care but will benefit from increased home care services. Ironically few generally accepted criteria exist for deciding which patients require hospital admission. The American Thoracic Society has recently promulgated guidelines for triage and treatment of patients with community acquired pneumonia.<sup>17</sup> However, these guidelines will be more difficult to develop for patients with exacerbations of common chronic illnesses such as heart failure.

Randomizing patients in such studies may be difficult because patients have been encouraged to regard hospital care as the gold standard of what is "best care." Defining an appropriate, feasible level of surveillance for ill patients and the logistic means to provide it can be difficult. The family or caregiver's role must be defined carefully to avoid shifting significant burden of care or cost to them. Discharge criteria may become blurred in a HH when the patient is already receiving care in the home. Also, some have asked whether turning a home into a hospital perverts the notion and ideal of "home."<sup>18</sup>

In this context, the study of a HH program reported by an Israeli group in this issue of the *Journal of the American*

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*Geriatrics Society* may be considered.<sup>19</sup> The Israeli health care system has undergone significant reforms in recent years. Universal coverage is provided with minimum benefit levels set by the government. The system is financed by income-based payroll taxes on employers and employees along with government contributions. Funds are collected by the National Insurance Institute, which distributes them on a capitated basis to four "sick funds," essentially competing health maintenance organizations, to provide care for the entire population. Capitation rates are adjusted to reflect the health care needs of its members. Therefore, a sick fund that enrolls a greater number of older people receives a higher capitation. People have freedom of choice among the sick funds. The largest of the four sick funds, under whose auspices the current study was done, is Kupat Holim Chalit. Chalit provides health care to 80% of Israeli older adults.<sup>20</sup>

In the Chalit system, primary care is provided in community health clinics. Primary care physicians from these clinics can provide home care to appropriate patients, though its effectiveness may depend on the energies of the physician. This type of home care entails a change in the location of care delivery to the patient's home, but it puts few additional services in the home. For inpatient care, there are typical acute general hospitals, with an average length of stay longer than that found in the US. District Geriatric Hospitals (DGH) provide skilled nursing and physician care to older patients and receive patients from the general hospital. Patients can stay in DGHs for extended periods of time. Patients without skilled needs who require exclusively custodial care go to government sponsored nursing homes. Except for these nursing homes, Chalit is financially responsible for all care provided.

The HH program described in this issue of *The Journal* provided in-home, physician-supervised, interdisciplinary medical care for patients with adequate caregiver support who "required" hospitalization. It is important to note that patients requiring "constant medical attention" were ineligible for the program. Patients fell into three categories: general medical patients, terminal care, and rehabilitation. Admission decisions were made within 24 hours of referral to the program. Half the patients came from the acute hospital and had a shortened acute hospital stay; the other half came from the community, avoiding the inpatient hospital experience entirely. Physicians provided 24-hour coverage and visited patients as often as was required, with a minimum of six visits per month. The average length of stay in HH was 46 days, with 12% of stays lasting longer than 90 days.

This study describes the impact of the HH on hospitalization rates and on cost savings to Chalit. It compares the general and DGH hospitalization rates before and after initiation of HH using older people insured by the other sick funds as controls, as well as its own historic controls. The results suggest that such a program resulted in a decrease in the rates of general and DGH hospitalization as well as significant cost savings for Chalit. High rates of satisfaction with the program, based on a limited survey, were also demonstrated.

This study represents an important demonstration of a home hospital program, but there are several caveats. First, patients were not randomized. Second, given a nonrandomized design, the choice of controls was not optimal. It may not be accurate to compare the utilization of Chalit's services, which cares for 80% of older Israelis, with a group of three sick funds that have limited experience in the delivery of

geriatric care, particularly at a time when the country was absorbing a significant number of immigrants and rebounding from reforms in the health care system. In addition, Chalit's historical affiliation with Israel's Labor Federation, as well as the higher proportion of professionals in the other sick funds, suggest that patients in Chalit may be different from those enrolled in the other funds. Also, comparison of service utilization by Chalit beneficiaries in Jerusalem who had access to HH with Chalit beneficiaries in another city who did not have access to HH may have provided more useful data. Third, questions remain with regard to patient selection and the kind of care provided. The authors specifically state that HH was not meant to provide chronic home care because home care, as distinguished from HH, is provided by primary care physicians in the Chalit system. However, with nearly 30% of admissions lasting more than 2 months, it is uncertain whether many of these patients needed HH or simply home care with the addition of some skilled services. A similar HH program in another part of Israel had to institute a "control unit" to better screen referrals when it found on review that 46% of initial admissions were inappropriate. This was especially true of the admissions referred by primary care physicians from home care.<sup>21</sup> Fourth, the reduction in general hospital days achieved by HH may reflect the greater difficulty in placing patients out of the general hospital compared with the US, where prospective payment systems have resulted in increasingly shorter lengths of stay, establishment of subacute units, and "quicker but sicker" discharges. Finally, there was no attempt to determine the cost of shifting the burden of care from the Chalit health care staff to the family caregivers. Indeed, did the savings to Chalit come at the expense of family caregivers who had to forgo their employment activities? This last issue may be especially relevant in the US where HMOs are often viewed as interested in cost savings above all else, including the interests of patients and their families.

Despite these criticisms and the limited applicability of this particular model to other locales and health care systems, especially in the US, this is an important study. It demonstrates that HH systems are feasible and can deliver care to a significant number of patients. The study will help begin to challenge the perception that the hospital represents the only or best model for caring for ill older persons.

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