



## CASE STUDY

### Portland VA Medical Center and *Hospital at Home*

#### About Portland VA Medical Center

The Portland Oregon VA Medical Center (PVAMC) is a 303-bed facility that serves as the quaternary referral center for Oregon, Southern Washington, and parts of Idaho for the U.S. Department of Veterans Affairs. In addition, the PVAMC supports ongoing research and medical education.

#### PVAMC and *Hospital at Home*

Between 2000 and 2002 PVAMC participated in a research-based National Demonstration and Evaluation Study of the *Hospital at Home* model of care for older patients in which certain acutely ill older patients are cared for at home rather than the acute hospital. Based on the results of this research and feedback from patients, families, and staff, PVAMC continued the program in a modified form. PVAMC's Program@Home provides care for: exacerbations of congestive heart failure or chronic obstructive pulmonary disease, community acquired pneumonia, and cellulitis. However, unlike the Demonstration Study it accepted adult patients of all ages, accepted early discharge patients from the hospital, and provided less intensive physician and nursing coverage.

*Integrated health care delivery systems, such as managed care organizations and the Veterans Administration (VA) health care systems, present a setting where **Hospital at Home** care may be an excellent way to meet patient care needs, reduce complications of acute illness, and make more hospital beds available for patients who can't receive care at home.*

**Scott Mader, MD**  
**Executive Director**  
**Portland VA Medical Center**



#### Goals and Objectives

PVAMC's goal was to integrate a *Hospital at Home* program into its integrated delivery system and demonstrate how the program can support inpatient, primary, emergency, and home care programs. The program offered patients the option of *Hospital at Home* care over hospital admission, or continued hospital stay during admitting hours (8AM – 4:30 PM, seven days/week). A nurse and/or physician usually saw the patient before admission. The physician reviewed the electronic medical record and spoke with the referring provider before admission.

Program@Home uses resources of Portland's VA Home-based Primary Care Program (HBPC). The HBPC interdisciplinary care team is familiar with the care of veteran patients and works closely with the Program@Home physicians providing a highly collaborative model of physician-nursing care. A half-time physician, a full-time home care registered nurse, and a half-time clerical support staff the program, which cares for approximately 100 admissions per year. HBPC nurses changed their usual schedule to ensure weekend and vacation coverage. Existing geriatric faculty and home care nurses supply coverage for nights, weekends, and vacation at no additional cost to the system. PVAMC's infrastructure could support approximately 120 admissions/year at an estimated cost of \$3,300/ admission. The team projected that it would need to avoid 235 inpatient bed days of care.

per year to cover the costs of the Program@Home infrastructure. "Full occupancy" with 120 patients/year would save more than 360 bed days.

## Results

In the *Hospital at Home* Demonstration Study, the costs of *Hospital at Home* were significantly lower than usual acute hospital care (\$5,081 (SD 4427) versus \$7,480 (SD 8113). Lab and procedure expenditures were lower at each site individually, and there was a shorter length of stay (LOS) (3.2 vs 4.9). There were no differences in health service utilization in the 8 weeks following the index hospitalization.

In Program@Home, 290 patients were admitted in the first 42 months, 37% of whom were under 65. Admissions came from the emergency department (23%), early hospital discharge (54%), and from an outpatient clinic or home care (23%). The mean LOS was 3.2 days; median LOS was 3 days with a range of 1-14 days. The LOS was the same for patients under age 65 and over 65 (3.3 days). The seven-day hospital readmission rate was 16%. An additional 10% were admitted within 30 days so that a total of 26% of patients had been readmitted to the hospital within 30 days. PVAMC's total estimated cost per patient was \$4,000 in a year that included 100 patients. Additional costs, including transportation of patients and medications, contract oxygen, contract IV medication delivery, nebulizer machines, and blood drawing services, averaged \$331/patient.

## Lessons Learned

- PVAMC's use of previously validated eligibility criteria to select Program@Home patients contributed to a low rate of complications and the relatively short LOS.
- Early discharge admissions from the hospital to Program@Home were found to be easier than an admission of a patient coming from other sources.
- An early discharge model may be easier to develop and can result in greater throughput than a model based entirely on hospital substitution.

- Cost savings and reduction of iatrogenic events were not as great as the hospital admission avoidance model previously tested.
- PVAMC benefited from strong physician involvement and probably helped to ensure patient acceptance of *Hospital at Home*-type care.

*Hospital at Home* is an innovative health care model that can provide hospital-level care in a patient's home as a full substitute for acute hospital care. To date, Hospital At Home has been developed and tested in the US in a National Demonstration and Evaluation Study, funded by the John A. Hartford Foundation, at sites in Buffalo, New York, Portland, Oregon, and Worcester, Massachusetts. Patients who required hospital admission for community-acquired pneumonia, congestive heart failure, chronic obstructive pulmonary disease (emphysema), and cellulitis were treated in *Hospital at Home*. For more information go to [www.hospitalathome.org](http://www.hospitalathome.org).

## References

*Program @ Home: a Veterans Administration Health Care Program to Deliver Hospital Care in the Home*, Scott L. Mader, Marijo C. Medcraft. *J Am Geri Soc*, In press.

*Hospital at Home: Feasibility and Outcomes of a Program to Provide Hospital-Level Care at Home for Acutely Ill Older Patients*, Bruce Leff, MD et al, Annals of Internal Medicine 2005; 143:798-808.

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