Avoiding Unplanned Hospitalizations for Acutely Ill Older Adults – The Hospital at Home Model

Linda V. DeCherrie, MD

Clinical Director, Mount Sinai at Home
Icahn School of Medicine at Mount Sinai
Mount Sinai Health System
Conflicts

No conflicts of interest

Dr. DeCherrie is a full time employee of the Icahn School of Medicine, which in turn has an ownership interest in a joint venture with Contessa Health, a venture that manages acute care services provided to patients in their homes through prospective bundled payment arrangements. Dr. DeCherrie has no personal financial interest in the joint venture.
Can Mount Sinai be serious? The answer is a resounding yes. In fact, we couldn’t be more serious. Mount Sinai’s number one mission is to keep people out of the hospital. We’re focused on population health management, as opposed to the traditional fee-for-service medicine. So instead of receiving care that’s isolated and intermittent, patients receive care that’s continuous and coordinated, much of it outside of the traditional hospital setting.

Thus the tremendous emphasis on wellness programs designed to help people stop smoking, lose weight and battle obesity, lower their blood pressure and reduce the risk of a heart attack. By being as proactive as possible, patients can better maintain their health and avoid disease.

Our Mobile Acute Care Team will treat patients at home who would otherwise require a hospital admission for certain conditions. The team involves physicians, nurse practitioners, registered nurses, social workers, community paramedics, care coaches, physical therapists, occupational therapists, speech therapists, and home health aides.

Meanwhile, Mount Sinai’s Preventable Admissions Care Team provides transitional care services to patients at high risk for readmission. After a comprehensive bedside assessment, social workers partner with patients, family caregivers and healthcare providers to identify known risks such as problems with medication management and provide continuing support after discharge.

It’s a sweeping change in the way that health care is delivered. And with the new system comes a new way to measure success. The number of empty beds.

IF OUR BEDS ARE FILLED, IT MEANS WE’VE FAILED.

New York Times, 2015-present
History of Hospital at Home
Why We Need Hospital at Home
(Bruce Leff Johns Hopkins)

- Walter, 82, lives with his cat
- Multiple chronic conditions, meds, and admissions
- Walter’s Gripes
  - “I can’t get breathing treatments on time so I end up on a ventilator”
  - “Food stinks”
  - “No one talks to me”
  - “I get confused – get tied down”
  - “I always come home with a completely new set of medicines”
- One day – sick – pneumonia
- “I will NOT go to the hospital”
Hospital at Home v1.0

Homeward bound
Snapshot of the Hospital at Home process

Assessment
Patient presents to ED. Clinicians determine patient has acute illness that could be treated at home. Patient chooses home-care option.

Transport
Patient transported home accompanied by nurse or physician with appropriate medications and equipment, including oxygen, if necessary.

Home care

Discharge
Nurse provides instruction about medications, follow-up care, sends letter to primary care physician.

• Since 1994….

History of Hospital at Home

Determined who and what to treat

Developed eligibility criteria (JAGS 45:1066, 1997)

Evaluated patient acceptability of program (JAGS 46:605, 1998)

(Early experience with CMS)

Pilot Studies: clinical/econ feasibility (JAGS 47:697, 1999)

RFP to managed care organizations

National Demonstration & Evaluation (Annals 143:798, 2005)

Dissemination activities

‘95 ‘97 ‘98 ‘99 ‘00 ‘01-04 ‘05
Hospitalization at Home (HaH)

- Largest hospital-at-home program in the country serving patients with conditions that might otherwise require hospitalization

- Initiated in 2014 under a $9.6 million Health Care Innovation Award from Centers for Medicare and Medicaid Innovation

- Accepting Health First, Emblem and Humana insurance

- Medicare FFS is on hold currently

- Name change – MACT to HaH
Hospital at Home – Plus

**Admission**
- Eligibility and home situation reviewed
- Services organized
- Transport home

**Acute Care**
- 3-5 days
- Daily MD & nursing visits
- IV medications, oxygen, x-ray, lab tests
- 24/7 support
- Community Paramedics
- Discharge

**Post-acute**
- Services available for 30 days
- Follow-up visits by team
Diagnoses

- Community Acquired Pneumonia (CAP)
- Congestive Heart Failure (CHF)
- Chronic Obstructive Pulmonary Disease (COPD)/Asthma
- Venous thromboembolism (DVT/PE)
- Urinary Tract Infection (UTI)
- Diabetes (hyper- and hypoglycemia)
- Cellulitis
- Dehydration
Why consider Hospital at Home

- Improved care (avoiding hazards of hospitalization)
- Increased patient satisfaction
- Lower cost
Hospital at Home Care Benefits

Some of the benefits of providing home-based hospitalization include:

– Reduction in infections
– Reduced rate of re-hospitalization
– Reduced rate of adverse events (including falls)
– Reduced risk for developing delirium
– Increased functional mobility (in institutions, patients spend the majority of their time in bed or sitting in a wheelchair)
– Functional rehabilitation is practiced in the patient’s own environment
Outcomes
Hospitalization at Home v. Control

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Raw Values*</th>
<th>Modelsb</th>
<th>Weightedc</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HAH</td>
<td>Controls</td>
<td>Unweighted Difference (SE), d</td>
</tr>
<tr>
<td></td>
<td>Acute length of stay, d</td>
<td>3.2 (2.1)</td>
<td>5.5 (3.4)d</td>
</tr>
<tr>
<td>30-Day postacute period OR (95% CI)</td>
<td></td>
<td></td>
<td>OR (95% CI)</td>
</tr>
<tr>
<td>All-cause hospital readmission</td>
<td>25 (8.6)</td>
<td>32 (15.6)d</td>
<td>0.51 (0.40 to 0.65)d</td>
</tr>
<tr>
<td>All-cause emergency department visit</td>
<td>17 (5.8)</td>
<td>24 (11.7)d</td>
<td>0.47 (0.35 to 0.63)d</td>
</tr>
<tr>
<td>Transfer to skilled nursing facility</td>
<td>5 (1.7)</td>
<td>22 (10.4)d</td>
<td>0.15 (0.10 to 0.23)d</td>
</tr>
<tr>
<td>Certified home health agency referral</td>
<td>172 (58.3)</td>
<td>104 (49.1)d</td>
<td>1.45 (1.24 to 1.70)d</td>
</tr>
</tbody>
</table>

Abbreviations: HAH, hospital-at-home; OR, odds ratio; SE, standard error.

* Unless otherwise indicated, all data are reported as number (percentage) of patients.

b Multiply imputed models, vs control patients; models adjusted for age, sex, race and ethnicity, education, insurance type, impairments in activities of daily living, general health status, and admission diagnosis of congestive heart failure or urinary tract infection.

P < .001.

P < .05.
# Patients’ Experiences with Care (HCAHPS) HaH vs. Control

<table>
<thead>
<tr>
<th></th>
<th>Medicare HVBP 2018 Benchmark</th>
<th>HaH</th>
<th>Control</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication with Nurses</td>
<td>86.7</td>
<td>88.0</td>
<td>75.9</td>
<td>.006</td>
</tr>
<tr>
<td>Communication with Physicians</td>
<td>88.5</td>
<td>98.2</td>
<td>88.1</td>
<td>.0004</td>
</tr>
<tr>
<td>Communication about medications</td>
<td>62.5</td>
<td>85.8</td>
<td>64.0</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Care transitions (CTM-3)</td>
<td>62.4</td>
<td>60.7</td>
<td>47.3</td>
<td>.02</td>
</tr>
<tr>
<td>Overall rating</td>
<td>84.6</td>
<td>80.5</td>
<td>69.3</td>
<td>.03</td>
</tr>
</tbody>
</table>

HCAHPS scores adjusted according to the Medicare Hospital Value Based Purchasing program Patient Mixed Adjustment criteria. HVBP benchmark is the mean of the top decile of scores from contributing hospitals.
INNOVATION PROFILE

Costs For ‘Hospital At Home’ Patients Were 19 Percent Lower, With Equal Or Better Outcomes Compared To Similar Inpatients

- Length of stay shorter: HaH 3.3, Hospital 4.5 days
- Satisfaction better
- 19% lower costs – lower rates of procedures and tests
Who are the patients?

- Require Hospital admission (not a home care episode)
- Require daily physician/NP monitoring, frequent labs
- Safe home environment
- ~575,000 FFS Medicare admissions each year could qualify for such a program (~5%)
Who are the patients?

86 yo woman with dementia, HTN, DM aspirates and develops pneumonia, becomes dehydrated and in the ED cannot maintain oxygen above 90% with 4 L of oxygen

86 yo woman with dementia, HTN, DM aspirates and develops pneumonia, becomes dehydrated and in the ED can oxygen saturation stays >90% on 2 L, safe home environment

75 yo woman with HTN, DM who develops pneumonia, not dehydrated, can take oral medications, does not require oxygen – treated at home and follows up with PCP in 3 days

ICU/step down in hospital

Hospital at Home

Does not require admission to a hospital
Current payment/system does not match what is needed for this program

- Daily MD/NP in person and video visit
- Nursing daily, twice daily or three times daily
- IV antibiotics delivered to home within 2 hours
- Labs processed like inpatient 2-3 hours
- SW and PT to home for assessments
- DME delivery to home within 2 hours
- Oxygen not covered for acute conditions (ie pneumonia)
- Community paramedics
Payment

- Contracting with Medicare Advantage, Managed Medicaid and Commercial Insurances
  - Challenging – fitting inpatient payment into an outpatient payment model
  - Contracting for bundle payments – acute period only and 30 day periods

- Submission to Medicare through Physician Focused Payment Model Technical Advisory Committee (PTAC) - **Hospital at Home Plus** – recommended for implementation
  - 95% DRG payment for 30 days of care
  - Shared savings for total care based on quality metrics
General Considerations

- Start up: ideal in a supportive health system and home based primary care program

- Need to provide 24/7 care but can leverage other services with existing health system providers with training (hospitalist, home care nurses, social work)

- Insourcing vs Outsourcing (ie contracting) staff and services

- Most HaH programs stay with in 1 hour geography

- 200-300 admissions annually is minimum volume for a program
Hospital at Home

Short-term (3-5 day) acute inpatient-level care at home with 30 day follow up

Hospital at Home Acute Care Team

The Platform: Home-based Care Team

Medicine, nursing, social work, rehabilitation, community paramedics, pharmacy, laboratory, radiology, other community-based services, and transport
### Diversifying the HaH “At Home” Suite of Services

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hospital at Home</strong></td>
<td>Short-term (3-5 day) acute inpatient-level care at home with 30 day follow up</td>
</tr>
<tr>
<td><strong>Observation Unit at Home</strong></td>
<td>Short-term (1 day) acute observation unit level care at home that can transition to Hospital at Home with 30 day follow up</td>
</tr>
<tr>
<td><strong>Palliative Care Unit at Home</strong></td>
<td>Short-term (3-5 day) acute level care at home for hospice-eligible patients with 30 day follow up (and possible transition to hospice)</td>
</tr>
<tr>
<td><strong>Hospital Averse at Home</strong></td>
<td>Short-term (3-5 day) acute level care at home for patients who decline being in the hospital</td>
</tr>
<tr>
<td><strong>HaH@Nite</strong></td>
<td>Recruitment at night with overnight care in the hospital for transition to home in the morning</td>
</tr>
<tr>
<td><strong>Pediatric Hospital at Home</strong></td>
<td>Short-term (3-5 day) acute inpatient-level care at home for children up to age 18 with select illnesses.</td>
</tr>
<tr>
<td><strong>Completing Hospital Stay at Home</strong></td>
<td>Short-term (&lt;20 day) completion of acute inpatient level care at home for hospital inpatients</td>
</tr>
<tr>
<td><strong>Rehab at Home</strong></td>
<td>Short-term (&lt;20 day) post-acute rehabilitation, medical, and nursing services in lieu of a nursing home stay with follow up up to 30 days</td>
</tr>
</tbody>
</table>

**Hospital at Home Acute Care Team**

- Medicine, nursing, social work, rehabilitation, community paramedics, pharmacy, laboratory, radiology, other community-based services, and transport

1 Ambulatory Surgery Post-Op (spring 2018)
2 Program for veterans to pilot (October 2018)
Linda.decherrie@mountsinai.org