New Frontiers in Home-Centered Care: Hospital at Home: What do home care providers need to know?

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Associate Professor – Department of Geriatrics and Palliative Medicine
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Faculty Disclosures

• DeCherrie – no relevant disclosures
Objectives

• List the conditions once cared for in a hospital that are now being managed in the home.
• Identify the pros and cons of managing these conditions in the home.
• Walter, 82, lives with his cat
• Multiple chronic conditions, medications, and hospital stays

• Walter’s Gripes with his hospital care
  • “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”

• Developed pneumonia at home – made a housecall
  • “I will not go to the hospital”

Slide from Leff
History

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**
Nurse remains with patient in home for eight to 24 hours, returns daily to administer meds, conduct routine tests. Physician visits daily, is available 24 hours a day in case of emergency.

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

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

Slide from Leff
• 61% chose HAH care
• HaH is feasible and efficacious
• High-quality care
• Fewer complications
• Higher satisfaction
• Lower costs of care

- Less CG stress
- Better function
- High provider satisfaction

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
HaH Meta-Analysis

21% Reduction in Mortality: \( NNT = 50 \)


24% Reduction in readmission
The 500-bed hospital that isn’t there: the Victorian Department of Health review of the Hospital in the Home program

Key decision 1994: reimburse HaH as inpatient service.

2009: 32.4K admissions = 2.3% all inpatient admissions, 5.3% multiday admissions & 5% all bed days

High satisfaction

“Time to move HaH from the back door to the front door of the hospital”

MJA 2010;193:598
Pursuing Many Dissemination Paths

- VA
- Managed Care
- ACOs
- Home Care
- FFS Medicare
  - CMMI Demo
Hospital at Home in the US

- Hospital systems
- VA hospitals
- Alternative models
- Potential entrant

- Swedish
- VA - Bend
- VA - Boise
- VA - Portland
- Kaiser
- Cedars-Sinai
- Centura + Dispatch Health
- Clinically Home
- Presbyterian
- VA - Honolulu
- VA - New Orleans
- VA - Cincinnati
- VA - Philadelphia
- Mount Sinai
MACT: Mobile Acute Care Team
Hospital at Home at Mount Sinai
Patient Example

• 82 yo male with BPH and DM admitted to outside hospital for UTI and urinary retention d/c home, no consistent PCP

• 2 days post discharge seen in ED for blood in urine and foley placed
Patient Example

- 3 days later seen in ED again with a blocked catheter, changed and started on oral abx for UTI
- 2 days later seen in Sinai ED with headache, nausea, abd pain found to have resistant UTI and pyuria
- Admitted to MACT
Patient Example

• Admitted to MACT

• Patient decided to stay at his daughters apartment

• Twice daily RN visits for IV antibiotics, insulin teaching

• Daily MD or NP visits

• PT (~hospital PT eval)

• SW evaluation
Patient Example – 30 day post acute period

• D/C on day #4

• Moved to his home

• SW – increased long term home support

• Changed PCP’s to Mount Sinai Visiting Doctors

• 1 urgent home visit in 30 days post acute for hematuria
Diagnoses

• Community Acquired Pneumonia
• Congestive Heart Failure
• Chronic Obstructive Pulmonary Disease/Asthma
• Venous thromboembolism (DVT/PE)
• Urinary Tract Infection
• Diabetes (hyper and hypoglycemia)
• Cellulitis
• Dehydration
Example of PNA Diagnosis Exclusion Criteria

- $O_2$ sat <90% despite 6 L $O_2$
- SBP <90 despite ED treatment or if determined baseline BP
- Need for bronchodilator more than every 2 hours
- Hemodialysis
- On methadone needing daily pick up of medication
- Lung cancer
- Cavitary lesion
- Severe immunosuppression
Inclusion criteria

• Medicare and HealthFirst Insurance

• Manhattan Resident
MACT Workflow

Patient presents to the ED
Determined needing admission

MACT MD/NP review ED admit list throughout the day for eligibility criteria (payor, geography, dx)

Patient in Observation determined needing admission

MACT MD/NP chart review of all potential patients
MACT Workflow 2

ED evaluation by MACT MD/NP (discuss with clinician/PCP and clinical evaluation of patient)

Home safety screen

Clinical consent for program

Patient in PCP office or at home meeting admission criteria

PCP Notified
Home Safety Screen

- Comfort with multiple visits per day
- Phone
- Electricity, running water, refrigerator
- Space
- Drugs and firearms
- Pets
- Responsible for care of another person
- Caregiver and hours
Orders: Sinai inpatient pharmacy, our nurses, external VNS PT’s, DME company, lab company

Patient goes home in ambulance with IV

RN sees patient at home
Daily Home Visits

- RN
  - Twice a day
  - Infusion
  - Can do a third visit if urgent

- MD/NP
  - Daily visit

- SW
  - At least once in the acute episode
Other Elements

- HHA – about 4 hours per day per patient
- PT – assessment on most patient
- Labs – multiple times a day if needed
- Xrays/Ultrasound – as needed
- DME – $O_2$, bed side commodes
Urgent issues

• MD on call 24/7 by phone

• Unscheduled MD/NP visits during day

• RN visit until midnight

• Community Paramedicine
Community Paramedicine Program

- Urgent Evaluation by EMS
  Coordinated with MACT physician
- HIPPA compliant face time with paramedic during visit
30 day Post-Acute Bundle

- Stratify MACT patients into standard and high risk group

- Varying levels of phone f/u, home visits, Home Health, SW

- 24 hour phone coverage, urgent visits available and community paramedicine

- Communication with PCP
What do home care providers need to know?

- You are the #1 resource for implementing these programs
  - Most hospitalists and primary care providers are uncomfortable providing care in the home
  - Many of you provide acute care already in the home but are limited by reimbursement, delivery systems and audits
- You will need to be part of a hospital system to set up a hospital at home program
  - Need an ER to admit patients from
What do home care providers need to know?

• Payer – FFS or global budget

• Interest from a health system in a new innovative idea
  • Huge undertaking
  • Half inpatient, half outpatient
  • Touches all parts of the hospital system
    • Legal
    • Supply chain
    • Medical
    • Nursing
    • Social work
The MACT HaH Platform

Mount Sinai Visiting Doctors

Long-term primary and palliative care for homebound persons

Mobile 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
Mobile Acute Care Team

**Mount Sinai Visiting Doctors**
Long-term primary and palliative care for homebound persons

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

**Mobile 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
The MACT HaH Platform

Mount Sinai Visiting Doctors

Long-term primary and palliative care for homebound persons

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<thead>
<tr>
<th>Hospital at Home</th>
<th>Observation Unit at Home</th>
</tr>
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<tbody>
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<td>Short-term (3-5 day) acute inpatient-level care at home with 30 day follow up</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>
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Mobile 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
# The MACT HaH Platform

<table>
<thead>
<tr>
<th>Mount Sinai Visiting Doctors</th>
<th><strong>Hospital at Home</strong></th>
<th><strong>Observation Unit at Home</strong></th>
<th><strong>Palliative Care Unit at Home</strong></th>
<th><strong>Hospital Averse at Home</strong></th>
</tr>
</thead>
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<tr>
<td>Long-term primary and palliative care for homebound persons</td>
<td>Short-term (3-5 day) acute inpatient-level care at home with 30 day follow up</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>
<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>
<td>Short term (3-5 day) acute level care at home where for patients who decline hospitalization</td>
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## Mobile 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
# The MACT HaH Platform

## Mount Sinai Visiting Doctors

Long-term primary and palliative care for homebound persons

## Mobile 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

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<th>Service</th>
<th>Description</th>
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<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>
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<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 where for patients who decline hospitalization</td>
</tr>
<tr>
<td><strong>Subacute Care 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 to 30 days</td>
</tr>
</tbody>
</table>
Evaluation

• Center for Medicare and Medicaid Innovations (CMMI) contracts with outside vendor
  • Claims based approach for evaluation
  • Evaluating the triple aim: Satisfaction, improved health and cost

• Hartford foundation has funded 1.6 million for a control group evaluation plus dissemination of the program
  • Quantitative and qualitative approach
  • Follow patients who were actually hospitalized
  • Dissemination in partnership with Center to Advance Palliative Care (CAPC)
Outcomes measured

• Experience
  • Patient satisfaction
  • Caregiver burden

• Clinical
  • Mortality
  • 30 day readmission and ED utilization
  • Adverse events: delirium, functional decline, emergency clinical situations, falls, etc

• Cost

• Special programs: community paramedicine
## Patient Characteristics – MACT HaH – Preliminary Data

<table>
<thead>
<tr>
<th></th>
<th>MACT (n=45)</th>
<th>Controls (n=69)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age, mean</strong></td>
<td>76 years</td>
<td>69 years</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Female</strong></td>
<td>83%</td>
<td>67%</td>
<td>.06</td>
</tr>
<tr>
<td><strong>Race/ethnicity</strong></td>
<td></td>
<td></td>
<td>.52</td>
</tr>
<tr>
<td>White</td>
<td>36%</td>
<td>28%</td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td>26%</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>38%</td>
<td>37%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td>.25</td>
</tr>
<tr>
<td>Less than high school</td>
<td>33%</td>
<td>33%</td>
<td></td>
</tr>
<tr>
<td>High school graduate</td>
<td>24%</td>
<td>10%</td>
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</tr>
<tr>
<td>Some college or more</td>
<td>43%</td>
<td>45%</td>
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<tr>
<td><strong>Insurance</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medicare</td>
<td>39%</td>
<td>34%</td>
<td>.36</td>
</tr>
<tr>
<td>Medicare Advantage</td>
<td>10%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>7%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Medicaid-Medicare</td>
<td>44%</td>
<td>34%</td>
<td></td>
</tr>
<tr>
<td>Private health plan</td>
<td>0</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td><strong>Self-rated health</strong></td>
<td></td>
<td></td>
<td>1.0</td>
</tr>
<tr>
<td>Poor to fair</td>
<td>95%</td>
<td>95%</td>
<td></td>
</tr>
<tr>
<td>Good to excellent</td>
<td>5%</td>
<td>5%</td>
<td></td>
</tr>
<tr>
<td>Admitting Diagnoses - MACT HaH - Preliminary Data</td>
<td>MACT (n=45)</td>
<td>Controls (n=69)</td>
<td>P</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------</td>
<td>----------------</td>
<td>----</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>24%</td>
<td>16%</td>
<td>.06</td>
</tr>
<tr>
<td>Congestive heart failure</td>
<td>20%</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Dehydration</td>
<td>15%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Chronic obstructive pulmonary disease</td>
<td>12%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>10%</td>
<td>13%</td>
<td></td>
</tr>
<tr>
<td>Cellulitis</td>
<td>7%</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td>5%</td>
<td>9%</td>
<td></td>
</tr>
<tr>
<td>Deep venous thrombosis</td>
<td>2%</td>
<td>7%</td>
<td></td>
</tr>
<tr>
<td>Hyperglycemia</td>
<td>2%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>2%</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Pulmonary embolism</td>
<td>0</td>
<td>1%</td>
<td></td>
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</table>
# MACT HaH Outcomes Preliminary Data

<table>
<thead>
<tr>
<th></th>
<th>MACT (n=45)</th>
<th>Controls (n=69)</th>
<th>p-value</th>
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<tbody>
<tr>
<td><strong>Clinical Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length of stay, mean days (sd)</td>
<td>3.6 (2)</td>
<td>4.7 (3)</td>
<td>.05</td>
</tr>
<tr>
<td>30-day ED revisit</td>
<td>17%</td>
<td>22%</td>
<td>.57</td>
</tr>
<tr>
<td>30-day Hospital readmission</td>
<td>10%</td>
<td>22%</td>
<td>.11</td>
</tr>
<tr>
<td><strong>Patient Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HCAHPS, mean score (sd)</td>
<td>85 (15)</td>
<td>70 (31)</td>
<td>.01</td>
</tr>
<tr>
<td>Communication</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Care Transitions Model 3, mean score (sd)</td>
<td>83 (15)</td>
<td>75 (20)</td>
<td>.05</td>
</tr>
</tbody>
</table>
Mount Sinai’s number one mission is to keep people out of the hospital. Our Mobile Acute Care Team will treat people at home who would otherwise require a hospital admission for certain conditions.

“Mount Sinai’s number one mission is to keep people out of the hospital.”

“Our Mobile Acute Care Team will treat people at home who would otherwise require a hospital admission for certain conditions.”
“When Martin Fernandez came into Mount Sinai Hospital’s emergency room one recent afternoon, with high fever and excruciating abdominal pain, he and his family were asked an unexpected question.

Mr. Fernandez, 82, would have to be officially admitted to receive intravenous antibiotics for his urinary tract infection. But he could stay at Mount Sinai, or he could receive treatment at home.”
A Vision for “Hospital at Home” Programs

by Bruce Leff, MD

December 21, 2015

Why I Believe in Hospital at Home

Article · December 21, 2015

Bruce Leff, MD

Johns Hopkins University School of Medicine


HaH in The Advisory Board (Again)

Hospital-at-Home Avoids Hospital Stay Altogether

Johns Hopkins Spearheads Innovative Care for Elderly Patients

Hospital-at-Home Substitutes Inpatient Stay

- Targeted Conditions:
  - COPD
  - CHF
  - Cellulitis
  - Pneumonia
  - Dehydration

- Diagnostic Testing
- Infusion Therapies
- Basic Home and Personal Care
- 24/7 Access to Physician and Nurse

Case in Brief: Johns Hopkins University Schools of Medicine and Public Health

- Model pioneered at Johns Hopkins Bayview Medical Center in Baltimore, Maryland
- Patients over 65 years old invited to participate in Hospital-at-Home program from emergency department or outpatient clinics
- Model can be used as a platform for providing high-level care in the home

1.7 days
Reduction in average length of stay
$2,399
Reduction in average cost per patient
38%
Reduction in risk of mortality at six months for patients treated at home
74%
Percentage point reduction in relative risk of incident delirium for patients treated at home


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Success and Challenges

- **Successes:**
  - Treated 150 patients
  - Expanded diagnoses and inclusion criteria
  - Created a platform
  - Multiple vendor relationships
  - Meeting with other Medicare advantage plans

- **Challenges:**
  - Lower acceptance rate than other H@H programs
  - Recruitment
  - Daily workflow efficiencies
Discussion

Go to: 2Shoesapp.com/AAHCM2016
1. Click on the session you are in
2. Ask and vote on questions