INNOVATIONS IN HBPC

Mary Ann Haggerty, MSN, CRNP
HBPC Program Director
Rachel K. Miller, MD
HBPC Medical Director
Objectives

- Review briefly HBPC services, population served
- Discuss outcome measures
- Discuss current innovations
- Discuss educational initiatives
Home Based Primary Care (HBPC) is a home care program designed to meet the longitudinal, primary care needs of an aging veteran population with complex, chronic, disabling disease.
HBPC

- Provide services 30 minutes from PVAMC (Philadelphia, Delaware, Montgomery, Bucks counties, Camden, Gloucester, Burlington counties in NJ)
- Team = NP, MD, RN, SW, Psychologist, Geriatric Psychiatrist, Dietician, Pharmacist
- Rehab (PT, OT, Speech) outsourced but very much a part of the team
Veteran Population

- Homebound/difficulty accessing primary care
- Complex, multiple medical problems
- ALS, MS, Parkinson’s
- Complex social and psychiatric problems
- TBI, PTSD
- Majority WWII, Korean, Viet Nam Wars
Outcome Measures

- Infection control surveillance (Pneumonia, UTI, Skin and Soft Tissue)
- Hospital Utilization pre/post HBPC
- Falls
### (HBPC Patients) Master Patient File: count size = 52,333

<table>
<thead>
<tr>
<th>Location</th>
<th>Patients, Admits, &amp; Days</th>
<th>Change in Admits &amp; Days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before HBPC</td>
<td>During HBPC</td>
</tr>
<tr>
<td>Station</td>
<td>Name</td>
<td>B: Total #</td>
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<td>Admits Days Days Newly Admits Admits Days % Days %</td>
<td>before / 1000 before / 1000 Enrolled during during during Reduct. during Reduct.</td>
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<tr>
<td>National</td>
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<td>9,642</td>
</tr>
<tr>
<td>Network</td>
<td>NETWORK</td>
<td>342</td>
</tr>
<tr>
<td>642</td>
<td>PHILADELPHIA (VAMC) PA</td>
<td>35</td>
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</table>
Quality Improvement: Falls

• 2011: 4 falls with major injury (fractures, hospitalization)
• Instituted ACOVE Fall Guidelines with post fall assessment and intervention
ACOVE Guidelines for Falls

- Imbedded in post fall intervention
- Fall history (circumstances, medications, chronic conditions, mobility, alcohol intake)
- Orthostatic vital signs
- Basic visual exam
- Tinetti Gait and Balance
- Consult to PT/OT
- Cognitive assessment: worsening?
ACOVE, con’t

- Assessment of environmental/safety hazards
- Pharmacist review of benzodiazepine use
- Consult to PT/OT for assistive devices, including education of devices
- PT/OT to develop structured exercise program
<table>
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<tr>
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<th>FY'11</th>
<th>FY'12</th>
<th>FY'13</th>
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</thead>
<tbody>
<tr>
<td>Falls without injury</td>
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<tr>
<td></td>
<td>37</td>
<td>14</td>
<td>24</td>
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<tr>
<td>Falls with minor injury</td>
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<td></td>
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<tr>
<td></td>
<td>31</td>
<td>20</td>
<td>17</td>
</tr>
<tr>
<td>Falls with major injury</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total falls</td>
<td>72</td>
<td>35</td>
<td>42</td>
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</tbody>
</table>
FY'12 Causes of Falls

- Using urinal/bathroom/commode: 7
- Fell OOB: 7
- Letting dog out: 1
- Not using assistive devices: 1
- Lost balance: 1
- Reaching: 6
- Left unattended: 3
- Legs gave out: 3
- Blacked out: 1
- Slipped/fell with transfer: 2
- Environmental/safety factor: 2
- Caregiver fell/veteran went down: 1
- Getting out of chair/standing up: 1

FY'12
Problem Causes of Falls

- FY'11: Fell OOB (9), Bathroom (7)
- FY'12: Fell OOB (7), Bathroom (7)
- FY'13: Fell OOB (8), Bathroom (5)
Innovations

• Video visits
• Medical Foster Home
• Hospital at Home
• Weekly journal club
• Interdisciplinary staff retreat
Video Visits

- Clinical Video Technology: VA initiative
- American Telecare video units
- IP to home
Goals of Video Visits

- Cut down on travel time
- Increase Veteran’s access to team
- Expand the HBPC service area
- Promote a new innovation for providing home care
Challenges

- Technology, connection
- Patient buy-in: replacing a face-to-face interaction
- Staff buy-in
- Provider units are located in HBPC offices
- Behavior Health utilizing it
- Dietician and Pharmacist
IP to Home

- Utilizes the Veteran’s own computer
- Veteran supplies the camera
- Can be done from any computer that has MOVI software
- Does not have peripheral equipment (BP cuff, stethoscope, etc)
Medical Foster Home

- Approved caregiver accepts 1-3 Veterans into their home for care
- Nursing home eligible
- Veteran pays the caregiver
- HBPC provides the in home medical care
- Challenge: finding appropriate Veterans!
Hospital at Home

- Pilot program to manage Veterans with CHF, COPD, CAP, Cellulitis, Palliative (symptom management) in the home instead of inpatient hospitalization
- T21 funding FY ‘12 and ‘13
- Partnered with PCAH to provide intensive nursing visits (PCAH, PHIT, Caring Way)
Background

- Hospital at Home programs have been instituted nation-wide as an alternative to hospitalization.
- These programs have been shown to be safe, effective, and reduce costs by 30%.
- Patients are admitted through emergency departments (substitute Hospital at Home) or by early discharge (complimentary Hospital at Home).
- Care teams include physicians, nurses, therapists, social workers and pharmacists.
- VA has implemented Hospital at Home programs at 5 Medical Centers, with each program employing the full program staff.
- Typically takes a program 6-9 months to get started when hiring new staff within VA.
- These programs have been implemented through the Home Based Primary Care (HBPC) programs at each medical center, an interdisciplinary team centered program providing acute and ongoing care to frail, homebound veterans in the community.

Objectives

1. Create an interdisciplinary and interagency team to deliver in-home care.
2. Demonstrate Hospital at Home as a safe and effective alternative to hospital admission.
3. Demonstrate cost-savings to the VA health system through a partnership approach compared to a staff-model arrangement.

Measures of Success

- Clinical data: diagnoses, length of stay, prior hospitalizations, readmissions.
- Financial data: direct variable costs, costs of hospitalization for those transferred to Hospital at Home from an inpatient ward.
- Qualitative data: patient experience in the program.

Keywords

- Hospital at Home Services
- Safety
- Inexpensive
- Community Partnerships
- Interdisciplinary
- Patient Experience

Intervention

- Created an inter-agency team linking nursing and infusion services through Penn Care at Home with medical care (HBPC) via a Provider Agreement.
- Enrolled patients from the Philadelphia VA Medical Center emergency department, clinics and inpatient medicine wards (through early discharge).
- Provided daily physician and nursing visits, parenteral therapy, durable medical equipment and home oxygen, laboratory and radiology diagnostics.
- For accounting created a “Hospital at Home Fund”, which had deposited revenue (as the Direct Variable Cost of the admission’s DRG), and from which costs of all services (either VA provided or through the Provider Agreement) were deducted. Full costs for H@H services were used, while Direct Variable costs for each DRG were used, as fixed costs could not constitute “savings”.

Findings to date

- Program established, provider agreement developed and signed, and first patient admitted within 5 months from award.
- 38 veterans admitted 48 times during the first three quarters.
- Two patients (5%) had 6 (16%) of admissions.
- 46 hospital admissions in the 6 months prior to initiation of the program.
- 29 admissions to substitutive H@H (direct from ED or clinic).
- Majority of substitutive and complimentary admissions (56%) were CHF exacerbations.
- 43% cost savings for all patients.
- 82% cost savings for substitutive H@H admissions.
- Safety: no falls, no cases of delirium (CAM screen), no iatrogenic infections.
- MICU transfers: 1 CHF patient for ionotropic support.
- Direct costs for H@H services averaged $240/day.

Key Lessons

- Hospital at Home provides safe and efficient inpatient-level care either directly substituting for hospital admission, or as a complement to shorter hospital admission.
- Substitutive Hospital at Home has substantially greater cost savings per admission.
- An inter-agency community partnership between VA and a community home health agency can effectively implement Hospital at Home with shorter start-up time and lower fixed costs.
- Costs of complementary Hospital at Home may also be reduced by earlier identification of eligible patients immediately after admission.
- Identified gaps include identification of appropriate patients by ED and inpatient providers, improved transition back to primary care, development of structured discharge hand-offs, and need for education of VA medical staff on capability of home-based hospital care.

Greater Savings from Substitutive Hospital at Home

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th># of admissions (Substitutive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHF</td>
<td>25 (10)</td>
</tr>
<tr>
<td>UTI</td>
<td>3 (3)</td>
</tr>
<tr>
<td>COPD exacerbation</td>
<td>5 (4)</td>
</tr>
<tr>
<td>Upper Gl bleed</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>5 (3)</td>
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<tr>
<td>DM</td>
<td>2 (2)</td>
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<tr>
<td>Abscess/Cellulitis</td>
<td>2 (2)</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>1 (1)</td>
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<tr>
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<td>2 (1)</td>
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<td>1 (1)</td>
</tr>
<tr>
<td>DVT</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>4/12-3/13 admits (substitutive)</td>
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<tr>
<td>-------------------------------</td>
<td>---------------------------------</td>
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<td>2 (2)</td>
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<tr>
<td>Atrial fibrillation</td>
<td>1 (1)</td>
</tr>
<tr>
<td>DVT</td>
<td>2 (1)</td>
</tr>
<tr>
<td>total</td>
<td>46 (27)</td>
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Enrollment Data

- 38 veterans admitted 48 times during first 4 Q
- 36 veterans admitted 36 times next 2 Q
- Two patients (5%) had 8 (16%) of admissions first 4 Q
- 46 hospital admissions in the 6 months prior to initiation of the program.
- Safety: no falls, no cases of delirium (CAM screen), no iatrogenic infections first 4 Q
- 1 delirium (complimentary), 1 line sepsis (substitutive) second 2Q
- MICU transfers: 1 CHF Ionotropic support; 1 CHF line sepsis
- Direct costs for H@H services averaged $240/day first 4 Q; $286 next 2Q.
### Length of Stay

<table>
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<th>Pre</th>
<th>H@H</th>
<th>MD visits</th>
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<tr>
<td>Substitutive</td>
<td>0</td>
<td>6.27 +/- 4.98</td>
<td>1.9</td>
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<tr>
<td>Complementary</td>
<td>5.8</td>
<td>6.2 +/- 3.14</td>
<td>1.4</td>
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<tr>
<td>CHF</td>
<td>3.6 +/- 4.7</td>
<td>7.05 +/- 4.9</td>
<td>1.6</td>
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<tr>
<td>Facility</td>
<td>6.1 (all DRGs)</td>
<td>6.6 (DRG 292)</td>
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</tr>
<tr>
<td></td>
<td>DRG</td>
<td>H@H cost</td>
<td>H@H savings</td>
</tr>
<tr>
<td>----------------------</td>
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<tr>
<td><strong>Combined</strong></td>
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<td>4/12-3/13</td>
<td>$428,559</td>
<td>$243,522</td>
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<td>4/13-11/13</td>
<td>$393,042</td>
<td>$237,918</td>
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<td><strong>Total</strong></td>
<td>$821,601</td>
<td>$481,440</td>
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<td><strong>Substitutive</strong></td>
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<td>4/12-3/13</td>
<td>$241,436</td>
<td>$41,880</td>
<td>$199,556</td>
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<td>4/13-11/13</td>
<td>$205,201</td>
<td>$43,444</td>
<td>$161,757</td>
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<td><strong>Total</strong></td>
<td>$446,637</td>
<td>$85,324</td>
<td>$361,313</td>
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PVAMC Hospital at Home Funds Flow
March 2012- Nov 2013

Direct Variable Cost of DRGs
$821,601

H@H costs
$481,440

Total savings
$340,181
Challenges

• New model of care
• Systems issues: Travel, Pharmacy, Radiology
• Facility support
• Staffing
• Facilitating transition back to PCCM, specialty services
HBPC Educational Innovations

• Weekly Journal Club/Case Conference
  • All team members participate
  • Evidence based medicine
  • Monthly Behavioral Health rounds
  • Opportunity to discuss in depth topics (ex/ ALS, feedback)
  • Will bring in specialty speakers
  • Trainee involvement
HBPC Educational Innovations

• Medicine Trainees
  • Medical student
  • Residents
  • Fellows- Geri, Geri-Psych, Pall Care, PADRECC, Pulm
• Nurse Practitioner Trainees
• Social Work Intern
• Psychology Intern
• Pharmacy students/residents
HBPC Educational Innovations

- Retreats
  - Yearly in the spring ½ day
  - Fun, but learning, too!
  - Past topics—Self management, Goals of care
  - Future- Team Building Skills