The Hospital Elder Life Program (HELP): Resources for Implementation

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Aims

• To describe the Hospital Elder Life Program (HELP)
• To summarize evidence of the effectiveness and cost-effectiveness of HELP
• To provide an overview of HELP materials and resources for implementation
WHAT IS DELIRIUM?
(Acute Confusional State)

Definition:
• acute decline in attention and cognition

Delirium is an important preventable syndrome for older patients
• common problem
• serious complications
• often unrecognized
• up to 50% cases preventable
DSM-IV-TR CRITERIA FOR DELIRIUM

• Disturbance in consciousness with reduced attention
• A change in cognition (e.g., memory deficit, disorientation, language deficit) or perceptual disturbance
• Acute onset and fluctuating course
• Evidence of an underlying medical etiology

Ref: APA; DSM-IV, Text Revision. 2000
COSTS OF DELIRIUM

- In 841 patients, determined total one-year health care costs associated with delirium
- Adjusted average annual costs were 2.5 times higher for patients with delirium
- Total annual costs attributable to delirium were $16,000-$64,000 per patient
- National burden of delirium: $40 to 150 billion per year.

Delirium meets criteria for an indicator of quality of hospital care of older patients:

- Often iatrogenic
- Linked to processes of care
- Common and associated with bad outcomes

If you prevent delirium, you are providing good quality hospital care for older persons more generally.

THE HOSPITAL ELDER LIFE PROGRAM
(HELP)

A Model of Care to Prevent Delirium and Functional Decline in Hospitalized Older Patients

HOSPITAL ELDER LIFE PROGRAM

GOALS

An innovative approach to improving hospital care for older patients, with primary goals of:

• Maintaining physical and cognitive functioning throughout hospitalization
• Maximizing independence at discharge
• Assisting with the transition from hospital to home
• Preventing unplanned readmission
UNIQUE ASPECTS OF HELP

• Hospital-wide focus; geriatric unit is not required
• Provision of skilled staff and trained volunteers to carry out interventions; contrasts with geriatric consultation program
• Use of practical interventions directed at 6 known risk factors for cognitive and functional decline
• Targeting of program towards appropriate patients
• Standard quality assurance procedures
ELDER LIFE PROGRAM INTERVENTIONS

Interventions conducted by skilled interdisciplinary team assisted by trained volunteers

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Impairment</td>
<td>Reality orientation</td>
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<tr>
<td></td>
<td>Therapeutic Activities Program</td>
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<tr>
<td>Vision/Hearing Impairment</td>
<td>Vision/Hearing Aids</td>
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<td></td>
<td>Adaptive Equipment</td>
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<tr>
<td>Immobilization</td>
<td>Early Mobilization</td>
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<tr>
<td></td>
<td>Minimizing immobilizing equipment</td>
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<td>Psychoactive Medication Use</td>
<td>Nonpharmacologic approaches to sleep/anxiety</td>
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<td></td>
<td>Restricted use of sleeping medications</td>
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<tr>
<td>Dehydration</td>
<td>Early recognition</td>
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<td></td>
<td>Volume repletion</td>
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<tr>
<td>Sleep Deprivation</td>
<td>Noise reduction strategies</td>
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<tr>
<td></td>
<td>Sleep enhancement program</td>
</tr>
</tbody>
</table>
OTHER HOSPITAL ELDER LIFE PROGRAM
INTERVENTIONS

- Geriatric nursing assessment and intervention
- Interdisciplinary rounds
- Geriatrician consultation
- Interdisciplinary consultation
- Provider education program
- Transitional Care: Community linkages and telephone follow-up
INTERVENTION PROCESS

• **Screening**: all patients $\geq 70$ years are screened
• **Inclusion**: as inclusive as possible, must have at least one risk factor for cognitive/functional decline
• **Exclusion**: minimized, mainly inability to participate in interventions
• **Assignment**: after screening, patients assigned to interventions based on their risk factors by Elder Life Specialists. Individualized menu of interventions
• **Adherence**: completion of all interventions tracked daily by Elder Life Specialists
QUALITY ASSURANCE PROCEDURES

Key to the program’s effectiveness

Procedures include:
• Daily review of intervention adherence
• Monthly Elder Life Program Working Group
• Monthly Program Director meeting with individual staff
• Twice yearly staff performance checks – with paired standardization
• Quarterly volunteer performance assessment – with competency based checklists
• Patient-Family Survey
VOLUNTEERS

- **Unique role:** Hands-on
- **Selection criteria:** Responsibility, caring, and respect for older persons.
- **Commitment:** Minimum of one 4 hour shift/week for 6 months
- **Training:** Intensive, 16 hours didactic group, followed by 16 hours one-on-one training with patients
- **Quality checks:** Quarterly competency-based checklists
- **Volunteer retention:** Daily staff communication, quarterly educational/support session, monthly newsletter, and incentive awards
- **Note:** Not all HELP sites utilize volunteers
## HELP Impact on Outcomes

<table>
<thead>
<tr>
<th>Reference</th>
<th>No. of Patients</th>
<th>Rate in HELP</th>
<th>Rate in Controls</th>
<th>Improvement with HELP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PREVENTION OF DELIRIUM</strong></td>
<td></td>
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</tr>
<tr>
<td>Rubin 2011</td>
<td>&gt;7,000</td>
<td>18%</td>
<td>41%</td>
<td>23%</td>
</tr>
<tr>
<td>Chen 2011</td>
<td>179</td>
<td>0%</td>
<td>17%</td>
<td>17%</td>
</tr>
<tr>
<td>Caplan 2007</td>
<td>37</td>
<td>6%</td>
<td>38%</td>
<td>32%</td>
</tr>
<tr>
<td>Rubin 2006</td>
<td>704</td>
<td>26%</td>
<td>41%</td>
<td>15%</td>
</tr>
<tr>
<td>Inouye 1999</td>
<td>852</td>
<td>15%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td><strong>REDUCED COGNITIVE DECLINE</strong> (MMSE decline by 2+ points)</td>
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<td></td>
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<tr>
<td>Inouye 2000</td>
<td>1,507</td>
<td>8%</td>
<td>26%</td>
<td>18%</td>
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<tr>
<td><strong>REDUCED FUNCTIONAL DECLINE</strong> (ADL decline by 2+ points)</td>
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<td></td>
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<tr>
<td>Inouye 2000</td>
<td>1,507</td>
<td>14%</td>
<td>33%</td>
<td>19%</td>
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<tr>
<td><strong>DECREASED HOSPITAL LENGTH OF STAY</strong></td>
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<tr>
<td>Rubin 2011</td>
<td>&gt;7,000</td>
<td>6.0 days</td>
<td>5.3 days</td>
<td>0.7 days</td>
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<tr>
<td>Caplan 2007</td>
<td>37</td>
<td>22.5 days</td>
<td>26.8 days</td>
<td>4.3 days</td>
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<tr>
<td>Rubin 2006</td>
<td>704</td>
<td>---</td>
<td>---</td>
<td>0.3 days</td>
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<tr>
<td><strong>REDUCED INSTITUTIONALIZATION</strong></td>
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<tr>
<td>Caplan 2007</td>
<td>37</td>
<td>25%</td>
<td>48%</td>
<td>23%</td>
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<tr>
<td><strong>DECREASED FALLS</strong></td>
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<td></td>
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<tr>
<td>Inouye 2009</td>
<td>--</td>
<td>4%</td>
<td>2%</td>
<td>2%</td>
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<tr>
<td>Inouye 2009</td>
<td>--</td>
<td>3.8/1000 p-y</td>
<td>11.4/1000 p-y</td>
<td>7.6/1000 p-y</td>
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<tr>
<td>Inouye 2009</td>
<td>--</td>
<td>1.2/1000 p-y</td>
<td>4.7/1000 p-y</td>
<td>3.5/1000 p-y</td>
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<tr>
<td>Caplan 2007</td>
<td>37</td>
<td>6%</td>
<td>19%</td>
<td>13%</td>
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<tr>
<td><strong>DECREASED SITTER USE</strong></td>
<td></td>
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<tr>
<td>Caplan 2007</td>
<td>37</td>
<td>330 hours</td>
<td>644 hours</td>
<td>314 hours</td>
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</table>
## HELP Impact on Costs

<table>
<thead>
<tr>
<th>Reference</th>
<th>No. of Patients</th>
<th>Impact on Cost</th>
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</thead>
<tbody>
<tr>
<td>Rubin 2011</td>
<td>&gt;7,000</td>
<td>&gt;$7.3 million per year savings in hospital costs (&gt; $1000 savings per patient)</td>
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<tr>
<td>Rizzo 2001</td>
<td>852</td>
<td>$831 cost savings per person-yrs in hospital costs</td>
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<tr>
<td>Leslie 2005</td>
<td>801</td>
<td>$9,446 savings per person-yrs in long-term nursing home costs</td>
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<tr>
<td>Caplan 2007</td>
<td>111</td>
<td>$121,425 per year savings in sitter costs</td>
</tr>
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HOSPITAL COST-EFFECTIVENESS
(N = 852)

• Intermediate risk patients (72% of sample), HELP resulted in lower overall hospital costs, averaging $831 per patient (range $415-1,689)

• Savings offset intervention costs, thus, HELP is cost-effective

• Savings across every cost category (e.g., nursing, room, diagnostic procedures, ICU)

Ref: Rizzo JA et al. Medical Care; 2001;39:740-52
LONG-TERM COST EFFECTIVENESS: NURSING HOME COSTS

• One yr follow-up of Delirium Prevention Trial pts
• Intervention did not affect the likelihood of nursing home placement
• Among patients receiving long-term nursing home placement (>100 days), intervention resulted in:
  – Lower total costs ($50,881 vs. $60,327, p=.01)
  – Shorter length of stay (241 vs. 280 days, p<.05)
  – Lower costs per survival day ($148 vs. $175, p<.02)

HELP REPLICATION IN A COMMUNITY HOSPITAL (UPMC SHADYSIDE)

• Quality improvement study of 4,763 older patients over 3 years
• Delirium rate decreased by 14.4% (35.3% relative risk reduction), P=.002
• LOS reduced by 0.3 days per patient.
• Total costs reduced by $1.25 million/one year
• High rate of nursing and family satisfaction
• Program sustained for over 7 years, serving over 7000 patients per year.

Ref: Rubin FH et al. JAGS 2006;54:969-74
HELP AT SHADYSIDE: 7-YEAR COST SAVINGS


Financial Return from HELP per year
$7,368,549

Total Cost Savings
$2,031,440

Cost savings in non-delirious HELP patients =
Reduction in variable costs x
Delirium cases prevented/year
$2,031,440

Revenue Generated from prevention of delirium =
Revenue generated/bed x
Additional beds/year
$2,256,944

Revenue Generated from shorter LOS in delirious patients on HELP =
Revenue generated/bed x
Additional beds/year
$3,080,165

Delirium Cases Prevented =
Reduction in Delirium Rate x
Total HELP patients/year
1,516 cases

Total Revenue Generated
$5,337,109

N > 7000 per year
HELP REPLICATION IN AUSTRALIA

• Two small before-after studies examining HELP effectiveness.

• Demonstrated lower delirium incidence (6% vs. 38%, P=.03) and lower severity.

• Decreased use of nursing assistants with HELP, with overall cost savings of $121,425 (US) over one year

• Effective and cost-effectiveness of program demonstrated in a different healthcare system.
Modified HELP in Taiwan

• Pre-post intervention study in elective abdominal surgical patients, involving 102 intervention and 77 controls
• Modified HELP: 3 protocols, no volunteers orientation/therapeutic activities; mobility; nutritional support
• Significant reductions in delirium, ADL decline, and malnutrition with HELP

HELP and Fall Prevention

- Evidence-based program that can prevent hospital falls (Medicare no-pay condition)
- Altered mental status/delirium is the leading risk factor for falls in the hospital
- Of 29 HELP hospitals, 95% reported tracking falls and all noted a reduction in the rate of falls
- At 3 HELP sites (Maine, Cornell, Moses Taylor), data documenting fall reduction:
  - Site 1: 11.4 to 3.8 per 1000 patient-days
  - Site 2: 4.7 to 1.2 per 1000 patient-days
  - Site 3: 4.2% to 2.4% in 4000 patients/1 yr

Inouye SK et al. NEJM 2009;360: 2390-3
NEW HELP DIFFUSION MODEL

• Materials open access and free of charge after accepting terms and disclaimer [recommended to be completed by organization]. Materials are copyrighted.

• Dissemination and mentorship through 5 experienced HELP Centers of Excellence. No centralized team.
CENTER OF EXCELLENCE
TRAINING

• Site Visit: fee-based
• Mentorship in program set-up
• Detailed review of manuals and program materials
• Guidance in creating an annual report to your organization
• Time-limited follow-up support
ONGOING SUPPORT

• Google Groups: on-line community
• Annual HELP conference: 3/21-23/12
• AGS and GSA Special Interest Groups
• Other website materials
  – Frequently asked questions
  – Resources from sites
• HELP email: 5 day turnaround
  <ElderLife@hsl.harvard.edu>
HELP WEBSITE
http://hospitalelderlifeprogram.org

• Components to highlight:
  – General information on delirium and hospitalization for patients and families
  – Searchable bibliography
  – Links to useful websites on delirium and hospital care

• HELP implementation materials
  – On-line review