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

Sharon K. Inouye, M.D., M.P.H.
Professor of Medicine
Beth Israel Deaconess Medical Center
Harvard Medical School
Milton and Shirley F. Levy Family Chair
Director, Aging Brain Center
Hebrew SeniorLife

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

Hospital Elder Life Program
HELP

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.

Ref: Leslie DL, et al. Arch Intern Med 2008;168:27-32.

DELIRIUM: A QUALITY INDICATOR

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.

Ref: Inouye SK, et al. AJM 1999;106:565-73.

THE HOSPITAL ELDER LIFE PROGRAM (HELP)

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

Ref: Inouye SK, et al. J Am Geriatric Soc. 2000;48:1697-1706.

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

Hospital Elder Life Program
HELP

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

Risk Factors	Intervention
Cognitive Impairment……	Reality orientation
	Therapeutic Activities Program
Vision/Hearing Impairment ……	Vision/Hearing Aids
	Adaptive Equipment
Immobilization……..	Early Mobilization
	Minimizing immobilizing equipment
Psychoactive Medication Use……..	Nonpharmacologic approaches to sleep/anxiety
	Restricted use of sleeping medications
Dehydration……..	Early recognition
	Volume repletion
Sleep Deprivation……	Noise reduction strategies
	Sleep enhancement program

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

Hospital Elder Life Program
HELP

INTERVENTION PROCESS

- Screening: all patients ≥ 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

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

Hospital Elder Life Program

HELP

HELP Impact on Costs

Reference	No. of Patients	Impact on Cost
Rubin 2011	>7,000	>$7.3 million per year savings in hospital costs (> $1000 savings per patient)
Rizzo 2001	852	$831 cost savings per person-yrs in hospital costs
Leslie 2005	801	$9,446 savings per person-yrs in long-term nursing home costs
Caplan 2007	111	$121,425 per year savings in sitter costs

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)

Ref: Leslie DL, et al. JAGS. 2005; 53:405-9

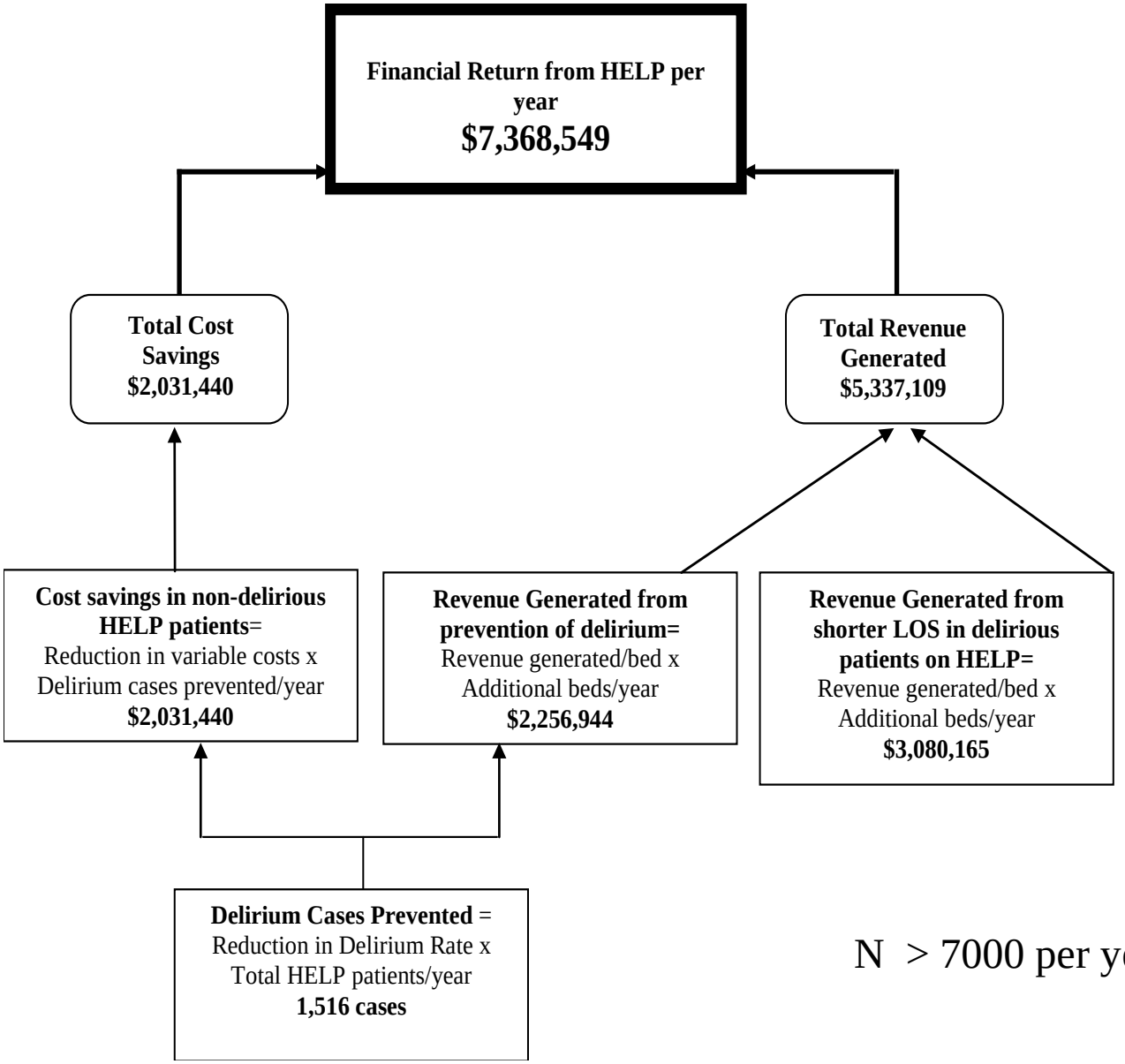
HELP REPLICATION IN A COMMUNITY HOSPITAL (UPMC SHADYSIDE)

- 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

Rubin F; *J Am Geriatr Soc*. 2011; 59:359-65



N > 7000 per year

HELP REPLICATION IN AUSTRALIA

Caplan GA et al. Int Med J. 2007;37:95-100

- 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

Chen C et al, J Am Coll Surg 2011; 213:245-252

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