Preventing and Managing Delirium; An Around the World Tour of Best Evidence

Anne Pizzacalla, BScN, MHSc, NP-Adult
RGP Preconference Day, April 25, 2012
Sharing Innovations to Promote Senior Friendly Hospitals
Shared risk factors – older age, cognitive impairment, functional impairment and impaired mobility - may lead to geriatric syndromes, which may in turn lead to frailty, with feedback mechanisms enhancing the presence of shared risk factors and geriatric syndromes.
Preventing Functional Decline and Delirium

Yale Delirium Prevention Trial

- N= 852 admissions to acute medical wards
- Standardized protocols targeting delirium risk factors:
  - Cognitive Impairment
  - Sleep Deprivation
  - Immobility and new onset functional deficit
  - Vision Impairment and Hearing Impairment
  - Dehydration

Preventing Functional Decline and Delirium

Yale Delirium Prevention Trial

- **Significant reduction in the development of delirium** (9.9% of intervention patients vs. 15% of usual care patients, odds ratio = 0.60, P=0.02).

- **Significant reduction in total number of days with delirium** (105 vs. 161 in usual care, P=0.02).

- **Significant reduction in functional decline and nursing home placement**

<table>
<thead>
<tr>
<th>Risk Factors</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Impairment</td>
<td>• Reality orientation</td>
</tr>
<tr>
<td></td>
<td>• Therapeutic Activities Program</td>
</tr>
<tr>
<td>Vision/Hearing Impairment</td>
<td>• Vision/Hearing Aids</td>
</tr>
<tr>
<td></td>
<td>• Adaptive Equipment</td>
</tr>
<tr>
<td>Immobilization</td>
<td>• Early Mobilization</td>
</tr>
<tr>
<td></td>
<td>• Minimizing immobilizing equipment</td>
</tr>
<tr>
<td>Psychoactive Medication Use</td>
<td>• Nonpharmacologic approaches to sleep/anxiety</td>
</tr>
<tr>
<td></td>
<td>• Restricted use of sleeping</td>
</tr>
<tr>
<td>Dehydration</td>
<td>• Early recognition</td>
</tr>
<tr>
<td></td>
<td>• Volume repletion</td>
</tr>
<tr>
<td>Sleep Deprivation</td>
<td>• Noise reduction strategies</td>
</tr>
<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
- Community linkages and telephone follow-up

Photo credit: Sebastian Kobs
Delirium Prevention Trial: Significance

- First demonstration of delirium as a preventable medical condition
- Targeted multicomponent strategy works
- Significant reduction in risk of delirium and total delirium days, without significant effect on delirium severity or recurrence
- Primary prevention of delirium likely to be most effective treatment strategy
- Effectiveness and cost-effectiveness of the program has been demonstrated in multiple studies.
HELP Website

http://hospitalelderlifeprogram.org

- **How to materials:** HELP manuals, videos
- **Educational materials:** on acute hospital care and delirium in older persons for consumers, families, caregivers
- **Reference list:** brief list by topic; comprehensive searchable bibliography
- **HELP:** general background information and study results
Sustainability of HELP: Will HELP Work in Other Settings?
HELP at Shadyside - UPMC

- Shadyside - 500 bed community hospital in Pittsburgh
- Delirium rate: pre HELP 2001: 46%
  2008: 18%
- 2011 – Hospital acquired delirium: less than 4%
- LOS decreased, delirious and non delirious patients
- Total patients served: 2008: 7,000
- Paid staff 7.6, 107 volunteers, 7 medical surgical units
- Cost savings $2,031,440 annually

HELP in Taiwan

Modified hospital elder life program: effects on abdominal surgery patients over age 70

Design:
- 2000 bed urban hospital, Pre-post comparative study
- 3 HELP interventions (mobility, nutrition and cognitive activities) delivered by a study nurse

Participants:
- 77 usual care, 102 HELP intervention abdominal surgical patients, matched

Measures:
- change in ADL, nutrition and cognitive status from admission to discharge

Outcomes:
- ADL and nutritional decline: HELP group < control (p < 0.001)
- Delirium rate HELP group (0%) < control group (16.7%) (p < 0.001).

HELP in Australia

- **Stage 1 Design:**
  - Stage 1 pre/post study on one ward: 21 patients usual care, 16 pts HELP interventions delivered by volunteers

- **Stage 1 Outcome:**
  - Delirium rate: control 38%; HELP 6.3% ($P = 0.032$)

- **Stage 2 Design:**
  - Expanded to 5 wards- measured sitter use as proxy; decreased by 314 hours/month

- **Stage 2 Outcome:**
  - Cost savings: $129,186 annually

HELP in Spain

- Controlled intervention study
- 542 medical pts, age 70 +, at risk
- Usual care and HELP interventions
- Interventions = educational and HELP clinical protocols
- delivered by nurses, residents and physicians with a CNS monitoring and prompting compliance
- Outcomes: delirium 18.5 % usual care, 11.7 HELP P=0.005,
- Functional decline: 45.5% intervention, vs 56.3% in UC, P=.03
- 75% adherence

Could HELP work with fewer staff resources?

- Who in your setting could recruit, train and schedule volunteers?
- Is there someone else who can deliver on the interventions?
- Who could screen and enroll patients? Could they be identified automatically on admission?
Ontario HELP Uptake

- Ontario HELP Network-11 sites (1 Alberta) - quarterly teleconference to share ideas, data and challenges
- Waterloo-Wellington LHIN is supporting five sites to start HELP
- Small hospitals report challenges in resources needed for HELP start up.
- Open Access makes a difference!
Translating Research into Clinical Practice: Making Change Happen.

- Gaining internal support for the program despite differing requirements and goals of administration and clinical staff,
- Ensuring effective clinician leadership,
- Integrating with existing geriatric programs,
- Balancing program fidelity with hospital-specific circumstances,
- Documenting positive outcomes of the program despite limited resources for data collection and analysis,
- Maintaining the momentum of implementation in the face of unrealistic time frames and limited resources.

We Can’t Always Prevent Delirium
The Evidence for Delirium Management
Create Your Own Delirium Management Room

- **Processes of Care**: Green Sheet - key adverse outcomes you need to prevent, behavioural approaches
- **Emotional & Behavioural Environment**: Pink Sheet - Who needs what in knowledge, attitudes, and skills. Education for patient and family.
- **Ethics in Clinical Care & Research**: Blue Sheet - What are the ethical issues in caring for delirious patients. What metrics will you use to evaluate efficacy?
- **Organizational Support**: Yellow sheet - Resources, Staffing, number of patients, eligibility criteria, metrics,
- **Physical Environment**: Visual aspects, Physical space and accessibility, sensory comfort, furniture
The Delirium Room: A Model of Care for Delirium Management

- Delirium Room (DR): a four-bed patient room (within an ACE Unit) 10 years of experience
- provides 24-hour nursing care,
- emphasizes nonpharmacological approaches,
- and is completely free of physical restraints.

Delirium room model

Staffing
CNA & RN (part time), room is closest one to nursing station
• Charge nurse decides admission from medical units or ER

Admission criteria:
• Require higher level of observation and intensity of service
• Need for frequent observation for acute delirium and redirection of behavior.

Other Features
• Viewed as a safety program for at risk patients

• Never use physical restraints

• In servicing Q two weeks, sometimes at patient bedside, now monthly to maintain the culture
Delirium Room Outcomes

Clinical Outcomes:
Measured through retrospective chart audit ACE unit comparing delirious versus non delirious patients. LOS, falls and mortality comparable to non delirious patients on the same Ace Unit.

Functional improvement in delirium room patients greater than non delirious patients (p<.001)

Staff outcome: to reduce restraints and manage behaviour
  Tolerate, Anticipate, Don’t Agitate (T-A-DA)

System Outcomes: dissemination to other wards
Do we have a pill for Delirium??

- Antipsychotics – maybe but very limited evidence

- Anticholinesterase inhibitors - eg Aricept - NO

- Melatonin - ? Early promise?
Melatonin