The Ontario Senior Friendly Hospital Strategy

Evaluation of Indicators for Hospital-acquired Delirium and Functional Decline

Preliminary Results

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Ontario Pan-LHIN Senior Friendly Hospital Strategy

PHASE 1
Objective
• Identify current state
Plan
• Hospital self-assessments
• LHIN-level roll-up
• Provincial roll-up

PHASE 2
Objective
• Close the gap
Plan
• Implement hospital improvement plans
• Develop key enablers

Future State
• Prevent functional decline
• Improve patient experience
• Enable hospital staff
• Improve equity

PHASE 3 - ONGOING
Objective
• Monitor and sustain hospital and system improvements

SFH Indicators
Provincial Summary Report
SFH “Promising Practices” Toolkit
Provincial Summary of SFH Care - Priorities

Functional Decline
Implement inter-professional early mobilization protocols across hospital departments to optimize physical function

Delirium
Implement inter-professional screening, prevention, and management protocols across hospital departments to optimize cognitive function
Literature Review and Environmental Scan
From over 15,000 retrieved articles from 1991-2011, 406 articles for delirium and 232 for functional decline were reviewed. Sixty-eight hospitals responded to an environmental scan. Together, this identified 268 potential indicators for delirium and 445 for functional decline.

Working Group Review, Delphi Panel and Consensus Meetings

**DELIRIUM**
406 ARTICLES
268 POTENTIAL INDICATORS

**FUNCTIONAL DECLINE**
232 ARTICLES
445 POTENTIAL INDICATORS

Environmental Scan results from 68 of 155 Ontario hospitals

DELIRIUM
- 268 INDICATORS
- 18 INDICATORS

FUNCTIONAL DECLINE
- 445 INDICATORS
- 18 INDICATORS

WORKING GROUP REVIEW
Redundant or impractical indicators eliminated by group consensus

DELPHI PANEL VOTING
- Validity
- Reliability
- Feasibility
- Responsiveness
- Ease-of-reporting
- Clarity
- Action-ability
- Appropriateness

CONSENSUS MEETINGS (3)
Implementation and technical considerations drafted

2 INDICATORS
# Delirium Indicators (All Hospital Sectors)

<table>
<thead>
<tr>
<th>Process</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Rate of baseline delirium screening</strong></td>
<td>Percentage of patients (65 and older) receiving delirium screening using a validated tool upon admission to hospital</td>
</tr>
<tr>
<td><strong>Rate of hospital-acquired delirium</strong></td>
<td>Incidence of delirium in patients (65 and older) acquired over the course of hospital admission</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Source and/or Tool</th>
<th>Confusion Assessment Method (CAM), CAM-ICU, or Intensive Care Delirium Screening Checklist (ICDSC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusions</td>
<td>Patients with decreased level of consciousness (unresponsive or requiring vigorous stimulation for a response); patients in palliative care</td>
</tr>
<tr>
<td>Considerations</td>
<td>Minimum frequency of screening to capture incidence – at least daily after the initial baseline screen</td>
</tr>
</tbody>
</table>
## Functional Decline Indicators (Acute Care Sector)

<table>
<thead>
<tr>
<th>Process</th>
<th>Rate of ADL function assessment at admission and discharge</th>
<th>Percentage of patients (65 and older) receiving assessment of ADL function with a validated tool at both admission and discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcome</td>
<td>Rate of no decline in ADL function</td>
<td>Percentage of patients (65 and older) with no decline in ADL function from hospital admission to hospital discharge as measured by a validated tool</td>
</tr>
</tbody>
</table>

**Data Source and/or Tool**
- Barthel Index
- Health Outcomes for Better Information in Care (HOBIC) – ADL Section
- Alpha-FIM Tool®

**Exclusions**
- Patients in emergency department who are not admitted to hospital;
- Patients in palliative care;
- Patients admitted for day surgery procedures;
- Patients with a length of stay <48 hours
Implementation

- 44 hospitals in 10 LHINs volunteered to implement the delirium and/or functional decline indicators
- Inform future use of the indicators in quality improvement or hospital accountability structures

<table>
<thead>
<tr>
<th>Evaluation</th>
<th>Sources of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator definition</td>
<td>Technical specifications</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Completion rates</td>
</tr>
<tr>
<td></td>
<td>Change trends</td>
</tr>
<tr>
<td></td>
<td>Data quality</td>
</tr>
<tr>
<td>Clinical value</td>
<td>Staff perception</td>
</tr>
<tr>
<td>Implementation strategies</td>
<td>Success factors</td>
</tr>
<tr>
<td></td>
<td>Challenges</td>
</tr>
</tbody>
</table>
Participating Hospitals

**South West**
- Grey Bruce Health Services
- St Joseph's Health Care (London)
- St Thomas Elgin General Hospital

**Erie St. Clair**
- Hotel-Dieu Grace Healthcare

**Hamilton Niagara Haldimand Brant**
- Brant Community Healthcare System
- Hamilton Health Sciences
- Joseph Brant Memorial Hospital
- Niagara Health System
- Norfolk General Hospital
- St Joseph's Healthcare (Hamilton)

**Toronto Central**
- Baycrest
- Providence Healthcare
- St Michael's
- Sunnybrook Health Sciences Centre
- Toronto East General Hospital
- University Health Network – TWH + TRI
- West Park Healthcare Centre

**Central**
- Markham Stouffville Hospital
- North York General Hospital
- Southlake Regional Health Centre
- Stevenson Memorial Hospital

**Central East**
- Campbellford Memorial Hospital
- Lakeridge Health
- Northumberland Hills Hospital
- Ontario Shores Centre for Mental Health Sciences
- Peterborough Regional Health Centre
- Ross Memorial Hospital
- The Scarborough Hospital

**South East**
- Brockville General Hospital

**Champlain**
- Deep River District Hospital
- The Ottawa Hospital

**North East**
- Blind River District Health Centre
- Espanola Hospital & Health Centre
- Health Sciences North
- Kirkland District Hospital
- St Joseph's General Hospital (Elliot Lake)
- Manitoulin Health Centre
- North Bay Regional Health Centre
- Sensenbrenner Hospital
- West Nipissing General Hospital
- West Parry Sound Health Centre

**North West**
- St Joseph's Care Group (Thunder Bay)

**Summary of Implementation:**
- Delirium – 42 patient care units at 31 hospital sites
- Functional Decline – 24 patient care units at 22 hospital sites
**DELIRIUM**

<table>
<thead>
<tr>
<th>Hospital Type*</th>
<th>No. of Hospitals</th>
<th>No. of Beds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addictions and MH</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>CAHO</td>
<td>8</td>
<td>385</td>
</tr>
<tr>
<td>CCC and Rehab</td>
<td>2</td>
<td>56</td>
</tr>
<tr>
<td>Community</td>
<td>15</td>
<td>556</td>
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<tr>
<td>Small</td>
<td>5</td>
<td>158</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31</strong></td>
<td><strong>1,180</strong></td>
</tr>
<tr>
<td>Withdrawn</td>
<td>2</td>
<td>130</td>
</tr>
</tbody>
</table>

* OHA classification

**Confusion Assessment Method**
1) Acute onset +
2) Inattention +
3) Disorganized thinking OR 4) Altered level of consciousness
DELIRIUM PROCESS INDICATOR – Rate of baseline screening

• Compliance
  • High rates of compliance with CAM screening on admission
  • Compliance rates trended upwards over time

• Ease of Use
  • “tool is easy and quick to learn, understand and use”
  • Concerns were raised about needing to know patient’s baseline (or needing to perform a cognitive assessment coupled to the CAM) for an accurate admission assessment

• Implementation - Need for Training
  • Some patient populations were difficult to assess (e.g. stroke, dementia, aphasia, other communication problems)

• Inclusion/Exclusion
  • Some sites suggested palliative patients not be excluded as they should have delirium managed for comfort if present
DELIRIUM OUTCOME INDICATOR – Incidence rate of delirium

• Compliance with regular CAM screening
  • High rates of daily or nearly daily CAM screening
  • Screening at regular time points was a success factor as it made it part of routine practice (e.g. q shift, daily at 3pm)
  • Tracking daily screening compliance was laborious and required human resources
    • Note: not a requirement of indicator, but compliance audits may be needed
  • Rehab/CCC sites do not feel daily screening is necessary as their patients are more stable
DELIRIUM OUTCOME INDICATOR – Incidence rate of delirium

- **Reliability** - moderate degree of inconsistency due to:
  - patient status fluctuations
  - different staff members having different interpretations of observations
  - different skill levels at assessing delirium
  - transfer of information issues (e.g. not knowing/communicating patient baseline)
  - administrative errors (e.g. calculating scores, transcribing scores)

- **Validity**
  - moderate to frequent feedback that CAM scores not matching reports of delirium in clinical notes or a physician diagnosis of delirium
  - some sites reported that CAM accuracy decreases over time, and regular refresher education is necessary
DELIRIUM INDICATORS – SUMMARY

• high rates of compliance with admission screening
• daily screening with CAM to capture delirium is feasible, but clinical judgement is gold standard - validity needs to be monitored
• very high value in educating staff to perform delirium/CAM screening – fostered QI and change in practice
  • more discussion of delirium (e.g. in rounds, amongst inter-professional staff)
  • perceived earlier detection of delirium
  • Leads to intervention (e.g. order sets, management strategies, resource binders, decision trees, posters/pamphlets for staff family and patients)
• Provincial Collaboration – sharing through teleconferences and web-based collaboration portal
## FUNCTIONAL DECLINE

<table>
<thead>
<tr>
<th>Hospital Type*</th>
<th>No. of Hospitals</th>
<th>No. of Beds</th>
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</thead>
<tbody>
<tr>
<td>Addictions and MH</td>
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<td>2</td>
<td>69</td>
</tr>
<tr>
<td>CCC and Rehab</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Community</td>
<td>11</td>
<td>326</td>
</tr>
<tr>
<td>Small</td>
<td>8</td>
<td>241</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>21</strong></td>
<td><strong>636</strong></td>
</tr>
<tr>
<td>Withdrawn</td>
<td>3</td>
<td>135</td>
</tr>
</tbody>
</table>

* OHA classification

## BARTHEL INDEX

- Feeding
- Bathing
- Grooming
- Dressing
- Bowels
- Bladder
- Toilet use
- Transfers (bed to chair and back)
- Mobility (on level surfaces)
- Stairs
FUNCTIONAL DECLINE INDICATORS – BARTHEL INDEX (11 sites)

• Compliance
  • “high” completion rates (56% of sites > 80% compliance for both admission and discharge Barthel)

• Ease of Use
  • mostly positive e.g. “quick and easy to learn and administer”

• Implementation
  • administered by range of inter-professional team members – e.g. PSWs found it helpful and that it facilitates practice to their full scope

• Sensitivity
  • most sites felt it was appropriate to detect functionally relevant change in the acute care population
  • modest ceiling effect noted
FUNCTIONAL DECLINE INDICATORS – HOBIC (10 sites)

• **Compliance – Low**
  - despite several year history of HOBIC implementation
  - despite changes to process in order to increase compliance

• **Implementation**
  • Time consuming ~ 1 hour
  • some issues with user friendliness of web-based platform causing data loss
  • Code 8 “Activity did not occur “— results in incomplete assessment = voided

• **Clinical value**
  • perceived as low - time lag to receive reports
FUNCTIONAL DECLINE INDICATORS – SUMMARY

• High compliance rates for ADL assessment on admission seem feasible with an assessment tool that is quick to administer

• Goal of monitoring functional decline in hospital does not seem feasible unless compliance with discharge ADL assessment can be improved

• For longer stay patients, admission and discharge ADL assessment is feasible and helpful (Barthel)
  • Influence care plan and monitor progress

• HOBIC - low feasibility and perceived value

• One site using the Barthel Index is adding this as a 1-month post-D/C telephone assessment to provide transitional support in the community
Next steps
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