Home Care Patient Safety

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CPSI-funded research:

- “Safety in Home Care: Broadening the Patient Safety Agenda to Include Home Care Services” (prepared by Dr. Ariella Lang and Dr. Nancy Edwards)

- Formative Research Team (led by Doran and Storch)
- Evaluation of safety indicators from the RAI-HC
- Environmental scan of home care in Canada

- Safety at Home: A Pan-Canadian Home Care Study (led by Doran and Blais)
Broadening the Patient Safety Agenda to Include Home Care Services

Key Findings

- Safety linked to relationships and communication among clients/families and caregivers/providers
- Unregulated and uncontrolled settings
- Autonomy and isolation
- Multidimensionality of safety (physical, emotional, social, functional)
- Challenges of human resources and maintenance of competence
• Storch and Doran lead the CPSI emerging team grant in patient safety and home care

• Two projects:
  - Data mining of the RAI-HC© and development of a framework for patient safety indicators in home care
  - Environmental scan of HC safety from interviews with key informants
Researchers: Diane Doran, John Hirdes, Ross Baker, Regis Blais, and Jennie Pickard

Purpose: To identify the nature and prevalence of patient safety problems among Canadian home care (HC) clients, using data collected through the RAI-HC© Assessment instrument.
Develop comparative indicators using RAI-HC© data for CIHI reporting to health regions.
### Age Adjusted Rates for Potential Adverse Outcomes

<table>
<thead>
<tr>
<th>Sample size</th>
<th>Ontario</th>
<th>Nova Scotia</th>
<th>Winnipeg</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>New fall (event)</td>
<td>10.8%</td>
<td>12.3%</td>
<td>10.6%</td>
<td>11%</td>
</tr>
<tr>
<td>Unintended weight loss</td>
<td>10.6%</td>
<td>9.7%</td>
<td>7.6%</td>
<td>10.4%</td>
</tr>
<tr>
<td>New ER visit</td>
<td>8.5%</td>
<td>7.4%</td>
<td>5.3%</td>
<td>8.3%</td>
</tr>
<tr>
<td>New hospitalization</td>
<td>7%</td>
<td>12.5%</td>
<td>6.7%</td>
<td>7.7%</td>
</tr>
<tr>
<td>Cognitive decline</td>
<td>5%</td>
<td>10.7%</td>
<td>6.6%</td>
<td>5.7%</td>
</tr>
<tr>
<td>New UTI</td>
<td>1.7%</td>
<td>3.3%</td>
<td>1.4%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Pressure ulcer deterioration</td>
<td>1.7%</td>
<td>2.4%</td>
<td>1.9%</td>
<td>1.8%</td>
</tr>
<tr>
<td>New pressure ulcer</td>
<td>1.6%</td>
<td>2.3%</td>
<td>1.8%</td>
<td>1.7%</td>
</tr>
<tr>
<td>New pneumonia</td>
<td>0.7%</td>
<td>1.2%</td>
<td>0.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>New bowel problem</td>
<td>0.7%</td>
<td>1.2%</td>
<td>0.5%</td>
<td>0.8%</td>
</tr>
<tr>
<td>New dehydration</td>
<td>0.7%</td>
<td>0.7%</td>
<td>0.3%</td>
<td>0.7%</td>
</tr>
<tr>
<td>New caregiver decline</td>
<td>2.7%</td>
<td>7.4%</td>
<td>4.4%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

What explains regional variation in adverse outcomes?

Safety Risks at Second Assessment

- Polypharmacy and history of cognitive impairment
- Polypharmacy and history of cognitive impairment and lives alone
- No medication review for clients and polypharmacy, and/or history of cognitive impairment.
### Predictors of Variation in ER Visits

**Region**
- Nova Scotia: Higher
- Ontario: Higher
- (reference) WRHA: 1.00

**Age categories**
- <65: -
- 65-74 and 75-84: -
- (reference) 85+: 1.00

**Other Variables**
- Two or more falls: Increase risk
- Polypharmacy: Increase risk
- Cancer DX: Increase risk
- Anxiolytic medication: Increase risk
- Antidepressant: Increase risk
- Self-reliance index: Lower risk
- ADL: Lower risk

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Limitations

• Generalization of the findings limited to clients who are eligible for RAI-HC assessment

• Need to consider organizational factors or care processes that influence the occurrence of adverse events such as communication, workload, technology (Masotti et al. 2009)
Collaboration between CPSI and partners:

- Canadian Institutes of Health Research (CIHR)
- Institute of Health Services and Policy Research (IHSPR)
- Institute of Aging (IA)
- Institute of Circulatory and Respiratory Health (ICRH)
- The Change Foundation
- Canadian Health Services Research Foundation (CHSRF)
- Co-funders: Nova Scotia Health Research Foundation & Quebec Ministry of Health and Social Services
Team Lead:
Dr. Diane Doran, RN, PhD, FCAHS
Nursing Health Services Research Unit
Lawrence S. Bloomberg Faculty of Nursing
University of Toronto

Co-lead:
Dr. Régis Blais, PhD
Director
Department of Health Administration
Université de Montréal

21 Research Team Members:
Academia; Researchers; Policy Makers; Direct Patient Care Providers
(e.g., MD, RN, PT)
Study Objectives

- Determine the prevalence, incidence, magnitude & types of adverse events (AEs) in home care (HC) in Canada
- Determine risk factors, service utilization factors & other contribution conditions associated with AEs in the general population, and among the sub-populations of congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), diabetes, & dementia
- Determine the burden of patient/ client safety concerns & risks from the perspectives of clients, unpaid caregivers, family members & paid providers
- Identify policies, practices & tools that could reduce avoidable AEs in HC
- Advance a definition of HC safety that reflects the complexity of the HC environment
Five Sub-Projects

- **Sub-project 1:** Integrative Study of the International Literature (Harrison et al.)
- **Sub-project 2:** Prevalence and Incidence of AEs among the General HC Population (Doran et al.) and among Chronic Disease Sub-Populations (e.g., CHF, COPD, Diabetes, Dementia) (Hirdes et al.)
- **Sub-project 3:** Chart Review and Analysis of Incident Reports (Blais et al.)
- **Sub-project 4:** Root Cause Analysis (Baker et al.)
- **Sub-project 5:** Care Recipient and Provider Interviews (MacDonald and Lang et al.)
Methodology

Project 1 methodology was a multi-step, iterative process using an explicit search and retrieval strategy based on Cochrane and Joanna Briggs Institute (JBI) methodologies.

- Searched practice, health services and policy peer reviewed literature, and grey literature
- 92 research studies met the inclusion criteria addressing adverse events (AEs) within the context of home care

Led by Margaret B. Harrison, Queen’s University
## Sub-project 1: Results

Prevalence Estimates of AEs Reported in Published Literature

<table>
<thead>
<tr>
<th>Type of AE</th>
<th>Prevalence estimate</th>
<th>Percent of all AEs reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>All falls</td>
<td>6.4% - 70.6%</td>
<td>1.4% - 46.2%</td>
</tr>
<tr>
<td>Medication errors</td>
<td>7.6% - 69.0%</td>
<td>23.1% - 59.7%</td>
</tr>
<tr>
<td>Pressure ulcers</td>
<td>6.0% - 17.9%</td>
<td>1.6% - 3.8%</td>
</tr>
</tbody>
</table>
Sub-themes attributed to increased risk of adverse events for home care patients

- Medication administration,
- Poly-pharmacy,
- Falls prevention
- Pressure ulcer screening, prevention, management,
- Home environment,
- Infection control,
- Communication,
- Transitions of care,
- Health literacy
11 peer-reviewed studies reported on strategies to address AEs in home care settings through management or screening of risk.

Examples of tools used to reduce AEs in home care from grey literature:

- Safety and risk assessment checklists
- Patient checklist
- Programs
- Brochures and posters to improve health literacy
Prevalence & Incidence of AEs among the general HC population (Part A),

and

Among the congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD), dementia, and diabetes sub-populations (Part B)
Sub-Project 2 Description

Study Type:
- Quantitative, Retrospective Cohort study
- Secondary data analysis using data from Canadian Institute for Health Information (CIHI) (2006-2010)

Team Leads:
- Part A: Dr. Diane Doran, University of Toronto
- Part B: Dr. John Hirdes, University of Waterloo

Methods:
- Jurisdictions: YK, BC, MB, ON, NS
- Inclusion Criteria:
  - All clients receiving publicly funded HC services Jan 1, 2006 – most current date 2010
Estimate prevalence of Problems for Home Care Clients

• Prevalence
  – Use linked dataset
  – Examine safety problems identified in the linked data compared to those in the interRAI data
  – Examine risk factors
Sub-Project 3 Description

Chart Review & Analysis of Incident Reports
Sub-project 3: Description

- **Study Type:**
  - Quantitative, primary data collection study
  - Chart review, incident reports

- **Team Lead:**
  - Dr. Régis Blais, Université de Montréal

- **Methods:**
  - **Jurisdictions:** BC, MB, QC, NS, NB
  - **Inclusion Criteria:**
    - Charts screened for inclusion criteria by nurses
    - Criteria positive charts are reviewed by physicians
      - Determine if AE occurred
      - If so, determine if AE was caused by home care
    - Incident reports analyzed for rate & types of AEs
Sub-project 3: Expected Outcomes

- Describe the rates & types of AE in HC clients from the chart review & incident reporting system
- Describe types & frequency of risk factors & contributing factors of AEs from the chart/incident reports
- Assess the value of chart review & incident reporting system
- Compare & contrast the rates of AEs from the chart/incident reports to the administrative data (Sub-project 2)
Sub-Project 4 Description

Root cause analysis (RCA)
Sub-project 4: Description

➢ Study Type:
  • Qualitative, primary data collection through RCA method

➢ Team Lead:
  Dr. Ross Baker, University of Toronto

➢ Methods:
  • Jurisdictions: AB, MB, ON
  • Inclusion Criteria:
    • Sample 3 most frequent or common AEs
    • Select 8 - 10 individual events for each type of AE
    • Interview clients, family members, unpaid caregivers, HC staff involved with these AEs
Sub-project 4: Expected Outcomes

- Describe root causes of AEs through the perspectives of HC clients, family members, unpaid caregivers, HC staff
- Analyze frequency & nature of contributing causes of AEs
- ID causes of AEs that are amenable to change & potential counter measures
Sub-Project 4 Description

Care Recipient & Provider Interviews
Sub-project 5: Description

- **Study Type:**
  - Qualitative, primary data collection through interviews

- **Team Leads:**
  - Dr. Marilyn Macdonald, Dalhousie University
  - Dr. Ariella Lang, VON Canada

- **Methods:**
  - **Jurisdictions:** BC, MB, NB
  - **Inclusion Criteria:**
    - 6 households in each jurisdiction
    - 3 - 4 interviews per household of clients with CHF or COPD
    - Semi-structure audio-taped interviews + photo-narrated environmental assessments
    - 2 focus groups of paid provides in each province
Sub-project 5: Expected Outcome

- Describe safety challenges clients & paid provides identify
- Explain socio-ecological factors that contribute to safety issues
- Compare socio-ecological factors across 3 provinces
Thank you & Questions!

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WHO
Conceptual Framework for the International Classification of Patient Safety