



Home Care Patient Safety

Diane Doran, RN, PhD, FCAHS

Scientific Director, Nursing Health Services Research Unit

Professor, Lawrence S. Bloomberg Faculty of Nursing

University of Toronto

CPSI-funded research:

2006

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

2007

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

2010 - 2012

- **Safety at Home: A Pan-Canadian Home Care Study**
(led by Doran and Blais)



Focus on Home Care: Safety in Home Care

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



Focus on Home Care: Formative Research Team

- 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



Home Care Safety Indicators

Researchers: Diane Doran, John Hirdes, Ross Baker, Regis Blais, and Jennie Pickard

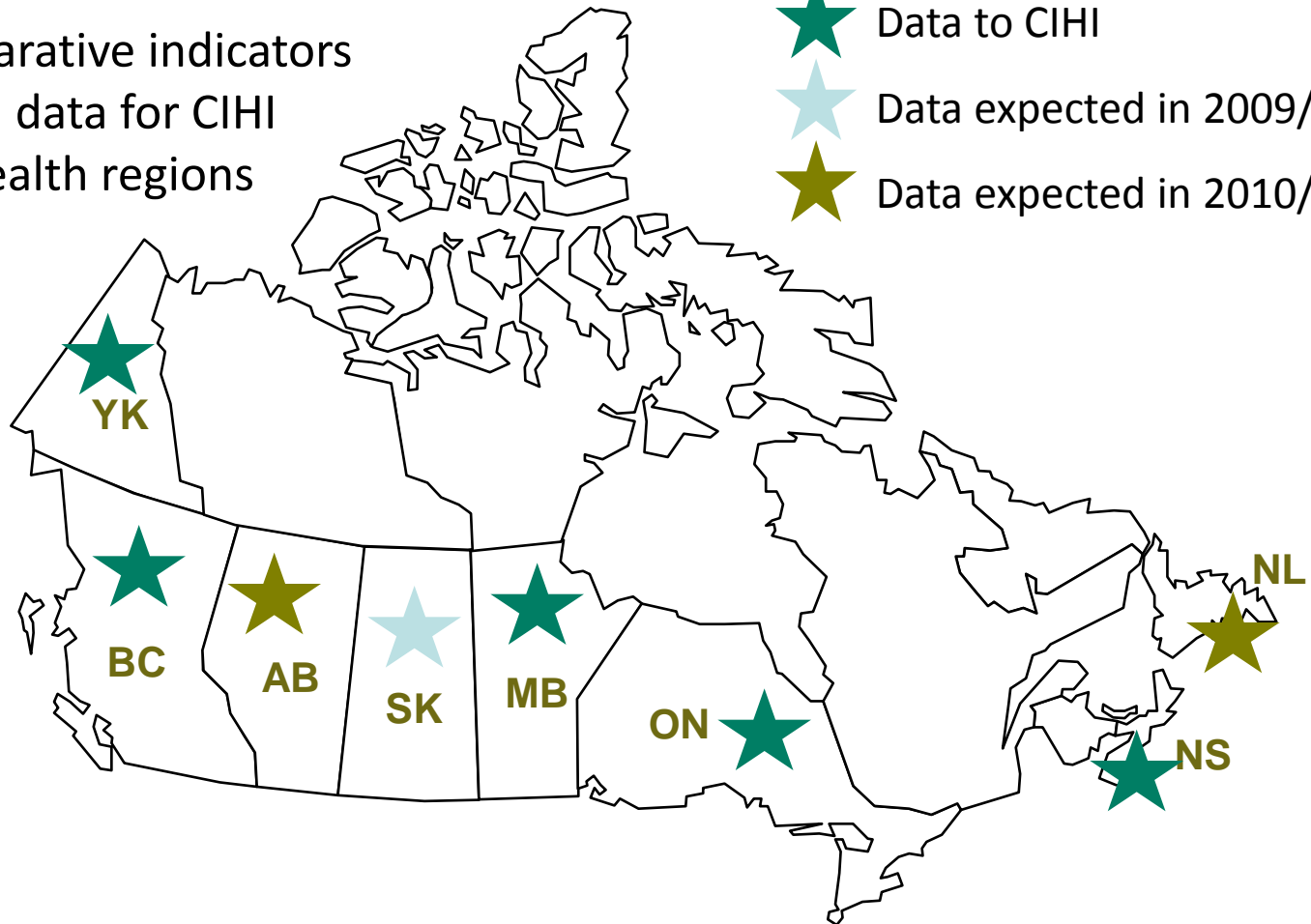
Purpose: To identify the nature and prevalence of patient safety problems among Canadian home care (HC) clients, using data collected through the **RAI-HC© Assessment instrument.**



Home Care Safety Indicators

Develop comparative indicators
using RAI-HC© data for CIHI
reporting to health regions

- ★ Data to CIHI
- ★ Data expected in 2009/10
- ★ Data expected in 2010/11





Home Care Safety Indicators

Age Adjusted Rates for Potential Adverse Outcomes

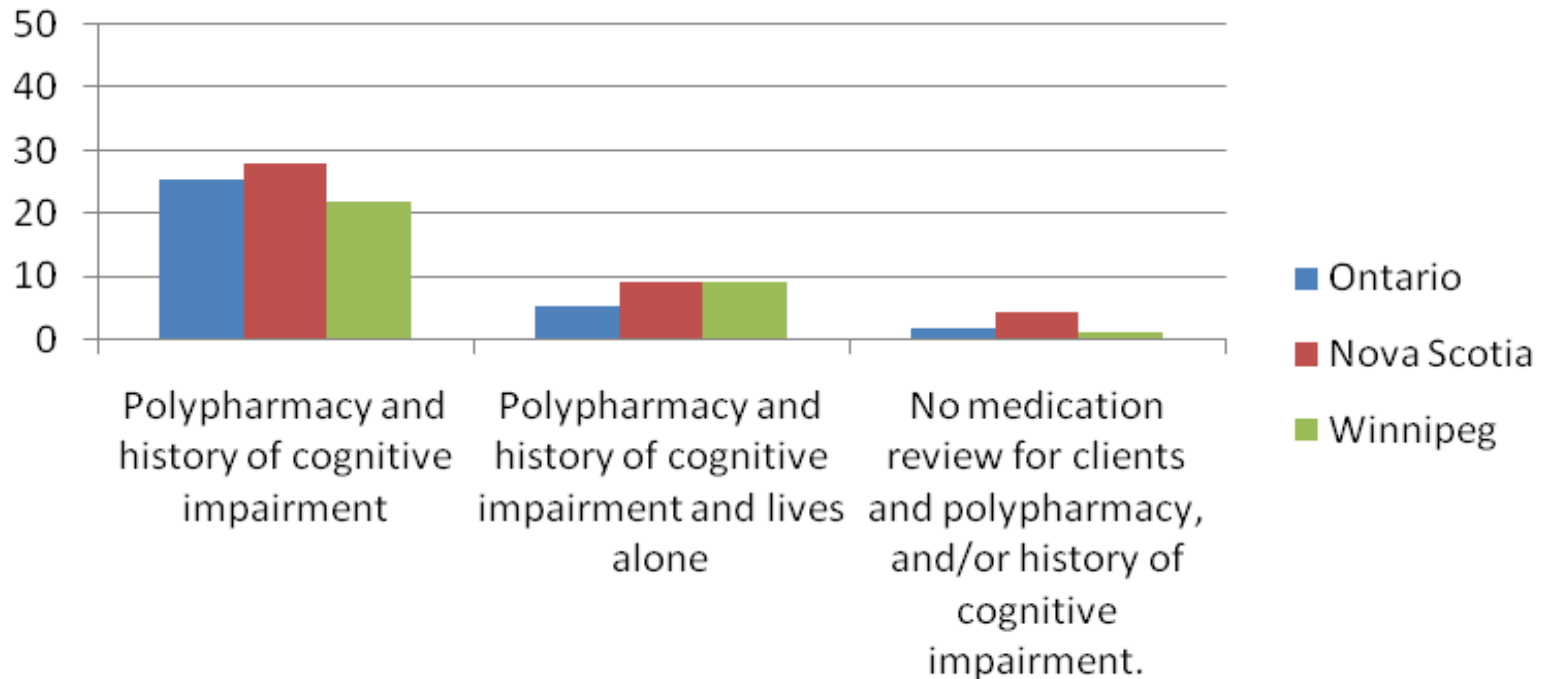
| | Ontario | Nova Scotia | Winnipeg | Overall |
|------------------------------|---------|-------------|----------|---------------|
| Sample size | 76,767 | 10, 507 | 1,749 | 89,023 |
| New fall (event) | 10.8% | 12.3% | 10.6% | 11% |
| Unintended weight loss | 10.6% | 9.7% | 7.6% | 10.4% |
| New ER visit | 8.5% | 7.4% | 5.3% | 8.3% |
| New hospitalization | 7% | 12.5% | 6.7% | 7.7% |
| Cognitive decline | 5% | 10.7% | 6.6% | 5.7% |
| New UTI | 1.7% | 3.3% | 1.4% | 1.9% |
| Pressure ulcer deterioration | 1.7% | 2.4% | 1.9% | 1.8% |
| New pressure ulcer | 1.6% | 2.3% | 1.8% | 1.7% |
| New pneumonia | 0.7% | 1.2% | 0.5% | 0.8% |
| New bowel problem | 0.7% | 1.2% | 0.5% | 0.8% |
| New dehydration | 0.7% | 0.7% | 0.3% | 0.7% |
| New caregiver decline | 2.7% | 7.4% | 4.4% | 3.3% |

Doran, D.M., Hirdes, J., Poss, J., Jantzi, M., Blais, R., Baker, G.R., & Pickard, J. (2009) Identification of Safety Outcomes for Canadian Home Care Clients: Evidence From the RAI-HC Reporting System Concerning Emergency Room Visits. *Healthcare Quarterly*, 12 (Sp): 40-48.; Doran, D.M., Hirdes, J., Blais, R., Baker, G.R., White, N., Pickard, J., & Jantzi, M. (2009) "The nature of safety problems among Canadian home care clients: evidence from the RAI-HC Reporting System." *Journal of Nursing Management*, 17, 165-174.



What explains regional variation in adverse outcomes?

Safety Risks at Second Assessment





Home Care Safety Indicators

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 |



Home Care Safety Indicators

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)



Safety at Home: A Pan-Canadian Home Care Study

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



Safety at Home: A Pan-Canadian Home Care Study



Faculté de médecine
Département d'administration de la santé

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

Sub-project 1: Results

Prevalence Estimates of AEs Reported in Published Literature

| Type of AE | Prevalence estimate | Percent of all AEs reported |
|-------------------|---------------------|-----------------------------|
| All falls | 6.4% - 70.6% | 1.4% - 46.2% |
| Medication errors | 7.6% - 69.0% | 23.1% - 59.7% |
| Pressure ulcers | 6.0% - 17.9% | 1.6% - 3.8% |





Integrative Literature Review

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

Sub-Project 2 Description

➤ **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

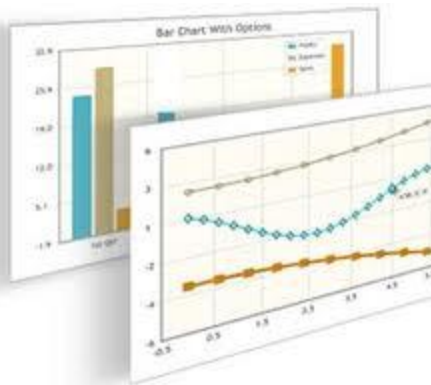
Part B: Dr. John Hirdes, University of Waterloo

➤ 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:

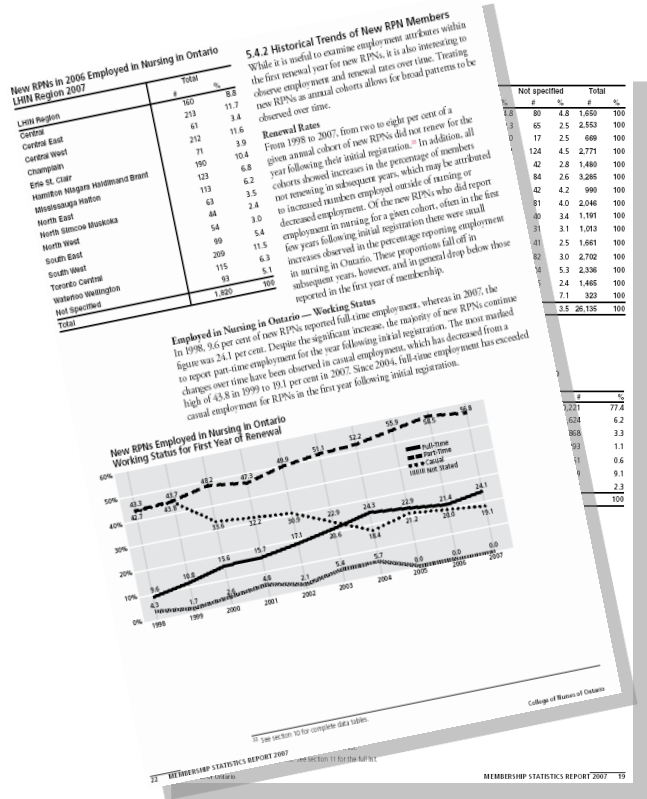
Dr. Régis Blais, Université de Montréal

➤ 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

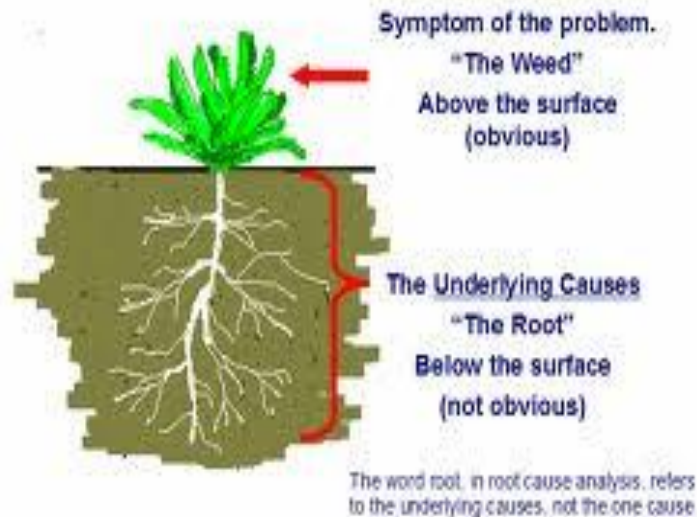
Sub-project 3: Expected Outcomes

- 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 Basics



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

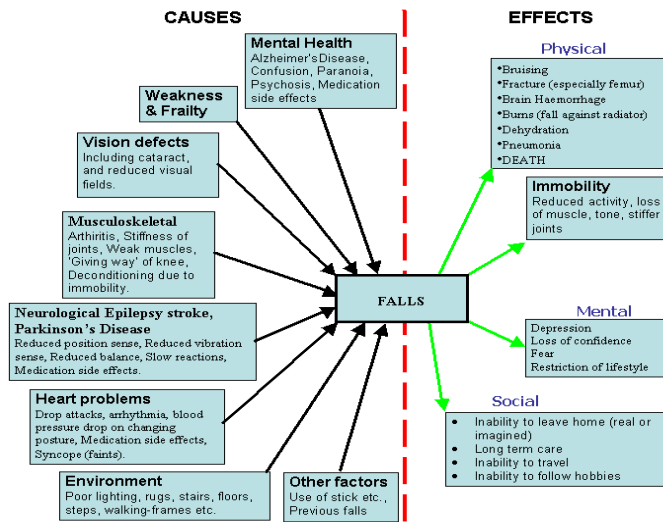
➤ Methods:

- **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:

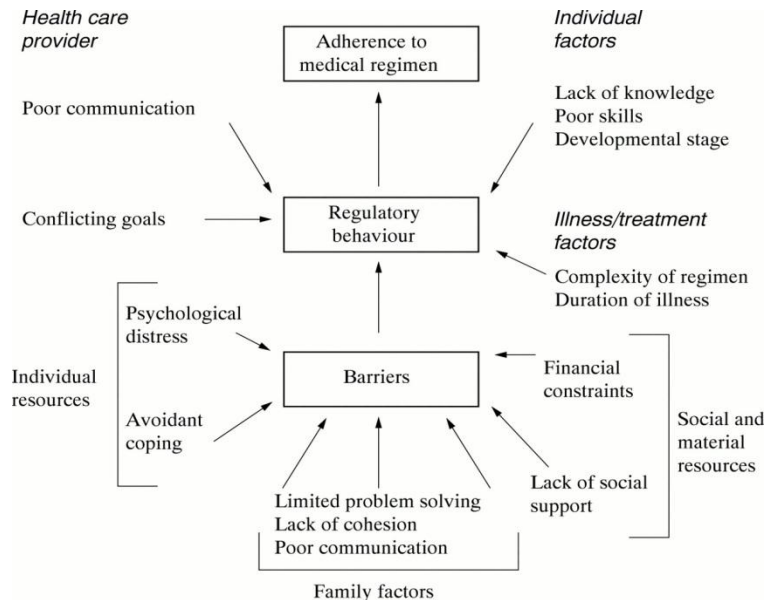
- **Jurisdictions:** BC, MB, NB
- **Inclusion Criteria:**
 - 6 households in each jurisdiction
 - 3 - 4 interviews per household of clients with CHF or COPD
 - Semi-structure audio-taped interviews + photo-narrated environmental assessments
 - 2 focus groups of paid provides in each province



Sub-project 5: Expected Outcome



- Describe safety challenges clients & paid providers identify
- Explain socio-ecological factors that contribute to safety issues
- Compare socio-ecological factors across 3 provinces



Thank you & Questions!



Diane Doran, RN, PhD, FCAHS
Professor, Lawrence S. Bloomberg Faculty of Nursing
University of Toronto
Email: diane.doran@utoronto.ca

**WHO
Conceptual Framework for
the International
Classification of Patient
Safety**

