Care of frail, acutely ill older persons: Making health care work like a system

Project funded by:
Technology Evaluation in the Elderly Network (TVN)
Project Team

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Twitter: @interRAI_Hirdes
Project Partners and Time Frame

• Partners
  • Blackberry, AIS, CIHI, CHUM

• Time Frame
  • 2015-2017
Agenda

• Use of interRAI instruments in Canada
• TVN study objectives
• Preliminary findings
  • Sample of where we are going
interRAI

- **Who**
  - International, not-for-profit network of ~95 researchers and health/social service professionals

- **What?**
  - Comprehensive assessment of strengths, preferences, and needs of vulnerable populations

- **How?**
  - Multinational collaborative research to develop, implement and evaluate instruments and their related applications
interRAI Countries

North America
- Canada
- US
- Mexico

Central/South America
- Brazil, Chile
- Peru

South Asia, Middle East & Africa
- India
- Israel
- Lebanon
- Qatar
- South Africa
- Ghana

Europe
- Iceland
- Norway
- Sweden
- Denmark
- Finland
- Netherlands
- France
- Germany
- Switzerland
- UK
- Italy
- Spain
- Czech Republic
- Poland
- Estonia
- Belgium
- Lithuania
- Russia
- Portugal
- Austria

Pacific Rim
- Japan
- China
- Taiwan
- Hong Kong
- South Korea
- Australia
- New Zealand
- Singapore
The interRAI Family of Instruments

- **Home Care**
  - Adult & pediatric versions
  - Contact Assessment

- **Complex Continuing Care Hospitals, Nursing Homes**

- **Acute Care**
  - ED Screener
  - ED Contact Assessment

- **Palliative Care**

- **Community Health Assessment**
  - Functional supplement
  - MH supplement
  - Deafblind supplement

- **Mental Health**
  - Inpatient
  - Community
  - Emergency Screener
  - Forensic Supplement
  - Correctional Facilities
  - Brief Mental Health Screener
  - Child & Youth Mental Health Supplement

- **Intellectual Disability**

- **Subjective Quality of Life**
  - Long term care
  - Home and community care
  - Mental Health
What Makes the interRAI Instruments an Integrated System?

- Common language
  - consistent terminology across instruments
- Common theoretical/conceptual basis
  - triggers for care plans
- Common clinical emphasis
  - functional assessment rather than diagnosis
- Common data collection methods
  - professional assessment skills
  - clinical judgment of best information source
- Common core elements
  - some domains in all instruments (e.g., depression, cognition)
- Common care planning protocols
  - for sectors serving similar populations
Use of interRAI Instruments in Canada

Solid symbols – mandated or recommended by govt; Hollow symbols – research/evaluation underway

Twitter: @interRAI_Hirdes
interRAI in Canada by the numbers
(Based on CIHI Reporting Systems only)

- 10 provinces and territories use interRAI instruments (9 mandated, 1 pilot)
- 15,000 clinicians in 1,900 organizations use interRAI assessments

- > 1.5 million Canadians assessed in-person by end of 2014
  - 352,190 in nursing homes
  - 232,679 in CCC hospitals
  - 731,716 in home care intake
  - 804,132 in long stay home care
  - 284,211 in mental health

- 7,863,346 in-person assessments by end of 2014
  - 3,026,267 in nursing home
  - 566,405 CCC hospitals
  - 1,145,626 in home care intake
  - 2,217,577 in long stay home care
  - 907,471 in mental health
Project Overview: Study 1

- trajectory & predictors of health declines/events for home care clients and nursing home residents
  - Acute Hospitalization – through record linkage to CIHI’s Discharge Abstract Database (DAD) for acute hospitals
  - “Post-acute hospitalization” – through RAI 2.0 records for Complex Continuing Care hospitals
  - Emergency department visits – through record linkage to CIHI’s National Ambulatory Care Reporting System (NACRS) for emergency departments
  - Intensive Care Units – using DAD and ON provincial health insurance
  - Mortality – using mortality data from OACCAC home care information system, RAI 2.0 discharge tracking form, hospital records

Twitter: @interRAI_Hirdes
Project Overview: Study 2

• trajectory & predictors of outcomes of persons 75+ admitted to intensive care units
  • Data linked to RAI 2.0 for nursing homes
  • 1-year mortality, rehospitalisation, LTC placement
  • ICU data
    • ICU admission diagnosis
    • severity of illness at admission (APACHE II score)
    • ICU length of stay
    • length of mechanical ventilation
    • age, sex, co-morbidities and ethnicity
    • Facility and regional effects
Project Overview: Study 3

• systematic review: clinical decisions support tools for ICU professionals to use in discussions re: care intensity, patient expectations and realistic outcomes of care
  • MEDLINE, EMBASE, CENTRAL, Global Health, Scopus, Web of Science, the International Clinical Trials Registry Platform etc
  • Abstract relevant studies, two reviewers
Project Overview: Study 4

• Feasibility study of interRAI ED Screener, ED-CA, AC
  • 10 academic hospitals ON, QC, MB, AB
  • 9,000 patients age 75+ to get ED screener & expect 3,000 to get AC
  • Outcomes to be tracked:
    • length-of-stay, final disposition, mortality, ICU admission, ICU length-of-stay, ALC status, and “selected quality markers during ICU hospitalization”
**EARLY** Findings
CHESS Scale

- Considers
  - Changes in ADL and cognition
  - End-stage disease
  - Signs and symptoms (e.g., shortness of breath, weight loss)

- 0 – stable to 5 – highly unstable health
CHESS and mortality persons with neurological conditions

Risk of death within 6 months by care setting in five Canadian provinces, 2011

Beyond the “Iron Lungs of Gerontology”: Using Evidence to Shape the Future of Nursing Homes in Canada

INSTITUTIONALIZATION OF THE ELDERLY IN CANADA
William F. Forbes, Jennifer A. Jackson, Arthur S. Kraus
Table 2. Percent of residents in continuing care by discharge destination in Canada\(^3\), 2009-2010

<table>
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<tr>
<th>Characteristic</th>
<th>NL LTC (N=375)</th>
<th>NS LTC (N=736)</th>
<th>ON</th>
<th>MB LTC (N=6,793)</th>
<th>SK LTC (N=9,814)</th>
<th>BC LTC (N=5,579)</th>
<th>YK LTC (N=156)</th>
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### Table 4. Percent of residents obtaining clinical scale scores in continuing care facilities in Canada, 2009 - 2010

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<td>23.7</td>
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</table>

^5 The interRAI LTCF form used in the ACCES study excludes one item used in the calculation of the CHESS scale.
Time to acute hospital admission among Canadian LTC home residents

LTC to Hospital - One Year Follow up

Survival Probability

days

Twitter: @interRAI_Hirdes
Provincial variations in time to hospital admission from LTC homes

LTC to Hospital - 365 days Follow up by Province

Survival Probability

days

facility_province
BC
MB
NL
ON
YT

+ Censored
Time to hospital admission by CHESS Score at LTC Admission

LTC to Hospital, 90 Days Follow up by CHESS

Twitter: @interRAI_Hirdes

www.interrai.org
Time to death by CHESS Score at LTC Admission

LTC Mortality by CHESS

Survival Probability vs. days_dis

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Concluding Comments

- interRAI instruments provide a unique opportunity to study frailty among home care clients, nursing home residents and other care settings
- Scales related to frailty and other dimensions of risk may be used to target older persons for interventions
  - Avoid preventable hospitalization
  - Care for conditions underlying health instability
  - Engage in advance care planning discussions
- Regional differences in hospitalization may be explained by
  - Clinical differences in populations served
  - Practice patterns in LTC and acute care
  - All the above
Thank You!

Questions? Comments?