

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

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Technology Evaluation in the Elderly Network (TVN)

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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

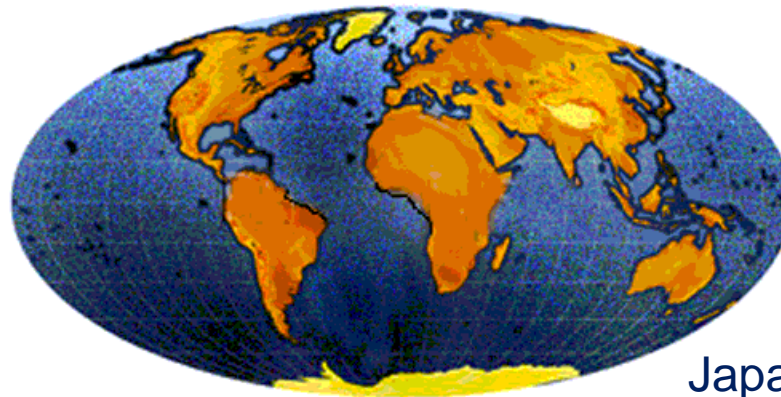
North America

Canada
US
Mexico

Europe

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

**Central/
South America**
Brazil, Chile
Peru



South Asia, Middle East & Africa

India, Israel, Lebanon, Qatar
South Africa, Ghana

Pacific Rim

Japan, China, Taiwan,
Hong Kong, South Korea,
Australia, New Zealand
Singapore

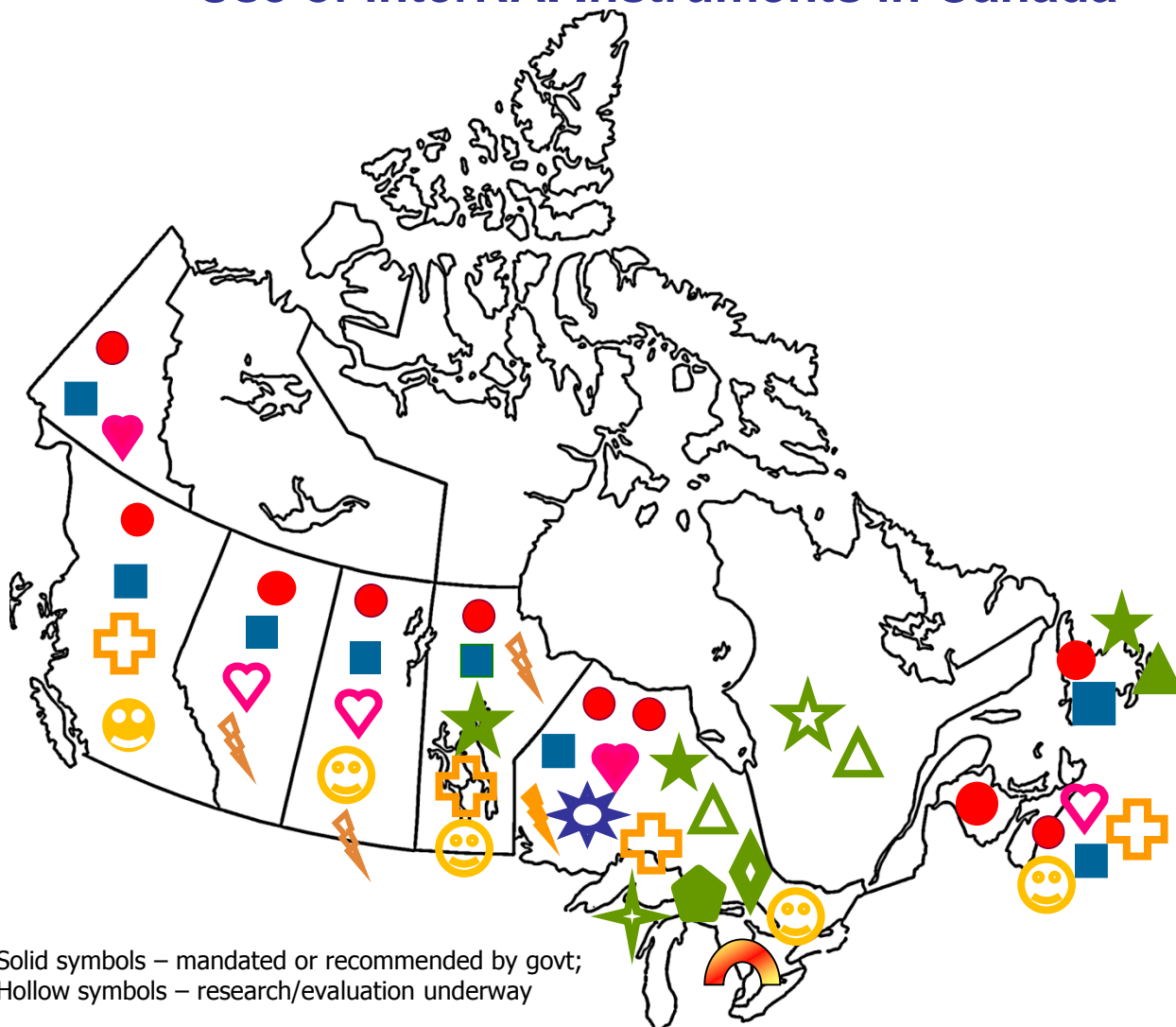
The interRAI Family of Instruments

- **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

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

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”

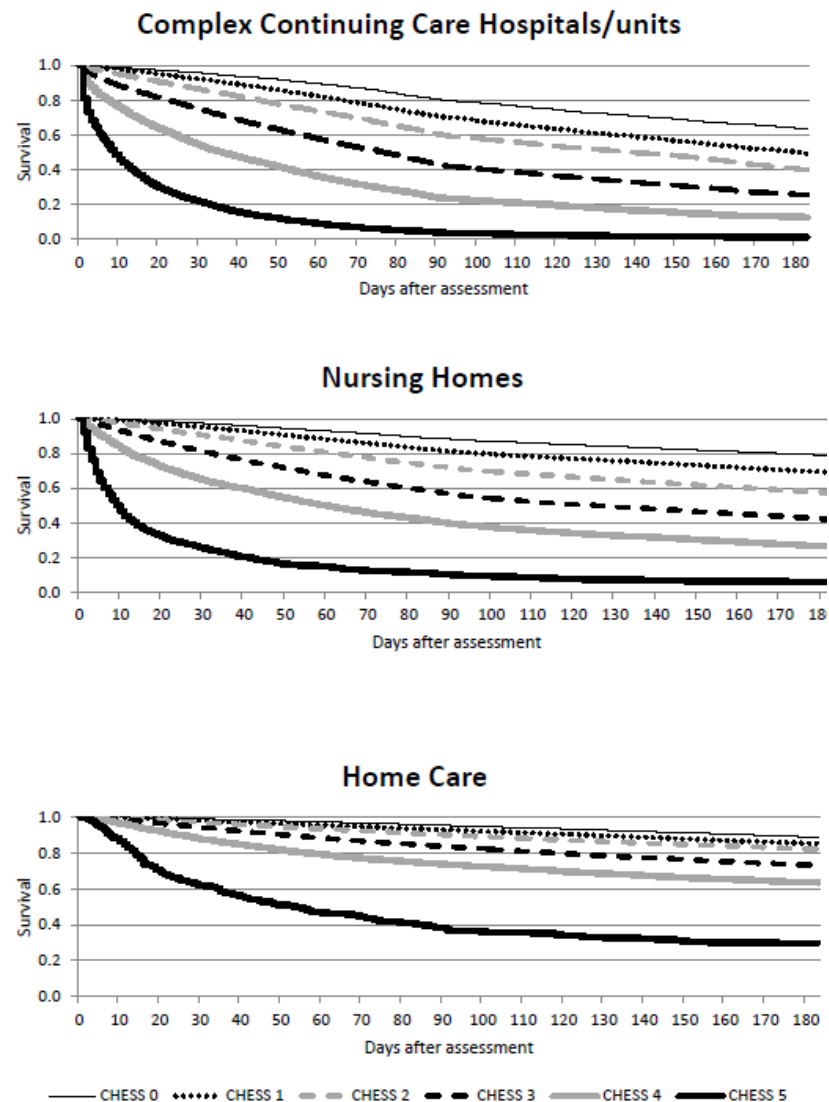
EARLY Findings

CHES Scale

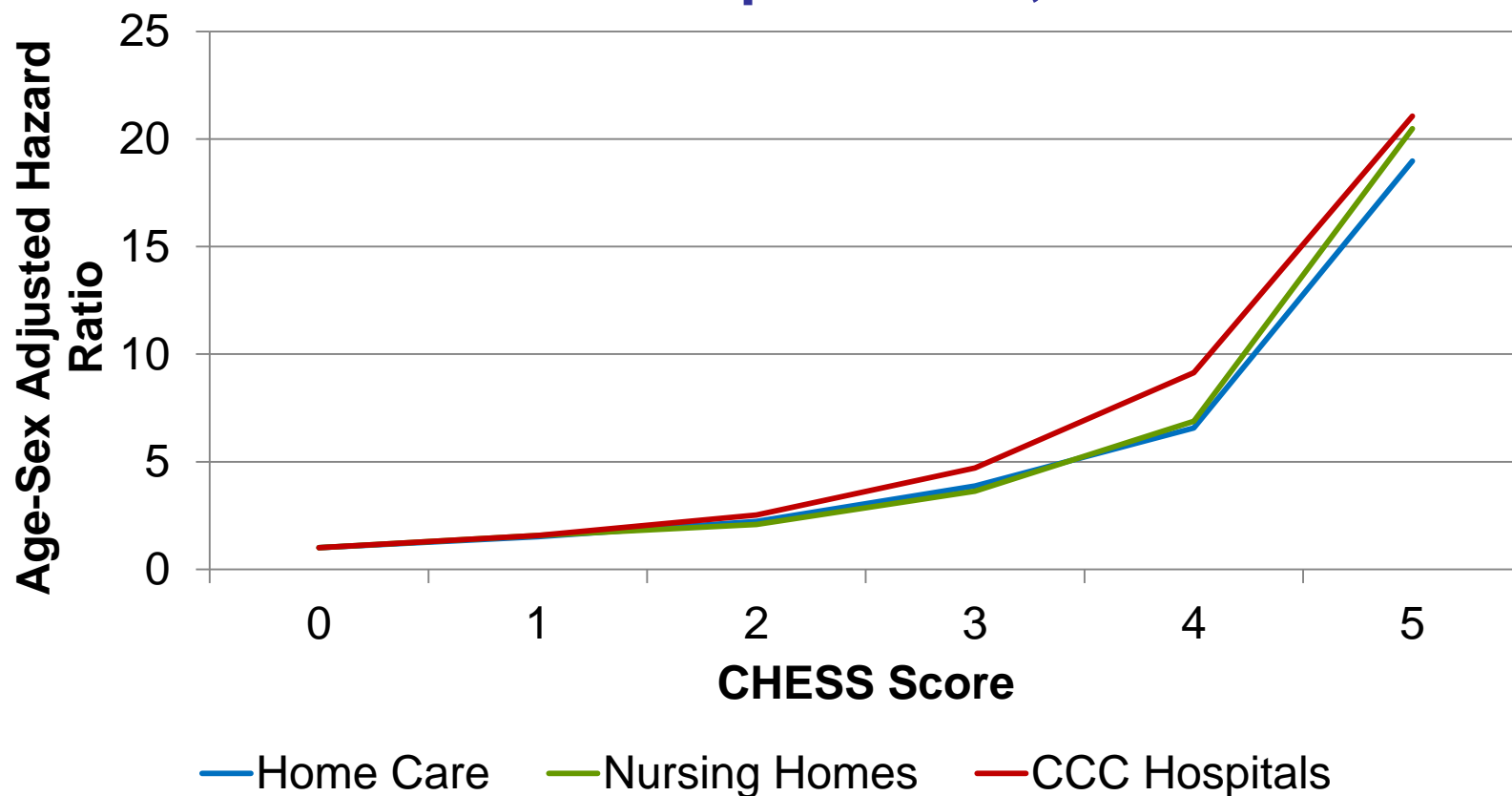
- Considers
 - Changes in ADL and cognition
 - End-stage disease
 - Signs and symptoms (e.g., shortness of breath, weight loss)
- 0 – stable to 5 – highly unstable health

CHES and mortality persons with neurological conditions

Hirdes et al., Use of the interRAI CHES Scale to Predict Mortality among Persons with Neurological Conditions in Three Care Settings, *PLoS One*, 2014.



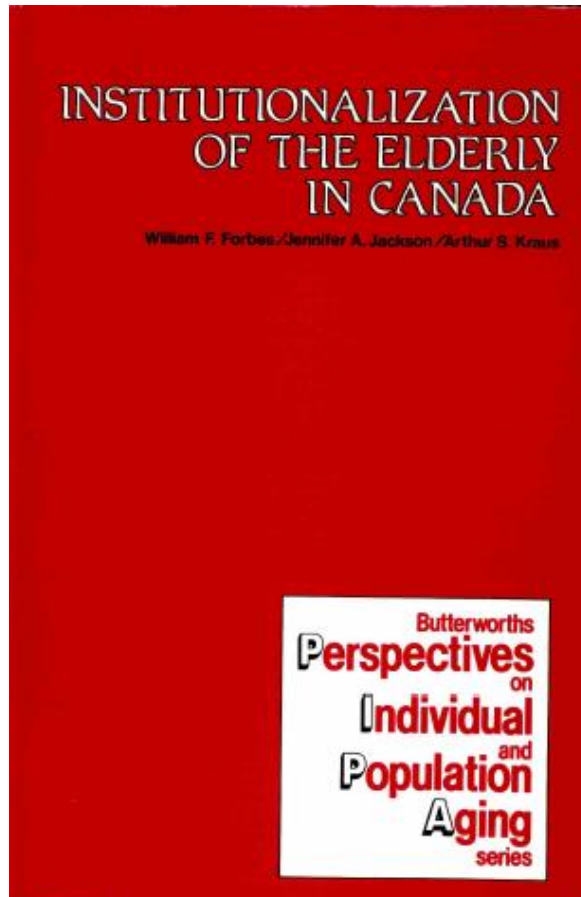
Risk of death within 6 months by care setting in five Canadian provinces, 2011



Data source: Hirdes et al., Use of the interRAI CHES Scale to Predict Mortality among Persons with Neurological Conditions in Three Care Settings, *PLoS One*, 2014.



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



Beyond the ‘Iron Lungs of Gerontology’: Using Evidence to Shape the Future of Nursing Homes in Canada*

John P. Hirdes,¹ Lori Mitchell,² Colleen J. Maxwell,³ and Nancy White⁴

RÉSUMÉ

Institutionalization of the Elderly in Canada a proposé que les efforts de s’attaquer aux causes sous-jacentes de hautes liées à l’âge de santé pourraient éradiquer la nécessité pour les maisons de soins infirmiers. Cependant, la prévalence des maladies chroniques a augmenté, et les conditions comme la démence signifie que les maisons de soins infirmiers sont susceptibles de rester des éléments importants du système de soins de santé canadien. Le manque d’information clinique à l’échelle individuelle a été un problème fondamental qui limite la capacité de comprendre comment les maisons de soins infirmiers peuvent changer pour mieux répondre aux besoins d’une population vieillissante. L’introduction d’instruments d’évaluation interRAI pour la plupart des provinces et territoires canadiens et la création du Système d’information sur les soins représentent des étapes importantes dans notre capacité à comprendre les soins dispensés par les maisons de soins infirmiers au Canada. Le témoignage de huit provinces et territoires montre que les besoins des personnes dans les soins de longue durée sont très complexes, que les allocations de ressources ne correspondent pas toujours aux besoins, et que la qualité varie considérablement entre et au sein des provinces.

ABSTRACT

Institutionalization of the Elderly in Canada suggested that efforts to address the underlying causes of age-related declines in health might negate the need for nursing homes. However, the prevalence of chronic disease has increased, and conditions like dementia mean that nursing homes are likely to remain important features of the Canadian health care system. A fundamental problem limiting the ability to understand how nursing homes may change to better meet the needs of an aging population was the lack of person-level clinical information. The introduction of interRAI assessment instruments to most Canadian provinces/territories and the establishment of the national Continuing Care Reporting System represent important steps in our capacity to understand nursing home care in Canada. Evidence from eight provinces and territories shows that the needs of persons in long-term care are highly complex, resource allocations do not always correspond to needs, and quality varies substantially between and within provinces.

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Mots clés: l’institutionnalisation, l’évaluation, la qualité, interRAI

Keywords: institutionalization, assessment, quality, resource use, interRAI

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Table 2. Percent of residents in continuing care by discharge destination in Canada³, 2009-2010

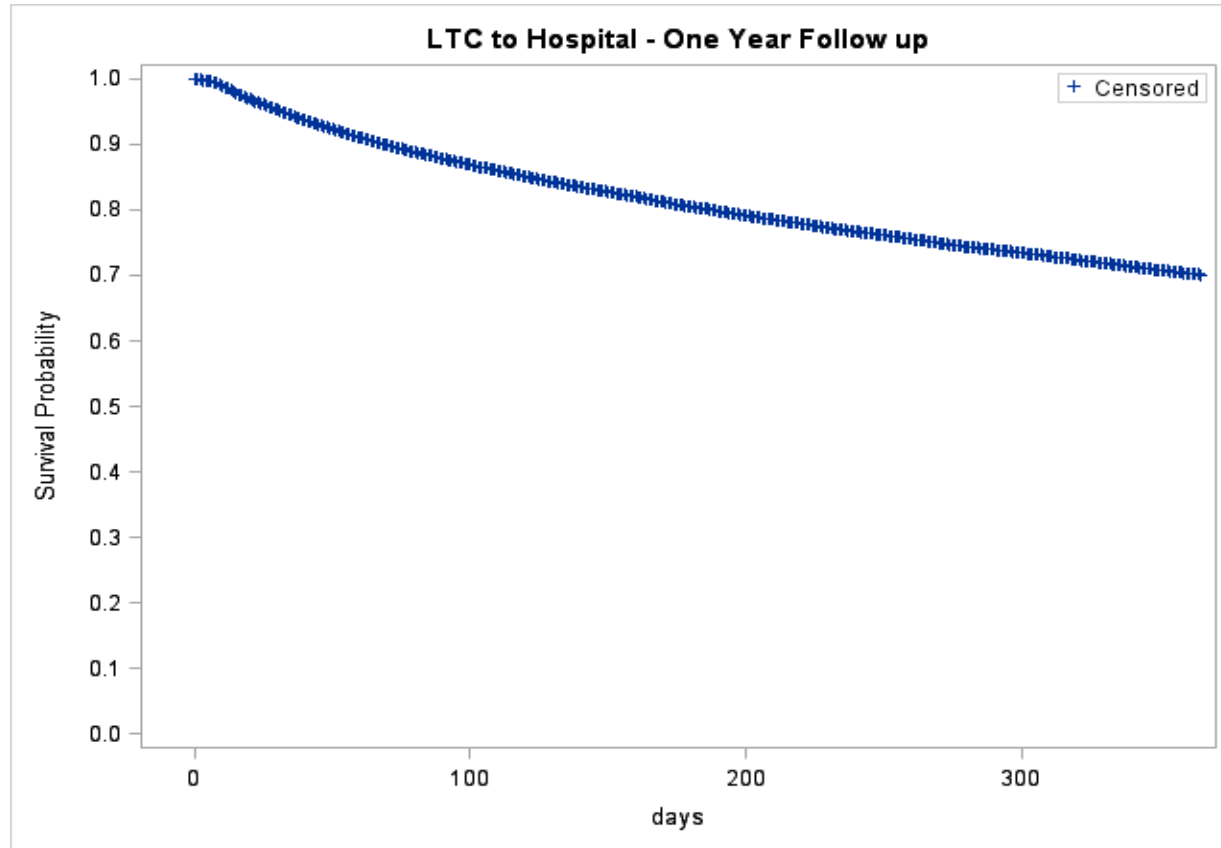
Characteristic	NL LTC (N=375)	NS LTC (N=736)	ON		MB LTC (N=6,793)	SK LTC (N=9,814)	BC LTC (N=5,579)	YK LTC (N=156)
			LTC (N=90,115)	CCC (N=14,600)				
	%	%	%	%	%	%	%	%
Discharged within 90 days of admission (of all residents)	1.9	3.8	5.9	57.0	2.6	9.2	2.8	5.1
Discharge destination⁴ (of discharges only)								
Home	0.0	-	9.6	36.6	1.9	8.1	3.1	26.0
Hospital	0.0	26.0	49.7	17.0	3.3	14.4	1.7	40.0
Psych hospital	0.0	0.0	1.0	0.2	-	0.2	-	0.0
Deceased	62.1	62.7	37.5	36.3	89.7	50.8	86.6	34.0

Table 4. Percent of residents obtaining clinical scale scores in continuing care facilities in Canada, 2009 - 2010

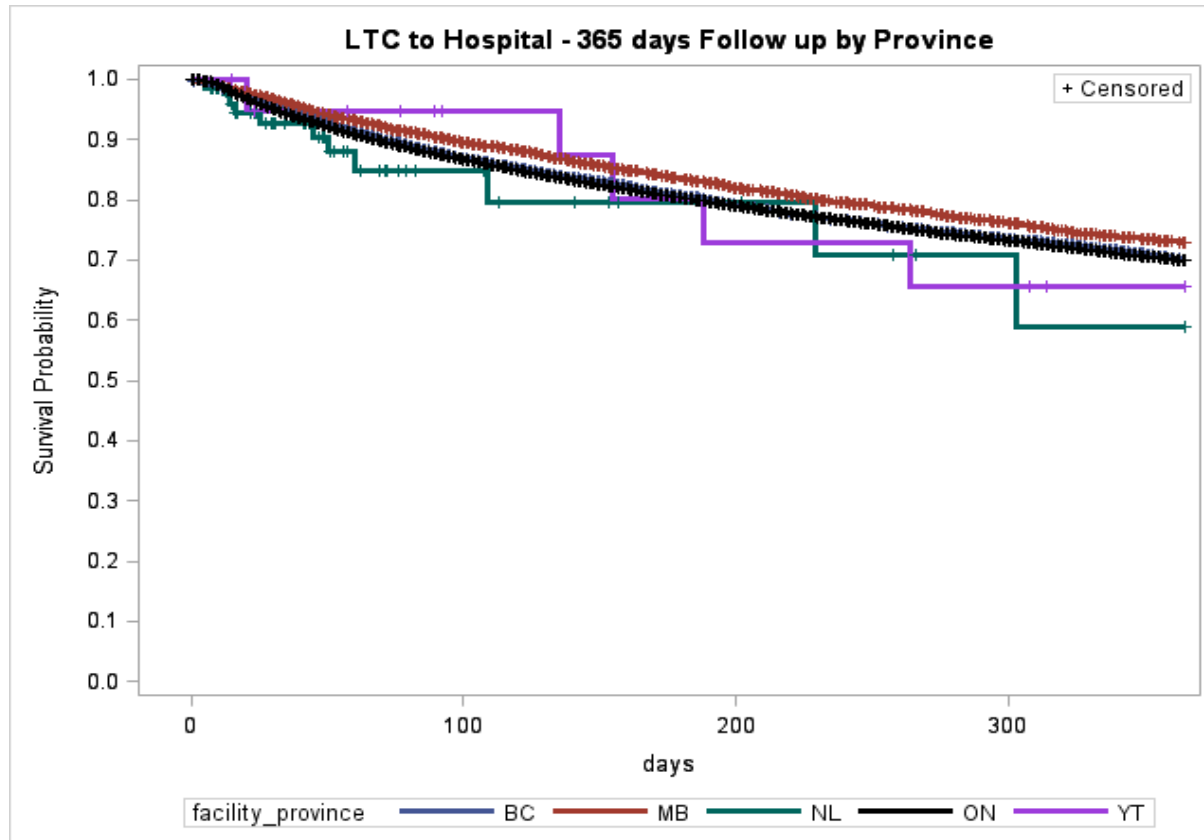
Clinical Scale	NL LTC (N=375)	NS LTC (N=736)	Ontario		MB LTC (N=6,793)	SK LTC (N=9,814)	AB LTC (N=1,000)	BC LTC (N=5,579)	YK LTC (N=156)
			LTC (N=90,115)	CCC (N=14,600)					
			%	%					
Cognitive Performance Scale									
0	7.2	12.6	15.2	24.3	9.3	10.9	6.0	10.1	3.8
1-2	25.3	26.9	26.4	32.8	26.2	24.8	35.1	26.5	39.1
3-4	16.3	35.5	33.4	24.7	38.8	35.6	28.8	36.3	37.8
5-6	51.2	25.0	25.0	18.2	25.6	28.7	30.0	27.2	19.2
ADL Hierarchy									
0	8.8	6.4	7.9	5.6	5.3	7.3	5.0	7.9	25.0
1-2	16.0	24.5	17.1	20.2	22.8	22.0	13.4	18.9	19.9
3-4	30.7	40.9	38.2	24.1	40.0	37.5	48.6	42.5	35.3
5-6	44.5	28.3	36.8	50.0	31.9	33.2	33.0	30.7	19.9
Depression Rating Scale									
0	63.7	51.4	34.1	48.3	47.8	37.8	23.9	35.6	17.9
1-2	18.4	28.2	33.0	30.0	32.2	35.9	25.6	30.4	34.6
3+	17.9	20.4	32.9	21.6	19.9	26.3	50.6	34.0	47.4
Aggressive Behaviour Scale									
0	69.6	62.4	55.0	73.9	62.4	63.9	34.1	60.9	55.1
1-4	23.5	28.1	32.9	21.1	30.0	29.9	39.3	31.6	34.0
5+	6.9	9.5	12.0	5.0	7.6	6.3	26.6	7.5	10.9
CHESS Scale⁵									
0	54.1	36.3	46.3	20.7	48.1	35.9	39.5	37.0	15.4
1-2	41.9	52.4	45.4	45.2	44.2	47.7	53.5	50.1	60.9
3+	4.0	11.3	8.4	34.1	7.7	16.4	7.0	12.9	23.7

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



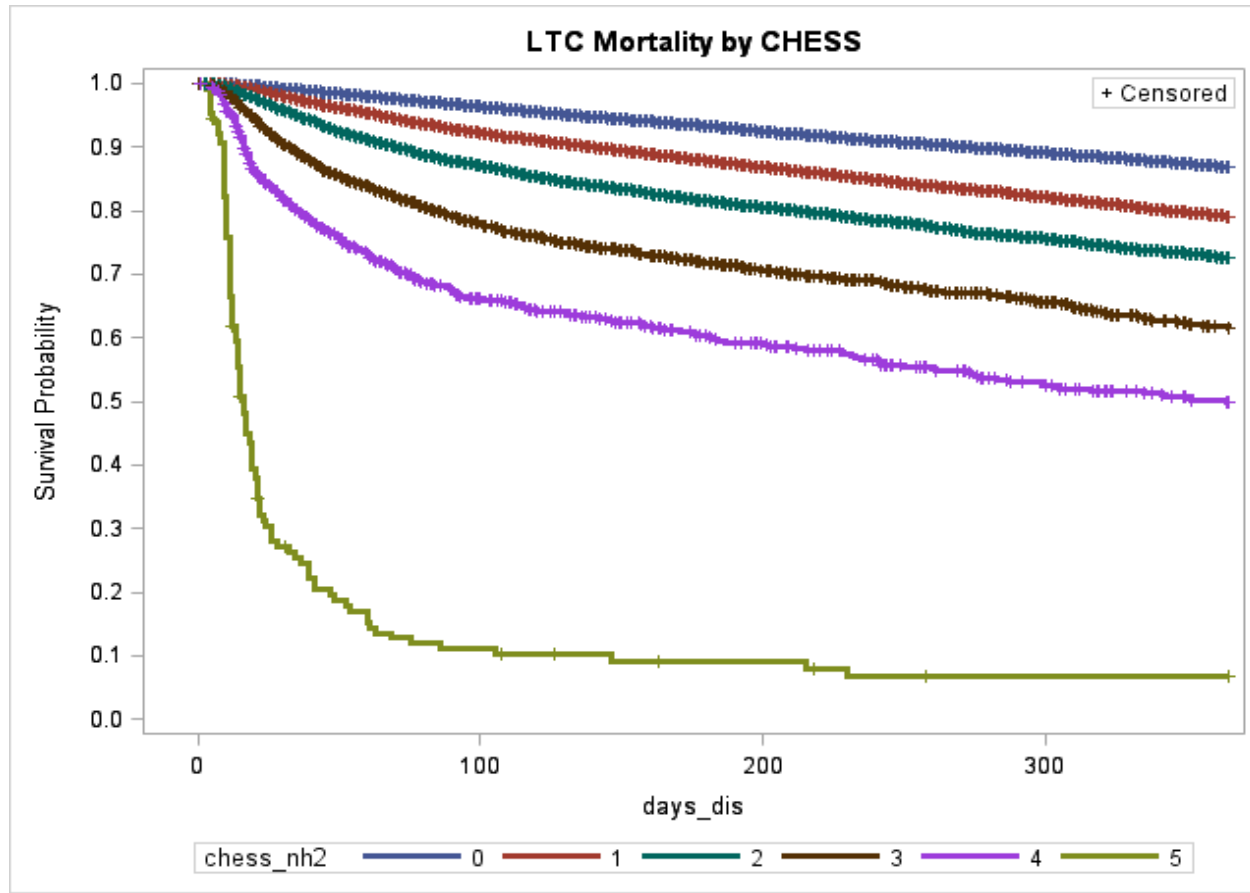
Provincial variations in time to hospital admission from LTC homes



Time to hospital admission by CHES Score at LTC Admission



Time to death by CHES Score at LTC Admission



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?