



Use of interRAI assessments to identify and respond to mental health needs of older adults across the continuum of care

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Agenda

- Overview of interRAI research on mental health systems
- Examples of applications of interRAI systems
 - Outcome measurement
 - Care planning
 - Evaluation of impact of COVID-19





interRAI

Who

 International, not-for-profit network of ~140 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



Bold & italics=countries involved in mental health network

North America
Canada
US

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

Europe

Central/
South America
Brazil, Chile



South Asia, Middle East & Africa

India, Israel, Lebanon, Qatar South Africa, Rwanda

Pacific Rim
Japan, China,
Hong Kong SAR, South Korea,
Australia, New Zealand
Singapore





Use of interRAI Instruments in Canada



RAI 2.0/ interRAI Long Term Care Facilities

RAI-Home Care

RAI-Mental Health

interRAI Community Mental Health

interRAI Emergency Screener for Psychiatry

interRAI Brief Mental Health Screener

interRAI Child/Youth Mental Health

interRAI Intellectual Disability

interRAI Palliative Care

interRAI Acute Care/Emergency Department

interRAI Contact Assessment

interRAI Community Health Assessment

interRAI Subjective Quality of Life

20 million+ assessments 6 million+ individuals

Solid symbols refer to implementations that have been mandated by government Hollow symbols refer to research, pilot studies, or implementation planning underway





It's personal

- 20% of Canadians experience problems with mental health or addiction
- Half will experience mental health problems by age 40
- NZ Dunedin cohort study suggests that only 17% of people will live a lifetime free from mental illness (Schaefer et al., 2017)





It's complicated

- 70% of mental health problems begin in childhood/adolescence
 - For some these will endure for a lifetime
- Aging associated with many conditions/experiences affecting mental health
- Causes AND consequences of mental illness include
 - Physical health and disability
 - Unemployment, poverty, deprivation, homelessness
 - Substance use
- Social relationships can protect us from stress, support our recovery







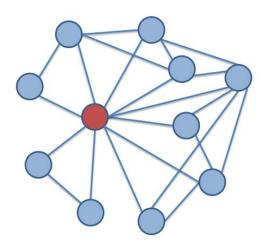
- It has widespread impact
 - All countries of the world are affected
 - WHO: mental illness and substance use disorders are world's leading cause of disability
 - 32% of years lived with disability
 - Depression 4th leading cause of total disease burden in 2000
 - Stigma associated with mental illness leads to social exclusion
 - "There is no health without mental health."
 - US Surgeon General David Satcher







- It needs a systems approach
 - Every part of the health and social service system deals with persons living with mental illness
 - Health care
 - Education
 - Welfare
 - Criminal Justice







We had a head start

- All interRAI instruments contain mental health items
- Initial nursing home instruments already included measures of:
 - Depression, anxiety, bipolar disorder, schizophrenia diagnoses
 - Depression and anxiety symptoms
 - Delirium, cognitive impairment
 - Behavioural issues
 - Psychosis
 - Interpersonal conflict





What did interRAI do?







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The interRAI Suite of Mental Health Assessment Instruments: An Integrated System for the Continuum of Care

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The lives of persons living with mental illness are affected by psychological, biological, social, economic, and environmental factors over the life course. It is therefore unlikely that simple preventive strategies, clinical treatments, therapeutic interventions, or policy options will succeed as singular solutions for the challenges of mental illness. Persons living with mental illness receive services and supports in multiple settings across the health care continuum that are often fragmented, uncoordinated, and inadequately responsive. Appropriate assessment is an important tool that health systems must deploy to respond to the strengths, preferences, and needs of persons with mental illness. However, standard approaches are often focused on measurement of psychiatric symptoms without taking a broader perspective to address issues like growth, development, and aging; physical health and disability; social relationships; economic resources; housing; substance use; involvement with criminal justice; stigma; and recovery. Using conglomerations of instruments to cover more domains is impractical inconsistent, and incomplete while posing considerable assessment burden, interRAI mental health instruments were developed by a network of over 100 researchers, clinicians, and policy experts from over 35 nations. This includes assessment systems for adults in inpatient psychiatry, community mental health, emergency departments, mobile crisis teams, and long-term care settings, as well as a screening system for police officers. A similar set of instruments is available for child/youth mental health. The instruments form an integrated mental health information system because they share a common assessment language, conceptual basis, clinical emphasis, data collection

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interRAI Mental Health Suite

Overview of all adult mental health instruments in interRAI suite

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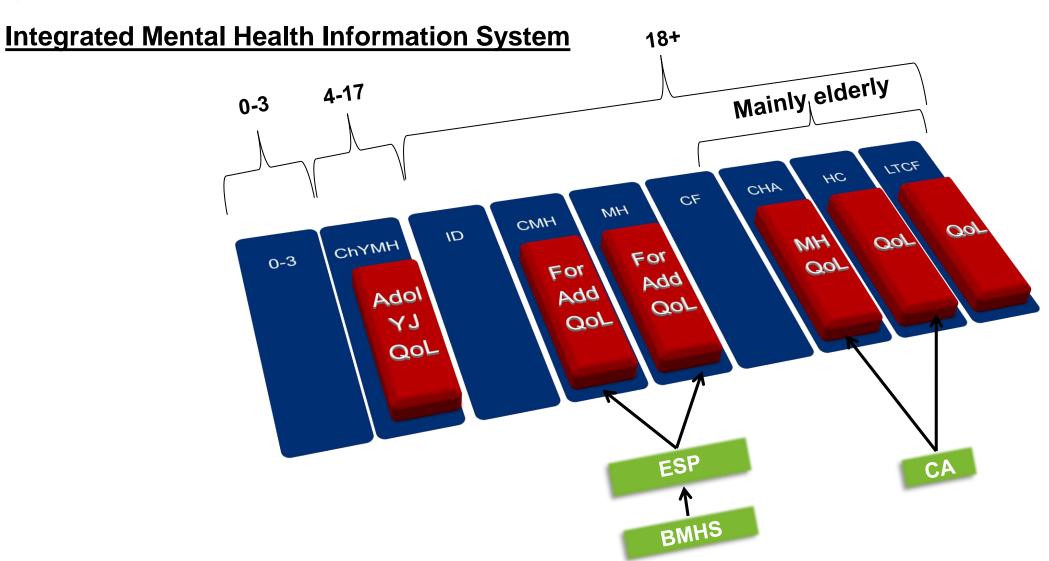


Development of interRAI Mental Health Systems

- 25+ years of research
- 250+ clinicians, researchers, policy experts engaged in development of instruments and care planning protocols
- Patient engagement in design of feedback systems
- Analyses of
 - > 1.5 million assessments from mental health settings
 - + additional 12.5 million assessments from other interRAI instrument in Canada alone!











What Makes 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., ADL, cognition)
- Common care planning protocols
 - for sectors serving similar populations







12-country study

Independent assessors

Demonstrated high reliability within AND between health settings



BMC Health Services Research



Research article

Open Access

Reliability of the interRAI suite of assessment instruments: a 12-country study of an integrated health information system John P Hirdes*1,2, Gunnar Ljunggren³, John N Morris⁴, Dinnus HM Frijters⁵, Harriet Finne Soveri⁶, Len Gray³, Magnus Björkgren³ and Reudi Gilgen³

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Abstract

Background: A multi-domain suite of instruments has been developed by the interRAI research collaborative to support assessment and care planning in mental health, aged care and disability services. Each assessment instrument comprises items common to other instruments and specialized items exclusive to that instrument. This study examined the reliability of the items from five instruments supporting home care, long term care, mental health, palliative care and post-acute care.

Methods: Paired assessments on 783 individuals across 12 nations were completed within 72 hours of each other by trained assessors who were blinded to the others' assessment. Reliability was tested using weighted kappa coefficients.

Results: The overall kappa mean value for 161 items which are common to 2 or more instruments was 0.75. The kappa mean value for specialized items varied among instruments from 0.63 to 0.73. Over 60% of items scored greater than 0.70.

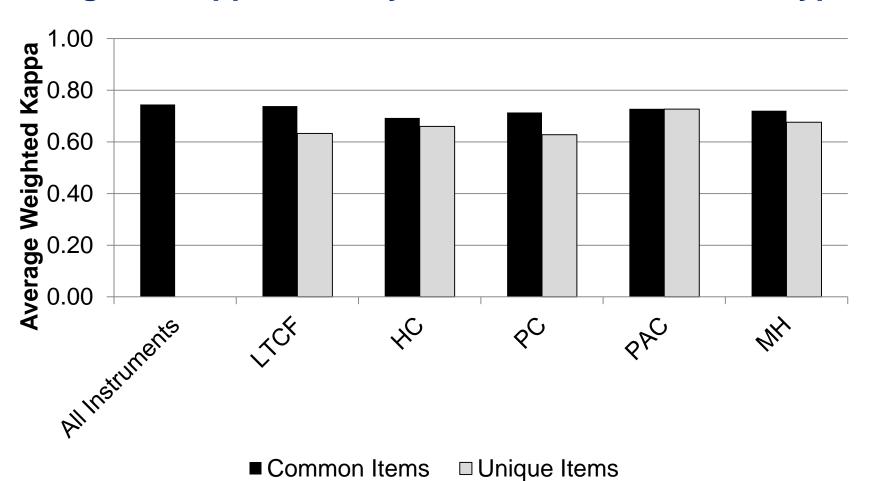
Conclusion: The vast majority of items exceeded standard cut-offs for acceptable reliability, with only modest variation among instruments. The overall performance of these instruments showed that the interRAI suite has substantial reliability according to conventional cut-offs for interpreting the kappa statistic. The results indicate that interRAI items retain reliability when used across care settings, paving the way for cross domain application of the instruments as part of an integrated health information system.

> Page 1 of 11 (page number not for citation purposes)





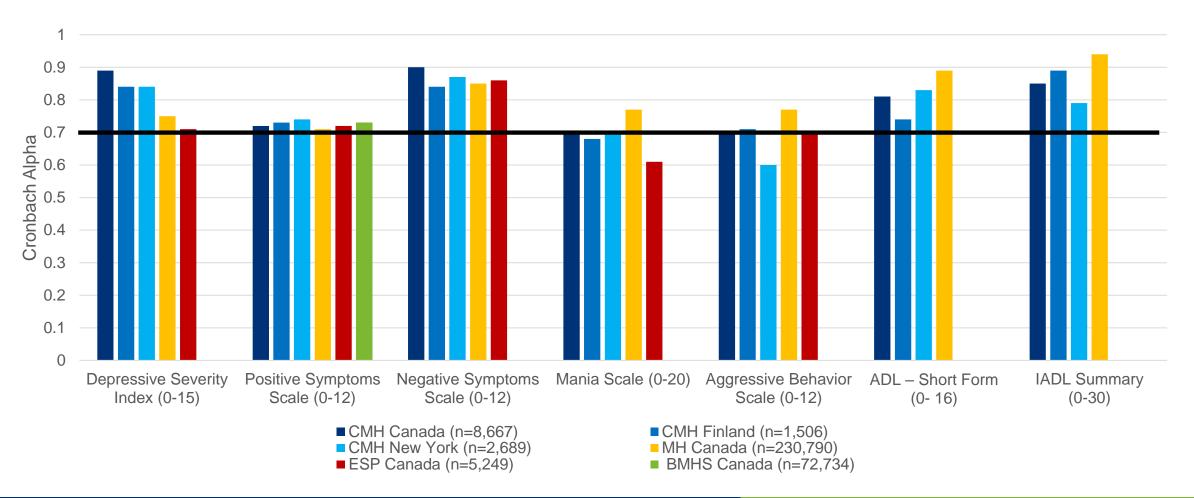
Average weighted kappa value by interRAI instrument and type of item







Reliability of interRAI Mental Health Suite Scales





Convergent Validity (c statistic):

Symptoms and Provisional Diagnosis by Care Setting

Provisional	Covariate(s)	ESP	СМН	MH
Diagnosis		(n=5,235)	(n=11,641)	(n=230,790)
Neurocognitive	Cognitive Performance Scale	.82	.82	.86
Substance & addictive	Misuse prescription meds Count of current substances used Days drank to intoxication in last 5+ drinks in single sitting CAGE crosswalk score	.79	.78	.87
Schizophrenia & other psychotic	Positive Symptoms Scale Insight to MH condition	.84	.71	.80
Depressive	Depressive Severity Index Social Withdrawal Scale	.64	.70	.65

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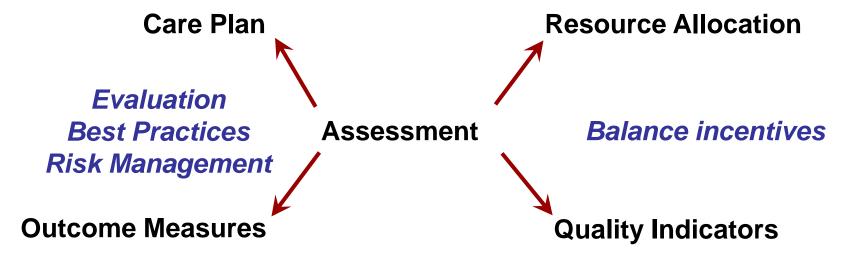




Applications of interRAl's Assessment Instruments:

One assessment ... multiple applications

Case-mix
Single Point Entry



Patient Safety
Quality Improvement
Public Accountability
Accreditation



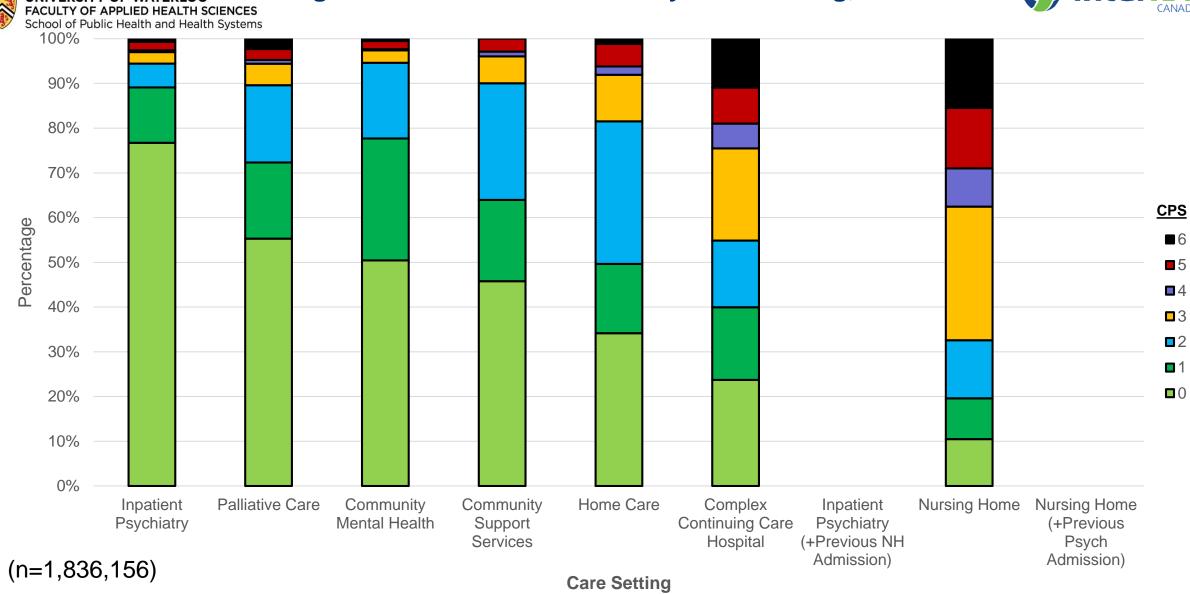


Outcome Measures Related to Mental Health

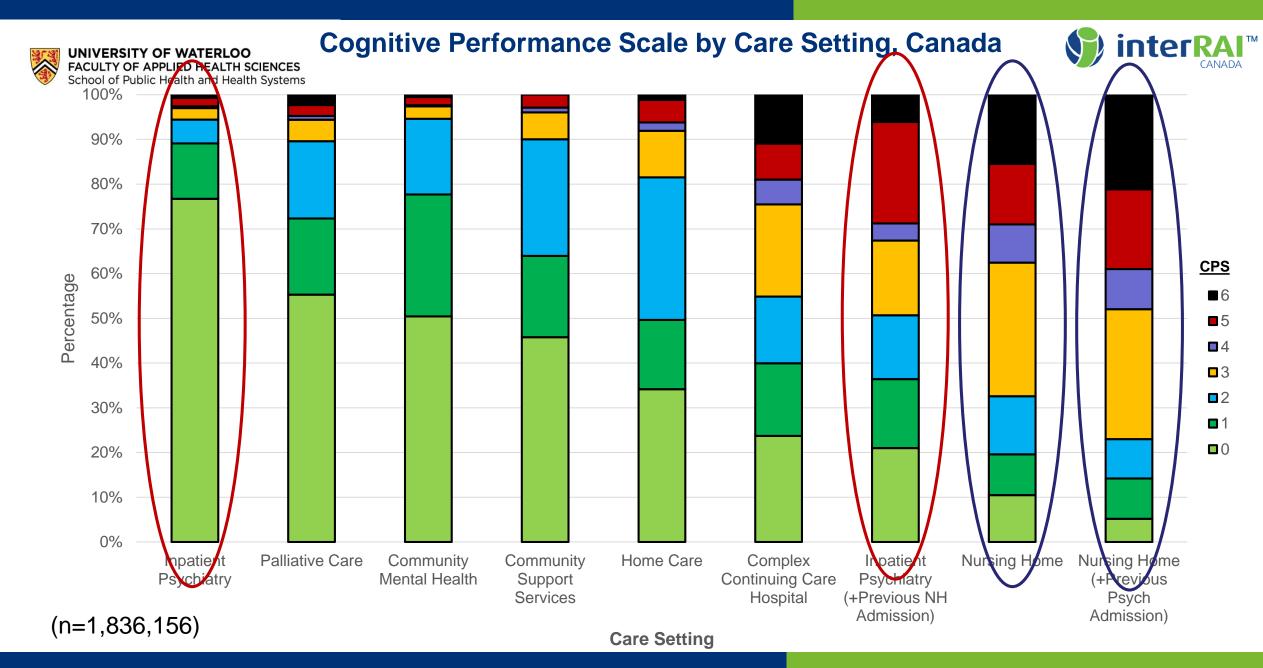
- Measure severity of symptoms
- Track changes over time
- Starting point for many decision support tools
- Cross-sector comparisons/evaluation
- Examples
 - Cognitive Performance Scale
 - Composite Mood Scale & Self-reported Mood Scale





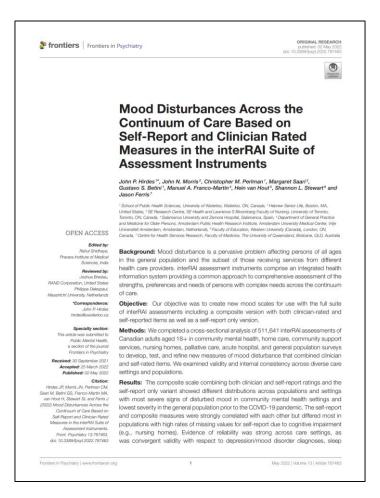


UNIVERSITY OF WATERLOO









Mood Disturbances Across the Continuum of Care Based on Self-Report and Clinician Rated Measures in the interRAI Suite of Assessment Instruments

John P. Hirdes, John N. Morris, Christopher M. Perlman, Margaret Saari, Gustavo S. Betini, Manuel A. Franco-Martin, Hein van Hout, Shannon L. Stewart, Jason Ferris





Development of new mood scale for interRAI suite

- Depression Rating Scale (DRS) widely used, but some limitations
 - No items on anhedonia
 - Clinical ratings provide different results from self-rated tools
- Focus is on identification of mood disturbance
 - Not a diagnostic scale
 - Could be on-going or transitional state
- Aim is to provide a compatible approach to measurement that works across care settings and populations





Characteristic	CMH (n = 7,256)	HC (n = 352,161)	CHA (n = 28,302)	CUSR (n = 4,930)	LTCF (n = 8,237)	PC (n = 106,759)	EDCA (n = 1,432)	Community surveys		
								Telephone (n = 643)	On-line (n = 1,921	
Region	Ontario	Ontario	Ontario	Ontario	New Brunswick	Ontario	Ontario, Quebec	Waterloo Region	Canada	
Setting	Community mental health	Long-stay home care	Community supports	Home care wellness check	Nursing homes	Palliative home care	Emergency departments	General population	General population	
Basis for use	Regional implementation	Provincial mandate	Provincial mandate	Regional implementation	Provincial mandate	Provincial mandate	Research pilot	Research	Research	
Years	2005-2019	2018-2021	2016-2017	2020-2021	2016-2020	2011-2021	2017-2018	2011	2021	
Age										
18-44	55.0	2.8	3.1	3.7	0.5	2.6	0.0	37.2	49.5	
45-64	34.0	11.5	10.4	15.0	4.8	24.1	0.0	38.8	34.7	
65-74	6.2	16.2	16.6	19.4	12.4	26.3	12.4	1	12.0	
75-84	3.3	29.5	31.7	27.8	28.4	27.7	38.6	24.0	2.4	
85+	1.5	40.0	38.1	34.0	54.0	19.2	49.1	1	0.4	
Female	52.1	60.5	68.4	59.9	65.4	41.6	58.9	59.6	56.7	
Married	29.3	37.7	26.7	37.9	28.8	60.0	NA	NA	57.6	
Depression/ mood	54.2	24.0	18.6	NA	27.5	NA	NA	NA	34.2	
diagnosis CPS							NA	NA	NA	
0	67.5	19.0	44.1	33.7	6.7	53.2				
1-2	28.8	55.1	47.1	50.1	31.4	36.2	511,641 assessments			
3-6	3.7	25.8	8.7	16.2	61.9	10.7	011,071 03303311101113			

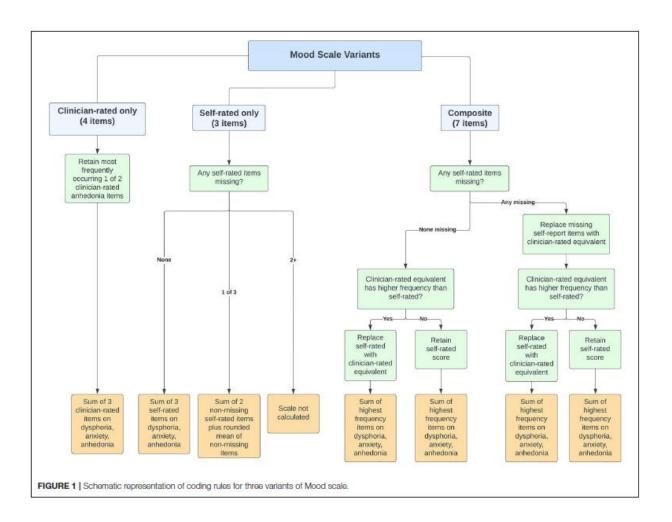
The 2011 Waterloo Region general population survey did not have adequate sample size to allow breakdown of older adults into further subgroups. The

Nine different settings



Three Scale Variants





- Clinician-rated
 - 4 items
 - Used with legacy instruments
- Self-rated
 - 3 items
 - Used with surveys, self-report systems
- Composite
 - 7 items (4 clinician, 3 self-report)
 - Use self-report first
 - Substitute clinician rating if
 - Self-report missing
 - Clinician rating higher
- All three have scores of 0-9
 - 0 ~ no indicators
 - 9 ~ worst mood disturbance





Psychometric testing

Reliability

- Previous research showed inter-rater reliability of items across care settings
- Good-excellent Cronbach's alpha values for internal consistency

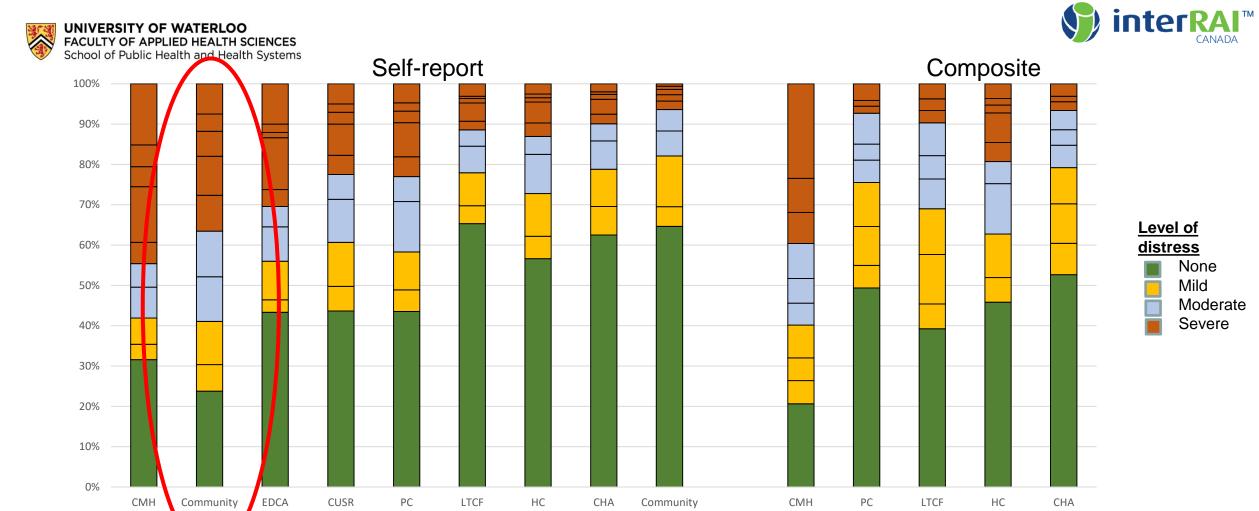
Validity

- Content validity

 indicators of dysphoria, anxiety, anhedonia
- Convergent validity → association with diagnosis, sleep disturbance, self-harm
- Criterion validity

 association with Kessler-10 psychological distress scale
- Predictive validity

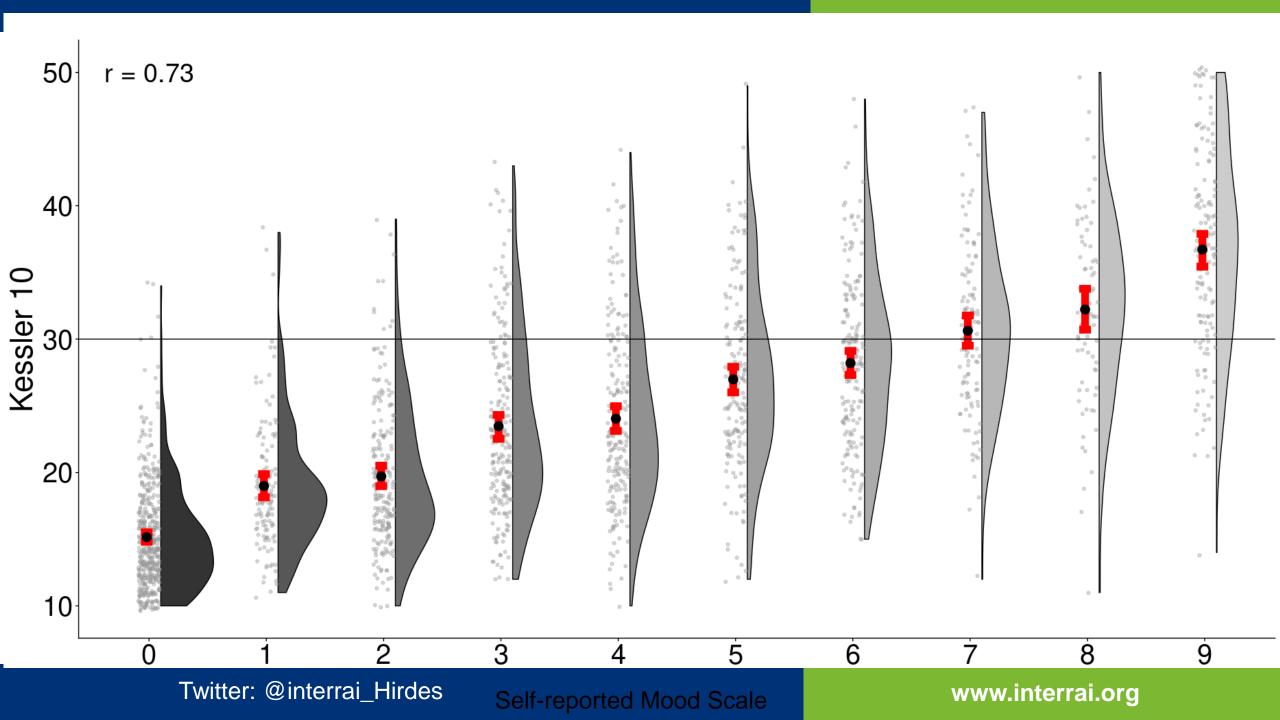
 future research



Note: Colors reflect similar levels of mood disturbance for each scale based on cut-points reported in Table 4. Horizontal lines within the stacked bars reflect single point increments in the scale value within each setting. The specific scale values (and text labels) in the stacked bars are: a) green (none) – 0 for both self-report and composite version; b) orange (mild) – 1-2 for self-report and 1-3 for composite; c) grey (moderate) – 3-4 for self-report and 4-6 for composite; and d) red (severe) – 5+ for self-report and 7+ for composite version.

Telephone

On-line







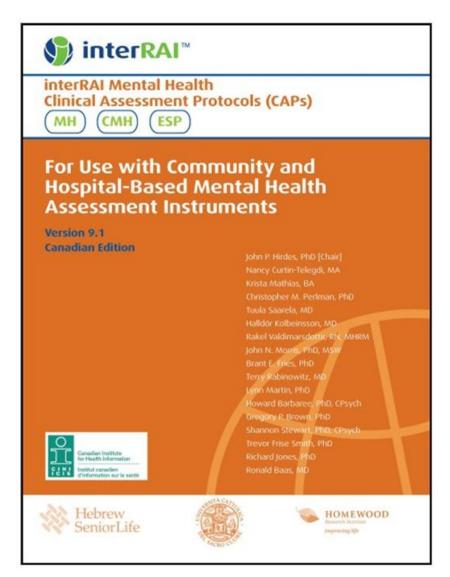


- New scales provide capacity for common assessment of mood disturbance across broad range of populations and settings
- Recommended as alternative to DRS
 - Addresses main criticisms and limitations of DRS
 - DRS still available in older instruments, discontinued in Version 10.0
- Future work
 - International replication of validity and reliability testing
 - Evaluation of predictive validity for future diagnosis and self-harm
 - Testing in additional populations (e.g., ID, child/youth)
 - Development of quality indicators, use in case-mix systems





interRAI Mental Health Clinical Assessment Protocols (CAPs)







Basic Principles for MH CAPs

- Evidence-based triggers and assessment guidelines
- Incorporate recovery principles
- Collaborative decision-making involving person and, where appropriate, informal support network
 - Not a robotic care planning library
- Focus on enhancing person's quality of life in all domains possible
 - Multidimensional intervention strategies (person, family, community)
 - Not a diagnostic system
- Support autonomy of person and take into account <u>strengths, preferences,</u> and needs
- Calibrate approach to person's current level of functioning





interRAI Mental Health CAPs

Safety

- Suicidality and Purposeful Self-Harm *
- Harm to Others *
- Self Care *

Social Life

- Social Relationships
- Social Support (CMH)
- Support Systems for Discharge (MH)
- Interpersonal Conflict
- Traumatic Life Events
- Criminal Activity

Economic Issues

- Personal Finances
- Education and Employment

Autonomy

- Medication Management & Adherence
- Rehospitalization
- Control Interventions (MH)

Health Promotion

- Smoking *
- Substance Use
- Exercise
- Weight Management
- Sleep Disturbance
- Pain
- Falls

^{*} Also available in ESP





Suicide Prevention ROP



- Accreditation Canada Required Organization Practices-Suicide
- Multiple sectors required to assess and monitor for suicide risk
 - Identify clients at risk of suicide
 - Risk of suicide assessed at regular intervals
 - Immediate safety needs addressed
 - Treatment and monitoring strategies
 - Implementation of those documented in record
- How can interRAI help?



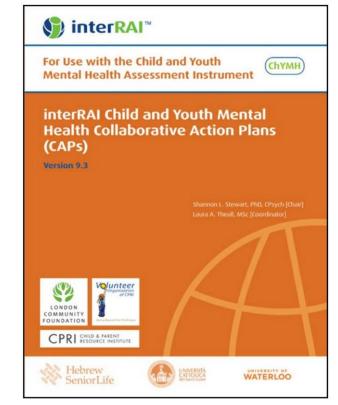


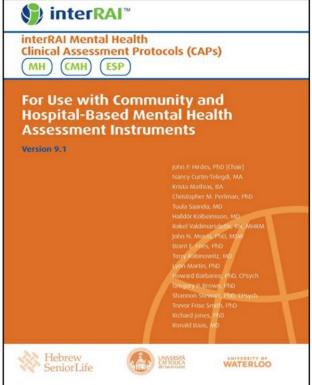
Assessment of suicide risk

- Directly measured
 - Emergency screener for psychiatry (ESP)
 - Mental health (MH)
 - Community mental health (CMH)
 - Child/Youth Mental Health (ChYMH)
- Less directly measured
 - Long term care facility (LTCF)
 - Home Care (HC)
 - Community Health Assessment (CHA)

Intervention and Monitoring

 Clinical Assessment Protocol: Purposeful Self Harm





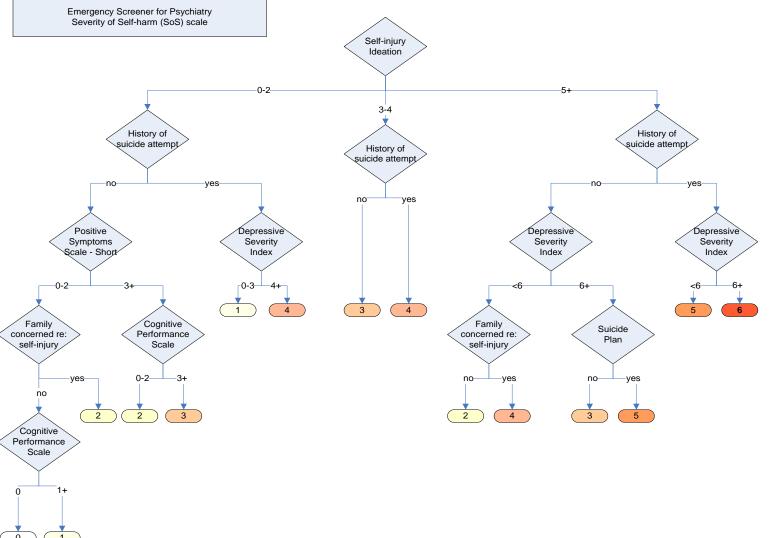




Severity of Self-harm scale

Items and scales used:

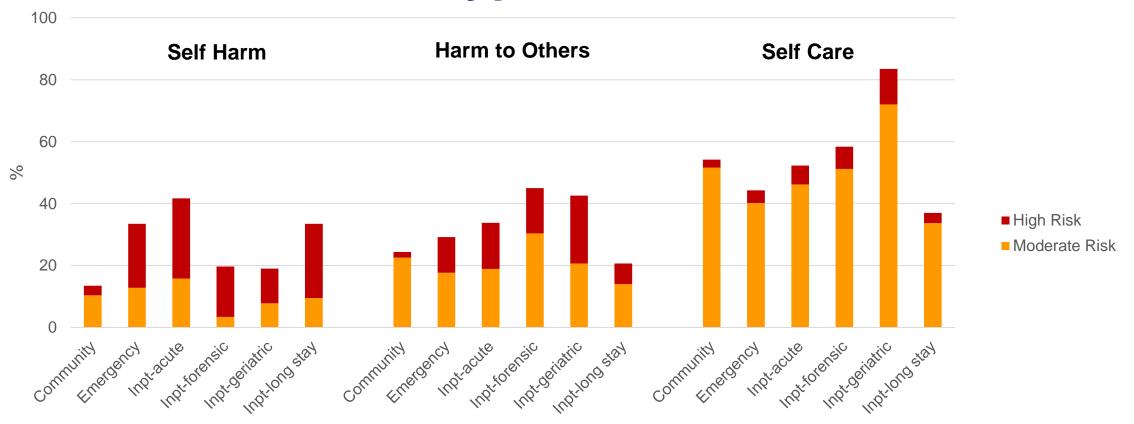
- Self injury ideation
- History of suicide attempts
- Family concerned re: self injury
- Depressive Severity Index
- Positive Symptoms Scale
- Cognitive Performance Scale







Risk levels by care mental health care setting and type of risk





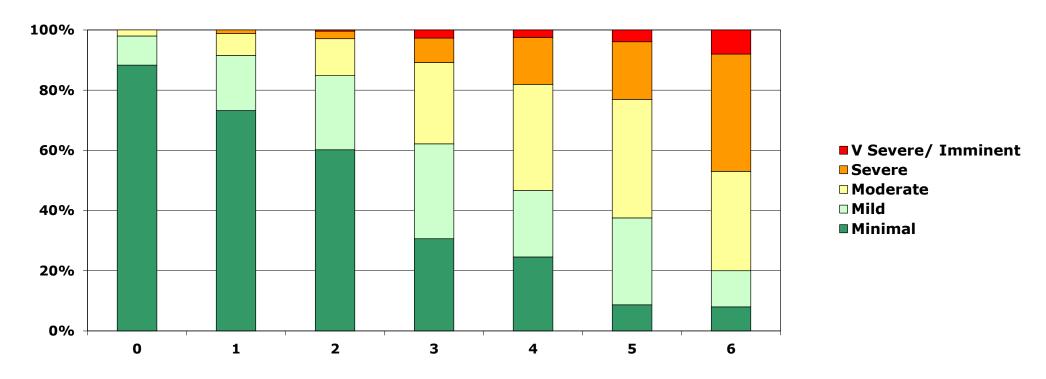


What's the evidence that the Severity of Self-harm scale works?





Staff Ratings of Severity of Risk of Harm to Self by Severity of Self-harm (SoS) Scale, interRAI ESP Pilot



Severity of Self-harm (SoS) Risk





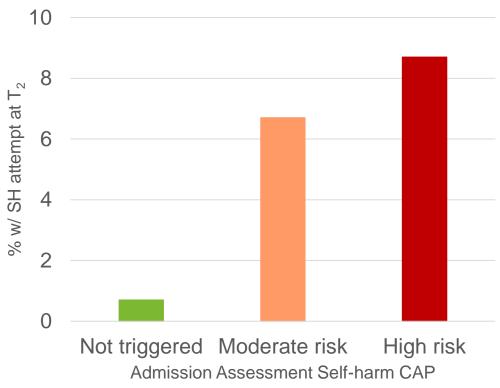
Association of SoS scale with reason for admission = risk of self harm, OMHRS

Age group	Odds ratio	95% CL	c Statistic	
10-17	1.99	1.90-2.09	0.799	Like a coin that gets
18-44	1.71	1.70-1.73	0.754	heads 80% of the time
45-64	1.69	1.68-1.71	0.754	6 pt difference in scale = 64 times
65+	1.75	1.73-1.78	0.726	increased odds





Predicting inpatient self-harm attempts at discharge/reassessment, OMHRS

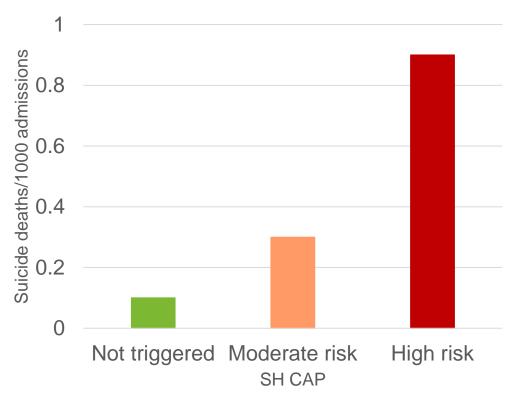


SH CAP	OR	(95% CL)				
Not triggered	1.00					
Moderate risk	9.88	8.31-11.75				
High risk	13.11	11.28-15.24				
c Statistic: 0.779						





Predicting inpatient deaths by suicide (n=90 deaths), OMHRS



SH CAP	OR	(95% CL)			
Not triggered	1.00				
Moderate risk	2.52	1.15-5.52			
High risk	6.82	4.32-10.77			
c Statistic N/A					





So what do we know about the self-harm CAP?

- It predicts
 - Clinical opinion of risk
 - Reason for admission
 - Inpatient self-harm attempts
 - Inpatient deaths by suicide
- CAP guidelines developed by multinational team of experts
 - Demonstrated predictive validity of triggers
 - International best practice guidelines for intervention and monitor





Evaluating the Impact of COVID-19 in Long Term Care Homes







The Impact of COVID-19 on Long-Term Care in Canada Focus on the First 6 Months



Table 1 Number of COVID-19 outbreaks, cases and deaths in Canada's LTC and retirement homes,* by pandemic wave[†]

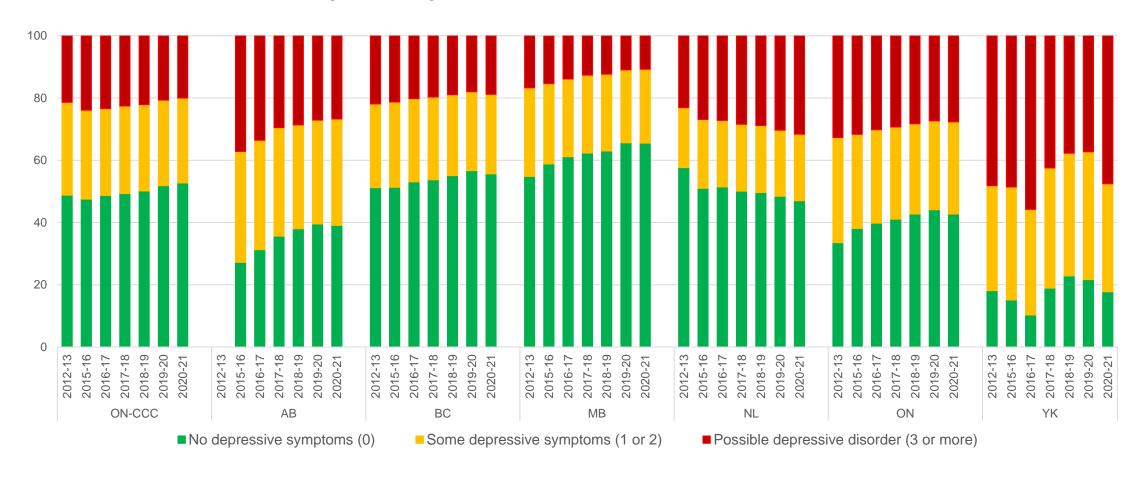
COVID-19 in LTC and retirement homes	Wave 1	Wave 2	Pandemic total (to date)
Number of homes with COVID-19 outbreaks	1,171	1,389	2,560
Number of resident cases	21,140	34,270	55.410
Number of resident deaths	7,260	7,479	14,739
Percentage of resident deaths relative to number of resident cases	34%	22%	27%
Percentage of resident deaths relative to number of total COVID-19 deaths in Canada	79%	60%	69%
Number of staff cases (deaths) [‡]	12,005 (16)	11,105 (12)	23,110 (28)

About 10,000 deaths in nursing homes





Historical Trends in Changes Depression Rating Scale (DRS) score of assessed residents, by Facility and Year, Data Source: CIHI Quick Stats







JAMEA xxx (2020) 1-6



JAMDA



journal homepage: www.jamda.com

Special Article

Evaluating the Effect of COVID-19 Pandemic Lockdown on Long-Term Care Residents' Mental Health: A Data-Driven Approach in New Brunswick

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COVID-19 InterRAL delirtum

Lone-term care (UTC) residents, isolated because of the COVID-19 pandemic are at increased risk for negative mental health outcomes. The purpose of our article is to demonstrate how the interRA LTC facility (LTCP) assessment can inform direical care and evaluate the effect of strategies to mitigate womening mental health outsomes during the COVID-19 pandemic. We present a supporting analysis of the effects of lockdown in homes without CDVD-19 outbreaks on depression, delictum, and behavior problems in a network of 7 ITC homes in New Brunswick, Canada, where mitigative strategies were deployed to minimize poor mental health outcomes (eg. virtual visits and increased student volunteers). This network meets regularly to review performance on risk-adjusted quality of care indicators from the interSALUCF and share learning through a community of practice model. We included 420 9 assessments. from 765 LTC residents between January 2017 to June 2020 and modeled the change within and between mailtents for dampasion, deligions, and behavioral problems over time with longitudinal emeralized estimating equations. Though the number of residents who had in-person visits with family decreased from 73,28 before to 1298 during lock down (chi square, P < ,001), the number of residents experiencing delirium (4.5%-3.5%, P = 51) and behavioral problems (35.5%-30.2%, P = .19) did not change. The proportion of medents with indications of depression decreased from 1998 before to 11,58 during lock down (P < D02). The final multivariate models indicate that the effect of lockdown was not statistically significant on depression, delirium, or behavior of problems. Our analyses demonstrate that poor mental health outcomes associated with look down can be mitigated with thoughtful intervention and ongoing evaluation with clinical information systems. Policy maken can use outputs to guide resource deployment, and researchers can examine the data to identify better management strategies for when

On March 11, 2020, the World Health Organization declared the outbreak of COVID-19 to be a pandemic. As we put pen to paper, the World Health Organization is reporting more than 30 million cases and more than 1,000,000 deaths in 216 countries (https://www.who.

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Wave 1: Lockdown in New Brunswick

- Lockdown period had either NO effect or protective effect on
 - Behaviour disturbances, depression, delirium
- These models controlled for effects of
 - Historical, demographic, diagnostic, symptom several and facility
- What did homes in NB do during wave 1?
 - Increased recreation resources, hired students, deployed tablets, communicated with family

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Changes in inappropriate anti-psychotic use through collaborative interventions

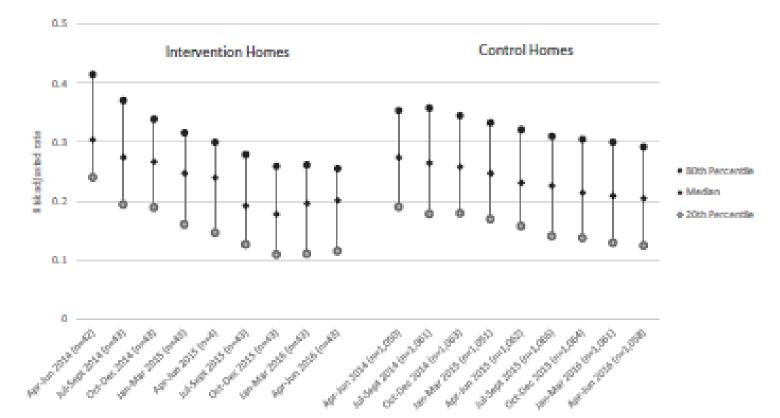


Fig. 1. Proportion of residents in intervention and control homes triggering risk adjusted quality indicator for potentially inappropriate antipsychol

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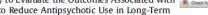


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A Canadian Cohort Study to Evaluate the Outcomes Associated with a Multicenter Initiative to Reduce Antipsychotic Use in Long-Term Care Homes



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ABSTRACT

Keywords: Nursing home quality indicators Objectives: To evaluate the impact of a multicenter intervention to reduce potentially inappropriat antipsychotic use in Canadian nursing homes at the individual and facility levels.

Design: Longitudinal, population-based cohort study to evaluate the Canadian Foundation for Healthcare Improvement's Spreading Healthcare Innovations Initiative to reduce potentially imappropriate anti-psychotic use in 6 provinces/territories.

Setting and Participants: Adults in nursing homes in 6 provinces/territories in Canada between 2014 and 2016. The sample involved 4927 residents in 45 intervention homes and 122,570 residents in 1193 control homes in the first quarter of the study.

Measures: Assessment data based on the Resident Assessment Instrument 2.0 were used in both settings to

track antipsychotic use and to obtain risk-adjusters for a quality indicator on potentially inappropriate use.

Intervention: Quality improvement teams in participating organizations were provided with education, training, and support to implement localized strategies intended to reduce antipsychotic medication use in residents without diagnosis of psychosis.

Results: At there sident level, we found that the odds of remaining on potentially inappropriate antipsychotic were 0.75 in intervention compared with control homes after adjusting for age, sex, agg ressive behavior, and cognition. These findings were evident within the pooled Canadian data as well as within provinces. At the facility level, the intervention homes had greater improvements in risk-adjusted quality indicator perfor mance than the control homes, and this was true for the worst, median, and best-performing homes at baseline. There was no major change in the quality indicator for worsening of behavior symptoms.

Condusions/Implications: The Canadian Foundation for Healthcare Improvement intervention was asso ciated with a reduction in potentially inappropriate antipsychotic use at both the individual and facility levels of analysis. This improvement in performance was independent of secular trends toward reduced antipsychotic use in participating provinces. This suggests that substantial improvements in medication use may be achieved through targeted, collaborative quality improvement initiatives in long-term care © 2020 The Authors, Published by Elsevier Inc. on behalf of AMDA - The Society for Post-Acute and

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The need to reduce use of antipsychotics in nursing homes has

become a focus of worldwide attention. 1-12 Their use may be justified

in the presence of diagnoses such as schizophrenia or Huntington's disease, or with symptoms like hallucinations or delusions. However,

antipsychotic use in the absence of those conditions is considered a

quality problem in long-term care^{13–16} because they are associated with increased risk for mortality^{17–19} and adverse events like falls,

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The authors declare no conflicts of interest,

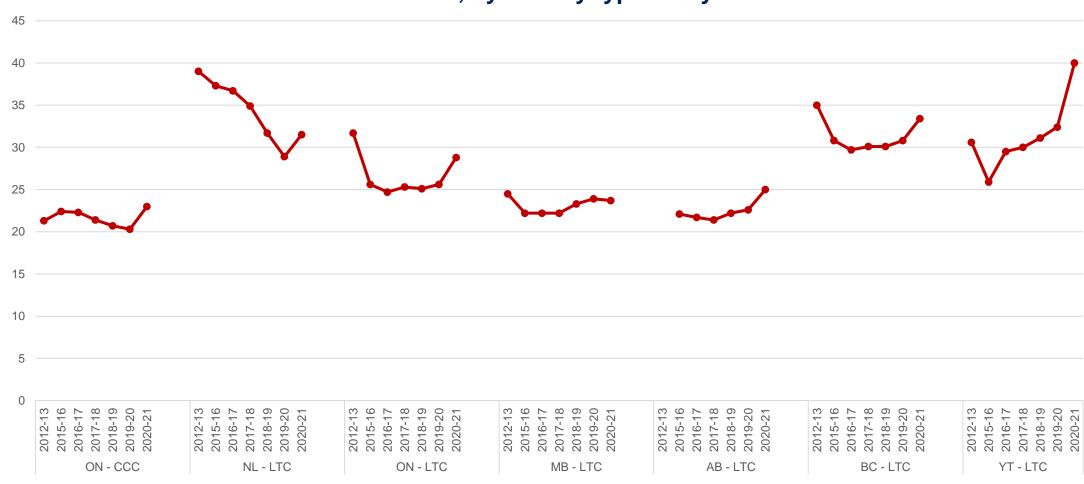
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Historical Trends of Antipsychotic Medications received by assessed residents, by Facility type and year







Concluding Comments

- interRAI assessments all you to identify and respond to mental health concerns
 - Within specific health sectors
 - Across care settings
 - Over life course
- Multiple uses for multiple stakeholders
 - Most important application is clinical response to needs





Thank you

Questions/comments?