



Regional Geriatric Program of Eastern Ontario
Programme gériatrique régional de l'Est de l'Ontario

Accessing Specialized Geriatric Services Through the InterRAI Tool – How Triggers Could Be Generated for Accessing Timely Services

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Raising Awareness! A Geriatric Education Day
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Disclosures

- Associate Fellow of interRAI and collaborator within interRAI Canada and the interRAI Network of Excellence in Acute Care (iNEAC)
- Consultant / speaker fees from Astra Zeneca, Merck, Servier
- Schlegel Research Chair in Geriatric Medicine (Schlegel University of Waterloo Research Institute for Aging)
- Cardiac Care Network of Ontario
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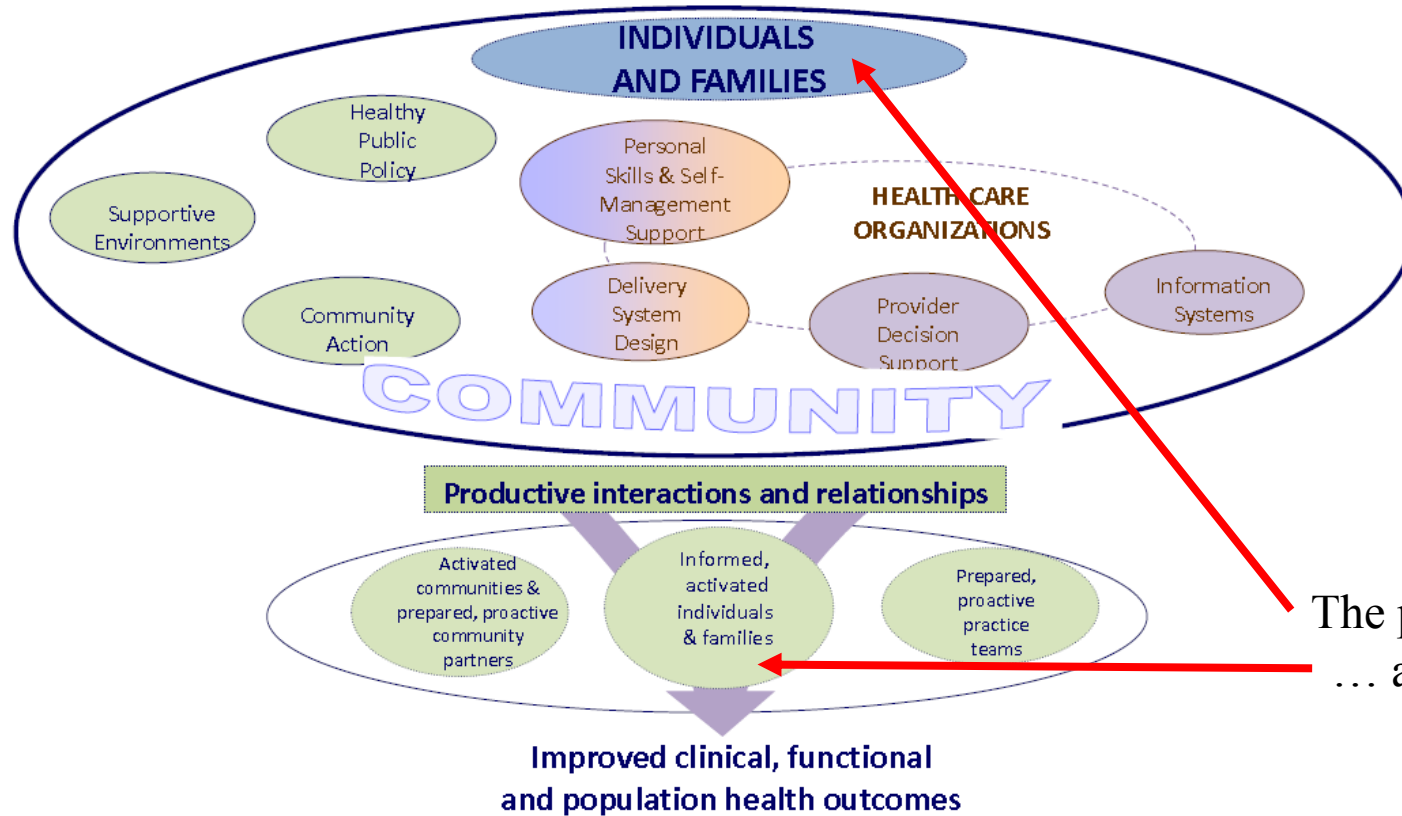


An existential question

- What is my role in the health care system?



Ontario's CDPM Framework



The patient is here...
... and here too ...

Where am I??

Wagner EH. A survey of leading chronic disease management programs: Are they consistent with the literature? *Managed Care Quarterly*. 1999;7(3):56-66. Bodenheimer T, Improving primary care for patients with chronic illness: the chronic care model, Part 2. *JAMA* 2002 Oct 16; 288(15):1909-14. Wagner EH, Improving chronic illness care: translating evidence into action. *Health Aff (Millwood)*. 2001 Nov-Dec;20(6):64-78.

Chronic Care Model

Wagner 1996; Scott 2008

- Multidisciplinary care to **optimize outpatient** care and **prevent acute care** use
- **Self-care** – enhancing ability of patients and informal caregivers to manage their chronic illness, learning to recognize and manage disease exacerbations and access the system early to avert acute care use
- **Care integration and coordination across multiple conditions and care settings**
- **System redesign to improve access and funding of community-based and multidisciplinary resources**
- **Clinical information systems to facilitate patient education, follow-up, information sharing and quality assurance**
- **Provision of evidence-based decision support to patients, informal caregivers and providers**

Implications of CCM

- Patients with multiple comorbidities can be involved in their care if they/caregivers are self-sufficient
- More integrated management of these patients can result in better outcomes
 - System navigation
- This can/should be anchored in primary care
- How do we coordinate care?

Starts with risk stratification

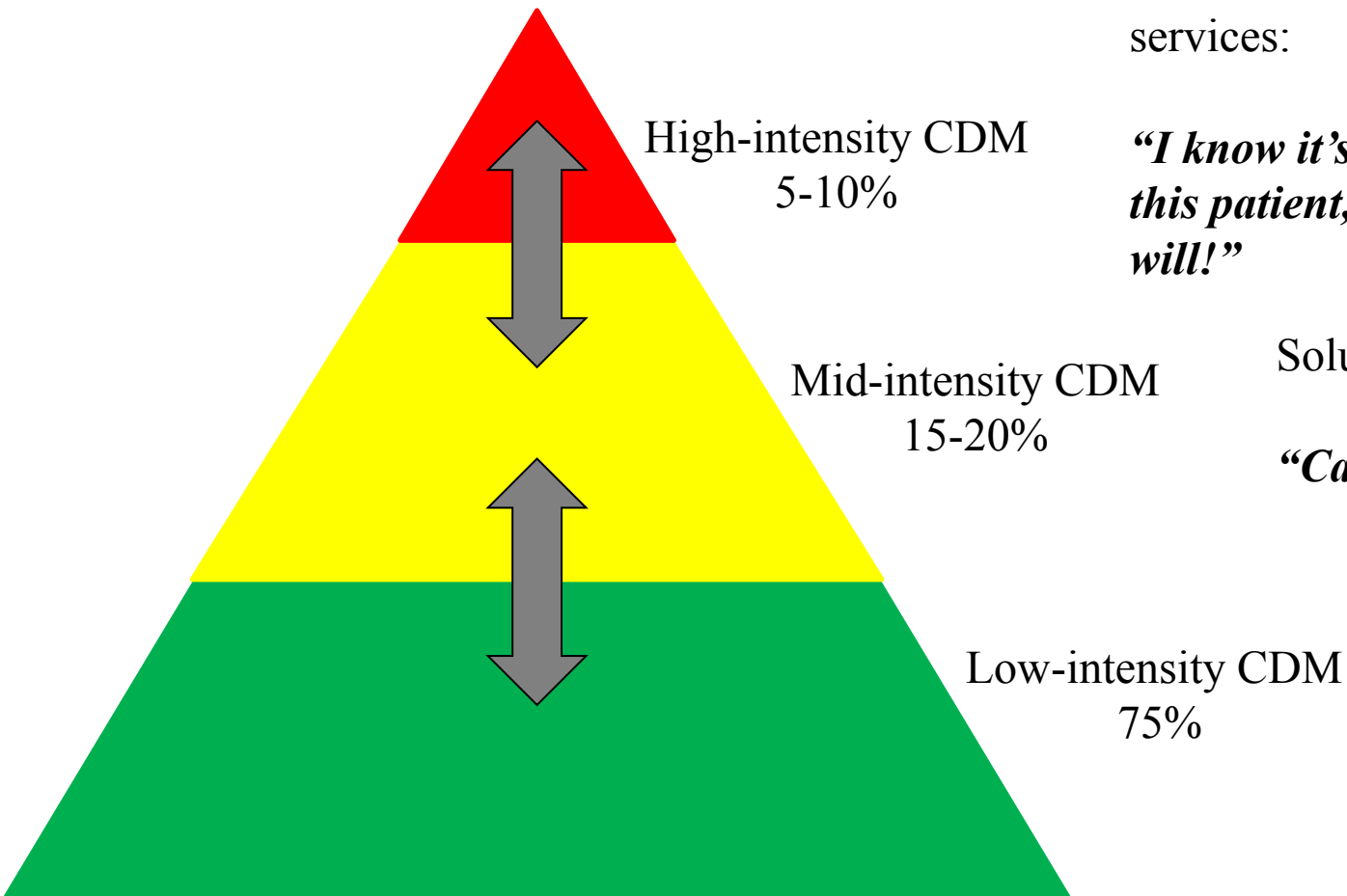
- All patients will do well with a “Cadillac” approach to care
 - E.g. Geriatric Day Hospitals
- *Not all require this*
- Need to target more intensive intervention to highest risk patients
 - E.g. HF clinics

Common objection by specialized services:

“I know it’s overkill for me to see this patient, but if I don’t, nobody will!”

Solution:

“Capacity building”



Tailoring intervention to risk

Scott 2008

- Low-risk/low-intensity: Usual primary care; emphasis on self-care
- Mid-risk/mid-intensity: Primary care with nurse specialists / allied health, integrated with other medical specialties, located to facilitate access
- High-risk/high-intensity: specialized services, case managers, with high degree of integration, coordination, and follow-up including home visits for some

But first, a bit about risk...

**TODAY, WE ANSWER
EXISTENTIAL QUESTIONS!**

Is this scenario familiar?

- 94 year old man is seen in a tertiary HF clinic
 - 4 ED visits in last two months with HF, one resulting in admission
- Past history
 - Mild Alzheimer's disease: saw geriatrician a year prior and discharged from clinic
 - Not seen by geriatrics or GEM since
 - Atrial fibrillation
 - Gout

Cardiac status

- Mild left ventricular systolic dysfunction
 - EF about 45%
 - No significant valvular problems
 - No significant renal insufficiency
 - On appropriate heart failure medications

Functional status

- Independent in ADLs
- He is not depressed, aggressive or psychotic
- Repeats war stories+++
- Financially secure

Audience participation!

What's the problem??

Caregiving situation

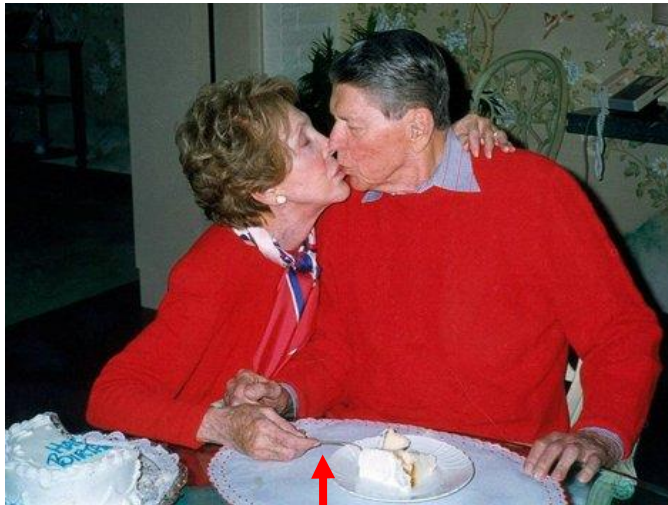
- Lives with daughter who looks after meals, meds and finances
- She is separated
- Her adult son with mental health issues needs support

Caregiving situation

- She is very stressed
- She has never received education about HF care
- They eat out a lot...



What do you see here?



Ronald Wilson Reagan

- February 6, 1911 – June 5, 2004
- 40th president of the USA (1981-1989)
- Died of Alzheimer's disease at age 93
 - *at home*

Audience participation!

- Was Ronald Reagan frail?
- Was he *at risk*?
- If so, at risk of *what*?

VOTE: WHO MOST NEEDS A COMPREHENSIVE ASSESSMENT?

- Ronald Reagan?
- Heart Failure guy?

Frailty

Bergman 2007

- State of reduced physiologic fitness and reserve resulting in vulnerability to stressors and leading to poor outcomes
- Stressors include
 - Iatrogenesis fulminans
 - Caregiver stress and other socioeconomic factors
 - System fragmentation



CSHA Clinical Frailty Scale

Box 1: The CSHA Clinical Frailty Scale

- 1 *Very fit* — robust, active, energetic, well motivated and fit; these people commonly exercise regularly and are in the most fit group for their age
- 2 *Well* — without active disease, but less fit than people in category 1
- 3 *Well, with treated comorbid disease* — disease symptoms are well controlled compared with those in category 4
- 4 *Apparently vulnerable* — although not frankly dependent, these people commonly complain of being “slowed up” or have disease symptoms
- 5 *Mildly frail* — with limited dependence on others for instrumental activities of daily living
- 6 *Moderately frail* — help is needed with both instrumental and non-instrumental activities of daily living
- 7 *Severely frail* — completely dependent on others for the activities of daily living, or terminally ill

Note: CSHA = Canadian Study of Health and Aging.

Rockwood et al CMAJ 2005

Deconstructing frailty

- Frailty arises from multiple & interacting deficits
 - Multimorbidity
 - Disability
 - Geriatric syndromes

- *All more common with age*
- *All associated with poorer outcomes and health service use*

- The more there are things going wrong, the worse the outcomes
 - Rockwood's thesis: Deficit accumulation = Frailty

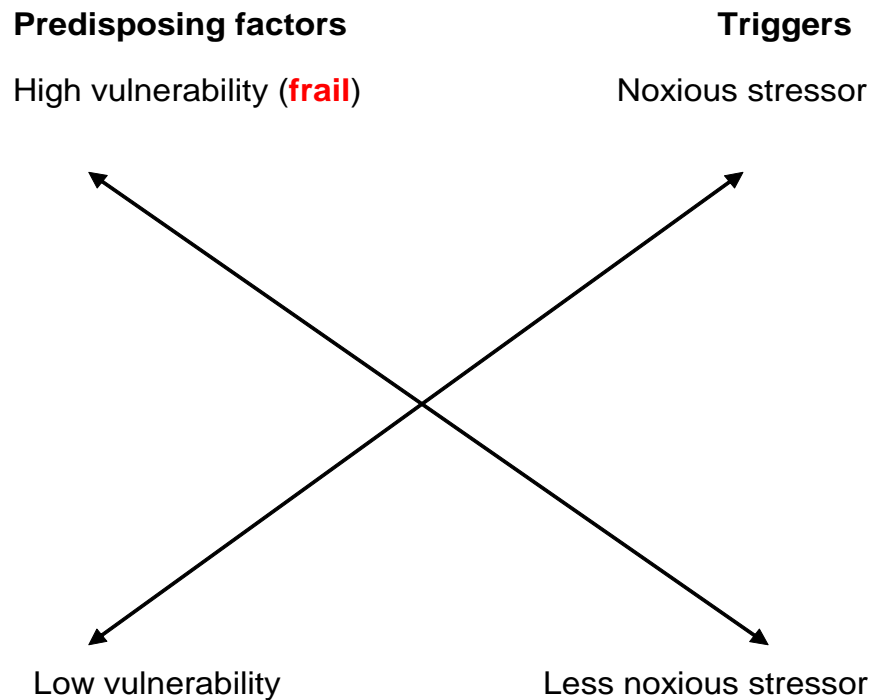
Appendix 1: List of variables used by the Canadian Study of Health and Aging to construct the 70-item CSHA Frailty Index

- Changes in everyday activities
- Head and neck problems
- Poor muscle tone in neck
- Bradykinesia, facial
- Problems getting dressed
- Problems with bathing
- Problems carrying out personal grooming
- Urinary incontinence
- Toileting problems
- Bulk difficulties
- Rectal problems
- Gastrointestinal problems
- Problems cooking
- Sucking problems
- Problems going out alone
- Impaired mobility
- Musculoskeletal problems
- Bradykinesia of the limbs
- Poor muscle tone in limbs
- Poor limb coordination
- Poor coordination, trunk
- Poor standing posture
- Irregular gait pattern
- Falls
- Mood problems
- Feeling sad, blue, depressed
- History of depressed mood
- Tiredness all the time
- Depression (clinical impression)
- Sleep changes
- Restlessness
- Memory changes
- Short-term memory impairment
- Long-term memory impairment
- Changes in general mental functioning
- Onset of cognitive symptoms
- Clouding or delirium
- Paranoid features
- History relevant to cognitive impairment or loss
- Family history relevant to cognitive impairment or loss
- Impaired vibration
- Tremor at rest
- Postural tremor
- Intention tremor
- History of Parkinson's disease
- Family history of degenerative disease
- Seizures, partial complex
- Seizures, generalized
- Syncope or blackouts
- Headache
- Cerebrovascular problems
- History of stroke
- History of diabetes mellitus
- Arterial hypertension
- Peripheral pulses
- Cardiac problems
- Myocardial infarction
- Arrhythmia
- Congestive heart failure
- Lung problems
- Respiratory problems
- History of thyroid disease
- Thyroid problems
- Skin problems
- Malignant disease
- Breast problems
- Abdominal problems
- Presence of snout reflex
- Presence of the palmomental reflex
- Other medical history

There needs to be an trigger!

- Frailty = Vulnerability
- Frailty x Stressor = *Risk* of a bad outcome

Example of delirium



Adapted from Inouye JAMA 1996

Comprehensive Geriatric Assessment

Abellan 2010

Multidimensional interdisciplinary process focused on determining a frail older persons' medical, psychological and functional capacity in order to develop a coordinated and integrated plan for treatment and long-term follow-up

1. comprehensive data collection
2. development of a comprehensive management plan
 - **Tailored to patient need and overall fitness / frailty**
 - **Ideally identify and mitigate potential stressors**

Sociodemographic	<p>Living situation and means of transportation</p> <p>Informal Caregiver and other social supports</p> <p>Elder abuse</p> <p>Advance directives</p>
Cognition	<p>Overall performance</p> <p>Behavioural issues and psychosis</p>
Psychiatric	<p>Mood and Anxiety</p>
Function	<p>Basic Activities of Daily Living (BADLs)</p> <p>Instrumental Activities of Daily Living (IADLs)</p>
Mobility	<p>Gait problems and gait aids</p> <p>Falls</p>
Senses	<p>Vision and Hearing</p>
Elimination	<p>Bladder and bowel function</p>
Health indicators	<p>Nutrition</p> <p>Pain</p> <p>Cardiorespiratory</p> <p>Skin integrity</p> <p>Substance abuse</p>
Medical	<p>Primary prevention (e.g. immunization)</p> <p>Secondary, tertiary (optimal chronic illness management)</p> <p>Polypharmacy / medication review</p>

CGA is a good thing in appropriately identified patients

- Improved prescribing
- Fewer hospitalizations
- Lower institutionalization rate
- Improved function, cognition
- Reduced falls
- Lower mortality
- Cost-neutral to cost-reducing

How do we assess risk?

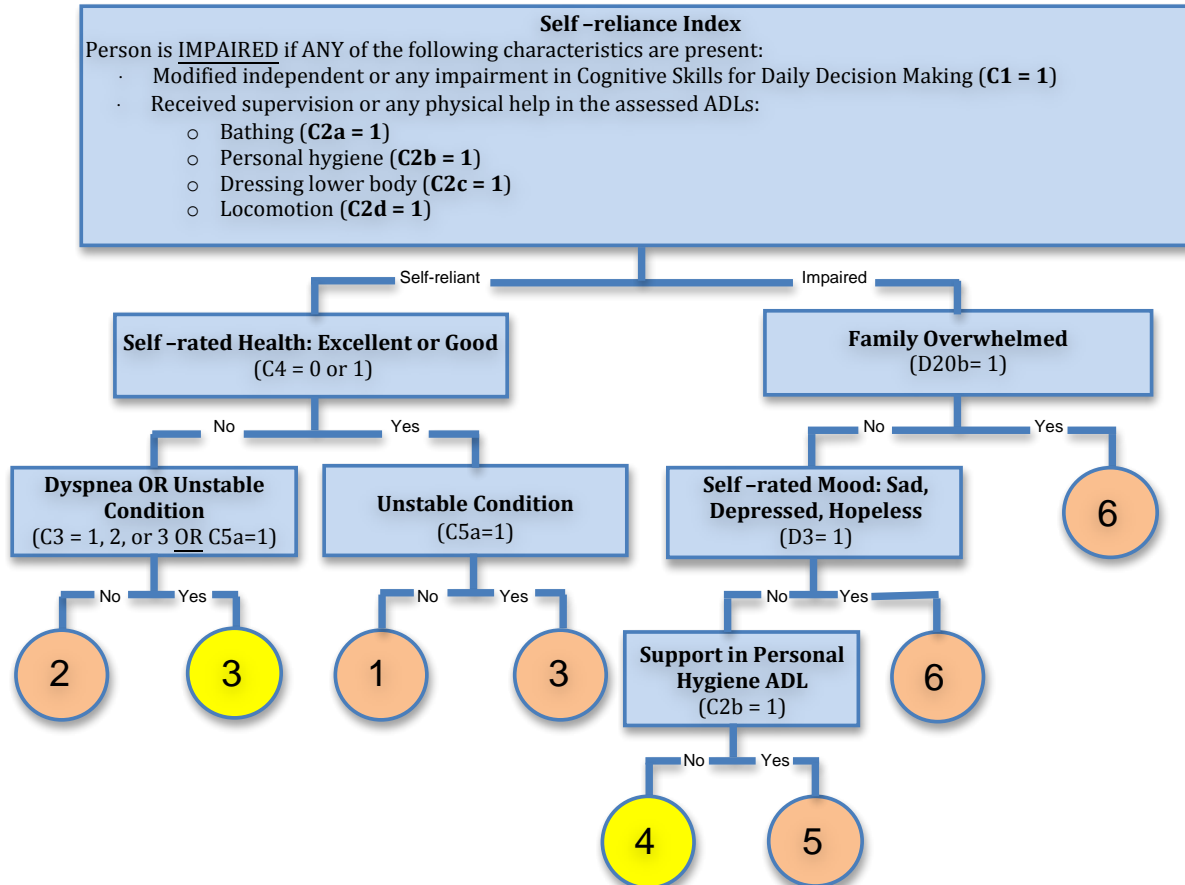
TALES FROM THE ED

Assessment Urgency Algorithm Development Study

- Focus groups: GEM nurses, ED physicians
 - Predict: referral to special geriatric services or home care, admission, long-stay/ALC
- Created ED assessment based on items from:
 - interRAI Community intake assessment
 - Items clinicians felt important for ED patients
- Assessed ED patients age 75 +
 - Mean Age: 83 (SD: 5.2), 60% Female
 - CTAS (Triage Acuity):
 - Resuscitation: 0%
 - Emergent: 21%
 - Urgent: 48%
 - Less Urgent: 24%
 - Non-Urgent: 7%

#	Hospitals	Number of ED assessments (N=860)
1	Cambridge Memorial Hospital	119
2	Grand River Hospital	44
3	Grey Bruce Health Services	126
4	Haliburton Highlands Health Services	34
5	Peterborough Regional Health Centre	175
6	St. Joseph's Health Centre	120
7	St. Mary's Hospital	225
8	Trillium Health Centre	20

AUA



2

2

Triggering Rate	Comprehensive Assessment Required	Admitted to Acute Care from Emergency Room	Long Stay/ALC Patient, if Admitted to Acute Care
Percentage (n)	Odds Ratio (95% CI)	ROC AUC	Odds Ratio (95% CI)

2

Assessment Urgency Algorithm (Ref=Low Risk)

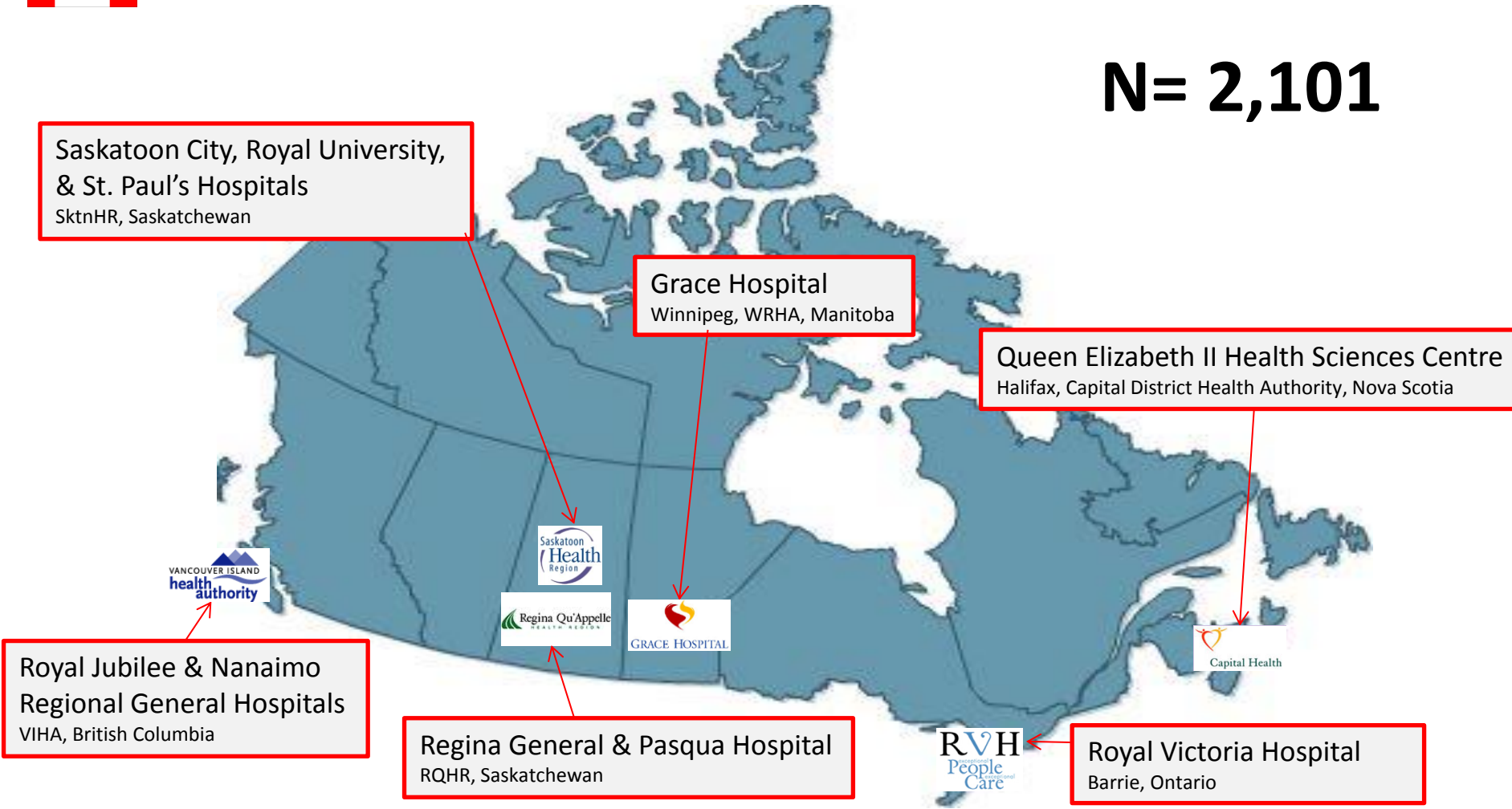
High Risk	36.8 (308)	6.84 (4.80-9.74)	.71	3.18 (2.29-4.40)	.63	4.90 (1.58-15.20)	.63
Medium Risk	23.8 (199)	3.12 (2.12-4.59)		1.30 (0.90-1.88)		4.08 (1.23-13.52)	
ISAR (Ref=0,1)							
2+	58.8 (507)	4.22 (3.12-5.71)	.66	2.55 (1.91-3.39)	.61	2.02 (0.86-4.73)	.57
TRST (Ref=0,1)							
2+	71.8 (594)	4.82 (3.34-6.97)	.64	1.40 (1.02-1.91)	.53	1.48 (0.60-3.66)	.53

Hirdes, Costa, Gray, et al. Age and Aging (Submitted)



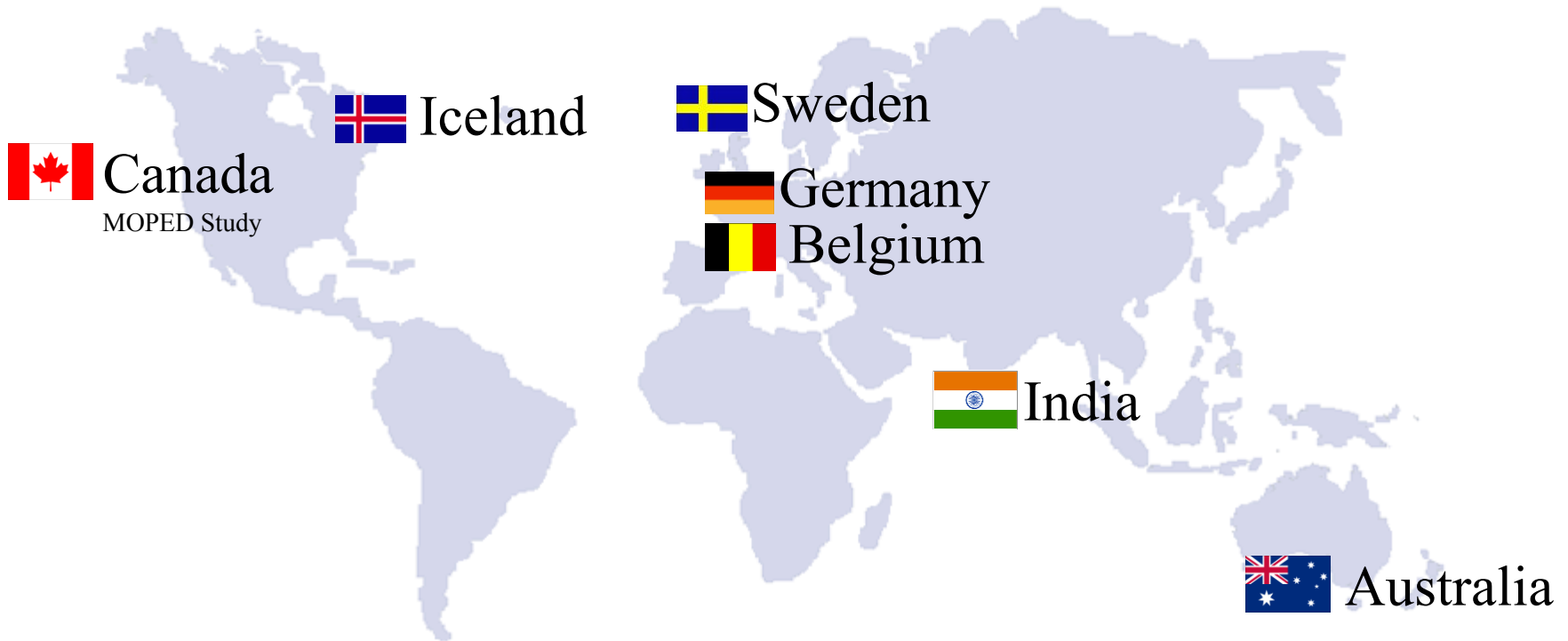
MOPED Study

N= 2,101

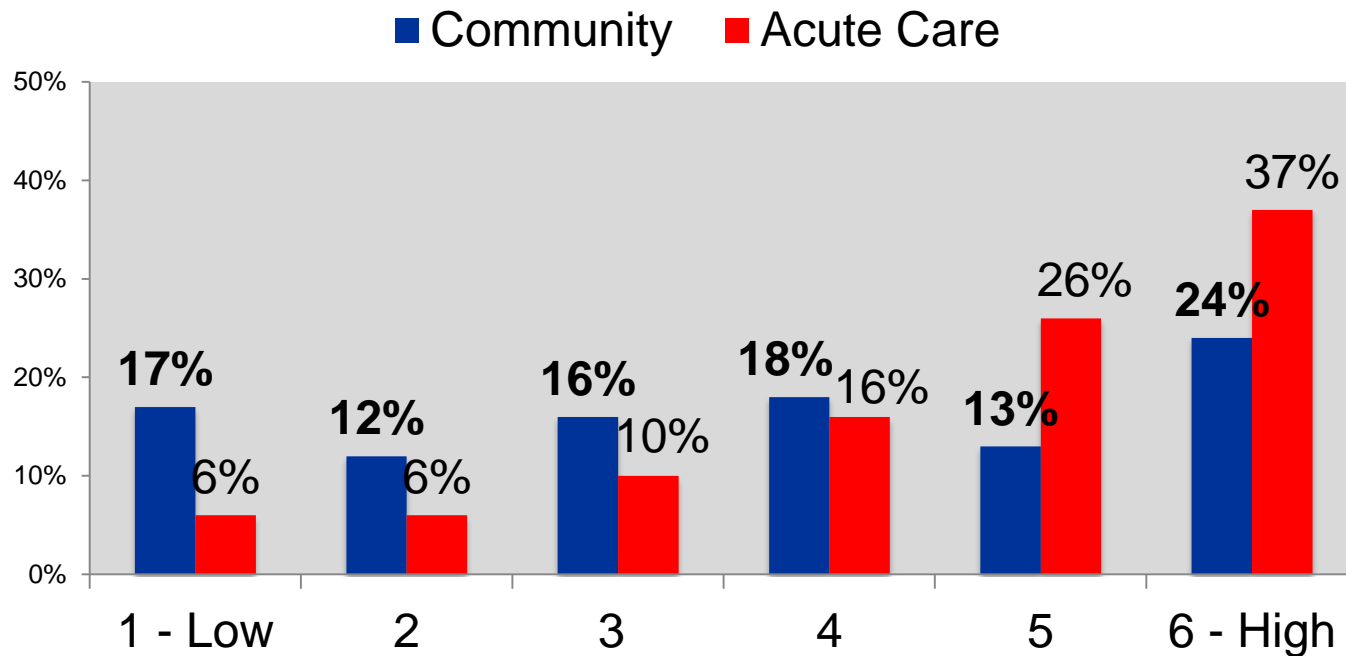


Multinational Emergency Department Study

N= 2,282

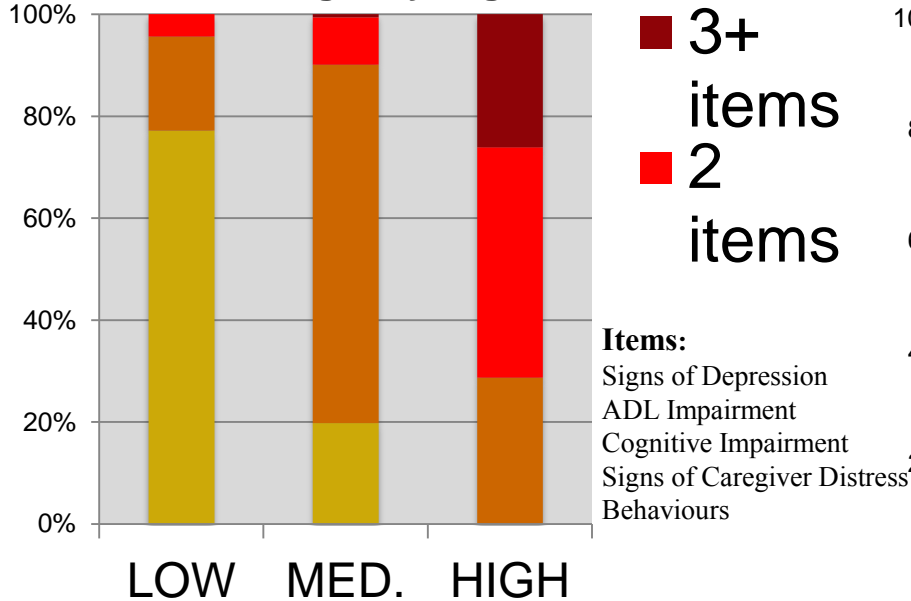


AUA Distribution by Discharge Destination, Multinational Sample

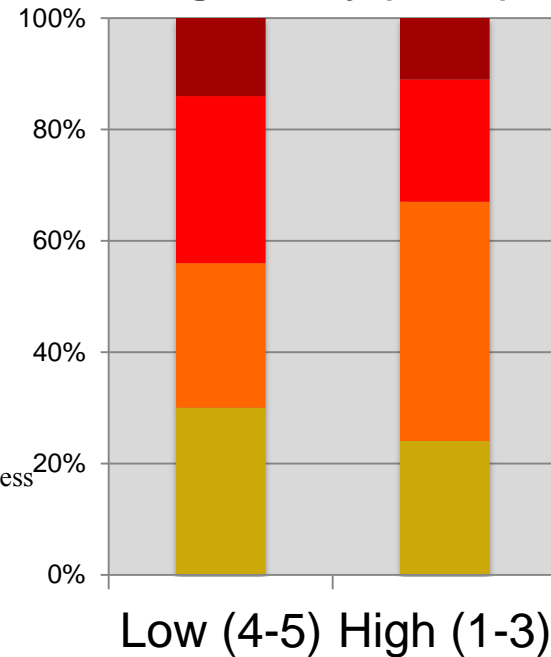


Cumulative Percentage of Geriatric Syndromes, MOPED

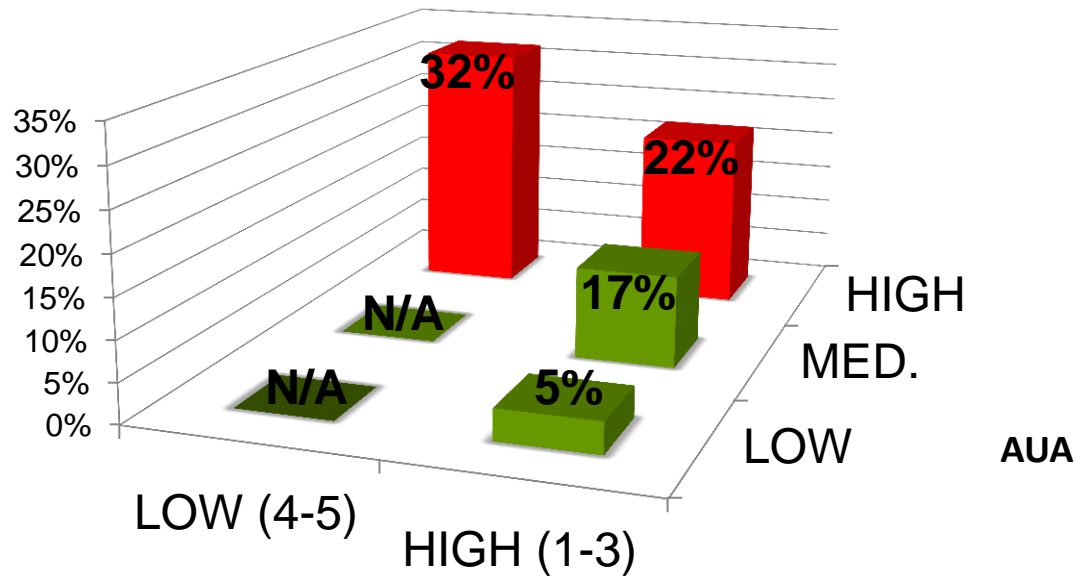
Assessment Urgency Algorithm



Triage Acuity (CTAS)



Proportion Designated “ALC” among Patients Admitted by Assessment Urgency & CTAS, MOPED (N=936)



Overall Prevalence: 18%

TRIAGE

The Cases: Frailty \neq Risk (necessarily)

- Ronald Reagan:
 - CSHA 6 or 7
 - AUA 4 or 5
- HF patient
 - CSHA 5
 - AUA 6
- So risk may be a better way of targeting seniors for CGA (and more consistent with the CDPM)

Planning geriatric care using interRAI tools

WHO SHOULD SEE SGS?

Where are the tools in use?

- Home care: RAI HC
- Long term care/CCC: RAI MDS 2.0
- Community Support Services: interRAI CHA
- Inpatient psychiatry: RAI MH

Recall: AUA

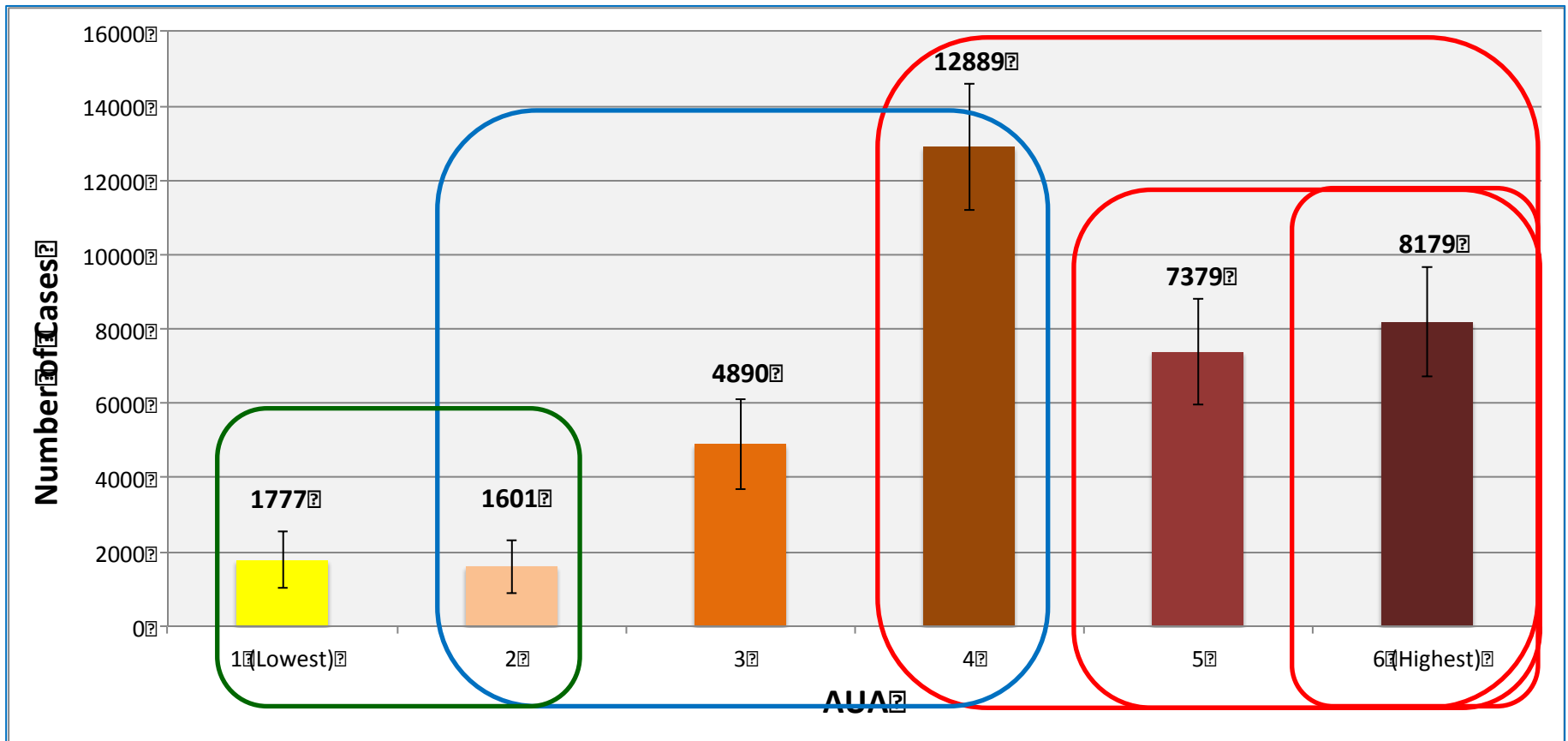
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Example from HNHB

- ED Visits @ HNHB LHIN April 1st, 2011 – March 31st, 2012
 - Total
 - 65+: 111,564
 - 75+: 66,446
 - Admitted
 - 65+: 36,711
 - 75+: 25,635
- ***How many should undergo CGA?***

Number of ED cases (65+) admitted by AUA/ED Screener

Specialized Geriatric Services
Usual Primary Care
Memory clinics?



Key questions

- How many **new** patients can a geriatrician see / day?
 - 4?
- What AUA score mandates a CGA? When?
- What proportion of patients for a specific AUA score require a CGA?

Modelling

- For example:
 - 25% of AUA = 3
 - 50% of AUA = 4
 - 75% of AUA = 5
 - 100% of AUA = 6
- Delphi process: at which AUA level should patient undergo geriatric consult?
 - *What proportion of pts at each AUA?*
- Geriatricians, Care of the Elderly, family physicians

Decision support

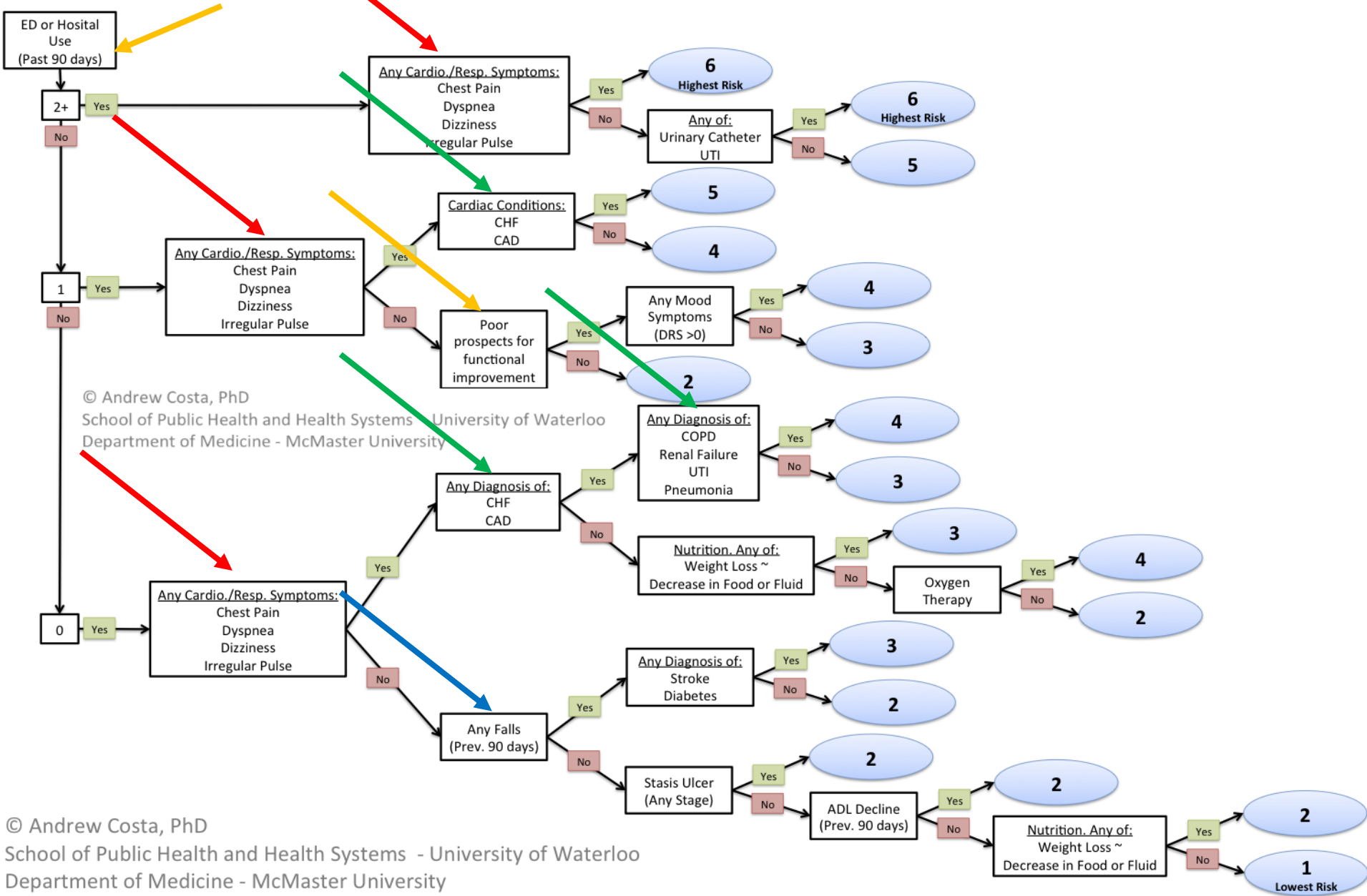
DIVERT

Home Care Population Sample Summary



	Winnipeg Regional Health Authority (WRHA)		Total
	Ontario	Health Authority (WRHA)	Total
Time Period	01 April 2007 - 29 Sept. 2010	01 Jan. 2006 - 29 Sept. 2009	-
Sample Size (N)	566,418	50,617	617,035
Any unplanned ED visit with 6 months of assessment (95% CI)	41.5 (±0.1)	37.7 (±0.4)	41.2 (±0.1)
Two or more unplanned ED visits with 6 months of assessment (95% CI)	15.0 (±0.1)	17.8 (±0.1)	17.6 (±0.3)
Three or more unplanned ED visits with 6 months of assessment (95% CI)	6.4 (±0.1)	8.1 (±0.1)	7.9 (±0.2)

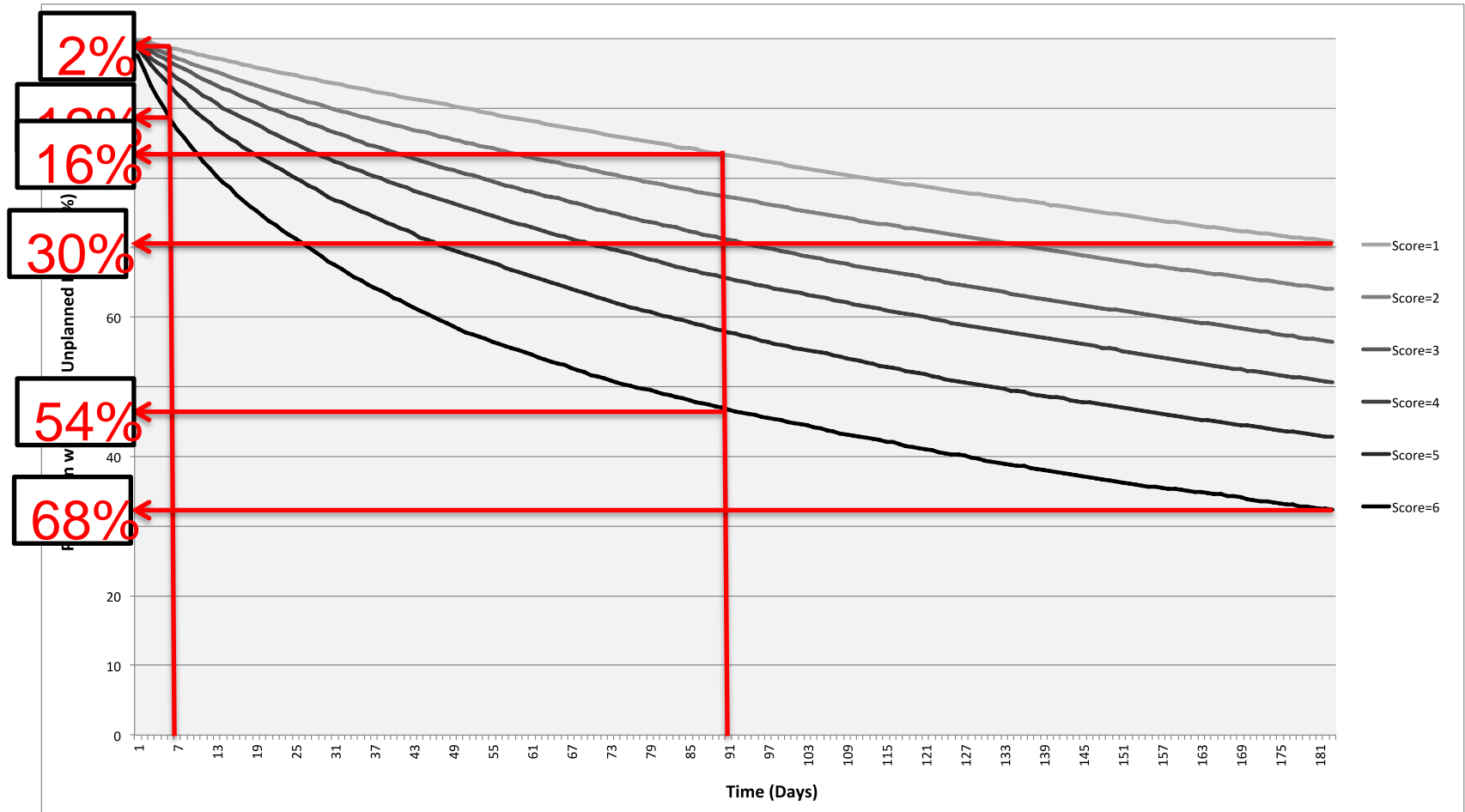
DIVERT Scale, Any Unplanned ED Visit by Long-stay Home Care Clients, within 6-months of RAI-HC assessment (N=462,773)



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Validation of *DIVERT* Scale Kaplan-Meier Survival Curve for Days to First Unplanned ED Visit by Long-stay HC clients, Ontario and WRHA, Validation Sample Partition (N=154,262)



ANOTHER APPROACH

Use interRAI instruments to ID CGA candidates

Lewis et al, *Regional Geriatric Programs of Ontario, 2008.*

- Search for those with 3 or more of
 - age over 85
 - falls/gait/balance problem
 - functional impairment
 - cognitive impairment (recent change or chronic)
 - Depression
 - Incontinence
 - frequent recent rehospitalizations / ER visits
 - weight loss
 - multiple medical problems (3 or more chronic illnesses other than dementia or depression)
 - polypharmacy (5 or more prescribed medications)
 - absence of caregiver

Use existing interRAI risk scales

- CHES: Health instability
 - Associated with greater health system use, mortality
- MAPLe: higher scores indicate caregiver stress, and at risk of needing alternate living arrangements

PLANNING MORE BROADLY FOR GERIATRIC SERVICES

Home care clients by AUA, Ontario, 2012-3

Note: these data are from home care clients. Those at lower levels like sicker than usual senior.

AUA Level →	1	2	3	4	5	6
Variable	Mean	Mean	Mean	Mean	Mean	Mean
Living Alone	36.8%	31.8%	35.7%	27.4%	16.3%	19.5%
CPS 3+	3.1%	2.7%	4.2%	8.9%	24.6%	22.3%
ADL Hierarchy 3+	3.4%	4.0%	3.6%	8.8%	29.8%	21.4%
DRS 3+	14.3%	19.5%	23.3%	16.6%	19.0%	29.4%
Pain 2+	51.8%	59.8%	59.2%	58.7%	54.5%	57.1%
CHESS 3+	14.0%	15.1%	20.5%	19.5%	21.3%	23.3%
IADL involvement 8+	4.2%	4.9%	5.5%	13.5%	36.0%	30.4%
ADL	15.5%	17.2%	17.1%	37.1%	64.8%	55.5%
Behaviour	3.8%	3.5%	5.9%	8.0%	15.0%	16.7%
Urinary Incontinence	24.4%	26.6%	29.1%	44.6%	51.1%	48.6%
Cardio-respiratory	41.7%	40.5%	53.7%	49.3%	44.9%	47.9%
Communication	12.7%	12.1%	16.0%	20.3%	26.6%	27.5%
Appropriate Medication	19.3%	21.5%	28.4%	29.8%	29.1%	29.5%

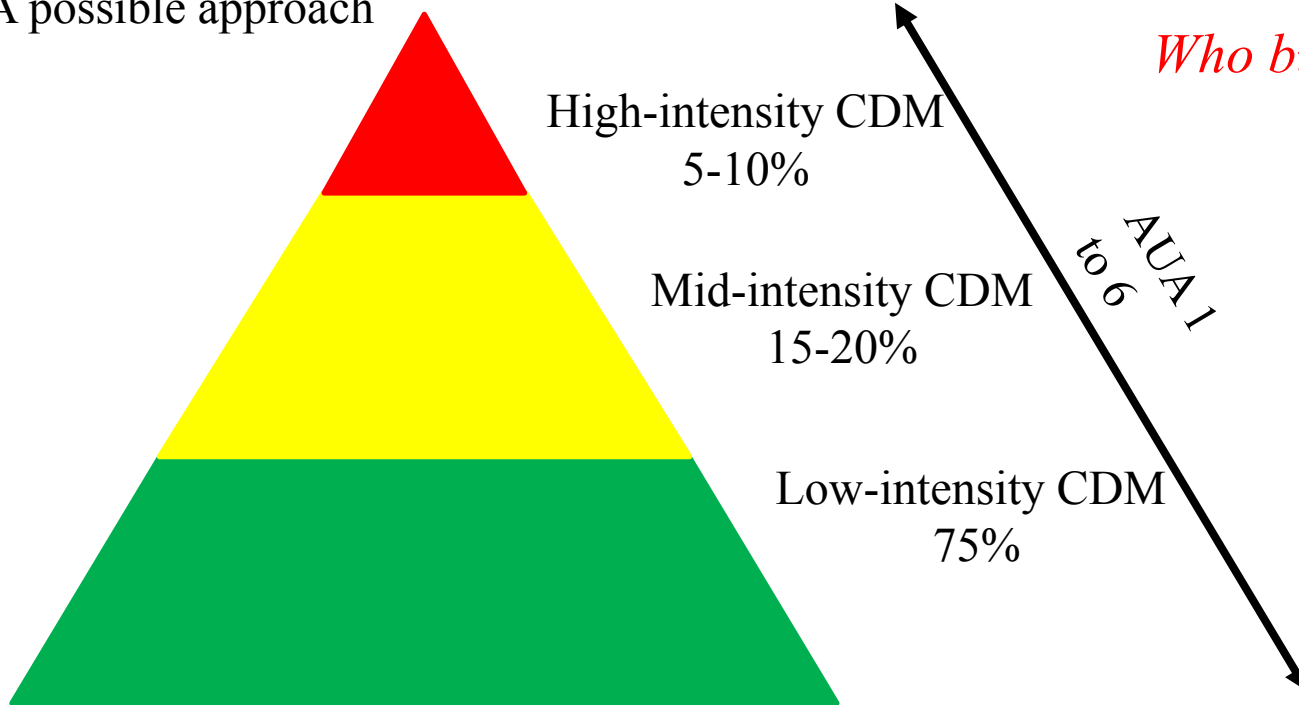
The “Goldilocks” principle

- Which patient really needs to be seen and by whom?
 - SGS vs. primary care vs. memory clinic
 - CCAC
 - Community Support Services
 - Rehab
- How do we divide up the “frailty-risk” pie and create referral maps based on regional resources?



Back to Chronic Disease Management

A possible approach



Who sees patients where?

Who builds capacity for whom?

Final thoughts

- Frailty or risk: geriatrics is everyone's business
- Risk may be more appropriate measure than simply frailty
- interRAI instruments provide multiple avenues and options to target patients
 - SGS but not only
 - Optimize and plan for rational use of community resources: Primary care, CCAC, CSS, GEM

Thank you!

QUESTIONS?