

A Practical Approach to Engaging Multiple Disciplines to Reduce Fracture Risk in Long-Term Care

Ontario Osteoporosis Strategy for Long-Term Care

Dr. Jonathan Adachi, MD, FRCP(C)

*Professor of Medicine, Alliance for Better Bone Health Chair in Rheumatology, Department of
Medicine, McMaster University*

Sid Feldman, MD, CCFP (COE), FCFP, CMD

*Chief, Department of Family and Community Medicine, Baycrest Health Sciences
Head, Division of care of the Elderly and Associate Professor, Family and Community Medicine,
University of Toronto*

OLTCC October 23, 2022

Faculty/Presenter Disclosure

- **Faculty:** Jonathan Adachi
- **Relationships with financial sponsors:**
 - **Grants/Research Support:** Amgen, Radius
 - **Speakers Bureau/Honoraria:** Amgen, Gilead, Paladin, OCFP, GERAS
 - **Other:** CIHR

Faculty/Presenter Disclosure

- **Faculty:** Sid Feldman
- **Relationships with financial sponsors:**
 - **Grants/Research Support:** CIHR, Healthcare Excellence Canada, U of T AHSC AFP Innovation grants
 - **Speakers Bureau/Honoraria:** OCFP, GERAS Centre, CFPC
 - **Other:** Baycrest Centre, University of Toronto

Disclosure of Financial Support

- **This program has received financial support from** The Ontario Ministry of Health and Long-Term Care **in the form of** educational/research grant.
- **Potential for conflict(s) of interest:**
 - none

Mitigating Potential Bias

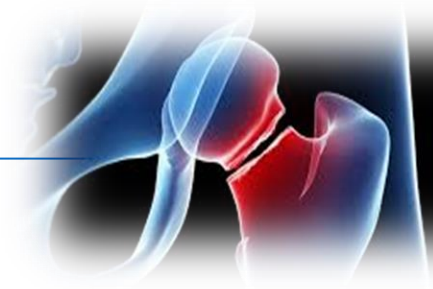
- Pharmacological therapy will be presented only as part of clinical recommendations determined using a GRADE approach (evidence-based approach) to guideline development
- All pharmacological therapy will be presented in its generic form

Learning Objectives

1. Use the Fracture Risk Scale (FRS) to assess fracture risk.
2. Adopt a team approach to develop and implement fracture risk-based care plan.
3. Incorporate an evidence-based care plan for fracture prevention

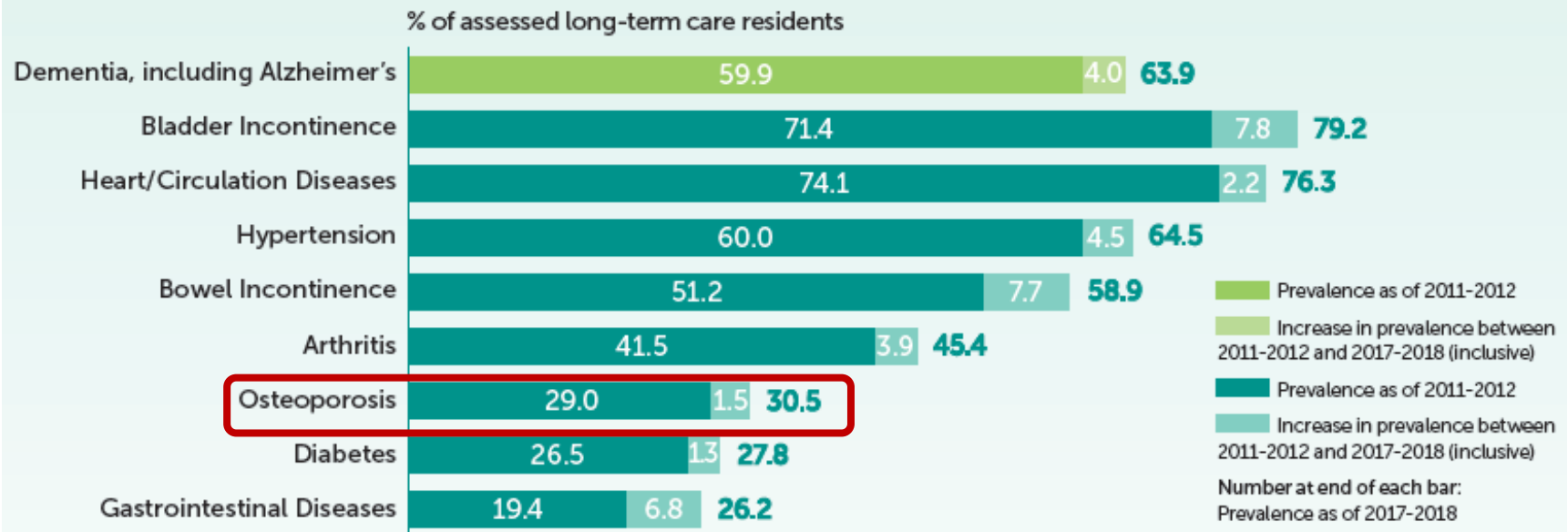


Why focus on fracture prevention?



Osteoporosis is common and prevalence is increasing

Health conditions and care needs have increased since 2011-2012



Hip fractures in LTC are a huge problem

- 2-6% of residents each year^{1,2}
- Rate in LTC is twice as high as in the community^{1,2}
- Most common fracture type in LTC (49%)²
- 39% of residents will die within 12 months post-fracture³
- In 2014, cost per LTC resident was \$54,822⁴
- All fractures in LTC cost \$1.03 Billion annually in Canada⁴

1. Ronald LA et al. *Can J Aging*. 2008;27:109-115

2. Papaioannou A. et al. *Osteoporos Int*. 2016;27:887-97

3. Papaioannou A, et al *J Soc Obstet Gynaecol Can* 2000; 22(8):591-7

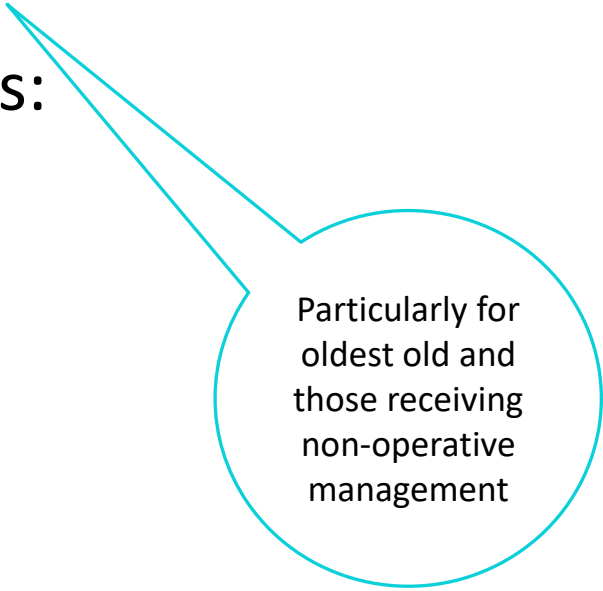
4. Hopkins et al. *Osteoporos Int* 2016;27:3023-3032



Fractures are a game changer for LTC residents!

Hip fractures are associated with:

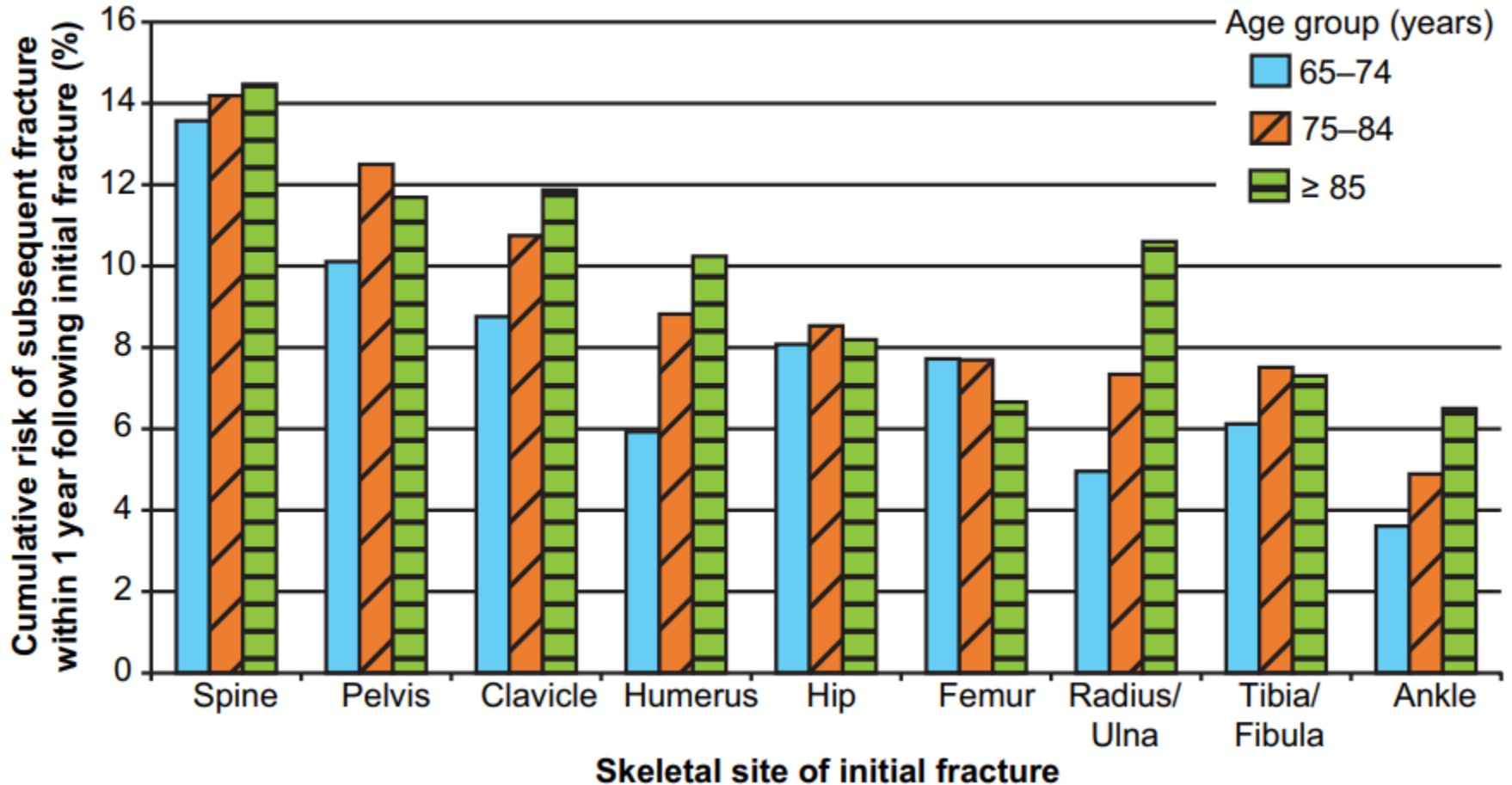
- Substantial mortality
- Increased dependence in ADLs:
 - Getting in and out of bed
 - Dressing
 - Transferring
 - Personal hygiene



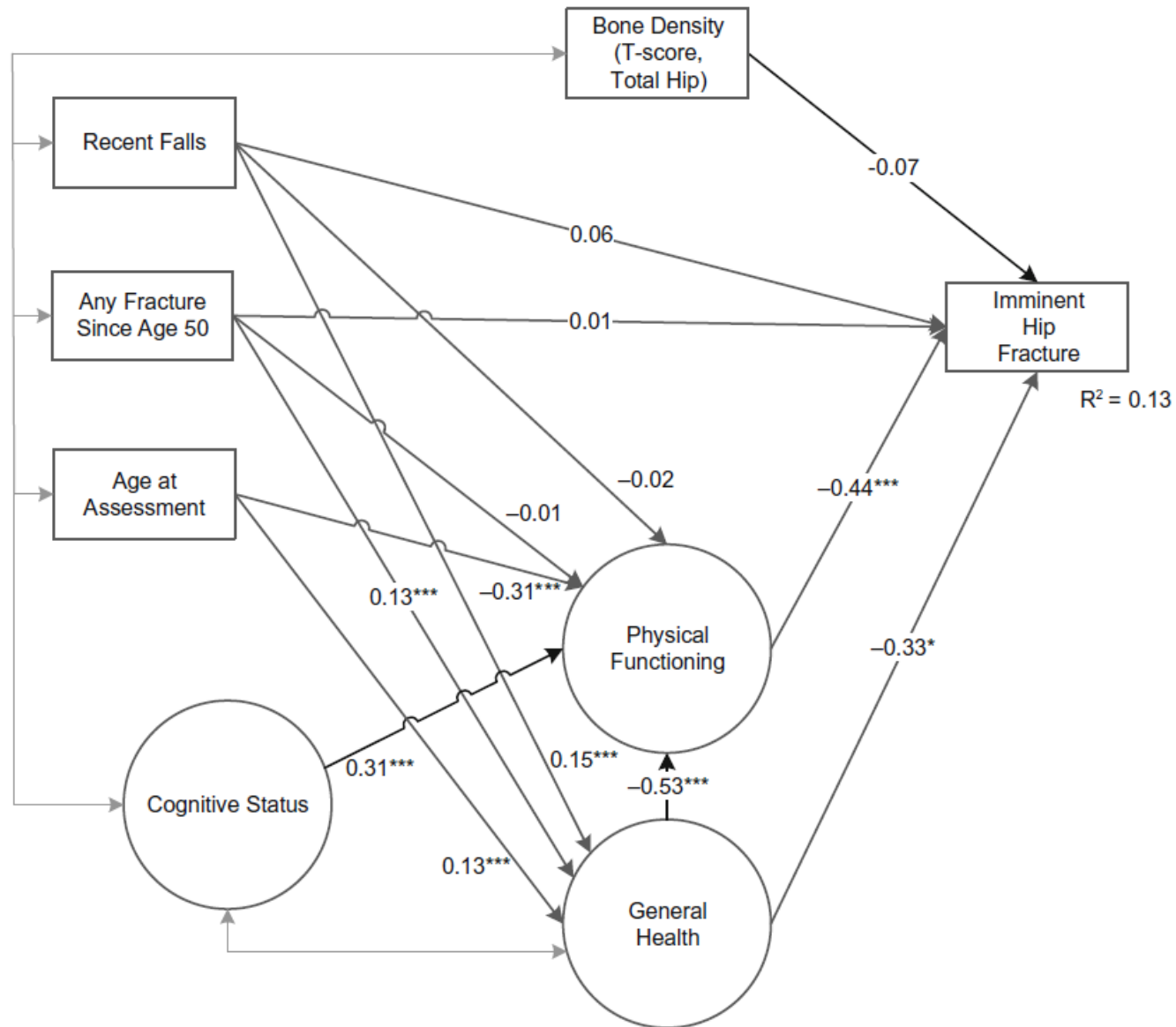
Particularly for
oldest old and
those receiving
non-operative
management



Risk of fractures at 1 year post incident fracture



Determinants of Imminent Hip Fractures



First fractures predict second fractures!



Think of fracture like stroke and myocardial infarction:

The first year post event is highest risk!

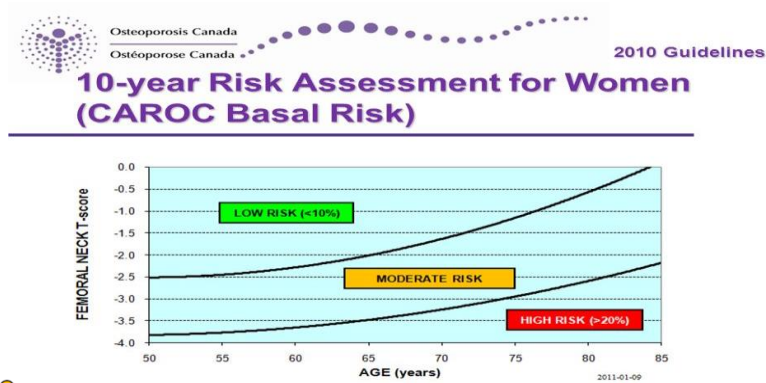


How is fracture risk usually assessed?



Typical fracture risk assessment:

CAROC



Papaloannou A, et al. CMAJ 2010 Oct 12. [Epub ahead of print].



FRAX

Country : US (Caucasian) Name / ID : Jane Doe About the risk factors ⓘ

Questionnaire:

1. Age (between 40-90 years) or Date of birth
Age: 74 Date of birth: Y: 1935 M: 4 D: 20

2. Sex Male Female

3. Weight (kg) 65

4. Height (cm) 165

5. Previous fracture No Yes

6. Parent fracture hip No Yes

7. Current smoking No Yes

8. Glucocorticoids No Yes

9. Rheumatoid arthritis No Yes

10. Secondary osteoporosis No Yes

11. Alcohol 3 or more units per day No Yes

12. Femoral neck BMD (g/cm²)
Hologic 7 T-score: -1.3

Clear Calculate

BMI: 23.9
The ten year probability of fracture (%)

with BMD

Major osteoporotic	16
Hip fracture	6.5

- Not validated for the LTC population
- Require bone mineral density testing
- 10-year fracture prediction not very helpful as average LOS in LTC is <18 months
- Missing risk factors applicable for the LTC population

Challenges to Bone Mineral Density testing in LTC

- Not possible to bring BMD testing machines to LTC
- Difficult to access – requires family or staff to accompany resident; transportation
- Mobility impairment
- Cognitive impairment – difficult to follow instructions
- Kyphosis – difficult/ painful to lie flat
- Frailty – difficult to maintain a steady position




**How can we assess fracture
risk in LTC?**



The Fracture Risk Scale (FRS)

- ✓ Predicts hip and major fractures for LTC residents
- ✓ Requires no additional documentation or resources/ score is autogenerated
- ✓ No BMD testing required
- ✓ Validated across Canada
- ✓ Can improve care, quality of life, and prevent fractures
- ✓ Supports care planning using the fracture prevention recommendations for LTC



Embedded in
RAI – MDS 2.0/
LTCF tools



How was the FRS developed?



FRS Development

Three databases were linked to develop the FRS:

- **RAI-MDS 2.0**
 - Standardized global assessment tool mandated for use in all LTC homes in Ontario
- **Discharge Abstract Database (DAD)**
 - National database
 - Administrative, clinical and demographic information on hospital visits
- **National Ambulatory Care Reporting System (NACRS)**
 - National database
 - Emergency department visits, & day surgery

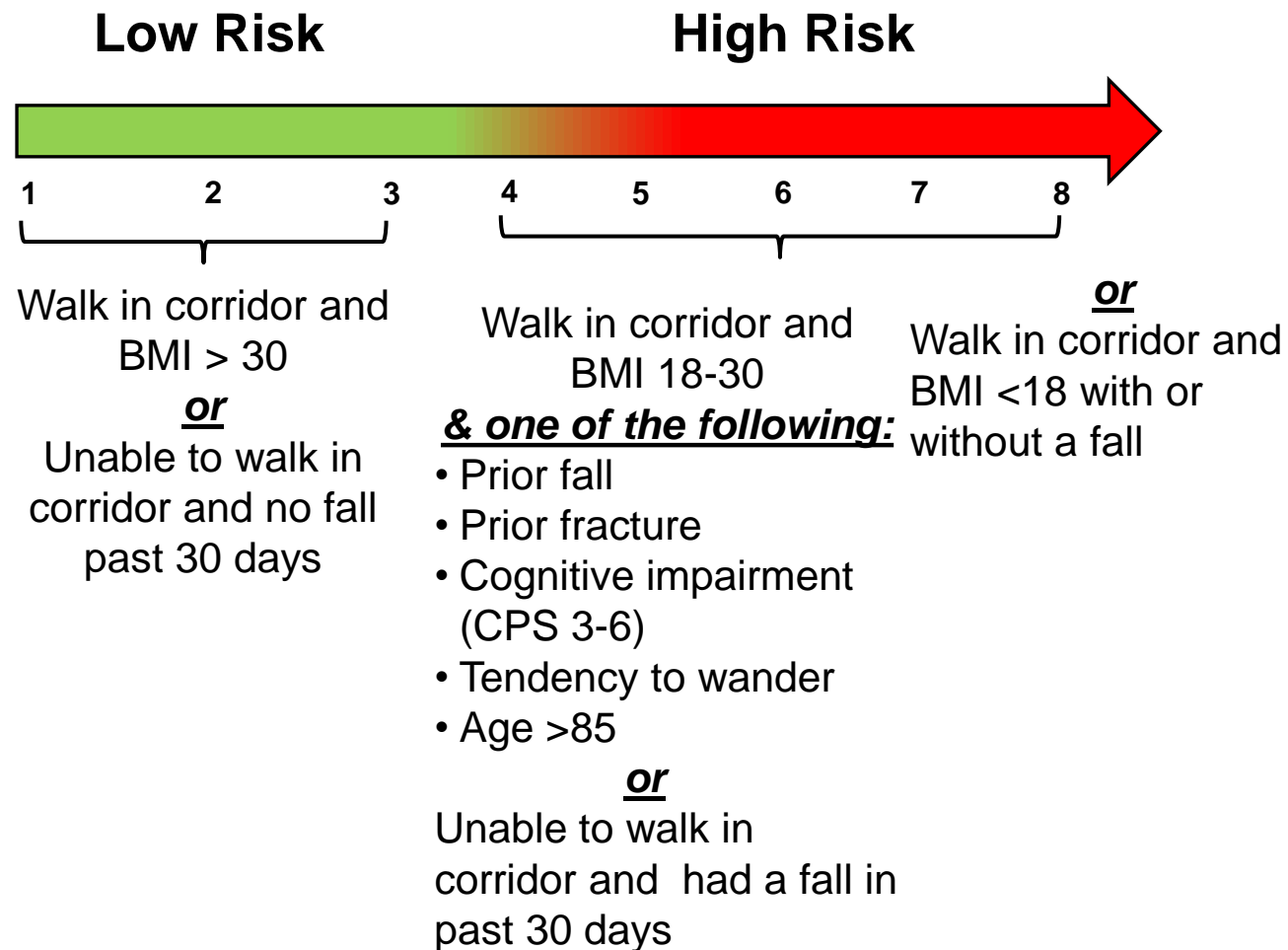


Factors that increase fracture risk in LTC (N = 29,848)

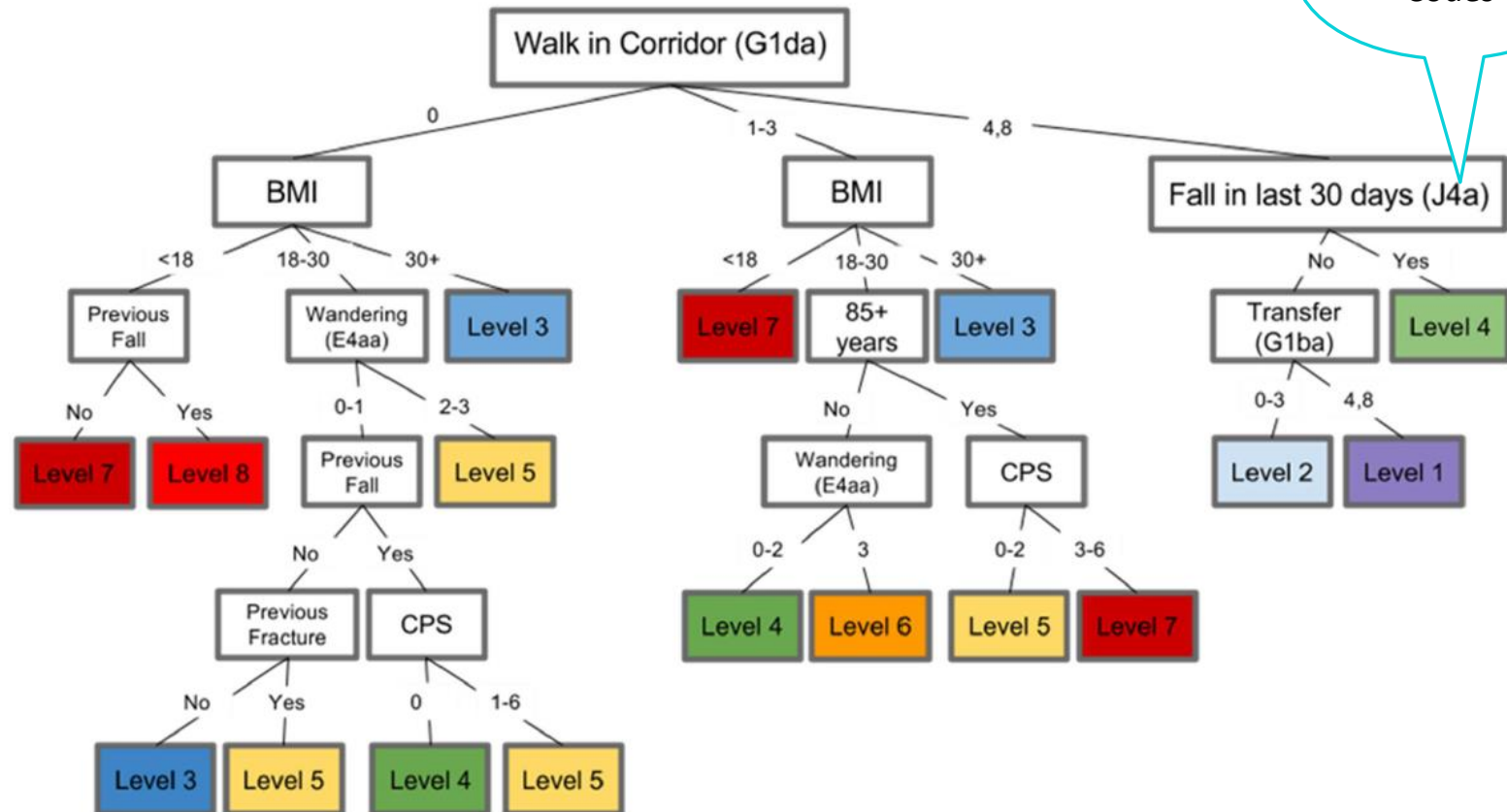
Risk Factors	% All Residents
Age group (85+)	45.9%
Women	66.0%
Previous fracture	10.1%
Body mass index <18	8.0%
18-30	74.6%
Fall in past 180 days	33.8%
Walking in corridor Independently	35.3%
With supervision/ assistance	31.3%
Total dependence	33.4%
Cognitive impairment	56.2%
Wandering frequency Daily (in past 7 days)	11.7%



FRS Scores and Hip Fracture Risk Factors



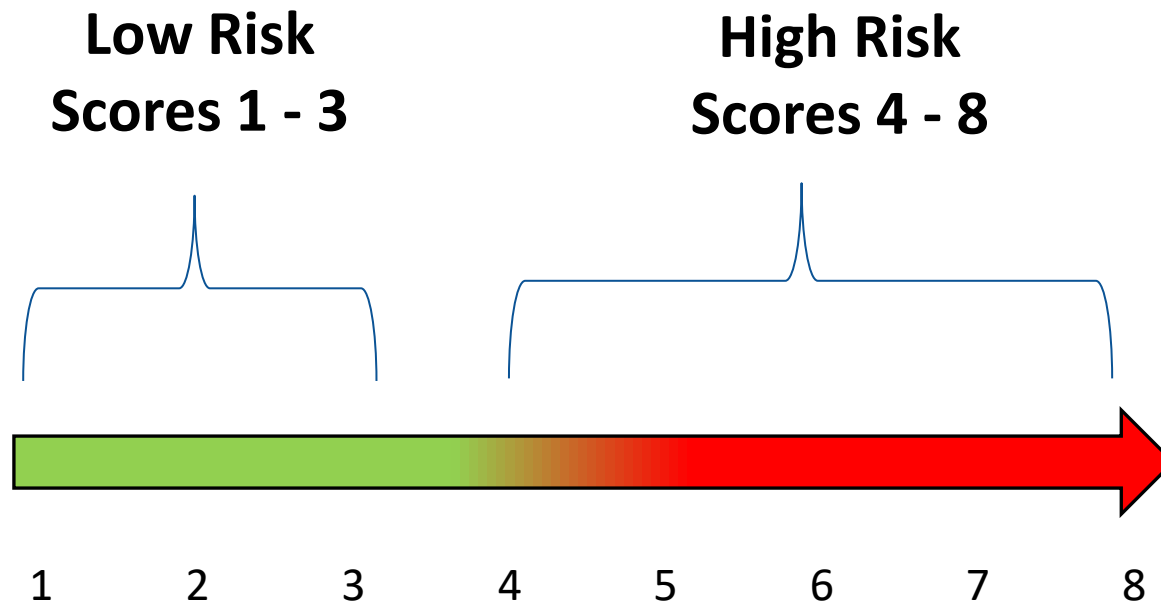
FRS Prediction Decision Tree



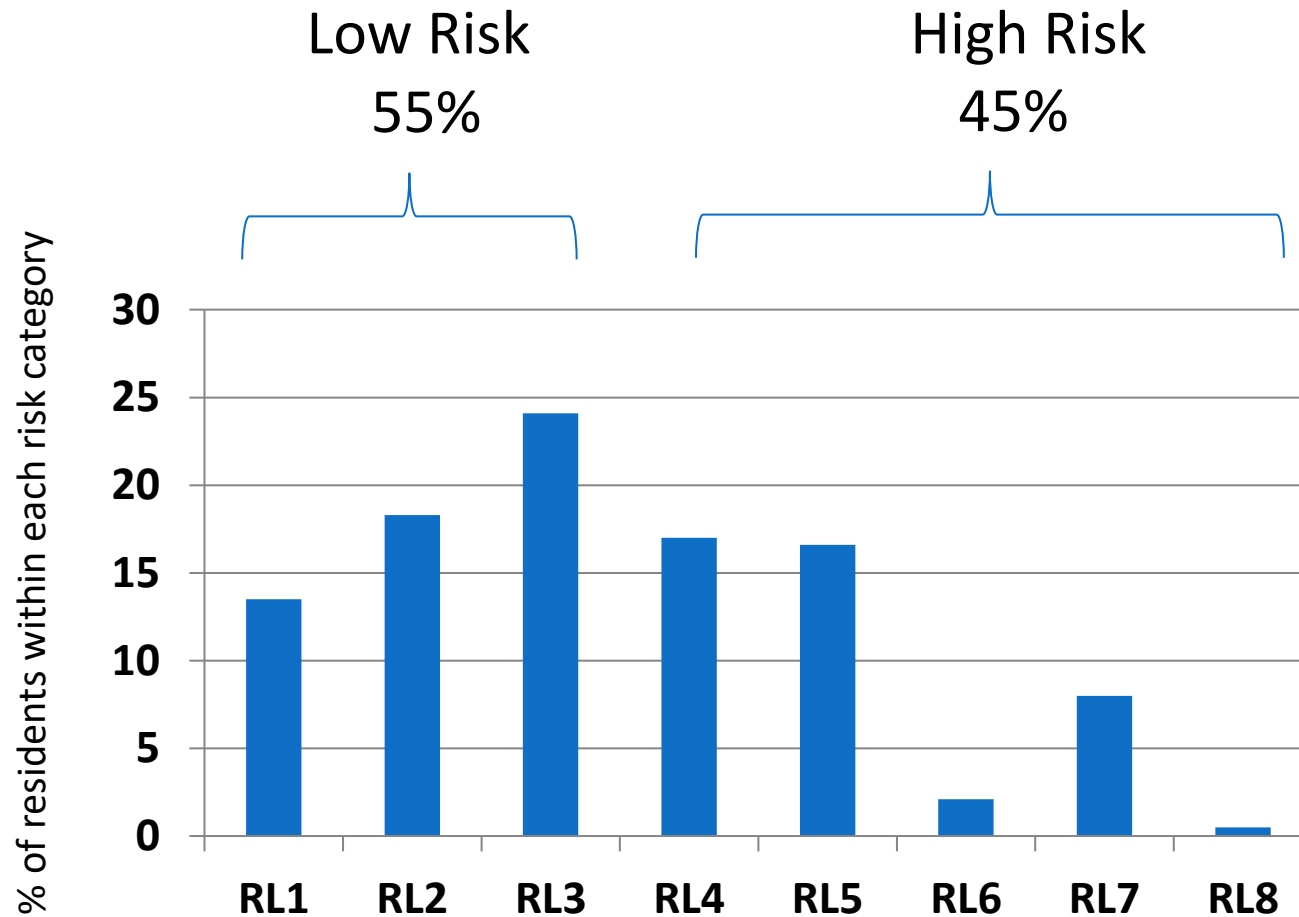
Previous Fall = Any fall in the previous 180 days
 Previous Fracture = Any fracture in previous 180 days
 BMI = Body Mass Index
 CPS = Cognitive Performance Scale

Fracture Risk Scale

Identifies fracture risk in the next year
Scored from 1 (lowest risk) to 8 (highest risk)



% of Residents within Each Risk Level



RL = FRS Risk Level

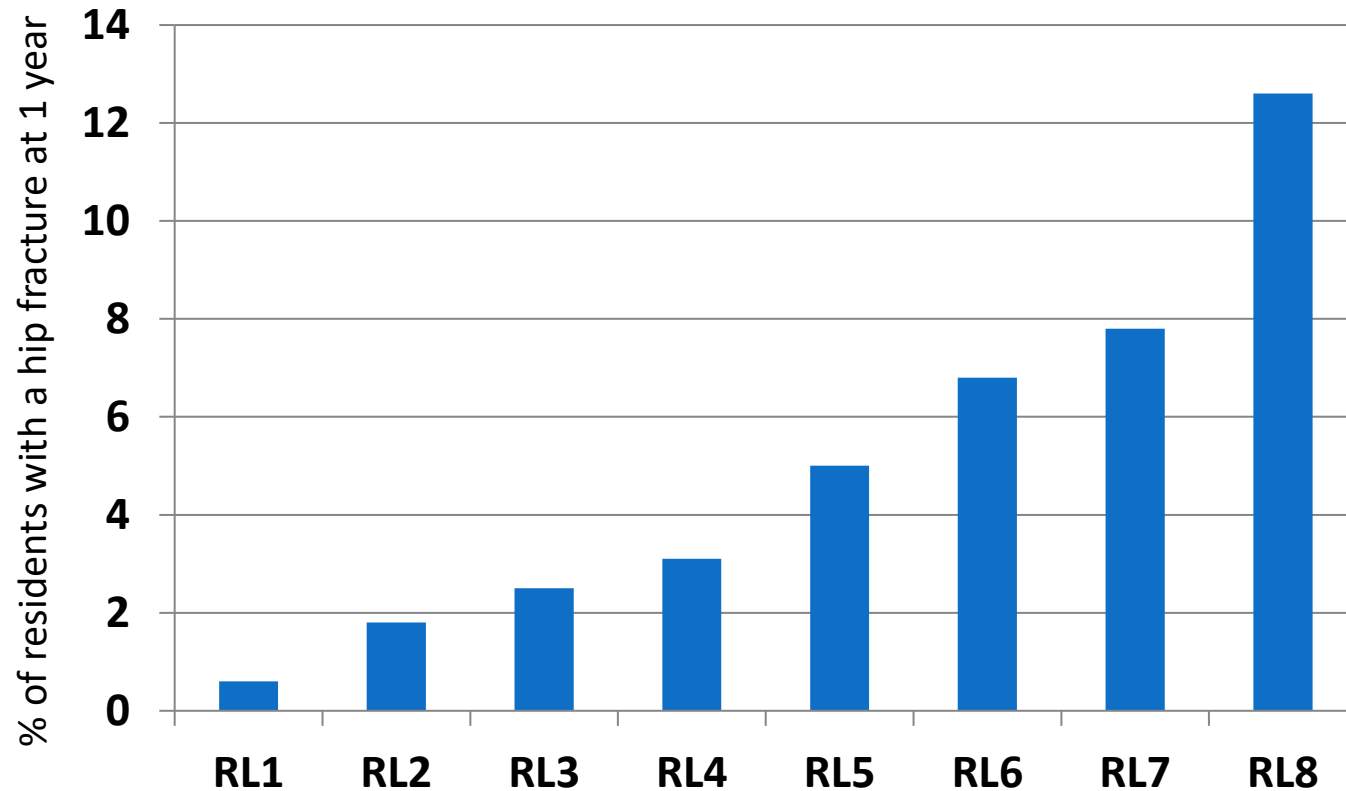
Ioannidis G, et al. *BMJ Open*, 2017;7.



**What is the percentage
of hip fractures at each
FRS risk level?**



% of Residents with a Hip Fracture at 1 Year in each Risk Category



RL = FRS Risk Level

Ioannidis G, et al. *BMJ Open*, 2017;7.



Odds Ratios* for Hip Fracture for each Risk Level

Risk Levels	Odds Ratio of Hip Fracture
FRS 2 vs 1	3.0 (1.9-4.6)
FRS 3 vs 1	4.2 (2.7-6.3)
FRS 4 vs 1	5.2 (3.4-7.9)
FRS 5 vs 1	8.3 (5.5-12.6)
FRS 6 vs 1	11.6 (7.0-19.1)
FRS 7 vs 1	13.4 (8.8-20.5)
FRS 8 vs 1	23.0 (12.5-42.3)

*Odds calculated using multivariable logistic regression analysis

Ioannidis G, et al. *BMJ Open*, 2017;7.



Using the FRS

CASE STUDY

Meet Matild Maasburg

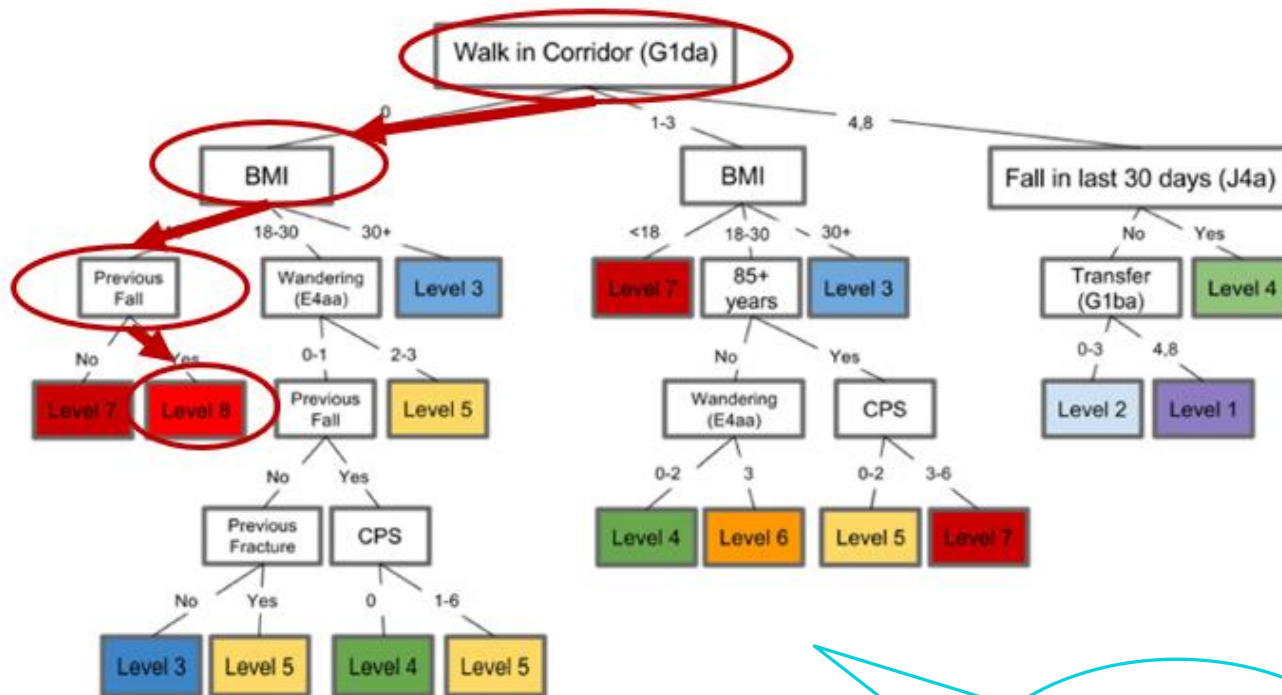


- 84 years old, admitted 2 years ago
- Height = 5'6"; Weight = 111lbs; BMI = 17.9
- Walks independently with a walker
- Fell 4 months ago, getting up from bed to go to the washroom at night
- No known previous fractures
- **Diagnoses:** hypertension, Alzheimer's disease (Cognitive Performance Score = 4), osteoarthritis, hypothyroidism, kyphosis
- Kidney function: eGFR = 56
- No swallowing issues
- **Medications:** donepezil 10mg; acetaminophen 650mg TID; ramipril 5mg; thyroxine 75mcg; Senokot BID



What is Matild's fracture risk? Low? High?

Matild's FRS Decision Tree



Fracture Risk
Score = 8
Matild is at
HIGH risk for
fractures



**Where can I find the
FRS Score?**



In RAI-MDS (MDS 2.0) / LTCF Tool
go to



Outcomes Summary Report
Fracture Risk Scale = Score



Home ▾ Admin ▾ Clinical ▾ QIA ▾ GLAP ▾ Reports

Sinatra, Barbara (00006) IPC

Status: Current Location: Rainy Meadows 101-A
 Gender: Female DOB: 3/10/1927 Age: 93
 Physician: Johnny BeGood

Care Profile Edit Print

Allergies: No Known Allergies

Dash Profile Census Med Diag Allergy Immun Orders Wts/Vitals Results **MDS** Assmnts Prog Note Care Plan Support Actions Misc

Canadian CCRS MDS 2.0 New

Next Full: ARD: 4/2/2021 - 123 days Next Qtrly: ARD (Q1): 7/2/2020 - 151 days overdue

View All Show Incomplete

Date	Description
4/1/2020	Admission assessment (required by day 14) Full
4/1/2020	Admission assessment (required by day 14) Face Sheet

1. Navigate to the Resident's MDS tab



2. Click Print



3. Check the Outcome Summary Report box



Print Options - Google Chrome

www1.pointclickcare.com/care/reports/printpopup.j...

Printing options

Select print options

- MDS Assessments
- Section V
- RAPS Worksheets
- RAPS Triggers
- Outcome Summary Report
- Note Report
- Warnings Report
- Audit Report

Print Cancel

4. Click on print



Quick access to FRS score

1. Navigate to the resident Dash

The screenshot shows a resident dashboard for Barbara Sinatra (00006). The navigation menu includes 'Dash', 'Profile', 'Census', 'Med Diag', 'Allergy', 'Immun', 'Orders', 'Wts/Vitals', 'Results', 'MDS', 'Assmnts', 'Prog Note', 'Care Plan', 'Support Actions', and 'Misc'. The 'Dash' tab is circled in red. Below the navigation menu, there are buttons for 'Edit Layout' and 'Printable View'. The main content area is titled 'UDA Scores in the Last 6 Months' and contains a table with columns 'ARD', 'Type', 'Category', and 'Score'. The table shows 'No Records Found.' for the 'ARD' column. To the right of the table is a list of scores for various categories: DRS (10), COMM (0), PAIN (1), ISE (5), ADL Short (16), ADL Long (28), ADL Self (6), CHESS (0), ABS (8), PSI (9), and FRS (4). The 'FRS' row is highlighted with a red box.

ARD	Type	Category	Score
		No Records Found.	

DRS			10
COMM			0
PAIN			1
ISE			5
ADL Short			16
ADL Long			28
ADL Self			6
CHESS			0
ABS			8
PSI			9
FRS			4

2. View the MDS scores – Find the FRS Score in the list (may need to scroll down)



The Outcome Summary Report will be generated.
This will give the FRS Score for that MDS Assessment.

Outcomes	
RUG	SSC
CMI	1.4
CPS	0
DRS	10
COMM	0
PAIN	1
ISE	5
ADL Short	16
ADL Long	28
ADL Self	6
CHESS	0
ABS	8
PSI	9
PURS	3
FRS	4



My EMR does not include the FRS, how can I calculate fracture risk?



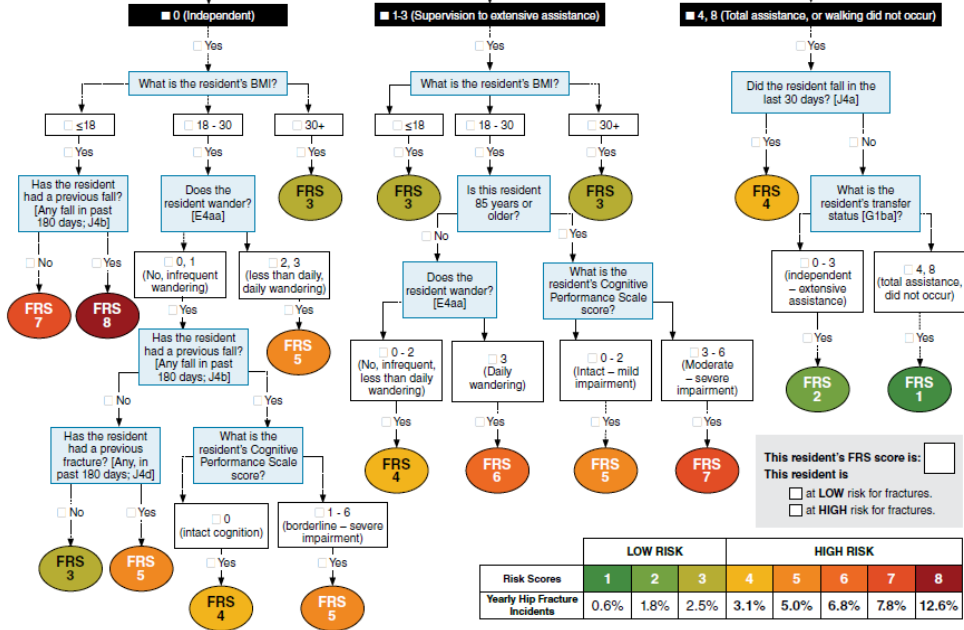
FRS Manual Calculation Tool

Instructions: Using information from the resident's latest RAI-MDS assessment, respond to questions to direct you to the resident's Fracture Risk Scale Score (MDS response locations appear in square brackets, where applicable). Document the responses using the check boxes. Instructions for calculating BMI are presented on the back side.

Fracture Risk Scale: Manual Score Calculation



START HERE → What is the resident's ability to walk in the corridor score? [G1da] Resident: _____ Date: _____



the resident's height and weight intersect; BMI is listed in the square

		WEIGHT															
		140	150	160	170	180	190	200	210	220	230	240	250	260	270	280	290
HEIGHT	64"	64	68	73	77	82	86	91	95	100	104	109	113	118	122	127	132

31	34	36	38	40	43	45	47	49	52	54	56	58	61	63	65	66
30	32	35	37	39	41	43	45	48	50	52	54	56	58	61	63	63
29	31	33	36	38	40	42	44	46	48	50	52	54	56	59	61	61
28	30	32	34	36	38	40	42	44	46	48	51	53	55	57	59	59
27	29	31	33	35	37	39	41	43	45	47	49	51	53	55	57	57
26	28	30	32	34	36	38	40	42	43	45	47	49	51	53	55	55
26	27	29	31	33	35	37	38	40	42	44	46	48	49	51	53	53
25	27	28	30	32	34	35	37	39	41	43	44	46	48	50	51	51
24	26	27	29	31	33	34	36	38	39	41	43	45	46	48	50	50
23	25	27	28	30	32	33	35	37	38	40	42	43	45	47	48	48
22	24	26	27	29	31	32	34	36	37	39	40	42	44	45	47	47
21	23	24	26	27	29	30	32	33	35	37	38	40	41	43	44	44
21	22	24	25	27	28	30	31	33	34	35	37	38	40	41	43	43
20	22	23	24	26	27	29	30	32	33	34	36	37	39	40	42	42
20	21	22	24	25	27	28	29	31	32	33	35	36	38	39	40	40
19	20	22	23	24	26	27	28	30	31	33	34	35	37	38	39	39
18	20	21	22	24	25	26	28	29	30	32	33	34	36	37	38	38

This resident's FRS score is:

This resident is at LOW risk for fractures. at HIGH risk for fractures.

Risk Scores	LOW RISK			HIGH RISK				
	1	2	3	4	5	6	7	8
Yearly Hip Fracture Incidents	0.6%	1.8%	2.5%	3.1%	5.0%	6.8%	7.8%	12.6%

62"	187.9	12	13	14	15	17	18	19	21	22	23	24	26	27	28	30	31	32	33	35	36	37
63"	190.5	11	13	14	15	16	18	19	20	21	23	24	25	26	28	29	30	31	33	34	35	36
64"	193.0	11	12	13	15	16	17	18	19	21	22	23	24	26	27	28	29	30	32	33	34	35
65"	195.5	11	12	13	14	15	17	18	19	20	21	23	24	25	26	27	28	30	31	32	33	34
66"	198.1	10	12	13	14	15	16	17	18	20	21	22	23	24	25	27	28	29	30	31	32	34
67"	200.6	10	11	12	14	15	16	17	18	19	20	21	23	24	25	26	27	28	29	30	32	33
68"	203.2	10	11	12	13	14	15	16	18	19	20	21	22	23	24	25	26	27	29	30	31	32
69"	205.7	10	11	12	13	14	15	16	17	18	19	20	21	24	24	25	26	27	28	29	30	31
610"	208.2	9	10	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
611"	210.8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	25	26	27	28	29	30

Adapted from: <https://bmiccalculator.ca>

Online BMI Calculators:
<https://bmiccalculatorcanada.com/>
<https://www.calculator.net/bmi-calculator.html>
https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/english_bmi_calculator/bmi_calculator.html

Papaloannou et al. Recommendations for preventing fracture in long-term care. CMAJ 2015; 187(15): 1135-1144.
 Ioannidis et al. Development and validation of the Fracture Risk Scale (FRS) that predicts fracture over a 1-year time period in institutionalized frail older people living in Canada: an electronic record-linked longitudinal cohort study. BMJ Open 2017; 7:e016477.
 McArthur et al. Developing a Fracture Risk Clinical Assessment Protocol for Long-Term Care: A Modified Delphi Consensus Process. JAMDA, Sep 20, 2020 (e-pub ahead of print).



Treatment Considerations								Considerations for medication use	
LOW RISK				HIGH RISK					
1	2	3		4	5	6	7	8	
<ul style="list-style-type: none"> Vitamin D: 800-2000IU Calcium: 1200mg (daily total diet & supplement) Exercise: functional strength & balance 				<ul style="list-style-type: none"> Vitamin D: 800-2000IU Calcium: 1200mg (daily total diet & supplement) Exercise: functional strength & balance Osteoporosis medications Hip protectors 				<ul style="list-style-type: none"> Fracture risk – residents at high risk should be treated Residents' preferences and goals for care Life expectancy (> 1 year) Kidney function (creatinine clearance) Swallowing issues (dysphagia) 	

Some Cautions About the FRS



- Only includes fractures that were experienced in the past 180 days (6 months).
- FRS assesses risk for hip fracture but may underestimate the risk for vertebral fractures.
- FRS calculates risk based on variables available in the RAI-MDS 2.0 – other risk factors may exist that are not included.
- The FRS is only as good as the data that is entered into the RAI-MDS.



**Now that fracture risk is
known, what next?**



Recommendations for Fracture Prevention in LTC¹

- Directed at interprofessional teams in LTC
- Recommendations related to:
 - Pharmacologic therapies for those at high risk
 - Hip protectors
 - Exercise
 - Multifactorial interventions
 - Calcium and vitamin D
- Guidelines will appear in FRS CAP
- Goals:
 - Reduce pain, immobility, and hospital transfers
 - Improve quality of life for residents in LTC

Early release, published at www.cmaaj.ca on September 14, 2015. Subject to revision.

CMAJ **GUIDELINES**

Recommendations for preventing fracture in long-term care

Alexandra Papaioannou MD MSc, Nancy Santesso RD PhD, Suzanne S. Martin MD MSc, Sidney Feldman MD, Jonathan D. Adachi MD, Richard Chilly BS MD, Lara M. Giangregorio PhD, Susan Jaglal PhD, Robert G. Josse MBE, Sharon Kaasalainen PhD, Brad Katz MD, Andrew Moser MD MSc, Laura Pirkard MA, Hope Weiler RD PhD, Susan Whiting PhD, Carly J. Skidmore MSc, Angela M. Cheung MD PhD, for the Scientific Advisory Council of Osteoporosis Canada

CMAJ Podcast: author interview at <https://podcasts.cmaaj.ca/141131-guidelines>

Abstract
The 2010 clinical practice guideline for the diagnosis and management of osteoporosis in Canada¹ focused on the care of adults living in the community. However, the fracture rate for adults living in long-term care (residents) is two to four times that of adults of similar age living in the community, and one-third of older adults who experience hip fractures are residents in long-term care.² Hip fracture is one of the most serious consequences of osteoporosis and also one of the leading causes of admission to hospital.³ When residents return to long-term care after a hospital stay, they need additional hours of specialized care.⁴ In addition, fracture pain and admission frequently associated with analgesia are distressing for residents and their families. Nonfatal fractures are also a concern for residents, and the reported prevalence is up to 50% for at least one moderate to severe fracture.⁵ Multiple vertebral fractures can be a substantial cause of pain, anxiety, depression, reduced pulmonary function and cognition.

Frail older adults at high risk of fracture in long-term care face other challenges. More than 40% have dementia,⁶ a similar percentage experience swallowing difficulties,^{7,8} and over 20% may have renal insufficiency.^{9,10} It may be difficult to identify residents at high risk of fracture, as the current fracture risk assessment tools (the Canadian Association of Radiologists and Osteoporosis Canada tool¹¹ [CARRC], www.osteoporosis.ca/instrumental/pdf/CARRC.pdf) and the Canadian WHO Fracture Risk Assessment Tool [FRAX], www.aetd.ca/WHOFRAX/) provide 10-year fracture risk and have not been validated in long-term care, where over 20% of residents may die within one year of admission.^{12,13} Most research regarding risk assessment and pharmacologic therapies has included those with multiple comorbidities.^{14,15}

Scope
This document provides guidance regarding strategies for the prevention of fractures among frail older adults in long-term care.

Methods
This guideline, which has been endorsed by Osteoporosis Canada, was developed using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE) approach¹⁶ (www.gradeworkinggroup.org), in a process led by a GRADE methodology (N.S.). The guideline panel comprised the authors, other multidisciplinary health care providers and researchers, and representatives from resident and family councils (see Appendix 1, available at www.cmaaj.ca/lookup/hq/guidelines/141131guidelines). The panel was first surveyed in pretest questions and interviews.

KEY POINTS

- In older adults living in long-term care (residents), fracture cause pain, agitation, immobility and transfers to hospital.
- Residents identified as being at high risk of fracture include those with prior fractures and those with one prior fracture and recent use of glucocorticoids.
- Recommendations for preventing fracture in long-term care were developed using the GRADE Grading of Recommendations, Assessment, Development and Evaluation approach, with consideration of the quality of the available evidence, the balance between benefits and harms, the preferences of residents and their care providers, and the resources required to implement the recommendations.
- Strategies to prevent fractures, including vitamin D and calcium supplementation, use of hip protectors, exercise, multifactorial interventions to prevent falls and pharmacologic therapies, should be tailored to each resident's level of fracture risk, mobility, life expectancy, renal function and ability to swallow.

© 2015, © 2015 FRC Canada Inc. or its licensors. CMAJ 1

1. Papaioannou, A. et al. *CMAJ* 2015; 187(15): 1135-44.
2. Guyatt, GH. Et al. *BMJ* 2008; 336:1049-51.

Fracture prevention for those at low risk (FRS scores 1 – 3)

Diet and supplements	<ul style="list-style-type: none"> • Dietary calcium 1200 mg/day • Calcium supplements ≤ 500 mg/day if dietary cannot be met, considering values and preferences • Vitamin D supplementations (800-2000 IU/day)
Multifactorial fall prevention strategies	<ul style="list-style-type: none"> • Exercise (balance, strength, and functional training) • Medication reviews (Beer's criteria or STOPP/START criteria) • Assessment of environmental hazards • Use of assistive devices • Management of urinary incontinence • Hip protectors for those who are mobile considering resources and residents' values and preferences <ul style="list-style-type: none"> • Opportunities to try various models • Education on benefits and limitations

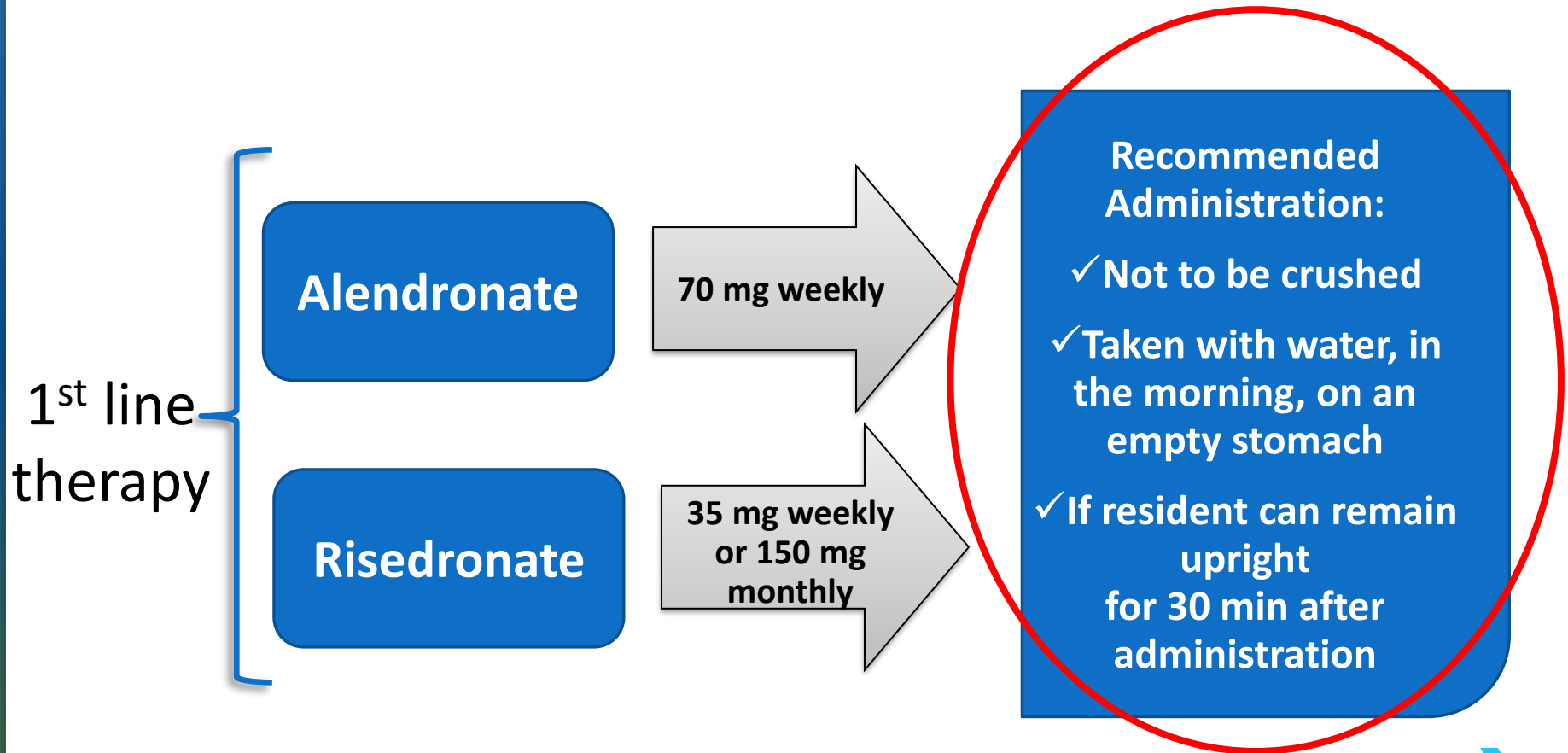


Fracture prevention for those at high risk (FRS scores 4 – 8)

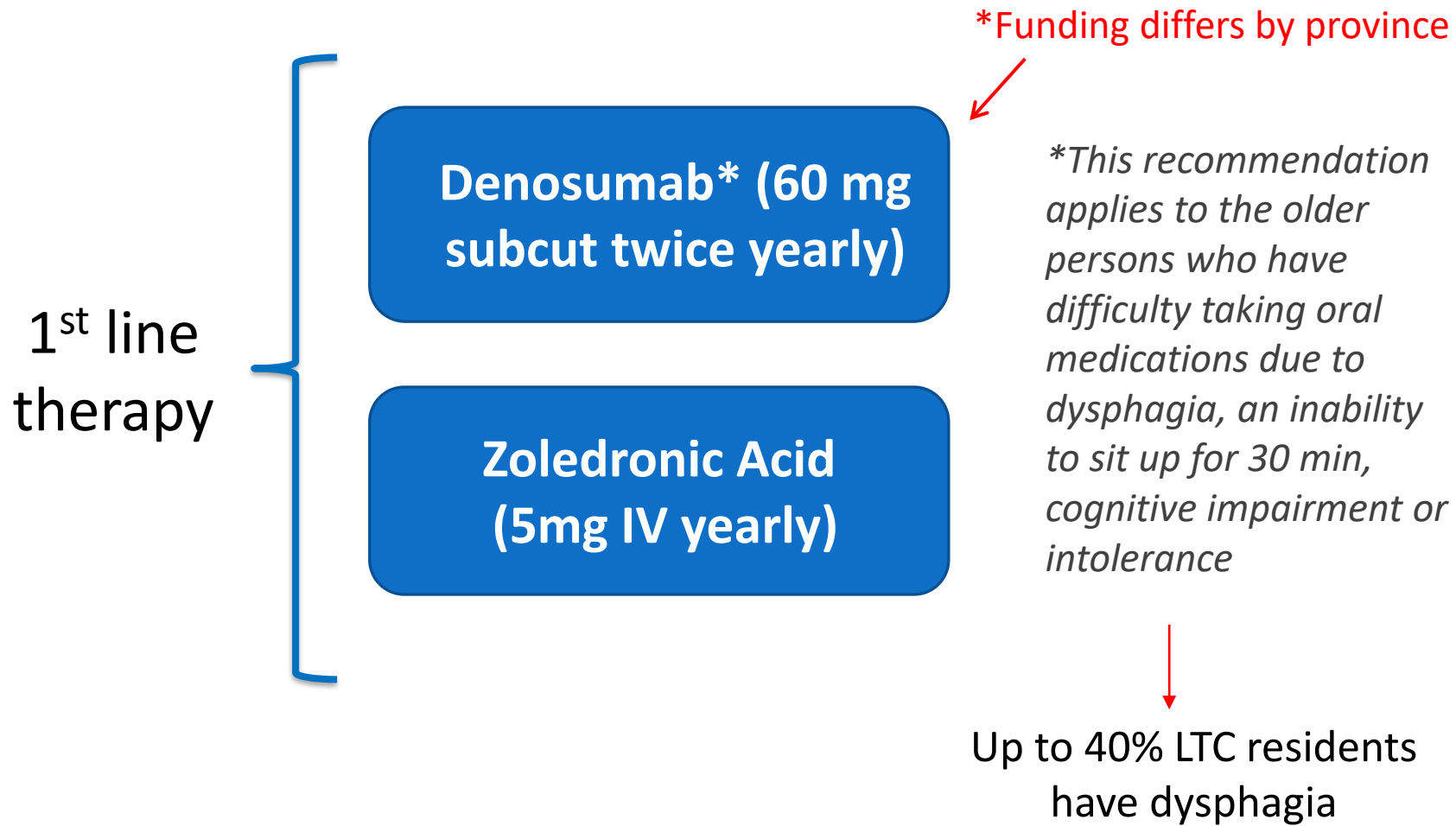
Diet and supplements	<ul style="list-style-type: none"> • Dietary calcium 1200 mg/day • Calcium supplements ≤500 mg/day if dietary cannot be met • Vitamin D supplementations (800-2000 IU/day)
Multifactorial fall prevention strategies	<ul style="list-style-type: none"> • Hip protectors for those who are mobile (value, preference & resource dependent) • Exercise (balance, strength, and functional training) as part of a multifactorial fracture and fall prevention strategy, considering: <ul style="list-style-type: none"> • residents' preferences, desires, beliefs and attitudes • promoting social support (e.g., group exercise) • providing stimulating environments (e.g., coloured equipment, music). • providing training and involve residents, family members, volunteers and primary health care providers
Medications	<ul style="list-style-type: none"> • Prescribe osteoporosis medications; considering: <ul style="list-style-type: none"> • residents' preferences and values • adequacy of kidney function (creatinine clearance) • presence of dysphagia • whether life expectancy exceeds time to benefit from the medication



For HIGH RISK residents, we recommend...



For HIGH RISK Residents + Difficulty Taking Oral Medications, we recommend...



How should I treat fracture risk if I think my resident's life expectancy is likely not more than one year?



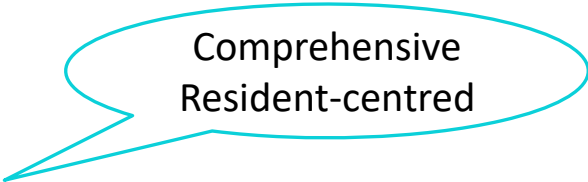
Medication management and life expectancy

- Life expectancy is one of several criteria to inform decision-making.
- Residents at high risk for fractures should be treated considering:
 - Residents' preferences and values
 - Adequacy of kidney function (creatinine clearance)
 - Presence of dysphagia
 - Whether life expectancy exceeds time to benefit from medication



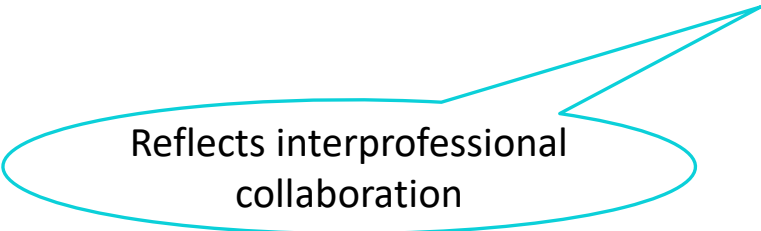
Matild's care plan

FRS = High Risk



Comprehensive
Resident-centred

- Bisphosphonate therapy
- Medication review to reassess need for ramipril
- Vitamin D supplements; dietary calcium preferred over supplements
- Physiotherapy – strength and balance training; reassess use of walker; postural training
- Consider use of hip protectors
- Comprehensive falls assessment; reassess toileting plan



Reflects interprofessional
collaboration



How can I implement the fracture prevention recommendations in my LTC home?



Impact of team approaches

Osteoporos Int (2011) 22:2321–2328
DOI 10.1007/s00198-010-1466-0

ORIGINAL ARTICLE

A team approach: implementing a model of care for preventing osteoporosis related fractures

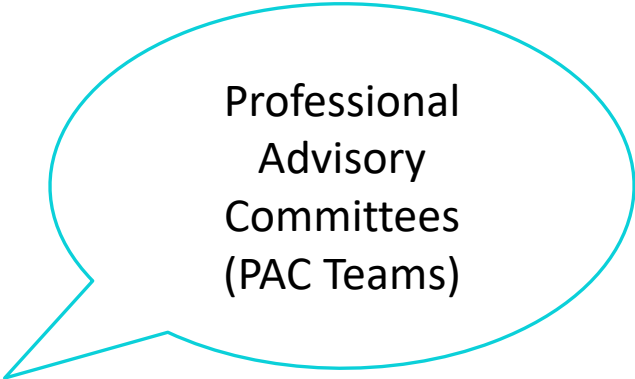
M. Giles · J. Van Der Kallen · V. Parker · K. Cooper ·
K. Gill · L. Ross · S. McNeill

- Increase awareness of osteoporosis
- Increase identification of at-risk patients
- Support coordinated and comprehensive care
- Improve management




Team approaches to fracture prevention

- Multi-disciplinary:
 - Physicians
 - Nurses
 - Pharmacists
 - Physiotherapy
 - Dietitian
 - Recreation/ Activation specialists
 - Personal Support Workers
- Expertise for coordinated, comprehensive care planning



Professional
Advisory
Committees
(PAC Teams)



Covering all
fracture prevention
recommendations

What role do various disciplines play in fracture prevention?



Physicians



- Know residents' FRS score
- Ensure fracture prevention plan is developed and used
- Care planning: Lead care team to ensure guidelines are implemented
- Medication review: Deprescribe meds linked to falls
- Review calcium and vitamin D supplementation
- Prescribe osteoporosis medications considering:
 - Residents' preferences and values
 - Adequacy of kidney function
 - Presence of dysphagia
 - Life expectancy



Nurses



- Know residents' FRS score
- Ensure fracture prevention plan is developed and used
- Care planning: Ensure guidelines are implemented
- Communicate with team, esp. PSWs to ensure safe care provided
- Explore use of hip protectors
- Manage urinary incontinence
- Complete falls risk assessment, examining all risk factors (health-related, behavioural, social, environmental)



Pharmacists



- Know residents' FRS score
- Ensure fracture prevention plan is developed and used
- Medication review (BEERS, STOPP/START)
 - Identify medications associated with ↑ falls
 - Quarterly after a fall, with change in acute status
- Review potential for osteoporosis medications with physician, knowing CrCl, swallowing status



Physiotherapists & other Exercise Professionals



- Know residents' FRS score
- Complete assessments: mobility, balance, falls risk
- Develop treatment plans involving 1:1 therapeutic exercises and/ or group exercise
- Involve family members in completing exercises
- Implement guidelines:
 - ensure adequate balance, strength, and functional training



Dietitians



- Know residents' FRS score
- Complete nutrition assessments to ensure adequate calcium and protein intake
- Develop meal plans to address nutritional deficits
- Provide suggestions for increasing dietary calcium intake
- Follow guidelines:
 - **High** and **low** risk: 1200mg daily (total diet and supplements)



Personal Support Workers



- Know which residents are at high fracture risk
- Ensure safe transferring techniques
- Promote proper positioning for sitting
- Integrate sit-to-stand exercises into personal care routines
- Declutter rooms to remove trip/ fall hazards
- Ensure use of proper non-slip footwear
- Make sure mobility aids are used and in close reach



Restorative Care



- Know residents' FRS score
- Practice spine sparing strategies
- Incorporate simple balance and strength exercises into walking programs
- Provide postural cues through range of motion exercises
- Promote proper posture



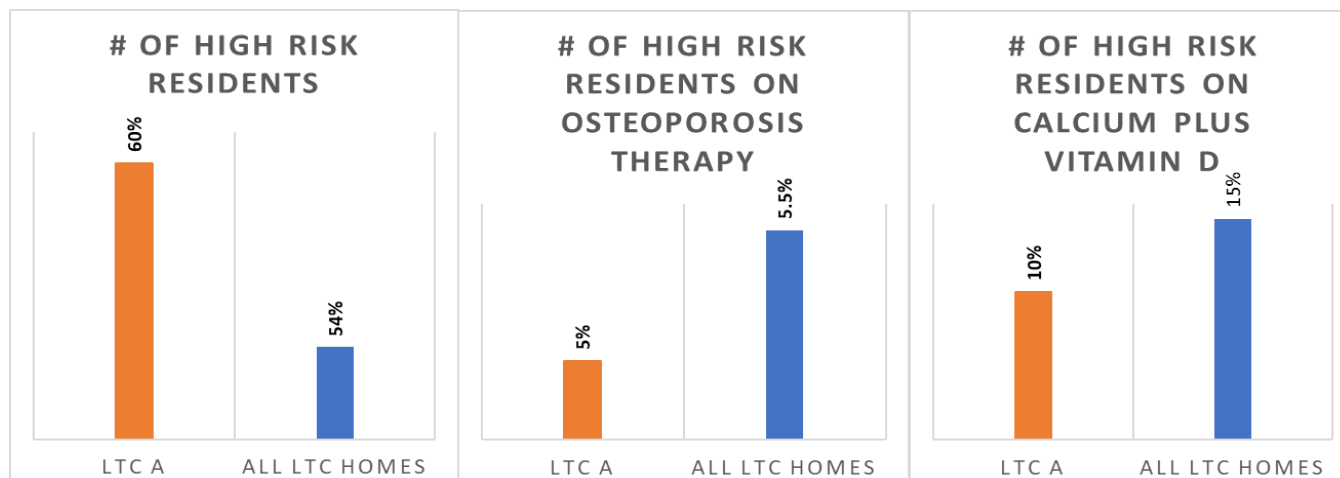
How can we implement a team approach to fracture prevention in LTC?



Implementing a Team Approach

PCC will be automating A & F in the near future

- Know residents' FRS score
- Make sure all team members know which residents are at high fracture risk
- Ask pharmacist to conduct an audit and feedback to identify opportunities for practice improvements



Implementing a Team Approach



- Ensure team members know the fracture prevention guidelines or can access information or education on the guidelines
- Create opportunities for teams to discuss high risk residents (e.g., case reviews, PAC meetings)
- Review resident history to identify potential fall and fracture risks
- Create care plans with input from all disciplines
- Ask each discipline/ team member: “Considering what we know about this resident, ,”



Strategies for implementing the FRS

- Minimize increase in workload:
 - Standardized processes
 - Integration of FRS CAP into existing processes
- Training on FRS CAP usage
- Education for residents and families:
 - Importance of guidelines
 - Advocating for following guidelines
- Persuasion through resident and staff stories to show:
 - Impact of fractures
 - Value of using the FRS CAP



What tools are available to support fracture risk reduction in LTC?





LTC fracture prevention

<https://www.gerascentre.ca/osteoporosis-strategy-for-long-term-care/>



BRIGHTER WORLD



Search ... Search



- About us
- Frailty and Dementia Research
- Osteoporosis LTC**
- Recent Publications
- Members Login

Osteoporosis Strategy for Long Term Care



Fracture Prevention Toolkit



[Resources for Health Professionals](#)



[Resources for Residents & Families](#)



Pearls



- Avoid fractures – Avoid pain, disability, death.
- Determine risk of fracture on admission and quarterly.
- Use the FRS as a valid tool for assessing fracture risk.
- Treat fractures - first fracture predicts a second fracture.
- Engage the multi-disciplinary teams to increase identification and improve management.



Pearls



- Treat fracture risk with consideration to:
 - Residents' preferences and values
 - Kidney function and dysphagia
 - Whether life expectancy exceeds time to benefit from medication.
- Consider a quality improvement approach to fracture prevention in your home (e.g., using audit and feedback).



