



Improving Food Quality in Long-Term Care Best Practices and New Initiatives

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RESEARCH	EDUCATION	PRACTICE
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Enhancing the quality of life and care of older adults through partnerships in *research, education and practice.*


Your moderator

- Professional and personal experiences in LTC
- Advocate



Kate Ducak, MA, CPG

This webinar is being funded by the Ontario Government through the Centre for Learning, Research and Innovation in Long-Term Care (CLRI) hosted at the Schlegel-UW Research Institute for Aging as part of a free webinar series to improve quality of care in Ontario long-term care homes. The views expressed in the webinar do not necessarily reflect those of the Government of Ontario.



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Outline

- Introduction
- Making the Most of Mealtimes (M3) concept
- M3 prevalence study
- What did we learn about food & fluid intake?
- What are some better practices observed?
- Where do we need to focus?
- New initiatives from M3

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Food intake is complex: M3 domains



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M3 prevalence study aims

- 1) To measure food intake and compare to requirements
Are residents eating enough?
- 2) To identify key modifiable drivers of food intake in long term care that can be the basis for interventions to improve intake
What things reduce food intake?
What things increase food intake?

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M3 team

Investigators


- Heather Keller (U of Waterloo)
- Christina Lengyel (U of Manitoba)
- Natalie Carrier (U of Moncton)
- Susan Slaughter (U of Alberta)
- Catriona Steele (TRI, UHN, U of Toronto)
- Lisa Duizer (U of Guelph)
- Habib Chaudhury (SFU)
- Minn Yoon (U of Alberta)
- Steve Brown, George Heckman, Veronique Boscart (U of Waterloo)
- Alison Duncan (U of Guelph)
- Lita Villalon (U of Moncton)

Students

- Sarah Wu (UW)
- Vanessa Vucea (UW)
- Sabrina Iguillo (UW)
- Ashwini Navmasivayam (UT)
- Christine Legace (U Moncton)
- Kelsey Mann (UM)
- Amanda Gravelle (UM)
- Michelle Dyck (UM)
- Charice Chan (UA)
- Vanessa Trinca (UW)
- Jill Morrison (UW)

Partnerships


- Hilary Dunn
- RIA
- Agri-Food for Healthy Aging





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Making the Most of Mealtimes (M3)

A cross-sectional, multi-site study aimed at identifying determinants of food intake and factors surrounding mealtime experience in Canadian LTC



- Purposively sampled from 4 Canadian provinces: AB, MB, NB, ON
- Eligibility: operating for >6 months, 50+ eligible residents
- Various sizes and environments
- At least one dementia care unit observed per home, if available
- 20 residents per home recruited randomly
- Eligibility: 65+ years, medically stable, >1 month since admission, regularly ate in dining room, not palliative


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M3 data collection

Dependent Variable


- 3-day food & fluid intake for each participant (observed & measured)

Independent Variables





2700+ variables /resident



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Key Food-Related Data

- 3-days weighed and estimated food intake
 - Non-consecutive days
 - 1 weekend day
- Menu analysis
 - First week
 - Variety (regular only)
 - Comparison to Dietary Reference Intake (Regular/Pureed)
 - Province and home variability

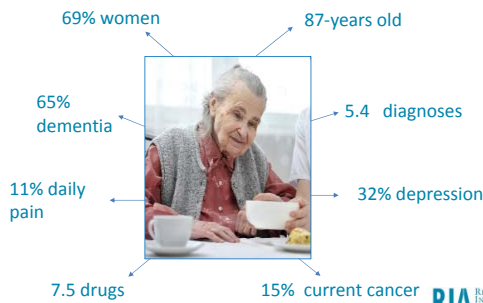


Day	Breakfast	Lunch	Dinner	Snack
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

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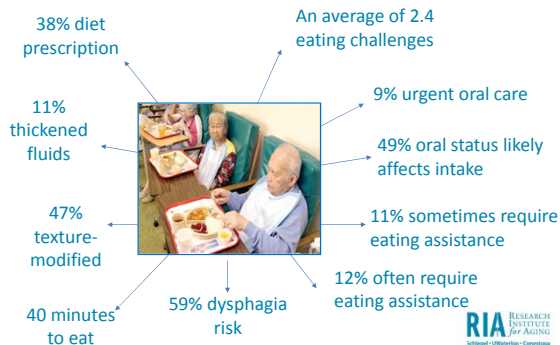
Residents' Characteristics



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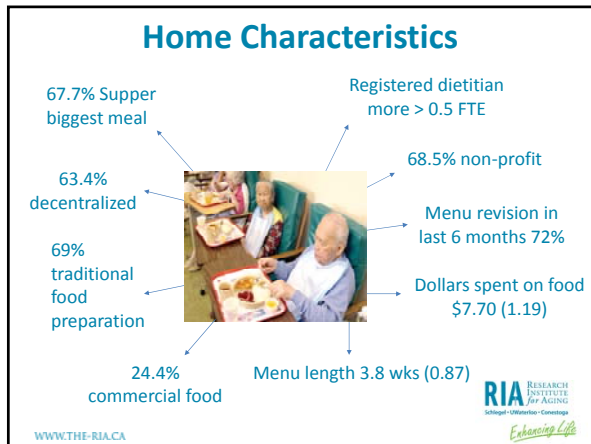
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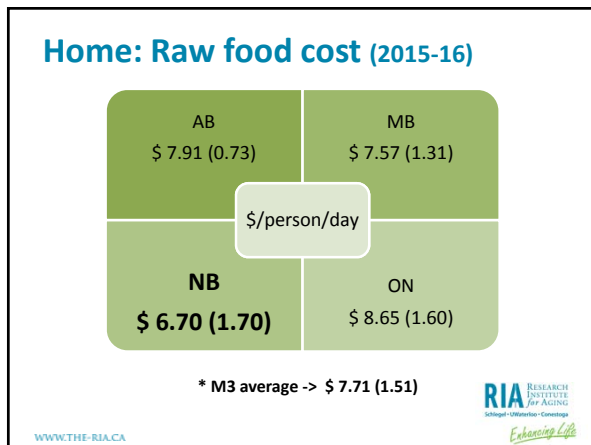
Residents' Characteristics



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Polling Questions

Do residents eat enough protein to meet their body's needs?

- 1) Yes
- 2) No
- 3) Unsure

Residents meet most of their nutrient needs through food.

Strongly agree

Agree

Don't know

Disagree

Strongly disagree

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Resident nutrition

	%	Mean (SD)
Well nourished (PG-SGA)	56	
MNA-SF		10.6 (2.53)
BMI		25.3 (5.75)
Energy intake kcal/day		1572.9 (411.93)
Protein intake g/day	41.6	58.4 (18.02)
% with Protein \leq 0.8 g/kg		
Mean Adequacy ratio (18 nutrients)		0.79 (0.09)
Oral nutritional supplement	30.7	

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- ### Nutrient intake in more detail.... (Keller et al, BJN 2018)
- < EAR/AI for 50%+ of participants
 - B6, folate
 - D, E, K
 - Calcium, magnesium, potassium, zinc (M)
 - Vit D & calcium supplementation improved intake
 - MTF < Regular for
 - M: folate, iron, selenium, sodium
 - F: B1, B2, niacin, folate, K, iron, selenium, sodium
 - MTF > Regular
 - M: vit C, D, Ca, Zn
 - F: vit C
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Does food quality need to be improved?

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MTF use predicts malnutrition (Vuca et al., JNHA 2018)

	Minced vs. Regular Beta	Pureed vs. Regular Beta
Minced & moist	-0.56*	---
Pureed	---	-0.89*
Age	-0.04*	-0.02
Male	-0.38	-0.19
ONS	-1.52*	-1.51*
CPS	-1.01*	-0.85*
Ed-FED	-0.33*	-0.34*
Oral health affects intake	---	-0.56*

* p<0.05

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The Menu: Energy, macronutrients, fibre (Vuca et al., BMC Nutrition 2017)

	RDA (males)	Regular	Pureed
Energy	n/a	2058 ± 397	1801 ± 507
Protein	56 g	86.5 ± 20.7	82.2 ± 23.6
Carbohydrates	130 g	265.8 ± 52.2	229.2 ± 66.9
Fibre	30 g	20.9 ± 5.05	16.9 ± 5.68

- Provincial differences
 - NB and AB had lower content for both menus vs. MB and ON
- No consistent provincial level differences by texture
 - Pureed not consistently lower than regular for energy
 - Protein content for pureed diet higher than regular in MB and ON
- Within provinces, home differences
 - Pureed not consistently lower than regular

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Institute of Medicine, 2006



Menu: Vitamins

- **Vitamin B6, D, E, K, and folate** were **below DRI recommendations** for both menus across all 4 provinces
- **Vitamin B1, B3, B6, and folate** were significantly different by texture but the difference between regular and pureed was not consistent across provinces
 - This difference was not consistently lower for pureed
 - NB and AB lower content for both menus

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Menu: Minerals

- **Calcium, magnesium, potassium, and zinc** were **below DRI recommendations** for both menus across all 4 provinces
- **Copper, magnesium, manganese, phosphorus, potassium, selenium, and sodium** were significantly different by texture but the difference between regular and pureed was not consistent across provinces
 - This difference was not consistently lower for pureed
 - NB and AB lower content for both menus
- Fewer differences between Pureed and Regular in ON

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Polling Question

Which of the following factors is associated with better menu quality? (check all that apply)

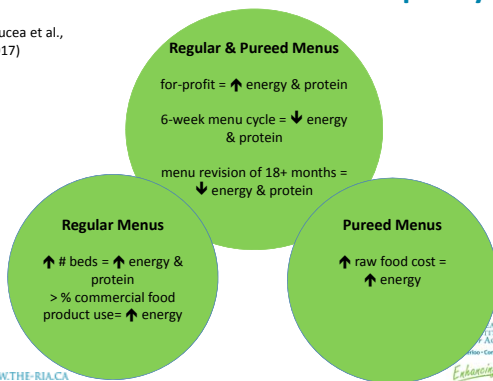
- More money budgeted for food
- Larger home
- For-profit status
- Increased use commercial food
- More frequent revision of the menu

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Home characteristics & menu quality

(Vucea et al., 2017)



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Home: Menu analysis (Lagacé, unpublished)

- **Menu variety:**
 - 7-day mean variety = **23.9** (5.78)
 - Weekly variety of food items = **78.1** (17.16)

	AB	MB	NB	ON
7-day mean	22.8 (2.66)	25.4 (9.24)	20.2 (3.15)	28.7 (2.73)
Weekly	75.4 (7.65)	77.4 (15.47)	63.4 (7.94)	102.2 (11.69)

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Some differences in nutrition standards that could influence menus...

	AB	MB	ON	NB
EWCFG	✓	✓	✓	✓
DRI			✓	
Clinical RD review menu	✓	✓	✓	✓
Clinical RD mandatory	somewhat	✓	✓	
Standardized recipes for MTF	?	✓	✓	?
Resident input to menu	✓	✓	✓	?

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Some Better Practices

- Shorter menu cycle ~3 weeks
- More frequent revision of the menu ~6 months
- Menu planning based on Dietary Reference Intake
 - Dietitian oversight and support for improving
- Standardized recipes for pureed & consistent use
 - Portion size equivalent to regular
 - Enhancement with ingredients
- More money for food
 - Discrete funding envelope for food
 - Funding specific to MTF (commercial and in-house)
- Menu planning involving family and residents

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Summary

- Several nutrients provided below DRI regardless of texture
 - Consistent with resident intake < DRI
- Pureed menus tended to contain lower amounts of nutrients than regular texture menus with some exceptions
 - MTF consumers also have lower intake for several nutrients and MTF use associated with malnutrition
- Variability by province and by home within province
 - Not just regional policy impacting diet quality
- Diverse home characteristics associated with variety in quantity and quality of food
 - Not just \$ for food



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Question

What should we do as a sector to improve the nutrient density of food provided to residents in long term care?



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Where we need to focus...



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Nutrition in Disguise

- Food products acceptable for LTC
- Increase nutrient density and antioxidant content
- Novel commercially available ingredients
 - Black beans + sweet potato => chocolate pudding



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Polling question

What food products should be the focus for nutrient enhancement?

- a) Breakfast hot cereal
- b) Egg dishes
- c) Desserts
- d) Soups
- e) Smoothies/milkshakes

Other suggestions?

↳ type in your response

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Discussion question

What are key considerations for making these nutrient-enhanced products?

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Making the Most of Mealtimes



THANK YOU
QUESTIONS ?

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