Provincial Geriatrics Leadership Ontario

Segmenting the Population – Older Adults Living with Complex Health Conditions[1]

Segmentation in this context means identifying groups with shared needs and access barriers. Segmentation can identify such groups at ***a system level (large or small)*** or ***practice/individual level***. Segmentation is a key step in managing a population's health, as it permits the use of care pathways and care coordination for better health outcomes.

System Level

Core Idea:
Estimating the population who may be living with complex health conditions (e.g. frailty) in a region.

What is this used for (rationale):
To facilitate planning by projecting the total possible demand for health services and to estimate the reach of interventions intended for the population of interest. "Reach" refers to an approximation of how many members of the population are currently being served.

Method (two methods[2] shown):

1. Using current published census data[3] for the area, and a validated index intended to estimate the prevalence of frailty among community dwelling seniors[4], calculate the population anticipated to be living with frailty in the region.

Census Division: Kawartha Lakes

	Population (P=Projection)					Estimated Population Living with Frailty			
Age group	2016 (Census)	2020(P)	2030(P)	2040(P)	Prevalence of Frailty (proxy)	2016	2020	2030	2040
65-69 (Males)	3185	3,267	3,267	3,073					
65-69 (Females)	3195	3,521	3,998	3,305					
70-74 (Males)	2375	2,893	3,645	3,279					
70-74 (Females)	2375	3,061	3,845	3,565					
Subtotal 65-74 (all)	11,130	12,742	14,755	13,222	0.16	1,781	2,039	2,360.80	2,115.52
75-79 (Males)	1,515	2,046	2,869	3,663					
75-79 (Females)	1,645	2,095	3,297	3,916					
80-84 (Males)	1,090	1,146	2,144	2,926					
80-84 (females)	1,280	1,415	2,524	3,312					
Subtotal 75-84 (all)	5,530	6,702	10,834	13,817	0.286	1,582	1,917	3,098.52	3,951.66
85-89 (Males)	620	719	1,158	1,812					
85-89 (Females)	880	922	1,418	2,363					
90-94 (Males)	215	368	368	1,116					
90-94 (Females)	475	658	940	1,760					
95-99 (Males)	60								
95-99 (Females)	135								
100+ (Males)	5								
100+ (Females)	20								
Sub total 85+ (all)	2,410	2,667	3,884	7,051	0.521	1,256	1,390	2,023.56	3,673.57
Total	19,070	22,111	29,473	34,090		4,618	5,345	7,483	9,741

See Frailty Estimates by Census Division and Health Region

2. Use administrative data[5] and frailty algorithm that identifies individuals as follows: resident in LTC, receiving palliative care services; or two or more of the seven following conditions: cognitive impairment, incontinence, falls, nutritional difficulties, hospital visits associated with decreased health status, functional difficulties, or targeted health service utilization.

Other notes:
Estimated reach = $\frac{\text{\# of individuals receiving service}}{\text{estimated \# of individuals living with frailty}}$

Practice/Individual Level

Core Idea:
Identify specific individuals who may be living with complex health conditions at a practice or service level.

What is this used for (rationale):
To enable individualized care planning with older adults and their families/caregivers, founded on principles of geriatric care demonstrating the best outcomes for this population.

Method:
(Adapted from https://www2.gov.bc.ca/assets/gov/health/practitioner-pro/bc-guidelines/frailty-pathway.pdf):

1. Use case finding, informed by warning signs (e.g. falls, delirium, unintended weight loss, cognitive change, functional decline etc.)[6] or the 5Ms (mind, mobility, medications, multi-complexity, matters most) to identify individuals.
2. Conduct a comprehensive assessment of individuals with identified complex health concerns. See
   a. Comprehensive geriatric assessment https://www.rgps.on.ca/initiatives/cga/
   b. Specific assessment tools http://rehabcarealliance.ca/fsmc-compendium and http://seniorscarenetwork.ca/wp-content/uploads/2019/02/Addendum-to-the-RCA-Compendium-final-Jan-25-2016.pdf
3. Confirm degree of frailty with a scoring tool.[7]
4. Develop or refine a goal based[8] care plan.
5. Provide care coordination support specific to older adults living with complexity which is characterized by integration, a holistic approach, facilitation of implementation and active follow-up & follow-through and outcomes monitoring.

Other notes:
For older people living with complex health conditions, there is limited utility for ultra-granular segmentation (e.g. a specific disease). The challenge is to create service designs appropriate for people living with **multiple**, complex health conditions.

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[1] Includes frailty, co-morbid conditions, dementia, and complexity arising from medical and/or mental health conditions

[2] These estimates will differ as assumed frailty (method 1) may not be evident in administrative data if individuals have not used health services in 2018 or had all co-morbid conditions documented.

[3] Such as Health Analytics Branch (2018 March) LHIN and sub-region Census profile - 2016 Census,

[4] Hoover, M., Rotermann, M., Sanmartin, C., and Bernier, J. (2013). Validation of an index to estimate the prevalence of frailty. Retrieved from https://www150.statcan.gc.ca/n1/en/pub/82-003-x/2013009/article/11864-eng.pdf?st=iY5Rki97

[5] Seitz, D. (2019). A Population-Based Study of Older Adults in Ontario: Dementia, Frailty and Utilization of Physician Specialist Services. Retrieved from https://www.rgps.on.ca/wp-content/uploads/2019/08/Older-Adults-in-Ontario-Report-May15-PGLO.pdf

[6] https://www2.gov.bc.ca/gov/content/health/practitioner-professional-resources/bc-guidelines/frailty#sands

[7] https://www.dal.ca/sites/gmr/our-tools/clinical-frailty-scale/cfs-guidance.html

[8] https://www.ncqa.org/wp-content/uploads/2018/07/20180531_Report_Goals_to_Care_Spotlight_.pdf