

**Title:** Frailty and Ageing: Canadian challenges and lessons learned in Denmark

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**ABSTRACT** (100 words max)

Delegates of Canadian government, health care and administration, and patient advocacy groups participated in a Canadian Frailty Network (CFN)-led visit to Denmark to learn first-hand about novel approaches to providing healthcare for older adults living with frailty. Based on the learnings of the CFN delegation, we discuss several healthcare challenges faced by Canada's aging population for which Danish strategies provide clues to improving system efficiencies and optimizing quality of life. Our paper describes how successful strategies implemented by the full continuum of Danish health and social care systems could maximize the impact of Canadian healthcare investments.

**KEY WORDS**

frailty, ageing, healthcare systems, Denmark, Canada



## **BACKGROUND**

In 2017, Canada and Denmark spent similar proportions (10.4% and 10.2%, respectively) of their gross domestic product (GDP) on healthcare <sup>1</sup>. Despite comparable health spending, Canada ranks near the bottom of Organisation for Economic Co-Operation and Development (OECD) countries with regards to availability and access to care <sup>2</sup>. Although Canada has a clear mismatch between value of care received for the relatively high amount of healthcare spending, Danish strategies have improved healthcare productivity and quality while successfully keeping expenditures in check. In May 2018, a delegation of Canadian government officials, hospital administrators, physicians, and advocates for older adults living with frailty and their caregivers visited Denmark to meet with Danish ministry and regional leaders. The purpose of the visit was to gather insight about Denmark's health system transformation success and aspects of holistic health care for older adults that might be adopted by Canada. The visit was spearheaded by the Canadian Frailty Network (CFN) in partnership with Healthcare Denmark. The CFN is a pan-Canadian not-for-profit organization funded by the Government of Canada through the Networks of Centres of Excellence (NCE) Program whose mission is to improve the care of those living with frailty in Canada. CFN and Healthcare Denmark are committed to improving the care for older adults living with frailty. As Canadian delegates toured Danish hospitals and rehabilitation centres, they were encouraged to explore how innovations and emerging scientific evidence could inform research, knowledge exchange, and clinical practice for those providing healthcare and support to older Canadians living with frailty.

Canada is home to 36.7 million inhabitants, of which 16.9% is aged over 65 years <sup>3</sup>. Within the next five years, 20% of Canada's population will be older than 65 <sup>4</sup>. The number of persons aged over 85 is also ballooning <sup>5</sup>. By 2051, one in four Canadian seniors will be older than 85 <sup>3</sup>. Together with the growing number of older adults is an increasing number of persons living with frailty, defined as a state of increased vulnerability and functional impairment caused by cumulative declines across multiple systems <sup>6,7</sup>. Although frailty is independent from chronological age, it is more prevalent in older adults and predicts adverse health outcomes, including institutionalization and mortality <sup>6,8</sup>. Over one million Canadians are living with frailty, and based on demographic shifts alone, well over two million Canadians will be living with frailty within the next decade. Addressing the influx of older adults living with frailty necessitates careful examination of care models from federal, provincial and territorial, and regional perspectives. Opportunities to improve the quality and efficiency of healthcare in Canada will rely on identifying novel strategies to mitigate personal, societal, and system-level burden.

Healthcare in Canada is based on a single-payer system that is centrally administered by the federal government. The federal government sets and directs national principles for the healthcare system, provides financial support to the provinces and territories, and provides funds to care for certain groups of people (e.g., First Nations). The federal government receives public healthcare funding calculated at 12% of taxable income <sup>9</sup>. Ten provincial and three territorial governments each receive federal funds through the Canada Health Transfer to independently administer and deliver healthcare to their residents with insurance plans that meet the national standards set out in the Canada Health Act. The provincial and territorial health insurance plans cover medically necessary hospital, doctors', long term and home care services that are financed with a combination of provincial and territorial and federal taxes. Canada's healthcare system, established in the mid-20<sup>th</sup> century, was built to deal with episodic care for a young population. The framework of healthcare system has remained largely unaltered and, consequently is not adequately designed to meet the challenges of a growing population of older adults living with frailty.

Denmark is widely recognized as a leader in care for its older citizens <sup>2</sup>. The Danish approach to citizen wellness can be described as: *You take responsibility for your health and we will take care of your illness*. Denmark empowers its 5.7 million citizens to achieve and maintain optimal health and wellness, while at the same time reassuring its citizens that medical treatments and social supports will be available when needed. Free and equal access to healthcare are fundamental rights for all Danish citizens. Equal standards of care throughout the country is a healthcare priority. Both Canada and Denmark have similar demographic challenges, where the number of inhabitants aged 65 and older is steadily increasing. In Denmark, 18.6% of the population is aged over 65, with adults aged over 80 representing the fastest growing segment of the population <sup>10</sup>. Over the past 25 years Denmark has transformed its healthcare structure to implement initiatives specifically for older adults. For example, older adults admitted to the hospital meet with a nurse who, in partnership with the patient's relatives, conducts a cross-disciplinary geriatric assessment and develops a treatment plan within 48 hours. Moreover, the geriatric assessment always includes a discharge plan and includes guiding principles of dignity, self-governance, safety and security, irrespective of their level of infirmity.

Much like Canada, Danish healthcare is a national single-payer system that is financed through public taxation. The Danish national government receives public healthcare funding calculated at 8% of taxable income. Denmark's healthcare operates within three levels: national, regional, and

municipal. The Ministry of Health operates at the national level and is responsible for regulating and supervising all functions related to health and elderly care policies, legislation, economic frameworks, and quality control. In recognition of the challenges associated with providing healthcare to older adults, Denmark recently established a dedicated Ministry for Elderly Care to work alongside the Ministry of Health in efforts to strengthen the patient management pathway between general practitioners (GPs), hospitals, and municipalities. Denmark's five administrative regions manage and finance most public hospitals, GPs, specialists in private practice, and hospice care. A defining feature of the Danish healthcare system is its decentralization of responsibilities for primary and secondary healthcare provision. Local health authorities are comprised of elected councils that are responsible for the delivery and financing of local health and elderly care services such as nursing homes, home care services, and programs for disease prevention, health promotion, and rehabilitation. Municipalities are financed in part through block grants, reimbursements, and equalization schemes from the Ministry of Health, but most funds allocated for health and social services are derived from local taxes <sup>11</sup>. Although municipalities have full autonomy to decide on the methods and levels of service for its citizens, local quality standards must be met to ensure equal access to healthcare is independent of where one lives and of economic resources.

Based on the learnings of the CFN delegation, we discuss several healthcare challenges faced by Canada's increasing number of older adults living with frailty for which Danish strategies provide guidance to improving system efficiencies and optimizing quality of life. We aim to describe how successful strategies implemented by the full continuum (acute, primary, long term, residential and community care) of Danish health and social care systems could maximize the impact of Canadian healthcare investments.

### **CHALLENGE 1: DESIRE TO LIVE AT HOME FOR AS LONG AS POSSIBLE**

Most (87%) Canadians want to live at home for as long as possible <sup>12</sup>. The decision to live at home is often equated with maintaining autonomy, comfort, and conveniences <sup>13</sup>; however, these advantages are threatened by physical limitations that restrict independence. As physical impairments accumulate, residing at home becomes increasingly challenging for older adults living with frailty because activities of daily living are difficult to manage and social interaction diminishes <sup>14</sup>. Canadians are living longer than previous generations and the number of adults aged over 80 coping with two or more chronic conditions is rising <sup>15</sup>. This is of particular interest to CFN since

approximately 30% of Canadians aged 75 to 84 are living with frailty <sup>16</sup> and have complex needs that require a host of medical and non-medical services. To promote independence among older adults and improve their access to care, Canada healthcare needs to focus on developing services that support older adults who want to live at home.

Nearly half (46%) of Canadian public-sector healthcare dollars are used by adults 65 or older <sup>17</sup>. Providing healthcare for older adults living with reduced capacity requires an integrated, multidisciplinary approach that shifts the focus from a disease-centred to a person-centred model. Most care providers in Canada understand the importance of integrated care to facilitate the coordination of support and services for older adults, but changing current embedded practices remains a significant challenge. Interestingly, chronic disease management is not recognized as a senior strategy that would integrate care into the community <sup>18</sup>. Canadian healthcare is largely fragmented and, in turn, is a source of tremendous burden for the 5.4 million Canadian caregivers for older members of their family or friends <sup>18</sup>. Canada needs a cost-effective strategy that is community-specific to accommodate the rising number of older adults who would benefit from integrated home care services. Coordination of care across disciplines along with information about access and provision of care is necessary for older citizens and their family and caregivers.

### **Learnings from Denmark**

Faced with similar demographic challenges to that of Canada, Denmark developed an innovative reablement service that facilitates older adults living with, or at risk of frailty to restore, improve, and maintain physical and mental function to perform their valued daily activities. The Danish perspective that embodies the guiding principle of reablement is: *Add life to remaining years, not years to remaining life*. Health and support services of reablement programs are focused on doing things *in cooperation with* individuals rather than doing things *for* individuals. For instance, reablement can range from physical rehabilitation after surgery to teaching a widower how to cook more nutritious meals at home. Denmark considers reablement advantageous because it reduces the number of older adults relying on supportive care and being institutionalized. Reablement training is not intended to resolve specific medical issues, but instead focuses on regaining functional abilities and the confidence in these abilities after illness or hospitalization <sup>19</sup>. Danish municipalities must conduct annual home visits for all adults over 75 to identify those at risk for frailty in need of home care services and a reablement training program. Reablement and preventive home visits are provided free of charge to Danish citizens in need. Interdisciplinary teams of healthcare and social



workers carry out an intense goal-oriented reablement program in the residential setting for a limited (e.g., 12 weeks) period. Importantly, the programs are based on the individual home-based assessments and account for personal and family goals. In combination with reablement programs, the preventive home visits reduced admissions to institutional care, and the majority (88%) of citizens are satisfied with the program and 66% report that their quality of life has improved <sup>20</sup>.

Despite the paucity of research demonstrating the effectiveness and cost-effectiveness of preventive home visits and reablement programs <sup>21,22</sup>, Denmark perceives these initiatives as investments in the health and wellness of its citizens. Accordingly, municipalities in Denmark began steadily increasing the number of home nurses in the mid-1980s, while at the same time reducing the number of nursing homes <sup>23</sup>. Now, 30 years later and in accordance with its citizens who prefer access to healthcare treatment and resources close to home, Denmark diverted the responsibility of older adult care and preventive health services to municipalities. This increased specialized training for nurses in chronic care outside hospitals to provide healthcare in GP practices and municipal health centres. These changes reduced length of hospital stays (average 5.5 days, compared to EU average of 8.0 days) <sup>10</sup>.

Canada is making strides to adopting a person-centred, integrated care model for older adults. For instance, on Prince Edward Island, the Caring for Older Adults in Community and at Home (COACH) program is delivered by an integrated interdisciplinary expert team of health professionals, including a geriatric nurse practitioner, the client's GP and a care coordinator. In collaboration with existing resources in partner programs, the COACH team provides direct client care at home, on a timely basis, to predict and prevent (or proactively manage) health crises when they occur. The team encourages advanced care planning and access to community support, with the goal of improved quality care for older adults living with frailty. Pilot data showed that the COACH program reduced hospital inpatient stays by two thirds, emergency visits by one third and primary care visits by one half <sup>24</sup>. COACH clients are better able to self-manage and make informed decisions that positively impact their quality of life at home <sup>24</sup>. Another Canadian example is the partnership between the Fraser Health Authority, Nova Scotia Health Authority, and a private sector. Together, they designed the Community Action and Resources Empowering Seniors (CARES) model that supports GP's to identify older adults at risk for frailty. In the CARES model a GP uses the clinical frailty scale (CFS) and an electronic comprehensive geriatric assessment and frailty index to calculate the degree of frailty, which is used to develop and deliver individualized care plans for older adults to support and develop their self-management capacity. Preliminary findings showed that after six months in

CARES, all patients classified as vulnerable or mildly frail by the CFS transitioned to a less frail category and 89% were classified as non-frail <sup>25</sup>.

Reablement is a multidisciplinary program that provides services from medical and non-medical personnel. Thus, widespread adoption of reablement programs by Canadian provinces and territories will require that all stakeholders understand the personal, societal, and economic values of a person-centred and integrated approach to improving capacity of older adults. Therefore, teaching the new philosophy of preventing and reversing frailty in training programs would be warranted and CFN and others, such as the Canadian Medical Association, can begin to advocate for policy change so that all regions of Canada adopt an integrated care strategy. Possible challenges to the implementation of reablement in Canada include diverse communities comprised of several cultural and ethnic backgrounds, as well as the vast geographical landscape of the country with rural and remote communities posing a significant challenge for providing equitable care. Denmark's example provides useful guidance on successful implementation of a reablement program for Canada, although one must keep in mind that Denmark's total population is 5.7 million inhabitants and has a land mass smaller than Nova Scotia.

## **CHALLENGE 2: IMPROVING LIVING IN LONG TERM CARE**

According to the 2016 census, nearly 7% of Canadians aged 65 or older, and 30% of those aged 85 and older, live in long-term care (LTC) or retirement residences <sup>3</sup>. Compared to those living in retirement residences, older adults living in LTC have more complex care needs <sup>26,27</sup>. It is estimated that 30 to 50% of adults older than 85 are living with frailty <sup>28</sup>. Among Aboriginal people in Canada, nearly half of adults older than 65 are living with frailty and the prevalence is expected to surge as the number of Aboriginal people over 60 is expected to triple by 2031 <sup>29,30</sup>. Cultural differences among ethnic and Aboriginal populations pose unique challenges to Canadian healthcare because of variation in how and where older adults care for members of their communities. About half a million Canadians are living with dementia and many older adults with dementia are LTC residents. In fact, 90% of LTC residents have some form of cognitive impairment and up to one third are living with severe cognitive impairment <sup>27</sup>. Whilst frailty is observed independently from chronological age, both dementia and frailty are increasingly prevalent among older adults and together will challenge the provision of quality care for older adults living in LTC <sup>31</sup>.

LTC homes, also known as nursing homes, in Canada are offered through a mix of public, private for-profit, private not-for-profit, and religious-based providers. Each year, the federal government allocates a budget for provincial and territorial health care (\$37 billion in 2017)<sup>32</sup>. Each provincial and territorial health ministry distributes the federal financing to coordinate and deliver LTC health services. LTC health services are also subsidized through various provincial and municipal plans and agencies; however, residents pay a portion of their accommodation services to the LTC home on a per-diem amount (\$59.82/day for basic long stay in 2018) that may be a combination of co-insurance or self-pay<sup>27</sup>. The number of beds is limited; 90 beds per 1,000 population aged 75 or older<sup>33</sup>. As a result, wait lists are long and in Ontario an older adult can expect to wait over five months (161 days) for LTC placement<sup>27</sup>. The long wait lists may be, at least in part, due to the funding mechanism that fails to create financial incentives for LTC homes to increase volume or transition residents to less intense care when appropriate<sup>34</sup>.

### **Learnings from Denmark**

One third of Danish citizens are living with one or more chronic illness<sup>35</sup>. Among those aged 65 and older, approximately 12% Danish citizens are living with frailty<sup>36</sup>. Similar to Canada, dementia is a growing concern among older adults and is estimated to affect 84,000 Danish citizens, or nearly 8% of all adults aged over 65<sup>37</sup>. In Denmark, older adults living with multimorbidity, frailty, or dementia may reside in one of many types of LTC dwellings: conventional nursing homes, modern close-care accommodation (i.e., subsidized housing for older adults with care staff and facilities), or at home. Regardless of dwelling, permanent personal (e.g., bathing, shaving) and practical assistance (e.g., chores, meal preparation) are paid for by the state. About 3.4% of adults aged 65 or older live in Denmark's conventional nursing homes and typically represent the oldest segment of the population (i.e., aged 90 and older)<sup>38</sup>. Despite the choice of LTC dwellings, Denmark's policy priority is home-based care. In fact, Denmark has not constructed a conventional nursing home since 1987. Instead, Denmark built a wide range of close-care dwellings explicitly for older adults<sup>38</sup>. Close-care dwellings consist of small individual apartments that are physically connected with a shared common-room and garden. Residents of close-care dwellings maintain autonomy and privacy; however, individuals also indicate the level of care and services they desire. The success of the close-care accommodation may be attributed to the adoption of an "integrated care system" that involves extensive systems of home-based care facilities and hospitals throughout the country. The integrated care system coordinates exchange of reports about admission notifications and responses, rehabilitation plans, care reports, and discharge notification between care providers. The information

exchange allows older adults to receive follow-up care in their respective dwellings, which reduced length of hospital stay by 22%, or 1.5 days, between 2008 and 2013 <sup>20</sup>.

While friends, relatives and neighbours help older citizens of Denmark with transportation and practical tasks, the basic cleaning and personal care are generally viewed by Danish citizens as the responsibility of home help provided by the municipality <sup>39</sup>. Nevertheless, like Canada, caregiver burden is a growing concern among Danish children caring for older parents who report greater stress in their daily routines, negative effects on psychological well-being, and difficulty finding time for self. To relieve caregivers and accommodate older citizens living with frailty, dementia, and a range of functional limitations, a significant renovation in the city of Aalborg, Denmark has resulted in “Nursing Homes of the Future” that focus on acknowledging the differences between resident care needs and thus adjusting care accordingly to promote quality of life. While the severity of an individual’s physical and cognitive impairments dictates their level of support and type of programming offered by the nursing home, the overarching objective for nursing care in Denmark is to provide daily integration of sense stimulation, mobility, and social interaction. In Aalborg, this is achieved using themed spaces such as common cooking areas, gardens, and a music room. The Canadian delegates were struck by the community spaces within the Danish nursing homes: fitness, library services, information and technology services, and a restaurant in the nursing home were also available for community members. Moreover, assistive technologies to foster independence among residents with frailty and dementia are an important feature of the environment. For example, smart floor technology increases resident safety by illuminating bathroom lights when the foot touches the floor and sounding an alarm to nursing home staff when residents fall or leave the premises. Other technologies such as wash columns, douche toilets, and ceiling hoist systems in bathrooms and bedrooms significantly reduce the staff required to bathe, toilet, and transfer residents.

Technology improves the quality and efficiency of services that act to reduce healthcare spending <sup>40</sup>. The Canadian government acknowledges the potential to improve quality of care and promote system-wide efficiencies with technology; however, adoption is generally slow <sup>41</sup>. CFN aims to improve healthcare for older adults living with frailty by funding projects that incorporate technology. Ongoing projects by CFN investigators include the development of a frailty screening tool to help GP’s streamline care and support referrals for older patients living with frailty by Stolee and colleagues, as well as Stelfox and colleagues’ intensive care unit (ICU) discharge tool kit to assist healthcare providers safely transfer seriously ill older adults living with frailty to ward. The

Aging Gracefully across Environments using Technology to Support Wellness, Engagement and Long Life (AGE-WELL) NCE program initiated National Innovation Hubs to provide a space where industry, community, government, researchers, end users and others can generate new ideas together. Although AGEWELL Innovation Hub is dedicated to advancing sensor technologies and data analytics, they are not exclusively focused on older adults. Other investments in entrepreneurial innovation centres, like MaRS Discovery District have helped develop Mavencare, a digital homecare company that supports older adults and their families to promote living in their homes. Continued investment in these types of novel solutions will contribute to broad economic and societal impact.

Denmark has experienced accelerated development and adoption of transformative and innovative technologies in healthcare institutions because of two key drivers: openness to showcasing its healthcare inventions globally and its emphasis on citizen engagement. It may be fruitful for Canada to consider a similar innovation showcase model like that of Healthcare Denmark, where Canadian best practices generate constructive discussions, investments, and improvement. Danish citizens support community engagement and take ownership for technological change. At its core, the Danish health and social care structure is grounded in the value of dignity '*from cradle to grave*' and heavily relies on citizen engagement to ensure that the system considers all factors that affect the quality of life and healthcare experience for an individual. Patient groups in Denmark are a tremendous source of citizen engagement and are known to heavily influence public debate. Danish Patients is an umbrella organization for 15 patient associations in Denmark that contribute to developing a patient-focused health system of international standard. Although differences in political structures result in greater distinctions between municipal government and healthcare in Canada, greater support for local involvement and community integration could shift Canada to adopt a wider range of patient-centered approaches to healthcare.

### **CHALLENGE 3: LIMITED ACCESS TO NUTRITIOUS FOOD**

A growing body of evidence suggests that nutrition is an important modifiable factor that is directly associated with frailty<sup>31</sup>. In fact, two of three malnourished older adults are living with frailty<sup>42</sup>. Since older adults are less physically active, muscle mass and metabolic rate decline. As a result, older adults require fewer calories, but the quality of the calories consumed must be nutrient-rich and contain high-quality protein<sup>43</sup>. Most LTC residents do not consume adequate amounts of nutrients<sup>44</sup>. Malnourishment among older adults is, in part, due to low food intake<sup>45</sup>, which is multifactorial and

attributable to poor appetite, poor motivation to eat well, and altered food preferences <sup>46</sup>.

Malnourishment compounds the complexity and cost of patient healthcare by increasing risk for infection and accelerating loss of muscle mass that leads to mobility limitations and longer hospital stays <sup>47</sup>. While Canadian healthcare institutions aim to provide nutritious meals, the goal is restricted by available funds and is more accurately stated as “*to provide the best quality food available as efficiently as possible within budget constraints*” <sup>48</sup>. This has contributed to a managerial orientation of food services decision-making, rather than a patient-centred care orientation.

One challenge of meal preparation in Canadian LTC homes is the limited daily raw food budget, which is allocated to each facility in an ‘envelope’ that is dedicated to raw food expenses and nutritional supplements. The amount per ‘envelope’ varies by province, but in 2017 the publicly funded LTC homes in Ontario had a daily (i.e., three meals) raw food budget amount of \$9.00 per resident <sup>49</sup>. Heterogeneity of Canadian LTC residents also challenges the provision of nutritious foods. In large urban centres, Canadian LTC residents represent diverse cultural backgrounds, races, ethnicities, religious affiliations, and economic status. Although food and liquid intake can be increased by providing culturally-appropriate meals <sup>50</sup>, preparing recognizable and palatable meals in line with cultural preferences of residents is time consuming and difficult within current budgetary constraints.

### **Learnings from Denmark**

Danish citizens consider food as integral to good health. However, research in Danish acute care settings showed that patients, staff and management were dissatisfied with the extent to which food was delivered and consumed <sup>51</sup>. Social and healthcare assistants felt that they didn’t have enough time to perform adequate nutritional counseling with patients, managers were unsure how to measure performance of a nutritional program, and patients felt that they were not aware of various food options available <sup>51</sup>. In response, hospitals in Denmark now hire dedicated nutrition assistants to teach patients about the importance of a nutritious diet for healing and provide knowledge that the patient can continue to apply after hospital discharge <sup>52</sup>. Patients reported high satisfaction of consulting with an individual who shows an interest in their nutrition <sup>52</sup>. In fact, this approach transformed the hospital experience for patients. Dedicated staff providing dietary counseling reduced the amount of food waste and improved patient diet post-discharge <sup>52</sup>.

In 2016, new legislation in Denmark required each municipality to develop a dignity policy that must describe how food and nutrition is secured for elderly care. During the CFN-led visit to Denmark, the notion '*food must be treated as medicine*' was evident at the Regional Hospital Horsens kitchen where trained food service workers, based on input from care staff, physicians, and the dietician, prepared visually appealing, nutritious meals intended to tantalize the patients' senses. Food served to patients in Horsens is considered Danish "comfort" food: familiar foods that the older patients would make for themselves at home. Moreover, nutritious snacks are available to patients between meals by a circulating a food cart that encourages individuals eat while unwell. The effect of these food strategies on clinical outcomes is not clear, but the caring and compassionate approach to mealtimes is thought to improve the older patients' quality of life.

A fundamental difference in Canadian healthcare is the perspective of food as hospitality. Although optimized nutritional care is associated with fewer days in the hospital and overall satisfaction of care <sup>47</sup>, low food intake among institutionalized Canadian older adults must be addressed and adopting the Danish food perspective may be one immediate solution. Innovative approaches to encourage older adults to eat their meals could improve outcomes related to healthy ageing <sup>53</sup>. Since appetite declines with aging and during bouts of acute illness, both LTC homes and hospitals are challenged to provide food options that meet protein and nutrient requirements, but also bring joy to an individual. LTC residents spend many months or years in a home and meal times are often considered a highlight of the daily routine. Creating an environment with social interaction, and where the meal time experience is familiar and personalized can increase food intake <sup>54</sup>. Since Canada's older adults represent a heterogeneous population in terms of health status, cultural origins, financial situations, and living arrangements, the process of creating familiarity may involve the type or flavour of food, timing of meals, and language spoken at meals. In Canada, the proportion of adults aged over 85 unable to speak an official language is growing <sup>55</sup>. Although it may not be possible to provide staff who speak all the languages of LTC residents, other strategies learned from Denmark may encourage greater food consumption. For instance, in Danish nursing homes the kitchen and food preparation facilities were open-concept, so that cooking smells could stimulate the senses of residents. Redesign of Canadian LTC homes could consider kitchenettes where smells of food preparation permeate in living areas and allow older adults to detect and desire the food being cooked.

## **CONCLUSION**

Healthy ageing of Canadians will rely on continued political and citizen support across care sectors and health disciplines. The value of Canadian healthcare for older adults requires an increased pace of discovery to facilitate timely adoption of novel solutions. Older adults living with or at risk of frailty represent an important population that will continue to challenge, every municipality, region, and province in Canada. Although there are many things that we can learn from Denmark, there are also many local innovations in Canada that need to be scaled up. Going forward, policies to improve the quality and efficiency of healthcare across Canada's large geography must ensure align with the values of its heterogeneous population.



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