# The Rural Elderly, Food and the Healthcare System

A DISCUSSION PAPER

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May 10, 2019

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## Introduction[1]

*For every complex problem there is a simple solution, it's just that it's wrong.*

H.L. Menken

As Canadians and Ontarians, we face many challenges: a changing economy, global climate change, increasing socio-economic inequity and an aging population. Each of these issues brings its own set of unique challenges. One of the challenges we face in terms of an aging population is the escalating costs of our healthcare system to meet the needs of this population. The economist Don Drummond (2012) reported that in Ontario healthcare spending takes slightly more than 40% of all program spending. This is a cause for concern as we cannot increase healthcare spending indefinitely for every increase in healthcare spending means moving money from other government programs in a political environment that is unlikely to see an increase in taxes to pay for enhanced services. In Menken's words, this is a complex issue and there is no simple solution.

When Tommy Douglas first brought universal healthcare to the province of Saskatchewan, he argued two things: (1) we need to provide people with healthcare when and where they need it, and (2) we must develop policies that keep people healthy. As Bennett (2009) notes, we cannot just focus on the "repair-shop." Ontarians must come to understand that we must support this second point, and an investment in keeping people healthy reduces cost by placing less demand on the healthcare system. Clearly, the researches on the determinants of health have demonstrated this whereby the healthcare system only accounts for 25% of the health outcomes despite receiving over 40% of the budget in Ontario. Socio-economic determinants account for 50% of the health outcomes while the physical environment accounts for 10% of health outcomes and genetic and biological factors account for 15% of health outcomes (Bennett, 2009). However, currently we suffer from the "tyranny of the acute" (Mintzburg, 2017) whereby increasing resources go into helping people get better rather than keeping them healthy (new drugs and hospital equipment etc. rather than preventive measures).

Romanow (2009) has argued that we need to emphasize preventive health measures, needing to move from an illness model to a wellness paradigm. As he notes, historically there have been two great revolutions in public health. The first focused on the control of infectious disease and the second one is the battle against non-communicable diseases. He then argues we need a third revolution,

[1] This research is part of a larger project focusing on food insecurity and the rural elderly and is funded through the OMAFRA/University of Guelph Research Partnership Program.

one that "is about moving away from an illness model to all of those things that both prevent illness and promote a holistic sense of well-being" (Romanow, 2009, xvi). And as Hallstrom (2009) argues, while there is recognition of the benefits of developing a preventive perspective, the contemporary political realities and the ideological influence of neoliberalism present barriers to be overcome if this goal is to be realized.

This discussion paper focuses on the relationship between food and seniors' health and wellbeing with an emphasis on the rural elderly living independently, and implications for the healthcare system. I begin by examining the social determinants of health followed by sections on food insecurity, rural health and wellbeing, an aging rural population, food and the rural elderly and I close by examining the implications and offering some conclusions.

## The Social Determinants of Health

The idea of social determinants of health has significant impacts on health outcomes. Raphael (2009[a]) denotes that how a society organizes its resources creates the conditions which determine health outcomes. The conditions created through social and economic conditions will have an impact on whether an individual remains healthy or becomes ill, and determines whether the individual will have the social, personal and physical resources to meet their needs and aspirations. Raphael wrote: "Social determinants of health are about the quantity and quality of a variety of resources that a society makes available to its members" (2009[a], 2).

Given the centrality of the social determinants of health to the wellbeing of individuals, communities and jurisdictions, policy as to how social and economic resources are distributed within a society will impact the overall social determinants of health and wellbeing. The policies will be shaped by the political, economic and social forces that are operative within particular societies (Raphael, 2009[a]). However, according to Raphael, when health authorities consider living conditions it is usually to identify individuals engaged in "unhealthy lifestyles" rather than looking at how governments might make living conditions more conducive to wellbeing. In other words, we need to look at systemic reform in the allocation of social and economic resources to promote health and wellbeing. Raphael concludes that "behavioural risk factors are rather weak predictors of health status as compared to socio-economic and demographic measures of which income is a major component" (10).

The study of social determinants of health, according to Raphael (2009[a]), seeks to answer two questions:

1. What are the societal factors (e.g. income, education, employment conditions etc.) that shape health and help explain health inequalities?
2. What are the societal forces (e.g. economic, social and political forces) that shape the quality of these societal factors? (5)

Raphael then suggests it is the retrenchment of public policy in the 1980s under the guise of neoliberalism that has led to the deterioration of the various social determinants of health. The influence of neoliberalism on governments in developed economies has started to unravel the social safety net of the former welfare state and this has led to greater wealth, social and health inequalities (Raphael, 2009[b]). Hallstrom (2009, 345) argues "the rise of neoliberalism, in combination with the federal structures of a 'politics of blame' have led to a withering of the Canadian welfare state, and a marked shift in political rhetoric away from collective rights and welfare toward politics of the individual." This has undermined Canada's social safety net and as Raphael (2009[b]) has argued the social safety net is an important determinant of population health in Canada but is not recognized as such. He highlights that various medical outcomes are related to income[2] such as heart disease and stroke, cancers and infectious diseases, and notes that premature death by injuries is also correlated with income. Raphael (2009[b]) explains "poor quality social determinants of health come to have maladaptive responses to stress, weakened immunity to infection and disease, and a greater likelihood of metabolic disorders" (26). He also argues that people who experience various types of insecurity be it income insecurity, employment insecurity (precarious employment), housing insecurity or food insecurity are more likely to engage in risk related activities, such as smoking, excessive alcohol consumption or not getting sufficient physical activity to maintain their wellbeing. Furthermore, these issues of maladaptive behaviours have accumulative effects across the lifespan. Raphael (2009[b], 39) then concludes:

> Income and its distribution, the availability and security of employment, and conditions of employment are prime social determinants of health. The availability of income, much of this a result of employment, is a determinant

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[2] Code Red was a study undertaken in Hamilton, Ontario that examined health inequities. They found that the difference in life expectancy between the wealthiest neighbourhoods and the poorest neighbourhoods to be a difference of 21 years (86.3 years of age versus 65.1 years of age) (Hamilton Spectator, 2010). Essentially the poorest neighbourhoods perform the same as countries in underdeveloped economies and if ranked in the national context the poorest neighbourhoods would be 165 in the ranking for life expectancy.

> of other social determinants of health. Without adequate income, access to food, housing, and other basic prerequisites of health is increasingly difficult. Without adequate income, the likelihood of social exclusion increases as more and more Canadians are unable to participate in commonly assumed economic, social, cultural and political activities. And even when employment is available, deteriorating working conditions, wages and benefits, and increasing employment insecurity threaten health. ...The sources of deterioration of these social determinants of health are government, political, economic and social policy decisions.

Unfortunately, governments who are guided by a neoliberal ideology are not likely to act to invest and improve those social determinants of health that promote the general wellbeing of the whole population (Raphael, 2009[b])[3]. Increasingly there is an expectation that people will take more responsibility for managing their own care.

Ronson and Rootman (2009) maintain that as a consequence of focusing on the individual there has been an increased interest in the idea of "health literacy". They have argued that this increased interest is driven by rising healthcare costs, an aging population, increase in the incidence of chronic diseases, and as noted above, in a political environment where increasingly individuals are expected to manage their own care. Yet Ronson and Rootman argued that 55% of Canadians of working age are not sufficiently literate to manage their own care. They also note that literacy is related to co-morbidity and life expectancy, and that seniors, a sector of the population that is heavily dependent upon the healthcare system and medication, is the least literate sector of the population. The lack of health literacy can create complications and increase healthcare costs as individuals are expected to take more responsibility managing their own care. As Ronson and Rootman wrote:

> People with limited literacy have less knowledge about medical conditions and treatment and they have trouble understanding health issues generally. They also have more difficulty with practitioners' verbal communications and they tend to have higher stress levels and feelings of vulnerability. People with lower literacy levels also tend to be less aware of and make less use of preventive services. They are also likely to seek care but have higher rates of

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[3] The recent cancellation of the second raise in minimum wage that was to take place in January, 2019 in Ontario, further proposed changes to Bill 148 and the cancellation of guaranteed income pilot project in Ontario by the newly elected Ford government illustrate Raphael's point.

hospitalization and experience more difficulties using health care systems (173).

Clearly health literacy has an impact on health and an impact on healthcare resources and costs.

## Food Insecurity

One of the contributing factors to health, one we seldom consider, is food insecurity. Generally, food insecurity has been understood "as the timely availability of food that is safe and nutritious, acquired in ways that are socially acceptable to the individual, without resorting to emergency food supplies, scavenging, or stealing (Keller et al., 2007, pp. 318)." Food insecurity occurs when the individual/household does not have access to nutrient-dense food. While food insecurity is often associated with lack of income to purchase quality food, there are numerous additional reasons including acquiring, accessing and utilizing food (Keller at al., 2007).

Tarasuk et al. (2014) reported that in the 12 months prior to 2014 12% of Canadian households experienced some level of food insecurity which translates into 1.3 million households, or 3.2 million individuals. Of these households, 20% or 294,000 were severely food insecure. McIntyre and Rondeau (2009) add that there has been an explosive growth on the dependency of people on food banks, noting "increasing numbers of Canadians being unable to acquire nutritious diets" (187). For example, nearly 1.1 million Canadians visited a food bank in March 2018 and served 5.7 million snacks and meals that month (Sagan, 2019). McIntyre and Rondeau further argue that food security is a determinant of "life, health, dignity, civil society, progress, justice and sustainable development" (188). They also note that Canada signed and adapted the *Universal Declaration of Human Rights* in 1948 that recognized adequate food as a fundamental human right, yet Canada has not had a policy related to food security[4]. They

[4] Historically, Canada has never had a food policy. However, the Government of Canada (2018) recently completed consultations on the development of a food policy. They collected stakeholder responses on four themes: increasing access to affordable, nutritious and safe food; improving health and food safety; conserving our soil, water and air; and growing more high-quality food. Pertinent priorities identified through consultations that are related to this project include: increasing food security for all people living in Canada; addressing food security as an issue based on income security; recognizing food as a key determinant of health; and enhancing food literacy and labelling.

further noted that while poverty is a long-standing research issue, the investigation into food insecurity is relatively new and there is not a long-standing body of research. They further argue that rising rates of food insecurity is a product of increasing inequity that gives rise to higher rates of poverty and ultimately may manifest itself in terms of increased food insecurity, leading to the creation of more food banks[5]. And while food banks were meant to be a stop-gap measure until we dealt effectively with the issue of poverty, they have now become part of the food landscape as a result of the continuous unravelling of the social safety net as we fail to deal constructively with the issue of poverty. As McIntyre and Rondeau wrote (2009, 191), "since 1989 we have failed to eliminate or even significantly reduce hunger and food insecurity despite a high level of public activity, awareness and sympathy for those who do not have enough to eat". In fact, if we use food bank usage as an indicator of food insecurity, it has become an increasing problem. For example, Food Banks Canada in their report *Hungercount 2016* report that between 2008-2016 use of food banks in Ontario has increased by 6.9%. And despite the increase in food bank usage, it has been noted by Loopstra and Tarasuk (2015), that this is a poor indicator of food insecurity. For example, they report that between 2007 and 2012 individuals in Canada experiencing food insecurity increased by 606,500 people but food bank usage only increased by 130,800 people. Thus, only about 22% of those who were newly experiencing food insecurity sought food relief through acquiring food from a food bank. One wonders how the others coped? Tarasuk (2009) reiterates that food insecurity is a result of the unravelling of the social safety net and while it is a serious human rights problem, it has become a serious public health problem. She argues that the most common problems for food insecure households are:

- Worrying about running out of food;
- Worrying about running out of food and not having money to get more; and
- Not being able to afford balanced meals.

As Tarasuk explains, the source of most household food security issues is financial, not other reasons such as preparation skills, poor budgeting or lack of

[5] Wilkinson and Pickett (2010) have demonstrated that inequality is directly related to poorer health outcomes and social problems. In their most recent book (2018) they have linked inequality with increasing rates of anxiety, depression and other forms of mental illness. Increased economic inequality can be assumed to be linked to increased food insecurity.

motivation to prepare nutritious meals. She cites research demonstrating that lower incomes are less likely to purchase milk products, or fresh vegetables and fruits. Furthermore, the lower the income the lower the nutritional quality of food purchased. And while diet is central to wellbeing and good health, food insecurity has seldom been viewed as a health problem.  There is a certain irony in this, given the increase in chronic disease such as heart disease or diabetes where risk reduction of these conditions can be managed partially through diet. Tarasuk (2009, 215) writes:

> …food insufficient households would report higher rates of heart disease, diabetes, high blood pressure, and food allergies compared to those in food–sufficient households. …participants with severe food insecurity were two times more likely to have diabetes than those without food insecurity, even after adjusting for socio-demographic factors, physical activity level and body-mass index. Tarasuk notes that in the Canadian context there have been numerous studies that have reported that food insecure households are more likely to self-report poor or fair self-rated health, have poor functional health, restricted activity, have multiple chronic health conditions, suffering from major depression and distress, and having poor social support.

Tarasuk et al. (2017) report that while we often think of food insecure households being on social assistance, 62.2% of Canadian households experiencing food insecurity were reliant on wages from employment. McFadyen (2015) found those experiencing food insecurity reported increased stress that resulted in keeping them awake at night through to contemplating engaging in self-harming behaviour. Other respondents reported experiencing shame as a result of being unable to adequately provide for the necessities of life. This perspective has been supported by Wilkinson and Pickett's research (2010; 2018) that has demonstrated how inequality breeds shame and how this correlates with increased anxiety and negative impacts upon physical and mental health. Laraia (2013) found that food insecurity often promotes dependence on "inexpensive, highly palatable foods that are energy dense. Such dependence and the cyclical nature of having enough food in the beginning of the month followed by food scarcity at the end of the month, could lead to weight gain over a short period of time (203)."  It appears that for food insufficient households it would be very easy to become engaged in a downward spiral where health impacts one's ability to acquire and prepare adequate meals, and as one's capacity for preparation of nutritious meals diminishes this furthers the negative impacts upon their health. This is exacerbated by the periodic fluctuation of income, having more money available for food at certain times of the month or year.

Thus, as we look to contain healthcare costs, we must look beyond the “repair shop” mentality and look to ways of not only healing but preventing ill health and actively promote wellbeing from a holistic perspective as suggested previously by Romanow (2009). This includes addressing the negative health impacts experienced by those suffering from food insecurity.

## Rural Health and Wellbeing

The idea of rural is an inherent part of the Canadian identity, deeply embedded in our consciousness whether it is reflected through the landscapes of the Group of Seven, the music of Stompin Tom Connors, Gordon Lightfoot and Rita McNeil who celebrated life and livelihood in rural Canada musically or captured on television shows such as *Corner Gas* or *Little Mosque on the Prairie*. For many people the rural is viewed in its idyllic form, bucolic fields and pasture lands, quaint fishing villages, and virgin forests. And while many subscribe to this vision of rural, like all maps they do not always reflect the territory. This is but one discourse of rural Canada. Another discourse focuses on the death of rural (Gilmore, 2018) and this discourse does not necessarily reflect rural Canada either but tends to be one held by many Canadians. And while it is true that rural Canada increasingly represents a smaller proportion of the Canadian population, many rural areas continue to constitute about 20% of the rural population and make a significant contribution to overall GDP. Yet we must acknowledge that there is a cost to living in rural Canada and to understand the cost it is important to understand that rural is different from urban and is not just non-urban, but that the socio-cultural fabric of rural communities across Canada vary, each having their own fabric and developmental trajectory which has given rise to the community they are today (Lauzon et al., 2015[a]). They are also dynamic and engaged in an ongoing process of change in response to changing demands and circumstances of the external environment[6].

[6] The integration of the global economy coupled with changes in technology result in what Lauzon (2015[b]) has described as the compression of time and space. Simply stated, this means change happens a lot more quickly than it used to and rural communities can be forced to change and adapt almost literally overnight. The 2008/2009 recession illustrated this as many automobile parts suppliers during this period in Southwestern Ontario simply went out of business changing the structure of the labour force. These jobs were considered, for the most part, good jobs and provided a good living plus social benefits for many of those who lacked higher education or were unskilled or semi-skilled.

To understand rural communities and their uniqueness, it is necessary to understand rural communities as particular places. Williams and Kulig (2012) capture this when they write:

> Spaces are primarily physical, such as geographies based on physical or administrative boundaries. Space is organized into social places or bounded settings that hold meaning and identity, where social relationships are constituted (9).

As Harrison and Dourish (1996, 69) state, “We are located in space, but we act in place. …places are spaces that are valued (as Quoted in Williams and Kulig, 2012, 9). As Williams and Kulig further state, the concept of place provides identity, is a source of social resources, define our life chances and the degree of risk we experience, and ultimately our health and wellbeing. DesMeules et al. (2012) note that place has health consequences and it is a shorthand way of describing a host of factors easily. They further argue that they believe the concept of place should have a special status in the population health discourses as it can provide an explanatory variable.

Rural research, as Williams and Kulig (2012) remind us, needs to acknowledge and incorporate the unique context of rural communities into their research. They also remind us that when it comes to health, each rural community offers its own nuanced context to health, nonetheless it is evident that there are health inequities across the urban-rural divide that most rural communities share. We now turn to the rural/urban health divide.

Despite the uniqueness of various rural communities, they do share common health inequities and disparities when compared with their larger urban counterparts. Simply stated, there are greater health risks in rural communities. Lauzon (2016), in a review of literature, notes that typically rural communities have higher levels of mortality and morbidity than urban communities. He further notes that people living in rural communities are more likely to have:

- A shorter life expectancy;
- Greater infant mortality rates;
- Higher rates of high blood pressure, heart disease;
- Higher rates of arthritis and rheumatism;
- Higher rates of depression;
- Lower levels of self-reported functional health and health promoting behaviours;
- Higher rates of accidents and higher rates of death resulting from injury;

- Higher rates of suicide per capita;
- Higher rates of poisoning;
- Higher rates of disability;
- Higher rates of obesity for adults and children;
- Rural women are more likely to have diabetes than urban women; and
- Are rural residents twice as likely to be hospitalized for diabetes (5).

DesMueles et al. (2012) would add to this list greater exposure to smoke, less than a healthy diet, and more likely to have fair or poor self-reported health. As DesMeules et al. (2012, 25) wrote:

> In general, rural residents are less healthy than urban Canadians. Although they experience some health advantages, typically they have higher mortality rates and shorter life expectancies, with injuries, motor vehicle accidents, and suicides being major contributors to deaths. Those living in the most rural areas experience the highest disadvantages in relation to deaths due to injuries, cardiovascular disease, and diabetes[7].

How do we account for these differences? While we cannot say anything definitive, there are several factors that may contribute. As we highlighted in the introduction the social determinants of health account for 50% of health outcomes and we know that income levels are lower, unemployment rates higher and educational/literacy levels are lower in rural communities than in urban communities (Lauzon et al., 2015[a]). In addition to differing social determinants of health for rural areas, they have fewer healthcare human resources per capita than urban areas, and what resources they have they utilize differently than those in urban communities (Williams and Pong, 2012).

Given the above, it is apparent that that there are significant health inequities across the urban/rural divide, with rural people experiencing greater inequities leading DesMeules and Pong (2006) to conclude that rural itself is a determinant of health.

## An Aging Rural Population

We often hear talk of the "grey tsunami" as baby-boomers enter and move through their final phase of the life cycle, putting strain on many of the government provided

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[7] It should be noted that employment opportunities in rural areas—agriculture, mining, forestry, construction and fishing—are some of the most dangerous occupations with high rates of accidents and death on the job. In fact, forestry, agriculture, construction and fishing are all in the top ten most dangerous occupations in Canada (Barton, 2018).

services, especially the healthcare system. The population of 65 or older in Ontario is projected to grow from 16.4% in 2016 to 25% by 2041 with 93% currently living in private households and 23.5% living alone (Province of Ontario, 2017). Furthermore, this population suffer from many chronic diseases, with 18.4% being diabetic, 46.8% have arthritis, 48.7% have high blood pressure along with a variety of other chronic conditions. According to the Ontario and Food Nutrition Strategy (Boddy et al, nd) chronic disease is the number one killer in Ontario accounting for 79% of the mortality rate. They further note that preventable illness is responsible for 25% of the healthcare costs in Ontario. They also note that food insecurity increases the risk of chronic disease, impacts mental health and well-being and leads to individuals being higher users of the healthcare system[8]. Complicating increased healthcare costs will be increases in the number of seniors suffering from dementia with the number growing from 228,000 Ontarians in 2016 to a projected 430,000 by 2038 (Province of Ontario, 2016) with an estimated cost of $325 billion between 2008 and 2038. Furthermore, those suffering from dementia usually suffer from two or more chronic conditions making them more vulnerable and visit doctors more frequently; have a higher number of prescriptions; are two times as likely to visit an ER or be hospitalized; and when hospitalized will have a longer stay. It is worth noting that 81% of the population diagnosed with dementia are 75 years of age or older and 64% of the population is female. Given these statistics and the differences between the sexes in terms of longevity, it means that women are more likely to be living alone and will be more vulnerable. Furthermore, it should also be noted that hospitalization, particularly for the elderly, can lead to hospital delirium which lengthens hospital stay, may impair cognitive functioning creating disability, and may be misdiagnosed as dementia (Boodman, 2015). It is important to strive to keep senirors out of the hospital.  It has also been reported that 37% of seniors live with a disability and 40% reporting it as mild or severe and 28% reporting it to be very severe (Province of Ontario, 2017), making the carrying out of everyday chores, such as cooking, challenging. These are some of the challenges we face as the Province of Ontario (2017) seeks to keep seniors healthy and living independent and engaged lives as outlined in Ontario's action plan.

Part of the challenge for rural Ontario is the lack of services and resources available to rural people. Keating and Eales (2012) argue rural communities are diverse and vary in distance from service centres and their capacity to meet the needs of their senior population is a function of population density and distance. Thus, there is a great deal of variance in rural communities' capacities to meet the needs of their

[8] The costs of seniors to the healthcare system are noted in a report by CIHI (2016) whereby those between the ages of 15 to 64 cost the healthcare system $2,663 per year/per individual whereas those 65 or over cost the healthcare system $11,635 per year/per individual.

senior population. As Keating and Eales remind us, where there is inadequate service availability in rural communities/areas, it is the frail and vulnerable who are most at risk and who suffer the most. Thus, services urban based seniors often take for granted, rural seniors do not have access to, leaving them largely dependent upon the goodwill of family and friends. This is problematic given that rural seniors are over represented in the rural population with more than 20% of rural populations being constituted by seniors. Furthermore, for those requiring some care 90% of these patients receive care in the home, usually attended to by family or friends (Forbes and Hawranick, 2012)[9].

## Food and the Rural Elderly

As MacIntyre (2003) has noted, food insecurity has been identified as a determinant of health independent of other determinants of health that leads to higher healthcare utilization and costs. According to Dean et al. (2011) we are seeing increasing rates of food insecurity in the senior population while Quandt et al. (1998) attributes increased nutritional risk to the changing health and social relations of seniors. For example, as we age we experience changes as a function of aging, such as diminished health status, increasing multi-morbidities, and often lower cognitive functioning. For those seniors who are food insecure, they are 2.33 times as frequently to report fair/poor health status and are at higher levels of nutritional risk (Lee et al., 2001). Furthermore, the lack of adequate nutrition in the elderly may exacerbate the problems associated with ongoing health conditions such as diabetes or hypertension that require specific diets to manage these chronic conditions and inadequate nutrition may exacerbate the symptoms associated with depression or Alzheimer Disease; as Dean et al. (2011) have noted, adequate nutrition helps in managing chronic diseases in the senior population. Failure to adequately manage dietary requirements of chronic conditions can lead to hospitalization and we know that hospitalization and discharge is often a critical turning point in the long-term wellbeing of the senior.

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[9] As noted by Forbes and Hawranick (2012), those providing care may be impacted negatively in terms of their health. They capture this when they wrote "caregivers are more likely than non-caregivers to experience fair to poor health, with high levels of stress-hormones, reduced immune function, slow wound healing and newly diagnosed hypertension and coronary heart disease (448-449)." Deterioration of the caregiver's health is likely to have an adverse effect on the care receiver's health making what is often a complex situation, more complex, placing more demands on the healthcare system. This is further complicated in rural areas, as there may be fewer opportunities for respite for caregivers given limited community resources.

The sources of food insecurity in the elderly arise because of a variety of issues. One is financial, and in Canada 6.8% of the senior population has incomes below the after-tax low-income cut-off and for those seniors unattached, 17% live below the low-income cut-off (Green et al., 2008). Tarasuk and Vogt (2009) noted that in 2005 5.1% of Canadian seniors were food insecure, and as Green et al. state, this can be particularly problematic for those seniors who are totally reliant on a public pension. It should be noted that 10.1% of those who access food banks in rural areas report pension as their main source of income[10] (Food Banks of Canada, 2016). Food insecurity in the elderly, however, is a growing population given that Food Banks Ontario (2018) noted a 10% increase in the elderly who were using food banks between 2017 and 2018. It should be noted here, as it was previously, that food bank usage is a poor predictor of food insecurity, hence the 10% increase of elderly patients utilizing food banks may simply represent the tip of the proverbial iceberg.

While for many having insufficient income to purchase nutritious food can be a cause of food insecurity, seniors may have adequate income but cannot access food due to health disabilities/conditions, or health disabilities/condition may interfere with their ability to prepare food, even if they can access and secure it. Food insecurity can also be a function of motivation and a lack of desire to prepare nutritious meals resulting in a decrease of nutrient intake. For example, seniors suffering from depression or Alzheimer disease, or perhaps those seniors living on their own, may not be motivated to prepare nutritious meals leading to limited food intake and lack of adequate nutrition (Arcury et al., 1998).

While seniors are at risk of food insecurity, rural seniors are at greater risk of food insecurity than their urban counterparts. Quandt et al. (1998) identified the following additional challenges for rural seniors: lower incomes; poorer health; higher cost of food with more limited selection; formal assistance programs unevenly distributed, and access limited by distance and lack of public transportation; and resistant to using public services when they are available. Lower levels of literacy also mean greater challenges in managing one's own care. Quandt et al. (1997) also identifies less access to healthcare services and Arcury et al. (1998) identify a deficiency of other services to support rural senior nutritional management. Bitto et al. (2003) note that rural seniors often face higher grocery prices and the consolidation of grocery stores, which impacts rural areas more than urban areas, has led to increasing food "swamps" and "deserts" in rural areas making access to nutritional food more challenging than their urban counterparts and this can lead to higher rates of food insecurity in rural areas for seniors. This

[10] In the 2016 report there were 198 food banks that reported overall and 60 of those were rural food banks who reported on primary source of income.

points to the importance of understanding the food ecosystems in which seniors live and the rural context. The food ecosystem relates to the interpersonal, institutional, community and socio-political factors that the senior interacts with. It provides the larger context which enables or limits access to food for seniors (Vilar-Compte et al., 2017). Simply stated, food insecurity challenges can be greater for elderly populations, and even greater challenges may exist for those seniors who live in rural areas of Ontario that differentiate them from their urban counterparts. Furthermore, the issue of food insecurity is more complicated for the senior population than it is for other populations. Usually food insecurity is a function of limited income, often equated with poverty. And while this is true for the food insecure population as a whole, and may be an issue for some rural seniors, it can also be an issue of physical access even if they have the financial means to acquire healthy food, it may be an issue of capacity to prepare food or it may been an issue of motivation to prepare food. Given the equation of food insecurity with the inability to afford food, I would like to propose that when speaking of the elderly population a more inclusive concept is ***nutrition insecurity*** as simply having access to or having food in the home does not guarantee that older populations will eat a healthy diet, and it may be more difficult for those who have dietary restrictions or needs in order to manage chronic conditions.

While food security is an important issue for rural seniors, if we think more broadly about food and its relationships to seniors, and in particular think about nutrition insecurity, then a critical consideration for the health and well-being of seniors must also address issues of food safety. As Buzby (2002) has noted, seniors are a very heterogeneous population in terms of physiological function and health. McWilliams et al. (2017) report that adults 65 years of age or older have higher rates of hospitalization and mortality as a result of foodborne diseases (FBD). McWilliams et al. further note that it is seniors who live on their own that are at greatest risk. In describing this population, they note that these adults:

- tend to be “older and less educated
- have fewer financial assets and resources
- tend to be more cognitively impaired
- have higher rates of cancer, chronic disease and frailty that can result in multiple health problems and/or disabilities
- are at higher risk of polypharmacy.

Blackburn et al (2014) would add to this list lapses in episodic memory contributing to the susceptibility of FBD.

While we often think of FBD as being contracted in public places such as restaurants and cafeterias etc., Gettings (2017) reports that FBD is three times as

likely to be contracted at home as it is in a public place. This may not be so surprising. Wilkinson et al. (2007) study of seniors' food safety found that only 10 percent earned top scores while 20 percent of the population earned failing scores pointing to the potential of a food safety risk. They further report that issues of food safety are exacerbated by the fact that often seniors' refrigerators and freezers are older and had temperatures that exceeded the recommendation required to keep food safe.

Gettings (2017) has argued that seniors are a population at risk for FBD and the consequences for this population can be more severe than for other aged populations. There are physiological factors such as the aging of the immune system, gastrointestinal tract aging, and major surgery and immunosuppression that exacerbate senior's vulnerability to FBD and its potential severity if contracted. High (2006) points to the fact that often for seniors' likelihood of contracting FBDs increases with malnutrition and immobility, while McWilliams et al. (2017) have identified the negative consequences of excessive use of antibiotics, antacids and antimotility drugs as factors increasing senior susceptibility to FBD.

McWilliams et al. (2017) have noted that increased susceptibility to FBD can arise as a result of improper hygiene practices in food preparation, often acquired over a lifetime, rooted in what they had learned growing up (knowledge handed down), and failing to acknowledge risk and resisting behavioural change. Inappropriate food handling also applies to food which may be delivered to seniors through such services as Meals on Wheels. These meals are meant to be eaten immediately but often seniors will leave them on the counter, refrigerate the meal or part of the meal for later consumption, or freeze the meal or any leftovers to be consumed later (Albrecht, et al., 2009), and if handled improperly, can put seniors at risk. These factors, coupled with impaired vision and a reluctance to throw food away (McWilliams et al., 2017) create vulnerabilities to FBD in seniors' lives. For those seniors with low literacy levels, they may not be able to follow instructions adequately to ensure they are preparing or using food appropriately (Alrecht,2009). This can have dramatic impact upon the health and well-being of seniors and may lead to hospitalization and in 2-3% cases of FBD in seniors it leads to long-term effects known as sequalae, and in some cases can even be fatal for seniors.

As Lee and Frongillo (2001, S98) wrote, "food insecure elderly persons are those who have multiple problems that prevent them from achieving nutritional well-being."

## Implications and Conclusion

In summary, rural seniors face greater challenges and are at greater risk of food insecurity than their urban counterparts. And despite seniors being a smaller proportion of the Canadian food insecurity challenge than other populations (i.e. single parent homes), they constitute a unique challenge. While the food insecurity literature identifies poverty as the main reason for food insecurity in Canada with other reasons having little impact, seniors constitute a different challenge and while financial barriers to food security are a challenge for many seniors, they also may face challenges of physical access or capacity given the often debilitating impact of chronic disease and the fact a large portion of the senior population suffers from one or more disabilities which impairs their ability to carry out day-to-day chores such as cooking. Motivation to cook may also be a challenge, particularly for seniors who suffer from some form of cognitive impairment or who live independently and are not motivated to prepare nutritious meals.

Health literacy, an increasing concern for public health, may also be a challenge for seniors with seniors representing the lowest levels of literacy in the population. A lack of health literacy or literacy in general, may impair their ability to understand how to manage their chronic diseases/conditions, or the importance of diet as a risk reduction strategy for many chronic diseases. In essence, failure to manage chronic disease, of which diet is an essential management strategy, may lead to complications and ultimately can lead to hospitalization which as noted previously, can be a turning point in the life of a senior. And while the above apply to all Canadian seniors, rural seniors face their own set of challenges that differentiates them from the urban senior population. First, the consolidation of grocery stores to larger urban centres mean rural communities may not have convenient access to nutritious food and the consolidation process creates what are known as "food swamps" or "food desserts" where the availability of nutritious food is limited. This is further exacerbated by the lack of public transportation, or having to drive long distances, often in inclement weather, that makes travel challenging. For many seniors driving becomes challenging given their physical limitations and/or disabilities and this makes them dependent upon family and friends. Furthermore, relative to urban centres, there is a dearth of services in rural areas (i.e. services such as Meal on Wheels). And while seniors do visit food banks, these do not eliminate the challenges of simply getting there to access food. While homecare is one means of overcoming this barrier by providing in-home service, we are currently facing a shortage of homecare workers in rural areas (Laucius, 2018).

Increased demand for these services, coupled with a clientele requiring increased complex care as hospitals search for efficiencies meaning patients are discharged earlier than they have been in the past, and hence greater responsibilities placed on homecare workers with less time available for the "extras" such as food/meal preparation. As Laucius notes in her article, personal support workers are not well paid, often earning a dollar or two more than minimum wages, and the quality of their work and employment conditions soon lead to low morale and disillusionment with many leaving the field. This, as she notes, is even more challenging in rural areas given the ongoing shortage of homecare workers in rural areas. Furthermore, the shortage of physicians in rural areas may mean that medical access may be limited and for many rural people having their own physician may not be within their reach. As the Society for Rural Physicians of Canada noted in their report *Review of Family Medicine within Rural and Remote Canada: Education, Practise and Policy* (Bosco and Oandasan, 2016), access to medical professions in rural areas remains problematic; 50-53% of physicians are family physicians and of these physicians 14% practice in rural areas, despite the population being 18-22% of the population (depending on the definition of rural used)[11]. For those individuals without a physician, continuity of care and ongoing monitoring of chronic conditions becomes problematic, putting them at greater risk for complications and/or hospitalization. All of these factors are further exacerbated by lower general levels of literacy in this population (we know that rural areas are characterized by lower education levels) and this creates greater risks for this population as we move towards greater responsibilities for managing one's own care of which dietary concerns are a critical element.

Given the above, failure to prioritize and pay attention to *nutritional security* for rural seniors will continue to lead to a lower quality of life for rural seniors and increase overall healthcare use and costs. The reality, however, as a research population rural seniors and  their relationship to food has rarely been considered, and failure to understand the rural context will lead to further exacerbating the rural/urban divide in health and well-being with rural seniors experiencing a lower standard of health and well-being than their urban counterparts. And while historically food security has been considered a human rights problem, it is now also a public health problem that can lead to increased healthcare expenditures and a lower quality of life for rural seniors.

The healthcare challenges we face regarding an aging population will not be met, as the opening Menken quote points to, through simple solutions. A response to the

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[11] Based upon the author's experience in healthcare as a hospital board member and membership on a community committee responsible for physician recruitment, for every long-term retiring "Doc", it will take at least 1.5 new family practitioners to replace them given the changing size of physician practices.

challenge of rural seniors, their wellbeing and the wellbeing for healthcare in Ontario requires complex and systemic solutions. Food security is an important element in the development of a complex solution to meet the challenges of an aging rural population, yet we know little about rural senior food insecurity in Ontario. There is a need for research into food security and the rural elderly living independently.

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