

Chronic Conditions More Than Age Drive Health System Use in Canadian Seniors

Michael Turner, Ben Reason, Ali Moses McKeag, Brenda Tipper and Greg Webster

Abstract

Which has more impact on health status and the use of healthcare services among seniors: age or the number of chronic conditions? To answer this question, we used responses from the 2008 Canadian Survey of Experiences with Primary Health Care to assess the effect of these two factors on seniors' self-perceived health status, prescription medication use and healthcare service use. We discovered that seniors with at least three chronic conditions were more likely to report poor health, take more prescription medications and use more healthcare services than seniors with two or fewer chronic conditions. The number of chronic conditions is better than age as a predictor of self-reported health status, prescription medication use and healthcare service use by seniors. Seniors with at least three conditions represented 24% of all seniors, but they accounted for 40% of the use of healthcare services. Health policies and programs focused on the prevention and improved management of co-morbidities among seniors could have a significant and positive impact on seniors' health (including self-perceived health status) and their use of healthcare services.

This article highlights findings presented in the Canadian Institute for Health Information report titled *Seniors and the Health Care System: What Is the Impact of Multiple Chronic Conditions?*

Many Canadians perceive that our aging population's use of healthcare resources is a threat to the sustainability of the healthcare system. The proportion of seniors – those age 65 years and older – in the Canadian population is increasing as baby boomers enter the senior category. Both the number of seniors and the proportion of the population that seniors represent are expected to double between 2005 and 2036 (Turcotte and Schellenberg 2007). With the exception of newborns and toddlers, per capita healthcare spending increases with the age of the patient. We see marked increases in healthcare spending as adults enter each of the three senior age categories: 65–74 years, 75–84 years and 85 years and older (Canadian Institute for Health Information [CIHI] 2010).

Chronic conditions also have a substantial impact on the Canadian healthcare system. The vast majority of deaths among all Canadians are attributed to chronic conditions (World Health Organization [WHO] 2005). Additionally, the prevalence of common chronic conditions, including diabetes, chronic obstructive pulmonary disease and high blood pressure, is rising among seniors (Statistics Canada 2009). The direct costs for healthcare and indirect costs of productivity loss arising from illness or premature death from chronic conditions including diabetes, heart disease and stroke are also rising (Canadian Diabetes Association 2009; WHO 2005). As a result, chronic conditions are placing a large and growing burden on both the health of Canadians and Canada's economy.

Data Source and Analysis

We used the 2008 Canadian Survey of Experiences with Primary Health Care – a survey co-funded by CIHI, Statistics Canada and the Health Council of Canada – as our data source for this study. Statistics Canada conducted the survey between April and June 2008 using computer-assisted telephone interviews of adults 18 years of age and older. There were 11,582 respondents to this survey, including 3,132 seniors. Eleven chronic conditions were included in the survey and subsequent analyses: arthritis, asthma, cancer, chronic pain, depression, diabetes, emphysema or chronic obstructive pulmonary disease, heart disease, high blood pressure, a mood disorder other than depression and stroke. We classified respondents between the ages of 65 and 74 as “young” seniors, those between 75 and 84 as “middle” seniors, and those 85 and older as “old” seniors. We also grouped respondents by number of chronic conditions (level of morbidity). We classified seniors who did not report any morbidity as having no morbidity; those who reported one chronic condition were classified as having a single morbidity; those with two chronic conditions were classified as having low co-morbidity; and those with three or more chronic conditions were classified as having high co-morbidity.

Three in Four Seniors Have at Least One Chronic Condition

The percentage of adults reporting at least one of 11 chronic

conditions increased with age (Figure 1). Only 19% of adults between 18 and 24 years of age reported having at least one chronic condition, whereas 74% of seniors reported at least one chronic condition. The most commonly reported chronic conditions among seniors were high blood pressure (47%), arthritis (27%) and heart disease (19%). Figure 1 illustrates that the percentage of seniors reporting chronic morbidity increased from young to middle seniors but not from middle seniors to old seniors; however, the percentage of seniors reporting high co-morbidity increased from young to middle and also from middle to old seniors (not shown).

High Co-morbidity and High Healthcare Services Use

Seniors with high co-morbidity use more healthcare services than do seniors with fewer or no morbidities. This high co-morbidity group, which comprised 24% of the total senior population, used 40% of reported healthcare services use by seniors – an estimated total of 13.3 million healthcare visits over 12 months. These healthcare services included visits to family doctors, nurses, pharmacists, dietitians, physiotherapists, social

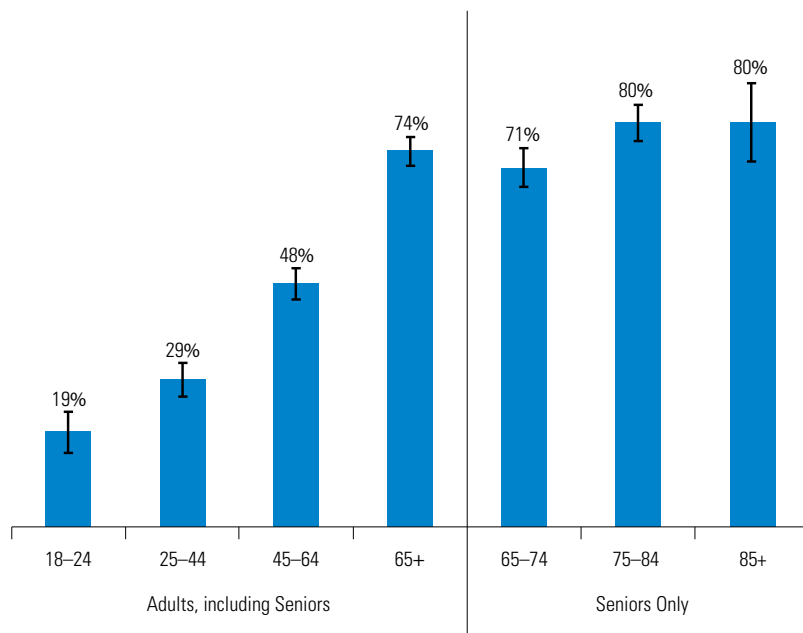
workers, counsellors, specialists and emergency departments.

Table 1 illustrates the relative importance of age versus the number of chronic conditions in the rate of healthcare service visits by seniors across senior age groups and morbidity groups. The rates of visits consistently increased with the number of reported chronic conditions for all senior age groups. Conversely, small and inconsistent increases in rates of healthcare visits were observed for morbidity status groups by age group.

Seniors with High Co-morbidity Less Likely to Report Health Status as “Good” or Better

Self-perceived health status can be a reliable indicator of functional ability, chronic disease and mental health (Turcotte and Schellenberg 2007). Seniors in the survey were less likely to report their health status as “good” or better (“excellent” or “very good”) with increasing co-morbidity (Figure 2). Only half of seniors with high co-morbidity reported their health status as good or better. Within each senior age group, the likelihood of reporting health status as “good” or better decreased with increasing co-morbidity. Conversely, within morbidity groups, the likelihood of reporting health status as “good” or better decreased less dramatically with increasing age.

FIGURE 1. Percentage of adults with at least one chronic condition, by age group*



* The analysis included “don’t know” and “refusal” responses. The percentage of non-responses per chronic condition/survey question was less than 1% overall for all adults.

Vertical lines at the top of the bars represent 95% confidence intervals.

Source: Canadian Survey of Experiences with Primary Health Care, 2008, Statistics Canada, Canadian Institute for Health Information.

High Co-morbidity and High Prescription Medications Use

Seniors with high co-morbidity take more prescription medications, on average, than do seniors with fewer or no chronic morbidities. In the survey, seniors with high co-morbidity regularly took an average of six prescription medications. This was 1.5 times the average number of medications taken by seniors with low co-morbidities and three times the average number of medications taken by seniors with a single morbidity. The sharp increase in medication use that was observed with increasing co-morbidity was not observed with increasing age among seniors. Middle and old seniors used only 1.3 and 1.4 times, respectively, the average number of medications when compared with young seniors.

TABLE 1.
Rates of total healthcare visits* in the past 12 months by seniors per 1,000 seniors, by age group and number of chronic conditions

Age Group	No. of Reported Chronic Conditions [‡]			
	None	1	2	3+
65–74	4,211 [†]	6,814	7,629	13,722
75–84	3,815 [†]	5,547	9,501	11,400
85+	4,917 [†]	6,268	6,766 [†]	14,028

* Visits during overnight stays were not included.

[†] Coefficient of variation is between 16.6% and 33.3%; interpret with caution because of high variability.

[‡] There were four weighted sample sizes: 1.1 million seniors reported no chronic conditions; 1.2 million seniors reported one chronic condition; 0.9 million seniors reported two chronic conditions; and 1.0 million seniors reported three or more chronic conditions.

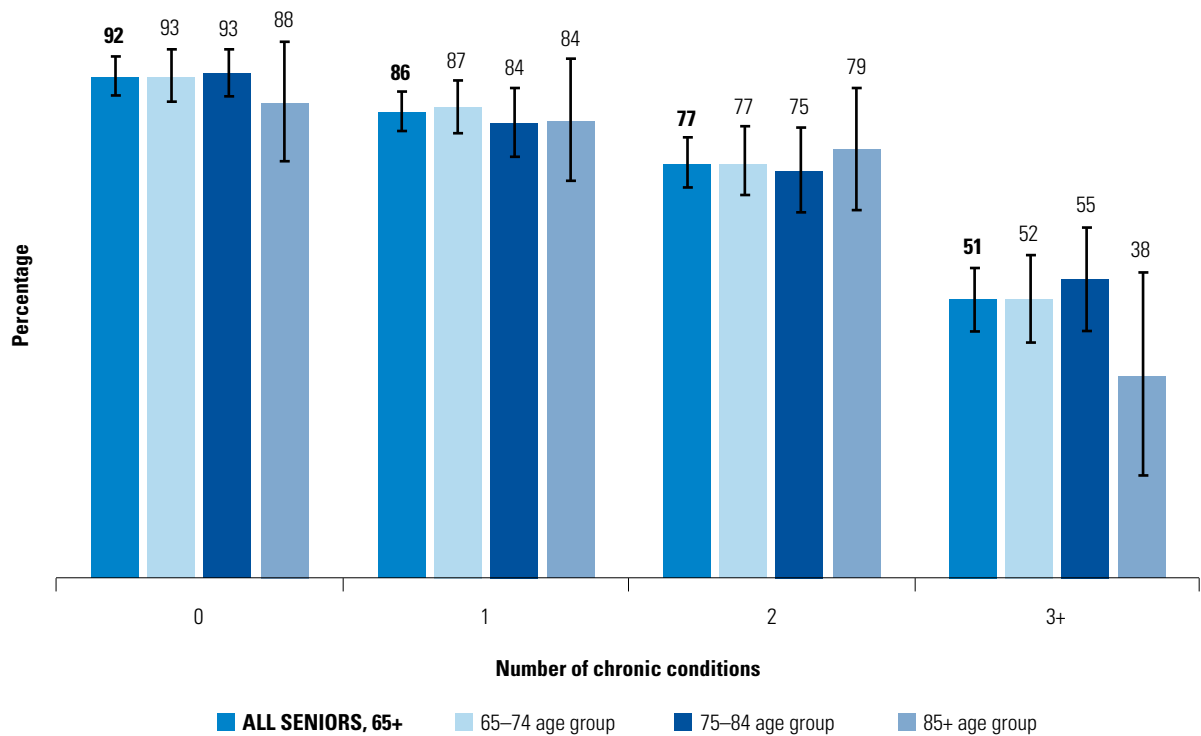
Source: Canadian Survey of Experiences with Primary Health Care, 2008, Statistics Canada, Canadian Institute for Health Information.

Summary

As seniors age, they are likely to develop more chronic conditions, thereby confounding the question of the impact of aging, per se, on the health status of seniors and their use of healthcare services. Seniors with at least three chronic conditions were more likely to report poor health, take more medications and use more healthcare services than were seniors with fewer or no chronic conditions. The number of chronic conditions was better than age as a predictor of self-reported health status, prescription medication use and healthcare services use by seniors. Health policy on chronic conditions should focus on the prevention and management of multiple chronic conditions. This focus could have a significant and positive impact on seniors’ health (including self-perceived health status) and their use of healthcare services.

For more information, please see the full CIHI report titled *Seniors and the Health Care System: What Is the Impact of Multiple Chronic Conditions?* (CIHI 2011). **HQ**

FIGURE 2.
Percentage of seniors with health status as “good” or better, by number of chronic conditions and by age group*



*The analysis included “don’t know” responses; however, data for this response accounted for less than 1% of total responses. Vertical lines at the top of the bars represent 95% confidence intervals.

Source: Canadian Survey of Experiences with Primary Health Care, 2008, Statistics Canada, Canadian Institute for Health Information.

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