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Aging in The City of Hamilton

AN ASSESSMENT AND REPORT ON THE AGE-
FRIENDLINESS OF THE CITY OF HAMILTON USING THE
CLSA DATA

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Table of Contents

Acknowledgements	ii
Introduction: About this Guide	1
Introduction: About the CLSA	3
Introduction: About the Present Report	7
Part I: Assessment of Indicators of Age-Friendliness	10
Dimension 1: Outdoor Spaces and Safety.....	11
Summary.....	15
Dimension 2: Transportation.....	16
Summary.....	29
Dimension 3: Housing.....	31
Summary.....	40
Dimension 4: Community Support and Health Issues.....	37
Summary.....	38
Dimension 5: Social Participation.....	45
Summary.....	53
Dimension 6: Social Inclusion, Respect, and Civic Participation.....	55
Summary.....	59
Part II: The Well-Being of Older Canadian Adults	60
Summary.....	66
Part III: Conclusions	68
References	74

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Introduction: About this Guide and the Current Canadian Population

Among the many issues facing both contemporary Canadians and global societies, two large, looming questions engage a collaboration of spheres of interest: how do we adapt to growing urban populations with respect to health and well-being, and how do we foster a healthy interaction between person and environment in an aging population? At the time that data collection ended for the baseline CLSA data, 81.7% of Canada's total population lived in urban areas, with an average annual rate of increase of 1.22%¹. In addition, as of 2017, 23.3% of the overall Canadian population is aged 60 or over^{2,3}, with increasingly more women than men past the age of 60³. The proportion of people over the age of 60 is expected to rise over coming years as well, as the population ages and life expectancy continues to rise. In Canada, the 2016 census marked the first time that people 65 years of age and older outnumbered children (14 years of age and younger). Population projections suggest that by 2063 roughly 24% to 28% of the Canadian population could be 65 years of age and older⁴.

The issue facing Canadians as well as countries around the globe is how to increase the well-being of those living in urban areas, especially with respect to older individuals. In response to this, the World Health Organization collaborated with researchers and countries around the globe in order to determine how to promote the health and well-being of aging populations in increasingly urban areas. Some of the largest contributors to this project were Canadians. This research eventually culminated in the creation of the Global Age-Friendly Cities Guide in 2007⁵.

Our project titled "A Tale of Eight Cities: Age-Friendliness and the CLSA" began in March, 2017 with funding from a CIHR CLSA Catalyst Grant. This report is built heavily on the WHO Age-Friendly Cities Guide (AFCG). The AFC guide identifies several major areas on which cities should focus in order to become friendlier toward older populations (and indeed, everyone). These areas are: outdoor spaces and buildings, transportation, housing, social participation, respect and social inclusion, civic participation and employment, communication and information, and community support and health services. To achieve the project objectives, we used baseline data from the Canadian Longitudinal Study of Aging to select indicators within

this dataset that either literally measure or otherwise closely approximate aspects of each of the areas of focus identified in the WHO AFC guide.

This report is meant for descriptive purposes. Because the sample size for all of our variables is very high, we are concerned with what is practically significant. Instead, we use the CLSA data to, in essence, paint a composite picture of the state of affairs with respect to the age-friendliness of eight major Canadian cities at the time of measurement of the data. By doing so, we hope to identify areas of strengths, weaknesses, and where there are potential for improvements with respect to age-friendly parameters in order to help guide where efforts by Canadian organizations, municipalities, and governments could be pointed for best effect in increasing the age-friendliness of Canadian cities.

The report will be broken down into individual discussions of each area of focus – based on the areas of focus identified in the WHO AFC guide – and each of these discussions further broken down into an assessment of the chosen indicators for those areas (Part I). Then, we will discuss the overall well being of older Canadian adults based on several indicators (Part II). Afterwards, general conclusions and recommendations will be drawn from the overall data in order to identify the general strengths and weaknesses of eight Canadian cities with respect to age-friendliness (Part III).

Introduction: About the CLSA

The Canadian Longitudinal Study on Aging (CLSA) is a Canada-wide study of over 50,000 male and female participants. The present report draws from the first cycle of CLSA data collected between 2012 and 2015. Participants of the CLSA were between 45 and 85 years of age at the time of entry to the study. The CLSA recruited 51,338 people residing within the 10 Canadian provinces to participate in the baseline round of data collection and to be followed for at least 20 years or until death. Participants were recruited through four sources. First, participants were recruited from the sample of the Canadian Community Health Survey – Healthy Aging (CCHS-HA). The CCHS-HA was conducted between 2008 and 2009, which included a nationally representative sample of people aged 45 years or older. The three additional sources of participants were recruited via: Provincial Health Registries, telephone sampling – Random Digit Dialling, and the Quebec Longitudinal Study on Nutrition and Aging. Persons living on First Nations reserves or in some remote or rural areas were excluded. Full-time members of the Canadian Armed Forces, individuals living in long-term care institutions, persons living with cognitive impairment, and those who were unable to respond in English or French were also excluded from participation⁶.

Data Collection

This study used secondary data collected in the CLSA. All CLSA participants were asked to provide information on demographics and several aspects of their lives relevant to health and aging. This information included: physical functioning, chronic conditions, injury and falls, psychological and cognitive functioning (e.g., memory), health service utilization, lifestyle (e.g., diet and activity), and social functioning⁷. In total, 21,241 participants (tracking cohort) randomly selected across the 10 Canadian provinces provided this set of information through telephone interviews. 30,097 participants (comprehensive cohort) across Canada provided this set of information through in-home interviews for the entire CLSA dataset. The participants within the comprehensive cohort were also asked to visit one of the Data Collection Sites (DCSs) to provide further information collected through face-to-face interviews, specimen collection, and physical examinations. The comprehensive cohort was selected from the areas within 25 to 50 km of a DCSs. There were 11 DCSs located across seven Canadian provinces⁶.

The data on the residents from Hamilton included in the present report represents 2394 participants (2,188 comprehensive participants (91.4%) and 206 tracking participants (8.6%). Information on demographic characteristics is provided in Table 1, 2 and 3, which gives information on gender, age, total household income, and education respectively. As most of the data is derived from the comprehensive cohort, the information presented herein is generalizable to the residents of Hamilton at the time of data collection. However, it may not necessarily be as generalizable to residents who live(d) in more rural or fringe area, as the number of participants from the tracking cohort was far fewer than the proportion from the comprehensive cohort. For detailed information on the generalizability of the two different data collection cohorts of the CLSA, please refer to the very well compiled “The Canadian Longitudinal Study on Aging (CLSA) Report on Health and Aging in Canada”⁶, which outlines the strengths and limitations of both cohorts.

Informed consent was obtained from all participants of both cohorts. The authors of this report obtained the appropriate permissions to access the CLSA data. Approvals from the appropriate ethics review boards at the University of Ottawa, Health Canada, and Public Health Agency of Canada have been obtained for the authors’ use of the dataset. Participants from both the tracking and comprehensive cohorts residing in the eight cities listed above were included in our analyses.

Table 1 –Participants’ Gender by Age

Gender	Age				Total
	45-54	55-64	65-74	75+	
Male	287 (48.2%)	383 (48.0%)	279 (47.6%)	203 (49.0%)	1,152 (48.1%)
Female	309 (51.9%)	415 (52.0%)	307 (52.4%)	211 (51.1%)	1,242 (51.9%)
Total	596 (24.9%)	798 (33.3%)	586 (24.5%)	414 (17.3%)	2,394 (100%)

Notes. Percentages in ‘Age’ columns and right-hand ‘Total’ column are column proportions. Percentages in bottom ‘Total’ row are row proportions. Full sample size for Hamilton sample is n=2,394

With respect to the gender ratio (see Table 1) for the Hamilton sub-sample of the CLSA, we found that there were proportionally more women (51.9%) than men (48.1). With respect to age, the largest proportion of participants (33.3%) were in the 56-64 age group, with relatively even proportions across the 45-54 and 65-74 groups, and the lowest proportion (17.3%) was in the 75+ age group.

Table 2 shows the information on total annual household income. Half the respondents, 50.0%, reported a total annual household income between \$50,000 and \$150,000. One in four respondents (28.0% overall) reported a total annual household income of less than \$50,000, with a small minority (4.9% overall) reporting a total household income of less than \$20,000. Overall, 14.5% of participation reported a total annual household income greater than \$150,000. Overall, those aged 45-54 were more likely to report total annual household incomes of \$100,000-\$150,000+, while those aged 65-74 and 75+ were more likely to report total annual household incomes of \$20,000-\$99,999. In addition, women were somewhat more likely to report a total annual household income of less than \$49,999, while men were somewhat more likely to report a total annual household income of \$50,000+.

Table 3 presents information regarding participants' level of attained education. It shows that the majority of respondents (66.9%) reported achieving a post-secondary degree or diploma of some kind. The rate for this level of academic achievement was somewhat higher for men than for women, and noticeably higher for those aged 45-54 compared to those aged 75+. Those aged 75+ were more likely to report graduating high school or less as their highest level of academic achievement compared to other age groups, while women were somewhat more likely to report being a secondary school graduate as their highest level of academic achievement compared to men.

Table 2 – Participants’ Income by Age and Gender

Income	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Less than \$20,000	29 (4.9%)	38 (4.8%)	28 (4.8%)	21 (5.1%)	38 (3.3%)	78 (6.3%)	116 (4.9%)
\$20,000-\$49,999	60 (10.1%)	149 (18.7%)	186 (31.7%)	159 (38.4%)	234 (20.3%)	320 (25.8%)	554 (23.1%)
\$50,000-\$99,999	178 (29.9%)	268 (33.6%)	219 (37.4%)	130 (31.4%)	400 (34.7%)	395 (31.8%)	795 (33.2%)
\$100,000-\$149,999	153 (25.7%)	163 (20.4%)	54 (9.2%)	31 (7.5%)	214 (18.6%)	187 (15.1%)	401 (16.8%)
\$150,000+	152 (25.5%)	137 (17.2%)	45 (7.7%)	14 (3.4%)	197 (17.1%)	151 (12.2%)	348 (14.5%)
No Response	24 (4.0%)	43 (5.4%)	54 (9.2%)	59 (14.3%)	69 (6.0%)	111 (8.9%)	180 (7.5%)
Total	596 (24.9%)	798 (33.3%)	586 (24.5%)	414 (17.3%)	1,152 (48.1%)	1,242 (51.9%)	2,394 (100%)

Notes: ‘Income’ reported in this table refers to household total income. Percentages are column proportions. Total sample size for household income was n=3104

Table 3 – Participants’ Education by Age and Gender

Education	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Less than Secondary School	22 (3.7%)	40 (5.0%)	68 (11.6%)	82 (19.8%)	99 (8.6%)	113 (9.1%)	212 (8.9%)
Secondary School Graduate	61 (10.2%)	100 (12.5%)	85 (14.5%)	62 (15.0%)	121 (10.5%)	187 (15.1%)	308 (12.9%)
Some Post-Secondary	54 (9.1%)	102 (12.8%)	70 (12.0%)	44 (10.6%)	124 (10.8%)	146 (11.8%)	270 (11.3%)
Post-Secondary Degree/Diploma	459 (77.%)	556 (69.7%)	361 (61.6%)	226 (54.6%)	806 (70.0%)	796 (64.1%)	1,602 (66.9%)
No Response	<10	<10	<10	<10	<10	<10	<10
Total	596 (24.9%)	798 (33.3%)	586 (24.5%)	414 (17.3%)	1,152 (48.1%)	1,242 (51.9%)	2,394 (100%)

Notes. Post-secondary degree/diploma includes trade certificate or diploma from a vocational school or apprenticeship training, non-university certificate or diploma from a community college, CEGEP, etc., University certificate below bachelor’s level, Bachelor’s degree, University degree or certificate above bachelor’s degree, or other post-secondary education. Total number of respondents was n=2,394

About the Present Report

The present report both summarizes and analyses data collected in the CLSA for those living within the CMA for Hamilton. The information in this report is meant to be viewed in conjunction with the “A Tale of Eight Cities: A General Report on the Age-Friendliness of Eight Major Canadian Cities”, which was previously released to appropriate groups and individuals from all eight cities for whom individual reports were subsequently made. The current report summarizes data with respect to all variables examined in the “A Tale of Eight Cities” general report using the data from the CLSA that is specific to the City of Hamilton. When examining the data and drawing conclusions from it, we will not be discussing differences in proportions/rates lower than or equal to 2%. Instead, such small differences will instead be discussed as being “relatively similar”. Any differences above 2% will be discussed in proportion to the size of the difference using the statistical knowledge and experience of the Ottawa Team as well as expert advice from members of the overall team.

Methodology for Comparing Each City to the Overall Data

In addition to summarizing the data, the present report will also compare the data from Hamilton to the data collected from the other seven cities in the general report. For proportions, this will be done using the “Total” data (the overall proportion collapsed across age and gender categories) from each individual age-friendly indicator variable in the general report. The highest/lowest (depending on which is more appropriate) proportion for each variables’ overall data will be used as the comparative value in a single-sample proportion test in order to determine whether each individual city differs from the highest/lowest proportion for that variable. In this way, each city is compared (individually) with the city that is currently demonstrating the “most age-friendly” value with respect to proportions of participants meeting age-friendly characteristics as previously identified by the WHO and previously discussed in the preceding sections of this report. The single-sample proportion test uses the current city’s data on a selected variable to generate a proportion mean and a variance. The test uses the proportion generated for the selected city on the selected variable and tests it against the pre-specified value (the highest/lowest among the eight cities previously examined in the general report). It does this by using a distribution whose mean is the pre-specified value and whose standard deviation

equals the standard error of generated proportion mean for the selected city on the selected variable. This creates a z-score that is then compared against a distribution table to determine statistical significance. Because of the number of analyses that are run in the present report, and in order to only report significances that are not only statistically significant but also (hopefully) practically significant, we will only be reporting p -values of .001 or less as significant.

For data that uses means and standard deviations, we will first be conducting an Analysis of Variance (ANOVA) in which the means of the eight cities included in the general report are compared to a grand mean. This will generate a mean error term to be used in planned post-hoc comparisons where the means of seven cities will be compared against the city that was previously identified to have the highest/lowest (depending on what was appropriate to the variable) mean value for the respective variable. In the planned comparisons, a Bonferroni correction will be applied to the statistical significance values.

By using these methods, the comparative analyses described in this report will compare each city against a reference city on any given variable. In describing this, we will use several symbols within the tables included in this report in order to denote different outcomes. These symbols are as follows:

- * Denotes that the value reported in the table is statistically significantly different from the comparative value at the $p \leq 0.001$ level for proportion tests, and $p \leq 0.05$ for means tests.
- A This symbol denotes that the value reported in the table was used as the reference value in the proportion tests for all other cities involved in this project. No further statistical comparisons are conducted on the respective variable for this city using this value.
- H Denotes that the value reported in the table is the highest value among the eight cities examined in this project on the corresponding variable.
- L Denotes that the value reported in the table is the lowest value among the eight cities examined in this project on the corresponding variable.

NA Denotes that the statistical analysis for this city on this variable could not be conducted due to insufficient cell size.

If the overall proportion of a given variable was not statistically different from the reference value (either the highest or lowest according to appropriateness for the corresponding variable), no inter-city differences are discussed. Moreover, the choices we made in determining which value (highest or lowest) to use as the reference value in the proportion tests do not necessarily reflect that they are the “best”. Rather, we have tried to create a system that would convey the most beneficial information to each city with respect to each variable and their respective categories. In some cases, such as for formal/informal care support usage, no solution was necessarily perfect, and so our choice simply reflects what we believe conveys the most useful information out of the two possible reference values (highest or lowest), and which relies the least on any untested assumptions.

We have tried to put an emphasis on practical significance, even in those cases where inferential statistics have been used and been found to be statistically significant. When examining differences between age groups or genders, we will use the word “stable” to refer to differences that are less than 2%. In some cases, where differences are right on the cusp of this cut-off (i.e., difference in rates are 1.9%), we will refer to such differences as “marginal”. Differences in rates between age groups or genders (on which inferential statistics were not conducted) that are between 2% and 4% are referred to as “slight” differences, indicating that the practical size of such differences is small. We also use the term “somewhat different” to refer to age or gender differences in rates that are around 5% (between 4.5% and 7%). “Substantial” differences are those that are at or above 10%. With respect to the results regarding inferential tests, we discuss practical significances as being “marginal” when the differences in proportions are around 1% or less, and “small” when they are at or less than 2%.

Part I

Assessment of Indicators of Age-Friendliness

Dimension 1: Outdoor Spaces and Safety

Safe, clean and walkable outdoor spaces are an important resource for older adults. Being able to go on frequent walks throughout the week of suitable distance (approximately a mile) helps to keep older adults healthy in several important ways. Frequent walkers tend to have better cognitive capacity, meaning that taking frequent walks outside can help older adults with things like verbal memory, fluently categorizing information, and better attention⁸. In addition, going on frequent outdoor walks has been associated with a lower risk of functional decline over time, and with a slower progression of disability⁹, meaning that older adults who do even minimal physical activity may be more able to take care of themselves later in life, and, if they have a disability, may slow the rate at which the disability may get worse over time. Having access to clean, safe, pleasant walking environments is also important for older adults who have to transition from being drivers to non-drivers, which is a common and difficult time that can have many negative outcomes¹⁰. Moreover, a recent review has demonstrated that engagement with nature and natural areas meets the criteria to be considered a basic human psychological need^{11, 12}. International evidence along with WHO recommendations puts the accepted minimum standard of urban green space at 9m² per capita¹²⁻¹⁶ with an ideal level of 50m² per capita¹³.

The World Health Organization describes several aspects of outdoor walking and safety that can affect older adults, such as: the city is kept clean (including noise and scent pollution), access to safe and regulated green spaces, pedestrian-friendly walkways, clean outdoor seating at regular intervals, smooth and level pavements that are maintained, regulated and have pedestrian priority, as well as roadways that are safe from slipping and have regular structures meant to assist crossing over busy roads⁹. Pedestrian-friendly walkways for older adults are an important facet of age-friendly cities, as a report by the Public Health Agency of Canada shows that falls are a large contributor to injury, especially hip fractures, among older adults⁸.

We examined several aspects of the physical environment that were present in the CLSA data in order to analyse how well Hamilton can match the needs of older adults in an age-friendly way. To begin with, we looked at how much park space and water space is available in each city. We used geographic information on the total amount of park space and water space, which we will call ‘green space’ and ‘blue space’ respectively, in each city in square kilometres,

as well as population statistics for each city obtained from Stats Can’s 2016 census, in order to create a value of the amount of green and blue space per capita in square meters (i.e. square meters per person).

With respect to green space, the data showed that Hamilton has 41.7 m² per capita, which is under the WHO and international research recommended ideal value of 50 m² per capita, but well above the minimum recommended standard of 9m² per capita of urban green space. With respect to blue space (water), the data showed that Hamilton has 59.2 m² per capita. While there are not agreed upon standards for the measurement of blue space alone, as such space tends to get lumped into overall “green” space in urban areas, we examined this separately, as data has shown that ‘blue’ space can have a somewhat differential impact than green space^{11,12}. We will use the same standard for blue space as we used for green space. With respect to this, Hamilton has more blue space than the recommended 50m² per capita.

Next, we examined how older Canadians perceive their local environments (e.g. how clean people think their neighbourhood is, how safe they believe it to be, etc.); results are shown in Table 4.

Table 4 – Perception of Local Environment

Perceptions of Local Environment (Environment Is...)	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Kept Clean	515 (95.2%)	732 (96.4%)	526 (95.8%)	369 (97.6%)	1,025 (96.4%)	1,117 (96.0%)	2,142 (96.2%)
Vandalism and Graffiti Are Big Problems	52 (9.6%)	34 (4.5%)	38 (6.9%)	24 (6.4%)	60 (5.6%)	88 (7.6%)	148 (6.7%)
Not Safe to Walk in After Dark	39 (7.2%)	69 (9.2%)	50 (9.2%)	36 (10.0%)	59 (5.6%)	135 (11.9%)	194 (8.9%)

Notes. Percentages are cell proportions of people who agreed with the respective statement about their local environment and community relative to all respondents. Number of respondents was $n=2,227$ for ‘kept clean’ and for ‘vandalism and graffiti are a big problem’ and $n=2,191$ ‘safe to walk in after dark’

Overall, 96.2% of respondents agreed or strongly agreed that their local environment is kept clean. This was significantly lower than the highest value of 98% (lowest value: 93.2%), though the practical significance was marginal. Rates were stable across age groups and genders.

Conversely, 6.7% of respondents felt that vandalism and graffiti are big problems in their local environment. This value was not significantly different than the lowest value. The rates for this decreased in a non-linear fashion across age groups, with an overall trend of decreasing as age increased, with females more likely to indicate that vandalism and graffiti were big problems in their neighbourhoods. Finally, 8.9% of respondents overall felt that their local environment was not safe to walk in after dark: the lowest value among all eight cities examined in this project. The rates increased across age groups (difference in rates of 2.8% between those aged 45-54 and those aged 75+), and was twice as high for women as it was for men (difference in rates of 6.3%).

We also examined how frequently Hamilton Residents above age 45 took a walk outside (see Table 5).

Table 5 – Weekly Frequency of Taking a Walk Outside by Age and Gender

Frequency of Taking a Walk Outside	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Never	68 (12.5%)	100 (13.2%)	93 (16.7%)	84 (22.2%)	157 (14.7%)	188 (16.0%)	345 (15.4%)
1 to 2 days	92 (16.9%)	120 (15.8%)	74 (13.3%)	48 (12.7%)	157 (14.7%)	177 (15.1%)	334 (14.9%)
3 to 4 days	114 (20.9%)	138 (18.2%)	95 (17.1%)	59 (15.6%)	174 (16.3%)	232 (19.8%)	406 (18.1%)
5 to 7 days	271 (49.7%)	401 (52.8%)	295 (53.0%)	188 (49.6%)	580 (54.3%)	575 (49.1%)	1,155 (51.6%)

Notes. Percentages are column proportions. Total number of participants with data for this data was $n=2,240$.

The majority of respondents (51.6% overall) indicated they took a walk outside 5 to 7 days a week. This value was significantly lower than the highest value of 61.9% (lowest value: 43.8%). The rates were lowest in the 45-54 and 75+ age groups. The rate for taking a walk outside 5 to 7 days/week was higher for men than for women. Overall, 18.1% of respondents reported walking outside 3 to 4 days a week. Rates for this frequency of walking outside slightly decreased across age groups, with women more likely than men to walk 3-4 days per week.. A further 14.9% overall reported taking a walk outside 1 to 2 days a week. This was significantly higher than the lowest value of 11.9% (highest value: 18.4%). The rates for this frequency of weekly walking

decreased slightly across age but were stable across genders. Finally, 15.4% of overall respondents reported not taking a walk outside on a weekly basis. This value was significantly higher than the lowest value of 8.5% (highest value: 19.4%). Rates for never walking outside increased markedly across age groups (difference in rates of 9.7% between those aged 45-54 and those aged 75+).

We also examined how many falls had occurred among participants as a result of standing or walking in the past year before the survey (see Table 6). We found that 39.8% (33 out of 88 falls) of the reported falls in Hamilton occurred as a result of standing or walking outside (not including exercising or doing yard work). This value was the lowest among all eight cities examined in this project. Inadequate cell sizes prevented examination of trends across age groups, though the number was much greater for women as it was for men.

Table 6 – Proportion of Sample Reporting Falls While Standing or Walking

Number of Falls	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Fall, Not Outside	12 (66.7%)	19 (61.3%)	13 (52.0%)	<10	22 (73.3%)	28 (52.8%)	50 (60.2%)
Fall Outside	<10	12 (38.7%)	12 (48.0%)	<10	<10	25 (47.2%)	33 (39.8%)

Notes. Percentages are column proportions. Respondents are only those who had fallen in the past 12 months in such a way that the fall caused injury enough to disrupt their normal daily living routine for multiple consecutive days. Number of respondents was $n=83$.

Summary

The Good News

- The large majority (96.2%) of respondents felt that their local environment was kept clean, while a small minority felt that vandalism and graffiti were big problems (6.7%) or that their local environment was not safe to walk in after dark (8.9%). In fact, Hamilton had the lowest proportion of respondents who felt their local environment was unsafe after dark of all eight cities in this project.
- The majority of respondents reported taking a walk outside 5 to 7 times a week (51.6%). With a further 18.1% reporting walking 3 to 4 days a week, this means that 69.7% of the Hamilton sample reported that they took a walk outside from 3 to 7 days a week.
- Hamilton had the lowest proportion of falls that occurred outside the home as a result of standing or walking of all eight cities examined in this project.

The Bad News

- Women were twice as likely as men to report not feeling safe in their local environment after dark.
- 30.3% of overall respondents reported taking a walk on fewer than 2 days (1-2 or never) a week.
- The frequency of not walking at all outside on a weekly basis increased markedly with age (nearly doubled by age 75+).

Dimension 2: Transportation

Transportation is an important aspect of life. Having personal transportation can be a significant boost to a person's quality of life and leads to higher social participation for older adults¹⁸. However, many older adults may have to experience the difficult transition from driver to non-driver¹⁰, highlighting the importance of alternate forms of transportation not only being available, but viable as well for a wide range of individuals. Even for those who are still driving, they may fear losing their driver's license¹⁹. But, those who are able to use other modes of transportation, specifically public transportation or walking, tend to have higher social participation compared to passengers and adapted transport/taxi users²⁰. Furthermore, the WHO AFCG also explains that having access to affordable transportation will, in turn, also give access to community and health services, and that the issue of accessible, affordable transportation in active aging touches on many other areas of active aging as well. While there are many alternate forms of transportation to driving, such as walking, cycling, taking a taxi, and sharing rides in a motor vehicle, a major aspect of this dimension is the availability and viability of public transportation. Public transportation should be (according to the WHO AFCG): affordable, accessible, reliable and frequent, have an adequate range of travel destinations, use age-friendly vehicles that are accessible to those with mobility limitations and which clearly denote the vehicle number and destination, be safe and comfortable, have priority seating, have easily accessible information, and have accessible and sheltered transport stations and stops.

Using the CLSA data, we were able to examine a number of features regarding transportation use among the CLSA participants. In the first subsection of this dimension, 'Modes of Transportation', we examined the proportion of people who still had a valid driver's license (Table 7) as well as driving frequency for those that had a valid license (Table 8). Moreover, we examined the most common form of transportation used by participants in the last year at the time of measurement, both for drivers (Table 9) and for non-drivers (Table 10). Similarly, we also examined the proportions of participants that had used various forms of transportation in the past month at the time of measurement, again for both drivers (Table 11) and non-drivers (Table 12). Furthermore, we examined the number of people that reported that lack of transportation, of any kind, was a barrier to participate in more social, recreational activities for drivers and non-drivers (Table 13). Because of the heavy emphasis in the WHO

AFC guide on public transportation, we looked more specifically at this mode of transportation in relation to the types of barriers older adults may face when trying to utilize this form of transportation in another subsection, ‘Public Transportation’, in which we examined the proportion of people that reported various types of barriers to public transportation use (Table 14 and 15) and accessible transportation use (Table 16 and 17).

Modes of Transportation

We first examined the number of participants in the Hamilton sample of the CLSA who had a valid driver’s licence. The results of this examination are presented in Table 7. The results show that 92.3% of the overall Hamilton sample still currently had a driver’s licence at the time of measurement. This value was significantly lower than the highest value of 96.2%, though of little practical significance. Rates for retaining one’s driver’s licence decreased with age, but only after the age group of 74 (difference in rates of 10.0% between those aged 65-74 and those aged 75+), as the rates between other age groups were stable. Moreover, men were somewhat more likely than women to still have a valid driver’s licence (difference in rates of 5.0%).

Table 7 – Driving Status

Driving Status	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Currently Has a Licence	512 (93.9%)	723 (95.1%)	521 (93.2%)	316 (83.2%)	1,016 (95.0%)	1,056 (90.0%)	2,072 (92.3)
Does Not Currently Have a Licence	33 (6.1%)	37 (4.9%)	38 (6.8%)	64 (16.8%)	54 (5.1%)	118 (10.1%)	172 (7.7%)

Notes. Percentages are column proportions. Total number of respondents was $n=2,244$.

Next, we examined the frequency with which those people drove their vehicle (see Table 8). The large majority (69.7%) of respondents reported driving on a daily basis. This was the highest proportion of daily driving frequency among all eight cities in this project. The rates dropped substantially as age increased (difference in rates of 24.1% between those aged 45-54 and those aged 75+), and were markedly higher for men than for women (difference in rates of 18.1%). A further 18.0% of respondents with a valid driver’s license reported driving 4 to 6

times a week. The rates for this frequency of weekly driving were higher for women than for men (difference in rates of 7.0%).

Table 8 – Driving Frequency

Driving Frequency	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Daily	405 (80.2%)	510 (73.3%)	280 (61.3%)	162 (56.1%)	753 (78.9%)	601 (60.8%)	1,354 (69.7%)
4 to 6 Times a Week	54 (10.8%)	108 (15.5%)	107 (23.4%)	80 (27.7%)	137 (14.4%)	212 (21.4%)	349 (18.0%)
2 to 3 Times a Week	25 (5.0%)	50 (7.2%)	41 (9.0%)	29 (10.0%)	33 (3.5%)	112 (11.3%)	145 (7.5%)
Once a Week	<10	11 (1.6%)	11 (2.4%)	<10	12 (1.3%)	20 (2.0%)	32 (1.7%)
Less than Once a Week, More than Once a Month	<10	<10	<10	<10	<10	<10	15 (0.8%)
Less than Once a Month	<10	<10	<10	<10	<10	14 (1.4%)	19 (1.0%)
Not at all	<10	10 (1.4%)	10 (2.2%)	<10	<10	22 (2.2%)	29 (1.5%)

Notes. Respondents are only those who previously identified that they currently have a valid driver’s license, either with or without restrictions. Percentages are column proportions. Total number of respondents was $n=1,943$.

7.5% of respondents reported driving 2 to 3 times a week. This value was the lowest of all eight cities in this project, and thus was significantly lower than the highest value of 12.8%. The rates for this driving frequency more than doubled across age groups (difference in rates of 5.0% between those aged 45-54 and those aged 75+), and was more than three times higher for women than for men (difference in rates of 7.8%). A small minority, 0.8% of respondents with a valid driver’s licence reported driving only once a week. Finally, 2.5% of respondents reported driving between ‘less than once a week, but more than once a month’ and ‘not at all’. Insufficient cell sizes prevent drawing conclusions across age groups or genders for these categories.

Next, we examined the most common mode of transportation over the past year at the time of measurement for those with a valid driver’s licence. Results are presented in Table 9. We found that the most common mode of transportation for those with a valid driver’s licence was driving a personal motor vehicle; the overall rate was 90.1%. This value was significantly lower than the

highest value of 93.3%, though the practical significance was small. The rates were stable across age groups, but were higher for men than for women (difference in rates of 7.7%).

Table 9 – Most Common Transportation Type over the Past Year for Drivers

Transportation Use	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Drive a Motor Vehicle	446 (90.1%)	625 (91.4%)	392 (88.1%)	257 (90.2%)	888 (94.0%)	832 (86.3%)	1,720 (90.1%)
Passenger in a Motor Vehicle	13 (2.6%)	28 (4.1%)	39 (8.8%)	15 (5.3%)	<10	86 (8.9%)	95 (5.0%)
Walking	12 (2.4%)	19 (2.8%)	<10	<10	23 (2.4%)	25 (2.6%)	48 (2.5%)
Public Transit	16 (3.2%)	<10	<10	<10	13 (1.4%)	18 (1.9%)	31 (1.6%)
Cycling	<10	<10	<10	<10	10 (1.1%)	<10	12 (0.6%)
Accessible Transit	<10	<10	<10	<10	<10	<10	<10
Taxi	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are column proportions. Respondents are those that indicated that they currently have a valid driver's licence, either with or without restrictions. Total number of respondents was $n=1,909$.

The second most common form of transportation for those with a driver's licence was being a passenger in a motor vehicle, with a rate of 5.0% overall. This value was significantly lower than the highest value of 7.6%, though the practical significance was small (lowest value: 2.6%). The rates for this mode of transportation nearly quadrupled between the age groups of 45-54 to 65-74 (difference in rates of 6.2%), but then dropped by nearly half between the age groups of 65-74 and 75+ (difference in rates of 3.5%). Moreover, women were much more likely than men to report this as their most common form of transportation. The third most common form of transportation for those with a valid driver's licence was walking, with an overall rate of 2.5%. This value was significantly lower than the highest value of 6.4% (lowest value: 2%). Rates were stable across age groups and genders. A further 1.6% of those with a licence reported public transit as their most common form of transportation. This value was significantly lower

than the highest value of 7.5% (lowest value: 0.9%). Inadequate cell sizes prevented drawing conclusions about trends across age groups and genders. Finally, 0.6% of respondents reported cycling as their most common form of transportation. This was the lowest value in all eight cities and significantly lower than the highest value of 4.5% .

We also examined the same information with respect to those who did not have a valid driver’s licence at the time of measurement (see Table 10).

Table 10 – Most Common Transportation Type over the Past Year for Non-Drivers

Transportation Use	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Public Transit	19 (50.0%)	14 (31.1%)	13 (31.0%)	17 (26.2%)	15 (25.9%)	48 (36.4%)	63 (33.2%)
Passenger in a Motor Vehicle	<10	14 (31.1%)	17 (40.5%)	26 (40.0%)	16 (27.6%)	46 (34.9%)	62 (32.6%)
Walking	<10	<10	<10	10 (15.4%)	11 (19.0%)	20 (15.2%)	31 (16.3%)
Accessible Transit	<10	<10	<10	<10	<10	<10	10 (5.3%)
Taxi	<10	<10	<10	<10	<10	<10	<10
Cycling	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are column proportions. Respondents are those that indicated they did not currently have a valid driver’s licence. Total number of respondents was $n=190$.

We found that the most common form of transportation for those without a driver’s licence was being a passenger in a motor vehicle, with a rate of 33.2% overall. This rate increased across age groups (difference in rates of 8.9% between those aged 55-64 and those aged 75+), and was somewhat higher for women than for men (difference in rates of 7.3%). The second most common form of transportation for those without a valid driver’s licence was public transit, with an overall rate of 33.2%. This value was significantly lower than the highest value of 55.8% (lowest value: 29.5%). Moreover, the rates for this were higher for women than for men (difference in rates of 10.5%). The third most common form of transportation was walking, with an overall rate of 16.3%. Inadequate cell sizes prevented drawing conclusions across age groups, though the rate for men was higher than it was for women (difference in rates of 4.9%). Next, 4.9% of respondents without a driver’s license reported accessible transit as their most common

form of transportation. Inadequate cell sizes prevented drawing any conclusions about taking a taxi or cycling as a form of transportation.

We also examined what types of transportation participants had used over the past month at the time of measurement, again split between drivers and non-drivers (see Table 11). It should be noted that, because driving status, frequency, and driving as the most common mode of transportation over the past year had previously been examined, driving a personal motor vehicle was not a response option for this line of questioning.

Table 11 – Transportation Types Utilized in Past Month for Drivers

Transportation Use	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Passenger in a Motor Vehicle	415 (81.1%)	552 (76.4%)	405 (77.7%)	233 (73.7%)	725 (71.4%)	880 (83.3%)	1,605 (77.5%)
Walking	396 (77.3%)	515 (71.2%)	343 (65.8%)	219 (69.3%)	732 (72.1%)	741 (70.2%)	1,473 (71.1%)
Public Transit	136 (26.6%)	144 (19.9%)	96 (18.4%)	54 (17.1%)	220 (21.7%)	210 (19.9%)	430 (20.8%)
Cycling	155 (30.3%)	147 (20.3%)	76 (14.6%)	21 (6.7%)	261 (25.7%)	138 (13.1%)	399 (19.3%)
Taxi	65 (12.7%)	83 (11.5%)	52 (10.0%)	26 (8.2%)	114 (11.2%)	112 (10.6%)	226 (10.9%)
Accessible Transit	<10	<10	<10	<10	<10	10 (1.0%)	13 (0.6%)

Notes. Percentages are cell proportions of respondents that responded “yes” to utilizing the corresponding type of transportation in the past month compared to the total number of respondents. Respondents are those that indicated they currently have a valid driver’s licence. Total number of respondents was $n=2,072$.

The results show that being a passenger in a motor vehicle was the most common response, with an overall rate of 77.5%. This value was significantly lower than the highest value of 82.2% (lowest value: 53.6%). Rates for this type of transportation decreased across age groups (difference in rates of 7.4% between those aged 45-54 and those aged 75+), and were higher for women than for men (difference in rates of 11.9%). The second most used type of transportation over the past month by these people was walking, with an overall rate of 71.1%. This value was significantly lower than the highest value of 81.8% (lowest value: 44.5%). The rates for walking decreased across age groups (difference in rates of 8.0%), but were stable across genders. 20.8%

of drivers reported using public transit in the past month. This value was significantly lower than the highest value of 39.3% (lowest value: 9.7%). Rates for this type of transportation decreased across age groups (difference in rates of 9.5% between those aged 45-54 and those aged 75+), and were slightly higher for men than for women (difference in rates of 1.8%). Nearly a fifth of overall respondents, 19.3%, reported cycling in the past month. This rate was significantly lower than the highest value of 26.4% (lowest value: 10.3%). Rates for this type of transportation decreased substantially across age groups (difference in rates of 23.6% between those aged 45-54 and those aged 75+), such that those aged 45-54 had nearly four times the rate of those aged 75+; and, the rate for men was twice as high than the rate for women (difference in rates of 12.6%). Overall, 10.9% of respondents reported using a taxi in the past month. This rate was significantly lower than the highest value of 20.3% (lowest value: 4%). The rates for this type of transportation decreased across age groups, but were stable across genders. Lastly, less than 1% of respondents with a valid driver's licence reported using accessible transit in the past month (0.6% overall). Insufficient cell sizes prevented drawing conclusions across age groups and genders.

We also examined the same information with respect to non-drivers (see Table 12).

Table 12 – Transportation Types Utilized in Past Month for Non-Drivers

Transportation Use	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Passenger in a Motor Vehicle	30 (90.9%)	30 (81.1%)	30 (79.0%)	54 (84.4%)	42 (77.8%)	102 (86.4%)	144 (83.7%)
Walking	26 (78.8%)	26 (70.3%)	28 (73.7%)	44 (68.8%)	39 (72.2%)	85 (72.0%)	124 (72.1%)
Public Transit	28 (84.9%)	29 (78.4%)	23 (60.5%)	33 (51.6%)	39 (72.2%)	74 (62.7%)	113 (65.7%)
Taxi	13 (39.4%)	12 (32.4%)	18 (47.4%)	17 (26.6%)	15 (27.8%)	45 (38.1%)	60 (34.9%)
Accessible Transit	<10	<10	<10	10 (15.6%)	12 (22.2%)	15 (12.7%)	27 (15.7%)
Cycling	<10	<10	<10	<10	10 (18.5%)	<10	12 (7.0%)

Notes. Percentages are cell proportions of respondents that responded “yes” to utilizing the corresponding type of transportation in the past month compared to the total number of respondents. Respondents are those that indicated they currently do not have a valid driver's licence. Total number of respondents was $n=172$.

The most common mode of transportation utilized in the past month by non-drivers was being a passenger in a motor vehicle, with an overall rate of 83.7%. This value was significantly lower than the highest value of 90.6% (lowest value: 63.7%). The rates decreased between people aged 45-54 and those aged 55-64 (difference in rate of 8.6%), but were stable between those aged 55-64 and those aged 65-74, after which they increased again for people aged 75+. The rate for women was higher than the rate for men (difference in rates of 8.6%). Walking was the second most common form of transportation: used by 72.1%. The rates decreased across age groups (difference in rates of 10.0% between those aged 45-54 and those aged 75+), with no gender differences in the rate of walking. 65.7% of respondents reported using public transportation in the past month. Rates decreased substantially across age groups (difference in rates of 33.3% between those aged 45-54 and those aged 75+); the rates for public transportation were higher for men than for women (difference in rates of 9.5%). A minority of non-driving respondents, 15.7% overall, reported using accessible transit. Inadequate cell sizes prevented drawing conclusions about age-related trends, though the rate for men was nearly double the rate for women (difference in rates of 9.8%). Finally, 7% of non-driving respondents reported using cycling in the past month, though inadequate cell sizes prevent drawing conclusions regarding age and gender.

After examining rates of usage of different forms of transportation, we then took a look at those who stated that transportation was a barrier to engaging in more social activities. The

Table 13 – Transportation as a Barrier to Participation in More Social Activities

Transportation as Barrier	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Drivers	<10	<10	<10	<10	<10	10 (2.0%)	15 (1.5%)
Non-Drivers	<10	<10	<10	<10	<10	15 (23.8%)	18 (19.0%)

Notes. Respondents are people who previously identified that they desired to participate in more social and physical activities over the past year. Percentages are cell proportions and represent the number/percentage of people who responded “yes” that transportation was a barrier to participating in more social activities over the past year at the time measurement for the corresponding age/gender category. Total number of respondents for ‘Drivers’ was $n=976$, and for ‘Non-Drivers’ was $n=76$. Results are presented in Table 13. These results are based on participants who had also indicated

that, in the past 12 months at the time of measurement, they desired to participate in more social activities.

The results show that a very small minority, 1.5% overall, of those with a valid driver's licence reported that transportation was a barrier to social activity participation. On the other hand, 19.0% of overall non-drivers reported that transportation was a barrier to their desired level of social activity participation. Inadequate cell sizes prevented drawing conclusions with respect to age and gender.

Public Transportation

Affordable, accessible public transportation represents an area where municipalities can exert a rather large influence on the well-being of older adults through the provision of a means to travel and gain access to a wide range of services and activities that are all a part of being an age-friendly city. After examining rates of usage of public transportation for various subpopulations of the relevant CLSA sample, we then examined the number of bus stops as well as the bus stop density per square kilometre. We used bus data that deals with non-unique bus stops. That is, if two routes both stop at the same physical bus stop, the stop is counted twice. This gives a measure of the variability of options that a person has for using public transportation in a given city above what the number of unique physical stops would otherwise indicate. Hamilton has 3,347 non-unique bus stops within the city's census metropolitan area geographical limits (highest value: 48,841; lowest value: 1,487). With respect to bus stop density, which is the number of bus stops per square kilometer, the data shows that Hamilton has a bus stop density of 2.3 bus stops per km² (highest value: 9.4; lowest value: 0.3).

Next, we examined various factors that prevented the use of public transportation for those individuals who did not report using public transportation at all in the past month at the time of measurement. Results are presented in Table 14. For the sake of parsimony, we examine this issue for all participants, regardless of driving status.

The most common response was that public transit was seen as not needed, with an overall rate of 56.8%. This value was significantly higher than the lowest value of 47.1% (highest value: 65.4%). The rates for this barrier increased somewhat across age groups (difference in rates of 3.8% between those aged 45-54 and those aged 75+), but were stable

across genders. The next most commonly reported barrier was that service was unavailable in one’s neighbourhood, with an overall rate of 24.2%. This value was significantly higher than the lowest value of 7.4% (highest value: 29.8%). The rates for this barrier decreased across age groups (difference in rates of 10.7% between those aged 45-54 and those aged 75+), though there was a plateau in rates between those aged 55-64 and those aged 65-74; also, the rates for this barrier were higher for women than for men (difference in rates of 6.9%).

A similar percentage of people cited inconvenient schedules/routes as a barrier to the use of public transit in the past month, with an overall rate of 20.6%. This value was significantly higher than the lowest value of 10.6% (highest value: 32.8%). The rates for this barrier were slightly higher for those aged 55-64 compared to other age groups (differences in rates between 2.5% and 4.2% between those aged 55-64 and all other age groups), but were otherwise stable across age categories. Also, the rate for this barrier was higher for men than for women (difference in rates of 8.4%). 17.1% of overall respondents reported that they ‘preferred not to use public transit’ as a barrier to its use in the past month. This value was the lowest among all eight cities included in this project. The rates for this barrier increased with age from those aged 45-54 to those aged 65-74 (difference in rates of 5%), but then decreased marginally between

Table 14 – Factors Preventing Use of Public Transportation

Factors That Prevented Use of Public Transportation	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Not Needed	203 (53.3%)	343 (58.4%)	252 (57.3%)	168 (57.1%)	472 (58.2%)	494 (55.4%)	966 (56.8%)
Service Unavailable	116 (30.5%)	130 (22.2%)	111 (25.2%)	55 (18.7%)	165 (20.4%)	247 (27.7%)	412 (24.2%)
Inconvenient Schedules/Route	63 (16.5%)	123 (21.0%)	85 (19.3%)	51 (17.4%)	186 (22.9%)	136 (15.3%)	322 (18.9%)
Prefer Not to Use	57 (15.0%)	99 (16.9%)	83 (18.9%)	50 (17.0%)	139 (17.1%)	150 (16.8%)	289 (17.0%)
Health/Mobility Limitations	<10	11 (1.9%)	<10	10 (3.4%)	10 (1.2%)	23 (2.6%)	33 (1.9%)
Too Costly	<10	<10	<10	<10	<10	<10	11 (0.7%)

Notes. Percentages are cell proportions of those that responded “yes” to the corresponding barrier for each age/gender category. Participants could respond to multiple barriers to public transportation use. Total number of respondents $n=1,702$.

those aged 65-74 and those aged 75+ (difference in rates of 1.8%); however, the rates were stable across genders. A small minority, 2.1% overall, reported that health/mobility limitations was a barrier to public transit use. The rates for this barrier were stable across age groups and genders. Finally, 0.7% reported that the cost of services was a barrier, though inadequate cell sizes prevented drawing conclusions regarding age and gender for this barrier.

Next, we examined the proportions of participants who reported different numbers of barriers to the use of public transportation for those individuals who previously reported not having used public transportation at all in the past month at the time of measurement (see Table 15). A small minority, 3.2% overall, did not report any of the pre-specified barriers as impediments to their use of public transit in the past month at the time of measurement, despite not also not reporting using public transit at all during that time period. The large majority, 76.2% overall, reported experiencing one barrier. The rates for this number of barriers decreased with age (difference in rates of 6.2%), but were stable across genders. A further 18.8% of the overall Hamilton sample reported two barriers to public transit use. This value was significantly higher than the lowest value of 8.8% (highest value: 19.6%). The rates for this number of barriers was highest for those age 65-74e (difference in rates of 3.9% between those aged 45-54 and those aged 65-74.), but were stable across genders. Finally, 1.8% of respondents reported three or more barriers to public transit use. Inadequate cell sizes prevented drawing conclusions across age groups, but rates were stable across genders.

Table 15 – Total Number of Barriers to Public Transportation Use

Number of Barriers	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	10 (2.6%)	15 (2.6%)	11 (2.5%)	19 (6.5%)	27 (3.3%)	28 (3.1%)	55 (3.2%)
1	302 (79.3%)	453 (77.2%)	327 (74.3%)	215 (73.1%)	614 (75.7%)	683 (76.7%)	1,297 (76.2%)
2	66 (17.3%)	103 (17.6%)	93 (21.1%)	58 (19.7%)	154 (19.0%)	166 (18.6%)	320 (18.8%)
3+	<10	16 (2.7%)	<10	<10	16 (2.0%)	14 (1.6%)	30 (1.8%)

Notes. Total number of barriers is 6. Percentages are column proportions. Respondents are those that previously identified that they did not use public transportation in the past month. Total number of respondents was $n=1,702$.

We also examined participants’ reported barriers to the use of accessible transit. This data is derived only from those participants who previously indicated that they did not use accessible transit in the past month at the time of measurement. The results are presented in Table 16.

Table 16 – Barriers to Use of Accessible Transportation

Factors That Prevented Use of Accessible Transportation	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Not Needed	472 (87.3%)	651 (87.0%)	477 (86.9%)	324 (88.3%)	912 (86.5%)	1,102 (88.0%)	1,924 (87.3%)
Service Unavailable	17 (3.1%)	30 (4.0%)	25 (4.5%)	16 (4.2%)	37 (3.5%)	51 (4.3%)	88 (3.9%)
Prefer Not to Use	<10	<10	12 (2.2%)	<10	13 (1.2%)	17 (1.5%)	30 (1.3%)
Inconvenient Schedules/Route	<10	<10	<10	<10	13 (1.2%)	<10	20 (0.9%)
Health/Mobility Limitations	<10	<10	<10	<10	<10	<10	<10
Too Costly	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are cell proportions of those that responded “yes” to the corresponding barrier for each age/gender category. Participants could respond to multiple barriers to accessible transportation use. Total number of respondents were $n=2,205$ for ‘Not Needed’, and $n=2,245$ for all other barrier categories.

The results show that, by far, the most commonly reported factor preventing use of accessible transportation in the past month was that the service(s) was seen as not needed, with an overall rate of 87.3%. This value was the lowest among all eight cities in this project, and was significantly lower than the highest value of 95.5%. The rates for this barrier were stable across age groups and genders. 3.9% of respondents overall reported that accessible transit services were unavailable to them. This value was the highest among all eight cities in this project, and therefore was significantly higher than the lowest value of 0.3%. The rates for this barrier were stable across age groups and genders. 1.3% of respondents overall indicated that they preferred not to use accessible transit. This was the highest value among all eight cities in this project (lowest 0.4%). Rates for this barrier were also stable genders. Finally, 0.9% of respondents

reported inconvenient schedules/routes as a barrier to use of accessible transit in the past month. Inadequate cell sizes prevented us from analysing this topic further.

We also examined this data with respect to the number of different barriers reported by participants. Results are presented in Table 17.

Table 17 – Total Number of Barriers to Accessible Transportation Use

Number of Barriers	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	53 (9.8%)	70 (9.4%)	46 (8.4%)	24 (6.5%)	102 (9.7%)	91 (7.9%)	193 (8.8%)
1	482 (89.1%)	655 (87.6%)	488 (88.9%)	334 (91.0%)	931 (88.3%)	1,028 (89.4%)	1,959 (88.8%)
2+	<10	23 (3.1%)	15 (2.7%)	<10	22 (2.1%)	31 (2.7%)	53 (2.4%)

Notes. Total number of barriers is 6. Percentages are column proportions. Respondents are those that previously identified they had not used accessible transportation in the past month. Total number of respondents was $n=2,205$.

We found that 9.3% of overall respondents reported none of the specified barriers in the CLSA, despite also not utilizing accessible transit in the past month at the time of measurement. The large majority, 88.8% overall, reported one barrier. This value was the lowest among all eight cities involved in this project. The rates for this number of barriers was higher among the 75+ age group and stable across the remaining age groups and genders. A further 2.4% overall reported two or more barriers. This value was the highest among all eight cities in this project, though the practical significance between cities was small. The rates for this number of barriers were stable across age groups and genders.

Summary

The Good News

- The large majority of respondents, 92.3% overall, in the Hamilton sample of the CLSA still held a valid driver's licence at the time of measurement.
- 87.7% of overall respondents were able to drive between 4 to 7 days a week, and reported being able to drive their own personal motor vehicle as their most common form of transportation over the past year. This indicates that the large majority of respondents across all age groups and genders were able to maintain a strong level of autonomy with respect to transportation.
- For non-drivers, the most common forms of transportation were public transit (33.2%) and being a passenger in a motor vehicle (32.6%), with a further 16.3% of overall respondents reporting walking as their most common form of transportation over the past year. Congruently, 83.7% reported being a passenger, 72.1% reported walking and 65.7% of non-drivers reported using public transit as a form of transportation in the past month at the time of measurement.
- Only 1.5% of those with a valid driver's licence reported that transportation was a barrier to their desired level of social activity participation in the past year.
- Hamilton had the lowest proportion of respondents indicating that 'prefer not to use' was a barrier to use of public transit in the past month. Furthermore, of the majority of respondents that did not use public transit in the past month, 76.2% overall, only reported one barrier to use of public transit.
- Hamilton had the lowest proportion of individuals across all eight cities in this project that reported only one barrier to use of accessible transit among those respondents who indicated they had not used accessible transit in the past month.

The Bad News

- Even despite the fact that the samples from the CLSA for the individual cities defined by CMA geographical limits are generally healthier than the overall Canadian population (as

discussed in the introduction of this report as well as the introduction to General Report), 16.8% of those aged 75+ did not have a valid driver's licence at the time of measurement, which is more than double the rate of such for those aged 65-74.

- Only 20.8% of those with a valid driver's licence overall reported using public transit at least once in the past month, with the rates for those aged 75+ being two-thirds of the rate of those aged 45-54.
- 19.0% of non-drivers that expressed a desire to participate in more social activities reported that transportation was a barrier to their desired level of social participation.
- Of those respondents that did not use public transit at all in the past month, 24.2% reported that services were unavailable to them, while 18.9% reported that the schedules/routes that were available were overly inconvenient.
- 18.3% of those that did not use public transit reported two or more barriers to the use of such.

Dimension 3: Housing

Adequate housing is not only a basic human need, it is a basic human right ²¹. Affordable, accessible housing is an important aspect of health worldwide. A systematic review of housing intervention studies demonstrated that housing improvement interventions, especially those improving heating and warmth, lead to improvements in general health, respiratory health and mental health ²². Adequate housing is especially important for vulnerable groups like those who have health issues, inadequate income, and/or are older in age ²². For these groups, their vulnerabilities interact with poor housing conditions to create hazardous, long-term situations that are detrimental to physical and mental health ²². Moreover, lack of affordable, appropriate housing is a common barrier to aging in place ²³, and aging in place is an important, common theme in healthy aging, especially for ‘stoic’ seniors (those who more strongly value self-reliance, practicality, hard work, being close to family/friends, and put less importance on social activities, volunteering, and have less resources to maintain contact over long distances) ²⁴. The WHO AFCG notes several key features of age-friendly housing, including affordability (including essential services), design (e.g., structurally sound, even surfaces, accessible doorways and hallways), maintenance, access to services in the home, familiar surroundings that establish a sense of community belongingness, housing options that accommodate changing needs for aging in place, and sufficient space and privacy.

Using the CLSA data, we examined several aspects of participants’ current housing, including satisfaction, types of problems and number of problems associated with current home. We break down the results with respect to those who own their home versus those who rent, based on post hoc examination of differential rates of housing problems between the two groups.

To begin with, we examined the proportion of individuals who either strongly agreed or agreed with the statement that they were satisfied with their current housing (see Table 18). We found that a large majority of homeowners, 95.9% overall, reported being satisfied with their current housing. The rates for satisfaction slightly increased across age groups (difference in rates of 3.1% between those aged 45-54 and those aged 75+), but were stable across genders. The large majority of renters, 90.8% overall, reported that they were satisfied with their current

housing. Rates for this increased markedly across age groups (difference in rates of 15.9%), and slightly greater for men than women (2.1%).

Table 18 – Satisfaction with Current Housing

People Satisfied with Current Housing	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Owners	457 (95.0%)	647 (94.7%)	475 (97.1%)	307 (98.1%)	937 (96.4%)	949 (95.5%)	1,886 (95.9%)
Renters	46 (79.3%)	59 (92.2%)	61 (95.3%)	60 (95.2%)	80 (92.0%)	146 (90.1%)	226 (90.8%)

Notes. Percentages are cell proportions for those that responded “yes” that they are satisfied with their current housing for the corresponding age/gender category. Total number of respondents was $n=1,966$ for ‘Owners’ and $n=249$ for ‘Renters’

We also examined current problems with housing for owners and renters. Participants identified which, if any problems with housing affected them. Participants could respond to all, some or none of the problems. Table 19 shows the proportions of older Hamilton adults in the CLSA sample who experienced problems with leaking, noise, condensation, electrical wiring or plumbing, heating, maintenance or repairs, and/or infestations for owners, while Table 20 shows the number of different housing problems reported.

With respect to current housing problems for homeowners, the most commonly reported problems overall were leaking (6.1%), maintenance or repairs (6.1%) and noise (5.9%). For all three, the values for the overall proportions were significantly higher than the lowest value of 2.8% for leaking (highest value: 7.3%), of 4.6 for maintenance or repairs (highest value 7.7) and 3.3% for noise (highest value: 8.2%). Rates generally decreased as age increased (difference in rates of around 2% between those aged 45-54 and those aged 75+, but were somewhat stable across genders. 4.5% of home owners indicated that infestation(s) were a problem in their current housing. This value was significantly higher than the lowest value of 1.2% (highest value: 5.7%). Rates for this issue slightly decreased across age groups (difference in rates of 2% between those aged 45-54 and those aged 65-74), but were stable across genders. 3.7% of homeowners reported electrical wiring and 3.3% reported condensation as problems in their current housing. Rates were relatively stable across ages and genders. Finally, 1.3% of owners

reported that heating was a problem. This value was the lowest among all eight cities in this project. Inadequate cell sizes prevented drawing conclusions with respect to age trends, though the rates were stable across genders.

Table 19 – Problems with Current Housing for Owners

Problems	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Leaking	36 (7.5%)	46 (6.7%)	22 (4.5%)	17 (5.4%)	53 (5.5%)	68 (6.8%)	121 (6.1%)
Maintenance or Repairs	37 (7.7%)	43 (6.3%)	24 (4.9%)	16 (5.1%)	53 (5.5%)	67 (6.7%)	120 (6.1%)
Noise	29 (6.0%)	46 (6.7%)	27 (5.5%)	14 (4.5%)	49 (5.0%)	67 (6.7%)	116 (5.9%)
Infestations	26 (5.4%)	32 (4.7%)	17 (3.5%)	13 (4.1%)	43 (4.4%)	45 (4.5%)	88 (4.5%)
Electrical Wiring or Plumbing	22 (4.6%)	23 (3.4%)	18 (3.7%)	<10	39 (4.0%)	33 (3.3%)	72 (3.7%)
Condensation	22 (4.6%)	29 (4.2%)	<10	<10	27 (2.8%)	40 (4.0%)	67 (3.4%)
Heating	<10	11 (1.6%)	<10	<10	<10	17 (1.7%)	25 (1.3%)

Notes. Percentages are cell proportions for those that responded “yes” that the respective housing problem was an issue for them at the time of measurement for the corresponding age/gender category. Participants could respond to multiple problems with current housing. Total number of respondents was $n=1,973$.

Table 20 – Total Number of Problems with Current Housing for Owners

Number of Problems	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	373 (77.4%)	537 (78.4%)	408 (82.9%)	257 (81.9%)	788 (81.1%)	787 (78.6%)	1,575 (79.8%)
1	62 (12.9%)	106 (15.5%)	60 (12.2%)	42 (13.4%)	127 (13.1%)	143 (14.3%)	270 (13.7%)
2	32 (6.6%)	25 (3.7%)	16 (3.3%)	12 (3.8%)	43 (4.4%)	42 (4.2%)	85 (4.3%)
3+	15 (3.1%)	17 (2.5%)	<10	<10	14 (1.4%)	29 (2.9%)	43 (2.2%)

Notes. Total number of problems is 7. Percentages are column proportions. Total number of respondents was $n=1,973$.

79.8 percent of owners reported no housing problems. This was significantly lower than the highest value of 84.5%. 13.7 percent reported one housing problem, a value which was significantly higher than the lowest value of 11.6% (highest value 18.3%). A further 4.3% of owners reported experiencing two of the specified housing problems. This value was significantly higher than the lowest value of 2.4% (highest value: 4.8%). Rates were stable across genders. Finally, 2.2% of homeowners reported experiencing three or more of the specified housing problems. This value was significantly higher than the lowest value of 1.4% (highest value: 2.4%), though the practical significance was less than marginal. Inadequate cell sizes prevented drawing conclusions about age and gender. 22 shows the proportions of people experiencing different numbers of housing issues.

We also examined the same variables for those who rent their current home. Table 21 shows the proportions of renters experiencing various pre-specified housing problems, while Table 22 shows the total number of problems for renters. We found that the most common problem among renters was noise, with an overall rate of 18.1%. This value was the highest among all eight cities in this project, and was significantly higher than the lowest value of 10.3%. The rates for this housing problem decreased across age groups (difference in rates of 12.0% between those aged 45-54 and those aged 65-74); in addition, the proportion of women

Table 21 – Problems with Current Housing for Renters

Problems	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Noise	16 (27.6%)	15 (23.4%)	10 (15.6%)	<10	11 (12.6%)	34 (21.0%)	45 (18.1%)
Infestations	<10	15 (23.4%)	<10	<10	12 (13.8%)	20 (12.3%)	32 (12.9%)
Heating	<10	<10	<10	<10	<10	16 (9.9%)	21 (8.4%)
Electrical Wiring or Plumbing	11 (19.0%)	<10	<10	<10	<10	15 (9.3%)	20 (8.0%)
Maintenance or Repairs	11 (19.0%)	<10	<10	<10	<10	13 (8.0%)	19 (7.6%)
Leaking	<10	<10	<10	<10	<10	13 (8.0%)	16 (6.4%)
Condensation	<10	<10	<10	<10	<10	<10	11 (4.4%)

Notes. Percentages are cell proportions for those that responded “yes” that the respective housing problem was an issue for them at the time of measurement for the corresponding age/gender category. Participants could respond to multiple problems with current housing. Total number of respondents was $n=249$.

reporting this problem was higher than the proportion of men difference in proportions of 8.4%). The next highest reported housing problem for renters was infestations, with an overall rate of 12.9%. This value was the highest for this housing problem among all eight cities involved in this project, and was significantly higher than the lowest value of 2.1%. Insufficient cell sizes prevented drawing conclusions regarding trends across age groups; however, rates were stable across genders. Eight (8.0) percent of people reported that electrical wiring or plumbing was a problem with their current housing. This was the highest rate among all eight cities in this project; it was significantly higher than the lowest value of 2.7%. Inadequate cell sizes prevented drawing conclusions about age or gender. In addition, 8.4% of respondents reported heating as a problem. This value was the highest among the eight cities and significantly higher than the lowest value of 3.1%. Insufficient cell sizes prevented drawing conclusions about trends across age groups or gender. Finally, 6.4% (highest), of respondents reported leaking as a problem and 4.4% of respondents reported condensation as a problem in their current home. Insufficient cell sizes prevented drawing conclusions regarding age or gender for either of these housing issues.

Table 22 shows the number of housing problems reported by renters. We found that 62.3% of renters reported none of the housing problems. This value was the lowest among all eight cities in this project, and thus was significantly lower than the highest value of 77.9%. The proportions of people with no housing problems increased substantially as age increased (difference in rates of 39.3% between those aged 45-54 and those aged 75+); moreover, the rate was higher for men than for women (difference in rates of 10.4%).

Table 22 – Total Number of Problems with Current Housing for Renters

Number of Problems	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	26 (44.8%)	32 (50.0%)	44 (68.8%)	53 (84.1%)	60 (69.0%)	95 (58.6%)	155 (62.3%)
1	17 (29.3%)	18 (28.1%)	15 (23.4%)	<10	15 (17.2%)	42 (25.9%)	57 (22.9%)
2	<10	<10	<10	<10	<10	11 (6.8%)	19 (7.6%)
3+	<10	<10	<10	<10	<10	14 (8.6%)	18 (7.2%)

Notes. Total number of problems is 7. Percentages are column proportions. Total number of respondents was $n=249$

22.9% of respondents reported experiencing one of the specified housing problems. This value was the highest among all eight cities in this project, and thus was significantly higher than the lowest value of 14.6%. Women were more likely to report experiencing one of the specified housing issues than men (difference in proportions of 8.7%). A further 7.6% of respondents reported experiencing two of the specified housing issues. Insufficient cell sizes prevented drawing conclusions regarding age or gender. Lastly, 7.2% of respondents reported experiencing three or more of the specified housing issues. This value was the highest among all eight cities involved in this project, and thus was significantly higher than the lowest value of 2.1%. Insufficient cell sizes prevented drawing conclusions regarding age or gender.

Summary

The Good News

- The large majority of homeowners (95.9% overall) and renters (90.8% overall) reported being satisfied with their current housing
- The large majority (79.8%) of homeowners reported experiencing none of the housing problems specified in the CLSA. About 6% reported experiencing two or more problems. For any specific housing issue, the proportion experiencing the problem was less than 7%.
- Most renters (64.7% overall) reported experiencing none of the housing problems specified in the CLSA.
- Hamilton had the lowest proportion of homeowners experiencing problems with heating in their current housing.

The Bad News

- While the majority of homeowners reported experiencing no problems with their current housing, one in five respondents still reported experiencing at least one or more problems.
- Nearly one in five renters reported noise as a problem in their current housing, which was three times the rate for owners. More than eleven percent of renters reported infestations as a problem in their current housing, which was 2.8 times the rate for homeowners and the highest rate of all eight cities.
- Hamilton had the highest proportion of renters experiencing noise, infestations and/or electrical wiring, plumbing and heating as issues with their current housing of all eight cities in this project.
- Housing issues disproportionately affected renters compared to owners. Renters were much more likely than owners to experience problems with their current housing (35.3 % versus 20.2%).
- Furthermore, Hamilton had the highest proportion of renters experiencing one housing problems, the highest proportion of renters experiencing three or more problems, and the lowest proportion of renters reporting no housing problems.

Dimension 4: Community Support

Formal and informal support in the community, and access to affordable health services, is essential to help seniors age in their homes²⁴. This is especially true for people with functional limitations or disabilities, and the need for caring support increases with age. Several personal factors can impact the use of formal and informal care use, including age, gender, personal values and beliefs²⁵. Several socio-demographic factors can influence care use as well, such as income, neighbourhood affluence, population density, family availability and education level. In Canada, older adults generally believe in governmental responsibility for assisting older individuals with their needs; furthermore, most Canadians do not want to rely on family for informal care beyond emotional support²⁶. There is also some evidence to suggest that older Canadian adults who receive formal care support tend to have slightly lower levels of loneliness and higher levels of life satisfaction compared to those who receive informal care or blended home care²⁶. Structured interviews with older Canadian adults showed that the use of formal care tends to bolster feelings of independence and autonomy and reduces the sense of feeling like a burden on family members²⁶.

We used the CLSA data to examine several factors relating to community support and health services use: the proportion of participants who had contact with a family physician in the past year, the proportion of older adults who had contact with a dentist in the past year, the proportion of older adults that received various forms of formal care in the past year, and the proportion of older adults that received informal care in the past year.

To begin with, we examined the number of participants in the CLSA who had contact with a family physician and/or a dentist (Table 23). We found that the large majority of respondents, 87.7% overall, reported seeing a family physician in the past year at the time of measurement although this value was significantly lower than the highest value of 94.1% (lowest value: 83.2%). The rates for seeing a family physician annually increased across age groups up to those aged 65-74, after which it plateaued (difference in rates of 7.9% between those aged 45-54 and those aged 65-74). Women were somewhat more likely to see a family physician than men (difference in rates of 6.6%). These are relatively high proportions considering that, as of

2015 when collection for the baseline data of the CLSA ended, there were approximately 225 physicians per 100,000 people in Canada ³¹.

Table 23 – Proportion of People Who Had Contact with Physician and Dentist

Health Professional	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Family Physician	452 (82.9%)	663 (87.4%)	507 (90.9%)	346 (90.8%)	902 (84.3%)	1,066 (90.9%)	1,968 (87.7%)
Dentist	466 (85.5%)	658 (86.6%)	450 (80.8%)	295 (77.4%)	862 (80.6%)	1,007 (85.8%)	1,869 (83.3%)

Notes. Percentages are cell proportions and represent the proportion of people in each respective category who have seen the corresponding health professional. Number of respondents is $n=2,243$.

We also found that the large majority of Hamilton respondents reported seeing a dentist in the past year, with an overall rate of 83.3%. This value was significantly lower than the highest value of 89.1% (lowest value: 69.6%). The proportions of respondents who saw a dentist annually was stable between the age groups of 45-54 and 55-64; after that, it decreased as age increased (difference in rates of 8.1% between those aged 55-64 and those aged 75+). Women were 5.2% more likely than men to see a dentist in the past year

We also examined the proportion of people in this sample who had formal care, which could include receiving assistance from paid workers or volunteers providing care due to a physical, mental, or cognitive health problem or limitation. The types of care were: personal care (e.g., assistance with eating, dressing, bathing or toileting), medical care (e.g., help taking medications, dressing changes), managing care (e.g., making appointments), help with activities of daily living (e.g., housework, home maintenance, outdoor work), transportation (e.g., trips to the doctor, shopping), and meal preparation or delivery. This data is shown in Table 24.

We found that the most commonly received type of formal care was medical care, with an overall rate of 2.4%. This value was the highest among all eight cities. The second most commonly received type of formal care was for activities, with an overall rate of 2.2%. This value was the lowest among all eight cities in this project and was significantly lower than the highest value of 5.3%. The proportion of people who received this type of formal care marginally increased across age groups (difference in rates of 1.2% between those aged 55-64 and those aged 75+), and were higher for women than for men (difference in rates of 1.8%).

1.7% of overall respondents reported using formal care for personal care. This value was the highest among all eight cities involved in this project. The rates for this type of formal care were higher for those aged 75+ compared to younger age groups, but were stable across genders.

Table 24 – Use of Formal Assistance

Type of Formal Assistance	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Medical Care	11 (1.9%)	17 (2.1%)	<10	21 (5.1%)	28 (2.4%)	29 (2.3%)	57 (2.4%)
Activities	<10	15 (1.9%)	15 (2.6%)	16 (3.9%)	15 (1.3%)	38 (3.1%)	53 (2.2%)
Personal Care	<10	13 (1.6%)	<10	15 (3.6%)	15 (1.3%)	25 (2.0%)	40 (1.7%)
Transportation	<10	<10	<10	<10	<10	18 (1.5%)	22 (0.9%)
Meal Preparation	<10	<10	<10	<10	<10	<10	10 (0.4%)
Managing Care	<10	<10	<10	<10	<10	<10	<10
Other	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are in relation to the number of people who have not used the respective type of formal assistance in their age/gender category. Number of respondents is $n=2,394$.

Less than 1% of respondents reported using formal care for transportation (0.9% overall) and/or meal preparation (0.4% overall). The overall rate for meal preparation was significantly lower than the highest rate of 1.1% (lowest value: 0.3%). Insufficient cell sizes for managing care and ‘other’ types of formal care prevented any analyses being run on this data.

We also examined the number of formal assistance service types used across age groups and genders. Results are presented in Table 25. We found that the vast majority of respondents (95.5%) did not report using any type of formal services. This percentage decreased with age (difference in proportions of 6.4% between those aged 45-54 and those aged 75+), but was slightly greater for men than women (relatively stable across genders. 2.9% of overall respondents reported using one type of formal care service. The rates for using one type of formal care increased with age (difference in rates of 4.3% between those aged 45-55 and those aged 75+). However, proportions were stable across genders. Finally, 1.8% of respondents

reported receiving two or more types of formal care services. The rates for receiving multiples types of formal care were greater for women than men.

We also looked at rates for receiving informal care, which includes receiving any assistance from family, friends, or neighbours due to a physical, mental, or cognitive health problem or limitation, shown in Table 26. The analysis on the number of types of informal care used is presented in Table 27.

Table 25 – Number of Types of Formal Assistance Services Used by Age and Gender

Number of Types of Formal Care Used	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	579 (97.2%)	773 (96.9%)	557 (95.1%)	376 (90.8%)	1,111 (96.4%)	1,174 (94.5%)	2,285 (95.5%)
1	12 (2.0%)	<10	21 (3.6%)	26 (6.3%)	28 (2.4%)	39 (3.1%)	67 (2.8%)
2+	<10	17 (2.1%)	<10	12 (2.9%)	13 (1.1%)	29 (2.3%)	42 (1.8%)

Notes. Percentages are column proportions. Number of respondents is $n=2,394$.

We found that the most commonly received type of informal assistance was for activities, with an overall rate of 6.8%. This proportion was significantly lower than the highest proportion of 11.8% (lowest value: 5.3%). Rates for this type of informal assistance were stable across age groups, but were higher for women than for men (difference in rates of 5.7%). The second most commonly received type of informal assistance was transportation, with a rate of 5.7%. This value was significantly lower than the highest value of 10.6% (lowest value: 4.8%). The rates for this type of informal assistance were also stable across age groups, and were also higher (in fact, more than double) for women than for men (difference in rates of 4.9%). Receipt of help with meal preparation had an overall rate of 4.1%. This proportion was the lowest among all eight cities involved in this project, and was significantly lower than the highest value of 8.4%. The rates for this type of informal support were stable across age groups,

but were higher for women than for men (though the difference was somewhat small, the rate for women was nevertheless more than double than the rate for men; difference in rates of 4.3%). 2.1% of respondents reported receiving informal care for personal care. The rates for this type of informal care appeared stable across age groups and slightly greater for women than men. Only 1.2% of participants reported receiving informal care for medical care. Finally, fewer than one percent (0.7% overall) of respondents reported receiving informal support for managing care.

Table 26 – Use of Informal Assistance by Age and Gender

Type of Informal Assistance	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Activities	45 (7.6%)	52 (6.5%)	37 (6.3%)	28 (6.8%)	44 (3.8%)	118 (9.5%)	162 (6.8%)
Transportation	37 (6.2%)	43 (5.4%)	31 (5.3%)	25 (6.0%)	36 (3.1%)	100 (8.0%)	136 (5.7%)
Meal Preparation	26 (4.4%)	33 (4.1%)	21 (3.6%)	17 (4.1%)	21 (1.8%)	76 (6.1%)	97 (4.1%)
Personal Care	17 (2.9%)	19 (2.4%)	<10	10 (2.4%)	16 (1.4%)	34 (2.7%)	50 (2.1%)
Medical Care	<10	<10	<10	<10	12 (1.0%)	16 (1.3%)	28 (1.2%)
Managing Care	<10	<10	<10	<10	10 (0.9%)	<10	17 (0.7%)
Other	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are cell proportions for the number of people that responded “yes” to using the corresponding informal care type for the respective age/gender category. Participants could respond to multiple types of informal care. Number of respondents is $n=2,394$.

In looking at the number of types of informal assistance used (as shown in Table 27), the majority of respondents (91.0% overall) reported not receiving any type of informal care; this was not significantly different than the highest rate. The rates for not receiving any informal care were relatively stable between the ages of 45 and 74 but decreased for those age 75+ to 88.9%. Men were more likely to report not receiving any informal support than women (difference in rates of 6.6%). We found that 3.2% of overall respondents reported receiving one type of informal support. This was the lowest value among all eight cities involved in this project, and thus was significantly lower than the highest value of 6.2%. The rates for receiving one type of informal care were relatively stable across age groups, though the age category of 75+ had a slightly higher rate than the other age groups; the rates were stable across genders. A further 2.3% of overall respondents reported receiving two different types of informal care. This proportion was lower than the highest proportion of 4% (lowest value: 2.1%), though the practical significance was small.

Table 27 – Number of Types of Informal Assistance Used by Age and Gender

Number of Types of Informal Assistance	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	543 (91.1%)	730 (91.5%)	537 (91.6%)	368 (88.9%)	1,087 (94.4%)	1,091 (87.8%)	2,178 (91.0%)
1	14 (2.4%)	25 (3.1%)	17 (2.9%)	21 (5.1%)	27 (2.3%)	50 (4.0%)	77 (3.2%)
2	13 (2.2%)	16 (2.0%)	16 (2.7%)	13 (3.1%)	16 (1.4%)	42 (3.4%)	58 (2.4%)
3	14 (2.4%)	11 (1.4%)	11 (1.9%)	<10	12 (1.0%)	31 (2.5%)	43 (1.8%)
4+	12 (2.0%)	16 (2.0%)	<10	<10	10 (0.9%)	28 (2.3%)	38 (1.6%)

Notes. Percentages are column proportions. Maximum number of informal care types was 6. Number of respondents is $n=2,394$.

The rates for receiving two different types of informal care were stable across age groups, but were slightly higher for women than for men (difference in rates of 1.7%). Another 1.8% of overall respondents reported receiving three different types of informal care. This value was lower than the highest value of 3.1% (lowest value: 1.65%). The rates for receiving this number of different types of informal care were stable across age groups and genders. Lastly, 1.6% of

overall respondents reported receiving four or more different types of informal care. This proportion was lower than the highest proportion of 3.4% (lowest value: 1.2). Insufficient cell sizes prevented drawing conclusions regarding age trends, though the rates were stable across genders.

Summary

The Good News

- The large majority of respondents had seen a family physician in the past year (87.7% overall) and/or a dentist in the past year (83.3% overall) at the time of measurement.

The Bad News

- Nearly one fifth of adults aged 45-54 and over one in seven males had not seen a family physician in the past year.
- Nearly one-quarter of older adults aged 75 and above, and nearly one fifth of older adults aged 65-74 had not seen a dentist in the past year.
- The overall proportion of older adults in Hamilton who used formal care for medical care and personal care was the highest among all eight cities in the project
- The overall proportion of older adults in Hamilton who used formal care for assistance with activities of daily living was the lowest among all eight cities in the project.
- The overall proportion of older adults in Hamilton who used informal assistance of any kind was lowest among all eight cities in the project.
- There are gender disparities for rates of receiving informal care for activities, transportation and meal preparation, such that men receive these types of care at less than half the rate for women.

Dimension 5: Social Participation

Regular participation in social activities is a very important aspect of quality of life for older adults. Frequent social activity participation reduces the risk of dementia²⁷ and helps to maintain cognitive ability later in life²⁸. Specifically, for Canadian seniors, social participation is associated with better self-rated health^{29,30}, and with lower loneliness and life dissatisfaction²⁹. Moreover, these relationships between social participation and increased well being actually get stronger as the number of different types of social activities that a person engage in increases²⁹. In the Canadian Community Health Survey – Healthy Aging data from 2008/2009, 21% of senior men and 27% of senior women reported a desire to participate in more social activities²⁹. But, despite this desire to participate in more social activities, many Canadian seniors experienced some form of barrier to their desired level of social activity²⁹. The WHO AFCG made several recommendations with respect to social participation for older adults, such as accessible opportunities, affordable activities, a variety of different types of opportunities and locations, increasing awareness of activities and events for older adults, and activities that allow socializing with other age groups.

We used the CLSA data to examine several factors relating to social participation in older Canadian adults. We examined frequency of participation in several different types of activities, the proportion of people who wished to participate in more activities and the proportion of respondents who experienced any of several types of barriers to being able to participate in more social activities.

Social activity participation rates are shown in Table 28. These social activities are outside the home with family or friends (e.g., small get-togethers, meals outside the household, weddings, reunions), church or religious activities (e.g., services, committees, choirs), sports or physical activities (must involve other people), educational and cultural activities (e.g., attending courses, concerts, plays, visiting museums), service club or fraternal organization activities (e.g., Lion's Club, Rotary, Kiwanis Club, Royal Canadian Legion, Foresters), neighbourhood, community or professional association activities, or other activities involving other people (e.g., hobbies, gardening, poker, bridge, cards, other games).

Table 28 – Participation in Social Activities by Age and Gender

Type of Social Activity	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Family/Friends Outside Household	548 (92.1%)	730 (91.5%)	537 (91.6%)	367 (88.9%)	1,038 (90.1%)	1,144 (92.3%)	2,182 (91.2%)
Sport/Physical Activity with Others	441 (74.0%)	529 (66.3%)	402 (68.6%)	242 (58.6%)	764 (66.3%)	850 (68.5%)	1,614 (67.5%)
Education/Cultural Activities	287 (48.2%)	393 (49.3%)	290 (49.5%)	183 (44.3%)	534 (46.4%)	619 (49.9%)	1,153 (48.2%)
Religious	223 (37.4%)	271 (34.0%)	220 (37.5%)	212 (51.3%)	398 (34.6%)	528 (42.6%)	926 (38.7%)
Association Activities	169 (28.5%)	210 (26.3%)	203 (34.6%)	126 (30.5%)	311 (27.0%)	397 (32.0%)	708 (29.6%)
Clubs or Fraternal Org. Activities	80 (13.5%)	105 (13.2%)	96 (16.4%)	80 (19.4%)	189 (16.4%)	172 (13.9%)	361 (15.1%)
Other	381 (63.9%)	529 (66.3%)	397 (67.8%)	256 (62.0%)	738 (64.1%)	825 (66.5%)	1,563 (65.3%)

Notes. Notes. Percentages are cell proportions for the corresponding activity type for the respective age/gender category. Participants could indicate participation in multiple types of social/recreational activities. Proportions are for those individuals classified as ‘participants’, meaning they indicated participating in respective activities monthly, weekly or daily, as opposed to either annually or never. Number of respondents is n=2392.

The most common social activity was with family/friends outside the household, with an overall rate of 91.2%. This value was significantly lower than the highest value of 94.1% (lowest value: 86.1%). Rates for this type of social activity were relatively stable across age groups from 45-54 to 65-74, with a slight decrease for the age group of 75+ (difference in rates of 2.3% between those aged 65-74 and those aged 75+). The rates for women were slightly higher than the rates for men (difference in rates of 2.2%). Sports/physical activities with others had an overall rate of participation of 67.5%. This proportion was significantly lower than the highest proportion of 79.3% (lowest value: 66.6%). Rates for sports/physical activity with others decreased across age groups (difference in rates of 15.4% between those aged 45-54 and those

aged 75+) and were higher for women than men (difference of 2.2). Further, 48.2% of Hamilton CLSA respondents participated in education/cultural activities. This value was the lowest among all eight cities involved in this project and was significantly lower than the highest value of 64.5%. The rates differed by age group (being lowest for those age 75+ at 44.3%) and the rate for women was slightly higher than the rate for men (difference in rates of 3.6%).

The overall rate of participation in religious activities was 38.7% and rates for participation on a weekly or monthly basis increased with age after the age group of 55-64 (difference in rates of 13.8% between the age groups of 55-64 and 75+). Furthermore, the rate for women was higher than the rate for men (difference in rates of 8.0%). 29.6 percent of participants were involved in association activities; this was significantly lower than the highest value of 37.1% (lowest value: 19.9%). Rates for this type of activity varied with age; the age group of 65-74 had the highest rate, and the age group of 55-64 had the lowest rate. We also found that the rate for women was slightly higher than the rate for men (difference in rates of 5.0%). Next, the rate of participation in clubs and associations was 15.1%. The rates for this type of social activity participation increased with age after 55-64 (difference in rates of 5.9% between those aged 45-54 and those aged 75+). The rate for men was slightly higher than the rate for women (difference in rates of 2%). Finally, 66.5% of overall respondents reported participating in 'other' activities. The rates for participation in 'other' activities increased somewhat with age up to the age group of 65-74 (difference in rates of 2.5% between the age groups of 45-54 and 65-74) and decreased somewhat for the age group of 75+ (difference in rates of 5.8% between those aged 65-74 and those aged 75+).

We also examined the number of different types of social activities that participants reported frequently engaging in (Table 29). We found that only a small minority, 2.1% overall, did not report participating in any social activities on a daily, weekly or monthly basis. This overall proportion was significantly higher than the lowest value of 1.1% (highest value: 4.1%), though the practical significance was small. The rates for not participating in any social activity were stable across age groups and genders. Overall, 8.2% of respondents reported participating in one type of social activity. A further 15.4% of overall respondents reported participating in

two different types of social activity. This value was significantly lower than the highest value of 17.7% (lowest value: 11.6%).

Next, 21.0% of overall respondents reported participating in three different types of social activities. This proportion was significantly lower than the highest proportion of 24.8% (lowest proportion: 19.6%). Another 25.2 of respondents reported participating in four different types of

Table 29 – Number of Types of Social Activities Engaged in by Age and Gender

Number of Types of Social Activities	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	12 (2.0%)	20 (2.5%)	12 (2.1%)	<10	24 (2.1%)	26 (2.1%)	50 (2.1%)
1	48 (8.1%)	79 (9.9%)	34 (5.8%)	35 (8.5%)	104 (9.0%)	92 (7.4%)	196 (8.2%)
2	91 (15.3%)	115 (14.4%)	88 (15.0%)	74 (17.9%)	190 (16.5%)	178 (14.4%)	368 (15.4%)
3	120 (20.2%)	168 (21.1%)	133 (22.7%)	80 (19.4%)	266 (23.1%)	235 (19.0%)	501 (21.0%)
4	158 (26.6%)	209 (26.2%)	134 (22.9%)	100 (24.2%)	273 (23.7%)	328 (26.5%)	601 (25.2%)
5	103 (17.3%)	137 (17.2%)	124 (21.2%)	78 (18.9%)	191 (16.6%)	251 (20.2%)	442 (18.5%)
6	48 (8.1%)	55 (6.9%)	47 (8.0%)	27 (6.5%)	79 (6.9%)	98 (7.9%)	177 (7.4%)
7	14 (2.4%)	14 (1.8%)	14 (2.4%)	13 (3.2%)	23 (2.0%)	32 (2.6%)	55 (2.3%)

Notes. Percentages are column proportions. Number of respondents is $n=2,390$

social activities. This value was significantly lower than the highest value of 29% (lowest value: 23.3%), though the practical significance was somewhat small. Moreover, 18.5% of overall respondents reported participating in five different types of social activities. This rate was lower than the highest rate of 22.5% (lowest rate: 13.1%), though the practical significance was small. Rates for this were slightly higher for the age groups of 65-74 compared to the age groups of 45-54 and 55-64 (differences in rates of 4.0%); also, the rate for women slightly higher than the rate for men (difference in rates of 3.6%). In addition, 7.4% of overall respondents reported participating in six different types of social activities. This value was significantly lower than the highest value of 9.4% (lowest value: 6.2%), though the practical significance was marginal.

We then looked at the proportion of people who reported a desire to participate in more social activities, shown in Table 30. Overall, 48.3% of respondents wished to participate in more social activities. This proportion was higher than the lowest proportion of 42.1% (highest proportion: 50.9%). The rates for desiring to participate in more social activities decreased dramatically as age increased (difference in rates of 21.8% between the age groups of 45-54 and 75+), and the rate for women was somewhat higher than the rate for men (difference in rates of 3.7%).

Table 30 – Desire to Participate in More Social Activities by Age and Gender

	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Desire to Participate in More Social Activities	343 (57.6%)	426 (53.5%)	237 (40.5%)	148 (35.8%)	540 (46.9%)	614 (49.6%)	1,154 (48.3%)

Notes. Number of respondents is $n=2,391$.

We then examined the proportions of CLSA participants (who wished to participate in more social activities) who reported certain barriers to social activity participation (see Table 31). The most commonly reported barrier was being too busy, with an overall rate of 48.4%. This proportion was significantly higher than the lowest proportion of 42.8% (highest value: 52%). The rates for this barrier dramatically decreased as age increased (difference in rates of 43.4% between those aged 45-54 and those aged 75+), and the rate for men was higher than the rate for women (difference in rates of 14.0%). The second most commonly reported barrier was personal or family responsibilities; the rate was 22.9%. This value was significantly higher than the lowest value of 10.5% (highest value: 23.8%). Rates for this barrier dropped by half between age groups of 45-54 and 55-64 (difference in rates of 16.0%). In addition, the rate for women was slightly higher than the rate for men (difference in rates of 1.9%). The third most commonly reported barrier to increased social activity participation was having a health condition or limitation, with an overall rate of 19.8%. This rate was significantly higher than the lowest proportion of 13.5% (highest value: 21.5%). Rates for this barrier nearly tripled across age groups (difference in rates

of 19.6% between those aged 45-54 and those aged 75+), and the rate for women was higher than the rate for men (difference in rates of 5.9%).

Table 31 – Barriers to Social Participation by Age and Gender

Type of Barrier	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Too Busy	216 (63.0%)	224 (52.6%)	90 (38.0%)	29 (19.6%)	302 (55.9%)	257 (41.9%)	559 (48.4%)
Personal or Family Responsibilities	112 (32.7%)	71 (16.7%)	55 (23.2%)	26 (17.6%)	118 (21.9%)	146 (23.8%)	264 (22.9%)
Health Condition or Limitation	42 (12.2%)	88 (20.7%)	52 (21.9%)	47 (31.8%)	90 (16.7%)	139 (22.6%)	229 (19.8%)
Activity Timing	95 (27.7%)	73 (17.1%)	29 (12.2%)	11 (7.4%)	107 (19.8%)	101 (16.5%)	208 (18.0%)
Going Alone	28 (8.2%)	59 (13.9%)	30 (12.7%)	20 (13.5%)	50 (9.3%)	87 (14.2%)	137 (11.9%)
Cost	38 (11.1%)	37 (8.7%)	21 (8.9%)	<10	30 (5.6%)	72 (11.7%)	102 (8.8%)
Lack of Activities	19 (5.5%)	14 (3.3%)	14 (5.9%)	<10	19 (3.5%)	37 (6.0%)	56 (4.9%)
Far Distance	10 (2.9%)	16 (3.8%)	13 (5.5%)	<10	13 (2.4%)	29 (4.7%)	42 (3.6%)
Social Barriers	<10	<10	<10	<10	11 (2.0%)	<10	17 (1.5%)
Safety Concerns	<10	<10	<10	<10	<10	<10	17 (1.5%)
Location Accessibility	<10	<10	<10	<10	<10	11 (1.8%)	15 (1.3%)
Other	<10	10 (2.4%)	<10	<10	11 (2.0%)	<10	20 (1.7%)

Notes. Numbers are based only on the participants who previously identified that they desired to participate in more social activities over the past year at the time of measurement. Percentages are cell proportions for those that answered “yes” to the corresponding barrier for the respective age/gender category. Participants could indicate multiple barriers. Number of responde is $n=XXXX$.

Activity timing was another barrier to increased social participation reported by 18.0% of respondents. This was significantly higher than the lowest proportion of 6.4% (highest proportion: 18.0%). The rate for this barrier for those aged 45-54 was more than triple the rate for those aged 75+ (difference in rates of 20.3%) and the rate for men was slightly higher than the rate for women (difference in rates of 3.3). 11.9% of respondents reported going alone as a barrier to increased social activity participation. The rates for this barrier almost doubled across age groups (difference in rates of 6.8% between those aged 45-54 and those aged 75+), and the rate for women was higher than the rate for men (difference in rates of 5.3%). Cost of activities was a barrier for 8.8% of respondents who desired to participate in more social activities. This proportion was significantly higher than the lowest value of 5.7% (highest value: 9.6%), The rate was somewhat higher for women than for men (difference in rates of 4.2%). Furthermore, 4.9% of respondents reported lack of activities as a barrier to social activity participation. This proportion was the highest among all eight cities involved in this project, and significantly higher than the lowest proportion of 2.8%, though the practical significance was marginal. Rates for this barrier varied across age groups, and the rate for women was higher than the rate for men (difference in rates of 3%). A small minority of respondents (3.6%) indicated that ‘far distance’ was a barrier to social activity participation. Moreover, 1.3% of participants that desired to participate in more social activities reported location accessibility as a barrier to social activity participation. This value was higher than the lowest value of 0.6% (highest value: 1.7%), though the practical significance was marginal. Insufficient cell sizes prevented drawing conclusions about age or gender. Safety concerns were reported by 1.5% of overall respondents as a barrier to social activity participation. This value was significantly higher than the lowest value of 0.6% (highest value: 1.5%), and was the highest value among all eight cities in this project, though the practical significance was marginal. Insufficient cell sizes prevented drawing conclusions with respect to age or gender. Lastly, 1.6% of overall respondents reported ‘other’ barriers to social activity participation, though insufficient cell sizes prevented drawing conclusions with respect to age or gender.

We also examined the number of barriers to increased social participation for those who wished to participate more (see Table 32). We found that 34.4% of respondents reported none of the specified barriers in the CLSA (including the ‘other’ category), despite also reporting a desire to have participated in more social activities over the past year at the time of measurement. This

proportion was the lowest among all eight cities involved in this project, and was significantly lower than the highest value of 45.4%. The rates for reporting zero barriers varied across age groups, increasing between the age groups of 45-54 and 55-64 (difference in rates of 8.8%), and then decreasing as age increased (difference in rates of 9.0% between those aged 55-64 and those aged 75+), and the rate for men was higher than the rate for women (difference in rates of 8.1%).

Table 32 – Number of Barriers to Social Activities by Age and Gender

Number of Barriers to Social Activities	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
0	105 (30.6%)	168 (39.4%)	79 (33.3%)	45 (30.4%)	209 (38.7%)	188 (30.6%)	397 (34.4%)
1	169 (49.3%)	185 (43.4%)	117 (49.4%)	78 (52.7%)	260 (48.2%)	289 (47.1%)	549 (47.6%)
2	50 (14.6%)	54 (12.7%)	26 (11.0%)	21 (14.2%)	55 (10.2%)	96 (15.6%)	151 (13.1%)
3	<10	11 (2.6%)	<10	<10	<10	16 (2.6%)	23 (2.0%)
4+	15 (4.4%)	<10	<10	<10	<10	25 (4.1%)	34 (3.0%)

Notes. Percentages are column proportions. Total number of barriers is 13. Number of respondents is $n=1,154$.

Of those that reported any of the specified barriers in the CLSA, 47.6% of respondents reported experiencing one barrier. This value was the highest among all eight cities involved in this project, and was significantly higher than the lowest value of 41.7%. The rates for experiencing one barrier to social activity participation varied across age groups, decreasing between the age groups of 45-54 and 55-64 (difference in rates of 5.9%), increasing between the age groups of 55-64 and 75+ (difference in rates of 9.3%). A further 13.1% of respondents reported experiencing two different barriers to increased social activity participation. This proportion was the highest among all eight cities involved in this project, and was significantly higher than the lowest proportion of 7.2%. Furthermore, 2.0% of respondents reported experiencing three different barriers to increased social activity participation. Finally, 3.0% of respondents reported experiencing four or more different barriers to increased social activity

participation. This value was significantly higher than the lowest value of 1.1% (highest value: 3.9%), though the practical significance was marginal. Insufficient cell sizes prevented drawing conclusions with respect to trends across age groups.

Summary

The Good News

- The large majority of respondents (91%) reported participating in social activities with family/friends outside the household on at least a monthly basis, if not more frequently.
- Two-thirds of respondents reported participating in sport/physical activity with others on a daily, weekly or monthly basis.
- Nearly half of the Hamilton respondents reported engaging in educational/cultural activities on a fairly regular basis.
- Two-thirds of respondents reported participating in ‘other’ types of social activities than the ones specified in the CLSA on at least a monthly basis.
- Over 90% of respondents overall, reported participating in two or more different types of social activities on a daily, weekly or monthly basis. Only a small minority, 2%, reported participating in no social activities at a frequency of once a month or more. 10% of respondents reported engaging in six to seven (maximum was seven) different types of social activities on a fairly regular basis.
- Only a small minority of respondents, 5% or fewer, reported one more of: lack of activities, far distance, social barriers, location accessibility, and/or safety concerns as a barrier to increased social activity participation.

The Bad News

- In comparison to the other eight cities in the study, Hamilton was among the lowest with respect to participation in sport/physical activity and educational and cultural activities.

- Nearly half of respondents reported a desire to participate in more social activities than they had been able to engage in over the past year at the time of measurement. The rate for this was greater for those aged 45-54 than any other age group.
- Nearly two-thirds of those aged 45-54 reported being too busy as a barrier to their desired level of social activity participation, and approximately one-third of such reported personal or family responsibilities as a barrier. For both barriers, this age group had the highest rate among all age groups.
- Going alone as a barrier to social activity participation nearly doubled with age.
- A health condition or limitation was a barrier to participation for nearly one-third of respondents 75 years of age and older.
- 18.0%, or nearly one-fifth of those that reported a desire to participate in more social activities reported multiple different barriers.

Dimension 6: Social Inclusion, Respect, and Civic Participation

Feeling included and respected in one's local community is important. It is the foundational experience in creating social cohesion. Social cohesion refers to how connected people feel within a group, how connected different social groups are together, and having a sense of oneness in belonging to a community. It can be a determining factor in peoples' quality of life. For example, social cohesion can decrease peoples' risk for general mortality (that is, mortality that can be caused by a large set of specific causes)³². Social cohesion has also been linked with decreased risk for stroke factors³³, and decreased risk of coronary heart disease³⁴. When social cohesion is low, it can be linked with increased rates of depression as well³⁵.

Civic participation is also an important aspect of quality of life for older adults. Volunteering is linked to higher levels of well being, lower rates of depression³⁶, and lower mortality rates for people of all ages³⁷. The benefits of volunteering and engaging in one's local community are also greater for older adults compared to younger ages with respect to self-rated health and life satisfaction³⁸. However, how often older adults volunteer in their local community can be influenced by factors within the community itself, such as how connected a person feels to the community, how satisfied they are with it, and whether the local neighbourhood has adequate social services³⁹.

We used the CLSA dataset to explore several indicators of social inclusion, respect and civic participation in older Canadian adults. To begin with, we assessed how positively participants perceived their local social environment to be by examining responses to several questions regarding friendliness of people in the local area, trust in neighbours, if there were people to help in one's local community if needed, how lonely people felt within their local area, if they felt that people took advantage of them in their local community, and if they felt part of their local community. Responses of "strongly agree" and "agree" were counted together to get a frequency count of the number of people who 'agree' with each of the corresponding statements, and the proportions listed are the percentages of people who agreed with the corresponding statement relative to the total number of respondents. Results are presented in Table 33.

Table 33 – Socio-Environmental Perceptions by Age and Gender

Perception of Social Environment	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Most People in Area Are Friendly	535 (98.9%)	738 (97.8%)	533 (98.0%)	369 (97.4%)	1,044 (98.6%)	1,131 (97.5%)	2,175 (98.0%)
Feel a Part of This Area	495 (92.7%)	700 (93.1%)	516 (94.3%)	355 (94.7%)	1,002 (94.9%)	1,064 (92.4%)	2,066 (93.6%)
Often Feel Lonely in This Area	35 (6.5%)	43 (5.7%)	32 (5.8%)	33 (8.8%)	51 (4.8%)	92 (7.9%)	143 (6.4%)
Most People in This Area Can Be Trusted	511 (95.7%)	716 (96.9%)	513 (95.4%)	347 (95.9%)	1,012 (96.8%)	1,075 (95.3%)	2,087 (96.0%)
People in This Area Take Advantage of You	18 (3.4%)	13 (1.7%)	20 (3.7%)	15 (4.1%)	27 (2.6%)	39 (3.4%)	66 (3.0%)
If in Trouble, Lots of People in This Area Would Help	516 (96.5%)	705 (95.9%)	512 (96.2%)	349 (95.9%)	1,000 (96.9%)	1,082 (95.4%)	2,082 (96.1%)

Notes. Percentages are cell proportions of those who either “strongly agreed” or “agreed” with the corresponding statement. Total number of respondents was $n=2,219$ for ‘Most People in Area Are Friendly’, $n=2,208$ for ‘Feel a Part of This Area’, $n=2,226$ for ‘Often Feel Lonely in This Area’, $n=2,173$ for ‘Most People in This Area Can Be Trusted’, $n=2,194$ for ‘People in This Area Take Advantage of You’, $n=2,166$ for ‘If in Trouble, Lots of People in This Area Would Help’.

The vast majority of respondents, 98.0% overall, agreed that most people in their area are friendly. The rates were stable across age groups and genders. Similarly, the vast majority of respondents, 93.64% overall, agreed that they feel part of their local area. This proportion was significantly lower than the highest proportion of 95.6% (lowest value: 90.2%), though the practical significance was marginal. The rates for this perception of the social environment were stable across age groups; however, the rate for men was slightly higher than the rate for women (difference in rates of 2.5%). We also found that 96.0% of overall respondents agreed that most people in their local area could be trusted. The rates for agreement with this statement were stable across age groups and genders. Similarly, the great majority of respondents, 96.1% overall, agreed that, if in trouble, many people in their local area would help them. Similarly, the rates for this perception of the social environment were stable across age groups and genders. A small minority (6.4%) of respondents agreed with the statement that they often feel lonely in their local area. The proportions for this perception of the social environment were relatively stable across age groups, 45-74 though the age group of 75+ was higher than younger age

groups; and the rate for women was somewhat higher than the rate for men (difference in rates of 3.1%). Furthermore, a small minority of respondents, 3.0% overall, agreed with the statement that people in their local area take advantage of them. The rates for agreement with this statement were also stable across age groups and genders.

We also assessed how participants tend to perceive their social standing in their local community. To do this, we examined participants' responses to the SEQ Ladder, which asked participants to imagine a ladder with ten rungs that represents their social standing, with higher rungs indicating greater social standing in their local community. The results are shown in Table 34. We report the mean as the measure of central tendency and standard deviation as the measure of variability for most groups (age and gender) with the exception of those aged 75 and above, as the coefficient of variation for this group was above 33.3%, and so the median and first/third quartiles are reported instead. This value indicates that the mean is too volatile in its variability, and so it cannot be adequately trusted to be representative or generalizable. The CV for the other groups was between 29% and 32%, and while this is not necessarily perfectly ideal, it still falls within an acceptable range of functionality.

Table 34 – Perceived Social Standing in the Local Community by Age and Gender

Perception of Social Standing	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Mean (SD)	6.1 (2.0)	6.1 (1.9)	6.0 (2.0)	6.0 (5/8)	6.2 (1.9)	5.9 (2.0)	6.0 (2.0)

Notes. 'Perceptions of Social Standing' is taken from participant's ratings on the SEQ Ladder, which is a 1 (very low) to 10 (very high) scale that asks participants to imagine that a ladder with ten rungs represents their social standing in their local community, and to rate how high they believe they stand in this respect. "SD" = Standard Deviation. The Coefficient of Variation (CV) for the group "75+" was above 33.3%, and so the median and first and third quartiles are reported instead. The CV for the reported means are between 31.3% and 33.1%. Number of respondents was $n=2,144$.

The average SEQ rating was 6.0 (standard deviation: 2.0) indicating that most respondents rated their social standing in their local community as above average (above the midpoint). The mean ratings for the SEQ Ladder were stable across age groups, with the median for the age group 75+ reflecting the mean for the other age groups, and the first and third quartiles also generally reflected the standard deviations of the other age groups. Furthermore, the mean ratings were relatively equal between genders, though the mean rating for women was slightly lower (mean difference of 0.3), though most likely this difference is not of any practical significance.

We then examined volunteering participation rates in the CLSA dataset to assess civic participation (Table 35).

We found that only a small minority of respondents, 2.7% overall, reported volunteering

Table 35 – Volunteer Participation Rates by Age and Gender

Frequency of Volunteering	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
At least once a day	14 (2.4%)	21 (2.6%)	16 (2.7%)	13 (3.2%)	26 (2.3%)	38 (3.1%)	64 (2.7%)
At least once a week	93 (15.6%)	133 (16.7%)	137 (23.4%)	86 (20.8%)	199 (17.3%)	250 (20.2%)	449 (18.8%)
At least once a month	128 (21.5%)	157 (19.7%)	114 (19.5%)	85 (20.6%)	224 (19.5%)	260 (21.0%)	484 (20.2%)
At least once a year	178 (29.9%)	211 (26.4%)	86 (14.7%)	46 (11.1%)	251 (21.8%)	270 (21.8%)	521 (21.8%)
Never	182 (30.6%)	276 (34.6%)	232 (39.7%)	183 (44.3%)	451 (39.2%)	422 (34.0%)	873 (36.5%)

Notes. Percentages are column proportions. Number of respondents is $n=2,391$.

on a daily basis and rates were stable across age groups and genders. A larger portion of respondents, 18.8% overall, reported volunteering at least once a week. The value was significantly lower than the highest value of 21.8% (lowest: 13.9%). The rates for this frequency of volunteering increased as age increased up to the age group of 65-74 (difference in rates of 7.8% between the age groups of 45-54 and 65-74), after which they declined to 20.8%; in addition, the rate for women was slightly higher than the rate for men (difference in rates of 2.9%). A further 20.2% of respondents reported volunteering at least once a month. This

proportion was significantly lower than the highest proportion of 25.5% (lowest proportion: 13.9%) and the rates were relatively stable by age group and gender. In addition, 21.8% of overall respondents reported volunteering at least once a year. This value was significantly lower than the highest value of 31.4% (lowest value: 18.8.5%). The rates for this frequency of volunteering decreased by more than half across age groups (difference in rates of 18% between those aged 45-54 and those aged 75+), though the rates were stable across genders. Finally, 36.5% of overall respondents reported never volunteering. This proportion was significantly higher than the lowest proportion of 25.2% (highest proportion: 50.2%). The rates for this frequency of never volunteering increased noticeably across age groups (difference in rates of 13.7%), and the rate for men was somewhat higher than the rate for women (difference in rates of 5.2%).

Summary

The Good News

1. Almost one hundred percent of respondents agreed with the statements that: most people in their area are friendly, they feel a part of their local area, most people in their area can be trusted, and, if in trouble, lots of people would offer help.
 - Only a small minority of respondents reported that they often feel lonely in their local area, and/or that people in their local area take advantage of them.
 - The average rating on the SEQ Ladder scale was above the midpoint, indicating most respondents felt that their social standing in their local area was above average.
 - 41.7% of respondents volunteer between at least once a month.

The Bad News

- Almost ten percent of respondents 75-years-old and above reported often feeling lonely in their local area.
- 58.3% of respondents overall reported volunteering either once a year or not at all.
- Those aged 65 and above are more likely than younger age groups to volunteer at least once a week, but also more likely to never volunteer.

Part II

The Well-Being of Older Canadian Adults

Next, we will examine several different indicators of the quality of life for older Canadian adults in the CLSA dataset in the same way that we examined the indicators of age-friendliness. Of course, it is valuable to understand the state of affairs with respect to the indicators of age-friendliness, but we also need a parallel understanding of how well respondents are doing in each city.

Therefore, we examined several facets of well-being with CLSA data. Well-being is a term used to describe the positive health of an individual, the absence of illness and their experiential quality of life. To begin with, we examined the self-reported physical health, mental health and healthy aging of CLSA participants for Hamilton. Results are presented in Table 36.

Table 36 – Self-Reported Health, Mental Health and Healthy Aging by Age and Gender

Self-Reported Health	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Physical Health	526 (88.4%)	708 (88.8%)	530 (90.4%)	369 (89.4%)	1,026 (89.2%)	1,107 (89.2%)	2,133 (89.2%)
Mental Health	543 (91.1%)	733 (92.1%)	548 (93.7%)	392 (94.9%)	1,082 (94.2%)	1,134 (91.4%)	2,216 (92.7%)
Healthy Aging	520 (87.5%)	700 (88.1%)	543 (93.0%)	385 (94.1%)	1,034 (90.5%)	1,114 (89.9%)	2,148 (90.2%)

Notes. Percentages are cell proportions of those that reported they had “Good”, “Very Good” or “Excellent” health with respect to the corresponding self-reported health variable (as opposed to “Poor” or “Fair”) for each respective age/gender category. Number of respondents was $n=2,391$.

We found that the large majority of respondents, 89.2% overall, reported their own physical health to be good to excellent (as opposed to poor to fair). This proportion was significantly lower than the highest City proportion of 92.2% (lowest value: 88.5%), though the practical significance was small. The rates for reporting good to excellent physical health were stable across age groups and genders. Furthermore, the large majority of respondents, 92.7% overall, reported their own mental health to be good to excellent. This proportion was

significantly lower than the highest proportion of 95.7% (lowest value: 92.8%), though the practical significance was small. These rates increased somewhat with age (difference in rates of 3.8% between those aged 45-54 and those aged 75+), and were slightly higher for men than for women (difference in rates of 2.8%). Finally, 90.2% of overall respondents rated their own healthy aging as good to excellent. The rates for this increased as age increased (difference in rates of 6.6% between those aged 45-54 and those aged 75+), but were stable across genders.

We also examined how respondents rated their satisfaction with life. The satisfaction with life scale⁴² sums responses on five questions that ask with how close participants feel their life is to the ideal, how positive the conditions of their life are, how well they have achieved the important things in their lives, and how much they would change things if they could start their lives over again. Results are shown in Table 37.

Table 37 – Satisfaction with Life by Age and Gender

Satisfaction with Life	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Mean (SD)	26.8 (6.9)	26.8 (7.3)	27.5 (6.6)	27.7 (6.1)	27.5 (6.7)	26.7 (7.0)	27.1 (6.9)

Notes. Range of possible scores is from 5 to 35, with higher scores indicating greater satisfaction with life. Total number of respondents was $n=2,357$.

The results of this analysis show that the average rating for Hamilton residents the Satisfaction with Life Scale (SLS) was 27.1 (standard deviation: 6.9), which is markedly above the scale midpoint of 20, indicating that, overall, most respondents report a high degree of satisfaction with life as measured by this scale. The overall mean rating on the SLS was significantly lower than the highest City mean value of 28.5, though the practical significance was small. The mean ratings for the SLS slightly increased as age increased after the age of 55 (mean difference of 1.2 between the age groups of 55-64 and 75+); however, mean ratings were relatively stable across genders.

However, well being is not just the presence of positive factors, but also the absence of negative ones. Therefore, we examined depression scores for participants in the CLSA in order to get an indicator for the presence of negative feelings and behaviours. Depression scores are

taken from the 10-item version of the Center for Epidemiological Studies Depression Scale (CESD-10), which sums the responses across several items examining aspects of depression (e.g., loneliness, feeling depressed, trouble concentrating, feeling restless, feeling like everything takes a lot of effort). Scores of 10 or above indicate that a person is at risk of clinical depression. Results are presented in Table 38, which reports both the median scores (and corresponding quartiles), as well as the proportion of people with scores above ten⁴³. The median represents the point at which 50% of respondents scored either above or below the indicated value; the first quartile represents the point at which 25% of respondents scored lower; and the third quartile represents the point at which 75% of respondents scored lower.

Table 38 – Depression Scores and Proportions by Age and Gender

Depression	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
CESD-10 Scores Median (Q1/Q3)	5 (2/8)	4 (2/8)	4 (2/7)	5 (2/8)	4 (2/7)	5 (2/9)	4 (2/8)
Proportion at Risk for Clinical Depression	118 (19.9%)	160 (20.2%)	97 (16.8%)	74 (18.4%)	158 (13.9%)	291 (23.7%)	449 (19.0%)

Notes. Scores are taken from the CESD-10. Scores above 10 indicate being at risk for clinical depression. ‘Q1’ represents the quartile, ‘Q3’ represents the third quartile. Total number of respondents was $n=2,364$.

The median score on the CES-D-10 was 4 (first quartile: 2, third quartile: 8). There was little variation in this score across age groups and genders, though the median for the age groups 45-54 and of 75+ was a point higher, and the median for women was a point higher than the median for men, with a slightly wider variation range (third quartile was 9). Overall, the proportion of respondents at or above the cut-off value for risk of clinical depression was 19.0%. This value was significantly higher than the lowest value of 13.7% and was the highest value across the eight cities. these rates were stable between the age groups of 45-54 and 55-64, decreased slightly (difference in rates of 3.4% between those aged 55-64 and those aged 65-74). The rate for women was noticeably higher than the rate for men (difference in rates of 9.8%).

We also looked at the proportion of CLSA participants who had functional impairments in their daily activities classification scores of the Instrumental and Basic Activities of Daily Living from the Older Americans Resources and Services (OARS) Multidimensional Assessment Scale. The classifications are no functional impairment, mild impairment, moderate impairment, severe impairment and total impairment, and deal with participants' ability to perform instrumental and basic daily activities for themselves such as preparing meals, getting dressed, eating, taking care of appearance, walk, get out of bed, take a bath, getting to the bathroom in time, using the telephone, travel, go shopping, and do housework, among others. Results are presented in Table 39.

Table 39 – Functional Impairment Classification by Age and Gender

Degree of Impairment	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
No Impairment	562 (94.5%)	737 (92.5%)	529 (90.7%)	334 (81.3%)	1,095 (95.1%)	1,067 (86.5%)	2,162 (90.6%)
Mild Impairment	28 (4.7%)	52 (6.5%)	45 (7.7%)	62 (15.1%)	44 (3.8%)	143 (11.6%)	187 (7.8%)
Moderate Impairment	<10	<10	<10	14 (3.4%)	10 (0.9%)	18 (1.5%)	28 (1.2%)
Severe Impairment	<10	<10	<10	<10	<10	<10	<10
Total Impairment	<10	<10	<10	<10	<10	<10	<10

Notes. Percentages are column proportions. Number of respondents is $n=2,386$.

We found that the large majority of respondents, 90.6% overall, had no functional impairments. This rate was not significantly different than the highest rate of 91.5. The rates for no impairments decreased as age increased, with the largest drop occurring between the age groups of 65-74 and 75+ (difference in rates of 10.4% between those aged 45-54 and those aged 75+). Moreover, the rate for men was higher than the rate for women (difference in rates of 8.6%). We found that, 7.8% of respondents reported mild impairment: these rates almost tripled as age increased (difference in rates of 10.4% between those aged 45-54 and those aged 75+). Similarly, the rate for women was almost quadruple the rate for men (difference in rates of 7.8%). Furthermore, a very small minority, 1.2% of overall respondents, had moderate

impairment. Inadequate cell sizes prevented drawing conclusions regarding age trends, though the rates were stable across genders. Insufficient cell sizes for the ‘severe impairment’ and ‘total impairment’ categories prevented running any analyses on these categories at all.

Well-being is not something that is solely determined by the individual, but also by social factors as well. Thus, we examined the degree to which participants perceived the availability of social support. Social support is examined through scores on the Social Support Survey subscales of the Medical Outcomes Study (MOS), which has four subscales that measure social support availability for different areas of life: affection (e.g., someone to show love and affection), emotional/informational (e.g., someone who listens, someone to provide advice or information), tangible (e.g., having someone to help with daily chores or prepare meals if you were unable to), and positive interaction (e.g., someone to have an enjoyable time with). All items are scored from 0 (none of the time) to 4 (all of the time) and then items are summed for each subscale. The results are shown in Table 40.

With respect to the individual subscales, the mean rating for the Affection subscale,

Table 40 – Perceptions of Social Support by Age and Gender

Type of Social Support Mean (SD)	Age				Gender		Total
	45-54	55-64	65-74	75+	Male	Female	
Affection	10.5 (2.5)	10.3 (2.5)	10.3 (2.5)	10.0 (2.6)	10.3 (2.6)	10.3 (2.5)	10.3 (2.5)
Emotional/ Informational	26.2 (6.0)	25.6 (6.4)	25.5 (6.4)	24.8 (6.9)	25.3 (6.6)	25.9 (6.2)	25.6 (6.4)
Tangible	12.9 (3.3)	12.7 (3.6)	13.0 (3.5)	12.6 (3.6)	13.2 (3.3)	12.5 (3.6)	12.8 (3.5)
Positive Interaction	13.0 (3.1)	12.7 (3.3)	12.9 (3.2)	12.4 (3.3)	12.8 (3.3)	12.8 (3.2)	12.8 (3.2)
Overall Average	4.3 (0.7)	4.2 (0.7)	4.3 (0.7)	4.2 (0.7)	4.3 (0.7)	4.2 (0.7)	4.2 (0.7)

Notes. Range of scores for Affection is 0-12; range of scores for Emotional/Informational is 0-32; range of scores for Tangible is 0-16; range of scores for Positive Interaction is 0-16. Values reported for these variables are the mean of the total score for all respective participants, where higher scores are indicative of greater support. Range of score for “Overall Average” is 1-5, with 1 denoting “None of the Time” and 5 denoting “All of the Time”. Overall Total is the overall, was 10.3 (standard deviation: 2.5; range: 0-12). Ratings across age groups and across

genders were stable. For the emotional/informational support subscale, the mean rating was, overall, 25.6 (standard deviation: 6.4; range: 0-32). Mean ratings across age groups were relatively stable, though there was a decrease for the age group of 75+ (mean differences between 0.7-1.8), though the ratings were fairly stable across genders. For the tangible support subscale, the overall mean rating was 12.8 (standard deviation: 3.5; range: 0-16). Ratings for this were similar across age groups and genders. Finally, for the positive interaction subscale, the overall mean rating was 12.89 (standard deviation: 3.2; range: 0-16). Again, mean ratings for this subscale were relatively stable across age groups and genders.

We also examined the overall mean rating for items across all subscales. To do this, we averaged responses across all of the Social Support subscales for the MOS in order to create an overall mean value. Results showed that the mean rating was 4.2 (standard deviation: 0.7, range 1-5). Mean ratings for overall social support were the same across age groups and genders.

Summary

The Good News

- Over 90% of respondents rated their own physical and mental health as good to excellent (as opposed to poor to fair), as well as their own healthy aging as such. Moreover, the rates for self-reported good to excellent health increased with age, rather than decreased.
- Mean totals on the satisfaction with life scale were high (27.1 overall), and stable across age groups and genders.
- Risk for clinical depression slightly decreased with age.
- The large majority of respondents presented with no functional impairment.
- Ratings on all subscales of the social support survey of the MOS, as well as on the overall score, were strong, and indicated respondents felt they had suitable social support of all types most of the time, if not nearly all the time. In addition, there was little discrepancy across age groups of genders.

The Bad News

- Nearly one-fifth of overall respondents presented as at risk for clinical depression based on scores on the CES-D-10 of ten. This was the highest of all eight cities.
- Women had nearly double the rate of being at risk for clinical depression as men (23.7% versus 13.9%).
- Rates for having mild impairment nearly tripled between the age groups of 45-54 and 75+.
- The proportion of women with mild impairment was almost tripled the proportion of men with such.

Part III

Conclusions

In this report, we examined a wide variety of indicators of the age-friendliness Hamilton using the World Health Organization's Age-Friendly Cities Guide for choosing relevant indicators and the Canadian Longitudinal Study of Aging as the data source. We also examined a variety of different indicators of well being in order to examine how well people across different age groups and genders were generally functioning with respect to quality of life.

The Overall Good News

With respect to the age-friendly indicators, the overall picture for Hamilton is that many of the age-friendly indicators are strong. For outdoor spaces, the large majority of respondents felt that their local environment was kept clean, while only a small minority reported vandalism and graffiti as big problems in their neighbourhood, and/or felt that their local area was unsafe to walk in after dark. In fact, Hamilton showed the lowest proportion of respondents who felt unsafe to walk in their local environment after dark. Also, slightly more than half of the Hamilton subsample reported taking a walk outside five to seven days a week, with a further 18.5% reporting walking three to four days a week. Moreover, Hamilton had the lowest proportion of respondents reporting a fall as a result of standing or walking outside.

With respect to transportation, the large majority of CLSA respondents in the Hamilton subsample still held a valid driver's licence at the time of measurement. For drivers, most reported driving on a near daily basis, and only a small minority reported transportation as a barrier to increased social activity participation, indicating that most respondents were able to retain a strong level of autonomy. For those that did not have a driver's licence (non-drivers), the most common forms of transportation were public transit and being a passenger in a motor vehicle. With respect to public transportation, Hamilton had the lowest proportion of respondents that reported 'prefer not to use' as a barrier to public transit use. In addition, nearly three-quarters of respondents who did not use public transit only reported one barrier, rather than multiple barriers.

For housing, over ninety percent of respondents, whether homeowners or renters, reported being satisfied with their current housing. For homeowners, the proportion reporting any of the specific housing problems in the CLSA was at or below six percent for each

individual housing issue. Four out of five homeowners reported experiencing none of the housing problems in the CLSA.

With respect to community support, more than four out of every five respondents reported seeing a family physician in the past year, with a very similar proportion reporting seeing a dentist in the past year. Moreover, the rates for seeing a family physician in the past year increased with age, rather than decreased. In addition, Hamilton had the highest rates of respondents who had received formal assistance for medical and personal care and the lowest rate for assistance with the activities of daily living of all eight cities involved in this project. The overall proportion of older adults who used informal assistance of any kind was lowest among the eight cities in the project.

With respect to social participation, eighty percent of participants reported participating in two to five different types of social activities on a daily, weekly or monthly basis, and an additional ten percent reported participating in six to seven different types. Only a small minority, less than two percent, reported participating less than once per month in any of the specified social activity types, including the ‘other’ category. Over ninety percent reported participating in social activities with family/friends outside the household; more than two-thirds reported participating in sport/physical activity with others; and, nearly half of respondents reported engaging in educational/cultural activities on a daily, weekly or monthly basis. About half the respondents desired to participate in more social activities. The most common barriers were being too busy, health condition or limitation and personal or family responsibilities. However, activity timing was a concern for about one-fifth of respondents, and going alone was a concern for about one-tenth. Five percent or less of those desiring to participate in more social activities reported that lack of activities, far distance, social barriers, location accessibility and/or safety concerns as a barrier to increased social activity participation.

For social inclusion, respect and civic engagement, nearly all agreed with the statements that: most people in their area are friendly, they feel like they are a part of their local area, most people in their area can be trusted, and, if in trouble, lots of people would offer help. Similarly, only a small minority of respondents reported that they often feel lonely in their local area, and/or that people in their local area take advantage of them. Furthermore, most respondents from the Hamilton subsample of the CLSA rating their social standing on the SEQ Ladder as

above average (above the midpoint). Moreover, a sizeable proportion of respondents, forty percent overall, volunteer between once a week and once a month.

Finally, with respect to well being, we found that ninety percent of respondents rated their physical health, mental health and healthy aging as good to excellent (as opposed to poor to fair). Mean ratings for satisfaction with life were strong across all age groups and genders. Furthermore, the large majority of respondents reported no functional impairments. As well, ratings on all subscales of the social support survey of the MOS were high and indicated that respondents felt they had satisfactory social support of all types most of the time, if not nearly all of the time, with little discrepancy across age groups or genders.

The Overall Bad News

However, while many of the results of our analyses on age-friendly indicators and indicators of well being had strong, positive results, it was not all ‘sunny skies’, so to speak. For the outdoor environment, women were twice as likely as men to report not feeling safe walking in their local environment after dark. Furthermore, slightly more than thirty percent of respondents reported either never walking outside, or only taking a walk one to two days a week. Not walking at all on a weekly basis increased markedly with age, as the rates nearly doubled by the age of 75+ (compared to 45-54).

With respect to transportation, the rate of being without a valid driver’s licence for those aged 75+ was more than double the rate of those aged 65-74. In addition, one in five respondents with a valid driver’s licence reported using public transit at all in the past month, and the rate for those aged 75+ was nearly half the of those aged 45-54. Of non-drivers who reported a desire to participate in more social activities, nearly one in five reported transportations as a barrier to their desired level of social activity, which was more than ten times the rate of such for drivers. Furthermore, of people who did not use public transit in the past month – both drivers and non-drivers alike – slightly more than one if five reported that services were not available to them, and/or that schedules/routes were overly inconvenient. Moreover, slightly more than one in five respondents who did not use public transit in the past month reported two or more barriers to its use.

With respect to housing, one in five homeowners reported experiencing at least one or more of the specified housing problems in the CLSA. Housing issues disproportionately affected renters compared to owners. More than one in three renters reported experiencing one or more problems with their current housing, with nearly one in seven respondents reporting two or more problems. Furthermore, Hamilton had the lowest proportion of renters who experienced none of the specified housing problems of all eight cities involved in this project. Nearly one in five renters, or three times the rate for homeowners, reported noise as a problem in their current housing. Also, more than one in ten renters reported infestations as a problem in their current housing; this was almost three times the rate for homeowners.

With respect to community services, nearly one fifth of adults aged 45-54, and over one in seven males across all age groups, had not seen a family physician at all in the past year at the time of measurement. Similarly, one quarter of older adults aged 75+, had not seen a dentist in the past year.

With respect to social participation, almost half of all respondents reported a desire to participate in more social activities over the past year at the time of measurement and this was more common for people in the age group of 45-54. Nearly two-thirds of those aged 45-54 reported being too busy as a barrier to their desired level of social activity participation, and approximately one-third of them reported personal or family responsibilities as a barrier. 'Going alone' as a barrier to social activity participation nearly doubled in rate across age groups. We found that one fifth of those who reported a desire to participate in more social activities reported multiple barriers.

For social inclusion, respect and civic engagement, almost one in ten respondents aged 75+ reported often feeling lonely in their local neighbourhood. Congruently, one in four respondents aged 75+ reported their social standing on the SEQ Ladder as being at or below average. Furthermore, the majority, more than one in two respondents, reported volunteering either just once a year, or not at all.

Finally, with respect to well being, nearly one fifth of respondents presented CES-D-10 scores that indicated they were at risk for clinical depression, with women showing nearly double the rate of being at risk for depression compared to men. In addition, the rates for having mild functional impairment nearly quadrupled between the age groups of 45-54 and 75+, and the

proportion of women with mild impairment was almost quadruple the proportion of men with such.

In summary, examination of the CLSA for the CMA of Hamilton revealed several strong points with respect to age-friendly city indicators. In addition, examination of several well being indicators showed that, for the most part, the Hamilton sample of the CLSA that fell within the CMA of the city was quite healthy based on multiple indices. However, we also were able to identify some aspects that could potentially be improved with respect to age-friendliness as well as vulnerable demographics with respect to well being. While there are generalizability limitations to the CLSA dataset (outlined in the introductory sections of this report as well as within a CLSA report as well, see references), we hope that this report offers insight in areas of strength and areas of improvement with respect to the further development of age-friendly initiatives in the city of Hamilton.

References

1. United Nations, Department of Economic and Social Affairs, Population Division. (2015). *World Urbanization Prospects: The 2014 Revision*. ST/ESA/SER.A/366.
2. United Nations, Department of Economic and Social Affairs, Population Division. (2017). *World Population Prospects: The 2017 Revision, Key Findings and Advance Tables*. ESA/P/WP/248.
3. Statistics Canada. (2017). CANSIM Table 051-0001. Retrieved from <http://www5.statcan.gc.ca/cansim/a26?lang=eng&id=510001>
4. Statistics Canada. (2015). Population Projections for Canada (2013 to 2063), Provinces and Territories (2013 to 2038). Retrieved from <https://www150.statcan.gc.ca/n1/pub/91-520-x/91-520-x2014001-eng.htm>
5. World Health Organization. (2007). *Global Age-Friendly Cities: A Guide*. Retrieved from http://www.who.int/ageing/publications/Global_age_friendly_cities_Guide_English.pdf
6. Raina, P., Wolfson, C., Kirkland, S., & Griffith, L. (2018). The Canadian Longitudinal Study on Aging (CLSA) Report on Health and Aging in Canada. Retrieved from: <https://www.clsa-elcv.ca/doc/2639>
7. Raina, P., Wolfson, C., & Kirkland, S. (2008). Canadian Longitudinal Study on Aging (CLSA) Protocol. Retrieved from <https://www.clsa-elcv.ca/researchers#content399>
8. Weuve, J., Kang, J. H., Manson, J. E., Breteler, M. M. B., Ware, J. H., & Grodstein, F. (2004). Physical Activity, Including Walking, and Cognitive Function in Older Women. *JAMA*, 292(12), 1454–1461.
9. Miller, M. E., Rejeski, W. J., Reboussin, B. A., Ten Have, T. R., & Ettinger, W. H. (2000). Physical activity, functional limitations, and disability in older adults. *Journal of the American Geriatrics Society*, 48(10), 1264–1272.
10. Dickerson, A. E., Molnar, L. J., Eby, D. W., Adler, G., Bédard, M., Berg-Weger, M., ... Trujillo, L. (2007). Transportation and aging: a research agenda for advancing safe mobility. *The Gerontologist*, 47(5), 578–590.
11. Baxter, D. & Pelletier, L. (2018). Is nature relatedness a basic human psychological need? A critical examination of the extant literature. *Canadian Psychology*. Advance online publication.
12. WHO. (2016). *Urban green spaces and health*. Copenhagen: WHO Regional Office for Europe.
13. Badiu, D., Ioja, C., Patroescu, M., Brueste, J., Artmann, M., Nita, ... & Onose, D. (2016). Is urban green space per capita a valuable target to achieve cities' sustainability goals? Romania as a case study. *Ecological Indicators*, 70, 53-66.
14. Gomez, F., Jabaloyes, J., Montero, L., Vicente, V., & Valcuende, M. (2011). Green areas, the most significant indicator of the sustainability of cities: research on their utility for urban planning. *Journal of Urban Planning and Development*, 137, 311-328.
15. Goro, B., & Mwasi, B. (2017). Determining per capita value of urban green spaces provision: a case of Eldoret Town, Kenya. *Africa Environmental Review Journal*, 2, 12-21.
16. World Health Organization, 2010. Urban planning, environment and health: from evidence to policy action. In W. R. O. f. Europe (Ed.) (p. 119).
17. Public Health Agency of Canada. (2012). *Tips to Get Active*. Retrieved from <https://www.canada.ca/en/public-health/services/health-promotion/healthy-living/physical-activity/physical-activity-tips-older-adults-65-years-older.html>

18. Davey, J. A. (2007). Older people and transport: coping without a car. *Ageing & Society*, 27(1), 49–65.
19. Wasfi, R., Levinson, D., & El-Geneidy, A. (2012) Measuring the transportation needs of seniors. *Journal of Transport Literature*, 6(2), 8-32
20. Dahan-Oliel, N., Mazer, B., Gélinas, I., Dobbs, B., & Lefebvre, H. (2010). Transportation Use in Community-Dwelling Older Adults: Association with Participation and Leisure Activities. *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement*, 29(4), 491–502.
21. Thiele, B. (2002). The Human Right to Adequate Housing: A Tool for Promoting and Protecting Individual and Community Health. *American Journal of Public Health*, 92(5), 712–715.
22. Thompson, H., Thomas, S., Sellstrom, E., & Petticrew, M. (2009). The health impacts of housing improvement: a systematic review of interventions studies from 1187 to 2007. *Research and Practice*, 99, 681-692.
23. Partners for Livable Communities. (2007). A Blueprint for Action: Developing a Livable Community for All Ages. Retrieved from <http://www.livable.org/livability-resources/reports-a-publications/184>
24. Menec, V. H., Means, R., Keating, N., Parkhurst, G., & Eales, J. (2011). Conceptualizing Age-Friendly Communities. *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement*, 30(3), 479–493.
25. Savla, J., Bivens, L. R., Roberto, K. A., & Blieszner, R. (2018). Where You Age Matters: Individual- and County-Level Predictors of Formal and Informal Care in Rural Appalachia. *Journal of Aging and Health*.
26. Lee, Y., Barken, R., & Gonzales, E. (2018). Utilization of Formal and Informal Home Care: How Do Older Canadians' Experiences Vary by Care Arrangements? *Journal of Applied Gerontology*.
27. Wang, H.-X., Karp, A., Winblad, B., & Fratiglioni, L. (2002). Late-life engagement in social and leisure activities is associated with a decreased risk of dementia: a longitudinal study from the Kungsholmen project. *American Journal of Epidemiology*, 155(12), 1081–1087.
28. Engelhardt, H., Buber, I., Skirbekk, V., & Prskawetz, A. (2010). Social involvement, behavioural risks and cognitive functioning among older people. *Ageing & Society*, 30(5), 779–809.
29. Gilmour, H. (2012). Social participation and the health and well-being of Canadian seniors. *Health Reports*, 23(4), 23–32.
30. Zunzunegui, M.-V., Alvarado, B. E., Del Ser, T., & Otero, A. (2003). Social Networks, Social Integration, and Social Engagement Determine Cognitive Decline in Community-Dwelling Spanish Older Adults. *The Journals of Gerontology: Series B*, 58(2), S93–S100.
31. Canadian Medical Association (n.d.). Physicians per 100,000 Population, Canada, 1986-2015. Retrieved from <https://www.cma.ca/Assets/assets-library/document/en/advocacy/13PhysPopChart.pdf>

Sundquist, J., Hamano, T., Li, X., Kawakami, N., Shiwaku, K., & Sundquist, K. (2014). Neighborhood linking social capital as a predictor of psychiatric medication prescription in the elderly: A Swedish national cohort study. *Journal of Psychiatric Research*, 55, 44–51.

32. Clark, C. J., Guo, H., Lunos, S., Aggarwal, N. T., Beck, T., Evans, D. A., ... Everson-Rose, S. A. (2011). Neighborhood Cohesion Is Associated With Reduced Risk of Stroke Mortality. *Stroke*, *42*(5), 1212–1217.
 33. Sundquist, J., Johansson, S.-E., Yang, M., & Sundquist, K. (2006). Low linking social capital as a predictor of coronary heart disease in Sweden: A cohort study of 2.8 million people. *Social Science & Medicine*, *62*(4), 954–963.
 34. Sundquist, K., Hamano, T., Li, X., Kawakami, N., Shiwaku, K., & Sundquist, J. (2014). Linking social capital and mortality in the elderly: A Swedish national cohort study. *Experimental Gerontology*, *55*, 29–36.
 35. Jenkinson, C. E., Dickens, A. P., Jones, K., Thompson-Coon, J., Taylor, R. S., Rogers, M., ... Richards, S. H. (2013). Is volunteering a public health intervention? A systematic review and meta-analysis of the health and survival of volunteers. *BMC Public Health*, *13*, 773.
 36. Okun, M. A., Yeung, E. W., & Brown, S. (2013). Volunteering by older adults and risk of mortality: a meta-analysis. *Psychology and Aging*, *28*(2), 564–577.
 37. Van Willigen, M. (2000). Differential Benefits of Volunteering Across the Life Course. *The Journals of Gerontology: Series B*, *55*(5), S308–S318.
 38. Dury, S., Willems, J., De Witte, N., De Donder, L., Buffel, T., & Verté, D. (2016). Municipality and Neighborhood Influences on Volunteering in Later Life. *Journal of Applied Gerontology*, *35*(6), 601–626.
 39. Giatti, L., Camelo, L. do V., Rodrigues, J. F. de C., & Barreto, S. M. (2012). Reliability of the MacArthur scale of subjective social status - Brazilian Longitudinal Study of Adult Health (ELSA-Brasil). *BMC Public Health*, *12*, 1096.
 40. Turcotte, M. (2015). Volunteering and charitable giving in Canada. *Statistics Canada*, Catalogue no 89-652-X2015001.
 41. Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of personality assessment*, *49*(1), 71-75.
- Björgevinnson, T., Kertz, S., Bigda-Peyton, J., McCoy, K., & Aderka, I. (2013). Psychometric properties of th