March 2012

Analysis in Brief

Supporting Factors Influencing Health

Disparities in Primary Health Care Experiences Among Canadians With Ambulatory Care Sensitive Conditions

Highlights

This report uses the 2008 Canadian Survey of Experiences With Primary Health Care to fill an important gap in our knowledge of primary health care for individuals who have ambulatory care sensitive conditions. An examination of differences in access, use and appropriateness of care according to income, geography, health conditions and sex reveals the following:

- Individuals with ambulatory care sensitive conditions in the lowest income group, in rural areas or with multiple chronic conditions were twice as likely to report that their last visit to an emergency department was for a condition that they perceived as being treatable by their primary health care provider.
- Women with ambulatory care sensitive conditions were less likely than men to report receiving all four recommended tests for chronic disease monitoring, to have medication side effects explained or to be provided with tools to self-manage their condition.
- Compared with those in the highest income group, individuals with ambulatory care sensitive conditions in the lowest income group were less likely to report that their primary health care physician involved them in clinical decisions or helped them make a treatment plan to manage their conditions.

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Introduction

Ambulatory care sensitive conditions cause considerable illness, hospitalization and death among Canadians and result in a high use of health care services. They affect an estimated 6.8 million Canadians age 20 to 74, and they result in an estimated 95,000 hospitalizations and almost 13,000 deaths annually. Examples of ambulatory care sensitive conditions are asthma, chronic obstructive pulmonary disease, diabetes, high blood pressure and some heart diseases. These conditions can generally be managed with adequate primary health care on an outpatient basis (see the Terminology box).[1]

The burden of ambulatory care sensitive conditions is not shared equally among all population groups. For example, those who live in rural or disadvantaged areas experience a higher burden from these conditions, compared with those living in urban and less disadvantaged areas. Disparities in hospitalization and mortality rates by socio-economic and geographic conditions are greater than disparities in the underlying prevalence of these conditions in the community (see Table B1 in Appendix B). This suggests that the treatment and management of these conditions through primary health care or in acute care settings may not be as appropriate or as effective for some groups of the population. This is supported by various studies that have related an individual's health and social conditions to use of primary health care and/or need for hospitalization.[3–5]

This report fills an important gap in our knowledge of primary health care for Canadians with ambulatory care sensitive conditions. It aims to establish whether there are any systemic differences by socio-economic and geographical conditions, health condition and sex in the access to, use of and appropriateness of primary health care experiences for people diagnosed with ambulatory care sensitive conditions. The results will help identify barriers to and difficulties in accessing primary health care services and assess whether all Canadians are receiving an appropriate level of care according to their needs. The analyses presented in this Analysis in Brief are based on information collected in the 2008 Canadian Survey of Experiences With Primary Health Care (see Appendix A).

Terminology

Timely and effective primary health care can help prevent the onset of health complications and may prevent hospitalizations associated with certain chronic medical conditions. These conditions are considered ambulatory—that is, they can be managed with adequate primary health care on an outpatient basis and are thus termed "ambulatory care sensitive conditions."[1, 2] Based on the information available through the 2008 Canadian Survey of Experiences With Primary Health Care and other studies, the following were considered ambulatory care sensitive conditions in this study: asthma, chronic obstructive pulmonary disease (including emphysema), diabetes, high blood pressure and heart disease.[6] While many studies have focused on hospitalizations for ambulatory care sensitive conditions, this study examines the experiences of those being treated for these conditions through primary health care services, such as general practices, community health centres and outpatient services.

Methods

The 2008 Canadian Survey of Experiences With Primary Health Care was used to report on primary health care experiences, including accessibility, utilization, clinical management and support for self-management of chronic conditions. This survey was co-sponsored by the Canadian Institute for Health Information (CIHI) and the Health Council of Canada and was conducted by Statistics Canada. The results are based on the population age 18 and older, living in private dwellings and reporting having been diagnosed with an ambulatory care sensitive condition (sample size of 4,138, equating to an estimated 7.9 million Canadians).

Descriptive analysis was undertaken to estimate the prevalence of selected primary health care measures across different population groups according to sex, adjusted household income, rural or urban residence and presence of multiple chronic conditions. Individuals with multiple chronic conditions were selected as a group for analysis to identify whether experiences with primary health care within the population that has been diagnosed with an ambulatory care sensitive condition vary according to need. Multiple logistic regression analysis was also undertaken to determine whether differences across population groups persisted after controlling for other characteristics. Refer to Appendix A for further details on the survey and analytical methods.

Profile and Highlights of Primary Health Care Experiences for Canadians With Ambulatory Care Sensitive Conditions

This analysis uses the Canadian Survey of Experiences With Primary Health Care to examine factors associated with primary health care experiences. According to this survey, in 2008, there were an estimated 7.9 million individuals age 18 and older, representing almost one in three adults (31%), living with an ambulatory care sensitive condition in Canada. Of these, two-thirds reported having high blood pressure (66%) and 18% reported heart disease, while diabetes and asthma were reported by 25% and 27%, respectively; chronic obstructive pulmonary disease (including emphysema) was reported by 6% of individuals with ambulatory care sensitive conditions.

More than one-third (39%) of individuals with ambulatory care sensitive conditions reported having been diagnosed with only one condition and just under one-third (30%) had three or more chronic conditions that included at least one ambulatory care sensitive condition (the other chronic conditions could include arthritis, cancer, stroke, mood disorders including depression and/or chronic pain).

Of those with an ambulatory care sensitive condition, almost 9 in 10 (87%) were age 18 to 74 (16% were age 18 to 44 and 51% were age 45 to 64).

Most adults with ambulatory care sensitive conditions reported having a place to go when they were sick or needed health advice (96%) and having a regular medical doctor (94%). In the previous 12 months, most (87% to 89%) had had no difficulties obtaining needed routine/ongoing care or health information/advice, and the majority reported positive experiences interacting with their providers (56% to 70%). Almost three-quarters (74%) of those with ambulatory care sensitive conditions reported receiving coordinated care from other doctors and places when needed (see Table 2 and Appendix C).

Despite almost all reporting a regular medical doctor and a regular place of care, one in five (21%) of those with ambulatory care sensitive conditions did not report contacting a family physician in the previous 12 months. More than 1 in 10 (12%) reported that their last visit to an emergency department was for a condition that they perceived as being treatable by their usual provider of primary health care, and almost two-thirds (61%) did not have access to after-hours care. Even though they rated their interactions with providers highly, many were not receiving the recommended tests to monitor their chronic conditions (49%), appropriate management of their medications (40% to 42%) or support to self-manage their chronic conditions, such as receiving help to make a treatment plan or receiving a written list of things to do to improve their health (61% and 69%, respectively; see tables 1 and 2 and Appendix C).

Results

The results in this report will highlight the barriers to and difficulties in accessing and receiving appropriate primary health care for Canadians with ambulatory care sensitive conditions, by examining differences according to sex, household income, rural or urban residence and presence of multiple chronic conditions. Twenty primary health care measures were examined in the analyses; the results presented here are for those measures where the largest population differences were observed:

- Access to and use of primary health care services; and
- Appropriateness of care, as measured by clinical management and support for the self-management of chronic conditions.

For further information on each of the measures examined, see appendices C and D.

Access to and Use of Primary Health Care Services

Regular access to and use of primary health care is influenced by a range of factors, and some population groups experience greater difficulties receiving the services they require. The results that follow show that population differences exist in the use of primary health care services (as measured by visits to a family physician, use of emergency departments for conditions perceived as being treatable by primary health care physicians and having access to after-hours services) within the population diagnosed with ambulatory care sensitive conditions.

Among adults with ambulatory care sensitive conditions:

Low-income individuals were higher users of primary health care and were more likely to visit emergency departments for conditions perceived as being treatable by their primary health care provider.

- Individuals in the lowest income group were higher users of primary health care and had on average 6.2 annual contacts with a family physician, compared with 3.4 contacts, on average, for those in the highest income group.
- Individuals in the lowest income group were also more likely than those in the highest income group to report that their last visit to an emergency department was for a condition that they perceived as being treatable by their usual provider of primary health care (19% versus 10%). They were also more likely to report not having access to after-hours care (78% versus 60%; see Table 1).

Rural residents and those with multiple chronic conditions were more likely to visit emergency departments for conditions perceived as being treatable by their primary health care provider.

- Rural residents were more likely than urban residents to report that their last visit to an emergency department was for a condition that they perceived as being treatable by their usual provider of primary health care (23% and 9%, respectively). Rural residents were also more likely than urban residents to report not having access to after-hours care (69% versus 58%; see Table 1).
- Compared to those with a single ambulatory care sensitive condition, individuals with three or more chronic conditions were also more likely to report that their last visit to an emergency department was for a condition that they perceived as being treatable by their usual provider of primary health care (16% versus 8%). Members of this group were also more likely to have contacted their family physician in the previous year and were high users of primary health care—they had, on average, 6.5 annual contacts with a family physician, compared with 2.6 contacts, on average, for those with a single ambulatory care sensitive condition.

When controlling for factors such as age, sex, rural or urban residence, presence of multiple chronic conditions and self-perceived health status in these measures of access to primary health care, many of the differences observed in the bivariate analysis continued to be significant. In particular, when adjusting for the other factors listed, having three or more chronic conditions appeared consistently as a significant predictor for many of these access measures: having no contact with a family physician in the previous 12 months (odds of 0.5), having a high frequency of contact (four or more contacts in the previous year; odds of 2.6) and visiting an emergency department for a condition perceived as being treatable by the usual provider of primary health care (odds of 2.3). Rural residence appeared as a significant factor only in the models for emergency department visits and after-hours access (odds of 3.0 and 1.5, respectively), and low income was significant for after-hours access only (odds of 2.1; see Table D1 in Appendix D).

The association between higher need and higher use of primary health care that is evident from this self-reported survey is consistent with data registered by primary health care providers in their electronic medical record systems. According to CIHI's Primary Health Care Voluntary Reporting System, most patients with three or more ambulatory care sensitive conditions had at least one visit with their primary health care provider in the last year (98%), and 88% had four or more visits; this compares with 93% and 62% for patients with only one ambulatory care sensitive condition. (See CIHI's Primary Health Care Voluntary Reporting System for further information.)

Table 1: Reported Experiences With Access to and Use of Primary Health Care for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	No Contact With Family Physician in Previous 12 Months (%)	Average Number of Contacts With Family Physician in Previous 12 Months (#)	Last Visit to the Emergency Department Was for a Condition Perceived as Being Treatable by Usual Provider of Health Care (%)	No After-Hours Access (%)
Overall	20.8	4.1	11.8	61.0
Sex				
Male†	22.2	3.9	11.3	61.5
Female	19.5	4.3	12.4	60.5
Number of Chronic Conditions				
Single Ambulatory Care Sensitive Condition†	26.2	2.6	8.0	57.3
Three or More Chronic Conditions	11.8*	6.5*	16.2*	63.5
Household Income (Adjusted for Household Size)				
Highest Income†	14.9^{E}	3.4	10.1^{E}	60.3
Lowest Income	17.1	6.2^{E}*	19.1^{E}*	78.1*
Geography				
Urban†	21.1	4.3	8.8	58.3
Rural	20.2	3.4*	23.0*	69.3*

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

E Interpret with caution (coefficient of variation between 16.6% and 33.3%).

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Appropriateness of Primary Health Care Received

Not all Canadians with ambulatory care sensitive conditions receive an appropriate level of care in terms of the clinical management of their conditions or support from their health care provider to independently manage their conditions. Studies have shown that, for those with chronic illness, allowing enough time with a doctor, having the doctor elicit concerns, patient-centred decision-making, whole-person care and satisfaction with care are associated with patients actively engaging in health behaviours that will maintain or improve their health.[7] The results that follow show that population differences exist for many of these primary health care experiences for Canadians with ambulatory care sensitive conditions. The largest disparities were seen between the sexes and between the lowest and highest income groups.

Among adults with ambulatory care sensitive conditions:

Women were less likely to receive recommended tests for chronic disease monitoring or tools to self-manage their conditions.

- Females diagnosed with heart disease, diabetes or high blood pressure were less likely than their male counterparts to report receiving all four recommended tests for disease monitoring—blood pressure, blood cholesterol, body weight and blood sugar measurements—in the previous 12 months (46% and 56%, respectively; see Table 2). Females who received regular or ongoing prescription medications were also less likely to report that their doctors usually or always explained the side effects of medications (56% versus 65%; see Table C2 in Appendix C).
- Females were also more likely than males to report generally not or almost never being asked to talk about their goals in caring for their condition, receiving help from their primary health care provider to make a treatment plan, receiving a written list of things to do to improve their health or being shown ways to take care of themselves (see Table 2).

These patterns remained significant for all of these measures when adjusting for other factors, such as age, household income, rural or urban residence, presence of multiple chronic conditions and self-perceived health status (see Table D3 in Appendix D).

Lower-income individuals were less likely to report that their physician involved them in clinical decisions or helped them make a treatment plan to manage their conditions.

- Individuals in the lowest income group were less likely to report that their primary health care physician usually or always involved them in clinical decisions, compared with those in the highest income group (47% versus 66%).
- Individuals in the lowest income group were also more likely to report generally not or almost never receiving help from their primary health care provider to make a treatment plan (71% versus 54%; see Table 2).

When adjusting for other factors (age, sex, rural or urban residence, presence of multiple chronic conditions and self-perceived health status), these measure continued to remain significant (odds of 0.4 and 1.8, respectively; see tables D2 and D3 in Appendix D).

While females and those in the lowest income group may not be experiencing an optimal level of care to manage their conditions, those in higher need, as measured by having three or more chronic conditions, reported more positive experiences, both in the clinical management of their conditions and in support to self-manage their chronic conditions—specifically in discussing goals in caring for their condition and receiving a written list of things to do to improve their health from their primary health care physician (Table 2). These differences persisted when controlling for other factors (see Table D3 in Appendix D).

Table 2: Reported Experiences With Disease Monitoring and Self-Management Support for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	Patients Received All Four Monitoring Tests (for Those Diagnosed With Heart Disease, High Blood Pressure or Diabetes) (%)	Primary Health Care Physician Usually or Always Involved Patients in Clinical Decisions (%)	In Previous 12 Months, the Primary Health Care Physician Generally Did Not or Almost Never			
			Asked to Talk About Patients' Goals in Caring for Their Chronic Conditions (%)	Helped Make a Treatment Plan That Patients Could Implement in Their Daily Lives (%)	Gave Patients a Written List of Things to Do to Improve Their Health (%)	Showed Patients What to Do to Take Care of Themselves to Influence Their Condition (%)
Overall	50.9	56.2	45.5	61.4	69.0	34.9
Sex						
Male†	55.8	55.2	42.1	56.2	63.5	29.3
Female	45.9*	57.2	48.9*	66.7*	74.6*	40.5*
Number of Chronic Conditions						
Single Ambulatory Care Sensitive Condition†	45.1	52.9	49.6	65.7	74.3	34.7
Three or More Chronic Conditions	57.8*	62.3*	37.7*	58.9	63.3*	31.1
Household Income (Adjusted for Household Size)						
Highest Income†	48.3	65.8	46.2	54.2	69.9	31.2
Lowest Income	44.4	46.7*	46.1	71.0*	69.3	42.4
Geography						
Urban†	51.0	57.1	46.5	61.2	70.4	34.4
Rural	46.7	53.0	43.5	63.2	64.9	38.6

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Discussion

The results presented in this analysis highlight that not all Canadians are receiving optimal access to primary health care services or an appropriate level of care according to their needs. The findings confirm that primary health care management of ambulatory care sensitive conditions is influenced by an individual's sex, household income, and geographic and health factors.

Individuals in the lowest income group had a higher rate of using emergency departments for conditions that they perceived as being treatable by their primary health care provider and experienced a lower availability of after-hours care than those in the highest income group. Despite being higher users of primary health care services than those in the highest income group, they were less likely to report that their primary health care physician routinely involved them in clinical decisions or helped them make a treatment plan. This finding is consistent with other Canadian studies that show that low-income individuals have higher use of primary health care services and higher rates of hospitalizations for chronic conditions, and that low income is a driver of primary health care use and/or need for hospitalization.[3–5]

Living in rural areas was associated with a lower availability of after-hours care and a higher rate of using emergency departments for conditions patients perceived as being treatable through primary health care. This finding is consistent with other research and may reflect the role that small rural hospitals play in delivering primary health care services.[8] Physicians in rural areas also tend to have multiple primary health care locations, including emergency departments as primary health care offices. This may result in rural physicians spending fewer hours in their clinics and being less available for walk-in care.[9]

In this analysis, those in higher need—as measured by having three or more chronic conditions—were higher users of primary health care and were more likely to visit emergency departments for conditions that they perceived as being treatable by their primary health care provider than those living with a single ambulatory care sensitive condition. They were also more likely to report more positive experiences in the clinical management of their conditions (such as receiving the recommended tests for chronic disease monitoring and being involved in clinical decisions about their health) and receiving support to independently manage their chronic condition. This suggests that those with multiple chronic conditions reported receiving a higher level of care—potentially reflecting their higher need for care. Males were also more likely than females to experience this higher level of clinical care.

Reducing hospitalizations and emergency department visits for all those with ambulatory care sensitive conditions, by providing more timely and accessible primary health care, has the potential to result in considerable savings to the health care system. The estimated average cost, excluding physician costs, of an acute care stay for an ambulatory care sensitive condition was almost $5,700, and that for an emergency department visit was approximately $280, in 2009–2010 (for 20- to 74-year-olds; see Table B2 in Appendix B). This suggests that every 10% reduction in hospitalizations equates to around $34 million in savings in hospital care each year.

The results presented in this Analysis in Brief highlight that there is considerable scope for further gains in the use of and appropriateness of primary health care for all Canadians and that the primary health care sector has an important role to play in ensuring equitable access to and quality of clinical care. These findings may also shed further light on why Canada compares unfavorably with 10 other countries in The Commonwealth Fund's survey on many of the primary health care measures presented in this Analysis in Brief, particularly in terms of after-hours access, emergency department use, availability and duplication of test results and access to a doctor or nurse when sick.[10]

Strengthening Primary Health Care in Canada

The findings of this analysis suggest that more can be done in Canada to ensure that all Canadians can access the primary health care services they require and to strengthen programs that ensure quality of clinical delivery and support for self-management of chronic conditions.

A number of strategies and models have been introduced to strengthen primary health care in Canada and internationally, which could influence health disparities. These focus on the quality of patient–clinician interactions, care delivery and records management, as well as supporting patients to self-manage their chronic conditions as a means of supplementing health care services and improving individuals' sense of control over their condition.[6, 11, 12] For example, the World Health Organization suggests several ways of addressing gendered disparities in health system access, including training health system staff on gendered differences in patient needs, underpinned by sustained financial and human resources.[13] Nurse-practitioner-led clinics, which provide an interdisciplinary and comprehensive approach to primary health care, are also being implemented in Canada and Europe and have been shown to improve health outcomes.[14, 15]

A number of studies have also identified specific activities to address the shortfalls in high-quality primary health care, such as the implementation of electronic health records, electronic monitoring and tele-monitoring systems, the provision of financial incentives for primary health care providers and the expansion of interprofessional collaborative teams.[6, 16] Case studies of 10 electronic health record systems in Europe indicated a net benefit to the health care system 6 to 11 years after implementation, with the benefits tending to be in the reduction of duplicate procedures, improved timeliness and improved health information to support decision-makers.[17] A review of evaluations from financial incentive programs in the United Kingdom and the United States yielded mixed results, with few significant impacts reported.[18]

A preliminary scan of activities at the health region level suggests that there are a number of initiatives currently under way in Canada that address disparities in access to primary health care for vulnerable groups, such as those outlined in this Analysis in Brief. For instance, information and communication technologies are being used in some regions to reduce barriers of time and distance for Canadians in rural and northern areas by helping them connect remotely with staff in hospitals from urban areas.[19] Some rural and northern areas are also reorienting service delivery, employing nurse-led clinics to deliver primary health care in underserviced areas.[20] Beyond service delivery, initiatives are in place to address shortages in health human resources through training and retention efforts for underserviced rural and isolated areas.[21] Initiatives are also under way to address financial barriers that low-income populations face to maintain health and when accessing services. In some areas, programs are being implemented to provide low-income populations with subsidies for prescription drugs, food supplements, prostheses and other equipment necessary for the management of certain conditions,[22] transportation options to medical appointments and child care services.[23]

An essential part of developing programs to address health inequalities is having in place effective monitoring practices to ascertain whether new and existing programs are having an impact on reducing disparities.[24] Collecting and reporting on the demographic and socio-economic information of patients and linking this information to medical information could better support decision-makers in evaluating the success of programs aimed at mitigating disparities in health system experiences. Further exploration of intervention options in primary health care settings and the impacts of these initiatives on vulnerable groups and health disparities could also contribute to the knowledge base.

Conclusion

This Analysis in Brief has shown that population differences exist in access to, use of and appropriateness of primary health care for Canadians with ambulatory care sensitive conditions. It highlights that there is room for improvement in providing more equitable access to and use of primary health care, clinical management of chronic conditions and support for patients to self-manage their conditions. While many of these factors can be addressed by the primary health care system, such as by providing more timely, accessible, comprehensive and coordinated health care, other factors lie beyond primary health care and are influenced by the wider social, economic, environmental and health system contexts. Further qualitative and quantitative research is required to more fully understand and address these factors and to further explore the impact of primary health care initiatives on disadvantaged populations. Building better information has the potential to ensure accountable, efficient and sustainable delivery of accessible health care for Canadians, foster the spread of best practices in primary health care that reduce health inequalities and promote the health of all Canadians.

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Appendix A: Data Source, Definitions and Methods

Data Source

The 2008 Canadian Survey of Experiences With Primary Health Care (CSE-PHC), a subsample of the Canadian Community Health Survey, was the primary data source used in this project. The CSE-PHC was co-sponsored by CIHI and the Health Council of Canada and conducted by Statistics Canada. The survey collected information on the use of, access to and experiences with primary health care services, as well as primary health care support for the self-management of chronic conditions. Information was collected from individuals living in private dwellings in the 10 provinces and 3 territories, excluding residents on Indian Reserves or Crown lands and in institutions, full-time members of the Canadian Forces and residents of certain remote regions. Further details about the CSE-PHC's design and sampling methodology are available from Statistics Canada.

Study Population

Adults age 18 and older who reported having been diagnosed with an ambulatory care sensitive condition that lasted, or was expected to last, six months or more were included in the study population (n = 4,138). The ambulatory care sensitive conditions included in this analysis were asthma, chronic obstructive pulmonary disease (including emphysema), diabetes, high blood pressure and heart disease. The inclusion of these conditions is consistent with other studies that have examined populations with ambulatory care sensitive conditions; however, there are slight variations in the conditions included due to the information collected on health conditions in the CSE-PHC.[6] Analyses of ambulatory care sensitive conditions are commonly restricted to the population age younger than 75; however, in this analysis, those age 75 and older were included due to the small sample of adults in the CSE-PHC who reported having an ambulatory care sensitive condition.

The results presented in this analysis include only individuals with self-reported diagnosed ambulatory care sensitive conditions; however, this information was not independently clinically validated, nor was the severity of the condition evaluated. Given that undiagnosed chronic conditions, such as high blood pressure and diabetes, are more likely to occur among the socio-economically disadvantaged, there is the potential for under-reporting in this analysis, particularly among the more disadvantaged groups.[25]

Populations Compared in the Analyses

Twenty primary health care measures were examined across different population groups by sex, adjusted household income, rural or urban residence and presence of multiple chronic conditions.

Income Groups

Income quintiles were derived from gross household income that was adjusted for household size. For example, an annual household income of less than $25,000 for a two-person household or less than $41,071 for a five-person household was categorized as falling within the lowest income quintile. Records with missing income were not included in the bivariate analysis but were included separately as an income category in the multiple logistic regression analysis (missing income category is not reported in the results).

Rural or Urban Residence

Urban and rural residence was defined using Statistics Canada's statistical area classification. Residents of census metropolitan areas or census agglomerations were considered urban, while residents of all other areas (strong, moderate, weak and no metropolitan influence zones, as well as the territories) were classified as rural.

Multiple Chronic Conditions

To evaluate whether experiences with primary health care within the population that has been diagnosed with an ambulatory care sensitive condition vary according to need, the study population was grouped according to the number of chronic conditions.

- One ambulatory care sensitive condition: individuals who reported being diagnosed with only one ambulatory care sensitive condition—that is, asthma, chronic obstructive pulmonary disease (including emphysema), diabetes, high blood pressure or heart disease—and no other chronic conditions.
- Three or more chronic conditions: individuals who reported having three or more chronic conditions, including at least one ambulatory care sensitive condition. Other chronic conditions could also include arthritis, cancer, stroke, mood disorders (including depression) and/or chronic pain.

Statistical Methods

Descriptive analyses were undertaken using SAS software (version 9.1) to estimate the prevalence of demographic, socio-economic, geographical, health condition and primary health care measures. The calculation of the prevalence estimates excludes cases with “don’t know,” “not stated,” “refusal” and missing responses. These cases generally account for less than 2.5% of respondents, except for the after-hours access question, where 14% of respondents did not know whether their primary health care provider had after-hours access.

Multiple logistic regression analysis was used to assess whether subgroup differences persisted in primary health care experiences after controlling for age, sex, household income (adjusted for household size), rural or urban residence, presence of multiple chronic conditions and self-perceived health status. Only primary health care measures that were significantly different for the subgroups studied in the bivariate analyses were considered (see Appendix D for further details).

The bootstrap technique, which takes into account the complex survey design, was used to estimate variance and 95% confidence intervals.

Study Limitations

There are several limitations to this study. The study examines individuals’ reported experiences with primary health care services and does not measure the quality of the care received, the types of services received, whether sufficient care was received according to individual needs or health care choices. It is also unknown whether individuals reported experiences with their primary health care provider related to the management of their ambulatory care sensitive condition or to other conditions. The inability to link primary health care experiences to emergency department visits, hospitalizations or mortality for individuals with ambulatory care sensitive conditions is a major limitation of this study. Such information would provide greater insight into the relationship between primary health care use and adverse health outcomes. Despite these limitations, this study provides valuable new information on reported experiences with primary health care for those with diagnosed ambulatory care sensitive conditions and the role of factors such as sex, household income, geography and the presence of multiple chronic conditions.

Appendix B: Health and Economic Burden of Ambulatory Care Sensitive Conditions

Table B1: Age-Standardized Prevalence, Hospitalization and Mortality Rates for Those With Ambulatory Care Sensitive Conditions, Age 20 to 74, 2008

	Prevalence (%)	Hospitalization Rate (per 100,000 Population)	Mortality Rate (per 100,000 Population)
Overall Ambulatory Care Sensitive Conditions	25	390	52
Sex			
Male†	26	438	72
Female	24	345*	33*
Relative Difference (Females/Males)	*0.9*	*0.8*	*0.5*
Area-Level Socio-Economic Status (SES)‡			
Highest SES†	21	206	N/A§
Lowest SES	29*	389*	N/A
Relative Difference (Low/High Area SES)	*1.4*	*1.9*	
Geography			
Urban†	25	349	N/A§
Rural	27	541*	N/A
Relative Difference (Rural/Urban)	*1.1*	*1.5*	

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

‡ The Institut national de santé publique du Québec's Deprivation Index was used as a summary measure of area-level socio-economic status. It is based on a range of socio-economic variables from the 2006 census, including education, employment, income and family structure.[26] Quebec data was excluded from the area-level socio-economic status analysis because of the lack of six-digit postal codes on Quebec's hospitalization records in the Discharge Abstract Database, which are necessary to identify a patient's place of residence.

§ Mortality rates by area-level socio-economic status or geography are not available from Statistics Canada's Vital Statistics Database. However, studies have documented that death rates among those living in less-populated areas and in the most disadvantaged areas are 25% to 50% higher than those in other areas.[27–29]

N/A Not available.

All estimates have been age-standardized to the 1991 Canadian population.

The definition of ambulatory care sensitive conditions differs slightly between prevalence, hospitalization and mortality data because of the information collected in the Canadian Survey of Experiences With Primary Health Care. For hospitalization rates, the following conditions were included: angina, asthma, chronic obstructive pulmonary diseases, diabetes, epilepsy, heart failure and pulmonary edema, and hypertension. For mortality rates, other acute/chronic ischemic heart disease was included rather than angina, and epilepsy was not included, as these causes of death were not available from Statistics Canada's Vital Statistics Database.

Sources

Prevalence: Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Hospitalization rates: Deprivation Index, 2006, Institute national de santé publique du Québec; Discharge Abstract Database, 2008–2009, Canadian Institute for Health Information.

Mortality rates: Vital Statistics Database, 2008, Statistics Canada.

Table B2: Emergency Department and Acute Care Inpatient Cost per Visit for Patients Presenting With Ambulatory Care Sensitive Conditions, Age 20 to 74, 2009–2010

	Estimated Average Emergency Department Cost per Visit ($)	Estimated Average Acute Care Inpatient Cost per Visit ($)
Weighted Average for All Ambulatory Care Sensitive Conditions Combined	281	5,679
Individual Ambulatory Care Sensitive Conditions		
Angina	504	3,854
Asthma	205	2,938
Chronic Obstructive Pulmonary Disease	275	6,514
Diabetes	284	4,745
Epilepsy	311	5,511
Heart Failure and Pulmonary Edema	430	7,258
Hypertension	298	3,670

Notes

Cost estimates represent the estimated average cost of services provided to the average patient. They include the costs incurred by the hospital in providing services and exclude physician fees.

The estimated average cost for services provided to a hospital patient is generated by multiplying the cost per weighted case by the average Resource Intensity Weight for each patient group. Cost estimates for inpatients are calculated using typical cases only (see the Patient Cost Estimator for further information).

Estimated average emergency department visit cost is calculated excluding patients in Saskatchewan, Quebec, New Brunswick, Newfoundland and Labrador, the Northwest Territories and Nunavut.

Estimated average acute care inpatient cost is calculated excluding patients in Quebec.

Inpatient cases were grouped using the Case Mix Group+ 2011 grouping methodology, Canadian Institute for Health Information.

Emergency patient cases were grouped using the Comprehensive Ambulatory Classification System, 2011, Canadian Institute for Health Information.

Sources

Emergency patients: Canadian MIS Database, 2008–2009 and 2009–2010, and National Ambulatory Care Reporting System, 2009–2010, Canadian Institute for Health Information; Alberta Ambulatory Care Database, 2008–2009, Alberta Health and Wellness.

Inpatients: Canadian MIS Database, 2009–2010, and Discharge Abstract Database, 2009–2010, Canadian Institute for Health Information.

Appendix C: Prevalence Estimates of Selected Experiences With Primary Health Care for Individuals With Ambulatory Care Sensitive Conditions

Table C1: Prevalence of Reported Primary Health Care Access Measures for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	Have a Regular Medical Doctor (%)	Difficulties Obtaining Routine/Ongoing Care in Previous 12 Months (%)	Difficulties Obtaining Health Information or Advice in Previous 12 Months (%)
Overall	93.9	10.9	13.3
Sex			
Male†	94.2	10.3^{E}	11.9
Female	93.5	11.5	14.8
Number of Chronic Conditions			
Single Ambulatory Care Sensitive Condition†	93.4	7.9^{E}	7.6^{E}
Three or More Chronic Conditions	96.1	12.6^{E}	17.2*
Household Income (Adjusted for Household Size)			
Highest Income†	93.7	17.9^{E}	18.4^{E}
Lowest Income	93.2	14.7^{E}	19.9^{E}
Geography			
Urban†	94.0	11.7	14.2
Rural	92.2	10.2^{E}	10.2*

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

E Interpret with caution (coefficient of variation between 16.6% and 33.3%).

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Table C2: Prevalence of Reported Experiences Interacting With Primary Health Care Provider for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	In Previous 12 Months, the Primary Health Care Physician Usually or Always						
	Allowed Patients Enough Time to Discuss Their Concerns (%)	Took Patients' Health Concerns Very Seriously (%)	Explained Test Results in a Way Patients Could Understand (%)	Coordinated Care From Other Doctors and Places When Needed (%)	Explained the Side Effects of Prescription Medications[‡] (%)	Reviewed and Discussed Prescription Medications[‡] (%)	Did Not Have Test Results Available, Had Tests Repeated Unnecessarily or Gave Conflicting Information (%)
Overall	64.9	70.3	62.9	74.2	60.2	58.1	5.4
Sex							
Male[†]	65.0	70.4	63.6	75.1	64.6	59.9	4.2
Female	64.8	70.3	62.2	73.3	56.1*	56.3	6.6
Number of Chronic Conditions							
Single Ambulatory Care Sensitive Condition[†]	59.1	67.1	59.5	67.7	56.8	60.1	3.6[E]
Three or More Chronic Conditions	74.1*	78.0*	70.3*	81.8*	61.5	59.6	7.9*
Household Income (Adjusted for Household Size)							
Highest Income[†]	70.2	75.5	65.1	76.2	65.4	53.2	3.2[E]
Lowest Income	60.2	66.7	56.2	68.2	61.5	53.0	9.5[E]*
Geography							
Urban[†]	64.3	70.6	63.4	74.6	57.5	57.2	5.2
Rural	66.2	71.8	62.0	71.1	62.6	59.1	6.0[E]

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

‡ These measures relate only to respondents who received regular or ongoing prescription medications. The prevalence estimates exclude respondents with a long-term use of the same medication, as these questions were not asked during the survey (28% and 23% of respondents, respectively).

E Interpret with caution (coefficient of variation between 16.6% and 33.3%).

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Appendix D: Adjusted Odds of Selected Primary Health Care Measures and Characteristics, for Individuals With Ambulatory Care Sensitive Conditions

Table D1: Adjusted Odds of Reported Primary Health Care Access Measures for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	No Contact With Family Physician in Previous 12 Months	Four or More Contacts With Family Physician in Previous 12 Months	Last Visit to Emergency Department Was for a Condition Perceived as Being Treatable by Usual Provider of Health Care	No After-Hours Access
Sex				
Male†	1.00	1.00	1.00	1.00
Female	0.84	1.30*	0.98	0.91
Age				
18–44†	1.00	1.00	1.00	1.00
45–64	0.52*	1.39	0.65	0.77
65+	0.63*	1.70*	0.36*	0.78
Household Income (Adjusted for Household Size)				
High Income†	1.00	1.00	1.00	1.00
Middle Income	2.08*	0.92	1.13	0.94
Low Income	1.64	1.20	1.72	2.05*
Geography				
Urban†	1.00	1.00	1.00	1.00
Rural	1.00	0.79	2.98*	1.52*
Number of Chronic Conditions				
Single Ambulatory Care Sensitive Condition†	1.00	1.00	1.00	1.00
Two Chronic Conditions	0.95	1.96*	1.84*	1.23
Three or More Chronic Conditions	0.49*	2.64*	2.30*	1.05
Self-Perceived Health Status				
Excellent, Very Good or Good†	1.00	1.00	1.00	1.00
Fair or Poor	0.67*	2.14*	1.15	1.56*

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Table D2: Adjusted Odds of Reported Experiences Interacting With Primary Health Care Provider for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	In Previous 12 Months, the Primary Health Care Physician Usually or Always					
	Allowed Enough Time to Discuss Patients' Concerns	Took Patients' Health Concerns Very Seriously	Explained Test Results in a Way Patients Could Understand	Involved Patients in Clinical Decisions	Coordinated Care From Other Doctors and Places When Needed	Explained the Side Effects of Prescription Medications‡
Sex						
Male†	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.02	1.01	0.96	1.16	0.91	0.69*
Age						
18–44†	1.00	1.00	1.00	1.00	1.00	1.00
45–64	2.20*	2.13*	1.68*	2.01*	1.61*	0.95
65+	2.14*	1.94*	1.70*	1.28	1.07	1.03
Household Income (Adjusted for Household Size)						
High Income†	1.00	1.00	1.00	1.00	1.00	1.00
Middle Income	0.71	0.67	0.87	0.66*	0.91	0.72
Low Income	0.50*	0.54*	0.58*	0.42*	0.60	0.86
Geography						
Urban†	1.00	1.00	1.00	1.00	1.00	1.00
Rural	1.05	1.08	0.94	0.86	0.82	1.15
Number of Chronic Conditions						
Single Ambulatory Care Sensitive Condition†	1.00	1.00	1.00	1.00	1.00	1.00
Two Chronic Conditions	1.05	0.90	0.93	1.02	1.37	1.27
Three or More Chronic Conditions	1.75*	1.57*	1.45*	1.60*	2.08*	1.17
Self-Perceived Health Status						
Excellent, Very Good or Good†	1.00	1.00	1.00	1.00	1.00	1.00
Fair or Poor	1.09	1.04	1.15	0.87	1.21	1.15

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

‡ This measure relates only to respondents who received regular or ongoing prescription medications. The prevalence estimate excludes respondents with a long-term use of same medication (28% of respondents).

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

Table D3: Adjusted Odds of Reported Experiences With Clinical Management and Self-Management Support From Primary Health Care Provider for Those With Ambulatory Care Sensitive Conditions, Age 18 and Older, 2008

	Patients Received All Four Monitoring Tests (for Those Diagnosed With Heart Disease, High Blood Pressure or Diabetes)	In Previous 12 Months, the Primary Health Care Physician Generally Did Not or Almost Never			
		Asked to Talk About Patients' Goals in Caring for Their Chronic Conditions	Helped Make a Treatment Plan That the Patients Could Implement in Their Daily Lives	Gave a Written List of Things to Do to Improve Health	Showed Patients What to Do to Take Care of Themselves to Influence Their Condition
Sex					
Male[†]	1.00	1.00	1.00	1.00	1.00
Female	0.62*	1.38*	1.48*	1.77*	1.62*
Age					
18–44[†]	1.00	1.00	1.00	1.00	1.00
45–64	4.84*	0.50*	0.97	0.61*	0.65*
65+	4.68*	0.68	1.67*	0.94	0.78
Household Income (Adjusted for Household Size)					
High Income[†]	1.00	1.00	1.00	1.00	1.00
Middle Income	1.30	0.91	1.07	0.81	1.06
Low Income	0.91	0.99	1.79*	0.91	1.40
Geography					
Urban[†]	1.00	1.00	1.00	1.00	1.00
Rural	0.75*	0.93	1.06	0.80	1.20
Number of Chronic Conditions					
Single Ambulatory Care Sensitive Condition[†]	1.00	1.00	1.00	1.00	1.00
Two Chronic Conditions	1.06	1.02	0.70*	0.79	1.23
Three or More Chronic Conditions	1.40*	0.69*	0.61*	0.65*	0.80
Self-Perceived Health Status					
Excellent, Very Good or Good[†]	1.00	1.00	1.00	1.00	1.00
Fair or Poor	0.93	0.88	0.97	0.78	1.05

Notes

* Value is significantly different from reference group at $p<0.05$.

† Reference group.

Source

Canadian Survey of Experiences With Primary Health Care, 2008, Canadian Institute for Health Information, Health Council of Canada and Statistics Canada.

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