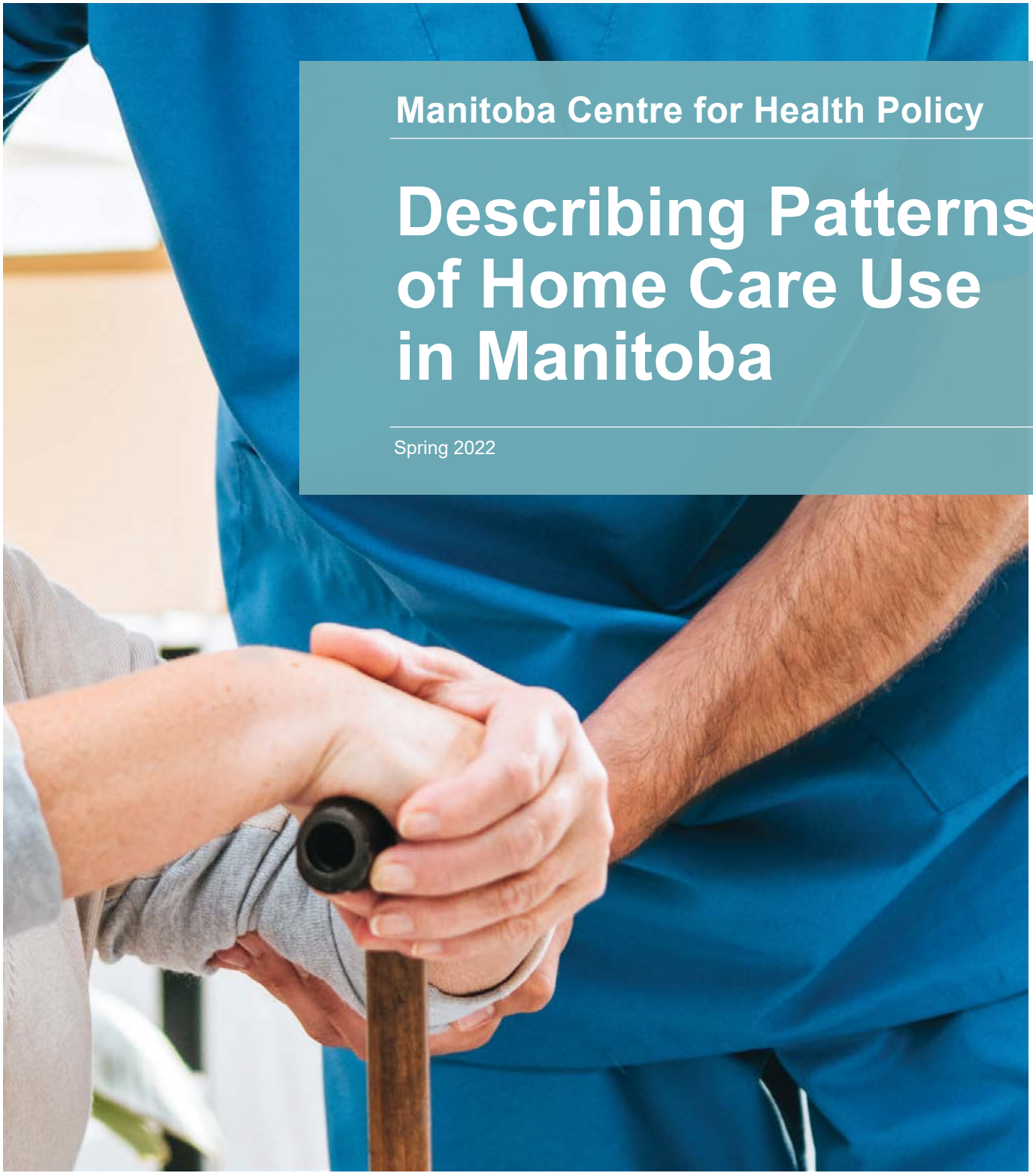


Manitoba Centre for Health Policy

Describing Patterns of Home Care Use in Manitoba

Spring 2022

Dan Chateau, PhD
Heather Prior, MSc
Qier Tan, PhD
Dale Stevenson, MA
Jessica Jarmasz, PhD
Susan Burchill, MSc

University of Manitoba | Rady Faculty of Health Sciences

Territory Acknowledgement

MCHP acknowledges that we live and work on Treaty 1 land, the home of the Anishinaabe, Cree, Oji-Cree, Dakota and Dene peoples and the homeland of the Métis Nation. We respect the treaties that were made on these Territories, we acknowledge the harms and mistakes of the past, we recognize the ongoing present day colonial violence that is faced by Indigenous peoples within healthcare, education, justice, child welfare and government systems and we dedicate ourselves to moving forward in partnership towards decolonization in the spirit of reconciliation and collaboration.

Information concerning this report or any other report produced by MCHP can be obtained by contacting:

Manitoba Centre for Health Policy
University of Manitoba
Max Rady College of Medicine
Rady Faculty of Health Sciences

408-727 McDermot Avenue
Winnipeg, Manitoba, Canada
R3E 3P5

Tel: (204) 789-3819
Fax: (204) 789-3910
Email: reports@cpe.umanitoba.ca

How to cite this report:
Chateau D, Prior H, Tan Q, Stevenson D, Jarmasz J, Burchill S. *Describing Patterns of Home Care Use in Manitoba*. Winnipeg, MB. Manitoba Centre for Health Policy. Spring 2022.

Legal Deposit:
Manitoba Legislative Library, Library and Archives Canada

ISBN 978-1-987924-09-1 (online)

Spring 2022

This report was prepared at the request of Manitoba Health, a department within the Government of Manitoba, as part of the contract between the University of Manitoba and Manitoba Health. It was supported through funding provided by Manitoba Health to the University of Manitoba (HIPC 2014/2015 – 58). The results and conclusions are those of the authors and no official endorsement by Manitoba Health was intended or should be inferred. Data used in this study are from the Manitoba Population Research Data Repository housed at the Manitoba Centre for Health Policy, University of Manitoba, and were derived from data provided by Manitoba Health, as well as the Winnipeg Regional Health Authority (Strict policies and procedures were followed in producing this report to protect the privacy and security of the Repository data).

About the Manitoba Centre for Health Policy

The Manitoba Centre for Health Policy (MCHP) is located within the Department of Community Health Sciences, Max Rady College of Medicine, Rady Faculty of Health Sciences, University of Manitoba. The mission of MCHP is to provide accurate and timely information to healthcare decision-makers, analysts and providers, so they can offer services that are effective and efficient in maintaining and improving the health of Manitobans.

Our researchers rely upon the unique Manitoba Population Research Data Repository (Repository) to describe and explain patterns of care and profiles of illness and to explore other factors that influence health, including income, education, employment, and social status. This Repository is unique in terms of its comprehensiveness, degree of integration, and orientation around an anonymized population registry.

Members of MCHP consult extensively with government officials, healthcare administrators, and clinicians to develop a research agenda that is topical and relevant. This strength, along with its rigorous academic standards, enables MCHP to contribute to the health policy process. MCHP undertakes several major research projects, such as this one, every year under contract to Manitoba Health. In addition, our researchers secure external funding by competing for research grants. We are widely published and internationally recognized. Further, our researchers collaborate with a number of highly respected scientists from Canada, the United States, Europe, and Australia.

We thank the Research Ethics Board on the Bannatyne Campus at the University of Manitoba for their review of this project. MCHP complies with all legislative acts and regulations governing the protection and use of sensitive information. We implement strict policies and procedures to protect the privacy and security of anonymized data used to produce this report and we keep the provincial Health Information Privacy Committee informed of all work undertaken for Manitoba Health.

The Manitoba Centre for Health Policy

Data | Insight | Informing Solutions

Acknowledgments

The authors would like to acknowledge the individuals whose knowledge and contributions made it possible to produce this report. We thank them for sharing their input and expertise with us. We apologize in advance to anyone we might have inadvertently omitted.

The Need to Know team represented by Jody Allan, Kristin Anderson, Della Beattie, Shelley Buchan, Sonia Busca Owczar, Maggie Campbell, Jane Curtis, Suzanne Dick, Michelle Gaber, Nathan Hoeppner, Philip Jarman, Lorraine Larocque, Colleen Metge, Nancy McPherson, Rachel McPherson, Ales Morga, Katherine Podaima, Michelle Taylor, Joy Tetlock, Heather Sparling, Kathryn Sibley, and Ayn Wilcox. Members from MCHP: Charles Burchill, Elaine Burland, Kara Dyck, Alan Katz, Heather Prior, and Mark Smith.

Our Advisory Group: Katherine Bayes, Roxie Eyer, Jim Legeros, Tracy Lothian, Lori Mitchell, Debbie Harms, Susan Shanks, and Karen Stevens-Chambers.

Colleagues at MCHP: Dr. Malcolm Doupe, Dr. Randy Fransoo, Dr. Alan Katz, Dr. Nathan Nickel, Dr. Noralou Roos, John-Michael Bowes, Cara Jonasson, Ina Koseva, Chelsey McDougall, Scott McCulloch, Hannah Owczar, Gurpreet Singh Pabla, Jennifer Schultz, and Ruth-Ann Soodeen. Thank you also to the data management and documentation groups who maintain the Manitoba Population Research Data Repository at MCHP.

We acknowledge the University of Manitoba Health Research Ethics Board for their review of this research project. The Health Information Privacy Committee (HIPC) is kept informed of all MCHP deliverables. The HIPC number for this project is 2014/2015-58. We also acknowledge Manitoba Health and the Winnipeg Regional Health Authority for the use of their data.

All data management, programming and analyses were performed using SAS® version 9.4.

Table of Contents

List of Tables

List of Figures

Abbreviations

DPIN	Drug Program Information Network
ED	Emergency Department
HCA	Home Care Attendant
HSW	Home Support Worker
MCHP	Manitoba Centre for Health Policy
Registry	Manitoba Health Insurance Registry
Repository	Manitoba Population Data Repository
MSSP	Manitoba Support Services Payroll System database
PCH	Personal Care Home
RHA	Regional Health Authority
WRHA	Winnipeg Regional Health Authority

Executive Summary

Established in 1974, the Manitoba Home Care Program provides home support to Manitobans who require health services or assistance with the activities of daily living following a needs assessment. Previous work at the Manitoba Centre for Health Policy (MCHP) looking at home care use was dependent on the Manitoba Support Services Payroll (MSSP) System database. This database was designed to prepare and process payroll information and lacked data on the details of the services being provided. In the last decade, however, each Regional Health Authority in the province switched to using Procura, a new software package for tracking home care clients. This software has data entry fields for many home care client variables and provides more details on home care clients and service use compared to MSSP.

This report describes the two main goals for bringing the Procura data to MCHP. First, the data itself was evaluated in terms of validity. Second, the data were analyzed to describe the extent and nature of home care use in Manitoba. We examined the data over a two-year time period starting when all regions in the province had begun reliably using the Procura data system to record home care services; fiscal years (April 1st – March 31st) 20013/14-2014/15[1]. The entire population of Manitoba for the two years was included in analyses, with the exception of time spent in a personal care home or hospital setting.

The validity checks between the administrative data and the Procura home care data revealed an extremely high level of agreement on age and sex of Manitobans receiving home care services (>99%). There was also a very high level of agreement on the region of residence. More in-depth analysis examining the timing of visits demonstrated that time in hospital and time after individuals moved into a personal care home were treated appropriately in the data, with the vast majority of scheduled home care visits being cancelled. There was also a high level of agreement on mortality. In sum, the Procura data and its linkage to the MCHP data were accurate, reliable, and valid.

There are several different types of home care visits. Our analyses concentrated on the following: nursing, home care attendant/home support worker (HCA/HSW), and oxygen. These three were chosen because they contained the most data and were provided in all regions. When looking at these types of home care altogether, the number of home care clients increased with age in all regions and for both males and females. In the older age groups (65-74,75-84,85+) females had a higher prevalence of home care use than males. The number of new cases per year were consistent, with older age groups having higher incidences of home care

1 This report used the most recent and available data in the Manitoba Population Research Data Repository at MCHP.

use. The one notable difference was that in the oldest age group, males had a higher rate than females. When we examined how home care use was related to income, it was evident that people living in lower-income areas had higher use of home care in urban settings (Winnipeg, Brandon). However, there was no relationship between income and use in other areas of the province. Analyses of the specific types of home care were very similar to the overall analyses, with HCA/HSW having the highest overall use.

Analyses of home care episodes revealed that the duration of an episode was longer in Winnipeg RHA and Prairie Mountain Health (~900 days) compared to other parts of the province (~700 days).

The last analyses of the Procura data examined the rate of home care visits. Importantly, it must be noted that the only type of home care that could be analyzed was HCA/HSW, as this is the only type of home care where visit data was recorded in all regions. Although Procura could be used to schedule or record nursing care visits, most regions of the province were not using the data system for this purpose. As the second most frequent type of home care provided in Manitoba, an effort to include visit data in the Procura system would enable the assessment of nursing care provision between regions. Initial analyses of home care visits were very similar to the incidence and prevalence of home care use (i.e. number of open files) in the entire Manitoba population, with much higher rates for older age groups, and females having higher rates than males. An additional home care client-based analysis that examined visit rates only for home care clients found that visit rates were not different between the age groups with only the oldest age group (85+) having a noticeably higher rate. We also found that visit rates did not differ by income area for home care clients. This would indicate that, for the most part, home care clients are similar in terms of demand on the system regardless of their age or income.

Analyses of health care use by home care clients also indicated that individuals who require home care are remarkably similar with one another in terms of their health status. Hospitalization rates were near-identical across all age groups despite very different rates between age groups in the general population. Ambulatory visit rates were also comparable across age groups, although the visit rate was lower for the youngest age group and declined for the oldest age group. Prescription drug dispensations were also quite similar compared to the general population, although it was evident that the number of dispensations declined with older age groups.

Together, the analyses presented in this report show a clear benefit to the use of the Procura data system, enabling detailed analyses of the number of home care clients and types, and highlighting the remarkable similarity of home care clients regardless of age, income, or region. With greater numbers of Manitobans aging, due to the large baby boom population, the need for more home care resources can be estimated with greater precision. This is particularly true for the most frequent type of home care (HCA/HSW) where both the number of users and the number of visits can be calculated. The one gap in the data is the lack of detailed data on nursing care. Although we know how many people are nursing service clients, it is not clear how much care is provided to these individuals (e.g., the number of visits).

Chapter 1: Introduction & Background

The Manitoba Home Care Program provides home support to Manitobans who require health services or assistance with activities of daily living [1]. This program was established in 1974, and Manitoba was the first province to provide home care as a universal service available to individuals following a needs assessment. According to Manitoba Health, the number of Manitobans receiving home care services was 39,668 in 2011-12, with an average of 24,172 clients receiving services each month [2]. Some of the services provided by the Home Care Program includes home support (meal preparation, housekeeping), health care (nursing services, physiotherapy, occupational therapy), and in-home respite care, or respite care in another setting. In addition, the program may also provide supplies or equipment for the home, such as oxygen.

Previous work at the Manitoba Centre for Health Policy (MCHP) looking at home care use was dependent on the Manitoba Support Services Payroll (MSSP) System database [3]. This database was designed to prepare and process payroll information for home care service workers, and it included basic information on home care clients and employees. Specific data about the type or intensity of services was not available. In the last decade, however, each Regional Health Authority in the province switched to using Procura, a new software package for tracking home care clients. This software has data entry fields for many home care client variables and provides more details on home care clients and service use compared to MSSP.

Acquisition of Procura data was a multiple-step process, with the data first being extracted and transferred to Manitoba Health. Once at Manitoba Health, the data was de-identified, meaning that all personal identifying information such as name or street address were removed. A unique numeric personal identifier was then attached to each record so that the home care data could be linked to other data holdings at MCHP.

This report describes the two main goals for bringing the Procura data to MCHP. First, the data itself was evaluated in terms of validity. This included some basic checks and comparisons to the other data at MCHP to ensure that the links were valid, and that the data was coherent. For example, a person identified as female in the Procura home care data should also be identified as female in other data sets, particularly the Manitoba Health Insurance Registry (Registry), which contains a list of all Manitobans eligible for the provincial health insurance program. Second, the data were analyzed to describe the extent and nature of home care use in Manitoba. Use can be described in multiple ways and each of these are addressed separately. We examined how many people are using home care, reported as the prevalence (i.e., the total number of home care cases during a period of time). We examined how many people were newly enrolled

in home care, reported as incidence (i.e., the number of new cases, not counting previously existing cases). Finally, we also looked at how often home care clients use the services, in this case, defined by the number of visits from home care aides or home support workers (i.e., the visit rate, or the number of visits in a year). The last aim of the deliverable was to briefly describe how home care clients may receive or use other health care services, such as physician visits and hospitalizations.

Chapter 2: Methods

Data Sources

The data analyzed for this report are housed in the Manitoba Population Research Data Repository (Repository) at MCHP. Detailed descriptions of the datasets can be found on MCHP's website (https://umanitoba.ca/manitoba-centre-for-health-policy/data-repository). Data in the Repository are considered 'administrative' data, recorded to administer government programs, including home care. MCHP only receives data for which identifying information (e.g., names and addresses) has been removed. A scrambled version of the Personal Health Identification Number (PHIN) is attached to the records in the datasets to allow linkage between different datasets. The primary dataset used for all analyses in this report was the Procura home care data; it was used to identify home care clients, the type of home care service they were provided, and the number of visits that the client received (only for the HCA/HSW). Although there are many tables in the Procura data, we used two primary tables for this report: 1) a client table that recorded the beginning and end of home care services, by the type of home care delivered; and 2) a visit table which recorded each visit delivered (but only for one of the types of home care services provided: HCA/HSW). In addition to Procura, several other datasets were also included in the analyses described in this report.

The following datasets were used for this report:

- Medical Services (i.e., physician visit claims)
- Hospital Abstracts
- Drug Program Information Network (DPIN)
- Emergency Department Information System (EDIS)
- Long-Term Care Utilization History
- Canada Census
- Manitoba Health Insurance Registry

Depending on the indicator, one or more of the datasets in this list contributed to the analyses.

All data management and analyses were conducted using SAS® statistical analysis software, version 9.4.

Study Period

We examined the data over two fiscal years (April 1 – March 31), starting when all regions in the province had begun reliably using the Procura data system to record home care services: April 1, 2013 through March 31, 2015.

Study Population

When initially determining rates of home care use, the entire population of Manitoba for the two-year period was included. The individuals included in the population denominator had to be registered with Manitoba Health for health insurance coverage and have resided in Manitoba at some point during the two-year study period.

Several exclusion criteria were designed to remove individuals from the study or to restrict their inclusion to only part of the study period. We excluded all individuals who resided in a personal care home (PCH; nursing home) or other care institution (e.g., long-term stay in hospital, or a chronic care facility such as Deer Lodge in Winnipeg) if it comprised their entire time as a resident in Manitoba during the study period. If they entered a PCH during the study period, only the time prior to entry was included in analyses.

Regions

Because we analyzed the home care use by region of the province, we had to determine where each individual in the cohort lived. To assign individuals to one of five health regions (also known as “regional health authorities” or RHAs) in Manitoba, we used their postal code from the beginning of the study period or at the time they first entered the cohort.

Organization of the Report

The remainder of this report is organized into three main parts. The first section (Chapter 3) examines aspects of the new home care data that were examined for validity by comparing Procura data to the administrative data elements at MCHP. The second part (Chapters 4-6) analyzes the Procura data itself and presents descriptive statistics about home care use prevalence and incidence in Manitoba by age group and health region. Analyses on visit rates for the most common type of home care are also provided. The use of home care is strongly related to age; we divided the population into age groups and further broke them down for those over 40 years. The presentation of age group-specific rates also means that comparisons between regions are not affected by differences in the age profile of the regions. Additional analyses in this section present home care use grouped by income quintile (separated into urban income and rural income areas). The last section (Chapter 7) provides the results of analyses of health care use by the home care population, presented in the same manner as above. We also examined the use of ambulatory care (e.g., physician and nurse practitioner visits), hospitalizations, prescription drug dispensations, and emergency department visits (for Winnipeg only).

Chapter 3:
Data Validity

All new data brought into MCHP undergoes a series of data checking algorithms that describe the completeness of the data fields and the relationship between various tables in the data. The Procura system is a large set of files with internal linkages between them. The complexity of the data is described in detail in a data quality report presented in Appendix 1 of the online supplement. After Procura data were incorporated into the Manitoba Population Research Data Repository (Repository), some initial checks were run to determine the agreement between basic identifiers in the Procura data and the Manitoba Health Insurance Registry (Registry). These included comparisons of sex (male/female), age, and region of residence as recorded in the two data sources.

Key Findings

- Sex and age: the agreement between the Procura data and the Registry was extremely high.
- Health region for nursing and home care attendant/home support worker (HCA/HSW) services:
    - The agreement was approximately 95% or better.
    - In instances where the two data sources did not agree, the greatest crossover was between Interlake-Eastern and Winnipeg, and then between Southern Health-Santé Sud and Winnipeg.
- Mortality:
    - 900 outliers were identified, where the date of death was sometimes years different from that recorded in the Registry.
    - For the remaining 5,458 deaths, over 90% had recorded the death within one month of the Registry death date.
- Home care visits while in hospital:
    - Out of almost twenty million visit records, only 75,073 were recorded as an active visit occurring during a hospital stay (0.4%).
    - ‘Cancelled’ (298,240; 1.5%).
    - ‘Held’ (426,152; 2.1%).
    - For active home care, 2,453 were admitted to a personal care home (PCH) during the study period. There were only 113,749 recorded ‘visits’ after a PCH admission (0.6% of all visits).
        - Of these, 59,296 (52.1%) were recorded as ‘cancelled’

Home Care Client Classified by Sex

For client's sex, the agreement between the Procura data and the Registry was high (see Table 3.1). For both males and females as identified in the Registry, 99.5% of all clients had the same sex recorded in the Procura data.

Table 3.1: Reliability of Sex as Identified in Manitoba Health Insurance Registry and Procura Home Care Data

Procura Home Care Data	Manitoba Health Registry	
	Male	Female
Male		
count	8,257	46
percent (%)	99.5	0.6
Female		
count	58	11,387
percent (%)	0.5	99.5

Age of Home Care Clients

When comparing the two data sources on the recorded age of home care clients, 99.35% of all clients had a recorded age within 1 year, with the vast majority being exact matches or within one day.

Region of Residence

We also checked to see whether the region of residence of the clients matched across the two data sources. This was done specifically for two types of home care services (nursing, and HCA/HSW; see Tables 3.2 and 3.3) which are described in more detail later in the report. For both types of home care services, the agreement was approximately 95% or better. The highest agreement was found in Prairie Mountain Health, where it exceeded 98% for both types of home care. In instances where the two data sources did not agree, the greatest crossover was between Interlake-Eastern and Winnipeg, and then between Southern Health-Santé Sud and Winnipeg.

Table 3.2: Reliability of Health Region Data Identified in Manitoba Health Insurance Registry and Procura Home Care Data for Manitoba Residents Receiving Nursing Services

Procura Home Care Data	Manitoba Health Registry				
	Southern Health-Santé Sud	Winnipeg RHA	Prairie Mountain Health	Interlake-Eastern RHA	Northern Health Region
Southern Health-Santé Sud					
count	2,724	99	16	14	s
percent (%)	95.3	3.5	0.6	0.5	s
Winnipeg RHA					
count	185	15,418	179	323	260
percent (%)	1.1	94.2	1.1	2.0	1.6
Prairie Mountain Health					
count	s	16	1,208	s	s
percent (%)	s	1.3	98.4	s	s
Interlake-Eastern RHA					
count	12	89	6	2,236	9
percent (%)	0.5	3.8	0.3	95.1	0.4
Northern Health Region					
count	0	7	s	0	495
percent (%)	0.0	1.4	s	0.0	97.8

s indicates data is suppressed due to small numbers

Table 3.3: Reliability of Health Region Data Identified in Manitoba Health Insurance Registry and Procura Home Care Data for Manitoba Residents Receiving HCA and HSW Services

Procura Home Care Data	Manitoba Health Registry				
	Southern Health-Santé Sud	Winnipeg RHA	Prairie Mountain Health	Interlake-Eastern RHA	Northern Health Region
Southern Health-Santé Sud					
count	3,621	88	28	11	s
percent (%)	96.6	2.4	0.8	0.3	s
Winnipeg RHA					
count	54	16,891	30	110	39
percent (%)	0.3	98.6	0.2	0.6	0.2
Prairie Mountain Health					
count	14	41	4,583	8	s
percent (%)	0.3	0.9	98.5	0.2	s
Interlake-Eastern RHA					
count	11	82	7	2,734	s
percent (%)	0.4	2.9	0.3	96.4	s
Northern Health Region					
count	0	13	s	0	665
percent (%)	0.0	1.9	s	0.0	97.5

s indicates data is suppressed due to small numbers

Comparison of Mortality Data

An additional validity check compared the recording of death in the Registry with those recorded in the Procura data. There were 6,319 deaths present in both data sets. We compared the recording of the date of death to determine how accurate or how timely these were recorded in Procura for active clients. This identified approximately 900 outliers, where the date of death was sometimes years different from that recorded in the Registry. For the remaining 5,458, over 90% recorded the death within one month of the Registry death date.

Comparison of Visit Data to Health Data

We also checked the HCA/HSW visit data and compared this to the hospital data to determine if home care visits were recorded while individuals were in hospital. Over fifteen thousand active home care clients were hospitalized during the two-year study period. Despite the large number of hospitalizations, the number of home care visits during hospitalization dates would be expected to be low, since these events would not typically occur. It is possible that some home care visits could happen either on the day of hospital admission or discharge so some overlap could occur, particularly if the home care provider initiated the contact with the acute care system after seeing the client. Out of almost twenty million visit records, only 75,073 were recorded as an active visit occurring on the same dates as a hospital stay (0.4%). Over ten times that number were recorded in the data as 'cancelled' (298,240; 1.5%) or 'held', where the client's place on the schedule is maintained while that particular visit does not occur (426,152; 2.1%). These numbers indicate that the reporting of scheduled visits for clients who are unavailable due to medical concerns are for the vast majority correctly recorded in the Procura data.

In a similar analysis, we checked to see whether visits were recorded after a client had been admitted to a PCH. For active home care clients, 2,453 were admitted to a PCH during the study period. There were only 113,749 recorded visits after a PCH admission (0.6% of all visits). Of these, 59,296 were recorded as 'cancelled'. Again, this is what we would expect to see in the Procura data for a visit that was scheduled after a client was admitted to a PCH.

Home Care Services by Type

Table 3.4 presents the number and percentage of clients found in each different type of home care found in the Procura data. As is evident in the Table, there are discrepancies in the data provided by the various regions. The Registration, Self/Family Managed Care, Supplies,

and Adult Day Program home care services are not found in the Winnipeg RHA Procura data (the WRHA maintained a separate data system to record these types of services). This would make it difficult to provide accurate provincial estimates given the proportion home care clients that Winnipeg accounts for. For this reason, the report will focus on the most frequent forms of direct client care found in all regions of the province: nursing, HCA/HSW, and oxygen. For analyses of overall home care service use, mental health services were added to the previous three, although these were only provided in two health regions in the province. Their impact on the overall numbers is negligible given the extensive use of Nursing and HCA/HSW services.

Table 3.4: Active Client Status by Home Care Department Type and Health Region

Department Type	Health Region					Manitoba Total
	Southern Health-Santé Sud	Winnipeg RHA	Prairie Mountain Health	Interlake-Eastern RHA	Northern Health Region	
Nursing						
count	4,174	23,127	1,435	3,366	579	32,681
percent (%)	12.8	70.8	4.4	10.3	1.8	
HCA & HSW						
count	5,944	20,144	5,186	4,456	727	36,457
percent (%)	16.3	55.3	14.2	12.2	2.0	
Other Dept						
count	0	12,810	1,952	0	0	14,762
percent (%)	0.0	86.8	13.2	0.0	0.0	
Hospital						
count	0	95	145	0	0	240
percent (%)	0.0	39.6	60.4	0.0	0.0	
Registration						
count	10,166	0	8,952	7,508	1,392	28,018
percent (%)	36.3	0.0	32.0	26.8	5.0	
Self/Fam Care						
count	83	0	33	93	s	s
percent (%)	39.0	0.0	15.5	43.7	s	
Equipment						
count	1,984	0	842	1,614	401	4,841
percent (%)	41.0	0.0	17.4	33.3	8.3	
Oxygen						
count	511	2,400	326	442	105	3,784
percent (%)	13.5	63.4	8.6	11.7	2.8	
ADP (Adult Day Program)						
count	504	0	316	505	25	1,350
percent (%)	37.3	0.0	23.4	37.4	1.9	
Therapy						
count	577	39	1,682	562	8	2,868
percent (%)	20.1	1.4	58.7	19.6	0.3	
Supplies						
count	1,597	0	749	2,141	163	4,650
percent (%)	34.3	0.0	16.1	46.0	3.5	
Mental Health						
count	0	901	0	0	89	990
percent (%)	0.0	91.0	0.0	0.0	9.0	

s indicates data is suppressed due to small numbers

Note: Where 0s appear in this table, it may be due to that department not being present in the respective health region.

Chapter 4:
Prevalence and Incidence of Home Care Use

The analyses in this chapter describe the prevalence and the incidence of home care use in Manitoba, with the results of analyses presented separately by age group and region. These analyses were carried out for the overall use of home care (combining the four types of home care outlined earlier), and then separately for each type of the service: home care attendant/home support workers (HCA/HSW), nursing, oxygen, mental health counselling (see Appendix 2 online for the technical definitions used to identify and measure home care services). The two numbers (prevalence and incidence) provide different looks at how home care services are managed and provided.

Prevalence Definition

In this report, prevalence is calculated and presented as the percentage of a population that received home care services during a specific time period, in this case, the two-year period from 2013/14 to 2014/15. This tells us how many people are using the services during the time period, including individuals who were already accessing home care before the beginning of the study period (who may continue throughout the study period or stop at some point during the study period) and those who started using home care services during the study period (who may discontinue at some point during the study period or who received services through to the end of the time period). It is an indicator of the total 'burden' of home care services provision.

Incidence Definition

Incidence is a rate representing the number of individuals who started receiving home care (i.e., new recipients), during the study period. For this analysis, anybody already receiving home care at the beginning of the study period is excluded since they do not meet the criteria (i.e., they cannot be a new case if they are already a case). There are also several other reasons that a person might not be able to receive home care, and this could change in the middle of our study period. A person could leave the province, be admitted to a nursing home, or they could die. To account for this difference in the possibility of being a new case, we calculated each person's time at risk during the study period. This could be as short as one day, or as long as the full year of data that was analyzed (2014/15). The incidence rate is presented as the number of new cases per hundred person-years at risk. If we were able to follow 100 people for a whole year, the rate would represent the number of new homecare cases that we would expect to see. For those not already receiving home care, the incidence is a more accurate estimate of the likelihood of becoming a home care recipient. Because it is only the new cases, incidence rates are much lower than prevalence.

Crude prevalence and incidence were calculated by age group and region. Analyses were also conducted by income quintile to determine if socioeconomic status might be related to the use of home care services. We remind the reader that income quintiles are defined separately for urban and rural areas. Previous work has shown that there is quite a bit more variation in income within rural areas, while urban areas are quite a bit more homogenous. For these analyses, the percentages and rates were adjusted for differences in the average age or proportion of males/females between the income quintiles. This means we can be sure that any significant differences between quintiles cannot be attributed to differences in the basic makeup of the populations, but rather to their socioeconomic status.

The results for all the analyses are presented for prevalence first, by health region, age group and sex, and by income quintile. These are followed by identical analyses for incidence rates, also by age group and sex, and by income quintile. Appendix 3 online presents prevalence and incidence rates by health region district.

Key Findings

Overall Home Care Use

Health Region, Age, and Sex:

- Age is the variable most strongly related to receiving home care, increasing dramatically with each step up in age group.
- For these older age groups, females consistently have a higher rate of receiving home care (prevalence) than males.
- In the Northern Health Region, the oldest age groups (75-84, 85+) are much less likely to receive home care (incidence) in comparison to the other regions.

Income:

- In rural areas of the province, there is no apparent trend. In urban areas, however, there is a steady increase in the likelihood of receiving (prevalence) home care as an individual's income decreases. The stronger relationship found in urban areas is not surprising given that rural areas have quite a bit more variation in income which will end up weakening the relationship between income and overall homecare use.

Home Care Attendant/Home Support Worker Services

(HCA/HSW) results are quite similar to the previous section regarding overall home care use.

Health Region, Age, and Sex:

- Women have a higher percentage of receiving HCA/HSW services in every age group, and every region of the province. This trend is reversed for the incidence of new home care cases in the oldest age group.
- The strong relationship with age is present for the HCA/HSW service, with prevalence more than doubling with each increase in age group.
- Few people in the province under the age of 40 received HCA/HSW services.

Income:

- Strong relationship with income quintile in the urban areas of the province.
- As income increases, the prevalence and incidence of HCA/HSW services decrease.
- No apparent relationship between income and HCA/HSW prevalence, or incidence, in the rural areas.

Nursing services

Results are quite similar to overall home care use, although the numbers are all lower than those for HCA/HSW.

Health Region, Age, and Sex:

- Prairie Mountain Health has a consistently lower prevalence and incidence than all other regions. This has been identified as an issue with data collection, where not all nursing services for Prairie Mountain used the Procura data system, resulting in an underestimate.
- A very strong relationship with age is present for nursing services, with prevalence more than doubling with each increase in age group.
- The prevalence amongst the youngest age group is not negligible. If home care is necessary for youth, it is more likely to require nursing services rather than support or assistance with daily living.
- For incidence, there is a consistent pattern of men who have a higher rate than women, particularly in the two oldest age groups.

Income:

- Strong relationship with income quintile in the urban areas of the province; as income increases, the prevalence and incidence of services from nurses decreases.
- People living in low-income areas are more likely to be receiving nursing services than those living in higher-income areas.
- No apparent relationship between income and nursing prevalence or incidence in the rural areas.

Oxygen services

Rates are quite low compared to the previous home care types.

Health Region, Age, and Sex:

- Prevalence and incidence increase with age.
- Males are more likely to participate in the oxygen assistance program than females, with the difference more apparent in the older age groups.

Income:

- Among urban areas of the province we found a strong, inverse relationship between income and both incidence and prevalence of oxygen home care services; higher incidence and prevalence were both associated with lower income neighborhoods.
- Rural areas of the province, where the rates are approximately equal for all income groups.

Overall Home Care Use

Health Region, Age, and Sex

From the results presented in Figure 4.1, it is quite clear that age is the variable most strongly related to home care use. For individuals less than 40 years old, the proportion of the population receiving home care services is negligible, and for those between 40 and 64, the prevalence and incidence are still quite low.

When we look at older populations, the prevalence and incidence increases dramatically with each step up in age group. For individuals aged 65-74, the prevalence is about one in twelve, over one in five for those aged 75-84, and over half for those aged 85 or older. For these older age groups, females also consistently have a higher prevalence than males. The patterns of findings with the incidence rates are similar to those for prevalence, but with a much lower rate (Figure 4.2). While prevalence in the oldest age group was approximately 50%, the incidence was only about eight new home care cases per hundred person-years in the most recent time period.

The most striking difference between prevalence and incidence is the reversal of the difference between males and females for the older age groups. The percentage of women in the population receiving home care is higher in women than in men for the 75-84 year age group, but the two groups are equal for incidence. For the 85+ year age group, the incidence rate is higher for men than it is for women. A possible explanation for this pattern of results is a longer average length of home care services for women than for men in these age groups.

Across regions, the notable difference in incidence from prevalence was that there was lower incidence for the oldest age groups (75-84, 85+) in Northern Health Region compared to other regions.

Figure 4.1: Prevalence of Home Care Clients for All Services by Health Region, Age, and Sex, 2013/14-2014/15
Crude percent of community-dwelling Manitoba residents

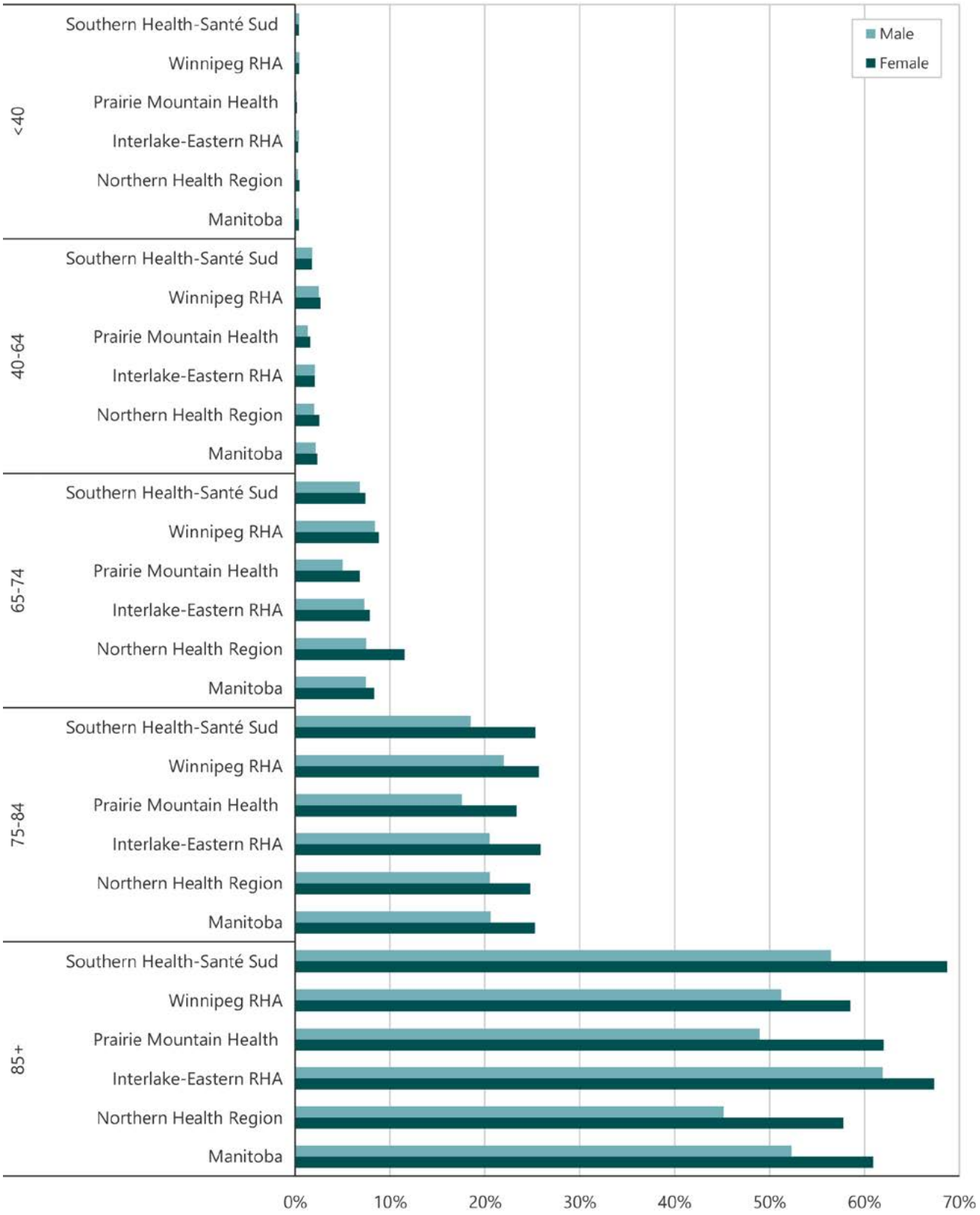
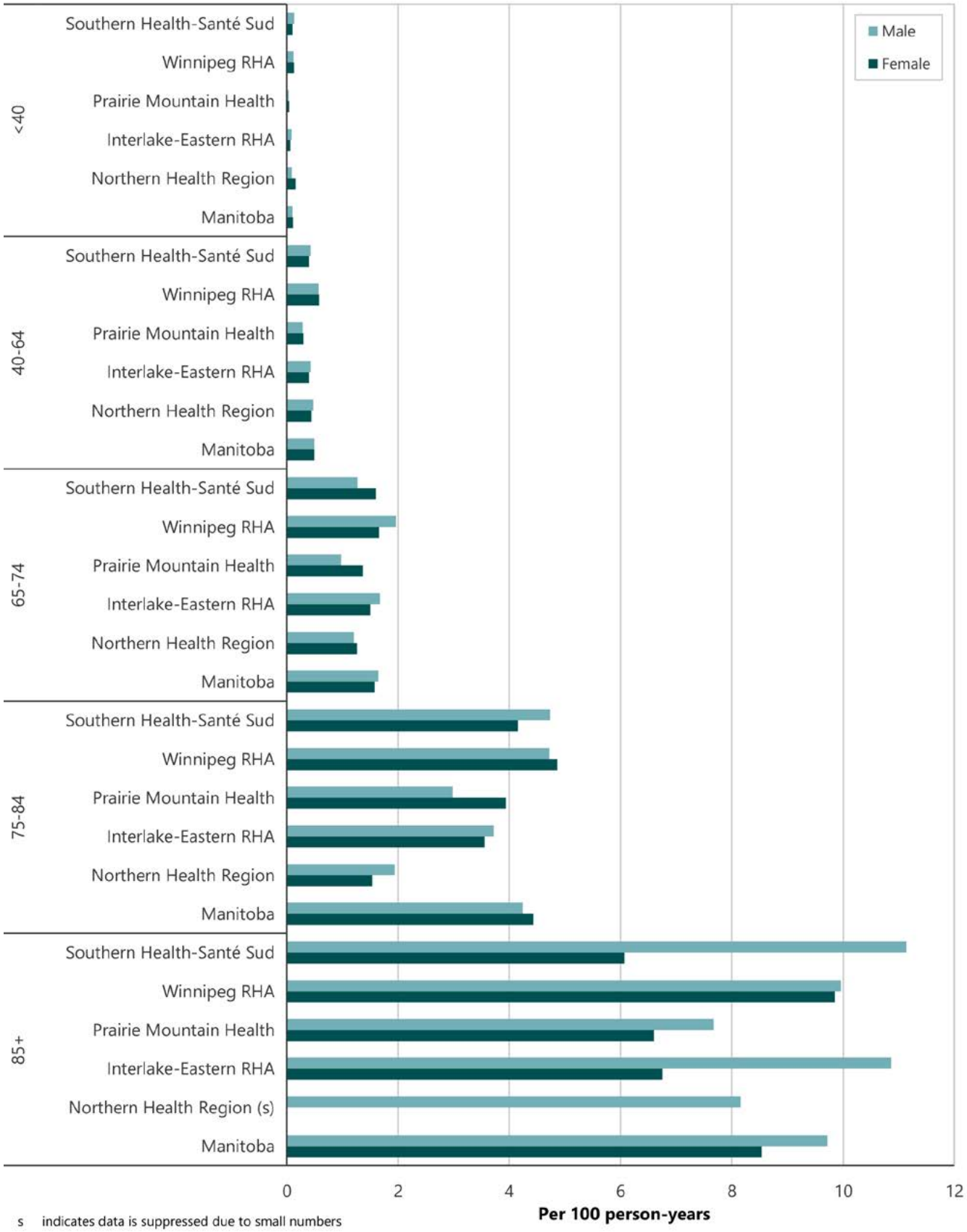


Figure 4.2: Incidence of Home Care Clients for All Services by Health Region, Age, and Sex, 2014/15
Rate per 100 person-years at risk for community-dwelling Manitoba residents



s indicates data is suppressed due to small numbers

Income

The analysis by income quintile revealed a dramatic difference between urban and rural areas in how home care delivery is distributed amongst the population (Figures 4.3 and 4.4). In rural areas of the province, there is no apparent trend, the prevalence of home care is approximately equal for all five income quintiles (~3.0% to 3.3%). In urban areas, however, there is a steady increase in the prevalence of home care as income decreases. In the lowest income group, the percentage of the population receiving home care services is 5.3%, while in the highest income group it is only 2.3%. Similar trends were seen with home care incidence.

Figure 4.3: Prevalence of Home Care Clients for All Services by Income Quintile, 2013/14-2014/15

Age- and sex-adjusted percent of community-dwelling Manitoba residents

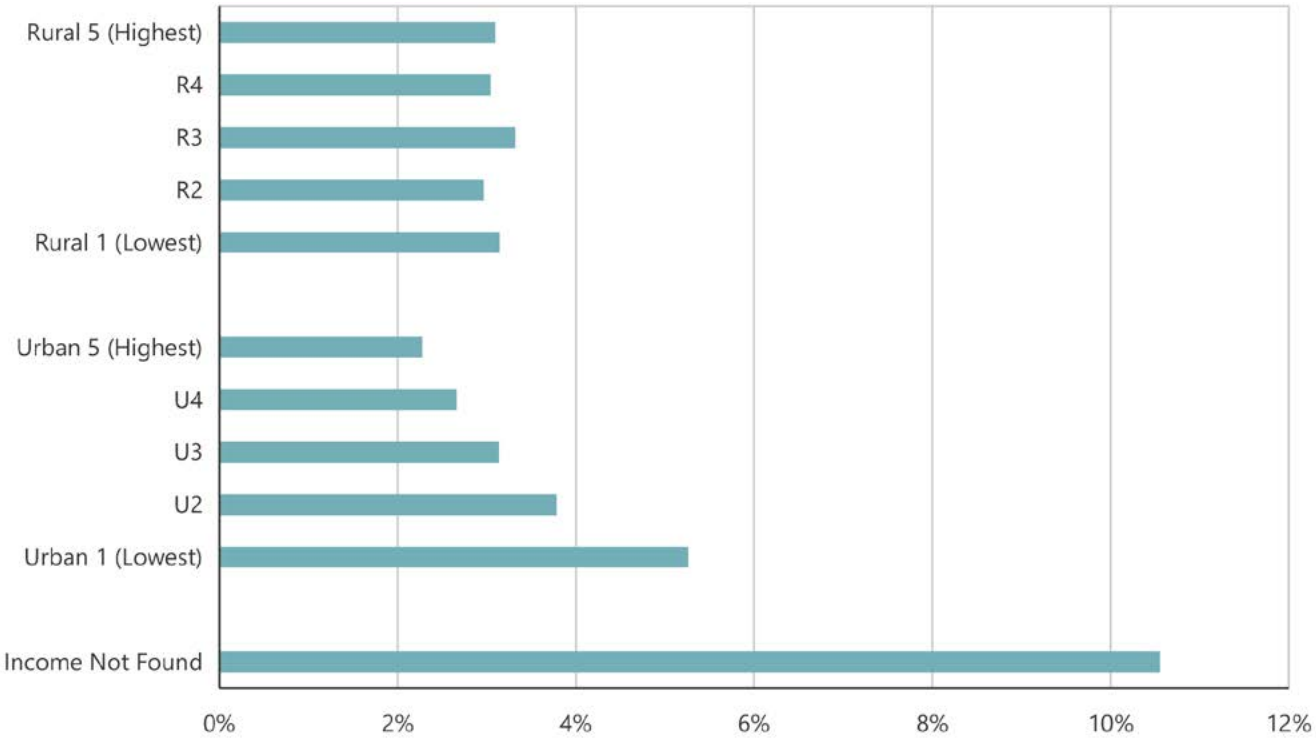
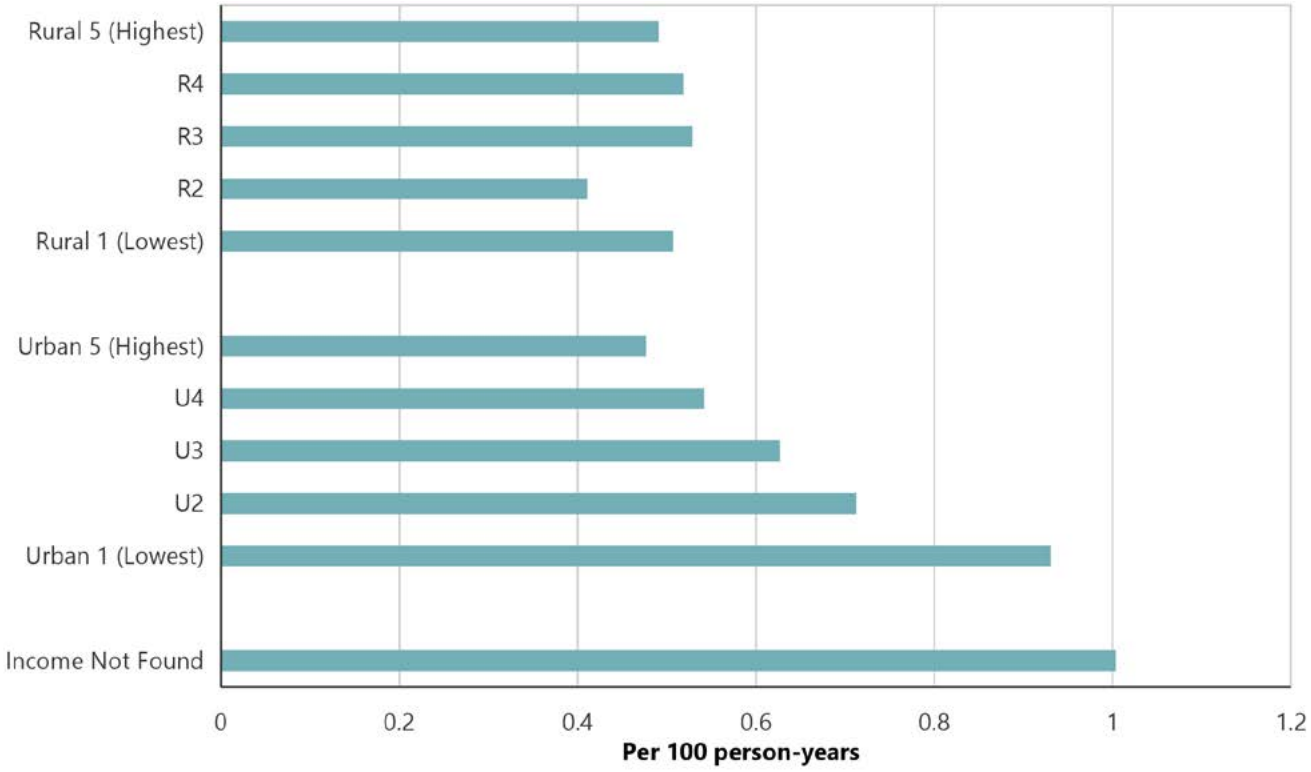


Figure 4.4: Incidence of Home Care Clients for All Services by Income Quintile, 2014/15
Age- and sex-adjusted rate per 100 person-years at risk for community-dwelling Manitoba residents



Home Care Attendant/Home Support Worker Services

In this section prevalence and incidence specific to HCA/HSW are reported. As the most common form of home care provided, the results are similar to the previous section on overall home care use.

Health Region, Age, and Sex

The strong relationship with age is present for the HCA/HSW service (Figures 4.5 and 4.6), with prevalence more than doubling with each increase in age group. Women have a higher percentage of receiving HCA/HSW services in every age group and every region of the province. Again, this trend is reversed for the incidence of new home care cases in the oldest age group, where men have a higher rate than women (5.2 new cases per hundred person-years compared to 3.9). It should be noted that very few people in the province under the age of 40 received HCA/HSW services (less than 4 per thousand). There are so few cases that the incidence rate was suppressed for most parts of the province.

Figure 4.5: Prevalence of Home Care Clients for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2013/14-2014/15

Crude percent of community-dwelling Manitoba residents

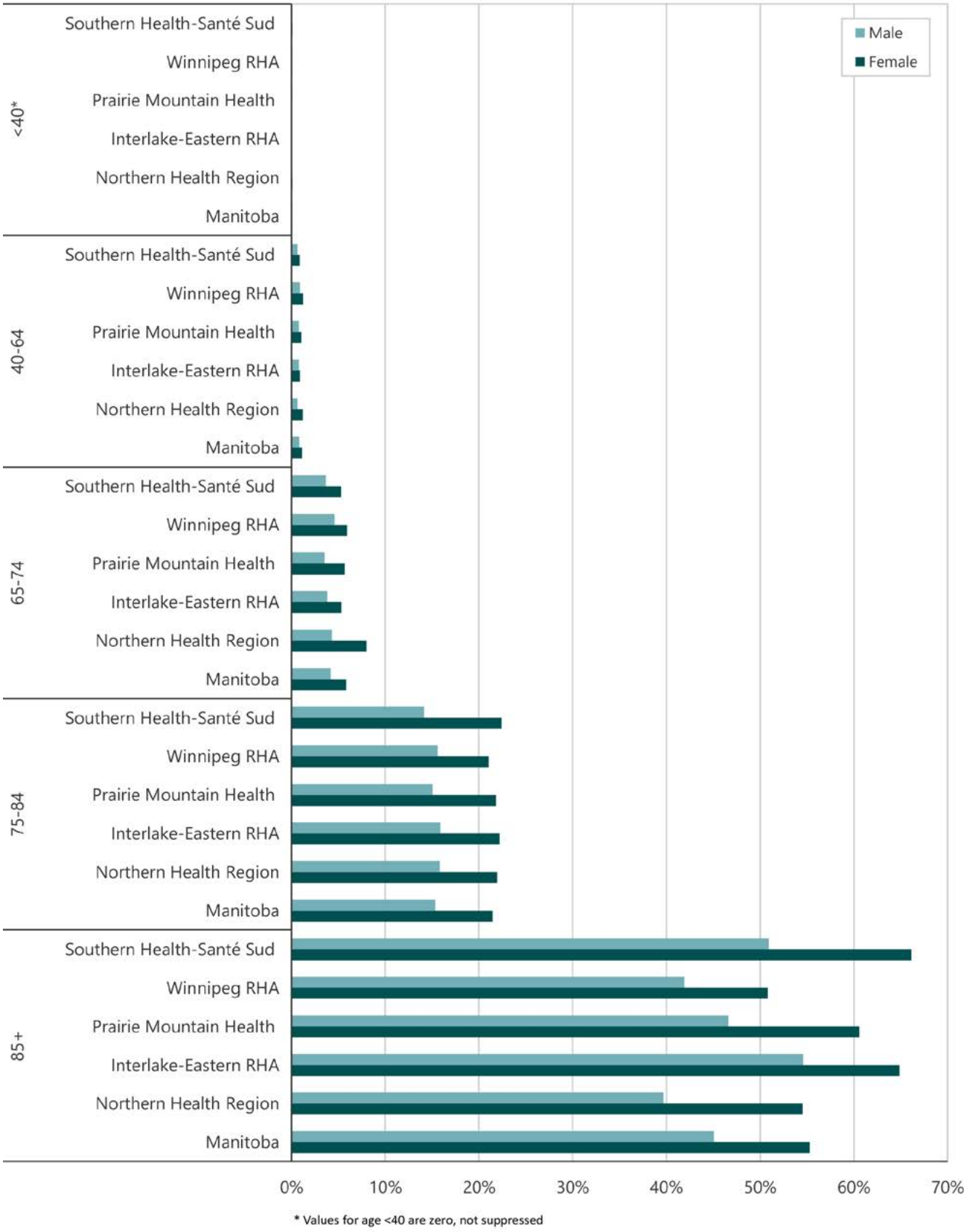
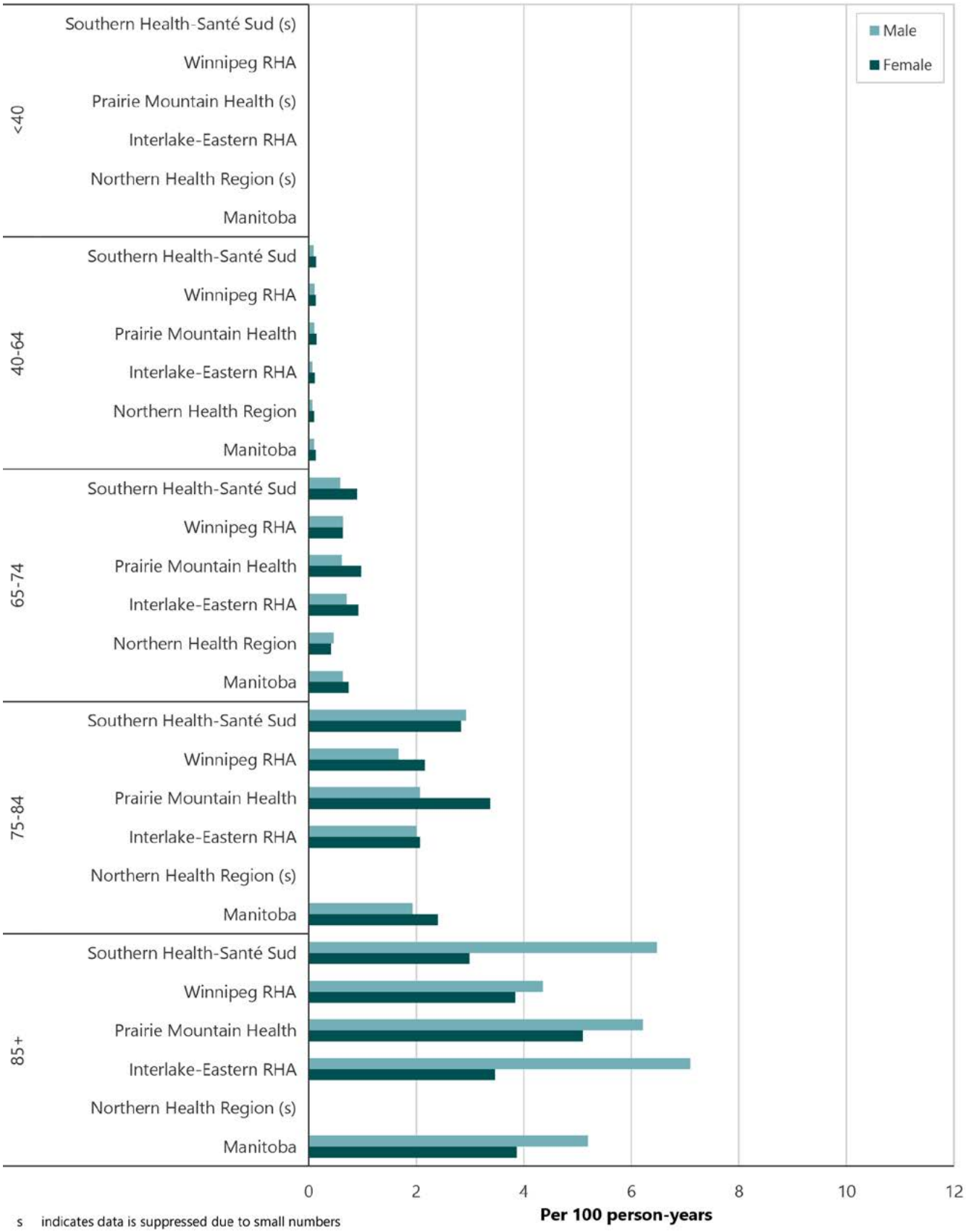


Figure 4.6: Incidence of Home Care Clients for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2014/15

Rate per 100 person-years at risk for community-dwelling Manitoba residents



s indicates data is suppressed due to small numbers

Income

For both prevalence and incidence, there is a strong relationship with income quintile in the urban areas of the province. As income increases, the prevalence and incidence of HCA/HSW services decrease (Figures 4.7 and 4.8). In contrast, there is no apparent relationship between income and HCA/HSW prevalence, or incidence, in the rural areas.

Figure 4.7: Prevalence of Home Care Clients for Home Care Attendant and Home Support Worker Services by Income Quintile, 2013/14-2014/15
Age- and sex-adjusted percent of community-dwelling Manitoba residents

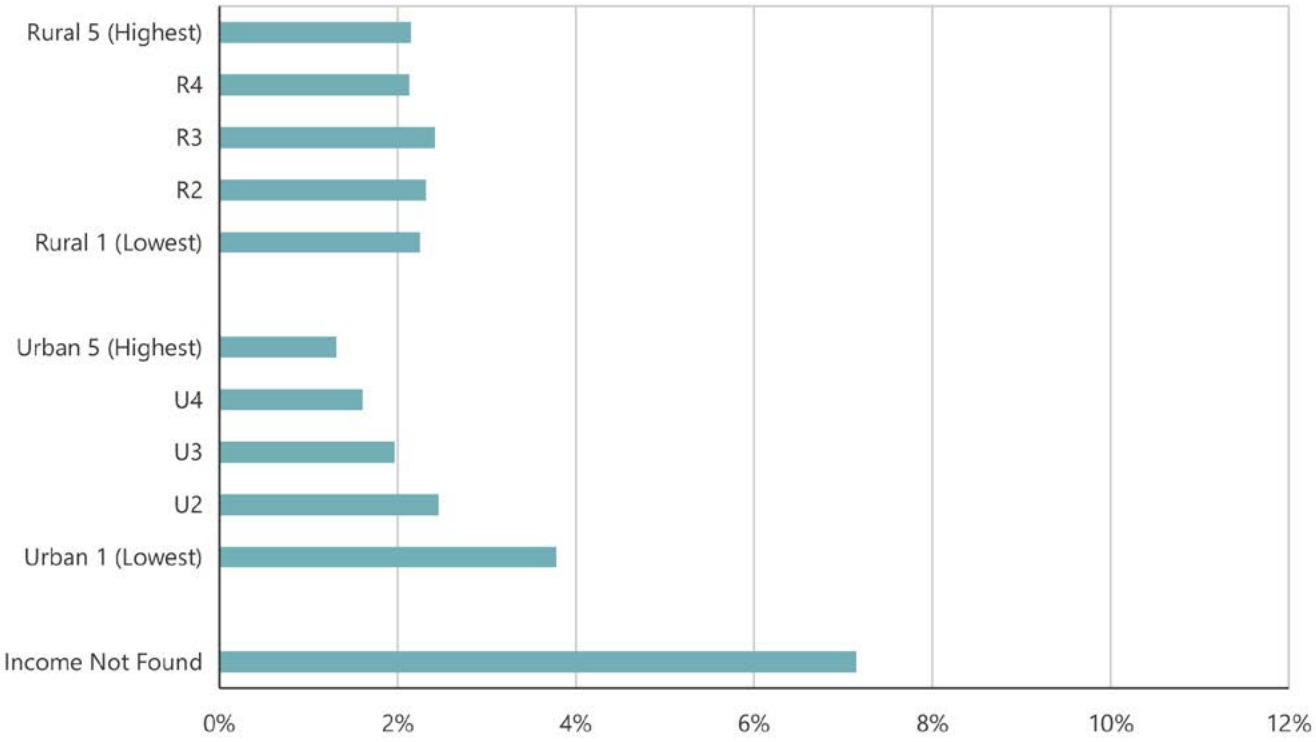
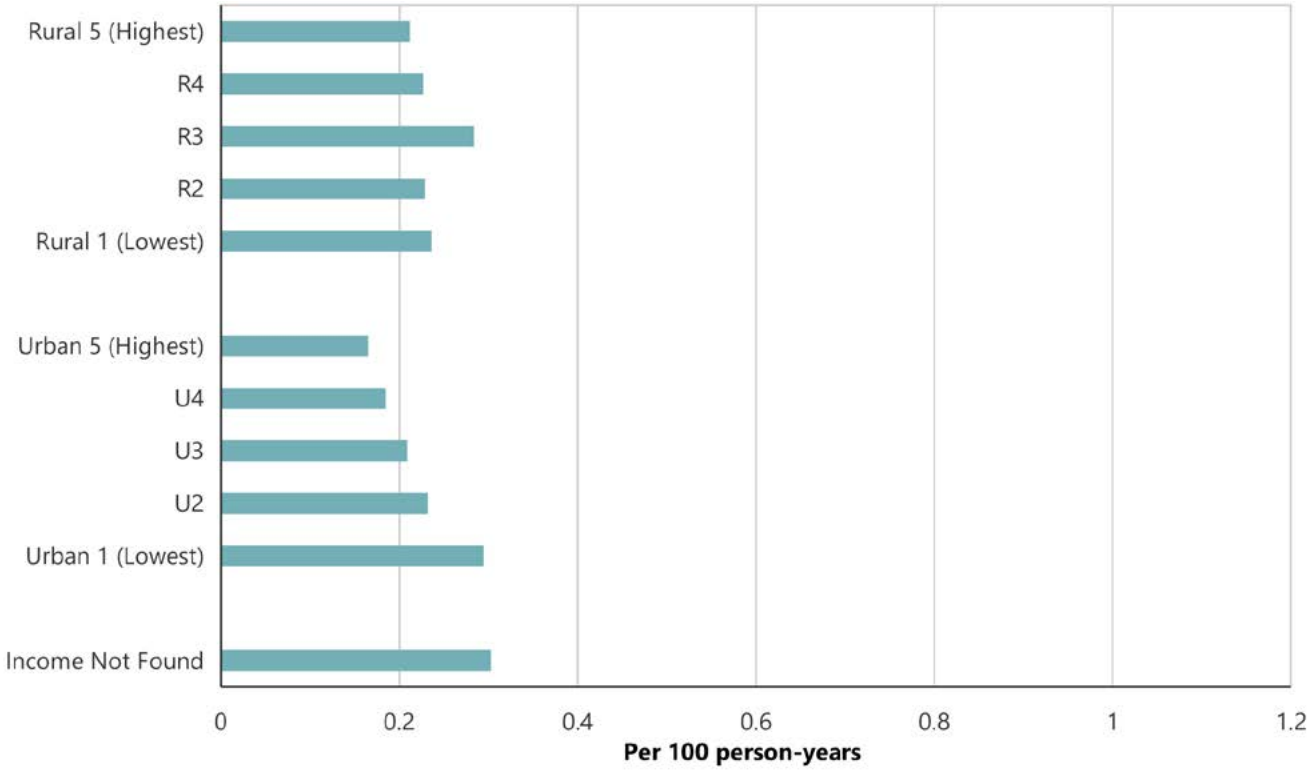


Figure 4.8: Incidence of Home Care Clients for Home Care Attendant and Home Support Worker Services by Income Quintile, 2014/15
Age- and sex-adjusted rate per 100 person-years at risk for community-dwelling Manitoba residents



Nursing Services

In this section prevalence and incidence specific to nursing services are reported (Figures 4.9 and 4.10). This is the second most common form of home care provided, and like HCA/HSW the results are quite similar to the previous section on overall home care use, although the numbers are all lower than those for HCA/HSW.

Health Region, Age, and Sex

Regionally, there are some differences to make note of. First, Prairie Mountain Health has a consistently lower prevalence and incidence than all other regions; these differences are not small and cannot be explained by simple variance in rates. Consultations with regional representatives indicated that at the time of data collection, not all nursing data was entered into the Procura data system. As a result, the numbers for Prairie Mountain Health are underestimated.

A very strong relationship with age is present for nursing services, with prevalence more than doubling with each increase in age group, to a high of ~25% of the oldest age group. This is about half the prevalence of HCA/HSW. Unlike HCA/HSW services, the prevalence amongst the youngest age group is not negligible, although still quite low compared to the older age groups. It would appear that for this lowest age group if home care were necessary, people are more likely to require nursing services rather than support or assistance with daily living.

There is a small difference in prevalence between the sexes, present only for the oldest age group. However, for incidence, there is a consistent pattern of men having a higher rate than women, particularly in the two oldest age groups.

Figure 4.9: Prevalence of Home Care Clients for Nursing Services by Health Region, Age, and Sex, 2013/14-2014/15
Crude percent of community-dwelling Manitoba residents

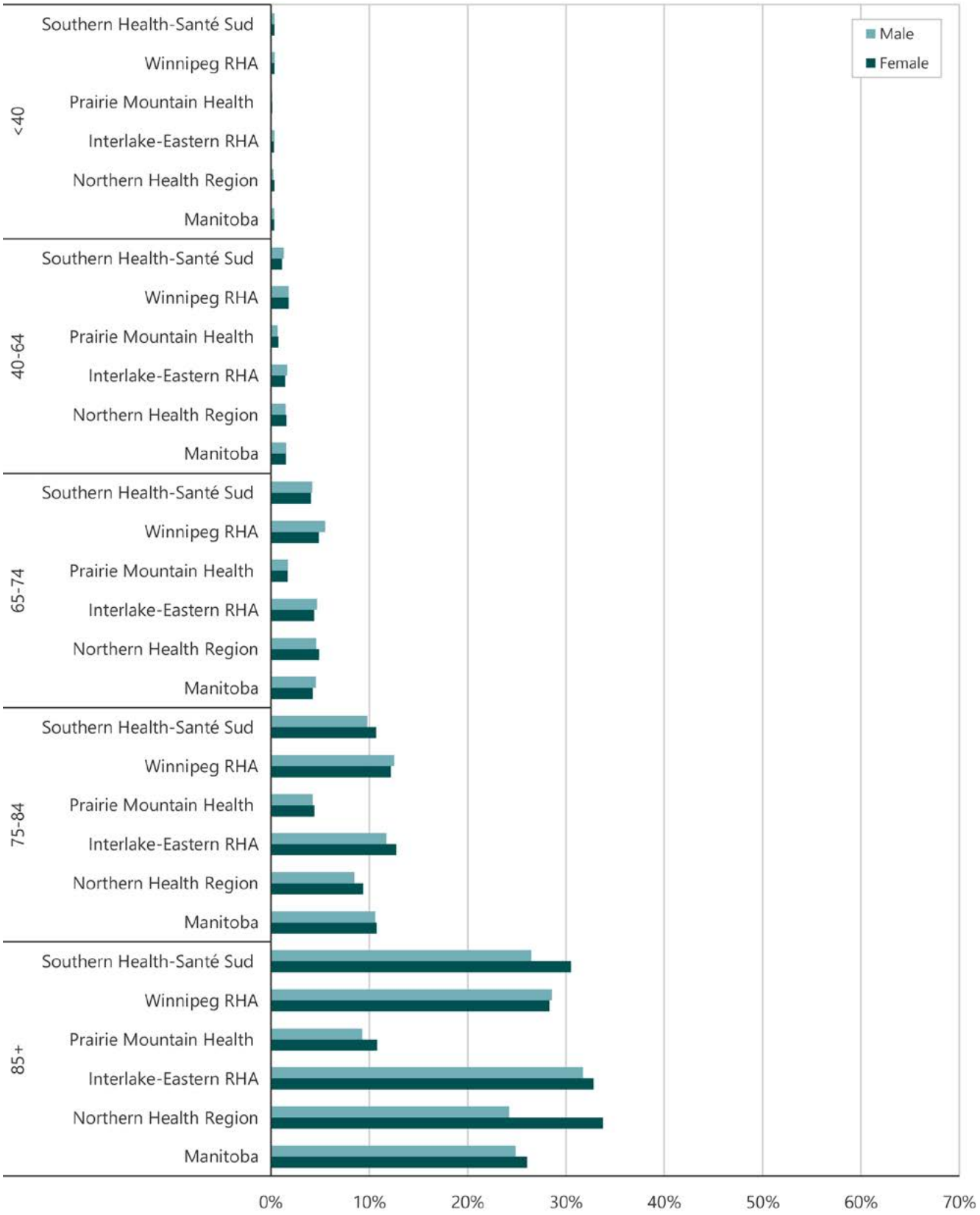
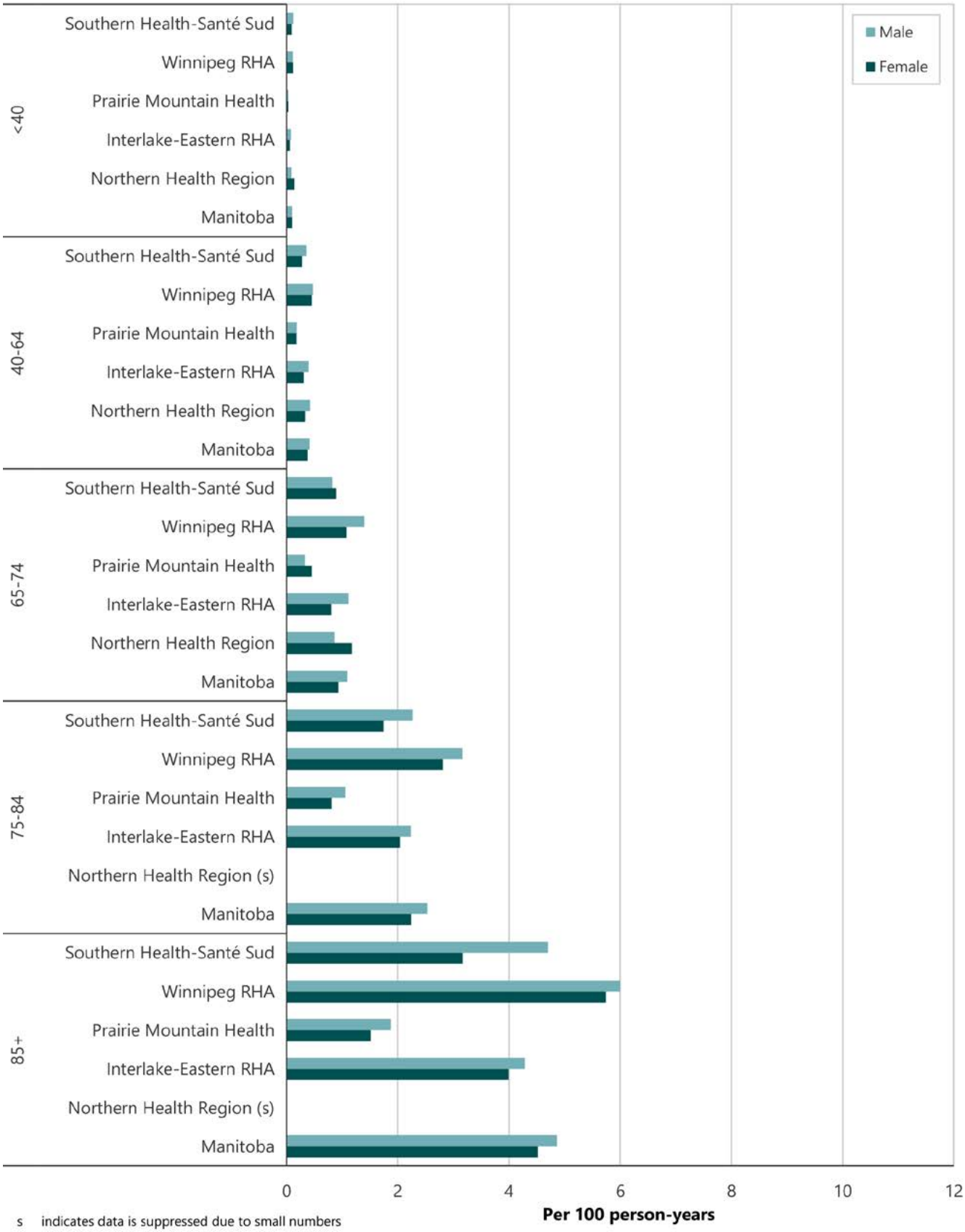


Figure 4.10: Incidence of Home Care Clients for Nursing Services by Health Region, Age, and Sex, 2014/15
Rate per 100 person-years at risk for community-dwelling Manitoba residents



s indicates data is suppressed due to small numbers

Income

For both prevalence and incidence, there is a strong relationship with income quintile in the urban areas of the province. As income increases, the prevalence and incidence of nursing services decrease (Figures 4.11 and 4.12). The relationship with income is stronger for nursing than for HCA/HSW presented in the previous section, but only for the urban areas of the province. People living in low-income areas are more likely to be receiving nursing services than those living in higher-income areas. There is no apparent relationship between income and nursing prevalence or incidence in rural areas.

Figure 4.11: Prevalence of Home Care Clients for Nursing Services by Income Quintile, 2013/14-2014/15
Age- and sex-adjusted percent of community-dwelling Manitoba residents

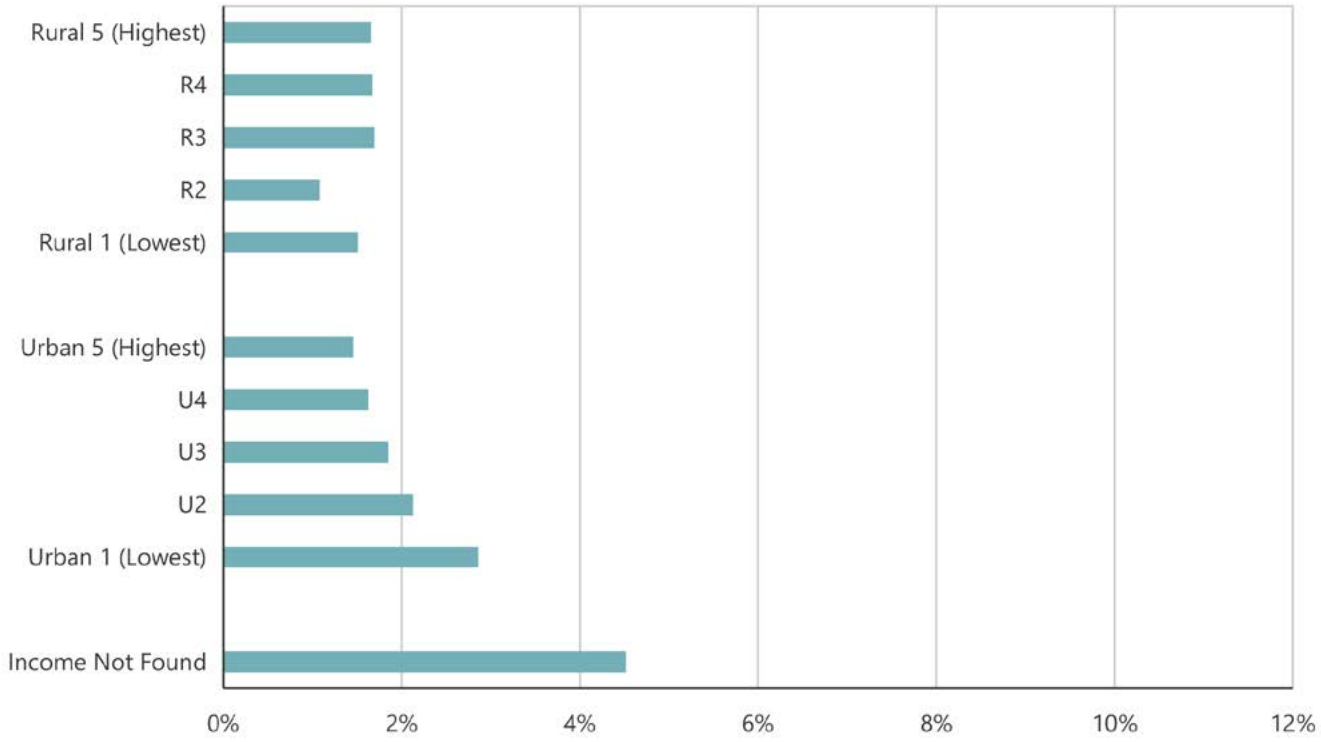
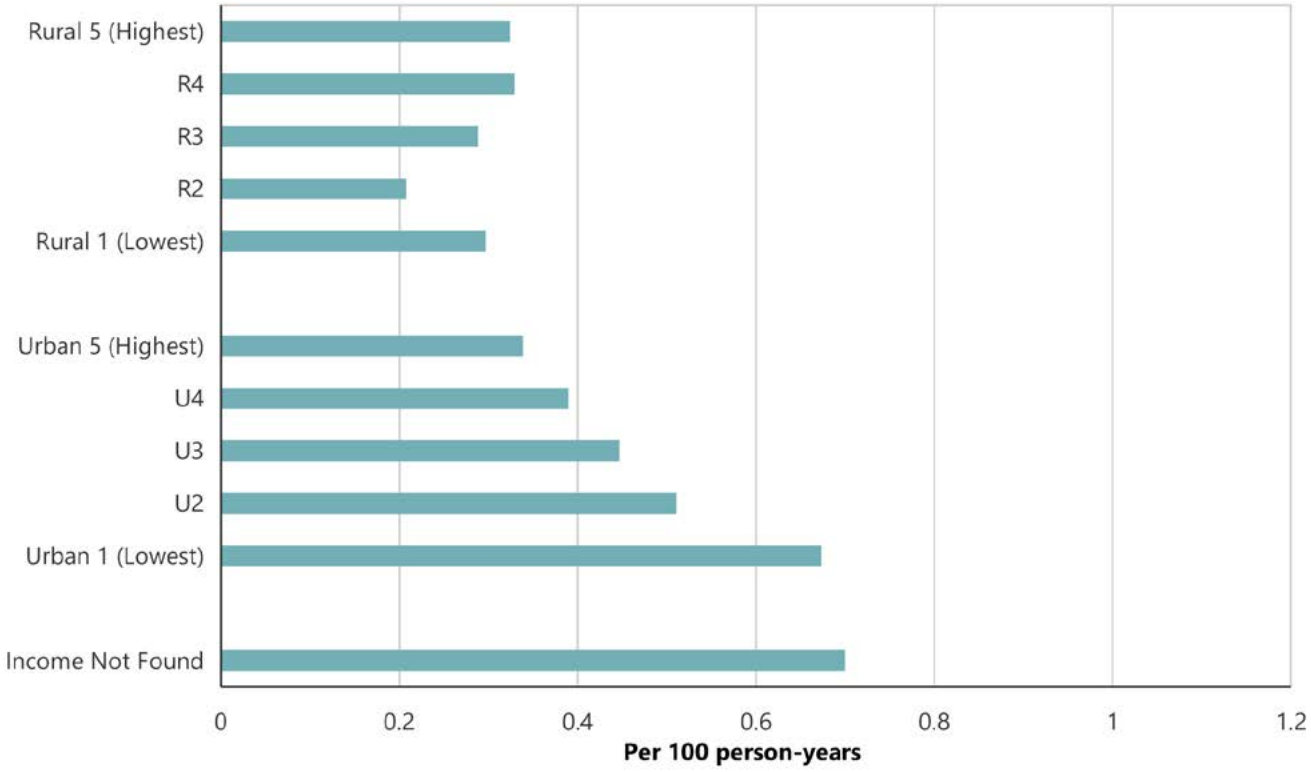


Figure 4.12: Incidence of Home Care Clients for Nursing Services by Income Quintile, 2014/15
Age- and sex-adjusted rate per 100 person-years at risk for community-dwelling Manitoba residents



Oxygen Assistance Program

The home care program in Manitoba covers costs for in-home oxygen therapy which typically consists of equipment and supplies for a home oxygen concentrator. These devices process the surrounding air using a compressor and filters the air to remove nitrogen. This in turn increases the relative proportion of oxygen in the air that the client breathes. In this section, we describe the prevalence and incidence of Manitobans taking part in this oxygen assistance program. However, the rates are low compared to the previous home care types. In fact, the incidence rate is so low at a population level that separate analyses for the regions could not be presented, and rather the summary numbers for the province are included.

Health Region, Age, and Sex

As with all forms of home care, the prevalence and incidence increase with age (Figures 4.13 and 4.14). In this case, very few Manitobans in the youngest age group participate in the program, similar to the findings for HCA/HSW. For the most part, males are more likely to participate in the oxygen assistance program than females, with the difference more apparent in the older age groups. Note that due to small numbers, we only present incidence data for all of Manitoba; there were too few events to stratify these results by health region.

Figure 4.13: Prevalence of Home Care Clients for Oxygen Services by Health Region, Age, and Sex, 2013/14-2014/15
Crude percent of community-dwelling Manitoba residents

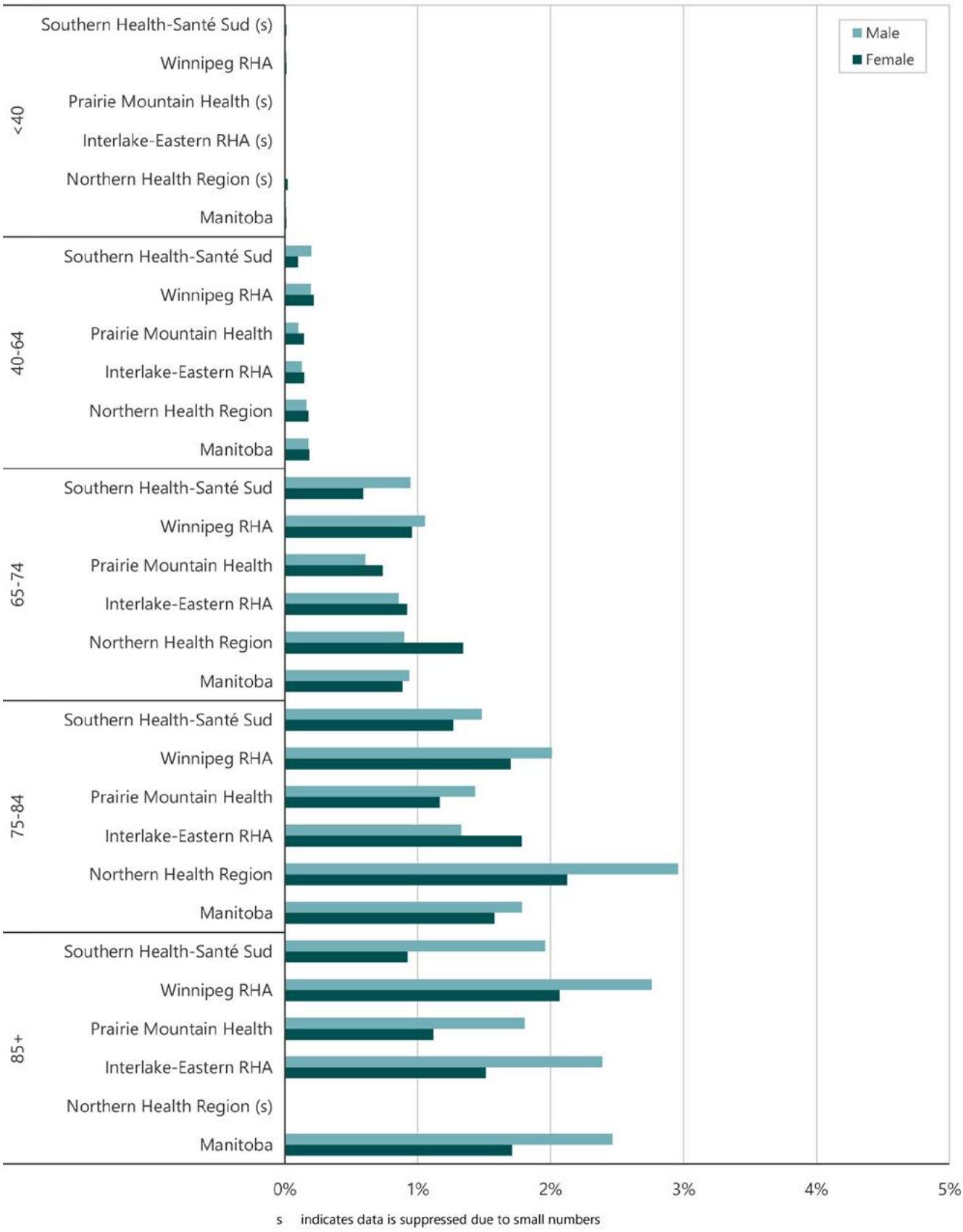
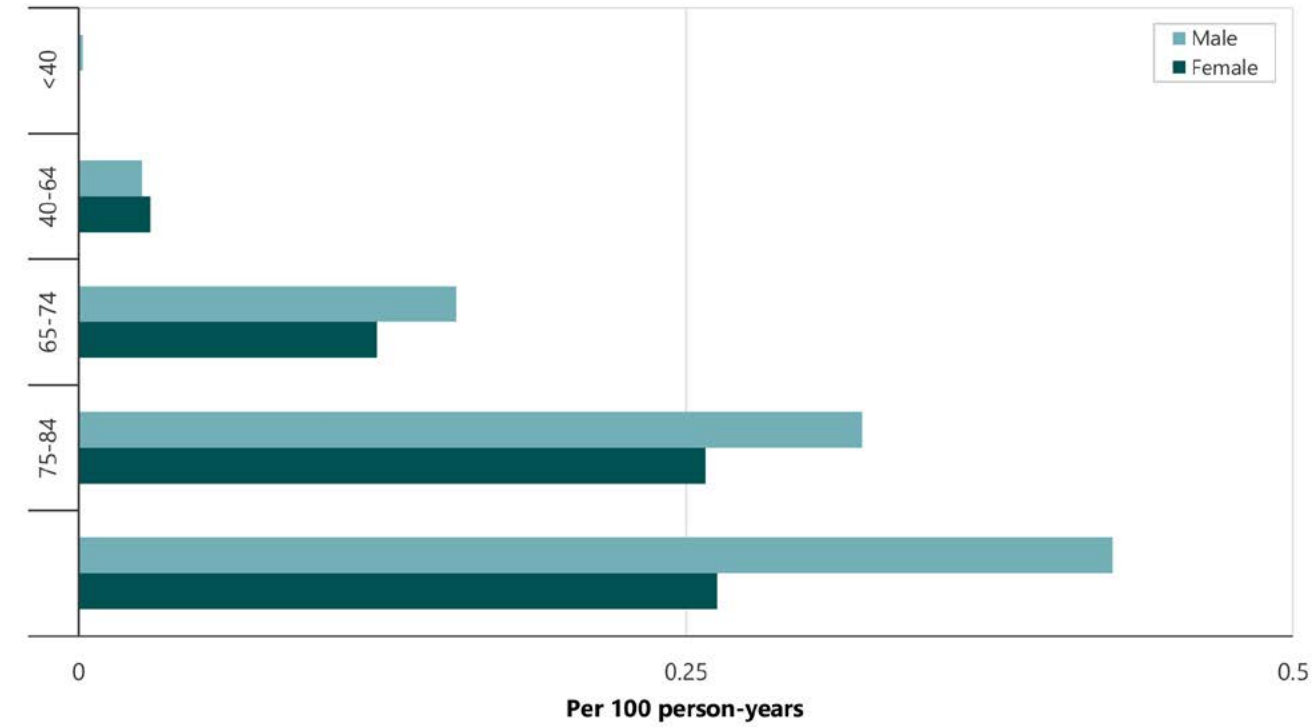


Figure 4.14: Manitoba Incidence of Home Care Clients for Oxygen Services by Age, and Sex, 2014/15
Rate per 100 person-years at risk for community-dwelling Manitoba residents



Note: due to small numbers incidence data is presented for all of Manitoba; there were too few events to stratify the results by RHA.
Female <40 data is suppressed due to small numbers.

Income

As with both nursing and HCA/HSW, the relationship with income is strong for the urban areas of the province, with higher prevalence and incidence associated with lower-income areas. However, this is not present for the rural areas of the province, where the rates are approximately equal for all income groups (Figures 4.15 and 4.16).

Figure 4.15: Prevalence of Home Care Clients for Oxygen Services by Income Quintile, 2013/14-2014/15
Age- and sex-adjusted percent of community-dwelling Manitoba residents

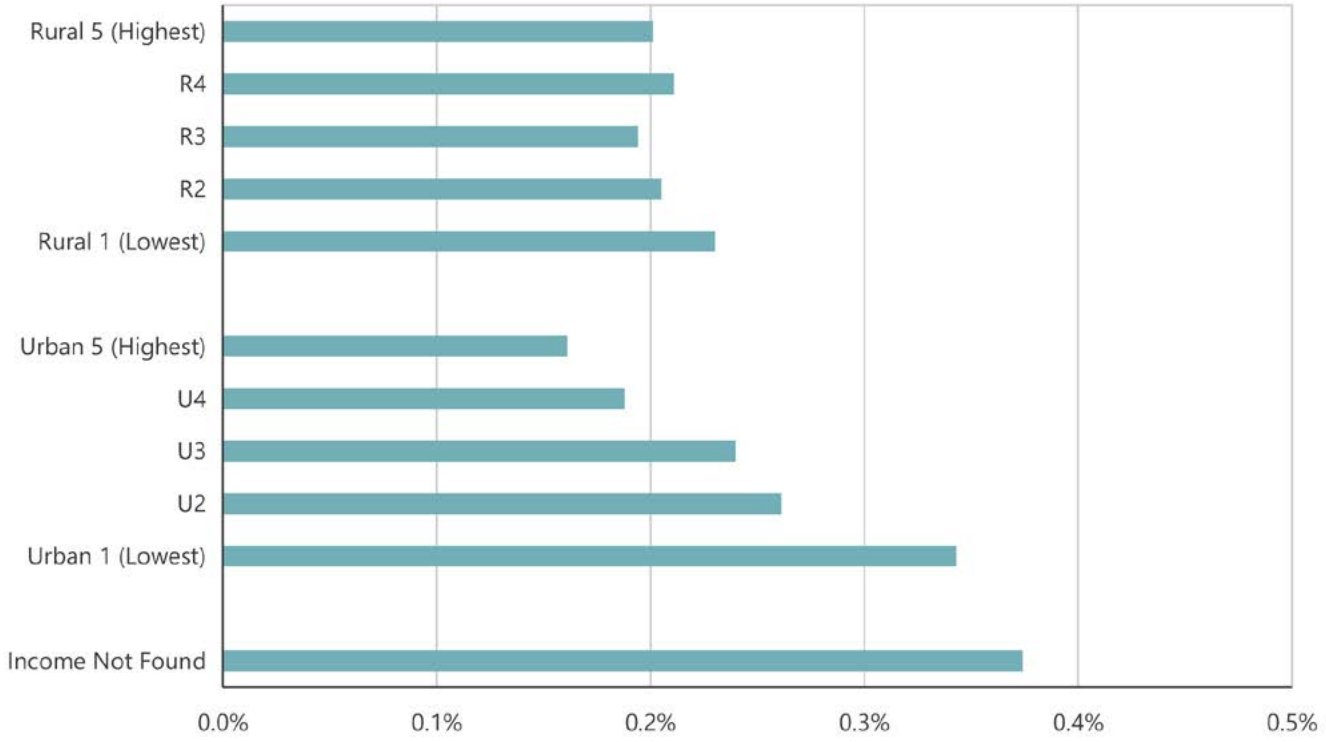
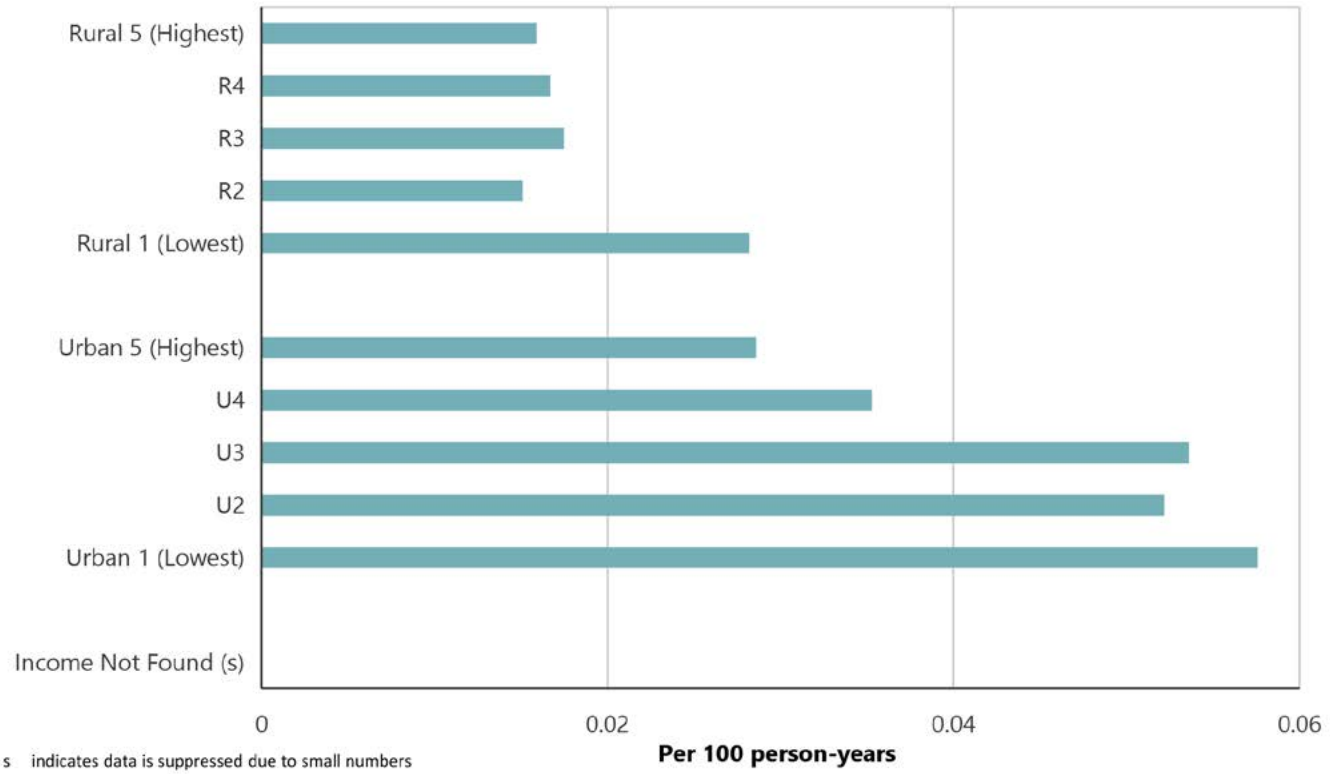


Figure 4.16: Incidence of Home Care Clients for Oxygen Services by Income Quintile, 2014/15
Age- and sex-adjusted rate per 100 person-years at risk for community-dwelling Manitoba residents



s indicates data is suppressed due to small numbers

Chapter 5:
Episodes for Home Care Attendant/Home Support Worker Services

For this report, we also looked at the total number of times that people in a population were enrolled for home care services in distinct episodes of care. This analysis was carried out specifically for the HCA/HSW service because it had the highest frequency of client use on multiple occasions within the study period. Individuals could contribute more than one episode if they were newly enrolled for services with at least one day without services between the prior episode and current episode. To separate care into episodes, the client must have a "closed" status recorded in the client table during the study period, and subsequently have a new open case and active status recorded. A client with a single open status would only count as a single episode, no matter how frequently or infrequently visits occurred. This is slightly different from the previous analyses of home care incidence and prevalence where a person could only be counted a single time in determining those rates. Any differences between these numbers and the prevalence reported earlier reflect the impact of multiple episodes of care for at least some of the individuals who had received HCA/HSW services.

Key Findings

Episode Rates Increased for Older Age Groups:

- Females have a higher episode rate than males.
- Rate is highest in the lowest income quintile.
- Individuals receiving HCA/HSW services have their care end and reinitiated with some regularity.

Duration of Home Care Episodes:

- Home care episodes for Winnipeg RHA and Prairie Mountain Health are considerably longer than those in other regions.

Episode Rates

For this analysis, each new and existing episode was counted at the beginning of the study period. As noted earlier, individuals could contribute more than one episode. This was based on data in the client table in the Procura data set where client status is recorded. If a client had home care services closed in this dataset, and subsequently had a new 'open' date recorded, then this would represent a new episode. If there was no break between them (i.e., one started immediately after the other), the two home care instances were considered a single continuous episode.

This total number of distinct client episodes in the population was used to calculate rates by age, sex, and region, and are displayed in Figures 5.1 and 5.2. The pattern of episodes is similar to both the prevalence and incidence for HCA/HSW, with increasing rates for older age groups. Like the prevalence results, females have a higher episode rate than males, and the rate is highest in the lowest income quintile. The difference between the incidence rate and episode rate suggests that individuals receiving HCA/HSW have their care end and reinitiated with some regularity.

Figure 5.1: Population-Based Home Care Episodes for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2013/14-2014/15

Crude rate per 100 person-years for community-dwelling Manitoba residents

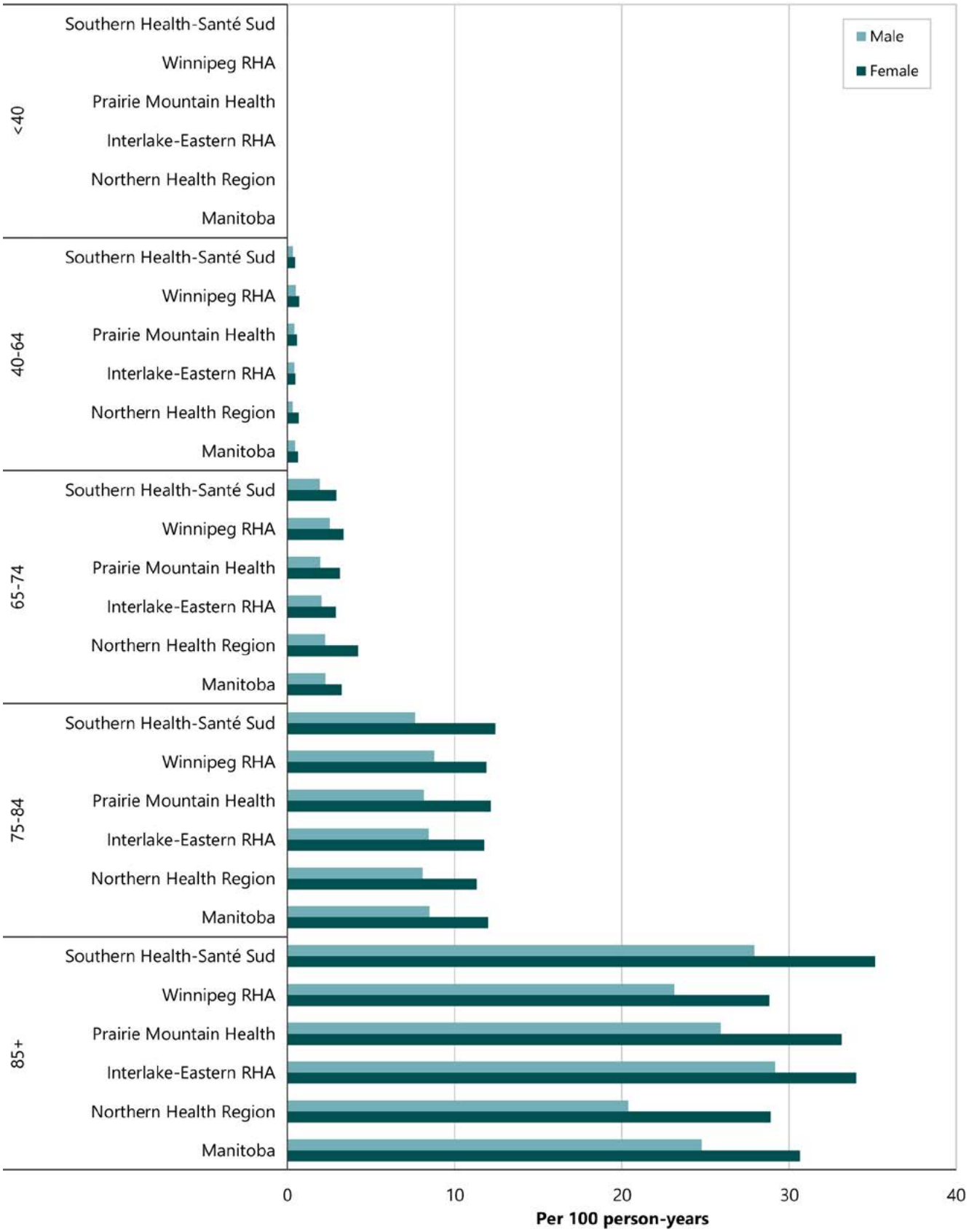
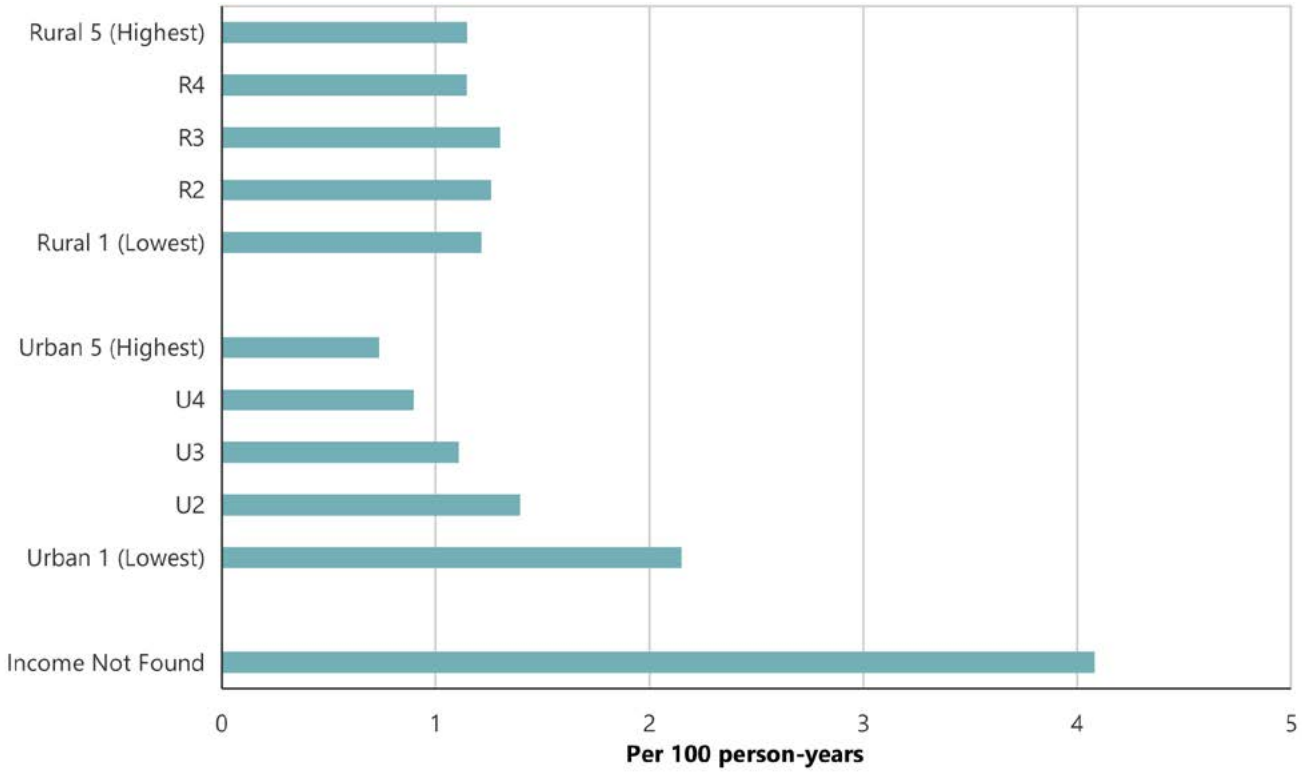


Figure 5.2: Population-Based Home Care Episodes for Home Care Attendant and Home Support Worker Services by Income Quintile, 2013/14-2014/15

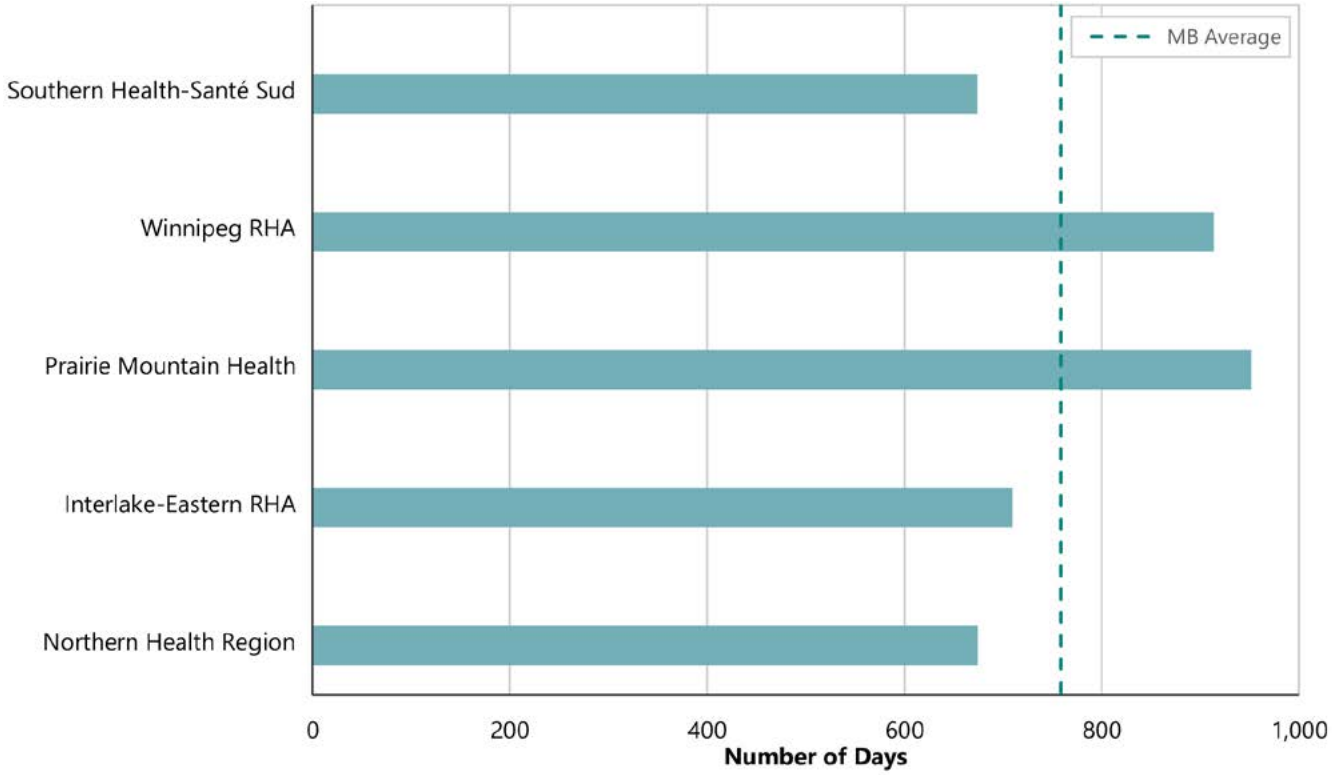
Age- and sex-adjusted rate per 100 person-years for community-dwelling Manitoba residents



Duration of Home Care Episodes

We examined the average length of closed home care episodes in days. For this analysis, we looked at all episodes that ended at some time during our two-year study period and calculated the time that each client had received home care services for HCA/HSW from the 'open' date (the day they were approved for home care services). The results are presented for the regions in Figure 5.3. Home care episodes for Winnipeg RHA and Prairie Mountain Health are considerably longer than those in other regions by as much as 300 days. An analysis by sex revealed a large difference in the average length of an episode, with females receiving home care services for 818 days on average compared to only 633 days for males.

Figure 5.3: Length of Home Care Episodes for Home Care Attendant and Home Support Worker Services by Health Region, 2013/14-2014/15
Number of days for Manitoba residents for closed cases



Chapter 6:
Home Care Visit Rates

Data for HCA/HSW include detailed information on individual visits to clients for the entire province. This data was used to calculate the visit rates to clients in two different ways. First, as with prevalence and incidence of home care cases above, the population denominator was used, providing the average number of visits across the whole population. This would include individuals that were not home care clients. The second analysis included only the home care cases in the denominator. This analysis provides the number of visits for the average home care client in the age/sex group, rather than the number of visits for the average Manitoban in the age/sex group. For some clients, there could be multiple visits in a single day, and all of these are counted when calculating the rates. There are also different types of visit status indicators in the data, and a separate analysis on ‘cancelled’ or ‘held’ visits is also presented. These are visits that were scheduled but were not delivered, usually because the client was not available.

Key Findings

HCA/HSW Visit Rates:

Overall while the need for home care may be dependent on age, sex, and income, all home care clients receive a similar level of care that is provided to them, at least in terms of the average number of HCA/HSW visits.

Health Region, Age, and Sex:

- Population-based analysis:
  - Visit rate increases dramatically with age.
  - Women had higher average visit rates than men.
- Client-based analysis:
  - The relationship with age was much weaker.
  - Less consistent and weaker patterns with sex.

Income:

- Population-based analysis:
  - Higher-income areas had lower average visit rates.
- Client-based analysis:
  - The relationship with income was much weaker. The only apparent difference was a lower rate amongst the highest income quintile in urban areas.
  - In rural areas, higher-income areas had lower rates, whereas there was no relationship with income in urban areas.

Number of Days from Intake to First Visit:

- In a very short time period, over half of all new clients have had their first visit (within one week).
- At 30 days, all health regions are at 80% or higher except for Northern Health Region (~60%).

Visit Rates

Health Region, Age, and Sex

For the population-based analysis, the visit rate increased dramatically with age (Figure 6.1) depending on both region and sex. There were practically no visits for the youngest age group (there were very few clients in this group), while the visit rate increased to around 50 per person-year for the 75-84 year age group, and between 75 per person-year to over 300 per person-year for the oldest age group (85+).

For the population-based analysis, in all cases, women had higher average visit rates than men (Figure 6.1). Client-based analysis showed less consistent and weaker patterns with sex. There were higher rates for males in the younger age groups and lower rates for females in the older age groups (Figure 6.2).

The analysis that considered only home care clients in the denominator was very different (Figure 6.2). The relationship with age was much weaker. In fact, there was no apparent difference in visit rate between the 40-64 year age group and the 65-74 year age group, and only a relatively small increase for the 75-84 year age group. A larger increase was seen with the 85+ year age group, still much less steep than that seen with the population-based analysis.

An additional analysis with the client-based denominator indicated that ‘cancelled’ and ‘held’ visit rates were remarkably similar across age groups (see Figure 6.3), reinforcing the point that home care clients receive services and behave in very similar ways regardless of age, sex, or income.

In both analyses, the northern region had consistently low rates compared to other regions of the province.

Figure 6.1: Population-Based Home Care Visits for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2013/14-2014/15

Crude rate per person-year for community-dwelling Manitoba residents

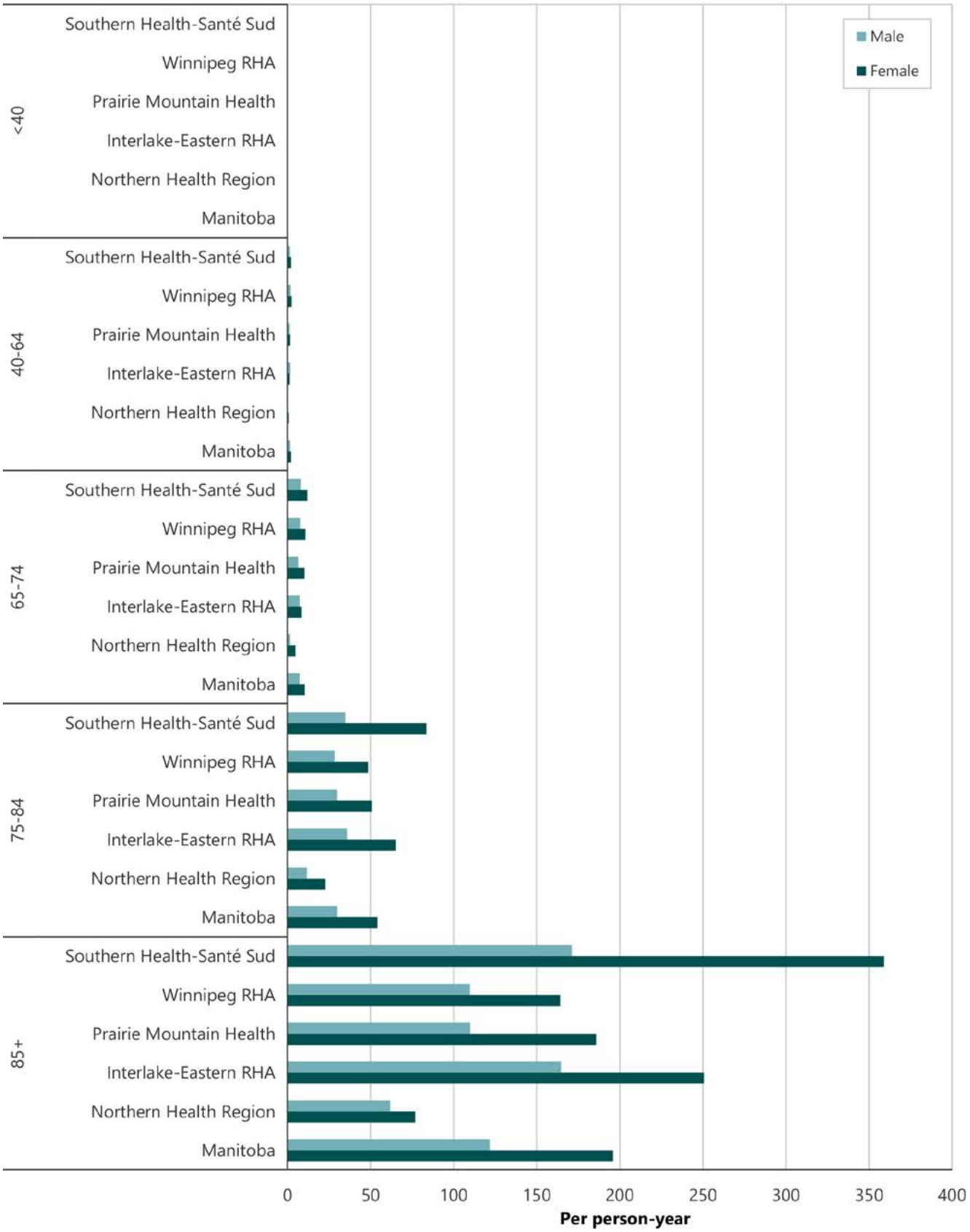


Figure 6.2: Client-Based Home Care Visits for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2013/14-2014/15

Crude rate per person-year for Manitoba home care clients

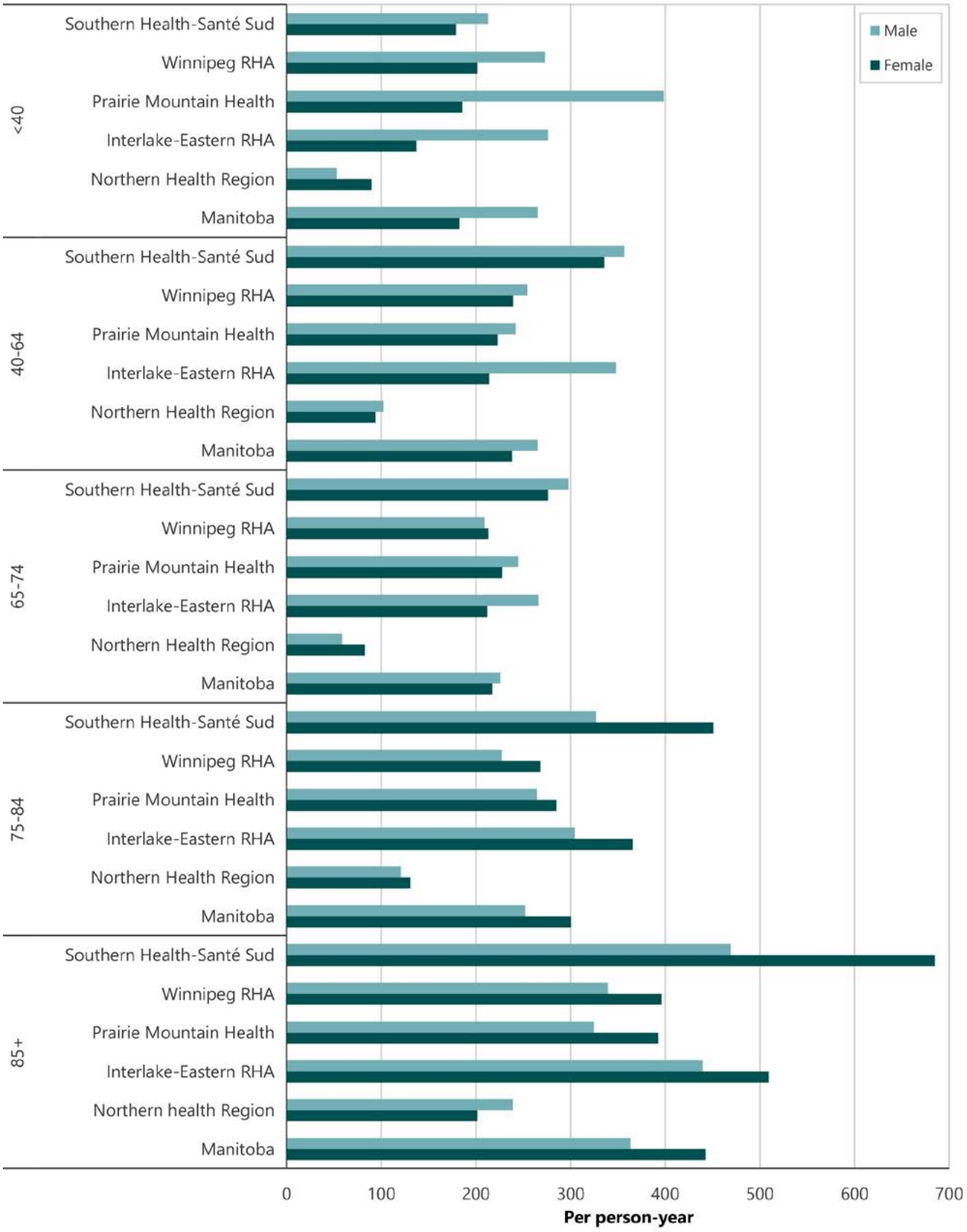


Figure 6.3: Client-Based Cancelled or Held Home Care Visits for Home Care Attendant and Home Support Worker Services by Health Region, Age, and Sex, 2013/14-2014/15

Crude rate per person-year for Manitoba home care clients

Income

For the population-based analysis, we also observed a strong relationship with income, which in this case was present for both rural and urban areas. Higher-income areas had lower average visit rates (Figure 6.4). For the client-based analysis, the relationship with income was much weaker (Figure 6.5). The only apparent difference was a lower rate amongst the highest income quintile in urban areas.

Together these analyses suggest that while the need for home care may be dependent on age, sex and income, all home care clients receive a comparable level of care, at least in terms of the number of HCA/HSW visits.

Figure 6.4: Population-Based Home Care Visits for Home Care Attendant and Home Support Worker Services by Income Quintile, 2013/14-2014/15

Age- and sex-adjusted rate per person-year for community-dwelling Manitoba residents

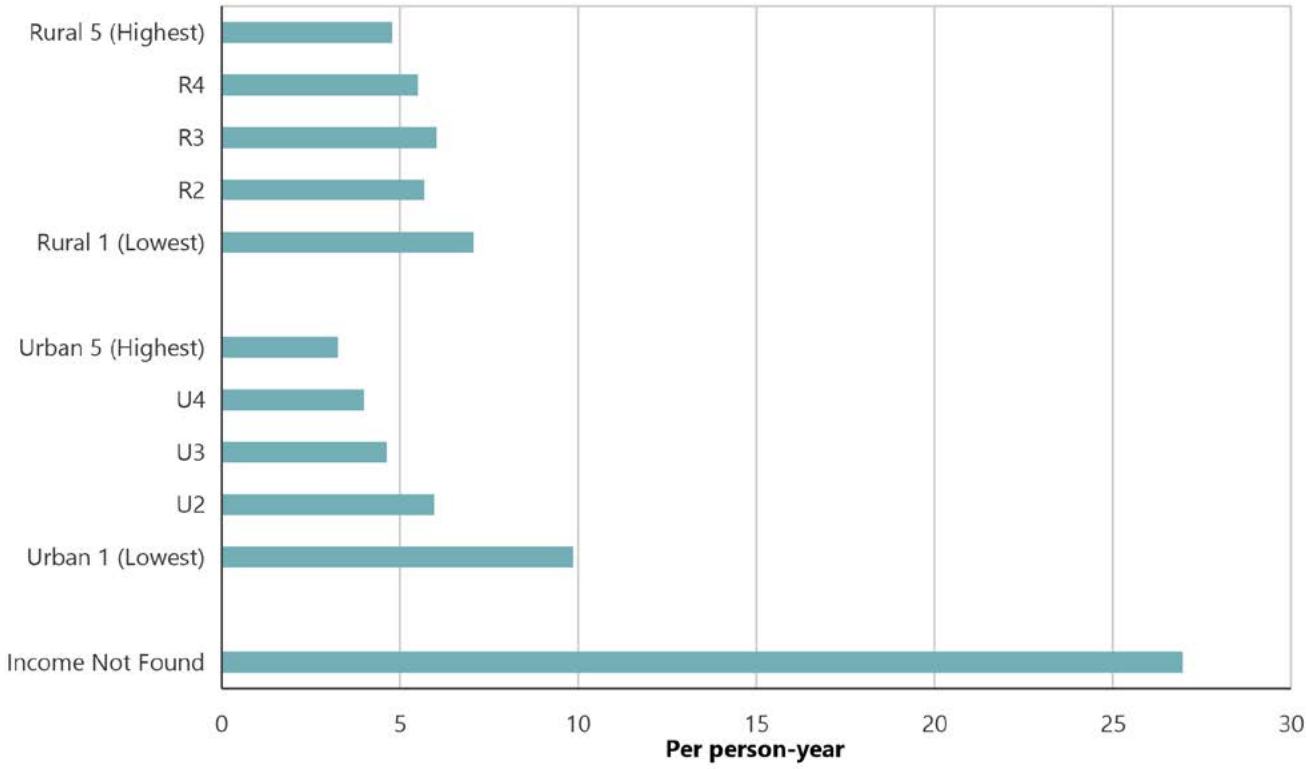
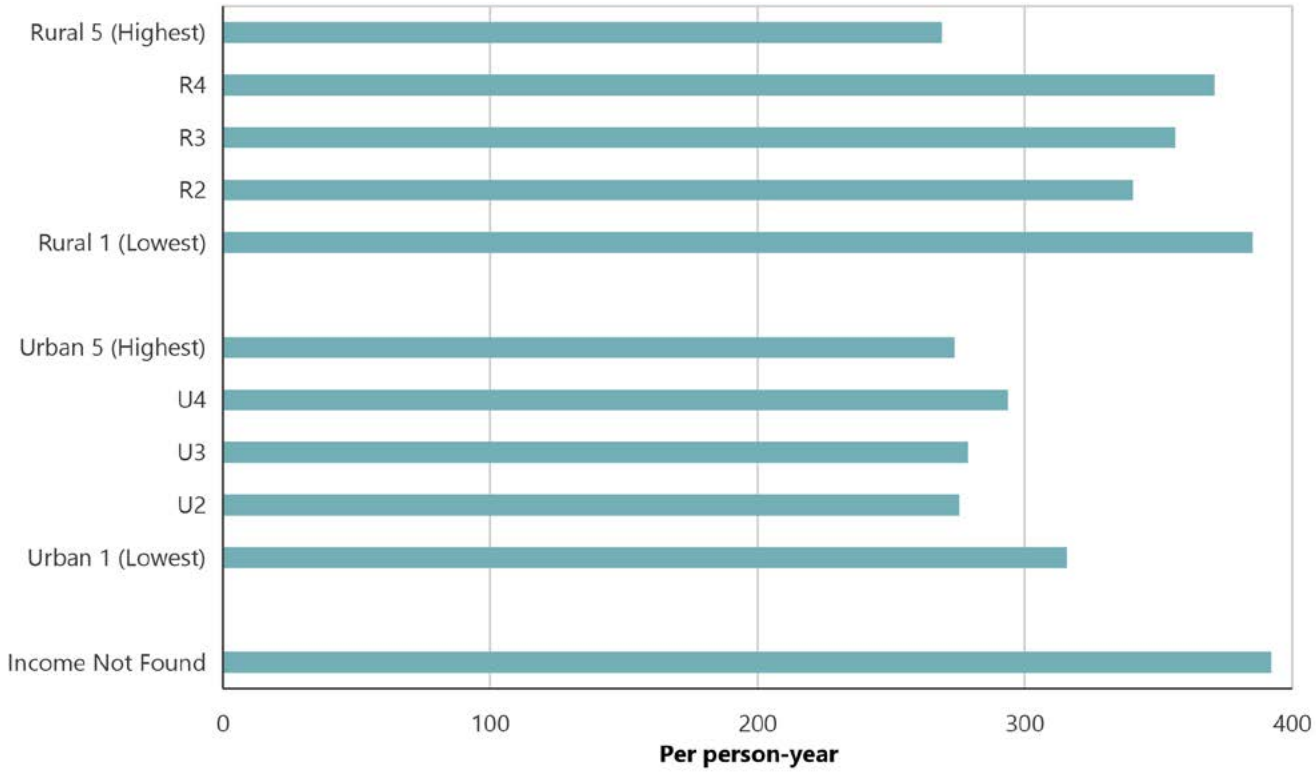


Figure 6.5: Client-Based Home Care Visits for Home Care Attendant and Home Support Worker Services by Income Quintile, 2013/14-2014/15

Age- and sex-adjusted rate per person-year for Manitoba home care clients



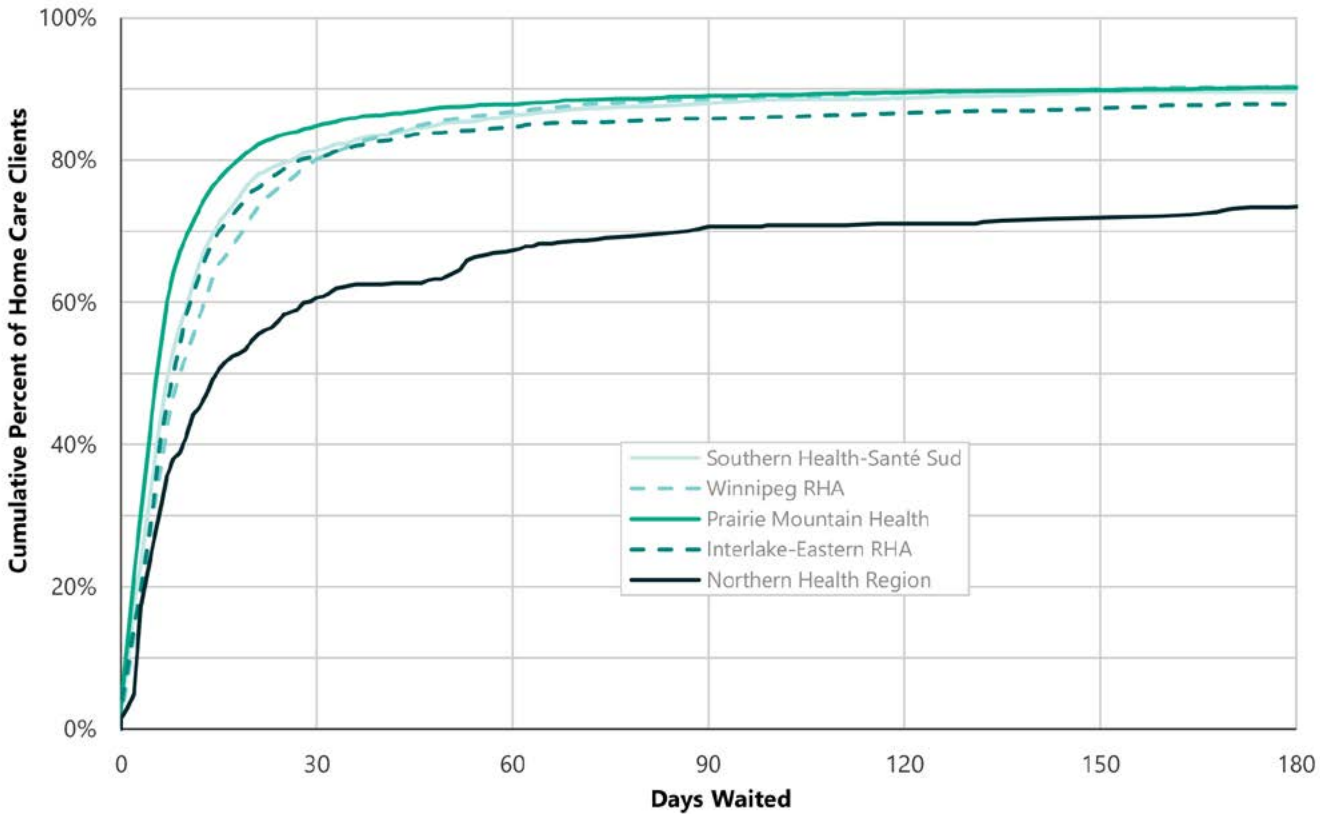
Number of Days from Intake to First Visit

This analysis of visit data calculated the time between a client's intake and when they had their first visit for HCA/HSW services. For this analysis, we looked at all new open home care episodes for HCA/HSW in the client data table, and then looked for the corresponding first visit for this individual in the HCA/HSW visit table. This was done for all new client episodes during the two-year study period.

The results of this analysis are presented in Figure 6.6 and show the cumulative percentage of new clients who have received their first visit, within various time periods after intake. All health regions start at zero. At 30 days after intake, 85% of clients in Prairie Mountain Health have had their first visit, and roughly 80% of clients in Winnipeg, Southern, and Inter-Lake Eastern have had their first visit. However, we see a very different story in Northern Health Region – at 30 days after intake only 60% of clients from Northern Health Region have had their first visit.

There are many possible reasons for the delay in initial home care visits. For example, there could be issues in negotiating an appropriate time and day between provider and client, staff may not be available due to caseloads, and/or intervening events are preventing an initial visit (e.g., hospitalization of the client). Indeed, for those who have appeared to have been waiting for six months or more, it is not clear if a wait of that duration continues to represent a client where an expectation for home care services remains. In some of these cases, the client data table may not have been updated to show a closure or transfer of a client. Findings show 10-15% of clients may not have had a visit within six months. This indicates that the prevalence and incidence numbers presented earlier only represent the number of people who meet the requirements for home care without necessarily receiving home care services.

Figure 6.6: Time from intake to first visit in days, by Health Region



Chapter 7:
Health Care Use Rates for Home Care Clients

This chapter of the report describes the health care use of home care clients, including the hospitalization rate, physician visit rate, prescription drug dispensation rate, and emergency department (ED) visits (for Winnipeg EDs only). In addition to the rates of events, these analyses looked at the reasons, or causes, for the events. Hospitalizations and physician visits were based on the International Classification of Diseases, which divides diagnoses into larger 'chapters' that group together similar conditions (e.g., cancer, digestive, respiratory, circulatory, etc.). Prescription drug dispensations analysis was based on the Anatomical Therapeutic Classification system, which groups together drugs based on the anatomical system they affect and the type of effect they have on that system.

Key Findings

Hospitalizations:

- Higher than those for the community-dwelling population of Manitobans, in all regions and for all age groups.
- Males are more frequently hospitalized than females.
- Clients in Winnipeg have a much lower hospitalization rate than clients living in other regions.
- Northern Health Region has a higher hospitalization rate than other regions.
- What is notable is the diversity of causes, with no single cause being predominant.

Ambulatory visits:

- Overall, home care clients have similar visit rates compared with Manitobans who did not receive home care.
- For the older age groups, the physician visit rates of home care clients are lower than for those living in the community and not receiving home care services.

Prescription drug dispensations:

- Prescription drug rates for home care clients peak for persons aged 40-64 and decline slightly afterwards.
- For the younger age groups, particularly under forty years old, Winnipeg RHA had a much higher rate of drug prescriptions to home care patients than other regions of the province.
- Other than in the oldest age group, women tended to have a higher rate of prescription drugs dispensed to them than men.

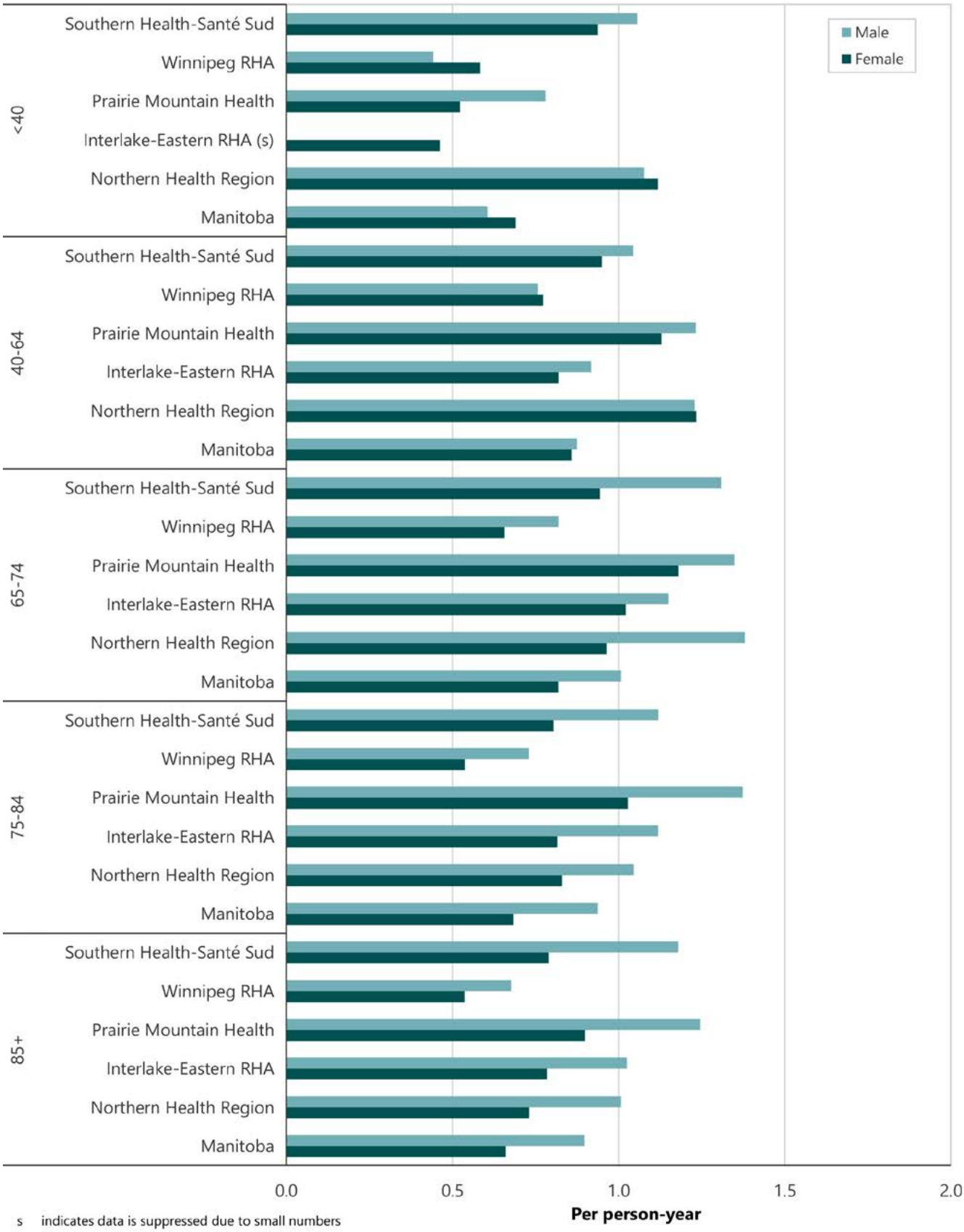
Emergency Department Visits:

- For the older age groups (65-74, 75-84, 85+) males receiving home care services have a consistently higher visit rate to emergency departments than females.
- In the youngest age group (<40) females have a much higher rate than males.

Hospitalization Rates

Across all regions and for all age groups, hospitalization rates for home care clients are higher compared to rates for the general population of Manitoba, (Figure 7.1). This is not surprising since those receiving home care are in poorer health. A recent report from MCHP found that the hospitalization rate for 65-74-year-old Manitobans was about 0.1 per person-year [4], compared to about 0.9 per person-year for those receiving home care services. A surprising result of the analysis of those receiving home care services is that the hospitalization rates do not appear to increase with age, and hospitalization rates appear to decrease slightly for the oldest age group (85+) compared to the younger age groups. In Manitoba's general population, hospitalization rates increase significantly with age [4]. The analysis also shows that amongst home care clients, males are more frequently hospitalized than females, and clients in Winnipeg have a much lower hospitalization rate than clients living in other regions. Northern Health Region has a higher hospitalization rate than other regions.

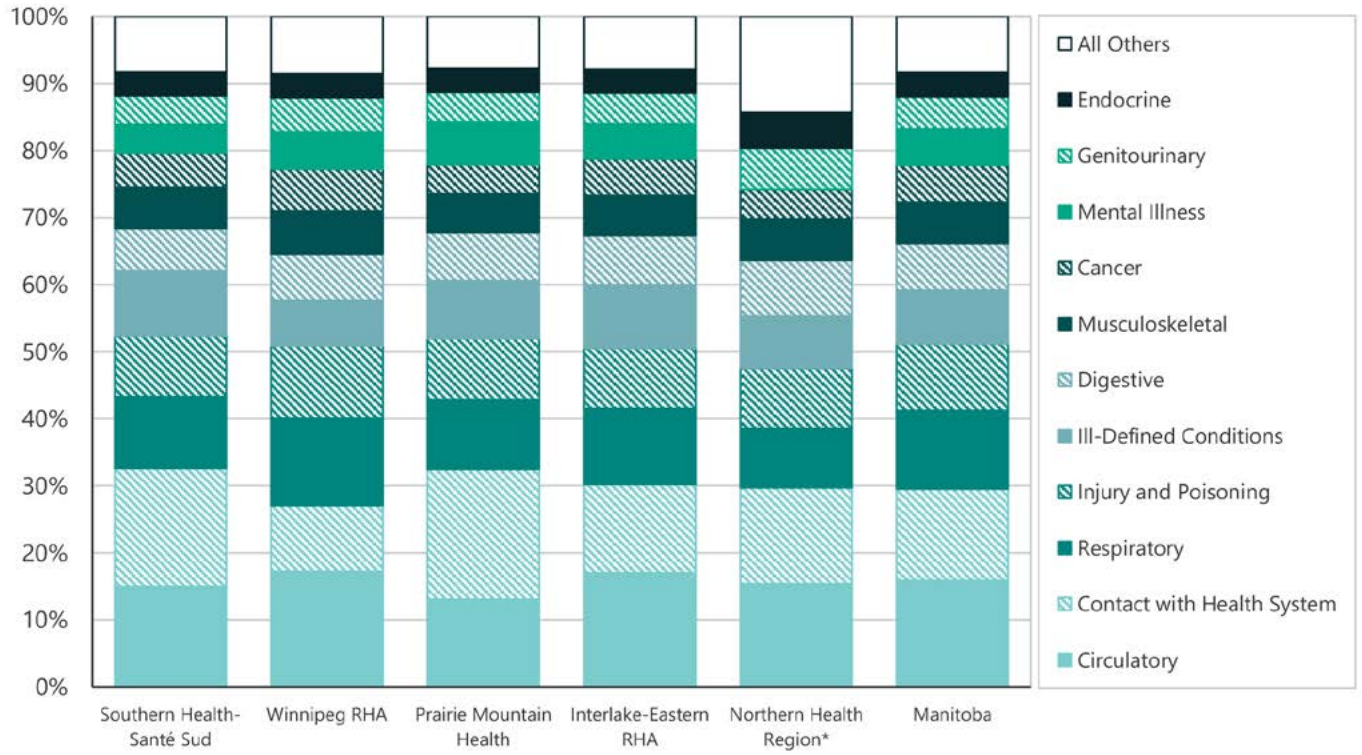
Figure 7.1: Hospitalizations by Health Region, Age, and Sex, 2013/14-2014/15
Crude rate per person-year for Manitoba home care clients



s indicates data is suppressed due to small numbers

Reasons for being hospitalized are fairly consistent across the province, with circulatory conditions being the most common cause for being admitted (Figure 7.2). What is notable is the diversity of causes, with no single cause being predominant. People are likely receiving home care for a wide variety of reasons, and/or have a complexity of issues that could be addressed by home care services.

Figure 7.2: Most Frequent Reasons for Hospitalization by Health Region, and ICD-10-CA Chapter, 2013/14 and 2014/15
Percent of Manitoba home care clients

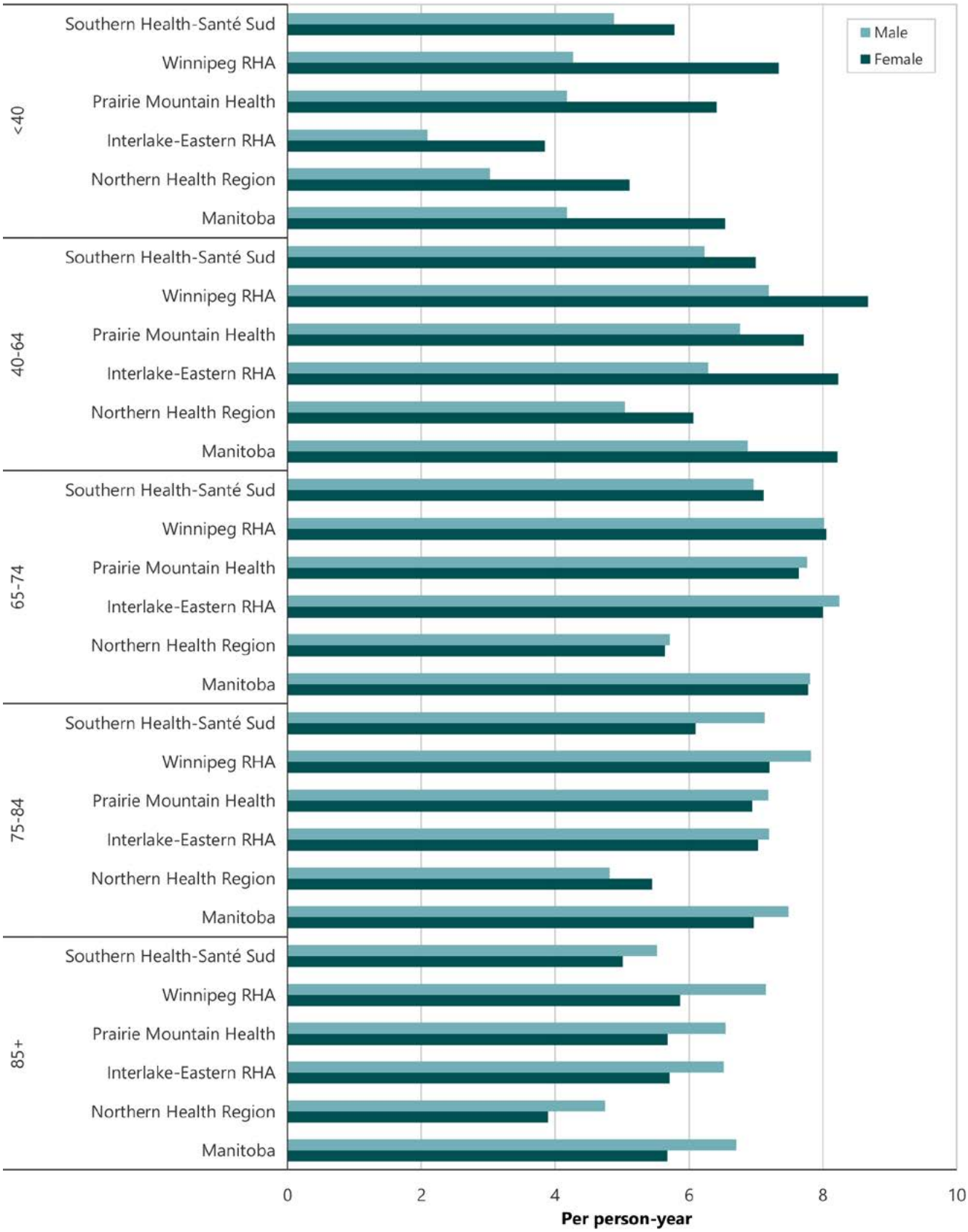


* Mental illness did not make the top 12 in Northern Health Region. Instead, infectious and parasitic causes had a rate of 3.4457, this was added to "all others"

Ambulatory Visit Rates

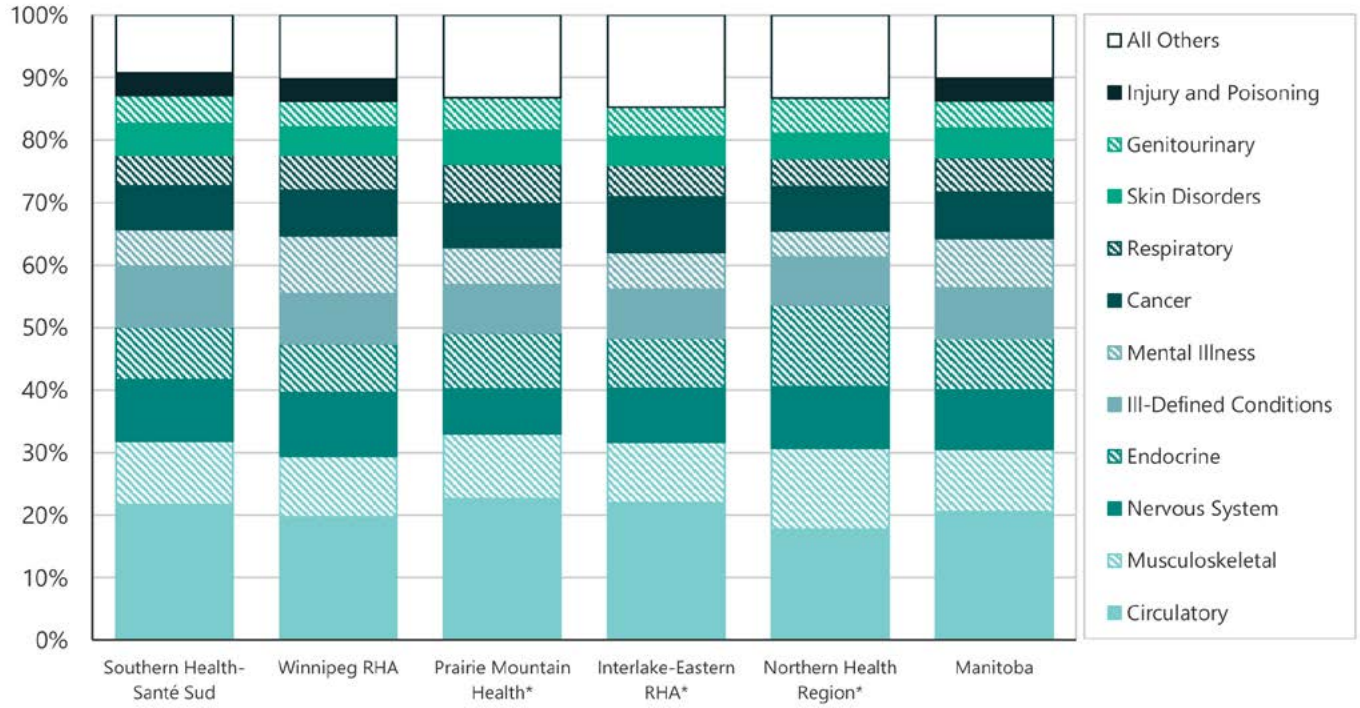
Ambulatory visits include all visits to physicians or nurse practitioners that occur outside of a hospital setting and were calculated as a rate per person-year for the 2014/15 fiscal year period. Home care clients do not have higher visit rates than Manitobans who do not receive home care (Chateau et al., 2019). For the older age groups, the rates for home care clients are lower than for those not receiving home care services (e.g., for 85+ home care client rate is ~6/year, and for non-clients ~8/year) (Figure 7.3).

Figure 7.3: Ambulatory Visits by Health Region, Age, and Sex, 2013/14-2014/15
Crude rate per person-year for Manitoba home care clients



The most common reason for an ambulatory visit is for circulatory system conditions which account for more than 20% of all visits (Figure 7.4). The next most common cause makes up less than 10% of visits (musculoskeletal; e.g. arthritis).

Figure 7.4: Most Frequent Reasons for Ambulatory Visits by Health Region & ICD-9-CM Chapter, 2013/14 and 2014/15
Percent of Manitoba home care clients



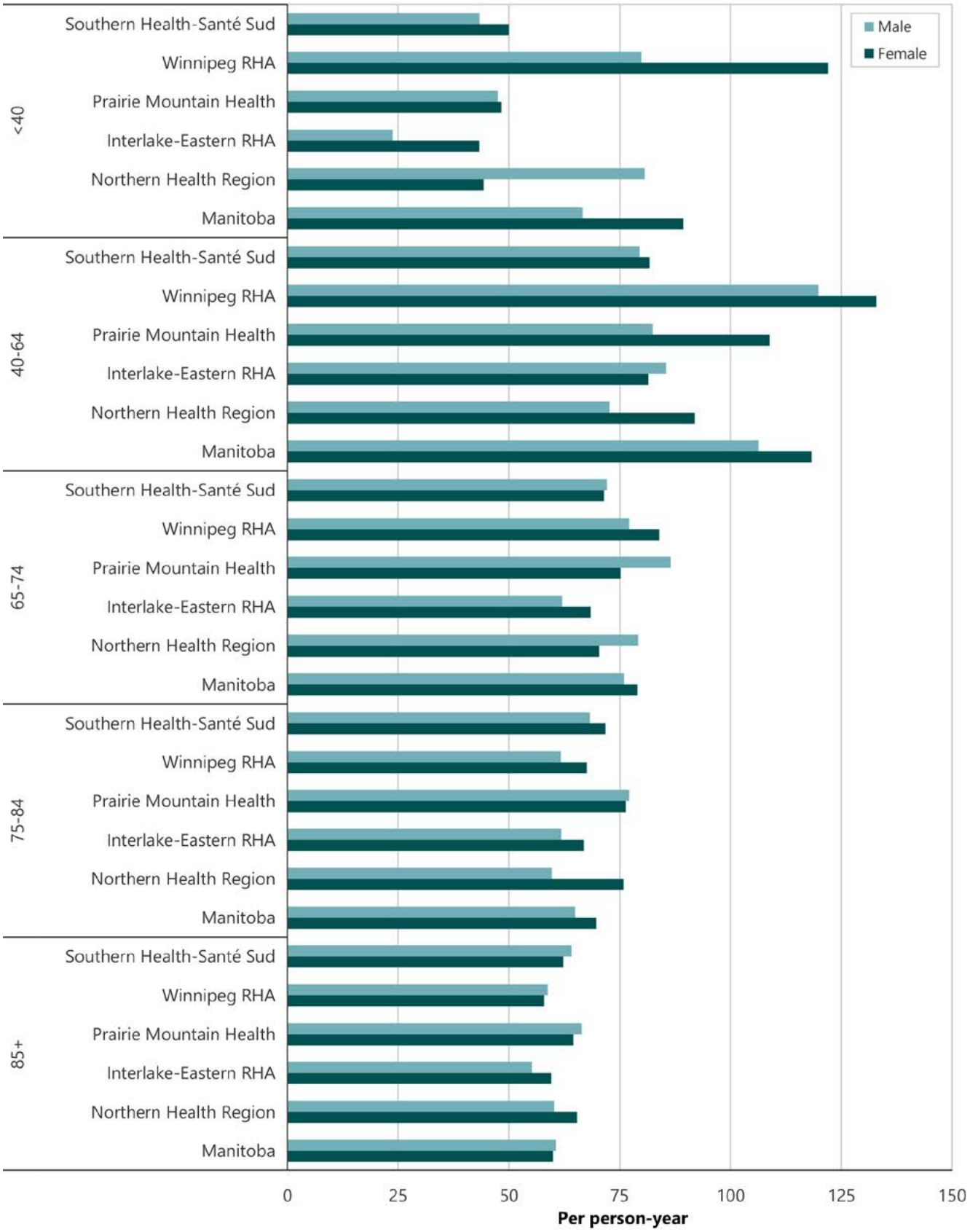
*Injury and poisoning did not make the top 12 ambulatory visits. Instead, Prairie Mountain Health and Northern Health Region had digestive system rate of 3.5995 and 3.8188 respectively. Interlake-Eastern RHA had a rate of 3.709 for contact with health system. These are added to "All Others"

Prescription Drug Dispensation Rates

Visits to a physician or nurse practitioner often result in a prescription for a drug to treat the symptom or condition that was the reason for the visit. The Manitoba Population Data Repository contains comprehensive information on prescription drug dispensations in the Drug Program Information Network (DPIN) data, including all dispensations of prescription drugs for Manitobans of all ages regardless of the method of payment. These data are records of the dispensations of the drugs, rather than the prescriptions, meaning the pharmacy had prepared and dispensed the drug to the patient. If a patient received a prescription but did not actually fill it, then it is not tracked in DPIN and cannot be included in our analyses.

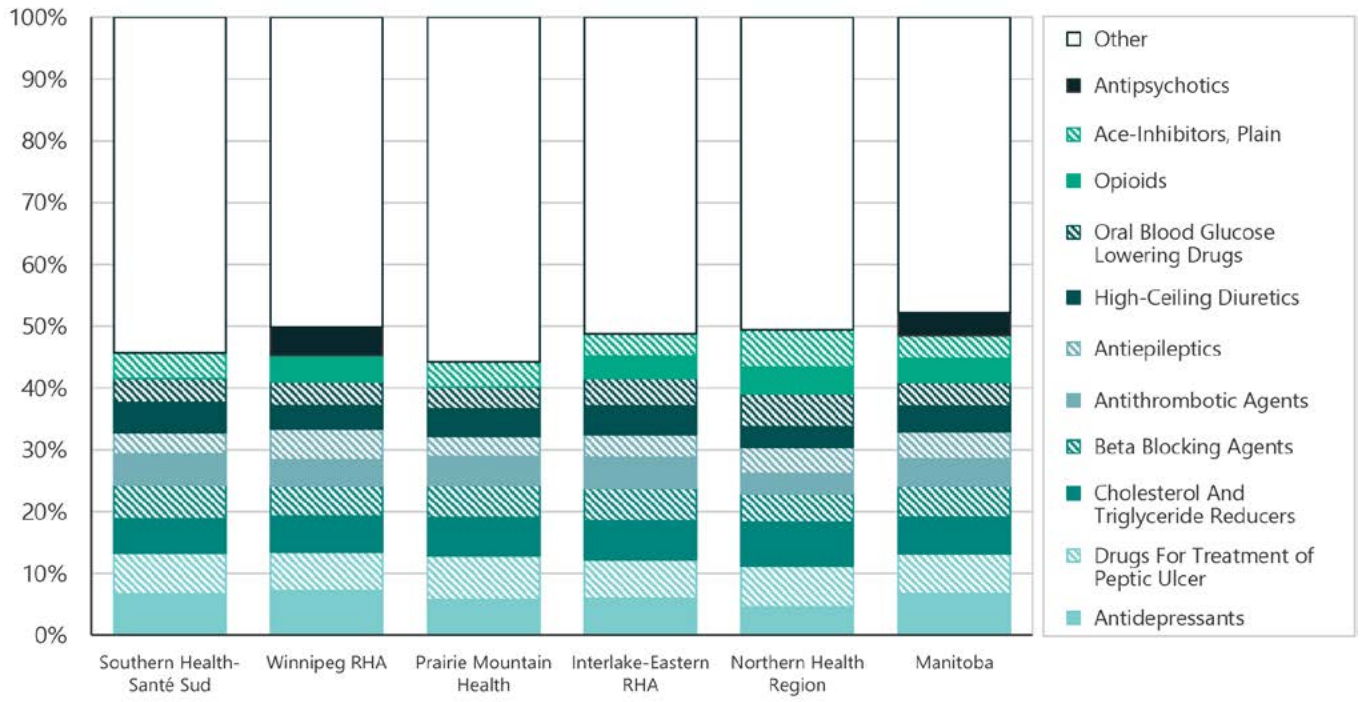
Prescription drug rates for home care clients follow the same trends as physician visits and hospitalizations, peaking for the persons aged 40-64 and declining slightly afterwards (Figure 7.5). Again, this is unlike the general population of community-dwelling older adults where the rates tend to increase as the age group increases [4]. For younger age groups, particularly less than forty years old, Winnipeg RHA had a much higher rate than other regions of the province. Other than in the oldest age group, women tended to have a higher rate of prescription drugs dispensed to them than men, for most age groups and regions of the province.

Figure 7.5: Prescription Drug Dispensations by Health Region, Age, and Sex, 2013/14-2014/15
Crude rate per person-year for Manitoba home care clients



Prescription drugs can be categorized based on the intended effects of the drugs (such as the group of drugs known as antidepressants, or the group of drugs used to control diabetes). We examined the drugs dispensed to home care clients, and Figure 7.6 presents the top ten drug classes for each of the regions. Antidepressants are the single most commonly dispensed class of drugs in Manitoba, accounting for 6.7% of all dispensations. Other commonly prescribed drugs included those for diabetes (oral blood glucose-lowering drugs, 3.9%), cardiac care (beta-blockers, 5%; and ace inhibitors, 3.8%), or for gastrointestinal ailments (treatment of peptic ulcer, 6.4%). Differences between the regions were minimal except for antipsychotics, which appeared in the top ten only for Winnipeg RHA, and opioids which were in the top ten for all regions except Southern Health-Santé Sud and Prairie Mountain Health.

Figure 7.6: Most Frequent Prescription Drug (ATC 3) Dispensations by Health Region, 2013/14 and 2014/15
Percent of Manitoba home care clients



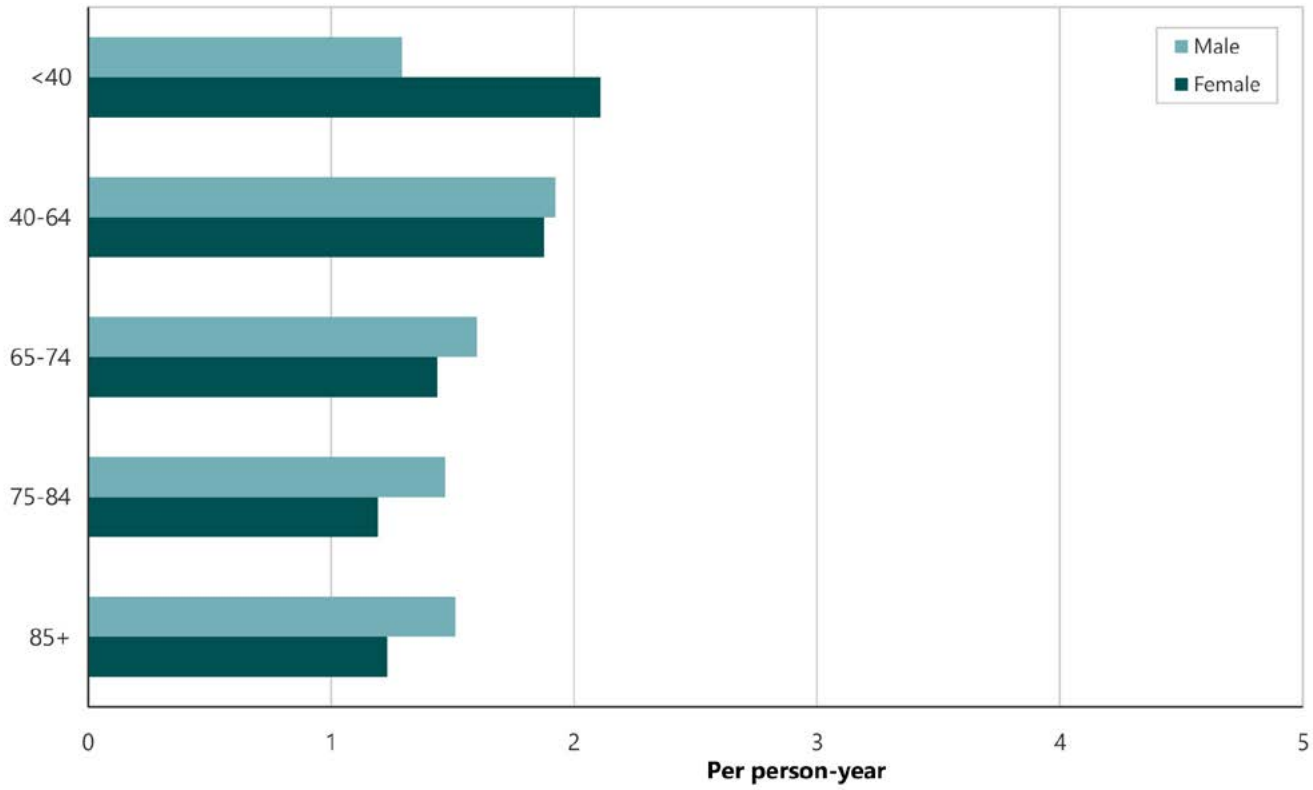
Note: Antipsychotics were represented in the top 12 for Winnipeg RHA and MB only
Opoids were represented in the top 12 for all regions except Prairie Mountain Health and Southern Health-Santé Sud

Emergency Department Visits

Despite ongoing regular care from an HCA/HSW or a nurse, the underlying condition that made home care necessary may result in the need for acute care. A trip to the emergency department (ED) at a hospital would be required if there was an exacerbation of the condition or the rapid development or worsening of a symptom. The Repository contains data for all visits to Winnipeg EDs during the study years but does not have comprehensive data for the other regions of Manitoba.

Results for Winnipeg are presented below in Figure 7.7. As with the previous health use indicators, we see a decline with age, from a peak of almost two visits per person-year for the 40-64 year age group to about 1.3 visits per person-year for the 85+ year age group. In the general population, there is a steep rise in ED visits with an increase in age group, although the rate is never as high as it is for the home care population, peaking at about 0.85 visits per person-year for the oldest age group [4]. There are some apparent sex differences with ED visits rates. For the older age groups (65-74, 75-84, 85+) males have a consistently higher visit rate than females, while in the youngest age group (<40) females have a much higher rate than males.

Figure 7.7: Winnipeg Emergency Department Visit by Age, and Sex, 2014/15
Crude rate per person-year for Manitoba home care clients



Chapter 8:
Discussion, Conclusions, and Recommendations

This report is the first-ever look at Procura, the new home care data recording system that has been adopted across Manitoba to record home care services. Several checks against alternate data sources indicated that the data is accurate and reliable and can be used to assess home care services in Manitoba. We have only touched the surface of the Procura home care data, using just two of the main data tables, but even so, we have highlighted the important improvements in data quality.

One of the advantages of the new data system is that we were able to differentiate types of home care services provided to Manitobans (e.g., nursing, oxygen therapy, home care attendant/home support worker (HCA/HSW)). These distinct services place separate demands on the system and planning for the future will need to take this into account, particularly nursing services and HCA/HSW care. This report provides a 'current status' for home care in Manitoba and updated numbers from further transfers of data to the Repository could be used to provide projections for future needs. Another advantage of the new data system is that it can provide visit level data for individuals receiving HCA/HSW services, which are the most prevalent type of home care provided to clients. Further analyses of this data can examine the frequency and length of visits, consistency of provider, and other important useful information for planners and care providers.

When we examined who is using home care services we found, for the most part, that usage patterns reflect needs-driven care provision. Older individuals are more likely to be receiving home care services than younger people. Amongst people aged 85 and older, women are more likely to be home care clients than men. Individuals living in areas of lower-income are more likely to use home care than individuals living in richer areas. Surprisingly, analysis of the data indicates that men have higher incident rates of home care use compared to women in the oldest age group. This coincides with a shorter duration of home care use for men than women. Additionally, when we restrict our cohort to home care clients, visit rates are not different between the age groups or income levels. However, we found hospitalizations, primary care visits, drug dispensations, and emergency department visits are all very similar across age and income levels of those receiving home care.

Further research using the Procura home care data may uncover additional useful information for planners and providers, particularly with updates that can then be used to identify any trends or changes in utilization of services and visit rates. Together with detailed analyses of health status and health service use of older adults, and how people transition across the continuum of care, demands on home care services, primary care, acute care, and personal care homes can be better evaluated as a complete system. Until now, detailed information on home care services was an important missing piece. That being said, much more information about home care is missing. The incomplete data on nursing across the province prevented an analysis of visit rates for this service, so while we are able to report on individuals who were listed for nursing services, we cannot report visit rates for nurses.

References

1. Shelkey M, Wallace M. Katz Index of Independence in Activities of Daily Living (ADL). *Director*. 2000;8(2):72-73.
2. Manitoba Health: Health Information Management. Annual Statistics 2011-2012. Winnipeg, MB; 2012.
3. Roos NP, Stranc L, Peterson S, Mitchell L, Bogdanovic B, Shapiro E. *A look at Home Care in Manitoba*. Winnipeg, MB; 2001. http://mchp-appserv.cpe.umanitoba.ca/reference/homecare.pdf
4. Chateau D, Doupe M, Prior H, Soodeen RA, Sarkar J, Dragan R, Stevenson D, Rajotte L. *The Health Status of Community-Dwelling Older Adults in Manitoba*. Winnipeg, MB; 2019. http://mchp-appserv.cpe.umanitoba.ca/reference/Senior2_Report_web.pdf

University of Manitoba | Rady Faculty of Health Sciences

Manitoba Centre for Health Policy

Data | Insight | Informing Solutions

University of Manitoba
Max Rady College of Medicine
Rady Faculty of Health Sciences

408-727 McDermot Avenue
Winnipeg, Manitoba, Canada
R3E 3P5

Tel: (204) 789-3819
Fax: (204) 789-3910
Email: reports@cpe.umanitoba.ca

www.mchp.ca