

Examining Variation in Access to Post-Acute Home Care Services

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Research Team and Funder

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- **Ann Tourangeau** PhD; Co-investigator

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Overview

- Study overview
- Study findings
- Study implications



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Context

- Post-acute health care services are shifting into the community
- Nurses provide the majority of in home post-acute health care services, including:
 - ✓ Intravenous medication administration
 - ✓ Post-surgical care
 - ✓ Cancer treatments (e.g., chemotherapy)



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Context

➤ **Post-acute home care:**

- ✓ Admission within 7 days of hospital discharge
- ✓ Expected home care length of stay less than 60 days
- ✓ Similar to CCAC short-stay client categorization



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Context

- Ontario-based researchers have found variation in access to home care services across regions
 - Coyte and Young (1999) noted regional differences in the rates of post-acute home care services received between 1993 and 1995



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Context

- In 1996, Ontario introduced the Community Care Access Centers (CCACs), in part, to facilitate equitable access to home care services
 - However, research conducted following the introduction of the CCACs found regional variation persisted (Laporte et al., 2007)



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Context

- Existing literature supports several factors as influencing access to home care services. These factors include:
 - ✓ Age
 - ✓ Sex
 - ✓ Race
 - ✓ Education
 - ✓ Socioeconomic status
 - ✓ Informal care
 - ✓ Living arrangement
 - ✓ Health status
 - ✓ Functional status
 - ✓ Caregiver burden
 - ✓ Region
 - ✓ Agency legal status
 - ✓ Previous health care utilization



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Study Aim

- 1) To identify factors affecting access to home care nursing services for Ontario post-acute home care clients
- 2) To determine whether regional variation in access to post-acute home care services exists across Ontario



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Methods: Data Sources

- Secondary analysis of provincial administrative health service utilization data
- Several databases were linked using a unique patient identifier, these databases included:
 - ✓ Discharge Abstract Database
 - ✓ Home Care Database
 - ✓ Registered Persons Database



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Methods: Sample Selection

- Adult patients (18 years and older) discharged from an Ontario hospital between April 1th, 2009 and March 31st 2012 were included in the study if:
 - ✓ They had a home care admission within 7 days of hospital discharge
 - ✓ They were included in one of the top 25 case mix groups (according to their hospital discharge record)



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Methods: Variables

➤ **Outcome:** Access

- ✓ **Home care nursing visit intensity:** the number of home care nursing visits received in the first 60 days following admission to home care

➤ **Explanatory variables:**

- ✓ Case Mix Group
- ✓ Age
- ✓ Sex
- ✓ Living arrangement
- ✓ Residence type
- ✓ Hospital length of stay
- ✓ Month & year of home care admission
- ✓ Region
- ✓ Previous health care utilization



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Methods: Statistical Analysis

- Intensity of home care nursing services received was modeled using ordinary least-squares regression
- Nursing visit intensity was positively skewed, and as a result was log-transformed



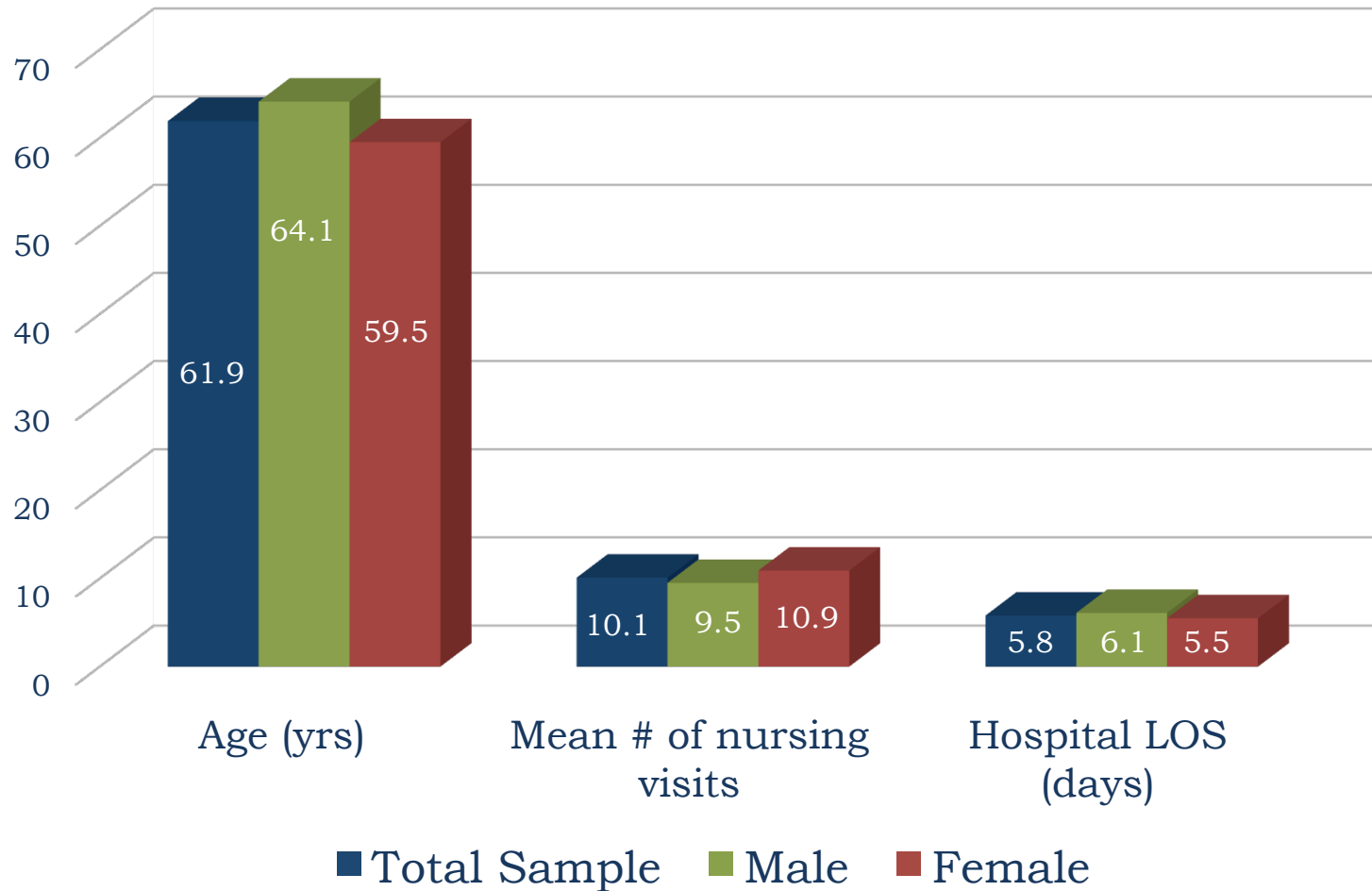
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Results: Sample Characteristics



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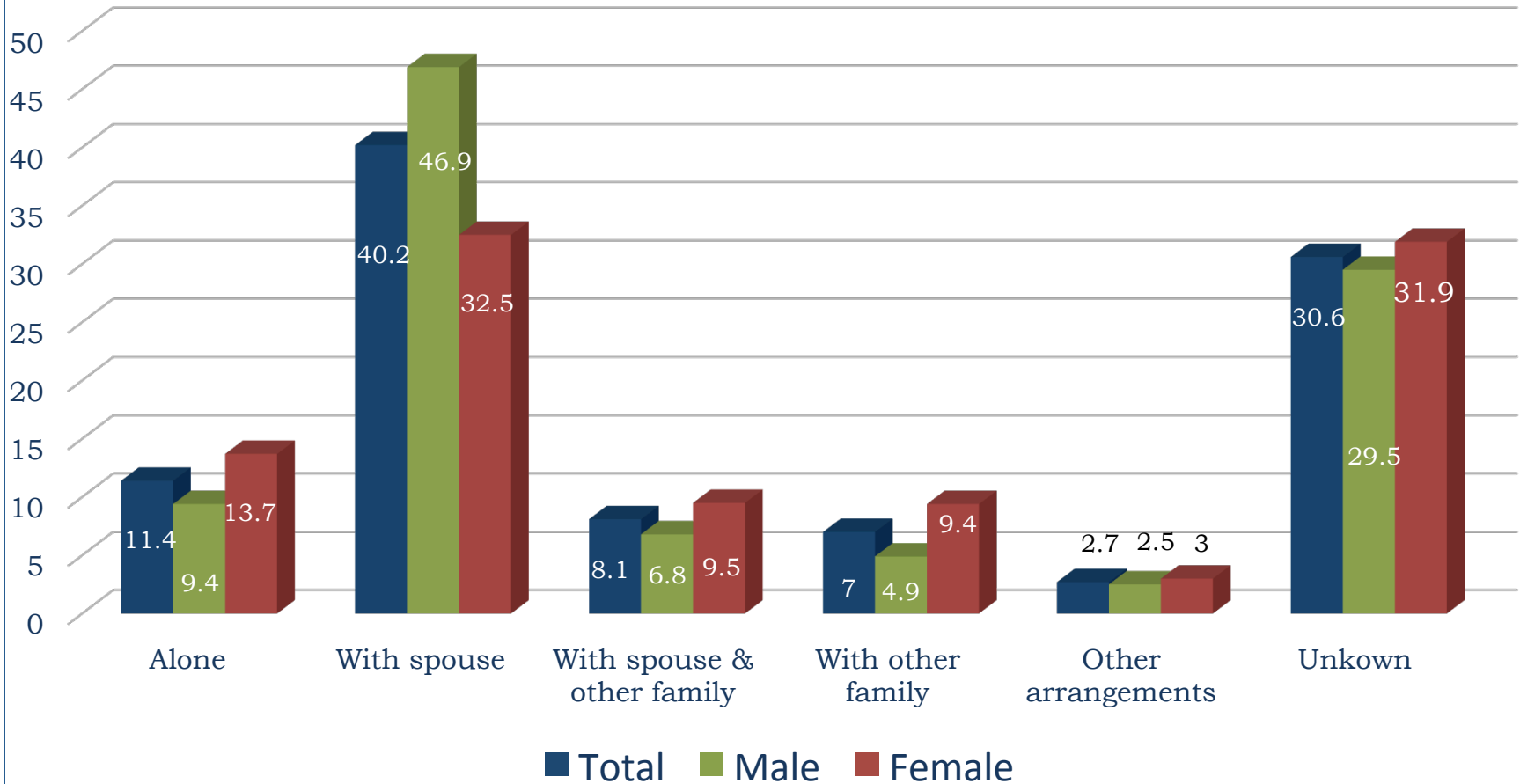
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Results: Sample Characteristics

Living Arrangement (%)



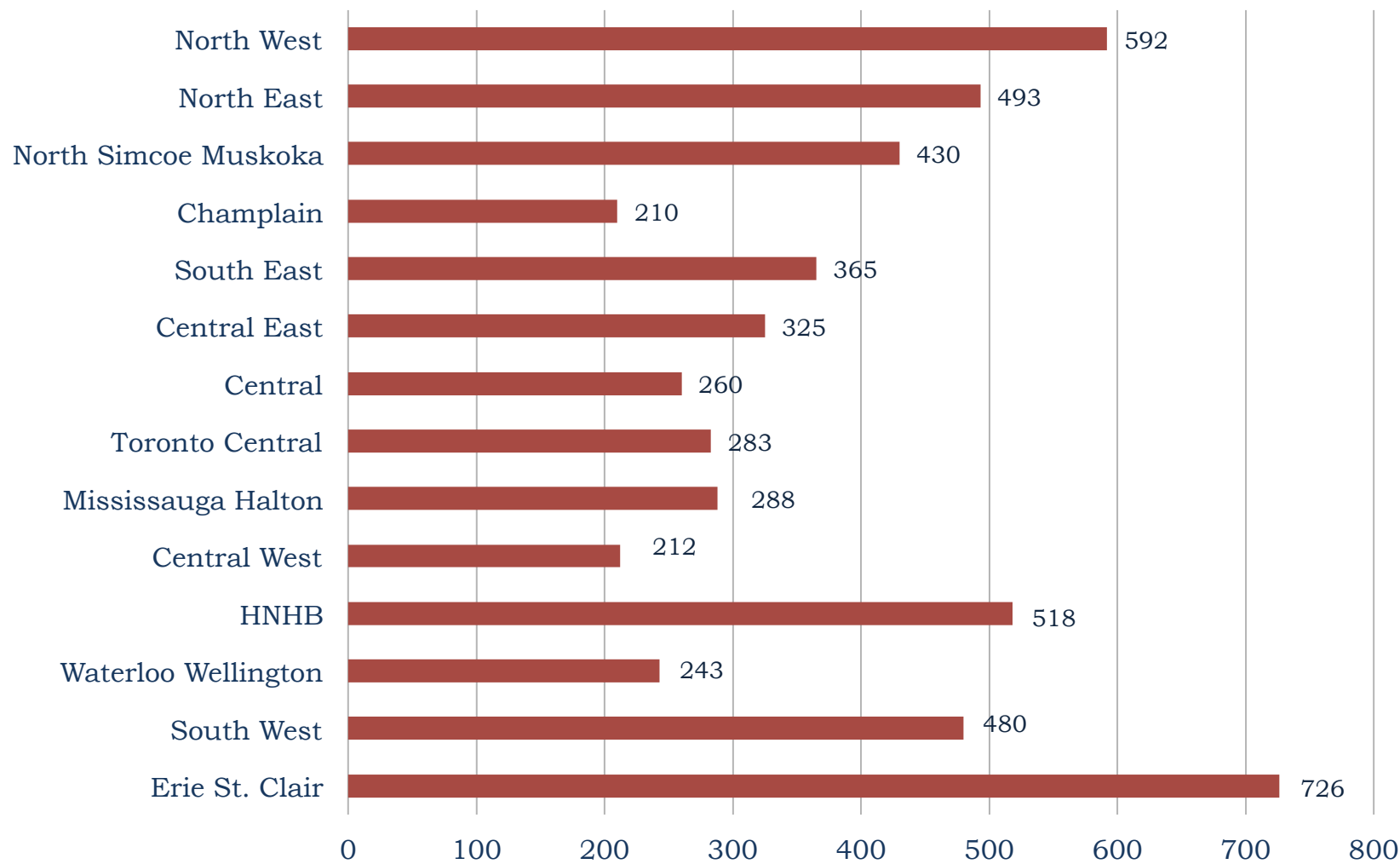
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Results: Home Care Episodes Across CCACs



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Results: Top 25 Case Mix Groups

CMG	Description	Frequency	% of Total Sample
221	Colostomy / Enterostomy	4,020	9.22%
462	Radical excision of prostate	3,926	9.0%
387	Unilateral total / radical excision of breast	3,113	7.14%
321	Unilateral knee replacement	2,829	6.48%
806	Convalescence	2,268	5.20%
223	Open large intestine/rectum resection without colostomy, planned	2,138	4.90%
464	Partial excision / destruction of prostate, closed approach	1,898	4.35%
172	Coronary artery bypass graft without cardiac catheter	1,848	4.24%
320	Unilateral hip replacement	1,838	4.21%
405	Cellulitis	1,805	4.14%
182	Bypass / extraction of vein / artery of limb	1,703	3.90%
780	Postoperative complication except haemorrhage	1,685	3.86%
385	Repair / reconstruction of the breast	1,500	3.44%
502	Hysterectomy with non-malignant diagnosis	1,436	3.55%
139	Chronic Obstructive Pulmonary Disease	1,395	3.20%
181	Abdominal aorta intervention	1,329	3.05%
196	Heart failure without cardiac catheter	1,287	2.95%
228	Complex hernia repair	1,069	2.45%
200	Pulmonary embolism	1,013	2.32%
258	Other gastrointestinal disorder	953	2.18%
537	Primary caesarean section	950	2.18%
437	Diabetes	938	2.15%
162	Cardiac valve replacement	891	2.04%
313	Spinal vertebrae intervention	883	2.20%
487	Lower urinary tract infection	882	2.02%



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Results: Care Received

- ✓ 99.5% received care from a nurse
- ✓ 7.2% received care from a physiotherapist
- ✓ 2.9% received care from a personal support worker
- ✓ 2.9% received care from an occupational therapist
- ✓ 0.7% received care from a registered dietician
- ✓ 0.4% received care from a social worker
- ✓ 36% received care from a case manager



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Results: Care Provider Type

Care was delivered by not-for-profit (28.8%) and for-profit (40%) home care organizations, in 31.2% of cases the legal status of the provider agency was unknown



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Results: Factors Influencing Access

- 22.8% of variance in nursing visit intensity was explained by the variables included in this model. The following were significant predictors ($p < 0.05$) of nursing visit intensity:
 - ✓ Sex and age
 - ✓ Case mix group
 - ✓ Home care admission month (February, March, July) and fiscal year (2010-2011 and 2011-2012)
 - ✓ CCAC or region
 - ✓ Living arrangement
 - ✓ Residing in long-term care
 - ✓ Receiving other types of home care services
 - ✓ Previous health care utilization



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Results: Factors Influencing Access

➤ Greater intensity of home care nursing services was associated with:

- ✓ Increasing age
- ✓ Being female
- ✓ Not living with a spouse
- ✓ Receiving care from other health care providers (other than nursing)
- ✓ Home care admission in July (compared to April)
- ✓ Receiving care in the North-West CCAC (as compared to Toronto Central)
- ✓ Longer hospital length of stay
- ✓ More hospital admissions in the 30 days preceding the home care admission



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Results: Factors Influencing Access

- Lower intensity of home care nursing services was associated with:
 - ✓ Living in a long-term care facility
 - ✓ Utilization of home care services in the 30 days preceding the home care admission
 - ✓ Home care admission in fiscal years 2010/11 and 2011/2012 (compared to 2009/10)
 - ✓ Home care admission in February or March (compared to April)
 - ✓ Receiving care outside of the Toronto Central, or North West CCACs



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Limitations

- Limited clinical information about home care users
- Explanatory variables limited by the available data



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Is there Regional Variation in Access to Post-Acute Home Care?

- Access to post-acute home care nursing services varies across CCACs/LHINs/regions
- Access to post-acute home care also varies over time (month and fiscal year)



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Implications

- Individuals in need of post-acute home care may not be receiving services they require, increasing the risk of adverse outcomes
- Funding allocation to CCACs is not facilitating equitable access over time
- Variation in access may also related to the supply of home care nurses available to provide care



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Thank You

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