

Structures of Post-Acute Home Care Service Delivery and Extended Home Care Length of Stay Among Ontario Seniors

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Research Team and Funder

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Context

- Hospital lengths of stay are decreasing, shifting post-acute care into the community.
- Patients discharged from hospital utilize a range of home care services to support their recovery in the community.



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Post Acute Home Care

➤ 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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Structures of Home Care Service Delivery

- Intensity of nursing visits
- Pattern of visits (frontloading)
- Wait time for first service
- Mix of providers
- Home care length of stay



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Study Aim

To identify which structures of home care impact home care length of stay for Ontario seniors receiving post-acute care.



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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

- Older adults (65 years and older) discharged from an Ontario hospital between April 1st, 2009 and March 31st 2012 were included in the study if:
 - ✓ They had a home care admission within 7 days of hospital discharge
 - ✓ They lived in a privately owned/rented home



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Methods: Statistical Analysis

- Multivariate logistic regression was conducted to examine the factors associated with post-acute home care stays greater than 60 days.



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Methods: Variables

- **Outcome:** Extended Home Care Length of Stay
 - ✓ Receipt of service after 60 days from admission

- **Explanatory variables:**

- ✓ Age
- ✓ Sex
- ✓ Case mix group
- ✓ Hospital length of stay
- ✓ Recent hospitalizations
- ✓ Previous home care utilization
- ✓ Nursing visit intensity
- ✓ Allied health visit(s)
- ✓ Case management visit(s)
- ✓ Personal support visit(s)
- ✓ Frontloading of nursing visits
- ✓ Wait time for service



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Results: Sample Characteristics

	Total Sample n=15,298	Male n=9,511	Female n=5,787
Mean age in years (SD)	74.1 (6.6)	73.7 (6.5)	74.8 (6.8)
Percent female	37.8%		
Lives alone	14.2%*	9.6%	21.8%
Hospital length of stay in days (SD)	6.0 (7.2)	6.0 (7.1)	6.1 (7.5)
Previous home care utilization	5.2%	5.6%	4.7%
Previous hospitalizations in the past 30 days			
• One hospitalization (linked with HC episode)	96.7%	96.5%	97.0%
• Two hospitalizations	2.9%	3.1%	2.6%
• Three or more hospitalizations	0.4%	0.4%	0.4%
Average nursing visits per week (SD)	2.18 (1.7)	2.16 (1.7)	2.21 (1.7)

*note in 28.3% of cases, living arrangement was coded as 'unknown' therefore this variable was not used as a predictor in the regression



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Results: Structures of Care

	Total Sample n= 15,298	Male Cases n=9,511	Female Cases n=5,787
Nursing Visit Intensity (nursing visits per week)			
• Zero to 2 visits	56.2%	56.9%	54.9%
• 2 to 5 visits	36.2%	35.8%	36.8%
• More than 5 visits	7.7%	7.3%	8.3%
Wait time for first visit			
• Less than 1 day	85.3%	85.4%	85.2%
• 2 to 5 days	13.1%	12.9%	13.4%
• More than 5 days	1.6%	1.7%	1.4%
Allied health visit			
• No allied health visit	85.4%	88.9%	79.6%
• Received allied health visit(s)	14.6%	11.1%	20.4%
Care coordinator visit			
• No care coordinator visit	63.1%	63.8%	61.9%
• Received one visit	28.6%	28.2%	29.2%
• Received more than one visit	8.4%	8.1%	8.9%
Personal Support and Homemaking Services			
• No personal support or homemaking	95.5%	97.3%	92.5%
• Received personal support and/or homemaking visit(s)	4.6%	2.7%	7.5%
Frontloaded pattern of nursing visits	73.0%	74.8%	70.2%



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Results: Extended Home Care Length of Stay

- 9.1% of cases in the sample remained on service past 60 days.
 - ✓ 7.8% of males had an extended length of stay
 - ✓ 11.3% of females had an extended length of stay.
- Average length of stay was 53.4 days
- Range: 1 day to 1094 days



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Results

- The model significantly predicted home care stays longer than 60 days [$\chi^2(51, n=15,298)=3014.61$ $p<0.0001$].
- Structures of home care service delivery influencing extended home care stays (greater than 60 days) include:
 - ✓ Amount of nursing services provided per week
 - ✓ Percentage of nursing visits occurring within the first two weeks of the home care episode
 - ✓ Provision of allied health visits
 - ✓ Provision of case management
 - ✓ Provision of home support services
 - ✓ Month of admission to home care
 - ✓ Geographical region where care was provided



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Results: Logistic Regression Model

Factor	Odds Ratio	95% Confidence Interval	
Female	1.129	1.058	1.406
Nursing Intensity			
• Low (0-2 visits/wk)	1.00 (ref)		
• Moderate (2-5 visits/wk)	1.218	1.042	1.424
• High (>5 visits/wk)	2.630	1.972	3.509
Received allied health	2.036	1.681	2.466
Care coordinator visit			
• No care coordinator visit	0.842	0.719	0.987
• Received one visit	1.00 (ref)		
• Received more than one visit	NS		
Received home support visits	2.185	1.722	2.774
Admitted in April	0.589	0.408	0.851
Wait time to first visit	NS		
Frontloading nursing visits	0.053	0.044	0.063



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Limitations

- Explanatory variables limited by the available data
- Limited clinical information about home care users
- Lack of evidence around optimal home care services and service levels to promote recovery for post-acute seniors



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Implications

- Frontloading
- Future research



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Thank You

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