



Understanding the Structures of Home-Based Care Delivery: A Presentation for Home Care Ontario

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Research Team and Funder

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Study Overview

TITLE: Impact of Home Care Nurse Staffing, Work Environments and Collaboration on Patient Outcomes

AIM: To examine the structures of home-based care teams in relation to patient outcomes for long-term maintenance patients.

❖ **Phase 1:** Synthesis

Goal: To gain an understanding of current structures of home-based nursing care delivery for LTM home care clients through a review of the literature and relevant policy documents.

Outputs: Literature Review, Jurisdictional Scan

❖ **Phase 2:** Analysis

Goal: To analyze and apply findings of the jurisdictional scan and literature review to the context of home-based nursing care delivery in Ontario.

Outputs: Comparative Policy Analysis

❖ **Phase 3:** Primary Data Collection

Goal: To describe current structures of home-based nursing care for LTM clients in Ontario and to examine how structures of home-based nursing care relate to LTM client outcomes.

Outputs: Conference Presentations and Targeted Group Presentations

*note: all research outputs are publically available on the study website: www.tourangeauresearch.com



Questions to be Addressed in this Presentation:

- ❖ What is the role of the PSW in the home care team?
- ❖ What is the process through which care activities are assigned to care providers in home-based care?
- ❖ What are the roles of home care team members in the process?
- ❖ What patient characteristics and structures of care are related to long term maintenance home care patient outcomes?



Methods

- ❖ **FOCUS GROUPS:** 13 focus groups were conducted with service providers at 2 Community Care Access Centers & 6 home care provider organizations
 - ◆ 23 unregulated care providers (PSWs)
 - ◆ 18 personal support services supervisors
 - ◆ 17 home care nurses (RNs & RPNs)
 - ◆ 12 care coordinators

- ❖ **CHART REVIEWS:** A random sample of charts belonging to 790 patients were reviewed in 6 service provider organizations across 4 CCACs for patients discharged in 2014
 - ◆ Patient characteristics, caregiver characteristics, service utilization, structures of care and patient outcomes



Speaking Notes

A total of 13 focus group sessions were conducted with health care workers at 2 CCACs and 6 service provider organizations. Focus groups were provider-specific and included 23 PSWs across 4 focus groups, 18 personal support services supervisors across 4 focus groups, 17 home care nurses across 3 focus groups, and 12 care coordinators across 2 focus groups.

Through these focus group sessions we sought to more clearly understand the role of each provider group in the home care team and to describe the process for delegating, teaching and assigning care tasks to unregulated care providers.

Additionally, chart reviews were conducted to gather information related to the structures and outcomes of home-based care. A random sample of charts belonging to patients discharged in 2014 were reviewed in 3 CCACs. Due to timing and resource constraints, the final CCAC was not able to participate in the data collection process and so a convenience sample was selected for that region.

Data were collected on patient characteristics, caregiver characteristics, structures of care, service utilization and patient outcomes. Through chart reviews we also sought to understand how often personal support workers were providing delegated care and how delegated care was documented.



PSW Role

Core Competencies and Added Skills



Speaking Notes

Through this study, we learned that PSWs are integral members of the home care team. Typically, when a patient is admitted to service for personal care, the PSW is the first person in the home. They are also the provider who visits the patient most frequently.

Therefore we believe that to better understand home care processes it is important to have a clear understanding of the PSW role. Over the next few slides we will describe the PSW role in relation to core competencies and added skills.



Poll Question

To work as a support worker in home care in Ontario you must have attended an educational program through:

- a. A community college
- b. A private career college
- c. The Board of Education
- d. No formal education is required



Speaking Notes

The correct answer is d) currently no formal education is required to work as a support worker in home care. However, many CCACs have written into their contracts with service provider agencies that care is to be provided by certified PSWs. So how are PSWs educated?



PSW Education

- ❖ Certified PSWs are educated through:
 1. Community Colleges
 2. Private Career Colleges
 3. The Board of Education
- ❖ Health care aides receive on the job training and are often hired based on life experience for providing supportive care



Speaking Notes

Support workers employed in the home care sector can be either certified PSWs or health care aides.

Certified PSWs are educated through programs at Community Colleges, Private Career Colleges and the Board of Education.

Those who are not certified PSWs are often referred to as health care aides, home support workers or unregulated care providers. These workers receive on the job training and are often hired based on life experience for providing supportive care.

For the purposes of this presentation, when we refer to PSWs, we will be referring to both PSWs and health care aides.



Poll Question

Which of the following tasks is not an added skill for PSWs?

- a. Intermittent catheterization
- b. Suppository administration
- c. Use of mechanical lifts
- d. Assisting with monitoring blood glucose



Speaking Notes

If you chose d) Assisting with monitoring blood glucose, you are correct! The first two tasks are controlled acts as designated by the regulated health professions act. While c) the use of mechanical lifts is not a controlled act, it does require patient specific teaching for PSWs as there is a high risk for both patient and PSW injury.



PSW Core Skills

Task	Examples
Personal Care	Mouth care, denture care, perineal care, hair wash, shaving, filing of nails, bathing, dressing
Nutrition & Fluids	Light meal prep, assist with oral feeding, measure and record intake/output
Light Housekeeping	Tidying of patient's space, removal of light garbage, laundry for patient only
Elimination	Assist patient to toilet, assist to use bedpan, urinal etc., empty catheter bag, change leg bag to night bag, empty colostomy bag
Medication assistance	Assist patient to take premeasured oral medication, assist patient to use blood glucometer*
Positioning	Positioning for comfort in bed, wheelchair etc.
Vital Signs	Assist with patient self-monitoring*
Other	Assist with obtaining specimens for diagnostic tests
* May not interpret results	

Speaking Notes

As most of you know, the PSW role is not regulated, as such, there is no defined "scope of practice". However, PSWs are accountable to their employers. The tasks they perform vary and are often defined by their job description. The majority of care provided by personal support workers for long term maintenance home care patients involves support for activities of daily living.

Core skills, which certified PSWs learn through educational preparation and other support workers learn through on the job training, include personal care, nutrition support, light housekeeping, assistance with elimination, medication assistance, positioning, assistance with vital signs monitoring and obtaining specimens.

When assisting with blood glucose or vital signs monitoring, PSWs are only able to assist and record, not interpret results.

Added Skills (e.g. Delegation or Teaching & Assignment)

Task	Examples
Compression therapy	Compression stockings (>20psi) and wraps
Transfers	Mechanical lifts, two person transfers and transfers with special equipment
Physiotherapy	Range of motion and other exercise programs*
Medications	Administration of: oral medications, eye drops, ear drops, nasal spray, medicated creams, inhalants*, assist with injections
Urinary catheters	Intermittent catheterization*
Diabetes care	Blood glucose monitoring* and insulin administration*
Assessment & monitoring	Skin assessment, blood pressure monitoring
Bowel management	Change colostomy appliance, <u>enema administration*</u> , digital stimulation* and suppository administration*
Wound Care	Dry dressings (intact skin, established tubes, chronic stoma), <u>cleaning established trach</u>
Other	Enteral nutrition*, oral suctioning, <u>assist with oxygen administration</u> , CPAP/bi-pap, <u>breathing exercises*</u> , assistance with application of prosthetic devices & braces
*Requires official delegation <u>Not mentioned in focus groups</u>	

Speaking Notes

More and more PSWs are being asked to perform care traditionally provided by registered health professionals such as nurses and physiotherapists. These skills are considered outside PSW education and require either formal delegation (for controlled acts) or teaching & assignment.

Currently in home care, in addition to personal care, personal support workers are applying compression stockings, performing transfers and lifts, assisting patients with range of motion exercises, cueing and administering medications, providing catheter care, assisting patients with diabetes care including blood glucose monitoring and insulin administration, performing ostomy care, assessing and monitoring skin integrity and vital signs, performing bowel management activities such as disimpaction and suppository administration, providing enteral nutrition and performing oral suctioning.

This table synthesizes the results of our focus groups and policy documents provided to us from the Ontario participants of our jurisdictional scan. The tasks in the table which are underlined were not specifically mentioned by focus group participants. However, these tasks are approved by CCACs for delegation or teaching and assignment to PSWs.

Poll Question

Who is responsible for the ongoing monitoring of the performance and need for added skills?

- a. Care coordinator
- b. Nurse or other allied health professional
- c. Personal support service supervisor
- d. Personal support worker



Speaking Notes

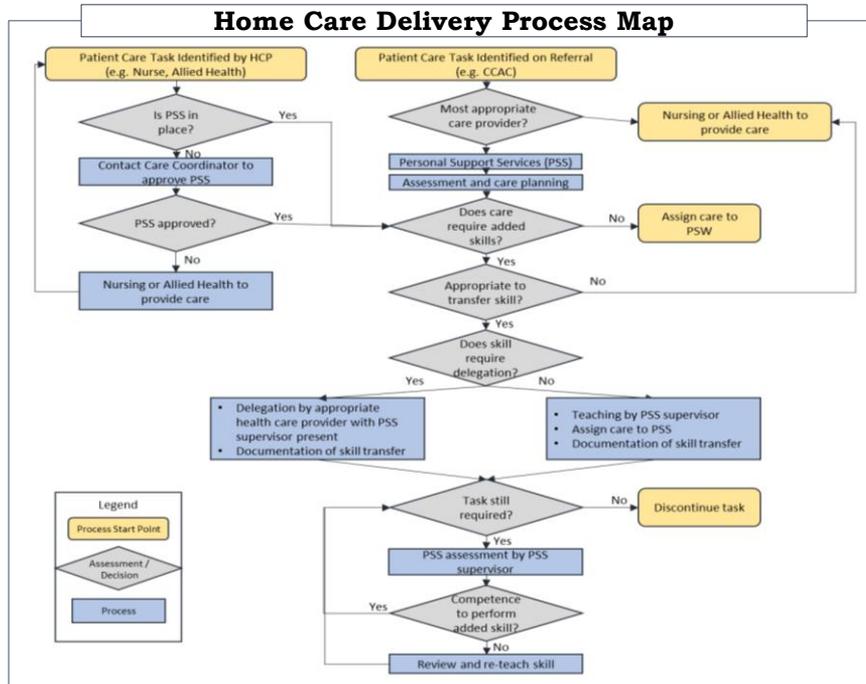
Technically according to the CNO (2015) the nurse who delegates the procedure is “responsible to ensure the client receives safe and ethical care”. However in the decision tree, the final step is “ensure a monitoring mechanism is in place (to determine ongoing competence)”. For the most part, in home care, this monitoring mechanism is assumed to be the personal support service supervisor, who is either a RN or an RPN. In other settings this may be the original delegator who is part of the health care team of that patient.



Care Provider Assignment & Delegation of Care

Process and Problems



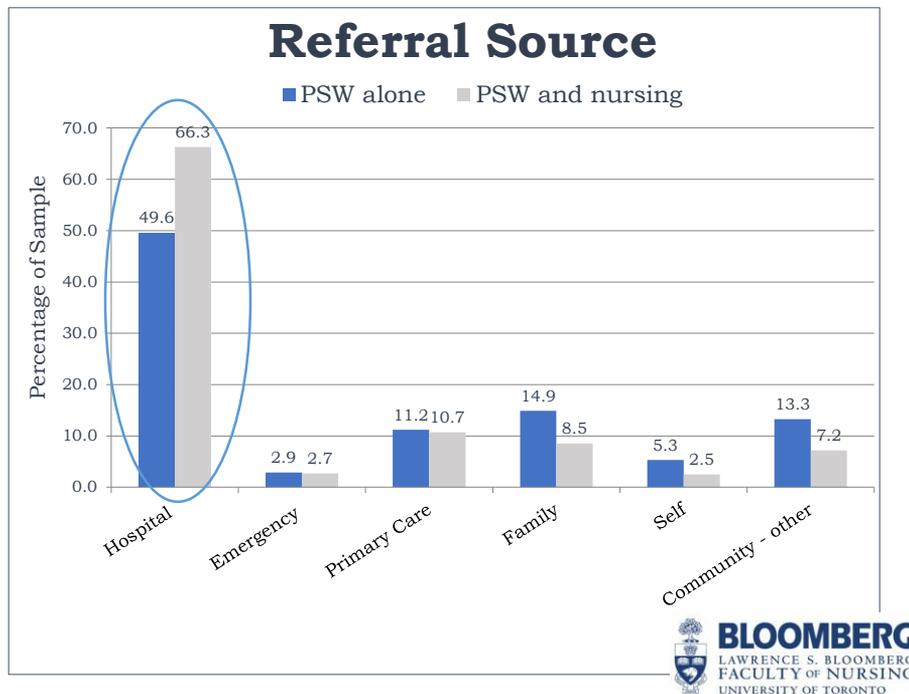


Speaking Notes

Through focus groups sessions and a review of relevant policy documents, we were able to better understand the roles of care coordinators, frontline nurses, personal support services supervisors and personal support workers.

Here, we have synthesized the findings of the focus group sessions to develop a process map illustrating the interplay of provider roles across the home care episode.

The following slides will break down the process by provider role highlighting the responsibilities of each provider group.



Speaking Notes

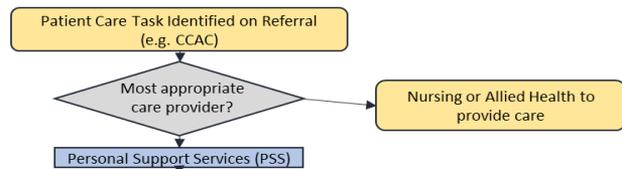
Patients are referred to home care from numerous sources in both acute and community settings.

Patients included in the chart reviews were referred to home care from hospitals, emergency departments, primary care practices, family, and through self-referral.

Note that as expected patients receiving PSW plus nursing care were more often referred by hospitals.

Care Coordinator Role

- Employed by the CCAC
- Responsible for service allocation and care coordination
- “Big picture” understanding of patient status and care delivery



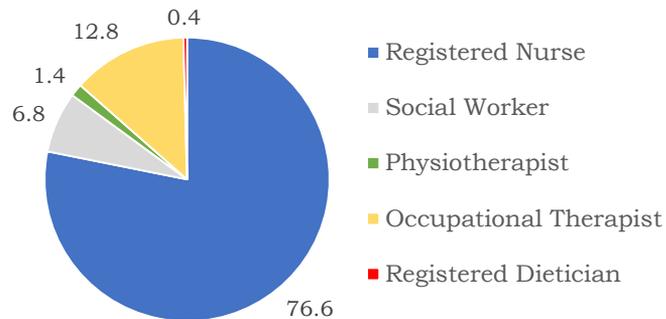
Speaking Notes

In this first step of the process, Care coordinators employed by Community Care Access Centers are responsible for allocating types and amounts of home care services. Through patient assessment, care coordinators determine which care provider or group of care providers is most appropriate to provide care.

Based on the findings of our chart review, it was evident that in the current service delivery model, care coordinators have the most complete “big picture” understanding of the client’s situation including health events, social situations and services utilized allowing them to coordinate care across service provider organizations.



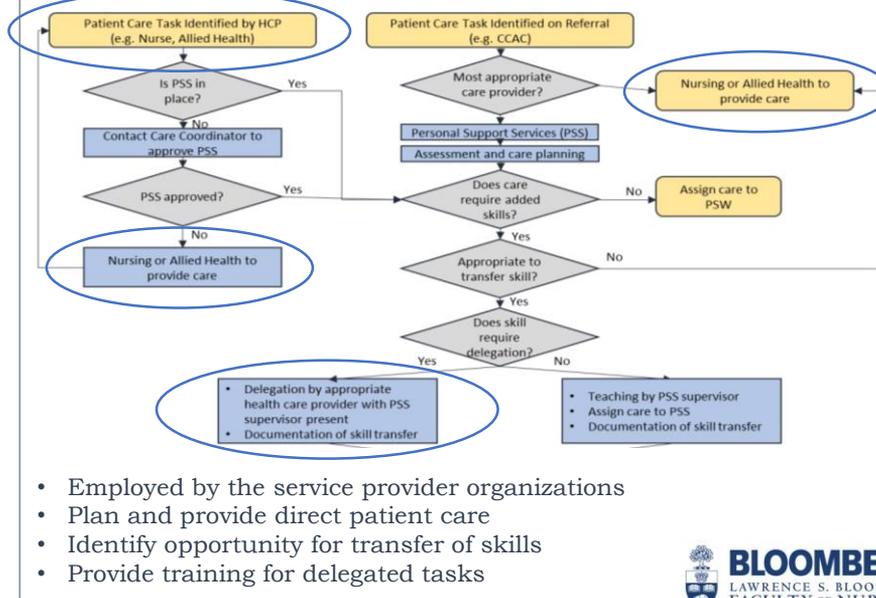
Care Coordinator Designation



Speaking Notes

Care coordinators are often nurses but can also be physiotherapists, occupational therapists, social workers or dietitians. In this study, care coordinators were most often registered nurses.

Nursing and Allied Health Role



Speaking Notes

Front line nurses and allied health providers are most often employed by home care service provider organizations and in some cases by the CCAC. These care providers are responsible for the planning and delivery of direct patient care and often identify the opportunity for the transfer of skills to PSWs.

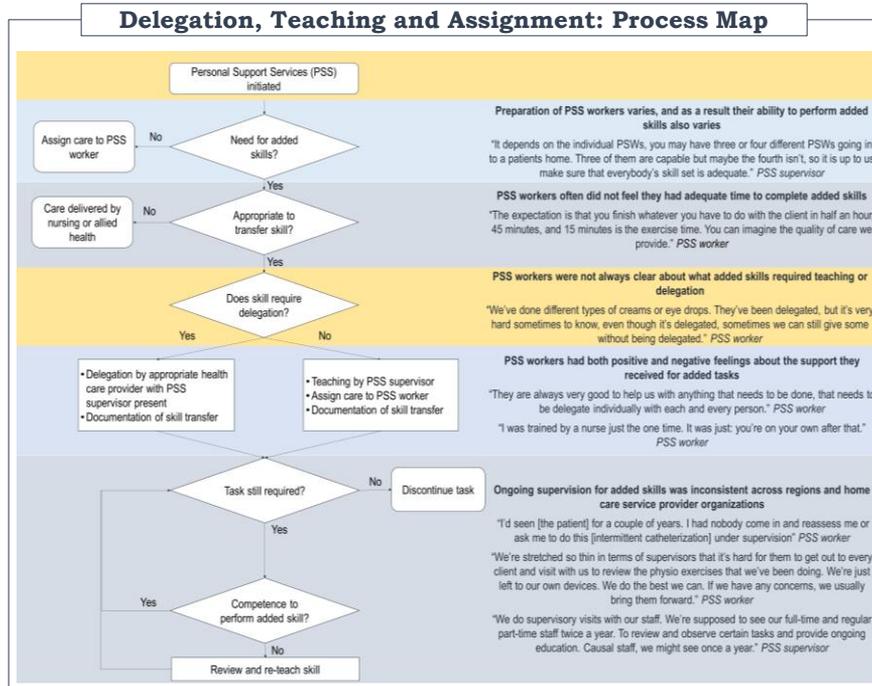
Nurses specifically, may also stay involved with patient care in the case where skills are transferred to support workers, to continue monitoring the patient and to order necessary supplies. However, it is the responsibility of the PSW supervisor to monitor the PSW and assess the care they provide.

Poll Question

Rate your level of agreement with the following statement: The roles of the home care team members were accurately described.

- a. Strongly disagree
- b. Moderately disagree
- c. Disagree
- d. Neutral
- e. agree
- f. Moderately agree
- g. Strongly agree





Speaking Notes

This process map begins at the point where personal support services are initiated. Care coordinator, nurses, allied health providers, physicians, the patient or their family can request personal support services.

Once personal support services are approved and initiated the care coordinator, personal support services supervisor or the PSW identify the need for added skills. If there are no added skills, the care is assigned to the PSW. If there are added skills required an assessment is made (usually by the personal support services supervisor) to determine whether it is appropriate to transfer the skills to the PSW.

If it is deemed not appropriate to transfer the skill, care is provided by a registered health care professional. If transferring the skill to the PSW is appropriate, the personal support services supervisor determines whether formal delegation is required.

Formal delegation is required when the task is a controlled act, as defined in Ontario's Regulated Health Professions Act. If formal delegation is required, the appropriate health care professional along with the personal support services supervisor train the PSW to provide the care and document that delegation has occurred. When formal delegation is not required, the PSW is trained to provide the skills by the personal support services supervisor (sometimes in classroom settings) and the transfer of skill is documented.

The final phase of the process is the ongoing supervision of added skills. After the skill has been transferred the personal support services supervisor is responsible for the ongoing monitoring of the PSWs competence to perform the added skill, the ongoing need for the care, and for monitoring overall patient personal care needs.

PSW Education

PSW preparation varies, as a result their ability to perform added skills also varies

- ❖ Not all individuals providing supportive care in home and community-based care are certified PSWs
 - ◆ Certified PSWs have completed formal education and training
 - ◆ Health care aides is the most common term used to refer to individuals providing supportive care who are not certified PSWs

“It depends on the individual PSWs, you may have three or four different PSWs going in to a patient’s home. Three of them are capable but maybe the fourth isn’t, so it is up to us make sure that everybody’s skill set is adequate.”

PSW supervisor



Speaking Notes

One of the identified challenges related to working with PSWs in the community is the variability in PSW education and preparation. PSW preparation varies and as a result their ability to perform added skills also varies.

As previously mentioned, a portion of those individuals providing supportive care in the community are certified PSWs educated through programs at Community Colleges, Private Career Colleges and the Board of Education.

Those who are not considered certified PSWs are often referred to as health care aides. These workers receive on the job training and are often hired based on life experience for providing supportive care.

This variability in education and preparation means the ability of PSWs to provide more complex care including added skills and delegated tasks varies.



PSW Workload

PSW workers often did not feel they had adequate time to complete added skills

- ❖ PSW are often expected to perform added skills without being provided additional time for their visit
- ❖ PSWs were often willing to learn added skills, however, they did not feel adequately compensated for the additional knowledge, skills, and workload
- ❖ Communication between home care organizations and Care Coordinators related to changes in PSW workload seemed to be lacking

“The expectation is that you finish whatever you have to do with the client in half an hour, 45 minutes, and 15 minutes is the exercise time. You can imagine the quality of care we provide.”

PSW worker



Speaking Notes

The additional workload resulting from having to perform added skills on top of personal care was identified by PSWs as problematic. PSWs were not always provided with extra time for added skills.

While most PSWs included in the focus groups were willing to learn added skills they did not feel adequately compensated for the additional knowledge, skills and workload associated with these new care tasks.

It was evident through focus group discussions that communication between home care organizations and care coordinators related to changes in PSW workload was lacking.



PSW Role Clarity

There was a lack of clarity about the PSW role and what added skills required teaching or delegation

- ❖ PSWs and health professional staff (i.e., nurses, allied health professionals, and care coordinators) were unclear about what added skills required teaching or delegation
- ❖ Policies and procedures related to added skills for PSWs varied across home care service provider organization
- ❖ There was also a lack of clarity around which added skills required patient specific delegation

“We’ve done different types of creams or eye drops. They’ve been delegated, but it’s very hard sometimes to know, even though it’s delegated, sometimes we can still give some without being delegated.”

PSW worker



Speaking Notes

Focus group discussions also revealed a lack of clarity around the PSW role, added skills, and when formal delegation is required.

PSWs and health care professionals including nurses, allied health providers and care coordinators were consistently unclear about what added skills required teaching or delegation.

In addition, policies and procedures related to the transfer of added skills for PSWs varied across home care service provider organizations. This may have contributed to the confusion around which skills required patient-specific teaching and assignment or delegation as compared to classroom teaching and assignment.



PSW Perceptions of Support

PSW workers had both positive and negative feelings about the support they received for added skills

- ❖ PSW perceptions of support for added skills varied across and within home care service provider organizations
- ❖ Most PSWs felt initial training for added skills was adequate
- ❖ Ongoing support / supervision for added skills seemed to be lacking

“Today I was just learning catheter care, catheter insertion...they will train me as much as I need. They will not leave it on me until I feel secure doing it.”

PSW worker

“I was trained by a nurse just the one time. It was just, you’re on your own after that.”

PSW worker



Speaking Notes

Feeling supported in the provision of added tasks was important to PSWs. They had both positive and negative feelings about the support they received, with PSW perceptions of support varying across and within service provider organizations.

The majority of PSWs we spoke to felt the support they received when initially being trained to perform an added skill was adequate. They felt comfortable asking for additional training if they were not ready to perform the task independently.

However, PSWs consistently conveyed to us that ongoing support for added skills was lacking.



PSW Supervision for Added Skills

Ongoing supervision for added skills was inconsistent across regions and home care service provider organizations

- ❖ Ongoing monitoring of PSW competency to deliver added care was lacking
- ❖ The need for the added care was not routinely assessed
- ❖ Adequate staffing and PSW supervisor workload seemed to contribute to issues around supervision for added skills

“I’d seen [the patient] for a couple of years. I had nobody come in and reassess me or ask me to do this [intermittent catheterization] under supervision”

PSW worker

“We’re stretched so thin in terms of supervisors that it’s hard for them to get out to every client and visit with us to review the physio exercises that we’ve been doing. We’re just left to our own devices. We do the best we can. If we have any concerns, we usually bring them forward.”

PSW worker



Speaking Notes

The final issue identified through focus group sessions was the inconsistent supervision and ongoing monitoring of the provision of and need for added skills.

Ongoing monitoring of a PSW’s competency to deliver added care was lacking. One PSW recalled how, although she had been working with a patient for a couple of years performing intermittent catheterization, nobody had come into reassess her ability to perform the skill.

Similarly, the ongoing need for the added skill was not routinely assessed.



Poll Question

Rate your level of agreement with the following statement: The process of delegation / teaching and assignment of care to PSW described in the presentation is accurate.

- a. Strongly disagree
- b. Moderately disagree
- c. Disagree
- d. Neutral
- e. agree
- f. Moderately agree
- g. Strongly agree



Patient Characteristics



Sample Characteristics

Mean age is 80.5 years



61.1% are female



38.4% are married



88.1% have a caregiver



Living Arrangement



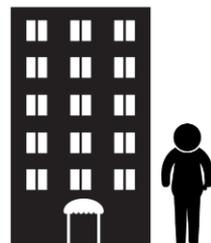
24.6% Live Alone



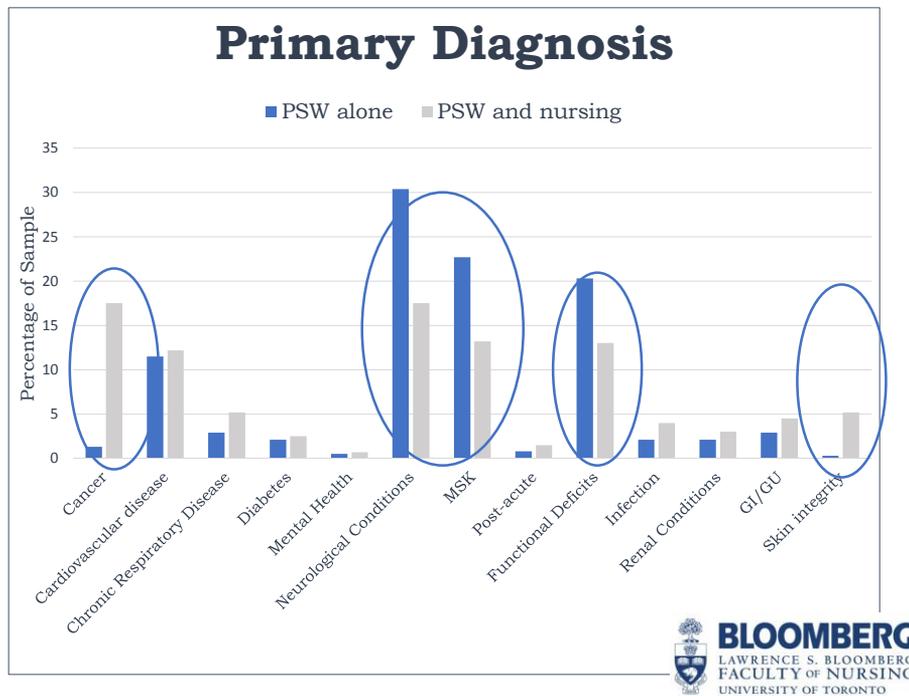
25.3% Live with Spouse



21.7% Live with Family



28.2% Live in Congregate Living Settings



Speaking Notes

For this slide we grouped the patients in our sample into PSW alone and PSW plus nursing to illustrate the differences in the types of patients being seen by the different providers.

The group receiving PSW and nursing services had higher rates of cancer and skin integrity issues as their primary diagnosis. While those receiving PSW services more often had a primary diagnosis of neurological conditions like dementia or Parkinson's, musculoskeletal issues like fractures or arthritis or functional deficits.

Structures of Care



Poll Question

True or false, the majority of patients receiving both PSW and nursing care receive both types of care from the same service provider organization?

- a. True
- b. False



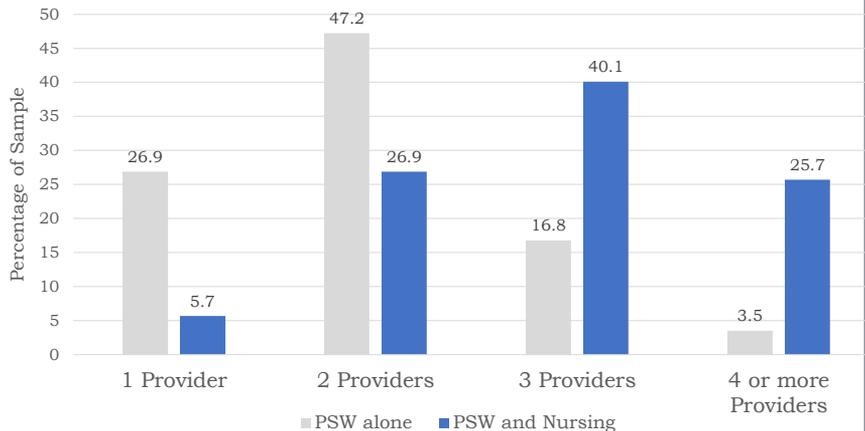
Speaking Notes

If you chose false, you are correct! Actually, in our sample, only 5.6% of individuals receiving PSW and nursing care received that care from the same agency.



Service Provider Organizations

- Number of service provider organizations ranged from 1-7 with an average of 2.5



*missing n=27



Speaking Notes

In our sample, only 5.6% of individuals receiving PSW and nursing care received that care from the same agency.

On average patients received care from 2.5 different service provider organizations.

Given the current structure of home care service delivery, it is not surprising that the more types of services you receive, the more care provider organizations you will have. However, those receiving multiples types of service are likely more complex and would benefit from more integrated care.



Types of Care Received

Service	PSW Alone	PSW and Nursing
Physiotherapy	43.2%	49.1%
Occupational Therapy	48.0%	65.3%
SLP	4.3%	4.7%
Social Work	3.2%	8.2%
Primary Care Visits	1.3%	3.7%
Other	7.5%	17.7%
Community Support Services	18.1%	12.7%
Rapid Response Nursing	6.4%	12.0%
Specialist Nursing		
Enterostomal Therapy	0.3%	5.2%
Continence Nursing	2.4%	2.0%
Wound Care Specialist	0.0%	7.0%
Palliative Care	0.8%	24.7%

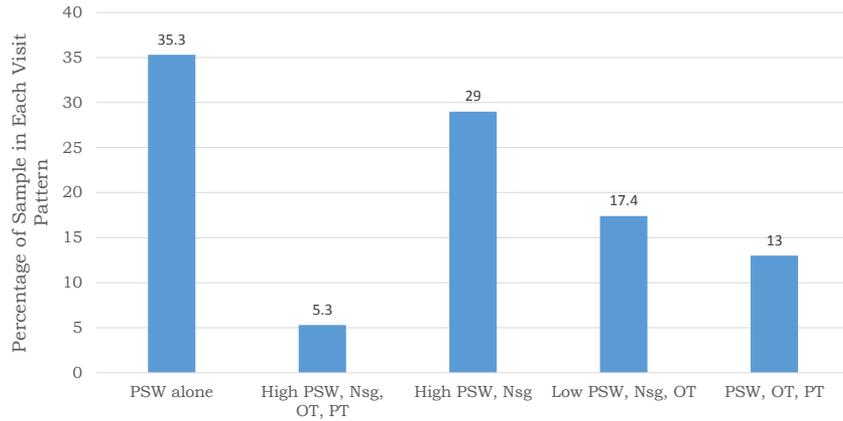
Speaking Notes

Those receiving PSW and nursing together tend to receive more types of service. Two possible explanations for this are that 1) they have more health issues and therefore require more care or 2) this may be as a result of nurses identifying and communicating the need for additional services. Unfortunately we don't know this from the data collected.

Additionally, some of the variation in service provision is logical based on differences in the primary diagnoses in the two populations, specifically skin integrity and cancer. Here we see those receiving PSW and nursing services have higher rates of specialist nursing.

However, variation in other services, including occupational therapy and physiotherapy, is contrary to what would be expected clinically for the dominant diagnosis groups in the PSW only population including functional deficits, neurological disorders and musculoskeletal issues.

Home Care Service Patterns



Speaking Notes

Using information on services received we were able to identify 5 unique service use patterns using a technique called latent class analysis. PSW care was categorized into low, moderate and high intensity. Those receiving up to 2 visits per week were considered low, those receiving 3-6 visits per week were considered moderate and those receiving 7 or more visits per week were considered to be high intensity.

Of the 776 patients in our sample,

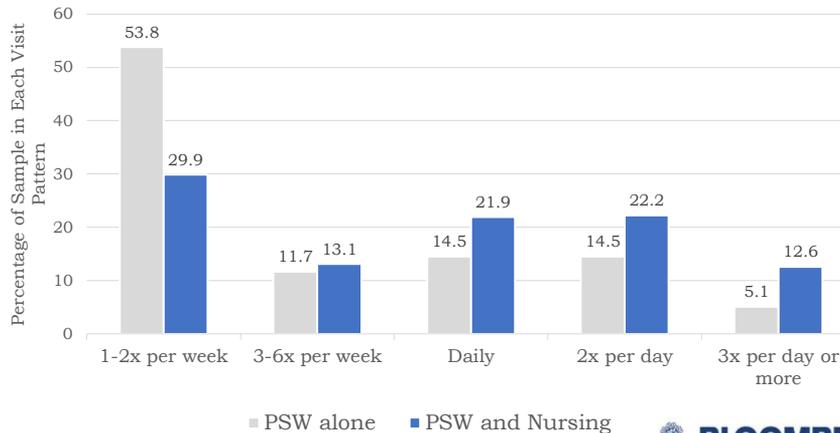
- ❖ 35.3% received PSW care only,
- ❖ 5.3% received high intensity PSW care, nursing care, occupational therapy and physiotherapy,
- ❖ 29% received high intensity PSW care as well as nursing care,
- ❖ 17.4% received low intensity PSW care, nursing care and occupational therapy, and
- ❖ 13% received PSW care, occupational therapy and physiotherapy.

In coming months we plan to conduct some further analysis on patients in these patterns to determine differences between these groups.



Personal Support Visit Pattern

- Mean length of stay = 429 days (Range: 11 to 1996 days)
- Percentage of PSW only patients with a service escalation = 23.4%
- Percentage of PSW plus nursing patients with a service escalation = 39.3%

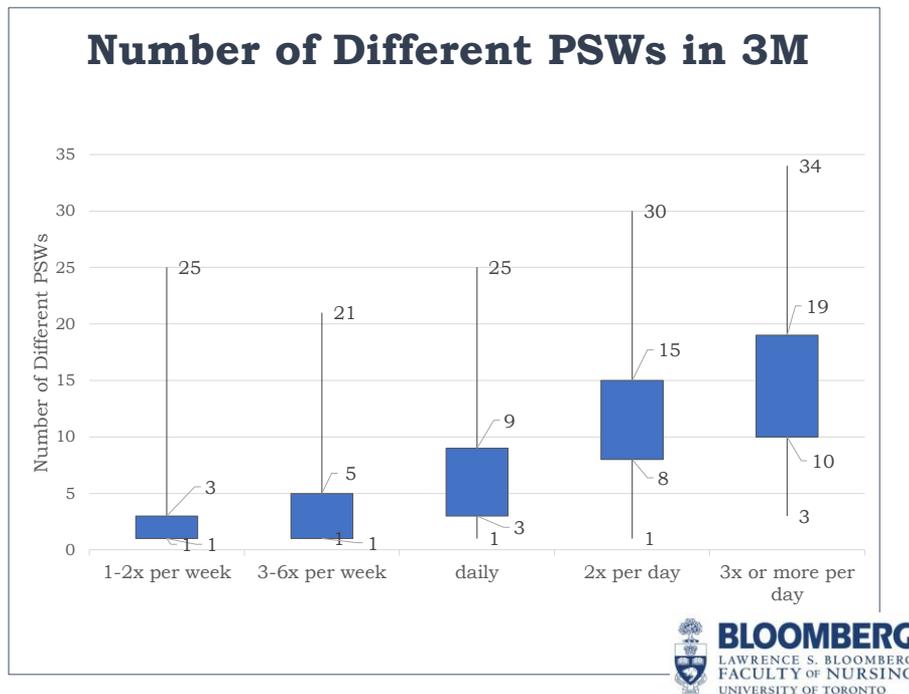


Speaking Notes

The average length of stay for homecare patients in our sample was 429 days. For those receiving PSW services only, visit patterns were more likely to be one to two times per week.

Those receiving PSW plus nursing care had more regular PSW visits, the majority receiving PSW visits either daily or more than once per day. Additionally, a larger proportion of patients receiving personal support plus nursing had an escalation in PSW services over time when compared to individuals receiving PSW care alone.





Speaking Notes

This slide illustrates the number of PSW care providers for the five most frequently occurring visit patterns over a 3 month period.

As expected, due to scheduling, visit patterns with more frequent service require more service providers. However the range highlights variation in continuity of care within patterns.

- ❖ Patients receiving 1-2 visits per week had between 1 and 25 different PSWs with an average of 2.3.
- ❖ Those receiving 3 to 6 visits per week had between 1 and 21 different PSWs with an average of 3.9.
- ❖ Those receiving visits daily had a range of 1 to 25 different providers with an average of 6.8.
- ❖ Those receiving visits twice a day had a range of 1 to 30 providers with an average of 11.3.
- ❖ Finally those receiving 3 or more visits a day had a range of 3 to 34 different PSWs with an average of 14.6.

Home Care Outcomes

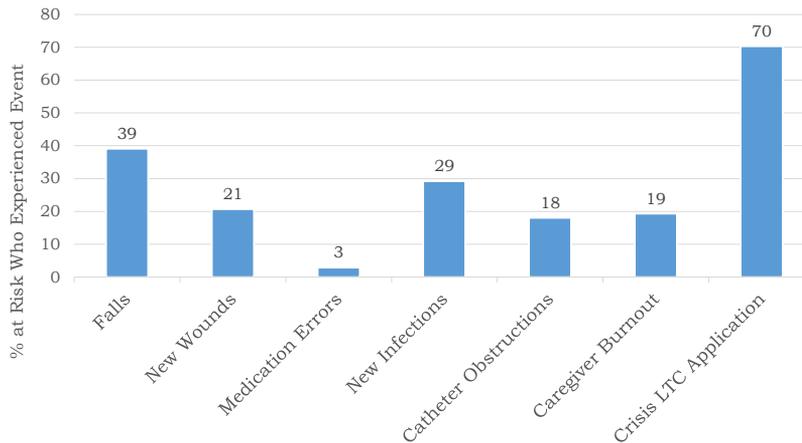


Speaking Notes

The outcomes we chose to measure in this study were carefully chosen through consultation with our home care agency partners. In this presentation we will highlight preliminary results for all the outcomes measured and look a little deeper into a select few.



Intermediate Outcome Variables



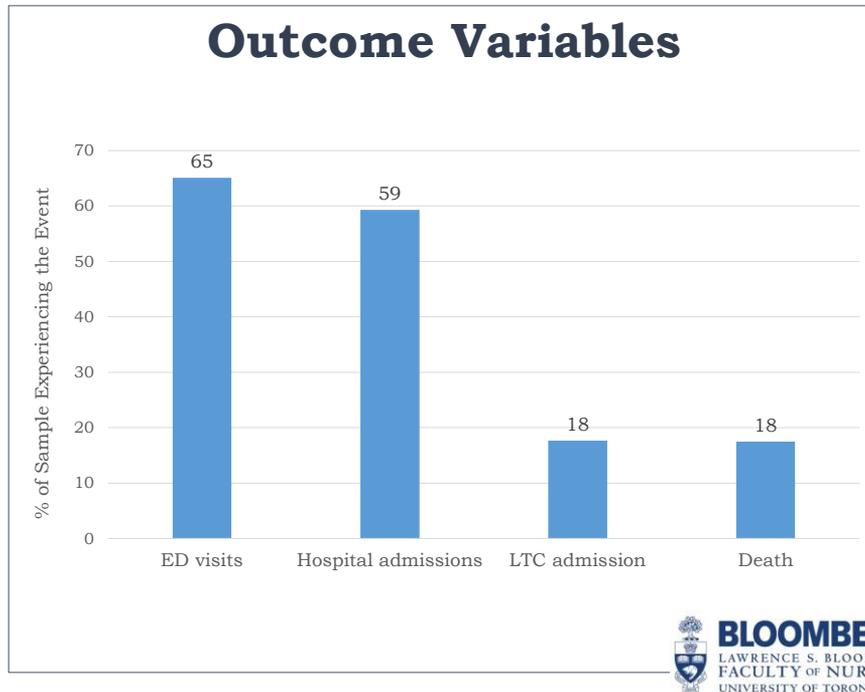
Speaking Notes

Data on intermediate outcomes were abstracted from CCAC and provider charts in the final year of the care episode. These data were then synthesized across charts to ensure each outcome was a unique event.

The following preliminary descriptive results reflect the percentage of patients in the sample who experienced an event when they were identified as being at risk for the event. For example, only those with a catheter can experience a catheter obstruction. Similarly, only those with an existing application for long-term can be designated a “crisis application”.

- ❖ In our study sample, 39% had at least one fall documented, and 21% developed a new wound during their episode of care.
- ❖ Patients were identified as at risk for medication errors when the patient was on service for medication administration, medication management, or medication reminders. 3% of those at risk for a medication error experienced a documented event.
- ❖ Additionally, 29% of patients in the sample developed a new infection during their episode of care.
- ❖ For the outcome “catheter obstructions” catheters included urinary catheters, suprapubic catheters, and any drainage catheter. 18% of those patients with a catheter developed at least one catheter obstruction.
- ❖ For those patients with a caregiver, 19% had documentation of caregiver burnout recorded in their charts.
- ❖ And finally, 70% of those applying for LTC were designated crisis





Speaking Notes

The entire sample was considered at risk for this next set of outcomes.

- ❖ 65% of the study sample had at least one emergency department visit. Of these 504 patients, 244 had multiple ER visits. Among the sample 59% of patients had at least one hospitalization, of these 458 patients, 150 had multiple hospitalizations.
- ❖ 18.3% of the sample were admitted to long term care.
- ❖ Additionally, 18% died either unexpectedly at home or in hospital. Please note that this death rate does not capture those who were admitted to hospital for longer than 14 days who subsequently died.

ER Visits Hypothesized Variables

- | | |
|---------------------------------------|---|
| ❖ Age | ❖ Service use pattern |
| ❖ Sex | ❖ Primary diagnosis (medical vs functional) |
| ❖ Marital status | ❖ Number of comorbidities |
| ❖ Living arrangement | ❖ Continence |
| ❖ Caregiver relationship | ❖ Presence of an IV |
| ❖ Presence of an additional caregiver | ❖ Presence of a catheter |
| ❖ Referral source | ❖ Other med/surg intervention |
| ❖ Wait at Home/Home First | ❖ Falls history |
| ❖ Number of agencies | ❖ Difficulty managing medications |
| ❖ Designated palliative | ❖ Functional status |
| ❖ Received rapid response nursing | ❖ Difficulty with IADLs |
| ❖ Number of PSWs | ❖ Cognitive status |
| ❖ Delegated tasks in service plan | |



Speaking Notes

The nature of our data precluded the use of predictive modeling as the data on ER visits and home care service use were concurrent. As a result, we examined the relationships between the number of ER visits and a group of variables hypothesized to be related to that outcome, all of which are listed here.



ER Visits

Groups: No ER visits, 1 to 2 ER visits, more than 3 ER visits.

Variable	P Value
Number of service provider agencies	<0.0001
Received rapid response nursing	<0.0001
Number of PSW providers in 3m	<0.0001
Delegated tasks in service plan	<0.0001
Service use pattern	<0.0001
Primary diagnosis (medical vs functional)	<0.0001
Number of comorbidities	<0.0001
Presence of an IV	<0.0001
Presence of a catheter	<0.0001
Difficulty with IADLs	0.001



Speaking Notes

To examine the relationships between variables we categorized the number of ER visits into three categories, no ER visits, 1 to 2 ER visits, and more than 3 ER visits.

The 10 variables listed here were found to have a significant relationship with the number of ER visits. Interestingly, variables you might typically expect to be related to ER visits were not significant including age, sex, having a caregiver, falls history, difficulty managing medications, functional status and cognitive status. In fact, for the most part the variables found to have significant relationships with the number of ER visits are not patient characteristics but rather structures of care and clinical or health related factors.

Two of the variables found to have a significant relationships with ER visits that we found interesting were number of service provider organizations involved in the patient's care and having delegated tasks in the service plan.

- ❖ Number of service provider organizations was categorized into four categories: one SPO, two SPOs, three SPOs, and four or more SPOs. Those patients who received care from only one SPO were more likely to have no ER visits. In contrast, patients cared for by four or more SPOs were more likely to have had 3 ER visits or more. Some possible explanations for this finding could be that 1) patients receiving care from more SPOs likely require multiple types of services indicating increased need and complexity and as a result may be more likely to use the emergency room or 2) receiving care from multiple SPOs may negatively impact communication and continuity of care possibly resulting in fragmented monitoring of patient care needs.
- ❖ The number of delegated tasks in the service plan was dichotomized. Patients with at least one delegated task were compared to those with no delegated tasks. Those patients who had at least one delegated task were more likely to have had three or more ER visits whereas patients who had no delegated tasks in their service plans were more likely to have had no ER visits. These findings could be interpreted in a similar way. Patients who have delegated tasks in their care plan may be more dependent and complex and as a result may be more likely to use the ER or it is possible that having PSWs perform delegated tasks is related to more frequent use of emergency room services.



Unplanned Hospitalizations Hypothesized Variables

- ❖ Age
- ❖ Sex
- ❖ Marital status
- ❖ Living arrangement
- ❖ Caregiver relationship
- ❖ Presence of an additional caregiver
- ❖ Referral source
- ❖ Wait at Home/Home First
- ❖ Number of agencies
- ❖ Designated palliative
- ❖ Received rapid response nursing
- ❖ Number of PSWs
- ❖ Delegated tasks in service plan
- ❖ Service use pattern
- ❖ Primary diagnosis (medical vs functional)
- ❖ Number of comorbidities
- ❖ Continence
- ❖ Presence of an IV
- ❖ Presence of a catheter
- ❖ Other med/surg intervention
- ❖ Falls history
- ❖ Difficulty managing medications
- ❖ Functional status
- ❖ Difficulty with IADLs
- ❖ Cognitive status



Speaking Notes

Similarly, the nature of our data precluded the use of predictive modeling for the number of unplanned hospitalizations. As a result, we examined the relationships between the number of unplanned hospitalizations and a group of variables hypothesized to be related to that outcome, all of which are listed here.



Unplanned Hospitalizations

Groups: No unplanned hospitalizations, 1 unplanned hospitalization, more than 2 unplanned hospitalizations.

Variable	P Value
Referral source	0.044
Number of service provider agencies	<0.0001
Received rapid response nursing	<0.0001
Palliative Care	0.001
Number of PSW providers in 3m	0.012
Delegated tasks in service plan	0.017
Service use pattern	<0.0001
Primary diagnosis (medical vs functional)	<0.0001
Number of comorbidities	<0.0001
Presence of an IV	0.001
Presence of a catheter	0.008
Other med/surg intervention	0.013
Difficulty with IADLs	0.001

Speaking Notes

We also categorized the number of unplanned hospitalizations into three categories, no unplanned hospitalizations, 1 unplanned hospitalization, and more than 2 unplanned hospitalization. The 13 variables listed here were found to have a significant relationship with the number of unplanned hospitalizations.

Again, variables you might typically expect to be related to hospitalizations were not significant including age, sex, having a caregiver, falls history, difficulty managing medications, functional status and cognitive status.

Similar to the ER visits outcome, for the most part the variables found to have significant relationships with the number unplanned hospitalizations are not patient characteristics but rather structures of care and clinical or health related factors.

Similar to the relationship with the number of ER visits, those patients who received care from only one SPO were more likely to have no unplanned hospitalizations. In contrast, patients cared for by four or more SPOs were more likely to have had 2 unplanned hospitalizations or more.

Likewise, those patients who had at least one delegated task in their care plan were more likely to have two or more unplanned hospitalizations whereas patients who had no delegated tasks in their service plans were more likely to have had none.

Admitted to Long-Term Care

Variable	Odds Ratio	P-value
Age	1.05	.016
Sex (female)	.713	.441
ADL hierarchy (reference = independent)		
Minimal assist	1.119	.846
Extensive assist	2.928	.054
Total dependence	1.580	.557
Cognitive performance (impaired)	3.066	.153
Designated "wait-at-home"	13.542	<.0001
Designated "end-of-life"	.110	.012
Number of SPO	1.606	.052
Number of PSW providers in 3 months	1.064	.038
Primary diagnosis (medical diagnosis)	.285	.012
Number of ER visits	.985	.045
Number of unplanned hospitalizations	1.030	<.0001
Presence of caregiver burnout	5.797	.001
Continence (incontinent)	2.799	.002
IADL difficulty (Great difficulty)	2.406	.074

Note. n=537; C=.868

Speaking Notes

Although we were unable to use predictive modelling to examine number of ER visits and number of unplanned hospitalizations, we were able to model the predictors of admission to long-term care. Age, being designated as 'wait-at-home', being designated 'end-of-life', the number of PSW providers in 3 months, primary diagnosis, number of ER visits, number of unplanned hospitalizations, the presence of caregiver burnout and continence were all found to be significant predictors of admission to LTC. Here we present the odds ratios and p-values for each predictor variable, on the next slide we will interpret the results.

Admitted to Long-Term Care

- ❖ For every one year increase in age, the odds of being admitted to LTC increase by 5%
- ❖ Patients designated as “wait-at-home” are 13.5 times more likely to be admitted to LTC
- ❖ The odds of being admitted to LTC are close to 90% lower for patients designated as “end-of-life”
- ❖ For every additional PSW providing care, the odds of being admitted to LTC increase by about 6%
- ❖ For every additional ER visit, the odds of being admitted to LTC decrease by 1.5%
- ❖ For every additional unplanned hospitalization, the odds of being admitted to LTC increase by 3%
- ❖ The odds of being admitted to LTC are around 70% lower for patients with a medical primary diagnosis when compared to those with a primary diagnosis related to functional decline
- ❖ The odds of being admitted to LTC are 5.8 times greater when caregiver burnout is present
- ❖ Patients who are incontinent are 2.8 times more likely to be admitted to LTC



Speaking Notes

- ❖ As would be expected for every one year increase in age, the odds of being admitted to LTC increase by 5%.
- ❖ Patients designated as “wait-at-home” are 13.5 times more likely to be admitted to LTC. This relationship is as would be expected as those designated wait-at-home are planning to enter LTC.
- ❖ In contrast, the odds of being admitted to LTC are close to 90% lower for patients designated as “end-of-life”. Again, this finding is expected as those designated end-of-life most often plan to die either at home, in hospice or in another palliative care setting.
- ❖ For every additional PSW providing care, the odds of being admitted to LTC increase by about 6%. This finding can be interpreted in a few ways. Two possible interpretations are: 1) individuals waiting for LTC placement may require more frequent care and as a result may encounter more PSWs or 2) increasing numbers of PSW may result in poor continuity of care which has been linked to negative outcomes for certain groups of patients such as dementia patients.
- ❖ For every additional ER visit, the odds of being admitted to LTC decrease by 1.5%. This relationship is not in the direction that we expected, although one possible explanation is that those being admitted to LTC have increased functional and cognitive care needs, not necessarily medical care needs and as such may utilize the ER less than those with a medical diagnosis.
- ❖ As expected, for every additional unplanned hospitalization, the odds of being admitted to LTC increase by 3%.
- ❖ The odds of being admitted to LTC are around 70% lower for patients with a medical primary diagnosis when compared to those with a primary diagnosis related to functional decline, this relationship is also in the direction that would be expected as those being admitted to LTC are often no longer able to provide for themselves at home due to either functional or cognitive deficit.
- ❖ Finally, the odds of being admitted to LTC are 5.8 times greater when caregiver burnout is present and 2.8 times more likely when the patient is incontinent. These findings are also in the expected directions.



Summary of Study Findings

- ❖ Providers work in isolation
- ❖ Home care team roles are fairly well defined, although interaction between care team members is limited
- ❖ The role of personal support workers is expanding to include tasks traditionally performed by health professionals
- ❖ Support for appropriate documentation and communication vary across service provider organizations
- ❖ PSW preparation varies, as a result, their ability to perform added skills also varies
- ❖ Supervision of added skills is inconsistent
- ❖ Home care patients are complex and experience multiple negative outcomes during their episodes of care



Speaking Notes

While we are still in the process of analyzing our chart-review data and interpreting our results we have been able to develop several conclusions based on our focus-group data. These conclusions are particularly relevant given the upcoming changes to home care in Ontario.

In home-based care, providers work in isolation and while home care provider roles are fairly well defined, limited interaction occurs between care provider types.

The role of PSWs is expanding to include tasks traditionally performed by health professionals. As PSWs spend the most time with patients they are often aware of changes in patient status sooner. Enabling PSWs to effectively their observations and concerns is particularly important given their expanding role in the home care team. While PSWs are currently required to report any patient issues to their supervisor, they are not consistently supported to appropriately document and communicate their observations.

Additionally, PSW preparation varies, and as a result their ability to perform added skills also varies. However, supervision of added skills is inconsistent and often lacking due to staffing issues and PSW supervisor's workloads. Finally, patients being cared for in the community are complex, receive multiple types of services and frequently experience multiple negative outcomes.



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- Poster Presentation for the Canadian Association on Gerontology Conference (Oct 2015)

**Applied Health Research Questions
(Summary of the Evidence):**

- The Role of Advanced Practice Nurses and Nurse Practitioners in Community Care
- Home Care Nurses' Intention to Remain Employed
- The Relationship between APN Support and Patient Outcomes in Home-Based Care
- Clinical Competency in Decentralized Work Environments
- Physician Roles in Supporting Home-Based Care
- Skill Mix (RN to RPN ratios) in Home Care



THANK YOU!

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