

Perspectives of Primary-Care Providers on Heart Failure in Long-Term Care Homes*

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RÉSUMÉ

L'insuffisance cardiaque (IC) est fréquente chez les résidents en soins de longue durée (SLD), et peut représenter 40 pour cent des transferts aux soins aigus. Des lignes directrices de l'IC de la Société canadienne de cardiologie approuvent les traitements standards, mais les résidents de SLD sont moins susceptibles de recevoir un traitement.* Cette étude qualitative a utilisé des groupes de discussion pour explorer les perceptions, de 18 médecins et infirmières praticiennes dans trois foyers de l'Ontario, des pratiques de soins de l'IC et les défis de SLD. Par exemple, les participants ont rapporté les défis concernant aptitudes diagnostiques et les connaissances procédurales de l'IC. Ils ont également identifié la nécessité de la collaboration interprofessionnelle et la clarification des rôles pour améliorer les soins et les résultats de l'IC. Pour résoudre ces problèmes, les interventions multi-modales et l'enseignement de chevet sont requis. Le leadership a été considéré comme essentielle pour améliorer les soins de l'IC. Plusieurs préoccupations ont surgi concernant les lacunes dans les connaissances et les déficits cliniques chez les fournisseurs de soins primaires qui traitent l'insuffisance cardiaque chez les résidents de SLD. Pour améliorer les soins de l'IC à long terme, des solutions éducatives et interprofessionnelles multi-modales et cliniquement ciblées sont nécessaires.

ABSTRACT

Heart failure (HF) is common among long-term care (LTC) residents, and may account for 40 per cent of acute-care transfers. Canadian Cardiovascular Society HF guidelines endorse standard therapies; yet LTC residents are less likely to receive treatment. This qualitative study employed focus groups to explore perceptions, from 18 physicians and nurse practitioners in three Ontario homes, on HF care practices and challenges. For example, participants reported challenges with HF diagnostic skills and procedural knowledge. They also identified the need for interprofessional collaboration and role clarification to improve HF care and outcomes. To address these challenges, multimodal interventions and bedside teaching are required. Leadership was viewed as essential to improve HF care. Several concerns arose regarding knowledge gaps and clinical deficits among primary-care providers who manage heart failure in LTC residents. Multimodal, clinically focused educational and interprofessional solutions are needed to improve HF care in long-term care.

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Heart failure (HF) disproportionately affects older persons, in whom it is a leading cause of health service utilization and death (Glenny, Heckman, & McKelvie, 2012). According to a recent systematic review, the prevalence of HF in long-term care (LTC) approaches 20 per cent (Daamen, Schols, Jaarsma, & Hamers, 2010). HF in LTC is associated with a one-year mortality rate that exceeds 50 per cent, and may account for as many as 40 per cent of transfers of LTC residents to acute-care hospitals (Allen et al., 2011; Boxer et al., 2012; Canadian Institute for Health Information, 2009; Hutt, Elder, Fish, & Min, 2011). Almost a third of HF acute-care hospitalizations from LTC are readmissions (Jacobs, 2011; Ouslander, Diaz, Hain, & Tappen, 2011). It has been suggested that many of these hospitalizations could be prevented if more-effective care processes were in place to manage HF in LTC (Bowman, Elford, Dovey, Campbell, & Barrowclough, 2001; Finn et al., 2006; Gruneir et al., 2010; Rizza, Bianco, Pavia, & Angelillo, 2007).

The Canadian Cardiovascular Society (CCS) HF guidelines endorse a multimodal approach to the management of chronic HF, including pharmacotherapy, non-pharmacological measures, disease management, and advance care planning (Arnold et al., 2006; McKelvie et al., 2013). Timely diagnosis, recognition of decompensated HF, and initiation of appropriate therapy are all essential to prevent acute-care hospitalizations. However, HF management in older adults is often complicated by multimorbidity, frailty, and cognitive impairment. Older persons with HF are less likely to receive recommended therapies due to concerns over diagnostic accuracy, polypharmacy, and skepticism about whether they even benefit from these therapies (Glenny et al., 2012).

A small number of studies found that HF management interventions in LTC can improve care quality and reduce health service utilization (American Medical Directors Association, 2002; Boxer et al., 2012; Hancock et al., 2012; Jacobs, 2011). However, these studies have major limitations from a Canadian perspective as they not only failed to reflect the organizational culture of the Canadian LTC setting, but they also relied on resources not readily in Canadian LTC homes, such as specialists and diagnostic testing, and did not consider how to sustain improvements in practice (Colón-Emeric et al., 2007). In our previous work, we identified specific problems related to the care of individuals with HF in LTC homes, including resident complexity, staffing education, interprofessional communication, limited resources, and the evolving practice scope of health care providers (Heckman & Boscart, 2013; Kaasalainen et al., 2013; Marcella et al., 2012; Newhouse et al., 2012). These concerns emphasize the need for HF care processes developed specifically for Canadian LTC settings.

In Canada, the care of LTC residents is generally overseen by primary-care providers (PCPs), usually family physicians, although primary-care nurse practitioners (NPs) are increasingly involved to help address a physician shortage (Donald & Martin-Misner, 2011; Donald et al., 2013; Stolee & Hillier, 2006; Stolee et al., 2006). Studies in primary care have shown that patients with HF are often under-investigated and under-treated (Mavaddat & Mant, 2010). A major barrier to appropriate HF management in frail seniors is diagnostic uncertainty because of mild or atypical symptoms (Fonseca et al., 2004; Laukkanen, Ikäheimo, & Luukinen, 2006; Olofsson, Edebro, & Boman, 2007; Rutten et al., 2005). This barrier is compounded by the erosion of

clinical skills proficiency among PCPs, lack of training in complex chronic-disease management, limited knowledge of clinical practice guidelines, inadequate communication, and perceived low remuneration for time spent (Conn & O'Keefe, 2009; Gordon, 2011; Peters-Klimm et al., 2012; Remme et al., 2008).

The overarching goal of our research was to develop HF care processes for LTC residents that are based on the CCS guidelines and that accomplish three objectives: (1) optimally utilize the skill sets of all LTC staff roles; (2) minimally disrupt care routines; and (3) achieve outcomes relevant to LTC residents. Accordingly, this article describes the perspectives of PCPs (i.e., physicians and NPs) on current practices and challenges associated with managing HF in residents of LTC homes, and identifies opportunities for improvement.

Methods

Design

This qualitative descriptive study was nested within a three-phase mixed-methods protocol with the overall

aim to develop care processes to manage HF in LTC (see Figure 1). We sought input from LTC stakeholders through three sequential consultation phases, the results of each informing the subsequent phase, with oversight by a multidisciplinary expert panel. Methods have been published previously (Kaasalainen et al., 2013; Marcella et al., 2012; Newhouse et al., 2012). The second consultation phase consisted of focus groups and interviews of LTC staff, residents, and their families to examine current care practices, barriers and facilitators to HF management in LTC, and to provide recommendations on how to improve HF care in LTC. In this article, we report on PCPs' perceptions of HF management in LTC, including diagnosis and activities related to the management of acute, chronic, and advanced HF. All participants provided clinical care to LTC residents as part of their practice.

Sample and Setting

The study was conducted at three LTC homes in southern and northern Ontario, Canada (home to 96, 150, and 251 residents respectively), between May and July 2010.

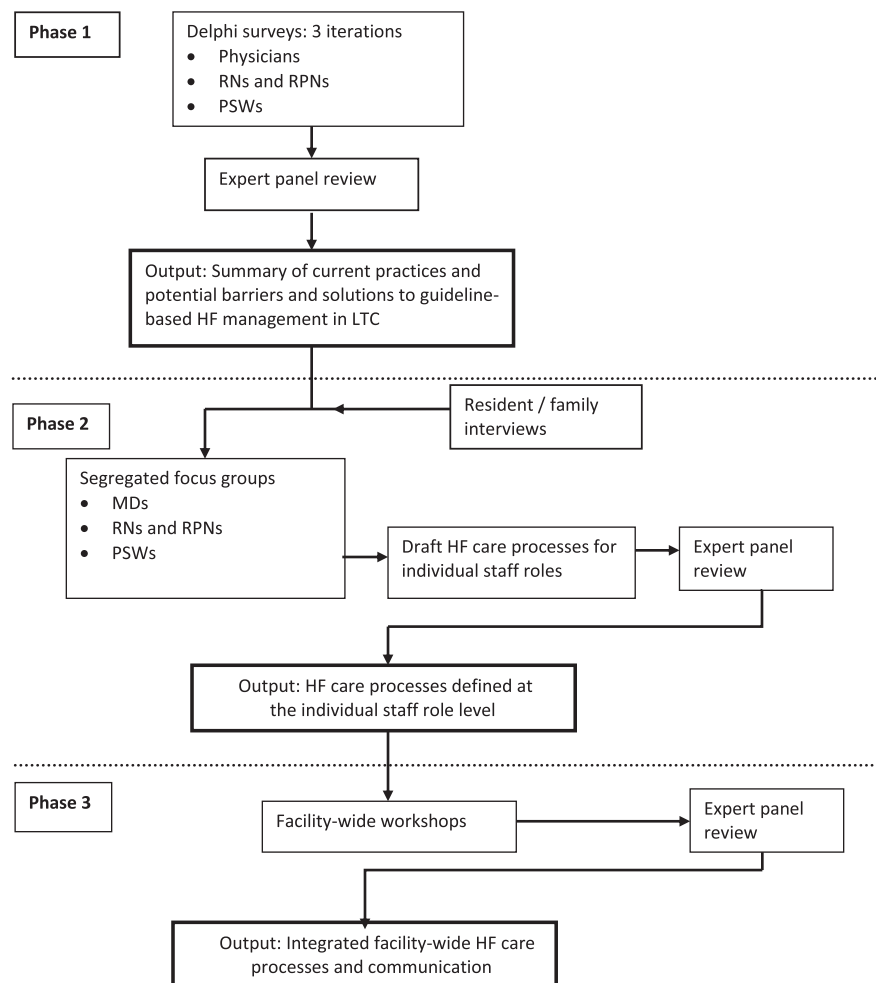


Figure 1: Flow diagram illustrating heart failure care process research development activities (Newhouse, 2012)

The selected sites offered variability in geographic setting, proximity to an academic health science centre, and ownership (public or private, profit, or not-for-profit) – facility characteristics known to affect HF outcomes (Coburn, Keith, & Bolda, 2002; Hutt, Frederickson, Ecord, & Kramer, 2003; McGrail, McGregor, Cohen, Tate, & Ronald, 2007; Weech-Maldonado, Meret-Hanke, Neff, & Mor, 2004). None of these homes had a formal HF management program in place, and all were similar with respect to staffing ratios. PCPs providing service to the residents in the study LTC homes were recruited to participate in the focus groups. We asked participating PCPs to identify other local PCPs working in LTC whom we also invited to participate. The inclusion of NPs in these focus groups was pre-specified in the study protocol and was required in two of the three homes in order to achieve the desired sample size of 5 to 10 participants for each focus group (Morgan, 1997; Patton, 2002).

This study was approved by the research ethics boards at the University of Waterloo, Lakehead University, and McMaster University. All participants provided informed consent.

Data Collection

A semi-structured focus group interview guide (see Figure 1) was developed using Delphi survey data collected during an earlier phase of the study (Newhouse et al., 2012). Questions focused on eliciting discussion related to diagnosis, monitoring, and management of HF among LTC residents. The focus group guide is presented in Appendix 1. One focus group interview was conducted at each of the three homes, for a total of three interviews. Each focus group was approximately 60 minutes in length and facilitated by a trained moderator, who ensured that all participants had sufficient opportunity to express opinions. A second investigator took field notes. All discussions were recorded and transcribed verbatim.

Data Analysis

Focus group data were analyzed using a thematic content analysis (Maxwell, 2005). Data were reviewed separately by two research associates (TD, OO) using QSR International's software program NVivo (v. 9). Thematic content emerged from the transcripts using an inductive coding technique, and data were subsequently organized into categorized concepts (Maxwell; Sandelowski, 2000). Thematic frameworks were developed independently by each of the RAs who then met regularly to discuss findings and develop one thematic framework based on consensus (Maxwell). Data saturation was assessed by comparative analysis across groups and reached within the current data set (Maxwell).

The RAs then reported this thematic content analysis, along with supporting comments in the findings and discussion, to the secondary analysis team composed of two co-investigators (GH, VB) who both reviewed and challenged the analysis. Consensus regarding final themes and frameworks was achieved following rigorous review and discussion with the RAs and the secondary team (Kurasaki, 2000). An audit trail was maintained to describe all stages and decisions involved during the analysis. Focus group results were shared with participants during onsite participant workshops as a form of member checking (Creswell, 2009). As no major thematic differences between physicians and NPs were evident, all data were analyzed together.

Results

Three focus groups were held with 18 PCPs. Sample sizes for each focus group were as follows: Group 1 (3 MDs, 1 NP); Group 2 (9 MDs); Group 3 (4 MDs, 1 NP). The age of the participating physicians and years in practice were 55.7 ($SD = 10.8$) and 24.4 ($SD = 11.3$) respectively; corresponding figures for the NPs were 47.5 ($SD = 2.1$) and 20 ($SD = 19.8$) respectively. On average, physicians provided coverage to residents in 2.8 ($SD = 1.8$) LTC homes, and the NPs to three homes. The dynamic and content of all three focus groups was similar; thus, data were combined for analysis. Three overarching themes emerged characterizing PCPs' experiences in managing residents with HF in LTC: (a) challenges to diagnosing HF in LTC residents; (b) challenges to manage the care of residents with HF; and (c) potential solutions to improve the care of residents with HF in LTC. Within each of these themes, we identified common subthemes in the participants' descriptions of their perceptions.

Theme 1: PCP Challenges to Diagnosing HF in LTC Residents

This theme described PCPs' views of common challenges perceived as unique to diagnosing HF in LTC residents. The data describing these challenges supported the identification of three subthemes: (a) challenges related to suboptimal PCP proficiency in clinical skills; (b) inter-professional challenges to diagnosing residents with HF; and (c) health system challenges in diagnosing residents with HF.

Subtheme 1.1: Challenges Related to Clinical Skill Proficiency

Data from the focus groups revealed several factors described as hindering the diagnosis of HF and which were related to clinical skills deficiencies. The CCS guidelines stipulate that appropriate HF management

be predicated on an accurate diagnosis (McKelvie et al., 2013). Although echocardiography is important to identify underlying functional and structural cardiac abnormalities that might predispose a person to HF, the HF diagnosis remains based on a sound clinical assessment of signs and symptoms of HF, augmented when possible by a chest x-ray or a measurement of B-type natriuretic peptide.

PCPs generally acknowledged that the HF diagnosis is primarily based on a clinical assessment, as stated by one PCP:

"It's usually clinical, they're usually short of breath, they're wheezing, you can hear crackles, they've got some leg edema – that's heart failure, all right." (MD, Group 2)

The need to assess signs and symptoms of HF was recognized and often alluded to in the focus group discussions. Yet frail LTC residents with HF can present with atypical symptoms, such as sleep disturbances, and non-specific or difficult-to-elicited signs related to age-associated changes and co-morbidities (Arnold et al., 2006). PCPs expressed difficulty interpreting clinical findings in this population and which led to diagnostic uncertainty.

"Because everyone has swollen legs, right? If that's the indicator that you're using, it's not a good one." (MD, Group 3)

"I mean you got some hunched-up person ... with poor expiratory outbursts ... how do you even hear chests all the time, and certainly to look for JVD [jugular venous distension] ... if the neck muscle is standing out ... can you get them [sitting] back 45 degrees ... , you couldn't even do that, right?" (MD, Group 1)

Accordingly, because of uncertainty over their clinical assessment, several PCPs expressed reliance on diagnostic imaging, if available, to substantiate the diagnosis of HF.

"I think that's because ... heart failure is supposed to be largely a clinical diagnosis but it sure is nice to have corroborating objective evidence of, like, an abnormal ECG or chest x-ray ..." (MD, Group 1)

"I may or may not do a chest x-ray to make sure they don't have pneumonia, ... you can mistake heart failure for pneumonia. So you know, making the diagnosis of heart failure ... that's a bit of an issue in the long-term setting because we don't have all the tools and the fancy equipment ... to do that." (MD, Group 2)

Others, however, even expressed doubt about the reliability of a chest x-ray in this population:

"I may do a chest x-ray; often that will be normal ... because you know chest x-rays are not a good tool for diagnosing heart failure But I would treat

them clinically, I would put them on a diuretic." (MD, Group 2)

One physician assumed that HF was diagnosed primarily with echocardiography.

"Usually the diagnosis is made – at least by myself – clinically, because I, I don't think I sent anybody for ... an echo. That's how you would theoretically make the diagnosis." (MD, Group 2)

Overall, these data suggest that while PCPs recognized the importance of the clinical assessment in the diagnosis of HF, many expressed a lack of confidence in their clinical skills, and some misunderstanding was apparent regarding the role of imaging modalities in HF assessment.

Subtheme 1.2: Interprofessional Challenges and Facilitators to Diagnosing Residents with HF

PCPs described benefits and limitations of working within an interprofessional team to diagnose residents with HF. PCPs emphasized the importance of observations and input from LTC staff and families in identifying residents with possible HF. In that regard, the role of nurses – registered nurses and registered practical nurses (RNs and RPNs) and personal support workers (PSWs) – who provide the majority of the front-line care to LTC residents, was recognized as particularly important.

"The nurses are the ones who are interfacing with the patients [and] the family. Or seeing first-hand the change ... seldom that we would pick that up ..." (MD, Group 1)

Because of the nurses and the PSWs' familiarity with the residents, they were able to recognize small changes in resident status. One PCP described this:

"What's more important is change, and the people that know it the best are the people that are with the patient on a daily basis, and it's not the doctor. It's not the RN. It's the basic health care aide [HCA] that knows that patient and knows when something's changing. And that's what I rely on a lot for information." (MD, Group 3)

The value of an interprofessional team collaborating to observe and diagnose residents with HF was recognized. Yet some physicians expressed concern about the reliability of the information received from LTC staff due to a lack of trust in the staff's clinical skills and ability to communicate effectively. These factors acted as barriers to obtaining valuable information pertaining to a resident's status. Two PCPs described this challenge:

"There's a great deal of difference between the quality of nurses. So there are some ... very good nurses, there are very intuitive nurses, there are nurses that aren't as good." (MD, Group 1)

"So for the RPN to talk to us almost never happens, you know; they just don't, I mean. There's a hierarchy ... that's a barrier there." (MD, Group 2)

Some PCPs recognized the importance of their role within the interprofessional team in supporting communication about a resident's status. One physician described how he intentionally invites PSWs to participate in interprofessional team communication to better understand a resident's status.

"I trust the PSWs more than anybody, more than the nurses, more than myself, because they see them [residents] all the time; they are the ones doing care. So if the PSWs know they've got the comfort level, they can go to the doctor or nurse anytime ...". (MD, Group 2)

"And if I would ask, 'Can you give me a hand?' [And she said,] 'Oh, no. I'm just a PSW'. And I said, 'That's what I want. Come with me'. In talking with them [I say] 'Please don't use [the phrase] 'I'm just a PSW.' So with each person I approach, I try to change that mentality." (MD, Group 3)

In summary, PCPs acknowledged the importance of and the challenges to effective interprofessional teamwork in LTC with respect to diagnosing HF. Some physicians also recognized their potential leadership role in building and supporting an effective interprofessional team.

Subtheme 1.3: Health System Challenges in Diagnosing Residents with HF

A third challenge identified by PCPs in diagnosing LTC residents with HF is health care system fragmentation: specifically, the lack of continuity of care and gaps in communication among different health care organizations. Inadequate transfer of complete health information from sending organizations (i.e., acute care, home care) when a resident is admitted into LTC leads to delays in diagnosing HF. PCPs described this as follows:

"I think one of those issues is that you don't get information when they come into the nursing home; and you don't get information when they come back from hospital." (MD, Group 3)

"A lot of times we get patients and they say 'CHF' and that's all we have. We have no echos [echocardiogram reports], we have nothing. We have no consult notes and ... you'll get the [previous] family doctor's notes but that person's been in maybe one or two facilities before [and] I feel like we don't always get all the stuff we need ... ". (MD, Group 1)

Another physician described the difficulty in reconciling prescription medications with diagnoses in the case of cardiovascular disease. New LTC residents commonly have been prescribed multiple medications

throughout their trajectory of care, many of which have several possible indications. Consequently, PCPs noted that such polypharmacy, in the context of poor communication between different prescribers and the absence of an electronic health record across care settings, further confounds the diagnosis of HF. One PCP described it thus:

"In here, they use four drugs to control blood pressure. Those same four drugs are used for heart failure. So if you just look it up, and a patient comes to the [LTC] home and you read a list of pills off, you don't know ... whether they're hypertensive or in heart failure until you see that patient; examine; get the history." (MD, Group 3)

In summary, health system fragmentation was perceived to be a significant impediment for PCPs to accurately recognize LTC residents with a history of HF.

Theme 2: Challenges to Manage the Care for Residents with HF

This theme described PCPs' views of unique challenges encountered when managing care for LTC residents with HF. This theme is divided into three subthemes: (a) challenges related to PCPs' familiarity with HF pharmacotherapy; (b) challenges related to collaborative relationships with the LTC staff and families; and (c) challenges related to the health care system.

Theme 2.1: Challenges Related to PCPs' Familiarity with HF Pharmacotherapy

The management of chronic HF includes optimizing pharmacological and non-pharmacological therapies to maximize the person's quality of life and reduce symptom burden (McKelvie et al., 2013). Good management also supports advance care planning and the early identification of HF exacerbations, thereby reducing the need for acute care transfers. This subtheme specifically focused on the participants' perceived challenges with the pharmacological management of chronic HF. The non-pharmacological aspect is discussed under subtheme 2.2.

Several of the PCPs expressed a good understanding of the rationale for the use of first-line medications such as angiotensin converting enzyme inhibitors (ACEi), beta-blockers, and mineralocorticoid receptor antagonists (MRAs), including their role in improving HF symptoms and preventing HF exacerbations:

"Getting them on an ACE inhibitor and beta blockers are fairly simple things to do; Aldactone's [an MRA] a bit more problematic [as it is necessary to] monitor the potassium." (MD, Group 1)

"I think one thing that may be lost here, and this may be part of the overall management: you make them better by treating the acute symptoms but

maybe there's something lost there that you don't go on to manage the heart failure itself ... because you make them better, you think you've done what you need to do, but maybe you should be looking at, you know: is this person on an ACE, and if not, should you be starting one?" (MD, Group 1)

However, some participants appeared less familiar with recommended HF pharmacotherapies. For example, one physician endorsed the adequacy of treating HF with diuretics only:

"I put her on Lasix, I think 80 [mg] a day initially and then I tapered it down; I think she is on 20 [mg] now. And she's ... holding her own, she's doing okay." (MD, Group 2)

Another physician felt PCPs sometimes overlook first-line HF therapies that can actually improve and palliate HF symptoms as well as modify the course of the illness:

"I just think sometimes we forget ... heart failure [is] a very specific problem and ... needs treatment, but I think sometimes we forget about some of the things that really just make people feel better." (MD, Group 2)

In addition, several participants were unfamiliar or uncertain with the use of third-line agents such as digoxin, or more potent diuretics such as metolazone, to enhance the effect of first-line diuretics such as furosemide, as the following exchange demonstrates:

*"[MD 1]: But I think I'm seeing more and more digoxin coming back from cardiologists.
[MD 2]: 'Cause you're running out of options, don't you think?
[MD 1]: Cardiologists are using more and more digoxin now, yeah. It works.
[MD 2]: For people with atrial fibrillation, maybe?" (MDs, Group 1)*

In addition to unfamiliarity with the recommended pharmacological therapies for the management of chronic HF, most PCPs expressed concerns over prescribing therapies to LTC residents who are frail, medically complex, and have a limited life expectancy, reflecting doubts about the benefits of particular treatments in this population, fear of causing harm through adverse drug events, and the burden related to laboratory monitoring. This challenge is demonstrated by the following comments:

"The more drugs they are on the more tests we have to do to make sure other things are working and [that] we are not causing more damage." (MD, Group 2)

"Like, if I think they're going to die within the next year... there's all sorts of things I won't be giving them, you know; it's sometimes a little hard to assess ... ". (MD, Group 2)

In summary, most participants understood first-line pharmacological management of HF in LTC residents, although not all appeared to comprehend the rationale underlying second- and third-line pharmacotherapy, particularly in the LTC setting where residents are frail, medically complex, and approaching the end of life.

Subtheme 2.2: Challenges Related to Collaborative Relationships with LTC Staff and Families

All of the PCPs interviewed endorsed the importance of collaborative relationships with other LTC staff and families to facilitate the optimal management of residents with HF, as one physician summarized thus:

"I [increased] his [furosemide] dose a little bit and I asked them [nurses] to check his vitals and check his O2 sat [oxygen saturation] and let me know in the morning what had changed. And he [resident] was better. So what made that success was the ability of the connections to be made to identify a sick person, to accurately portray information that I asked for, or that they [nurses and family] were able to give me clearly, and then, you know, me taking a shot at what I thought might be an appropriate thing." (MD, Group 3)

Several PCPs interviewed identified the importance of LTC staff and family members in ensuring adherence to non-pharmacological modalities such as regularly assessing residents' weights and the role of sodium and fluid restriction in order to monitor and maintain fluid balance among residents with HF. PCPs also acknowledged the challenges inherent to the implementation of these interventions:

"I think some of the nursing staff don't realize how critical it is to the patient's care, and the reliability of the reading is very important, so if they're not getting rid of that wet diaper or they're using a different scale, or they're putting them on the wheelchair instead of a different chair – or all of those things." (NP, Group 3)

"I mean, you can't keep them [residents] away from sodium. It doesn't matter how bland, how sodium restricted their diet is. Their family is going to bring something in. They're going to eat it if they like the taste." (MD, Group 1)

Relying on a collaborative interprofessional team to establish and adhere to residents' goals of care and advance-care plans was seen as particularly challenging in LTC. All PCPs interviewed agreed that key priorities in the management of LTC residents with HF were symptom control, optimizing quality of life, and avoiding unnecessary transfers to the emergency department (ED). To that extent, strong and effective interprofessional teamwork, including with the resident's family, was viewed as necessary. However, respecting

advance-care plans was often compromised by shifting family expectations at the time of acute illness, and perceived discomfort and lack of knowledge among nurses dealing with acutely ill LTC residents:

"There's advanced directives, that's very important. There's also the family, too, and sometimes the expectations of the family can be what drives your decision. And there's sometimes a conflict with what you feel that the patient wants and what the family wants, but you're the one who's going to end up dealing with the family." (MD, Group 1)

"They're the ones [nurses] that will get into a situation that's acute, and they just freeze and panic, and just want it out of their facility, and will have managed it [transfer to ED] before you even have a choice sometimes." (MD, Group 1)

To successfully address some of these challenges, several PCPs reported that it is essential for physicians to assume more leadership in engaging staff on treatment modalities, collaborative decision making, and facilitating advance-care planning discussions with families. Two PCPs described this as follows:

"And I think that's where it's the team approach again, if you try to get everybody – it's sort of buying into it. Make sure the PSWs are there with the RPNs and RNs and the physician. Then maybe they will understand why you are ordering daily weights." (MD, Group 2)

"And I sit down and talk to the whole family in one group instead of individuals, because I have one person asking the same question over and over again, so you spend five times the amount of time in discussing the whole issue. So not only does it help me, it helps the family members because they're asking questions. They are thinking. So the father knows what the sister is thinking. So all the family members have the same answer as the whole group, and they all have a comfortable feeling as to what takes place." (MD, Group 3)

Few PCPs alluded to the importance of being more available to the care team, including front-line LTC staff, residents, and families, in order to contribute to optimal management of residents with HF. One physician did not appear to grasp the potential relationship between infrequent visits to the LTC home and urgent calls from nurses after hours:

"Well, you mean on rounds: I usually see [everybody] every second week, but what happens is notoriously, ten o'clock at night and you get the call, somebody's short of breath and you're asking, 'well, do they have wet sounds in their chests?' In the end, if they don't respond to Lasix, they're sent to emerg [ED]. I don't go out to the nursing home and assess them, because if they haven't responded to Lasix, what am I going to do? So anything that's like an evening call is a transfer of hospital." (MD, Group 1)

This comment suggests that some physicians believe that HF exacerbations develop acutely and unpredictably, usually at night, and transfers to the ED are thus unavoidable. Moreover, these exacerbations are seen as inevitable despite what was perceived by the PCP as reasonably frequent rounds in the LTC home.

Other PCPs realized the importance of being available in relation to optimal management of residents with HF, particularly with respect to communicating with staff and families.

"Some of these families are in daily to see their loved one. It's not like we have to call them long distance on the phone and talk about difficult stuff, because people are in and out every day – sometimes several times a week. Opportunities [to communicate] are there all the time." (MD, Group 3)

PCPs recognized the importance of effective collaborative relationships with LTC staff and residents' families, and PCPs' availability to foster these relationships; they also acknowledged the need for PCPs to assume greater leadership and responsibility.

Subtheme 2.3: Challenges Related to the Health Care System

As already noted, PCPs acknowledged being frequently challenged by the medical complexity of LTC residents with HF. While some PCPs expressed a need for specialist assistance in order to more optimally manage the care of some residents, others suggested that the involvement of multiple specialists, each with a narrow clinical focus, might paradoxically further complicate the management of residents.

"So we really do sometimes need a person who specializes in one or another field to try to build things on, because sometimes a patient is going [to a specialist] and a cardiologist will take over initially. Then he [cardiologist] passes on to the diabetologist. Then he passes on to the renal specialist. So sometimes one [specialist] fixes one thing and gets them [residents] stabilized, then passes on to the next." (MD, Group 3)

"Or they [residents] see the [orthopedic surgeon who puts] them on an NSAID, and you know, all of a sudden they're short of breath [with HF secondary to NSAID use]..." (MD, Group 2)

These comments illustrate how some specialists may not understand how their prescribed treatment for a resident could inadvertently affect the management of other co-morbidities, thereby potentially harming the resident.

Access to specialists was variable. Some PCPs in urban centers described close relationships with specialists, with immediate benefits to their residents:

"Yeah, he called this morning, I called him on my cell phone and he called back by lunch." (MD, Group 2)

Other PCPs in remote or underserved areas described limited access to specialized care:

"We have one geriatrician, and he's up to his eyeballs because he does internal medicine as well. He does Alzheimer's group, so he does everything. He's the only geriatrician and he does a bit of everything. So he's never readily available for us." (MD, Group 3)

There were concerns raised about staffing and care models in LTC affecting care continuity. PCPs noted the importance of stable staffing in LTC homes as a key facilitator to optimal management of residents with HF, particularly with respect to clinical assessment and recognizing a change in status.

"We always have the same people on the same floor. The nurse will call me and say, well Mr. Jones is 5 kilos more today than he was last week and his legs are swollen, but he's not short of breath or anything. So we [diurese him] a little bit more and he loses a couple kilos and you know, you sort of seem to keep him out of the hospital, or keep him away from needing oxygen or anything else sometimes." (MD, Group 1)

Unfortunately, staffing recruitment and retention issues were described as frequent and blamed, at least in part, on the current funding model in LTC coupled with the availability of higher wages in other health care sectors. Situations where LTC units were short-staffed were seen as leading to poor resident care, as described by this physician:

"So on a given day, on a Saturday or Sunday, the nursing homes are always short-staffed – every single weekend. That's because they've [PSWs, RNs, NPs] signed up for two or three different shifts on a weekend; and whichever one takes them that pays the highest, that's the one they go to." (MD, Group 3)

"Regulars – as opposed to a casual RN or RPN coming in and not knowing the resident – that's a big part [of the problem]." (MD, Group 2)

PCPs also commented on how some LTC homes have access to NPs, who often take on multiple roles, including addressing acute illnesses or exacerbations of chronic conditions, as well as educating the LTC staff. While PCPs generally endorsed this development as potentially contributing towards better management of HF in LTC residents, others expressed concerns over a lack of role clarity, and what impact this might have on residents:

"I think it's [access to NPs] certainly an asset. Where I take some issue to it is where people have a physician, then have an NP and a physician assistant. I understand what you [NPs] do and

I understand what you [NPs and PAs] do, but what does the doctor do?" (MD, Group 2)

An additional significant health system challenge perceived by PCPs related to the ability of EDs to appropriately manage LTC residents, including those with acute HF exacerbations, leading to reluctance among PCPs to refer residents to the ED. Foremost among these was the perception that ED physicians are unable to properly assess frail patients, and that the ED environment was conducive to poor resident outcomes.

"Yeah, if they stay in Emerg [ED], the noise: the delirium sets in. They get confused. They get bed sores. They fall. They break hips." (MD, Group 3)

The following exchange describes the frustrations expressed by two physicians about the care their LTC residents received in the ED:

"MD [1]: I've had someone sent because they fell and broke their shoulder and they were sent back with a UTI [diagnosis of urinary tract infection].

MD [2]: ... and the shoulder wasn't x-rayed.

MD [1]: Exactly right, and I think it's the first positive result that reaches the emergency, then they [ED staff] stop thinking." (MDs, Group 2)

One PCP was of the opinion that many acutely ill LTC residents could be managed well in the LTC home, particularly if parenteral medications, such as intravenous or intramuscular diuretics or antibiotics, were available. However, most PCPs reported that such therapies were generally unavailable in the homes at which they attended.

"I can run an IV in the home; it doesn't matter if they are in the home or the hospital, it will just save them a trip. If it doesn't work in the home, it's not going to work in the hospital, and most of them are on side with that." (MD, Group 2)

"You can't push Lasix [Furosemide] here, so you are very limited, you can give oral Lasix but that's the extent of Lasix. Sometimes you can get nurses to be a little braver and stuff and actually use IV Lasix, but it's rare. The home has to play ball and a lot of them won't." (MD, Group 2)

In summary, PCPs identified several concerns related to the health care system's ability to effectively manage residents with HF in LTC homes. For example, concerns involved unequal access to specialists; staff issues; role confusion with NPs in LTC homes; and the negative perceptions of LTC residents' care transitions to the ED.

Theme 3: Potential Solutions to Improve the Care of Residents with HF in LTC

Despite the many challenges described in both the diagnosis and treatment of chronic HF in LTC settings,

PCPs proposed several avenues whereby this care could be improved. One physician noted that he often relied on brief tools summarizing the HF guidelines to ensure that residents were receiving appropriate pharmacotherapy.

"Well, there's the [heart] failure guidelines, just like the diabetic guidelines, you know: the templates – I don't know if you use them – I probably even have them in my car. And a lot of times, if someone comes in with a diagnosis of failure, I will sort of go through that template as well, just to see if they are on an ACE, you know, what their blood pressure [is] So – and that's been very helpful." (MD, Group 2)

Most PCPs endorsed the need for more education regarding the diagnosis and management of HF in LTC residents for front-line nursing and PSW staff. Notably, although some PCPs expressed a need for greater access to specialists or diagnostic testing to assist them with HF diagnosis and management, most did not specifically identify themselves as requiring any educational interventions, despite the concerns we have raised earlier in this article.

PCPs recommended that LTC staff be trained with multimodal educational interventions tailored to specific needs and skill levels. Access to onsite teaching resources, facilities, and dedicated time to facilitate the delivery of education to LTC staff were also identified as important. One NP emphasized, in particular, the importance of bedside teaching for LTC staff.

"So I've opted from doing classroom work and I do it right at the bedside. ... So while they're going through their care, they're learning the importance of ... why this is important, why I'm asking them to do that." (NP, Group 3)

Another important strategy to improve the care for residents with HF in LTC was to enhance the inter-professional collaboration of care teams and empowering all LTC staff to participate more actively in resident care and decision making.

"It's a big area, education. They [front-line staff] need in-service, they need formal education, they need resources, and the place [to] get the education, get the tools, [so] they can get accurate staffing so that they can attempt in-service. We arrange for an in-service and they can't go to it because they are too busy on the floor – they can't get away." (MD, Group 2)

"It's the personal support worker's job to say, 'Something's going on. Come and look.' And [the nurse's job is to] determine the next step to figure out what it is. And if [the nurse] can't figure out what it is, they can at least collect data that they can transmit up the ladder to someone who has a sense of, 'I kind of know what this is.'" (MD, Group 3)

Additionally, PCPs identified several areas in the current health care system for targeted investments specifically related to LTC. Participants concluded that better care would be delivered if more attention were paid to making wage structures for LTC staff equitable to other health care settings, improving access to diagnostic equipment (e.g., chest x-rays and portable echocardiograms), resources to provide staff education, providing parenteral medications in LTC, and creating incentives for LTC homes to reduce rates of resident transfers to acute care.

"And I think that's what the government should be focusing on: they should be giving credit to the homes and people that are treating people at the homes." (MD, Group 2)

"So if you want to make one recommendation to the Heart and Stroke Foundation as to how to improve management of just heart failure in long-term care. I would say 'get portable echocardiograms'." (MD, Group 1)

Finally, some PCPs noted the excessively high content of sodium in food served by LTC homes, and how some homes have implemented procurement policies to purchase products with lower sodium content.

"I eat in the nursing home the day I'm there because I say, 'I want to know what you're feeding the patient'. That ham and whatever, oh my gosh, you might as well bite on salt. And ... I had to call the kitchen and say, 'You know what? A lot of these elderly are on a salt-restricted diet, and did you taste the food today?'" (MD, Group 1)

In summary, PCPs identified several potential interventions to improve HF care in LTC homes. A need for multi-modal education, including educational tools and bedside teaching, was identified, although PCPs focused more on the needs of other LTC staff rather than their own. Other suggestions included more access to specialists, clearly defined roles for NPs, stable staffing, greater access to portable imaging devices, and institutional reduction of dietary sodium.

Discussion

Although heart failure is common in Canadian LTC homes, the optimal care processes to manage HF in this setting remain to be determined. The perspectives of PCPs in LTC homes, presented in this article, offer helpful insight to the challenges in the diagnosis and management of residents with HF in LTC homes, and potential solutions to these challenges.

Optimal HF requires an accurate diagnosis. A key finding from this study was that PCPs expressed concerns about their ability to perform a reliable clinical assessment to diagnose HF. Some fundamental misconceptions about HF were evident, notably that acute exacerbations

develop suddenly and unpredictably, whereas in fact most HF develops insidiously over days or weeks (Chaudhry, Wang, Concato, Gill, & Krumholz, 2007; Jurgens, 2006). This is consistent with previous observations of the progressive erosion of clinical skills among clinicians (Conn & O'Keefe, 2009; Fonseca et al., 2004; Laukkanen et al., 2006; Olofsson et al., 2007; Rutten et al., 2005), and the lack of exposure during clinical training of Canadian physicians and NPs to geriatric medicine in general, and to LTC residents specifically (Donald & Martin-Misner, 2011; Gordon, 2011; Katz & Pfeil, 2013). This discomfort with clinical skills may be linked to an expressed need by PCPs for greater access to diagnostic imaging. While diagnostic imaging clearly has an important role in the assessment of persons with suspected HF, it should not supersede a proper clinical assessment (McKelvie et al., 2013).

Also consistent with previous research were findings related to procedural skills, such as inconsistent familiarity with recommendations on HF pharmacotherapy (Remme et al., 2008). Some PCPs did not appear to understand the role of first-line therapies in improving HF symptoms and preventing hospitalizations, and were similarly unfamiliar with second-line medications. PCPs expressed concerns over the perceived risks of polypharmacy inherent to HF care, including the risks of adverse drug events and the additional burden of laboratory testing, particularly in the context of the underlying medical complexity of LTC residents. Concerns about the transfer of information between LTC and other health care sectors were consistent with previous studies showing that when an older person was admitted to LTC, the transfer of health information from sending organizations was often inadequate (Coleman, 2003).

A key finding of this study was the acknowledgement by PCPs of the importance of an approach to care based on interprofessional trust and efficient communication among all LTC staff. There was general agreement about the importance of greater involvement of front-line staff, particularly PSWs. A novel finding was the perception that engagement of front-line staff by PCPs was essential to effectively monitor residents with HF to identify those with early signs of HF exacerbation, using modalities such as reliable and regular weights and timely communication of important findings to facilitate further assessment. Direct interactions between PSWs and physicians greatly enhanced interprofessional teamwork. Although some PCPs raised concerns about the skills of some LTC staff, many others recognized that physicians could play a leadership role in fostering the development of an effective interprofessional culture, including educating front-line staff and actively engaging staff in HF management. Also, there was acknowledgement that successful

interprofessional HF care requires that PCPs could and should be more available to exercise leadership in engaging LTC staff as more active contributors to resident care, as well as enhancing PCP interactions with LTC residents and their families, particularly with respect to education and advance care planning.

The findings also demonstrate a need for multimodal educational interventions to address gaps in knowledge at all staff levels, which is consistent with other studies (Corazzini et al., 2010; Marcella et al., 2012; McAiney et al., 2007; Stolee et al., 2005; Stolee et al., 2009). An important novel finding from this study is that of incorporating bedside teaching into daily care: while this is a central tenet of medical education, it is usually restricted to undergraduate and post-graduate learners (Montgomery, 2006; Peixoto, 2001). Although suggested by an NP with respect to education of nurses and PSWs, the concept of mentorship by a specialist as a viable educational intervention has shown promise in improving gerontological skills among family physicians (Sullivan, Parenteau, Dolansky, Leon, & Le Clair, 2007). Furthermore, the concept of multidisciplinary bedside teaching during team rounds has the potential to improve interprofessional functioning of the LTC team (Bharwani, Harris, & Southwick, 2012).

Several health system issues were identified by PCPs as detrimental to the care of LTC residents with HF. Greater access to specialists was seen as desirable, although a concern was raised about the potential negative impact of multiple specialists working at cross-purposes. Geriatric medicine specialists may be particularly well-suited to support PCPs in LTC homes, although, as noted, these are in short supply in Canada, and only a third provide service to LTC homes (Hogan et al., 2012; National Physician Survey, 2010). The introduction of NPs into LTC in Canada was seen as potentially helpful, although a perceived lack of role clarity needs resolution in order that this role be integrated more seamlessly with existing roles. Several Canadian jurisdictions have conducted pilot studies to evaluate the role of NPs in providing care to LTC residents, and preliminary data suggest that their deployment is associated with improved resident health status, although the professional scope of practice remains to be clearly delineated and the impact on health service utilization determined (Donald et al., 2013; Donald & Martin-Misner, 2011; Stolee & Hillier 2006; Stolee et al., 2006). Greater and timelier access to diagnostic testing was viewed as desirable, including more ready access to chest x-rays to aid in the diagnosis of HF, and access to echocardiography to guide HF therapy. Efforts to reduce sodium content in the meals at the institutional level were deemed important.

Finally, a finding of concern was the perception that EDs are unable to address the needs of frail seniors admitted from LTC homes, and several PCPs expressed a preference to manage acutely ill residents in the LTC home rather than transferring them to the ED. While this perception is consistent with the notion that many EDs are not properly designed to safely meet the needs of frail seniors (Gray et al., 2013), it also raises concerns that some acutely ill LTC residents might be denied otherwise appropriate transfers to the ED because of this perception. PCPs reported being limited in their ability to manage acutely ill residents in the LTC home due to a lack of access to parenteral medications, and by families reversing advance-care plans when suddenly confronted by an “acute” deterioration of their loved one. Although not explicitly identified as a potential health system improvement by the PCPs, the lack of information sharing between LTC homes and other health care settings is potentially remediable through the use of common assessment systems and integrated electronic medical records. These have been identified as essential elements of integrated systems of care, and have been shown to improve outcomes in frail seniors (Hollander & Price, 2008; Johri, Beland, & Bergman, 2003; Suter, Oelke, Adair, & Armitage, 2009; Vedel, Monette, Beland, Monette, & Bergman, 2011; Williams et al., 2009).

The resource and system improvements identified through these focus groups reflect perceived needs by primary-care providers serving LTC residents. However, these needs might not be as acute if the fundamental issues related to clinical and procedural skills, as well as effective interprofessional collaboration, were addressed. Addressing these fundamental issues reflects the interprofessional literature, which identifies the most immediate determinants of resident-centered quality care as conditions and interprofessional relationships within the LTC home (San Martin-Rodríguez, Beaulieu, D’Amour, & Ferrada-Videla, 2005). Improving PCPs’ clinical and procedural skills, based on the Canadian Cardiovascular Society HF guidelines, and the quality of interprofessional collaboration among all LTC staff, has great promise to improve the care and outcomes for residents with HF.

A number of limitations to this study must be acknowledged. As with all qualitative research studies, the Hawthorne effect and social desirability bias had the potential to influence participant responses during focus groups (Parsons, 1974). Researcher bias is a potential concern when interpreting qualitative data. However, the triangulation of methods, audit trail, and member-checking techniques applied in this study, and the secondary analysis of each transcript by two researchers and collaboration for consensus on themes and results, minimized the risk of bias. The small sample of LTC homes may limit the transferability of

findings to other settings. An important concern is the inclusion of NPs into the focus groups numerically dominated by physicians. Their participation in the two groups was not only dictated by pragmatic considerations related to group sample size, but was also by design due to their increasing role in LTC; their presence in the focus groups was welcomed and encouraged by the physicians in attendance. Furthermore, themes raised by the two NPs were generally consistent with those raised by the physicians. However, extrapolation of the focus group results to the broader NP community should be considered only with great caution.

Conclusion

This article has presented results from focus groups designed to determine the perceptions of PCPs on the diagnosis and management of heart failure in long-term care. Important deficits in clinical and procedural skills related to HF management in frail seniors were identified among PCPs in LTC. Participants recognized interprofessional barriers to effective HF care in LTC residents and acknowledged that they should assume greater leadership in overcoming these barriers.

We have proposed several solutions to improve the care of LTC residents with HF, including a need for multimodal, clinically focused education including bedside teaching, and interprofessional solutions targeting PCPs and all LTC staff. These include fostering a greater leadership ethos among PCPs. Addressing these fundamental issues is a necessary first step towards improving the care and outcomes for LTC residents with HF.

References

- Allen, L. A., Hernandez, A. F., Peterson, E. D., Curtis, L. H., Dai, D., Masoudi, F. A., et al. (2011). Discharge to a skilled nursing facility and subsequent clinical outcomes among older patients hospitalized for heart failure. *Circulation: Heart Failure*, 4, 293–300.
- American Medical Directors Association (AMDA). (2002). Heart Failure: Clinical Practice Guideline 2002.
- Arnold, J. M. O., Liu, P., Demers, C., Dorian, P., Giannetti, N., Haddad, H., et al. (2006). Canadian Cardiovascular Society consensus conference recommendations on heart failure 2006: Diagnosis and management. *Canadian Journal of Cardiology*, 2, 23–45.
- Bharwani, A. M., Harris, G. C., & Southwick, F. S. (2012). Perspective: A business school view of medical interprofessional rounds: Transforming rounding groups into rounding teams. *Academic Medicine*, 87, 1768–1771.
- Bowman, C. E., Elford, J., Dovey, J., Campbell, S., & Barrowclough, H. (2001). Acute hospital admissions from nursing homes: Some may be avoidable. *Postgraduate Medical Journal*, 77, 40–42.

- Boxer, R. S., Dolansky, M. A., Frantz, M. A., Prosser, R., Hitch, J. A., & Piña, I. L. (2012). The Bridge Project: Improving heart failure care in skilled nursing facilities. *Journal of the American Medical Directors Association, 13*(1), 83.e1–83.e7.
- Canadian Institute for Health Information (CIHI). (2009). *Patient pathways: Transfers from continuing care to acute care*. Ottawa: Author.
- Chaudhry, S. I., Wang, Y., Concato, J., Gill, T. M., & Krumholz, H. M. (2007). Patterns of weight change preceding hospitalization for heart failure. *Circulation, 116*, 1549–1554.
- Coburn, A. F., Keith, R. G., & Bolda, E. J. (2002). The impact of rural residence on multiple hospitalizations in nursing facility residents. *The Gerontologist, 42*, 661–666.
- Coleman, E. A. (2003). Falling through the cracks: Challenges and opportunities for improving transitional care for persons with continuous complex care needs. *Journal of the American Geriatrics Society, 51*, 549–555.
- Colón-Emeric, C. S., Lekan, D., Utley-Smith, Q., Ammarell, N., Bailey, D., Corazzini, K., et al. (2007). Barriers to and facilitators of clinical practice guideline use in nursing homes. *Journal of the American Geriatrics Society, 55*, 1404–1409.
- Conn, R. D., & O'Keefe, J. H. (2009). Cardiac physical diagnosis skills in the digital age: An important but increasingly neglected skill (from stethoscopes to microchips). *American Journal of Cardiology, 104*, 590–595.
- Corazzini, K. N., McConnell, E. S., Anderson, R. A., Reed, D., Champagne, M. T., Lekan, D., et al. (2010). The importance of organizational climate to training needs and outcomes in long-term care. *Alzheimer's Care Today, 11*(2), 109–121.
- Creswell, J. (2009). *Research design: Qualitative, quantitative and mixed method approaches* (3rd ed.). Thousand Oaks, CA: Sage.
- Daamen, M. A., Schols, J. M., Jaarsma, T., & Hamers, J. P. (2010). Prevalence of heart failure in nursing homes: A systematic literature review. *Scandinavian Journal of Caring Science, 24*, 202–208.
- Donald, F., & Martin-Misner, R. (2011). Understanding the individual, organizational, and system factors influencing the integration of the nurse practitioner role in long term care settings in Canada. Ryerson University. Retrieved 30 June 2014 from <http://www.ryerson.ca/apnlc/pdf/FinalReport.pdf>.
- Donald, F., Martin-Misener, R., Carter, N., Donald, E. E., Kaasalainen, S., Wickson-Griffiths, A., et al. (2013). A systematic review of the effectiveness of advanced practice nurses in long-term care. *Journal of Advanced Nursing, 69*(10), 2148–2161. doi: 10.1111/jan.12140.
- Finn, J. C., Flicker, L., Mackenzie, E., Jacobs, I. G., Fatovich, D. M., Drummond, S., et al. (2006). Interface between residential aged care facilities and a teaching hospital emergency department in Western Australia. *Medical Journal of Australia, 184*, 432–435.
- Fonseca, C., Morais, H., Mota, T., Matias, F., Costa, C., Gouveia-Oliveira, A., et al. (2004). The diagnosis of heart failure in primary care: Value of symptoms and signs. *European Journal of Heart Failure, 6*, 795–800, 821–822.
- Glenny, C., Heckman, G., & McKelvie, R. (2012). Heart failure in older persons: Considerations for the primary care physician. *Canadian Geriatrics Society Journal of CME, 1*, 9–17.
- Gordon, J. E. (2011). Updated survey of the geriatric content of Canadian undergraduate and postgraduate medical curricula. *Canadian Geriatric Journal, 2*, 34–39.
- Gray, L. C., Peel, N. M., Cost, A. P., Burkett, E., Dey, A. B., Jonsson, P. V., et al. (2013). Profiles of older patients in the emergency department: Findings from the interRAI multinational emergency department study. *Annals of Emergency Medicine, 62*(5), 467–474.
- Gruneir, A., Bell, C. M., Bronskill, S. E., Schull, M., Anderson, G. M., & Rochon, P. A. (2010). Frequency and pattern of emergency department visits by long-term care residents – A population-based study. *Journal of American Geriatrics Society, 58*, 510–517.
- Hancock, H. C., Close, H., Mason, J. M., Murphy, J. J., Fuat, A., de Belder, M., et al. (2012). Feasibility of evidence-based diagnosis and management of heart failure in older people in care: A pilot randomized controlled trial. *BMC Geriatrics, 12*(70), 1–10.
- Heckman, G., & Boscart, V. (2013). *Barriers to heart failure management in Ontario long term care homes*. Podium presentation at the 4th Ontario Long Term Care Annual Research Day, Toronto, Ontario, February 13, 2013.
- Hogan, D. B., Borrie, M., Basran, J. F. S., Chung, A. M., Jarrett, P. G., Morais, J. A., et al. (2012). Specialist physicians in geriatrics – Report of the Canadian geriatrics society physician resource work group. *Canadian Geriatrics Journal, 15*(3), 68–79.
- Hollander, M. J., & Price, M. J. (2008). Organizing healthcare delivery systems for persons with ongoing care needs and their families: A best practices framework. *Healthcare Quarterly, 11*(1), 44–54.
- Hutt, E., Elder, S. J., Fish, R., & Min, S. J. (2011). Regional variation in mortality and subsequent hospitalization of nursing home residents with heart failure. *Journal of the American Medical Directors Association, 12*, 595–601.
- Hutt, E., Frederickson, E., Ecord, M., & Kramer, A. M. (2003). Associations among processes and outcomes of care for Medicare nursing home residents with acute heart failure. *Journal of the American Medical Directors Association, 4*, 195–199.
- Jacobs, B. (2011). Reducing heart failure hospital readmissions from skilled nursing facilities. *Professional Case Management, 16*, 18–24.
- Johri, M., Beland, F., & Bergman, H. (2003). International experiments in integrated care for the elderly. *International Journal of Geriatric Psychiatry, 18*, 222–235.

- Jurgens, C. Y. (2006). Somatic awareness, uncertainty, and delay in care-seeking in acute heart failure. *Research in Nursing & Health, 29*, 74–86.
- Kaasalainen, S., Strachan, P., Heckman, G., D'Elia, T., McKelvie, R., McAiney, C., et al. (2013). Living and dying with heart failure in long term care. *International Journal of Palliative Nursing, 10*(8), 375–382.
- Katz, P. R., & Pfeil, L. A. (2013). Nursing home physicians and the credibility gap. *Journal of the American Medical Directors Association, 14*(2), 83–84.
- Kurasaki, K. (2000). Intercoder reliability for validating conclusions drawn from open-ended interview data. *Field Methods, 12*(3), 179–194.
- Laukkanen, A., Ikäheimo, M., & Luukinen, H. (2006). Practices of clinical examination of heart failure patients in primary health care. *Central European Journal of Public Health, 14*, 86–89.
- Marcella, J., Nadarajah, J., Kelley, M., Heckman, G., Kaasalainen, S., Strachan, P., et al. (2012). Understanding organizational context and heart failure management in long term care homes in Ontario, Canada. *Health, 4*, 725–734.
- Mavaddat, N., & Mant, J. (2010). Primary care research and clinical practice: Cardiovascular disease. *Postgraduate Medical Journal, 86*, 696–703.
- Maxwell, J. A. (2005). *Qualitative research design: An interactive approach* (2nd ed.). Thousand Oaks, CA: Sage.
- McAiney, C. A., Stolee, P., Hillier, L. M., Harris, D., Hamilton, P., Kessler, L., et al. (2007). Evaluation of the sustained implementation of a mental health learning initiative in long-term care. *International Psychogeriatrics, 19*(5), 842–858.
- McGrail, K. M., McGregor, M. J., Cohen, M., Tate, R. B., & Ronald, L. A. (2007). For-profit versus not-for-profit delivery of long-term care. *Canadian Medical Association Journal, 176*, 57–58.
- McKelvie, R. S., Moe, G. W., Ezekowitz, J. E., Heckman, G. A., Costigan, J., Ducharme, S., et al. (2013). The 2012 Canadian cardiovascular society heart failure management guidelines update: Focus on acute and chronic heart failure. *Canadian Journal of Cardiology, 29*(2), 168–181.
- Montgomery, K. (2006). Clinical judgment and the interpretation of the case. In *How doctors think: Clinical judgment and the practice of medicine*. New York: Oxford University Press.
- Morgan, D. (1997). *Focus groups as qualitative research* (2nd ed.). London: Sage.
- National Physician Survey. (2010). Retrieved 30 June 2014 from <http://nationalphysiciansurvey.ca/surveys/2010-survey/>.
- Newhouse, I. J., Heckman, G., Harrison, D., D'Elia, T., Kaasalainen, S., Strachan, P. H., et al. (2012). Barriers to the management of heart failure in Ontario long-term care homes: An interprofessional care perspective. *Journal of Research in Interprofessional Practice and Education, 2*(3), 278–295.
- Olofsson, M., Edebro, D., & Boman, K. (2007). Are elderly patients with suspected HF misdiagnosed? *Cardiology, 107*, 226–232.
- Ouslander, J. G., Diaz, S., Hain, D., & Tappen, R. (2011). Frequency and diagnoses associated with 7- and 30-day readmission of skilled nursing facility patients to a non-teaching community hospital. *Journal of the American Medical Directors Association, 12*(3), 195–203.
- Parsons, H. M. (1974). What happened at Hawthorne? *Science, 183*, 922–932.
- Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage.
- Peixoto, A. J. (2001). Birth, death, and resurrection of the physical examination: Clinical and academic perspectives on bedside diagnosis. *Yale Journal of Biology and Medicine, 74*(4), 221–228.
- Peters-Klimm, F., Natanzon, I., Muller-Tasch, T., Ludt, S., Nikdendei, C., Lossnitzer, N., et al. (2012). Barriers to guideline implementation and educational needs of general practitioners regarding heart failure: A qualitative study. *GMS Zeitschrift für Medizinische Ausbildung, 29*(3), 10–17.
- Remme, W. J., McMurray, J. J., Hobbs, F. D., Cohen-Solal, A., Lopez-Sendon, J., Boccanelli, A., et al. (2008). SHAPE Study Group. Awareness and perception of heart failure among European cardiologists, internists, geriatricians, and primary care physicians. *European Heart Journal, 29*(14), 1739–1752.
- Rizza, P., Bianco, A., Pavia, M., & Angelillo, I. F. (2007). Preventable hospitalization and access to primary health care in an area of Southern Italy. *BMC Health Services Research, 7*, 134.
- Rutten, F. H., Moons, K. G. M., Cramer, M.-J. M., Grobbee, D. E., Zuithoff, N. P. A., Lammers, J.-W., et al. (2005). Recognising heart failure in elderly patients with stable chronic obstructive pulmonary disease in primary care: Cross sectional diagnostic study. *British Medical Journal, 331*, 1379–1385.
- San Martín-Rodríguez, L., Beaulieu, M. D., D'Amour, D., & Ferrada-Videla, M. (2005). The determinants of successful collaboration: A review of theoretical and empirical studies. *Journal of Interprofessional Care, 19*(Suppl. 1), 132–147.
- Sandelowski, M. (2000). Whatever happened to qualitative description? *Research in Nursing & Health, 23*, 334–340.
- Stolee, P., Esbaugh, J., Aylward, S., Cathers, T., Harvey, D. P., Hillier, L. M., et al. (2005). Factors associated with the effectiveness of continuing education in long-term care. *Gerontologist, 45*(3), 399–405.

- Stolee, P., & Hillier, L. M. (2006). The Ontario nurse practitioner project in long-term care facilities pilot project. Aestima Research, London, Ontario, 2002. Retrieved 30 June 2014 from http://www.health.gov.on.ca/en/common/ministry/publications/reports/nurseprac02/np_report_022302.pdf.
- Stolee, P., Hillier, L. M., Esbaugh, J., Griffiths, N., & Borrie, M. J. (2006). Examining the nurse practitioner role in long-term care: Evaluation of a pilot project in Canada. *Journal of Gerontological Nursing*, 32, 28–36.
- Stolee, P., McAiney, C. A., Hillier, L. M., Harris, D., Hamilton, P., Kessler, L., et al. (2009). Sustained transfer of knowledge to practice in long-term care: Facilitators and barriers of a mental health learning initiative. *Gerontology Geriatrics Education*, 30(1), 1–20.
- Sullivan, M. P., Parenteau, P., Dolansky, D., Leon, S., & Clair, Le, J. K. (2007). Shared geriatric mental health care in a rural community. *Canadian Journal of Rural Medicine*, 12(1), 22–29.
- Suter, E., Oelke, N. D., Adair, C. E., & Armitage, G. D. (2009). Ten key principles for successful health systems integration. *Healthcare Quarterly*, 13(Special Issues), 16–23.
- Vedel, I., Monette, M., Beland, F., Monette, J., & Bergman, H. (2011). Ten years of integrated care: Backwards and forwards. The case of the province of Québec, Canada. *International Journal of Integrated Care*, 11(7), 1–11.
- Weech-Maldonado, R., Meret-Hanke, L., Neff, M. C., & Mor, V. (2004). Nurse staffing patterns and quality of care in nursing homes. *Health Care Management Review*, 29, 107–116.
- Williams, A. P., Lum, J. M., Deber, R., Montgomery, R., Kuluski, K., Peckham, A., et al. (2009). Aging at home: Integrating community-based care for older persons. *Healthcare Papers*, 10(1), 8–21.

Appendix 1

Focus Group Guide for Physicians and Nurse Practitioners

Introductory discussion: Discuss overall perspective of HF in the context of other health concerns affecting LTC residents

Using this template as a guide, proceed to discussions regarding topics below

Diagnosis

1. How are you made aware that an LTC resident may be developing *a serious illness*?
2. What signs and symptoms suggest to you that a resident is developing *a serious illness*?
3. What signs and symptoms suggest to you that a resident is developing *heart failure*?
4. In addition to performing a history and physical examination, what other tests or investigations do you routinely utilize to assist you in achieving a diagnosis?
5. What tests or investigations *not currently readily available to you* would you find helpful to assist you in achieving a diagnosis?

Monitoring

1. How are your heart failure patients monitored?
2. Do you utilize any tests or investigations to help you monitor your heart failure patients?
3. Are you satisfied with the way your heart failure patients are monitored? If not, how do you feel they should ideally be monitored?

Management

Acute heart failure

1. Does your facility have policies and procedures in place to manage *acute* heart failure?
2. How is acute heart failure managed within the LTC facility?
3. What criteria are used to decide if a patient should be transferred to acute care?
4. Are treatment plans and advanced directives easily available to help guide treatment decisions?

Chronic heart failure

1. Does your facility have policies and procedures in place to manage *chronic* heart failure?
2. What are some of the things that help you manage heart failure?

3. What are some of the barriers that make heart failure management difficult for you?
4. Are there concerns or considerations when prescribing certain heart failure therapies?
 - a. ACE inhibitors?
 - b. Angiotensin receptor blockers?
 - c. Diuretics?
 - d. Digoxin?
 - e. Beta-blockers?
 - f. Aldosterone antagonists?
 - g. Device therapies (pacemakers, defibrillators)?
5. What, if any, are your concerns regarding polypharmacy?
6. Do you refer to specialists? If so, which specialty? Where are patients seen? If not, are there situations when you would like to have access to a specialist?
7. Do any of your patients attend heart failure clinics?
8. What should be the role of specialists and specialty clinics in the management of LTC residents with heart failure?
9. Do you work alongside an advanced practice nurse? If so, what should be the role of advanced practice nurses?

Symptom management in end-stage heart failure

1. How are treatment goals and priorities set for residents with chronic heart failure?
2. When are advanced directives discussed?
3. Are advanced directives ever reviewed? If not, what barriers prevent these discussions? If so, how are these discussions triggered?
4. What other therapies are useful for managing end-of-life symptoms?
5. Where do your heart failure patients die?
6. How could end-of-life care be improved in LTC?