Hip-Fracture Care in Rural Southwestern Ontario: An Ethnographic Study of Patient Transitions and Physiotherapy Handoffs

Helen Johnson, BSc(PT), MSc;* Dorothy Forbes, RN, PhD;†
 Mary Y. Egan, PhD, OT Reg. (Ont.);‡ Jacobi Elliott, BA, MSc;§
 Paul Stolee, PhD;§ Bert M. Chesworth, BA, BSc(PT), MClSc(PT), PhD¶**

ABSTRACT

Purpose: To examine information exchange by physiotherapists during care handoffs of patients with hip fracture in a rural health care setting. **Methods:** This qualitative ethnographic study used observation and interviews of 11 networks of patients with hip fracture ($n = 11$), family caregivers ($n = 8$), and health care providers ($n = 24$). Patients were followed from acute care through each subsequent care setting. Data were supplemented by health care records and policy documents. **Results:** Findings revealed that handoffs were less successful when information transfer was untimely or incomplete. Family caregivers experienced challenges in obtaining information required to facilitate the handoff, especially when direct contact with physiotherapists was not possible as a result of distance or other factors. Physiotherapists had to navigate multiple data sources to retrieve important information, and managed information gaps in various ways. Information flow was often unidirectional and suggested no further clinical accountability for the discharging physiotherapist. **Conclusions:** Providing information in a structured and timely fashion facilitated physiotherapy handoffs. Inadequate handoffs compromised continuity of care, delayed progress in rehabilitation, and resulted in families' missing information of vital importance to their caregiving role. A multi-directional exchange of information is needed between patients, families, and health care providers across care settings.

Key Words: continuity of patient care; hip fractures; qualitative research; rural health services.

RÉSUMÉ

Objectif : Examiner l'échange d'information assuré par les physiothérapeutes au cours des transferts du soin de patients qui ont subi une fracture de la hanche en contexte de soins de santé ruraux. **Méthodes :** Cette étude ethnographique qualitative reposait sur l'observation et des entrevues de 11 réseaux de patients ayant subi une fracture de la hanche ($n = 11$), d'aidants naturels ($n = 8$) et de fournisseurs de soins de santé ($n = 24$). Les patients ont été suivis du service de soins actifs jusqu'à chaque contexte de soins subséquent. Les dossiers de santé et des documents stratégiques ont complété les données. **Résultats :** Les constatations ont révélé que les transferts étaient moins réussis lorsque le transfert de l'information était en retard ou incomplet. Les aidants naturels ont eu de la difficulté à obtenir l'information nécessaire pour faciliter le transfert, surtout lorsque la distance ou d'autres facteurs empêchaient de communiquer directement avec les physiothérapeutes. Les physiothérapeutes ont dû consulter de multiples sources de données pour extraire des renseignements importants et ont géré le manque d'information de diverses façons. L'information a souvent circulé de façon unidirectionnelle, ce qui indique qu'un physiothérapeute qui donne son congé au patient n'a plus d'autre obligation clinique. **Conclusions :** L'information fournie d'une façon structurée et à temps a facilité les transferts en physiothérapie. Les transferts inadéquats ont compromis la continuité des soins, retardé le progrès de la réadaptation et fait que des familles manquaient de renseignements d'importance vitale dans leur rôle d'aidants naturels. Un échange multidirectionnel d'information s'impose entre les patients, les membres de leur famille et les fournisseurs de soins de santé, et entre tous les contextes de soins.

From the: *Chatham-Kent Health Alliance, Chatham, Ont.; †Faculty of Nursing, University of Alberta, Edmonton; ‡School of Rehabilitation Sciences, University of Ottawa, Ont.; §School of Public Health and Health Systems, University of Waterloo, Ont.; ¶School of Physical Therapy, Faculty of Health Sciences, and **Department of Epidemiology and Biostatistics, Schulich School of Medicine and Dentistry, Western University, London, Ont.

Correspondence to: Helen A. Johnson, ESC LHIN Rehabilitation Network Lead, Chatham-Kent Health Alliance, 80 Grand Ave. W., Chatham, ON N7L 1B5; hjohnson@ckha.on.ca.

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Hip fractures are a significant problem in Canada's ageing population, contributing to growing pressures in our health care system.¹ Frail elderly patients with hip fracture experience numerous transitions through various care settings during recovery.² A *care transition* involves the *physical transfer of a patient* to a different location for care, either within or between health care settings or from a health care setting to home with formal or informal care in the community.³ At each transition, care responsibilities are passed to different health care professionals in other settings and, less formally, to patients and their families. To decrease the risk of transition-related adverse outcomes, patients need continuity in their care. Canadian hospital-accreditation programmes have recognized the importance of information transfer by instituting Required Organizational Practices, one of which is specific to information transfer during care transitions.⁴

Several transitional care models using advanced practice (AP) nurses and specific tools to enhance communication (e.g., care records and patient education materials) have achieved improved care outcomes.^{5,6} More recently, AP physiotherapists have improved care transitions through their involvement in follow-up clinics for patients after total joint arthroplasty.⁷

The act of transferring information at the time of patient transition is known as the *handoff*. Apker and colleagues have portrayed handoffs as the "glue that holds the health care continuum together" for patients who interact with numerous health care providers during hospital admission, care, and discharge.^{8(p.161)} Most of the published research on handoffs has focused on physician and nursing handoffs and on handoffs from unit to unit within one care facility. Some best practices include face-to-face handoffs supplemented with written information and structured templates to guide information exchange.⁹ Coleman has noted that frail older patients with hip fracture receive care from many providers in multiple settings, and that successful handoffs of care across settings are crucial for optimal outcomes.³

Physiotherapists are intimately involved in the transitional care of patients with hip fracture, but physiotherapy care handoffs (i.e., transferring care from a physiotherapist in the discharging facility to a physiotherapist in the receiving care setting) have not received much attention in the literature. In rural settings, which tend to have fewer health care resources¹⁰ and higher proportions of elderly people,¹¹ physiotherapy care handoffs have not been studied.

The purpose of our study, therefore, was to explore information transfer occurring through care handoffs executed by physiotherapists across the rural hip-fracture care continuum. The research questions were the following: (1) What information do physiotherapists *see as important* to have and share to optimize care transitions

for patients with hip fracture? (2) What information do physiotherapists *actually exchange* across health care settings for these patients? (3) What are the *challenges* to exchanging information in a care handoff, and how are they overcome so that rehabilitation across the care continuum is optimized?

METHODS

Study design

Our research took place within a larger Canadian study of health information transfer across the continuum of care for older adults who had fractured a hip;¹² the study location for the present report provided the rural health care context. Our local multidisciplinary research team consisted of a physiotherapy researcher (BC), a nurse researcher (DF), and two graduate students: one physiotherapist (HJ) and one with a kinesiology undergraduate degree (JE). The graduate students performed all data collection. The Health Sciences Research Ethics Board of the University of Western Ontario approved this study, and all participants provided signed informed consent.

To examine practices in everyday, real-life settings, we chose a qualitative ethnographic approach. Qualitative methodologies enable exploration of the behaviours, attitudes, and interactions of groups and individuals; ethnographic approaches, applied to health care, provide a method of accessing beliefs and practices in the context in which they occur, facilitating understanding of the behaviours of patients and health care providers.¹³

Research paradigm

An interpretive-constructivist paradigm guided our study.¹⁴ While all patients came to rehabilitative care with a common diagnosis of hip fracture, their varied ages, pre-fracture functional levels, home situations, comorbid health conditions, and treatment trajectories yielded a range of life situations. The ethnographic approach allowed us to function as "participant-observers," observing and experiencing events, interactions, and conversations in action.¹⁵ We constructed an understanding of each unique situation through our interactions with study participants and the care environment.

Participants

English-speaking patients, care providers, and family members were recruited from two jointly managed rural hospitals (one with 60 and one with 16 acute-care beds). Participants were eligible for inclusion if they were >65 years old and had been admitted to an acute-care ward following hip-fracture surgery; family members were included if they were caregivers to the patient; and health care providers were included if they were involved in the patient's circle of care or could, as key informants, provide general information related to policies, procedures, and other pertinent aspects of a care setting.

Data collection

The graduate students completed semi-structured interviews at each care setting through the recovery journey, using a semi-structured interview guide that allowed for further probes or queries. Interviews were most often initiated in the acute-care setting; if a patient was transferred to subsequent care settings before all interviews could be completed, some interviews took place retrospectively, or data collection began at the next care setting. Interviews were recorded and transcribed verbatim; all participants were assigned pseudonyms to maintain confidentiality.

Observation occurred during study site visits for participant recruitment, during attendance at team rounds, and during formal interviews. We observed patients undergoing routine care, participating in physiotherapy sessions, and being discharged home. We also observed informal communication among health care providers, patients, and families on the unit, as well as during telephone and informal “hallway” conversations. Field notes and analytic memos were used to record experiences, observations, emerging ideas, and reflections on an ongoing basis, informing early data analysis and providing further direction as the study unfolded.

Documents relevant to patient care and transfers between care settings were collected and analyzed for content. These documents—including blank chart forms applicable to patients with hip fracture, de-identified health records, patient education information, and policy documents—provided important collateral information related to the care pathway and the planning of care transitions. They also provided evidence of the formal execution of care handoffs.

Data management and analysis

We entered transcribed interviews, field notes, and relevant documents into a qualitative data-management programme, NVivo 8 (QSR International, Victoria, Australia, 2008). All data were organized and analyzed by *networks*, consisting of patients, their family caregivers, and health care providers. The key informant interviews provided supplementary data on administrative and other general aspects of the care settings. The primary data sources for analysis of physiotherapy handoffs were a subset of interviews with eight physiotherapists, one physiotherapy aide, one occupational therapist, and two orthopaedic surgeons, along with observation field notes and physiotherapy-specific handoff documentation. We examined all interview transcripts for references to physiotherapy care and handoffs; pertinent references to physiotherapy care and handoffs made by other health care providers, patients, and family caregivers or found in health care documentation were also incorporated into the data analysis. Our inductive, data-based analytic approach was informed by the guidelines of Lofland and colleagues.¹⁶ Transcribed data were condensed and

structured into initial meaning units and categories; using focused coding, we further developed the initial codes into more elaborated interpretations. The research team reviewed the codes to ensure consistency of interpretation. Through this process, the various data sources were organized into conceptual themes and evolved into the framework presented in the Results section below. Memos kept during the course of the fieldwork and data analysis, which stored emerging ideas and their interconnections, were reviewed with the team to contribute to the processes of coding and making sense of the data.¹⁵

Enhancing the quality of the study

To improve the trustworthiness of the results, we used criteria described by Guba and Lincoln: credibility, dependability, confirmability, and transferability.¹⁷ *Credibility* involved peer debriefing: reviewing the research process with the larger group of co-investigators. *Dependability* involved triangulating data from the three main sources to corroborate interpretations during analysis. An audit trail kept throughout the study assisted with *confirmability*, recording the decision-making process during data collection and interpretation. Detailed description of results facilitated *transferability*, which aims to enable those interested in transferring findings to other contexts to determine through their reading whether concepts described are similar enough for such a transfer.

RESULTS

Study sample

Between December 2009 and January 2011, we recruited 11 patients (8 female, 3 male; mean age 80.3 years). Purposive sampling yielded participants with a variety of pre-morbid situations and levels of care complexity (e.g., absence of spouse, cognitive impairment, multiple comorbidities) and diverse care trajectories, maximizing the variety of care settings to which care was handed off. Patients came from several different home settings: three lived alone, four with a spouse or child, and another four in assisted living environments. Eight family caregivers were recruited (2 spouses, 6 children; mean age 57.5 years).

We recruited 24 health care providers with rural clinical experience from the various health care settings (mean duration of rural practice 20.4 years): four health care aides or registered practical nurses, seven registered nurses, nine physiotherapists, one occupational therapist, and three physicians or orthopaedic surgeons. The physiotherapy department manager, three physicians, and a staff physiotherapist were interviewed as key informants; although not directly involved in the care transitions of any study participants, they provided a global picture of policies and procedures for admission, discharge, and overall care of patients with hip fracture at the study site. These interviews provided details on the practice

Table 1 Care Trajectories of Study Participants*

Trajectory	Setting and transition no.										
	LS	1	CS 1	2	CS 2	3	CS 3	4	CS 4	5	CS 5
1	Home	→	SX Hospital R1	➔	Hospital R2†						
2	Home	→	SX Hospital R1	➔	Home HC						
3	Home‡	→	SX Hospital R1	➔	LTC§						
4	Home	→	SX Hospital R1	➔	RH¶	→	Home No HC				
5	Home‡	→	SX Hospital R1	➔	Home HC	➔	OP PT Hospital R1				
6	Home	→	SX Hospital R1	➔	LTC**	→	Home No HC				
7	Home	→	SX Hospital U	➔	Hospital R1	➔	Home HC	➔	OP PT Hospital R1		
8	RH	→	Hospital R1	→	SX Hospital U	➔	Hospital R1	➔	RH HC		
9	RH	→	Hospital R3	→	SX Hospital R1	➔	LTC††	→	Hospital R1	→	LTC§

*Bolted arrows indicate physiotherapy handoffs.

† Deceased.

‡ Two patients followed this trajectory.

§ Permanent.

¶ Short-stay bed.

** Temporary.

†† Respite bed.

LS = living setting; CS = care setting; SX = surgical; R1–R3 = first–third rural; HC = home care; LTC = long term care; RH = retirement home; OP = outpatient; PT = physiotherapy; U = urban.

context within which the handoffs being studied took place. Interview times ranged from 25 to 45 minutes; of 58 interviews (21 with patients, 11 with family caregivers, and 26 with health care providers), 50 were conducted face-to-face and 8 by telephone. A total of 65 hours of observation in the field generated field notes, and we retrieved 286 pages of health records and 15 pages of policy documents and forms pertaining to information transfer.

Patient care trajectories

Table 1 shows that patients travelled a variety of care trajectories across 17 physiotherapy handoffs. The simplest trajectory was from home to hospital for surgery and return to the pre-admission home setting; the most complex route involved initial presentation from a retirement home to a small non-surgical rural hospital for X-rays, followed by transfers to the study site surgical hospital, a respite bed in a long-term care (LTC) facility, return to hospital for surgical revision because of non-union, and, ultimately, permanent placement in the LTC facility. The average acute-care length of stay was 23.4 days.

Variety of care handoffs observed

While our initial aim was to observe handoffs between physiotherapists, we recognized two other important handoffs during the course of the study: handoffs between physiotherapists and other health care providers, and the more informal handoff of care to the family. The information communicated by physiotherapists to family caregivers emerged as a significant factor in rehabilitation

care continuity for patients, and thus contributed significantly to the themes discussed below.

Information important to physiotherapists for patient transitions

Physiotherapists' information needs fell into two categories: retrieving information (for clinical decisions about treatment and goal setting) and providing information (as perceived to be required by health care providers, patients, and family). Important information needs upon receiving a referral involved knowing about the patient's current and pre-morbid health history and any other comorbid conditions that might affect rehabilitative care, as described by this acute-care physiotherapist:

And it depends on which health conditions we're talking about, so if there's heart conditions, obviously that's important for treatment, and things like arthritis, so that if I know that patient's knee is sore, that I know, OK, they've had arthritis for a while, so that's probably why it's sore.

A home-care physiotherapist described additional considerations that are important in the community-based treatment setting:

Oh, we ... go through the history, the present complaint and illness, the past or previous medical history, the medications that they are on, the investigations and follow-up appointments they have in the future ... factors that could affect the treatment, like vision, hearing, language, memory, cardiovascular, respiratory ... any other additional ... complications in the hospital ...

In addition, knowing the mechanism of injury, the type of fracture, the surgical procedure undertaken for its repair, and the prescribed weight-bearing status or other

post-surgical precautions are paramount for clinical decision-making and treatment planning:

What type of surgery she had, how her injury occurred ... her weight-bearing status ... (Acute-care physiotherapist)

Try to find any documentation from the surgeon ... I would like to see precautions. You know, whether it be weight-bearing or avoiding a certain activity ... that's a big thing. (LTC physiotherapist)

A home-care physiotherapist discussed why obtaining the post-surgical weight-bearing status from the surgeon is so important:

When it's a fracture surgery, the big thing is the weight-bearing status. That tells me what I can progress her to ... it's quite variable with fractured hips, and mainly dependent on the client. If they're an elderly [person], very osteoporotic, they're going to have more limited weight-bearing status. You know, depending what they're doing to fixate the joint as well, sometimes the surgeon will leave it "partial weight" or "50%" for the first 6 weeks; occasionally I get "weight-bearing as tolerated," which means we can progress to a cane.

Actual information exchanged by physiotherapists at transitions

The actual information transferred at care handoffs was typically structured in the form of medical notes, and covered the information indicated to be important, as discussed above: patient profile (age, sex, previous home setting), history of present illness (fracture history), surgical procedure and weight-bearing status gleaned from the orders, past medical history (comorbidities), and social history (home situation, family supports). Information initially documented by acute-care physiotherapists later became their source of information at the time of handoff. These notes were typically brief and concise, with expeditious use of short forms and symbols, as seen in this initial PT assessment for one patient, in which short forms and symbols have been spelled out for clarity:

Patient Profile: 91-year-old ♀ [woman] from retirement home

Hx [History] of Patient Injury: Left hip # 2° [fracture secondary] to fall at RH [retirement home] on Feb. 26/10—did not present to hospital until Mar. 2/10 (was ambulating with rollator walker until then)

Sx [Surgery]: Left hip ORIF [open reduction internal fixation] Mar. 5/10 by Dr. [surgeon's name] *restricted to TTWB [toe touch weight bearing]*

PMHx [Past medical history]: CAD [coronary artery disease], afib [atrial fibrillation], R [right] hip # [fracture], R [right] knee hardware removal, GERD [gastroesophageal reflux disease], squamous cell CA [carcinoma] left neck.

Social: Lives alone at RH [retirement home]. Previously I [independent] with rollator walker.

Physiotherapists particularly valued discipline-specific information from colleagues in the prior care setting, as this acute-care therapist explained:

I think that's the most useful information, because it comes from a physiotherapist who also knows what information is important to me, so they sum up that information, which makes it a lot easier for me to get that picture [of the patient].

Physiotherapists in hospitals used structured forms to facilitate their care handoffs. Information transfer from home-care physiotherapists to those providing outpatient care was less standardized, usually involving handwritten notes. However, this home-care therapist welcomed new policies being implemented to improve information transfer to outpatient settings:

We have a form for ... outpatients, which I need to ... start working on, because it really makes a lot of difference ... for these cases where there was a fracture, and they were a long [time in] community care ... to give the outpatient [physiotherapist] an idea would definitely be beneficial for them, and the client as well, so that everybody's on the same track ... a note of progress she's made ... specifics [of] certain conditions ...

Unidirectional information flow from the discharging to the receiving physiotherapist was evident in the absence of space for (or provision of) contact information on the standard physiotherapy discharge forms. Furthermore, discharge notes typically conclude with statements indicating that the patient has been transferred or discharged, implying that the discharging physiotherapist has no further clinical accountability.

Physiotherapists' challenges to information exchange at handoffs

Physiotherapists experienced challenges in both retrieving and providing information during care handoffs; they used a variety of strategies to counter these challenges and their impacts on continuity of care.

Challenges in retrieving handoff information

Physiotherapists in acute care had to navigate several data sources to retrieve important information, including health records, patients, family members, and other health care providers. Sometimes they had to sift through large amounts of information in both electronic and paper-based health records to find the details they needed to provide care:

I think the biggest challenge is that there's a lot of information ... it's just at times difficult to sort through what's exactly important for me to have at this moment ... to treat this patient. (Acute-care physiotherapist)

Observations during this particular conversation suggested that large amounts of information impede efficiency in managing the time pressures of a busy caseload.

Information did not always move to the next care setting as quickly as the patient did, and consequently physiotherapists sometimes had to assess and treat without having received timely handoff information:

I think that usually we do get the information that we need, my only thing would be, sometimes the timeliness ... Particularly the client who goes home end of the week / weekend, and then I see them right away the beginning of the week ... so I've seen the client once or twice and then I get the note. You can still carry on, but the more information you have ahead of time, the better. (Home-care physiotherapist)

The important information most commonly reported to be missing was current weight-bearing status, which can potentially delay the progression of rehabilitation:

If I'm not sure of the weight-bearing status, I'll keep it to partial. I would never progress them to a cane if I was not sure it was weight-bearing as tolerated. (Home-care physiotherapist)

Similarly, on transitions from home care to outpatient physiotherapy, weight-bearing status and other information were not always handed off efficiently, creating an information gap:

Occasionally we do need to track down weight-bearing orders or restriction orders ... there may not be a good transition of information from home care to us. Sometimes we get it and sometimes we don't; it's hit and miss. (Outpatient physiotherapist)

Challenges in providing handoff information

Physiotherapists faced challenges in knowing whether or not their information had reached the intended recipient, as one acute-care physiotherapist noted:

I usually always try to have a discharge summary for wherever they're going ... I usually give it to ... the clerk to send with them in their stack of papers, [but] after that I don't know what happens to it, whether the person receiving all the papers just doesn't hand it to the actual therapist there, or what actually happens with it, I don't know ... I wouldn't have time to follow up and make sure they have it in their hand or anything like that, I just hope that they get it.

Finally, we observed that requirements to obtain patients' consent to release their information to other health care providers or family members, as well as consent for referral to services following discharge, caused delays in information transfer, affecting continuity of rehabilitation for some patients. In one instance, a LTC resident told us that she followed her roommate's exercise prescription while waiting for the facility physiotherapist to begin her therapy, unaware that the delay had occurred because her consent for treatment had not been obtained when she was admitted.

Challenges in exchanging information with families during handoffs

Physiotherapists recognized that families were included in the handoff of care, as we observed their consideration of families' ability to "handle the situation" in discharge planning. Conversations with family members indicated that information was transferred most clearly when they were able to visit the hospital during regular work hours and meet with physiotherapists face to face; this was often challenging, however, because of the travel distances involved in the rural setting. In the absence of direct contact, some family members communicated by telephone to meet their information needs, which sometimes produced confusion and uncertainty:

Family member: ... because he was doing very little, and then eventually he said physio had come up ... it was later on that I did call physio and said what is happening with him ... how much is he being assisted with, and how much can he do?

Interviewer: ... so you called for information?

Family member: Yes, I did ... to be sure what and how he could move, you know, they recommended that he needed to have the pillow between his legs to move, to keep the legs moving in unison ... But I don't know whether any precaution was really advised as far as the amount of flexion or anything ...

Interviewer: ... and how, when you made the phone call, did you get ...

Family member: To some degree, yes, I was enlightened a little bit more then ...

We also heard that communication was challenging when different family members were involved in planning discussions. For example, hospital staff typically held family meetings early in the morning, and not all family caregivers were able to attend—frequently because of long travel distances or work commitments. As a result, considerable stress and misunderstanding occurred when the family caregiver attending the meeting was not the same one who later had to scramble to arrange for equipment:

And then, because I wasn't there [at the family meeting], and I don't think I got the message until Thursday night, that she had to have a walker and a wheelchair, a stationary walker or whatever you call them, that she couldn't come to [the LTC home] before she got it, that was kind of a confusion ... I knew that mom needed a walker and a wheelchair but I didn't realize that it had to be *here* before she would be able to be admitted. That was the detail.

Moreover, both patients and family members told us that while there was some instruction on exercise or transfer techniques during the hospital stay, this did not necessarily happen in every case, particularly when

families could not visit during regular business hours. Written information was not consistently provided for patients and family caregivers to take home, as illustrated in this interview with a patient's spouse:

Interviewer: ... were you given any forms or a booklet about surgery ... ?

Patient's spouse: No booklet, but the people ... in the next bed got a booklet because they were scheduled for surgery ... so I borrowed their booklet, took it home and copied it ... I didn't know about how he was supposed to bend and not bend.

The booklet the family caregiver copied outlined precautions and exercises applicable to a total hip replacement. Fortunately, her husband's hip-fracture surgery was a hemi-arthroplasty, which is subject to the same precautions and exercises.

Strategies to counter challenges

Physiotherapists told us that they manage information gaps following handoffs in a variety of ways, depending on the type and location of care setting. An outpatient PT at the rural acute-care hospital noted that missing information or unanswered questions can often be resolved efficiently when the previous care providers are in the same building:

Because ... a lot of the orthopaedic surgery is done here, it's very easy for us to just ask the in-patient therapist. So what was so and so doing in hospital, or what was their weight-bearing status, so we have that advantage ... [that] you don't necessarily have with somebody coming from another facility.

In home-care environments, this is more difficult, because diverse schedules and rural travel distances preclude joint home visits. To deal with this challenge, home-care physiotherapists leave other providers voice-mail messages or handwritten notes in the patient's home. The situation was summed up nicely by this home-care physiotherapist:

As far as communication, it's hard if there's other service providers in a client's home, it's hard for us to communicate with each other. ... If the OT [occupational therapist] is seeing a client, I try to, you know, leave them a message, saying I'm in there as well, do you see anything, or any concerns, but often, you know ... unless you want to do a joint visit, you're not there at the same time ...

In both LTC and home-care settings, physiotherapists spoke about calling or faxing the surgeon's office for weight-bearing orders or other surgical precautions. Fax was commonly reported as more efficient than telephone:

It depends on the surgeon ... some of the ones in the county, I can call, and talk to the nurse, and she provides the information. The ones in [urban centre], what they prefer is fax them something with the question, the secre-

tary will show the surgeon, he'll put a comment on it, and fax it back ... the timeliest I've ever seen, it came back in one day. [Waiting for return] phone calls can sometimes be not so timely. (Home-care physiotherapist)

Interestingly, physiotherapists in all settings considered it more efficient to contact the surgeon's office than to try to locate the previous physiotherapist.

Finally, this outpatient physiotherapist described how therapists often use patients as couriers to deliver hand-off information:

And I got an update from the home-care therapist, [it] was forwarded to me ... the patient ... had that with her when she arrived. That's the normal mode we would get it, although it's possible it might have been forwarded to us by home care, but usually it comes to us with the patient.

Sometimes, however, this approach has drawbacks. One home-care therapist explained the resulting inefficiency when her patients forget to take her notes to the physician appointment:

Interviewer: Now that letter that you send back with clients, do clients ever forget to take it?

Physiotherapist: Of course they do ... In that case sometimes they bring a little slip from the doctor, and then we're ok ... Sometimes even that is forgotten, and then we have to hunt the doctor.

DISCUSSION

This study illustrates physiotherapy care handoffs in which information transfer works well; it also reveals the impact on patients and families when information gaps occur. In addition, it shows the challenges of handoffs in rural health care and the one-way nature of information flow during handoffs.

When handoffs work well

In our study, care handoffs between physiotherapists succeeded when information from the previous care setting was provided in a structured format and in a timely fashion. Typically this occurred through transfer of information in writing, as the rural health system we studied relied primarily on paper-based communication at the time of the study. Care handoffs between physiotherapists and family members worked best when family caregivers were available within the physiotherapist's work schedule, when the same family member was consistently involved, and when written information accompanied the handoff. When patients were cognitively intact and able to understand instructions, they were able to transfer information about their physiotherapy programme to their family caregivers; when this was not possible, however (e.g., with frail patients with cognitive impairment), family caregivers' role in information handoffs was more important.

Handoffs and family caregivers

Transferring care to families without a formal handoff procedure can have negative consequences. In our study, when family members or friends were unable to attend a patient's physiotherapy session before discharge, they often missed information important to assuming their caregiving role. In acute care, if patients' functional abilities were deemed insufficient or family support was considered inadequate to sustain discharge to home, families were formally called in to discuss alternative care settings. If family support was deemed to be adequate, however, the patient was returned home and the balance of care transferred to the family without any formal family meetings. In these cases, it was assumed that patients and families would be able to manage mobility-related issues such as transfers and weight-bearing and movement restrictions. Coleman has observed that patients and caregivers often inherit the added responsibility of coordinating their care transitions "without [having] the necessary skills and confidence to do so";^{3(p.550)} similarly, Chugh and colleagues have noted that, typically, no standardized approaches are in place to ensure that patients and families adequately comprehend increasingly complex discharge instructions.¹⁸

Therefore, it is not surprising that family caregivers in our study sometimes showed anxiety and frustration. Consistent with our observations, Weinberg and colleagues have reported that patients and families who perceive poor care coordination may experience confusion, which can affect the rehabilitation process.¹⁹ Others have also noted that patients and family caregivers express significant anxiety during care transitions.^{20,21} Feelings of anxiety may result from a lack of understanding and preparation for the self-care role, confusion about conflicting advice, and even, as Snow and colleagues note, "a sense of abandonment attributable to the inability to contact an appropriate health care practitioner for guidance."^{21(p.356)}

Importantly, when families were not able to connect directly with acute-care physiotherapists during business hours, they were somehow seen as unavailable for the handoff, and accountability seemed to shift to the family to track down the information they needed to assume their care responsibilities. To deal with this issue in the area of stroke care, Cameron and Gignac have developed a conceptual framework, *Timing It Right*, that outlines the changing educational and support needs of family caregivers during patient transitions through different stages of recovery and care settings.²² As with patients with hip fracture, the balance of care shifts from professional health care providers to family caregivers when patients with stroke are discharged home. The *Timing It Right* model summarizes the patient journey, care focus, and caregiver needs through five stages: event/diagnosis, stabilization, preparation (to return home), implementa-

tion, and adaptation following stroke.²² A similar framework could be explored for patients with hip fracture, as our study illustrates comparable care phases. Furthermore, one of our family caregivers photocopied an education booklet from her husband's hospital roommate, illustrating the lengths to which family and friends will go to meet their information needs. Policies and practices that explicitly ensure that physiotherapists and other health care providers engage in effective communication with family caregivers at the time of care transitions need to be developed across the entire care continuum.

Handoffs and the rural setting

Paine and Millman have noted that home-care providers need comprehensive handoffs with clear directions to maximize time spent with patients.²³ For the rural health care providers in our study, having to "hunt" doctors and track down information intruded on their patient-care time; this is particularly important, in our view, because we already know that rural travel distances limit the time health care providers can spend with patients.²⁴ In our study, rural home-care physiotherapists had to take additional time, either during the treatment visit or following their travel, when missing information required contact with other clinicians.

Arora and colleagues have suggested the best handoff practice should use face-to-face interaction supported by standardized documents.⁹ However, the challenges of rural health service delivery significantly affect implementation of handoff best practices in this context; face-to-face dialogue is impractical when significant distances separate care settings. The one-way, paper-based handoff communication practices we observed in this rural setting meant that physiotherapists lacked feedback as to whether the information they provided had reached the intended recipient.

Handoffs and the direction of information exchange

The primarily one-way flow of information we observed shows that, to a certain extent, participating physiotherapists and the organizations in which they worked regarded handoffs as an end point in their provision of care. Lee and Garvin have acknowledged this one-way *information transfer* as a pervasive pattern throughout health care practices that significantly limits effectiveness,²⁵ and have advocated for researchers, clinicians, and policy makers to practice two-way *information exchange* during patient/provider encounters. Incorporating planned two-way communication into handoff practices at care transitions is an important area for future research, particularly in rural care settings. Evolving electronic health record systems need to be interoperable and available across the care continuum, including primary-care, hospital, home-care, and LTC settings. Options such as open text boxes that allow for dialogue between clinicians at discharging and admitting sites may improve information exchange. The use of

patient and family education booklets that travel with patients and allow for two-way written communication between care settings could also be explored. Mobile communication technologies such as text messaging and video calling may also be viable solutions in challenging rural care environments.

LIMITATIONS

The limitations of our study include our inability to interview a health care provider and/or family caregiver for each patient in each setting and to recruit a primary-care practitioner to explore the family physician perspective. Recruiting family members who lived far away from our patients was difficult, either because of their age or because they lived far enough away that regular involvement as a family caregiver was not feasible. Therefore, we do not know how these people affect transitional care. Finally, because our research took place within a single region, the policy contexts we encountered will not necessarily generalize to other health care settings.

CONCLUSION

Our findings show that the transitional care information needs of physiotherapists are discipline specific, confirm the importance of sharing handoff information in a timely manner, and highlight opportunities for physiotherapists to improve their handoffs to family caregivers. Further research is needed to elucidate the best methods of information sharing to operationalize clinical responsibility across care settings. Researchers interested in health professional education should identify effective ways to educate physiotherapy students and practising clinicians on executing physiotherapy handoffs across the continuum of care.

KEY MESSAGES

What is already known on this topic

Most published research on handoffs has focused on physician and nursing handoffs and those from unit to unit within one care facility. Suggested best practices for care handoffs include combining written and oral information exchange. No study has examined physiotherapy care handoffs across care settings for rural patients with hip fracture.

What this study adds

This study identifies opportunities for physiotherapists to improve their handoffs and information exchange with colleagues and other health care providers when a patient with hip fracture transitions to another care setting, including developing specific strategies to optimize communication with family caregivers at care handoffs. As a profession, physiotherapy needs to explore ways to reasonably accept some clinical responsibility across care settings to enhance multi-directional information exchange.

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