

# A grounded theory of interdependence between specialist and generalist palliative care teams across healthcare settings

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## Abstract

### Background:

Individuals with palliative care needs face increased risk of discontinuity of care as they navigate between healthcare settings, locations, and practitioners which can result in poor outcomes. Little is known about interactions that occur between specialist and generalist palliative care teams as patients transition from hospital to community-based care after hospitalisation.

### Aim:

To understand what happens between inpatient specialist palliative care teams and the generalist teams who provide post-discharge palliative care for shared patients.

### Design:

A constructivist grounded theory approach, using semi-structured interviews and constant comparative analysis, including coding, memo-writing, and diagram construction.

### Settings/participants:

Interviews (n=21) with specialist palliative care clinicians and clinicians in other specialties providing generalist palliative care. Specialists had training in palliative care and worked in specialty palliative care practices; other clinicians worked in primary care or oncology and did not have specialised palliative care training.

### Results:

A grounded theory of interdependence between specialist and generalist palliative care teams across healthcare settings was constructed. Two states of inter-team functioning were found which related to how teams perceived themselves: separate teams or one cross-boundary team. Three conditions influenced these two states of inter-team functioning: knowing the other team; communicating intentionally; and acknowledging and valuing the role of the other team.

Conclusions:

Teams need to explicitly consider and agree their mode of functioning, and enact changes to enhance knowledge of the team, intentional communication, and valuing other teams' contributions. Future research is needed to test or expand this theory across a range of cultures and contexts.

Key Statements

*What is already known about the topic?*

- Individuals with palliative care needs often experience a lack of continuity of care as they transition between healthcare settings which contributes to worse clinical outcomes.
- Complex service provision models across settings, locations and providers can make continuity of care at the point of transition challenging.

*What this paper adds:*

- A grounded theory of interdependence between specialist and generalist palliative care teams that promotes understanding of how these teams function across transitions has been developed that can guide practice and future research.
- Proposed conditions that could improve continuity of care include knowing the other team; communicating intentionally; and acknowledging and valuing the role of the other team.

*Implications for practice, theory, or policy:*

- Clear processes for intentional communication between teams may improve clinical outcomes and patient, family, and professional satisfaction
- Policies should support investment of time and money in relationship building and communication between teams as these impact critical outcomes
- This theory could be tested and expanded through exploration in other cultures and contexts to expand its explanatory power.

## Key Words

Palliative care, interdisciplinary health team, interprofessional relations, continuity of patient care, grounded theory, qualitative research

## Introduction

Worldwide, people with palliative care needs receive healthcare in multiple settings such as clinics, hospitals, hospices, care homes, and their own homes from primary care and specialist healthcare teams<sup>1</sup>. As they near the end of life, people often experience frequent transitions between settings<sup>2-4</sup>, leading to discontinuity of care and poorer outcomes<sup>5, 6</sup>. Continuity of care, defined as the degree to which care is coherent and consistent across time and place<sup>7</sup>, is particularly important for patients who have complex conditions, as they are at higher risk for poor outcomes such as errors, delays, and suffering<sup>8</sup>.

Palliative care is provided by generalist and specialist healthcare providers. Generalist palliative care providers, who can be specialists in other areas in their own right, provide basic symptom management, advance care planning, and psychosocial support along with usual medical management of advanced illnesses. Specialist palliative care is provided by professionals with specialised training and focused practice on palliative care needs<sup>9, 10</sup>. Collaboration between generalist and specialist palliative care providers is impacted by interactional and psychosocial factors such as personal relationships<sup>11</sup>, trust<sup>12</sup>, visibility<sup>13, 14</sup>, understanding of the other's practice<sup>15, 16</sup>, and clear role definitions<sup>17</sup>. A sense of professional failure<sup>16</sup>, negative perceptions of the other team<sup>18</sup>, and poor communication<sup>12, 17, 19</sup> all hinder collaboration between these teams.

Whilst there are many forms and types of interaction between different teams, little research focuses on how inpatient specialist palliative care teams interact with generalist teams who care for shared patients after discharge from hospital. Without an understanding of what happens between teams during these transitions, it is impossible to improve the continuity of care that palliative care patients and their families require at this juncture. This study was undertaken to further understanding of this particular phenomenon.

## Methods

### Research question

What happens between specialist and generalist teams when patients transition from receiving palliative care from an inpatient palliative specialist team to receiving it from a generalist team after hospital discharge?

### Design

A relativist ontology and interpretivist epistemology guided this study. These approaches emphasise that knowledge is socio-culturally bound and co-constructed by the researcher and participants<sup>20, 21</sup> and that new knowledge is generated by individuals' interpretations of their experiences<sup>22</sup>. This, along with the nature of the research aim, drove the selection of constructivist grounded theory<sup>22</sup> as the methodology for this study. This approach focuses on generating theory that provides a comprehensive explanation of patterns of behaviour<sup>23</sup> and legitimises the knowledge of the researcher as data source that contributes to theory<sup>20, 24, 25</sup>.

### Setting

This study was conducted with participants from large, highly specialised tertiary and smaller, less specialised community hospitals and rural and urban clinics across the U.S. The majority of participants worked in the midwestern U.S.

### Population

The study population included members of inpatient specialist palliative care teams and generalist healthcare teams practicing outside the hospital setting who cared for patients with palliative needs

after the patients experienced a specialist palliative care consultation while hospitalised (see Table 1 for inclusion and exclusion criteria).

Table 1: Participant inclusion and exclusion criteria

	Inclusion criteria	Exclusion criteria
Inpatient specialist team members	<ul style="list-style-type: none"> <li>• Being a member of a specialist palliative care team in a hospital in the United States</li> <li>• Having provided inpatient consultative care for at least one patient for whom a generalist team assumed responsibility for palliative needs after discharge</li> </ul>	<ul style="list-style-type: none"> <li>• Having a specialist palliative care practice in which responsibility for patients' post-hospital palliative care needs <u>always</u> continue to be met by a specialist palliative care team</li> </ul>
Outpatient generalist team members	<ul style="list-style-type: none"> <li>• Being a member of a health care team providing primary care or other subspecialty care (other than palliative) outside the inpatient setting in the United States</li> <li>• Having provided care for at least one patient who had previously received inpatient specialist palliative care consultation</li> </ul>	<ul style="list-style-type: none"> <li>• Having extensive training or certification in palliative care</li> </ul>

## Sampling

Purposive and snowball sampling was initially used to identify individuals with relevant experience from a variety of different settings. After initial, iterative, data analysis, theoretical sampling was utilized to specifically identify individuals with particular perspectives which may enable the refinement of developing theoretical concepts. This included palliative specialist registered nurses, oncology professionals, and those who had experienced a strong connection between the inpatient palliative care team and outpatient team providing generalist palliative care. The revised

recruitment flyer used at the stage of theoretical sampling focused on individuals who had had experiences of strong connections, as these were the exception in the initial interviews.

## Recruitment

Participants were recruited via email, the online forum of a U.S.-based palliative care professional network, and the newsletter of a midwestern U.S. family medicine organization. Initial recruitment occurred in August and September 2016. In January 2018, a revised recruitment email was sent to specialist palliative care teams and oncology teams with the purpose of recruiting individuals who could provide more specific data related to the developing theoretical concepts. Prior to data collection, all participants received written information about the study, including reasons for the research, and signed a consent form. Some participants were known professionally to M.T. prior to the study.

## Data collection

Interviews were used to collect data, with the interview guide informed by an initial scoping of the literature and the theoretical sensitivity of the researchers, which refers to a grounded theory researcher's ability to discern what is important in the field of study and in the data based on their professional experience and knowledge<sup>22</sup>. Consistent with iterative theoretical data collection<sup>22</sup>, the interview guide was revised partway through the interviews to address developing categories more specifically (see supplemental material A and B).



Interviews occurred between September 2016 and May 2018 and were conducted by M.T. Participants were interviewed face to face when possible, or via videoconferencing or phone. Basic demographic data were obtained, and participants self-assigned a pseudonym to maintain confidentiality. M.T. shared her personal background and interest in the research topic prior to commencement. Audio-recorded interviews, ranging from 30-70 minutes, were transcribed by M.T., with any participant identifiers omitted. Transcripts were saved in secure online repository at Lancaster University.

## Analysis

Transcripts were managed using NVivo software<sup>26</sup> and all coding was completed by M.T. with review by S.B. and C.W. M.T. is an experienced palliative care nurse undertaking a PhD at the time of this study, C.W. is an experienced researcher with a nursing background, and S.B. is an experienced health services researcher.

Iterative levels of initial, focused, and theoretical coding were performed concurrently with ongoing data collection and analysis. Initial coding is the first step in constructivist grounded theory data analysis serving to “fracture data”<sup>22</sup>, providing the building blocks for theory. Each transcript was initially coded for any content that could have relevance to the psychosocial processes that occur between inpatient specialist palliative care and generalist healthcare teams outside the hospital setting<sup>27</sup>. Next, focused coding served to raise the level of data analysis to a more abstract level through asking questions of the data like “What’s happening here?” and “What are the circumstances that lead to this action?” to keep a focus on psychosocial processes occurring between the specialist and generalist teams. To reflect the focus of inquiry on social actions, most categories were constructed using active words in the form of gerunds<sup>22</sup>. The final stage of coding in focused on developing identified categories rather than trying to capture every possible idea in the data, narrowing the scope of analysis to the evolving theoretical categories<sup>22</sup>. All subsequent interview transcripts were coded using these categories as a coding framework and all earlier

transcripts were reviewed and recoded. Simultaneously with iterative coding, memos and the use of diagrams were used to develop categories and relationships between them. Memo-writing captured evolving ideas, while diagrams allowed abductive exploration of categories' connections to each other<sup>22</sup>. Theoretical sampling, and the processes of coding, memo-writing, and diagram construction continued until no additional insights were added and the proposed relationships between categories were stable and further insights into the theoretical categories were uncovered<sup>28</sup>.

### Ethical considerations

Approvals were received from the institutional review board of the healthcare institution at which M.T. was employed in June 2016 (ID 16-004490) and Lancaster University's Faculty of Health and Medicine Research Ethics Committee in July 2016 (ID FHMREC15124), with amendments approved by both in 2017. Participants provided written informed consent and were advised they could withdraw from the interview at any time. Pseudonyms were used and all identifying data omitted from transcripts. Materials were stored in secure electronic files. No ethical concerns were raised during the study.

### Findings

Ten specialists and 11 generalists, from medicine, nursing, and social work participated. All were Caucasian and the majority were female and from the midwestern U.S. (both 84%). See Table 2 for additional participant characteristics. Overall, participants reflected the workforce in the study locations, except for a larger proportion of female physician participants than is typical in the workforce. At least 7 different teams were represented across the 21 participants, though team membership data was not collected with demographics.

Table 2: Characteristics of participants

Characteristic	Inpatient specialists N = 10	Outpatient generalists N = 11
<b>Gender</b>		
Female	8	10
Male	2	1
<b>Age</b>		
31-40	4	5
41-50	2	2
51-60	2	3
61-70	2	1
<b>Ethnicity identified</b>		
White	10	11
<b>Professional discipline</b>		
Medicine	4	2
Nursing – Registered nurse	2	6
Nursing – Advanced practice	2	3
Social work	2	1
<b>Professional subspecialty</b>		
Family medicine	0	6
Internal medicine	0	4
Oncology	0	1
Palliative medicine	10	0
<b>Years of experience in subspecialty</b>		
< 5 years	1	4
5-15 years	8	4
6-25 years	0	1
26-35 years	0	1
>35 years	1	1
<b>Holds certification in Palliative Care</b>	7	0
<b>Practice setting</b>		
Tertiary care hospital	6	n/a
Community hospital	4	n/a
Urban/suburban clinic	n/a	6
Rural clinic	n/a	5
<b>Geographic region of U.S.</b>		
Midwest	9	9
Southwest	0	2
Southeast	1	0

Constructed grounded theory of interdependence between inpatient specialist palliative care and outpatient generalist teams across healthcare settings

The findings from this study enabled the construction of a theory of interdependence between inpatient specialist palliative care and outpatient generalist teams across healthcare settings and is presented figuratively (Figure 1).

This theory offers a way to understand the psychosocial processes that occur between specialist and generalist palliative care teams when patients transition from the hospital to the community.

Interdependence is the term used to describe the degree of engagement and collaboration between the teams, ranging from a state of little interdependence on one end of a continuum to a state of high interdependence on the other. Teams that function on the low end of the interdependence continuum tend to see themselves as a self-contained team, within the boundaries of their own setting and focus on patient needs within that setting. Teams that function on the high end of the interdependence continuum tend to see themselves as part of a larger team that crosses boundaries and focus on patient needs outside their own setting and the needs and capabilities of the team in the other setting.

Three conditions, or lack thereof, appear to contribute to a team's self-perception and way of functioning in relation to the other team: knowing the other team, communicating intentionally, and acknowledging the role and value of the other team. Not only do these conditions influence the team's self-perception and level of interdependence, but the conditions are perpetuated by the team's self-perception and way of functioning, creating a cyclical pattern that tends to maintain a given degree of interdependence between teams over time.

In this theory, the degree of interdependence impacts patient and professional outcomes. A low degree of interdependence tends to result in more negative outcomes, such as poorly executed discharge plans, potential for patient harm, patient, family, and professional distress, and redundant work. A high degree of interdependence tends to result in more positive outcomes, such as safer

patient transitions between settings, better follow through on discharge treatment plans, and increased patient, family, and professional satisfaction.

The categories of social actions that were created to enable the formulation of this theory are now presented.

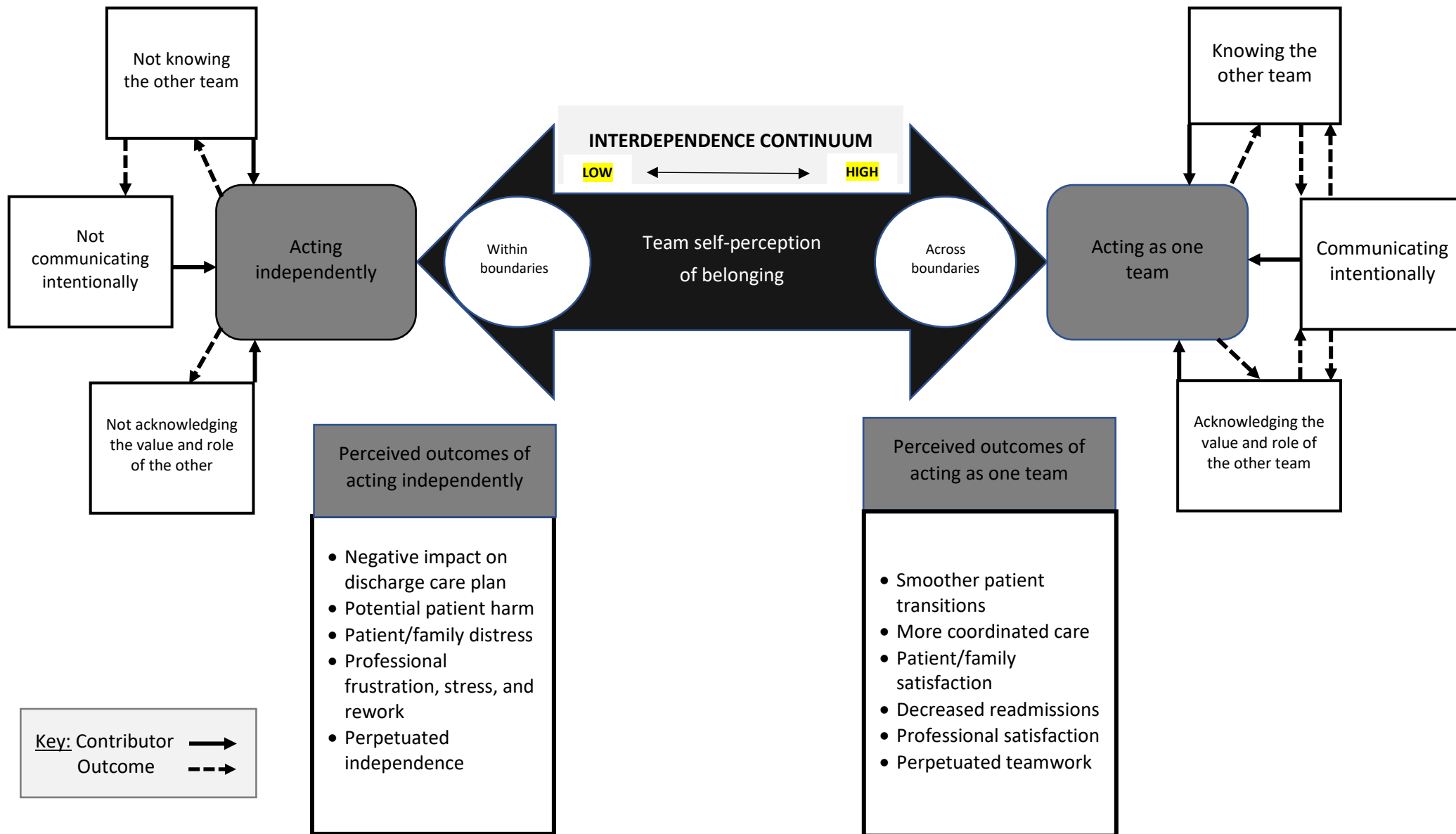


Figure 1: Graphic representation of the theory of interdependence between inpatient specialist palliative care and outpatient generalist healthcare teams across hospital/community boundaries

Five categories of social actions were developed: two reflected states of interdependence between teams (Seeing team within boundaries: acting independently; Seeing and belonging to a cross-boundary team: acting as one team across boundaries) and three represented processes that impact teams' states of interdependence (Knowing the other team, Communicating intentionally; Acknowledging the role and value of the other team).

Categories reflecting states of interdependence

*Seeing team within boundaries: acting independently*

Individual team members' self-perception of boundaries between health care locations aligned with the degree of interdependence with which specialist teams and generalist teams interacted; whether a team worked independently from other teams caring for shared patients, or whether they worked as one team for a shared patient across location boundaries. More participants perceived themselves as being part of a within-boundaries team than as being part of a cross-boundaries team. The way specialist participants talked about the generalist teams and vice versa revealed a perceived separation not only in physical location, but in purpose and function.

*It just kind of makes you feel like the work that you've done, and you know it's been really, really good work, that it stops when they walk out the door. That's how you feel. You don't have any way to follow that up to find out if that's the case or not. (Jean, inpatient specialist palliative care social worker)*

"Seeing team within boundaries: acting independently" was reflected in participants' language about physical distance, differing disciplinary approaches, strict role boundaries, prior patient/clinician relationships, and level of respect between clinicians of various specialties or disciplines. These were all identified as factors that impact teams' self-perceptions and ways of interacting with the other team.

*Everyone wants to be... responsible for what they're responsible for. And nothing else. I'm the same way. You know, I want to do my job and I don't want to do your job. (Linda, outpatient generalist nurse practitioner)*

Participants perceived that when teams worked independently patients received fragmented care with no clear plan, inadequate follow up, and ambiguous accountability for post-discharge care. Perceived negative clinical outcomes included poor symptom control, unwanted medical interventions, and repetition of difficult conversations. Teams acting independently was also thought to result in anxiety and frustration for patients and caregivers and moral distress for professionals when they felt their work with a patient was disregarded in another setting or they had no closure regarding eventual patient outcomes.

#### *Seeing and belonging to a cross-boundary team: acting as one team across boundaries*

The corresponding category about degree of interdependence, though less common in the data, was "seeing and belonging to a cross-boundary team: acting as one team across boundaries."

Participants used more inclusionary language about the other team when describing their work, describing development of a mutual plan of care, a willingness to cross disciplinary or specialty turf boundaries, and blurred roles.

*We've been caring for your patient, we wanted to connect and share with you, you know, what we've been doing and talking about and how can we work together? Who would you, you know, how can we be part of, you know, how can we be of help to you? (Crash, ISPC RN)*

Teams who functioned in this way sometimes described talking to the patient about the generalists and specialists interacting as one team to meet the patient's needs.

*He [palliative physician] gives the perception to them of "we're doing this together, and I'm letting [Mae] know, and she knows that she can reach out to me if she needs it." (Mae, outpatient generalist nurse practitioner)*



Participants perceived that when teams acted as one across settings, patients received more coordinated care, meaning that care plans developed in one setting carried over to the other and were mutually understood and agreed upon by clinicians in each setting. More coordinated care was perceived to result in better symptom control, treatment more congruent with the patients' preferences, less distress for patients and caregivers, and greater work satisfaction for professionals.

Categories reflecting processes that impact level of interdependence

#### *Knowing the other team*

"Knowing the other team" was a multi-factorial process fundamental to the level of interdependence between teams. At the most basic level, it meant knowing who the other team was and how to contact them. Working in shared physical space, having met members of the other team face-to-face, or having professional or personal inter-team relationships supported this process.

*One of the hindrances is not knowing, not knowing each other. I always feel like, when people can put a name with a face, there's more thought behind the process. (Linda, outpatient generalist nurse practitioner)*

Another aspect of knowing the other team was understanding the other teams' daily work, priorities, disciplinary makeup, and capabilities.

*After they've seen that it helped their patients, then they've gone, "Oh... they know what they're talking about..." ... they've gotten to know us, they, we know them, we understand them, and we try to work together. (Renee, inpatient specialist palliative nurse practitioner)*

Without the basic condition of knowing the other team, further processes that support interdependence were absent.

#### *Communicating intentionally*

Intentionality of communication, or lack of it, impacted how interdependently specialist and generalist teams functioned across settings. Many teams relied on passive communication,

expecting the other team to access their documentation in the electronic health record without prompting.

*But then we are just relying on discharge notes. You know what I mean? There's no, like, follow up calls, or anything like that. (Andrea, outpatient generalist nurse practitioner)*

Deliberate unidirectional communication, for example notes forwarded electronically from inpatient specialist to outpatient generalist, was seen as helpful by the generalists but less than satisfying to the specialist as they did not receive any follow up on a proposed plan or eventual outcomes.

*They always send me notes. I always read them... kind of give me a heads up as to what happens, or what the gist of the consult was, but you know, I always read the consult, and I might answer back if there's a particular thing... (Sunshine, outpatient generalist physician)*

*There's no formal process... it's not very good, it seems like it's almost one way... yeah, regrettably. (Duncan, inpatient specialist palliative physician)*

Bidirectional communication sometimes occurred and increased the level of interdependence between the two teams. This occurred through email exchange or live via phone or face-to-face conversation and provided both teams with important historical context for ongoing care, allowed for co-construction of a mutually acceptable plan based on each team's capabilities, and helped in proactively planning for anticipated problems across transitions.

*When she was ready for discharge back to her home...I made sure to touch base, well I kept him in the loop you know, by sending him copies of her notes, but then contacted him before discharge to come up with a plan for management. And so, every couple of months he would send me messages. (Hill, inpatient specialist palliative physician)*

"Communicating intentionally" was enhanced when disciplinary hierarchies were not entrenched and communication from any discipline between teams was welcomed. Some teams identified one member as the "bridge" between teams to facilitate communication.

*The receiving team, it makes it a good connection if they don't care about titles, if it's not important for you to have the title of doctor or nurse practitioner. If they are willing to listen or have a conversation with, you know, "just the nurse" of the team. (Susan, inpatient specialist palliative registered nurse)*

Participants described inconsistency in intentional communication from patient case to patient case. In absence of a standard procedure to incorporate bidirectional communication between teams, often individual team member characteristics drove whether this occurred or not.

*We don't have a process in place for that. (Rose, ISPC NP)*

*I think there's people that are better, just easier to connect with, or more receptive, and it's more how they are personally or professionally. (Susan, ISPC RN)*

Intentional, bidirectional, and interdisciplinary communication between teams facilitated interdependent working between inpatient specialist and outpatient generalist teams when patients were discharged from the hospital to the care of their generalist team.

#### *Acknowledging the role and value of the other team*

The final process that impacted the level of interdependence was teams "acknowledging the role and value of the other team," meaning that a specialist or generalist clinician spoke to the patient about the other team in positive terms or demonstrated respect for the other team's input by their actions. This was demonstrated by seeking the other team's input with the patient's knowledge or engaging in joint visits with the patient and members of the other team. This process served to contextualise the patient's care, created a sense of continuity over time, and was perceived to equalise the roles of specialists and generalists which facilitated interdependent work.

*"I want to let you know I talked to your doctor back in little town, (state name), because I know he's been caring for you for a lotta years and I just want to make sure that I had a good sense of the backstory here." ...You have to represent the prior history through that medical*

*team, as well as the future history with the receiving team once again. (Walter, inpatient specialist palliative physician)*

## Discussion

The concept of interdependence and the ways that one's self-perception as either being autonomous or part of a larger social whole impact behaviours, values, actions, and relationships has been identified within experimental psychology. Within psychology, this type of self-perception is known as self-construal<sup>29-33</sup>. The propositions of the theory of interdependence from this study, despite being undertaken without using self-construal or interdependence as a priori concepts, provide interpretive evidence of these experimental findings. To the best of our knowledge, no other theories have been proposed that integrate the concepts of self-construal and interdependence with the functioning of specialist and generalist healthcare teams. These concepts provide a foundation for development of inter-team interventions that could impact outcomes for patients and professionals within palliative care and other fields.

The findings of this study align with research into collaboration between health professionals. First, that lack of awareness of, communication with, and valuing of the other team are important in collaborations between inpatient hospital medicine specialists and community primary care providers at time of hospital discharge<sup>34-37</sup>. Second, that factors which enhance collaboration between specialist and generalist palliative care professionals include established interpersonal relationships<sup>11, 12, 38</sup>, frequent, proactive communication<sup>18, 19, 39</sup>, and respect for the other team's contributions<sup>38, 39</sup>.

This study was the first to construct an integrated theory, proposing relationships between conditions and the way in which teams function. It was also first to introduce the more abstract concept of team self-perception as a driver of how teams function in relation to the other team<sup>40</sup>. These findings contribute to the conceptual understanding of interdisciplinary and cross-boundary continuity of care<sup>41, 42</sup>, suggesting that continuity could be impacted positively by influencing teams' self-perception toward a more interdependent view.

### *Implications for practice, policy, education, and research*

These findings and the resultant grounded theory of interdependence support investing resources in relationship-building between teams who care for patients with palliative care needs in different contexts. This includes ensuring that contact information for other team is readily available; having an electronic health record that allows for direct messaging between teams; allowing adequate time to communicate in discharge transition processes; and the availability of video technology to involve the team across the contextual spectrum in decision making and care planning. Experiences with telemedicine during the Covid pandemic has paved the way for integration of these practices. Building steps into clinical workflows that encourage inter-team engagement may have a positive impact on patient and caregiver physical, emotional, and mental outcomes and on professionals' job satisfaction.

For development of policy, the theory of interdependence supports organisational policies that include expectations that collaboration and intentional communication between teams is a standard process. This theory also provides support for policies that would invest financially in relationship-building between healthcare teams to positively impact both clinical and organisational outcomes. For educational curriculum development, this theory demonstrates the importance of emphasising, within basic and specialty level education programmes, opportunities to impact continuity of care and patient outcomes in care transitions. Interprofessional education can make a significant difference in knowledge, skills, and attitudes toward other disciplines<sup>43</sup>. Educational curricula should include activities to influence knowledge, attitudes, and behaviours toward healthcare teams in other care settings and disciplines as well as to develop deliberate communication skills.

Implications for further research are many. As a constructivist grounded theory is open to modification with further study, there is scope to develop this theory in different contexts. Other qualitative research could explore patient or caregiver perceptions of healthcare team interdependence and the impact on their care. Quantitative exploration of teams' interdependence

and association with actual patient and professional outcomes using available standardised tools designed to measure interdependence<sup>33, 44</sup>, medical record review for patient outcomes, and professional satisfaction assessment could test elements of this theory. Comparison studies exploring various means of intentional communication or use of videoconferencing with the other team during consultation could inform development of interventions based on this theory. This theory is a starting point for a thorough understanding of how specialty palliative care teams in the hospital and generalist teams in the community interact as patients transition between healthcare settings.

#### *Strengths and limitations*

Strengths of this study are based on the characteristics of credibility, originality, resonance, and usefulness<sup>22, 45</sup>. Credibility, having sufficient relevant data for asking questions about the data, making systematic comparisons throughout the research process, and developing a thorough analysis, was enhanced by use of an iterative interview guide; the multiple coding rounds during analysis; researcher reflexivity through memoing; and including elements in the final theory only if supported by the participant data. The theory is felt to be original through offering new insights and a fresh conceptualisation on the issues originally conceptualised as collaboration. Resonance, or insight for others, was determined by asking participants, post-interview, if initial findings made sense to them and by presenting preliminary concepts as a poster at a national palliative care conference in 2018 and receiving affirmation from peers that the ideas “made sense.” Usefulness, is determined by the ability to make sound practice and policy recommendations.

Limitations are primarily related to the participant sample. All participants were Caucasian, and primarily female and from the Midwest US. Only one participant was from the oncology specialty. By definition, constructivist grounded theory is context-specific<sup>22</sup>, so it is not expected that this theory is generalisable. However, the findings and resultant theory may be transferable to other contexts

and additional study could strengthen this theory with more heterogenous samples, different geographic regions or types of healthcare systems.

## Conclusion

To date, there have been no theories proposing to explain how inpatient specialist palliative care teams and outpatient generalist care teams work together to provide coordinated, continuous palliative care to seriously ill patients across the continuum of healthcare settings<sup>46</sup>. A deeper understanding of the interactive processes between these teams, demonstrated in the theory of interdependence, provides a foundation for development of practical interventions that could improve both patient and professional outcomes and inspires a vision for palliative care that is truly integrated across the continuum through transformation of teams' perceptions of belonging to a cross-boundaries team.

## Declarations

### Authorship

Mary Thelen PhD was primary researcher and author of this paper, having completed this research as a requirement for completion of a PhD in Palliative Care at Lancaster University.

Sarah G. Brearley PhD served as primary academic supervisor for this research and made substantial contributions to the design of the work, collection and analysis of data, and reviewed and approved the final version of this paper.

Catherine Walshe PhD served as secondary academic supervisor for this research and made substantial contributions to the design of the work, collection and analysis of data, and reviewed and approved the final version of this paper.

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## Declaration of conflicts of interest

The Author(s) declare that there is no conflict of interest.

## Research ethics and patient consent

Approvals were received from the institutional review board of Mayo Clinic (Rochester, Minnesota, U.S.) in June 2016 (ID 16-004490) and Lancaster University's Faculty of Health and Medicine Research Ethics Committee in July 2016 (ID FHMREC15124), with amendments approved by both in 2017. All participants provided written informed consent.

## Data management and sharing

All interview transcripts were saved electronically on the Lancaster University's secure online repository for future use as needed.

## Acknowledgements

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