Supporting rural families during interhospital patient transfers for critical illness events: An exploration of an acceptable communication process

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\textbf{A R T I C L E  I N F O}

\textbf{Keywords:}
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Critical care
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Caregivers
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Patient transfer

\textbf{A B S T R A C T}

Critically ill patients in rural areas at times require an interhospital transfer from their local hospital to an urban tertiary care centre for advanced critical care services not available locally. Family members have described this transfer window as a communication blackout and one of the most stressful times of their relative’s critical illness event.

\textbf{Objective:} To explore what communication process would be most acceptable between family members and transfer team members (consisting of critical care nurses, paramedics, and physicians) during interhospital transfers of critically ill patients.

\textbf{Research methodology:} Using a qualitative descriptive approach of critical thematic analysis, data were collected in September and November 2022, from focus groups of five family members and four transfer team members who experienced this phenomenon.

\textbf{Setting:} Rural Canada where speciality services such as interventional cardiology and neurosurgery are unavailable, and a tertiary care hospital is more than 160 km away.

\textbf{Findings:} Within themes of unequal power relations and status-based hierarchies, family members described how communication during interhospital transfers supports connection and coping, challenges experienced in accessing information, an overwhelming unknown, and practical challenges of the transfer. Transfer team members described a context of power relations and status-based hierarchies in which themes of transfer team burden, role confusion or connection, protection and management of family members, and complexities of information sharing during interhospital transfers were identified.

\textbf{Conclusion:} In critical illness, communication linkages are created between healthcare providers and family members but are broken during an interhospital transfer resulting in increased stress for family members. Acceptable communication elements described by transfer team members and family members may maintain these linkages during the transfer window.

\textbf{Implications for clinical practice:} These findings provide the foundation for critical care nurses and their professional colleagues to take family care to the next level with an explicit communication strategy during interhospital transfers.

\section*{Introduction}

The regionalisation of health care has resulted in specialty services becoming centralised in tertiary care hospitals (Ray et al., 2022). Consequentially, smaller, rural hospitals have a limited ability to provide specialised critical care services (Allen et al., 2020; Almqvist et al., 2023) thereby necessitating an increasing need for interhospital transfers (IHT) of patients from smaller, rural hospitals to tertiary care centres for essential, advanced critical care services (Allen et al., 2020; Joseph et al., 2022; Mueller and Schnipper, 2019; Ray et al., 2022).

Critically ill patients may undergo IHT to access specialty services for conditions such as intracranial hemorrhage, spinal cord injury (Burns, 2021; Frost et al., 2019; Mackie et al., 2014), multi trauma, myocardial infarction, vascular emergencies (Burns, 2021; Frost et al., 2021).
2019), or respiratory failure resulting from COVID-19 infection (Allen et al., 2020). Patients who are transferred span all ages from neonates to older adults (Ali et al., 2022; Allen et al., 2020) and are transferred either by land or air ambulance (Dabija et al., 2021; Frost et al., 2019; Joseph et al., 2022). Depending on country or health region, and patient condition (Frost et al., 2019), healthcare personnel who care for the critically ill patient during the IHT may include critical care nurses (Allen et al., 2020; Dabija et al., 2021; Frost et al., 2019), paramedics (Allen et al., 2020; Burns et al., 2023), emergency medical technicians with extended scope of practise (Allen et al., 2020) and physicians such as anaesthetists or intensivists (Frost et al., 2019).

The phenomena of a families’ experiences of a critically ill relative’s IHT have been broadly explored in Australia (Johnson, 1999; Mackie et al., 2014), Sweden (Karlsson et al., 2020), and Canada (Burns et al., 2023). Burns et al. (2023), explored the experiences of rural FMs when a critically ill relative requires an IHT to a distant urban centre for advanced critical care services. While similarities of experiences in previous studies were found, this interpretive phenomenological study also reported novel findings that directed the purpose of the present study. In this study, FMs described the transfer window, when the patient was being transferred from the originating hospital to the receiving hospital, as one of the most stressful components of the critical illness experience. This transfer window, lasting between 3 and 4 h, included an absence of communication between family and the transferring team which left the family wondering as to the health and well-being of their relative and if they were still alive. Of note, one participant in this study was provided the personal mobile telephone number of a transferring paramedic which she described as central to her ability to cope with the IHT of her critically ill relative (Burns et al., 2023).

While supporting the understanding that rural FMs have experiences and needs distinct from their urban counterparts (Johnson, 1999; Mackie et al., 2014), Burns et al. (2023) suggest the constructs of health literacy and a culture of rurality also influence this experience. Health literacy, noted to be lower in rural populations compared to urban populations (Golboni et al., 2018; Halverson et al., 2013), and an area of concern among rural Canadians (Gillis and Sears, 2012), refers to the ability of an individual to access and understand information to successfully interact with the health system (Halverson et al., 2013). A culture of rurality encompasses characteristics of self-reliance, a respect for individuals with perceived authority that interferes with an individual’s ability to advocate for self, and an inherent reticence to share personal feelings and concerns with people unknown to them (Slama, 2004). When considering interventions to support communication between FMs and transferring healthcare providers, it is important to consider how health literacy and a culture of rurality might exert influence in the form of power relations.

A better understanding of how to meet the information needs of FMs of critically ill patients during IHT is needed (Burns et al., 2023; Karlsson et al., 2020; Mackie et al., 2014). Specifically, because family members describe the transfer window as an intensely stressful time during which there is no communication between TTMs and FMs thereby challenging their ability to cope during the IHT (Burns et al., 2023), the Transactional Model of Stress and Coping (Lazarus and Folkman, 1984) was used to develop the purpose of this study.

According to Lazarus and Folkman (1984, p. 21), stress is “a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her (sic) resources and endangering his or her (sic) well-being”. The appraisal process includes a primary appraisal where individuals consider their context and determine if it is irrelevant, promotes well-being, or is stressful (Lazarus and Folkman, 1984). An environment may be appraised as stressful if harm or loss has occurred or is at risk of occurring (Lazarus and Folkman, 1984). In responding to a situation deemed stressful, individuals seek to engage coping strategies, a process termed secondary appraisal by Lazarus and Folkman. During secondary appraisal, an individual assesses what coping options are useful and available to them which are then evaluated as to their effectiveness. Upon receiving new information, an individual performs a reappraisal of their situated context.

As noted by Karlsson et al. (2020), lived experiences of individuals experiencing IHT are useful to inform the development of interventions. The purpose of this study was to explore what process of communication would be most acceptable between the FMs and transfer team members (TTMs) during IHTs of critically ill patients. Findings of this study can then inform the development of a communication intervention to target secondary appraisal and reappraisal by family members during IHT to enhance coping of a relative’s IHT for advanced critical care services. Key concepts for this study were informed by Burns and Petrucka (2020) and listed in Table 1.

**Methods**

**Design**

This study used a qualitative descriptive approach. Guided by the framework for developing and evaluating complex interventions (Skivington et al., 2021), FMs and TTMs were identified as stakeholders with perspectives essential to exploring an acceptable process of communication during this event. Data were collected using a FM focus group (focus group 1) and a TTM focus group (focus group 2) and analysed using critical thematic analysis as described by Lawless and Chen (2019). Critical thematic analysis is useful in accessing the influences of power relations and hegemonic social structures manifest in discourses (Lawless and Chen, 2019). This method was chosen so that the presence of status hierarchies and power relations, particularly in relation to health literacy and a culture of rurality, may be accessed and their influence on experience understood. This study was reported using the Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist (Tong et al., 2007).

**Participants and setting**

This study was reviewed according to the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) good clinical practice (GCP) guidelines by the PEI Research Ethics Board (approval certificate #12). Following institutional research ethics board approval, participants were recruited to either the FM or the TTM focus group using the respective inclusion criteria in Tables 2 and 3.

This study was set in rural Atlantic Canada where specialty services such as interventional cardiology, neurosurgery, thoracic surgery, and vascular surgery are not available. Typically, IHT for eligible patients is by land or air ambulance to a tertiary care hospital more than 160 km. Often, IHTs depart from the emergency department, however, some IHTs originate from the critical care units.

**Table 1**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Definition*</th>
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<tbody>
<tr>
<td>Rurality</td>
<td>defined within the context of access to advanced critical care services whereby patients were at times transferred to an urban tertiary care centre for advanced critical care services not available at the local hospital</td>
</tr>
<tr>
<td>FMs</td>
<td>a spouse, child, parent, sibling, grandchild, or someone with whom the critically ill patient has a similar relationship with.</td>
</tr>
<tr>
<td>Critical illness</td>
<td>a life-threatening condition requiring critical care services not available in a general nursing care unit.</td>
</tr>
<tr>
<td>Interhospital transfer</td>
<td>the transfer of a critically ill patient to an urban tertiary care centre more than 150 km from the originating hospital.</td>
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*Burns and Petrucka (2020),
Table 2
Family member inclusion criteria.

(a) live in a rural area
(b) be a FM of a critically ill patient who required an interhospital transfer to an urban centre for advanced critical care services
(c) experienced the transfer of a critically ill relative within the last two years, but not within the last month
(d) be 18 years of age or older
(e) speak and understand English
(f) are willing to participate in the study

Table 3
Transfer Team Member Inclusion Criteria.

(a) currently working as a paramedic with Island EMS
(b) have participated in critically ill patient transfers to an urban centre for advanced critical care services for at least one year

Data collection

Assuming an ontological position of historical realism with a critical epistemology, the primary investigator (MB) and a research assistant used a semi-structured interview guide to facilitate focus group discussions. The FM focus group met in-person and, to accommodate paramedic work schedules, the TTM focus group was completed virtually. Each focus group met for one session which lasted between 55 and 62 min. Ground rules, including the requirement of confidentiality, were discussed by the primary investigator at the beginning of each focus group followed by guiding questions (Tables 4 & 5). In each focus group, participants were encouraged to share ideas while interacting with each other and the researchers. Focus group discussions were digitally audio recorded, transcribed and digitally stored using two levels of security.

Data analysis

Focus group audio recordings were reviewed several times by the primary investigator (MB) and transcripts prepared and cleaned by a research assistant. Data were analysed using critical thematic analysis as described by Lawless and Chen (2019). Data were first analysed using open coding for “repetition, recurrence, and/or forcefulness” (Lawless and Chen, 2019, p.98) to identify themes of experiences or ideas important to participants. Next, closed coding was used to understand how power relations influenced this experience (Lawless and Chen, 2019). A research assistant completed open coding of the first 30 min of the FM focus group which was reviewed by the primary investigator for accuracy. The research assistant then analysed the remaining FM focus group data which was then reviewed by the primary investigator for accuracy. The primary investigator completed open coding of the TTM focus group data and closed coding for both focus group data. Observational notes taken by the primary investigator, co-investigator (ML) and research assistant and were reviewed by the primary investigator after open and closed coding of focus group data to seek additional themes or ideas. De-identified transcripts and code books generated from this analysis were shared with the co-investigator who then independently reviewed them for accuracy. The primary investigator and co-investigator then met to discuss the code books and finalize data analysis.

Rigour

Guided by criteria of trustworthiness (Guba and Lincoln, 1989; Lincoln and Guba, 1985), several strategies were used to increase rigour of this study. To increase credibility, we engaged in peer debriefing and investigator triangulation to enhance coding accuracy and in-depth of analysis from differing clinical and disciplinary perspectives, notably critical care nursing versus paramedicine (Polit and Beck, 2021). Transferability was enhanced by including thick description of the study context in this report. The criteria of dependability and confirmability was attended to by engaging in researcher meetings to discuss data analysis and by maintaining records of raw data, observational notes, transcripts, data analysis steps, code books, and methodological decisions.

Findings

Five FMs and four TTM participants in the study. Participant demographics are presented in Tables 6 and 7.

Family members

Initial coding of FM focus group data resulted in four themes: Communication supports connection and coping, challenges to accessing information, an overwhelming unknown, and practical challenges of IHT. Critical analysis of this data identified themes of unequal power relations and status-based hierarchies. These themes provide insights as to what the most acceptable process of communication would be
1. FM have described the loss of connection with their critically ill relative during the interhospital transfer window as the most stressful time of the whole experience. To help FMs feel more connected to their relative during the transfer window, the clinical support desk may be used as a communication buffer between FMs and paramedics. What are your thoughts on this process of communication between you and FMs?

2. What process of communication with FMs do you think would work best during these interhospital transfers? For example, would it be better for the clinical support desk to contact you at regular intervals for updates that they will share with the FMs? Or would it be better for the clinical support desk to only contact you when requested by the family?

3. What do you think would happen if you were busy providing patient care when the clinical support desk contacted you for an update? What would your preferred process be in this situation?

4. What kinds of information do you anticipate that FMs may wish to receive?

5. Would you want a communication process to include a way for you to initiate contact with the family during the transfer? Through the clinical support desk?

6. Do you have any concerns about having a process of communication between transferring paramedics and FMs of critically ill patients during the transfer window? If so, what are they?

### Table 6

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify as female</td>
<td>5 participants</td>
</tr>
<tr>
<td>Identify as male</td>
<td>0 participants</td>
</tr>
<tr>
<td>Age</td>
<td>27-69 years</td>
</tr>
<tr>
<td>Relationship to critically ill patient</td>
<td>child (n = 3), spouse (n = 4), parent (n = 1)</td>
</tr>
<tr>
<td>Length of time since IHT event</td>
<td>4 months – 21 months</td>
</tr>
<tr>
<td>Reason for IHT</td>
<td>heart attack (n = 1), collapsed lung (n = 1), vascular surgery (n = 1), spinal cord injury (n = 2), valve replacement complications (n = 1), abdominal aortic aneurysm (n = 2)</td>
</tr>
<tr>
<td>FM travelled to urban centre</td>
<td>Yes (n = 2), No (n = 6)</td>
</tr>
<tr>
<td>by personal car or public transport</td>
<td>Yes (n = 4), No (n = 4)</td>
</tr>
<tr>
<td>was accompanied by other FMs during IHT</td>
<td>Yes (n = 0), No (n = 8)</td>
</tr>
<tr>
<td>In what season did the IHT occur</td>
<td>Winter (n = 2), Spring (n = 3), Summer (n = 3), Autumn (n = 0)</td>
</tr>
<tr>
<td>What were the driving conditions</td>
<td>Icy/snow covered roads (n = 2), Snowing (n = 1), Rainy (n = 1), Good (n = 2), No answer (n = 2)</td>
</tr>
<tr>
<td>How long the IHT took from departure to arrival</td>
<td>1.5 h – 5 h</td>
</tr>
</tbody>
</table>

*Some participants experienced two IHTs with the same or different FMs at different times. For example, one participant experienced an IHT for their child and then several months later, their spouse.

### Table 7

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify as female</td>
<td>2 participants</td>
</tr>
<tr>
<td>Identify as male</td>
<td>2 participants</td>
</tr>
<tr>
<td>Age</td>
<td>37-54 years</td>
</tr>
<tr>
<td>Length of time as a practicing paramedic</td>
<td>12-18.5 years</td>
</tr>
<tr>
<td>Length of time in critical care</td>
<td>10-17 years</td>
</tr>
<tr>
<td>Particpant has previously offered FMs a mode to communicate during IHTs (e.g. sharing personal mobile phone number with FM)</td>
<td>No (n = 1), Yes (n = 3)</td>
</tr>
</tbody>
</table>

Between FMs and TTM during IHT and are foundational to the development of a communication intervention. These themes are described below.

Family members frequently identified communication with healthcare providers as a mechanism to support a sense of connection with their critically ill relative and thus, enhance their coping during IHT. During the IHT, FMs described a need for honest and truthful information about how their relative was feeling, if their condition had changed or if they were still alive. In receiving information from TTM, FMs shared that they would “know what was going on” and would “just feel connected”, which would have “made it [IHT] so much easier” (focus group 1). One participant described “if I knew, I could like talk to my mom [about what was happening with my partner’s IHT] I’d be like ‘okay’ just talk through it with her… Breathe through it and stuff. Okay, this is what we’re facing now” (focus group 1). For this participant, receiving information from TTM would have unlocked additional FM support from her mother during her critically ill partner’s IHT.

The level of health literacy challenged FMs when seeking information during the IHT. A FM stated “I’m not sure I’d know what the questions I’d want to ask were” (focus group 1). In some cases, participants blamed themselves for not understanding what was happening with their relative stating “I should have been smart enough to pick up on that in the hospital” (focus group 1). Family member concern of distracting the transfer team from their critically ill relative also creates a perceived challenge to accessing information during IHT. Finally, the COVID-19 pandemic added challenges to accessing information with participants frequently questioning if IHT experiences were linked to pandemic related restrictions.

A sense of an overwhelming unknown was described by participants at the time of departure and persisting throughout the IHT. Several FMs described the memory of their relatives’ departure as standing out in memory “it was the goodbye… not knowing what’s happening, seeing your important person on a stretcher… wondering all of the things that you wonder” (focus group 1). Participants characterized the time of the IHT window as a blackout period where they “just don’t know what’s going on and you got four to five hours say that you… have no contact and you don’t know” (focus group 1). Participants indicated that receiving information during this blackout period would have alleviated some of their stress.

During the focus group, FMs at times noted practical challenges they faced during their relatives’ IHT. These included a lack of transportation to the urban centre, not knowing how to get to the urban centre or the urban hospital itself, and difficult weather-related driving conditions. Participants described their unsuccessful requests to TTM to accompany their relative in the ambulance. One participant was permitted to travel in the ambulance on two separate IHTs with her partner. This participant stated it “was really nice that I could be in the ambulance to be there with him” (focus group 1). Participants indicated that receiving information during this blackout period would have alleviated some of their stress.
Status-based hierarchies were identified during critical analysis whereby participants referred to their rural status as disadvantageous. One participant stated that she did not “know where to go [in the city] ... I haven’t driven to [the city] ... I had no idea where the hospital was” (focus group 1). Rural FMs attending a critically ill relative in an urban centre necessitates a long-distance journey during which bad news may be received, yet the FM must continue the journey. A participant stated “what happens if I am driving and I see the ambulance on the side of the road...that’s how I would know... I would know that something had gone horribly wrong” (focus group 1).

**Transfer team members**

Open coding of the TTM focus group data resulted in four themes: Protect and manage FMs, complexities of information, transfer team burden, and role confusion or connection. Critical analysis of this data also identified themes of unequal power relations and status-based hierarchies however, differences were noted in the positions of power and status-based hierarchies identified in the context of TTM clinical practice. These themes are described below.

Transfer team members frequently referred to a need to both protect and manage FMs during the IHT. Protection included shielding families from what TTTMs perceived as unnecessary stress, such as FMs hearing equipment alarms in the background during an IHT update. Participants also described “safety concerns” for FMs who, after receiving distressing news during an IHT, may drive recklessly in a panicked state to the urban centre (focus group 2). Establishing professional boundaries and managing FM expectations during IHT were also described by TTTMs when stating “I don’t give out my phone number [to FMs]” and “as long as it’s clear before you leave what the expectation is on both sides...how many times are you going to call, when we’re going to call... as long as it’s clear” (focus group 2).

The theme of complexities of information was identified through discussion of what and how to communicate to FMs and TTTMs’ varying degrees of comfort in doing so. For instance, when considering what information family might want to know, TTTMs stated “the basic question- how are they doing...has there been a change in condition?” delivered through either direct or indirect communication modes (focus group 2). Some participants expressed comfort in speaking with FMs during an IHT and others described feeling less comfortable or knowing colleagues who are not comfortable speaking with families. One participant described “they’re not doing great, actually they’re dying. And, I feel like that’s an awkward conversation to have” and “not all paramedics would have that level of comfort in calling and talking to family” (focus group 2).

Participants frequently referred to concerns relating to family communication during IHT causing an increased transfer team burden. When reflecting on their past, busiest critical care transfers, TTTMs indicated that they may not have time to provide families with an update and “patient care would always come first of course and then updating the family would come second” (focus group 2). Participants described the importance of prompts to assist them to remember to provide an update to families thereby reducing cognitive load associated with family communication. One participant suggested that paramedic staff working in the communications centre, the clinical support desk (CSD), could remind TTTMs to provide an update, and another suggested a communication time could be set for when the ambulance crosses a bridge with span linkages that cause a recognizable road noise that would act as a reminder for TTTMs to update family.

The final theme was that of role confusion or connection. Elements of role confusion were described in the context of patient care transitions and the sharing of bad news with FMs. One TTTM suggested that the receiving hospital, rather than the transfer team, would contact the family with an update upon patient arrival and another questioned, in the event of a patient deterioration during IHT, “is that a conversation that the receiving physician or whatever should have?” (focus group 2).

Role connections and intra-professional intuition between TTTMs and peers in the CSD were considered a strength in supporting family communication during IHT. Participants agreed that, using medical language, TTTMs could easily and quickly communicate important information to colleagues in the CSD who could then translate this information into lay language to share with FMs.

As with the FM group, closed coding of transfer team data also identified themes of unequal power relations and status-based hierarchies. However, with TTTMs, unequal power relations existed in the transfer teams’ control of the flow of information to FMs. When describing a specific patient scenario, a participant indicated “I don’t know if that would be appropriate to contact the family at that point to let them know. Maybe just let them know whenever they arrive at the hospital. So, then they’re not freaking out while driving” (focus group 2). Participants noted contact intervals should be reasonable and asked, “how often do we think is appropriate for check-ins?” (focus group 2).

Status-based hierarchies were identified in transfer team relationships with physicians, FMs and clinical practice frameworks. For example, if an IHT did not go well, TTTMs deferred to physicians stating, “is that a conversation that we should have or is that a conversation that the receiving physician... should have?” (focus group 2). While TTTMs expressed their desire to provide good patient care and the importance of communicating with FMs to achieve this, a sense of the lower status of FMs was noted in participants describing family updates as cognitive load, or a burden. Further, TTTMs did not refer to past family knowledge of the patient as valuable to their care of the critically ill patient. Critical analysis also revealed the power exerted by clinical practise protocols with TTTMs frequently raising questions and seeking structured, protocol-type guidance about the practicalities of communication, roles, and responsibilities of team members during IHT.

**Discussion**

This study identified important themes of experiences from FMs and TTTMs during IHT events. Communication with TTTMs during IHT would enhance the FMs’ ability to cope during the blackout period of the IHT, however FMs described experiences of reduced health literacy and a culture of rurality that challenged their ability to successfully connect with TTTMs. Family members do not know what questions to ask TTTMs and are hesitant to interfere with the work of TTTMs who are in a perceived position of power over FMs. Rural FMs also described challenges they encountered resulting from their rural status such as difficulty wayfinding and to within the urban centre and fear of encountering the TTTMs stopped on the highway during the transfer.

While TTTMs expressed a need to protect FMs during IHTs, from background equipment alarms and risks while travelling under stressful circumstances, they also noted the importance of maintaining professional boundaries with FMs and minimizing burden that a communication intervention might add to TTTMs during IHT. Some TTTMs expressed varying degrees of comfort communicating with FMs and uncertainty surrounding which healthcare professional should be providing updates to FMs. Additionally, the TTTMs described a position of power over FMs where TTTMs controlled the flow of what information they perceived to be appropriate and when to share it with FMs.

This study supports findings of previous research and extends our understanding of this experience. As with previous studies (Burns et al., 2023; Johnson, 1999; Karlsson et al., 2020; Mackie et al., 2014), FM participants identified the stress of separation from their relative, a blackout period, and the importance of receiving updates from TTTMs during the IHT. Similar to findings by Burns et al. (2023), FMs noted that communication during the IHT may enhance the coping ability of FMs, and one participant shared that receiving information may unlock support from other FMs during the event, a novel finding.

It is recognized that health literacy may be a challenge for some individuals in rural areas (Gillis and Sears, 2012; Golboni et al., 2018; Halverson et al., 2013), and along with a culture of rurality, may
influence the FMs’ experiences of IHT (Burns et al., 2023). The present study identified new understanding of how health literacy, a culture of rurality, and unequal power relations between TTMs and FMs influenced if and how FMs would obtain information from TTMs during IHT. Finally, although previous work has noted the uniqueness of this critical illness experience for rural FMs compared to their urban counterparts (Burns et al., 2023; Burns and Petrucka, 2020; Mackie et al., 2014), findings from the present study deepen understandings of this phenomenon as experienced by rural-status FMs. Unlike urban FMs of critically ill patients, rural FMs face long journeys to unknown cities and hospitals, potentially receiving devastating news enroute or encountering the ambulance stopped on the highway while the transfer team is performing resuscitative interventions.

While previous research has measured patient safety during IHT (Almqvist et al., 2023; Ray et al., 2022), optimal transport mode of IHT (Joseph et al., 2022), and TTMs experiences of providing patient care during IHT (Dabija et al., 2021; Frost et al., 2019), the present study adds to our understanding of TTMs perspective of IHTs and communication with FMs during this event. TTMs described a need to protect FMs from stress and safety risks during IHT and manage expectations of communication. Complexities of information sharing were identified including a need to maintain professional boundaries, reduce TTM burden in communicating with family during IHT, and concerns of a protocol nature. For example, TTMs frequently identified a need for prompts to remind them during IHT to update FMs or to discern specifically which healthcare provider would be responsible to communicate what information to FMs. In this study, TTMs were universally paramedics who practise in a protocol-driven environment (Bigham et al., 2009; O’Hara et al., 2015; Tavares et al., 2023).

Participants expressed varying degrees of comfort in communicating, at times difficult, information to FMs. Overall, TTMs agreed that communicating with a FM during IHT is important and a component of good patient care. However, some TTMs expressed a reticence in doing so and identified colleagues who would prefer not to participate in direct or indirect communication with family members. In a systematic review, Hanna et al. (2021) identified that paramedic practise includes a responsibility to communicate with patients, families and peers effectively however, paramedic graduates were often unprepared in this area. Hanna et al. recommend that communication strategies be formally integrated into paramedic education to support this professional responsibility.

Implications for practice

The purpose of this study was to explore what process of communication would be most acceptable between the FMs and TTMs during IHTs of critically ill patients. Themes from the perspectives of FMs and TTMs were identified and provide the foundation for critical care nurses, critical care paramedics, critical care medical technicians, and physicians (Allen et al., 2020; Dabija et al., 2021; Frost et al., 2019). These TTMs each have unique educational preparation and scopes of practise which may limit the transferability of these findings. Additionally, transfer team participants were experienced in IHTs involving ground transportation rather than air transport which inevitably has unique communication challenges.

Because of conflicts with TTM work schedules, this focus group was transitioned from in-person to online, an acceptable alternative to in-person focus groups (Polit and Beck, 2021). Additionally, one TTM participant withdrew immediately prior to the start of the focus group thereby reducing this focus group to four participants which may reduce the credibility criterion. Despite this, a robust focus group session occurred with the remaining four paramedics and a breadth and depth of data were collected. Polit and Beck (2021) note smaller focus groups are recommended when the study topic is sensitive in nature.

The semi-structured interview guides for focus group 1 and focus group 2 were designed to spark discussion among participants. While these interview guides were primarily comprised of open-ended questions, some questions were closed-ended and, to promote a robust discussion, some questions contained examples which could reduce the criterion of credibility. As noted above, several strategies were implemented to enhance trustworthiness including peer debriefing, investigator triangulation, maintaining records of data analysis steps and methodological decision making, and the inclusion of participant quotes in the final report.

Conclusion

When a relative becomes critically ill, linkages between FMs and healthcare providers are created. Within the context of an IHT, these connections established pre-transfer are subsequently broken during the transfer window, rendering the family invisible to TTMs and increasing stress and anxiety experienced by family. Recognizing the importance of this link, there is a need to maintain connection between FMs and TTMs during this transition in care. Findings of this study provide the foundation to take family care to the next level with an explicit communication strategy during IHT. More research is needed to assess the feasibility of IHT communication strategies and evaluate their acceptability and effectiveness for TTMs and FMs.

CRediT authorship contribution statement

Margie Burns: Writing – original draft, Supervision, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. William Montelpare: Writing – review & editing, Resources, Funding acquisition, Conceptualization. Matthew Leijenaar: Writing – review & editing, Formal analysis.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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