



CACCN

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The Canadian Journal of Critical Care Nursing

Volume 33, Number 2, Fall 2022

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Canadian Association of Critical Care Nurses

Vision statement

All critical care nurses provide the highest standard of patient- and family-centred care through an engaging, vibrant, educated and research-driven specialized community.

Mission statement

We engage and inform Canadian critical care nurses through education and networking and provide a strong unified national identity.

Values and beliefs statement

Our core values and beliefs:

- Excellence and Leadership
 - Collaboration and partnership
 - Pursuing excellence in education, research, and practice
- Dignity and Humanity
 - Respectful, healing and humane critical care environments
 - Combining compassion and technology to advocate and promote excellence
- Integrity and Honesty
 - Accountability and the courage to speak up for our beliefs
 - Promoting open and honest relationships

Pathways to success

1. Leadership:

- Lead collaborative teams in critical care interprofessional initiatives
- Develop, revise and evaluate CACCN Standards of Care and Position Statements
- Develop a political advocacy plan



2. Education:

- Provision of excellence in education
- Advocate for critical care certification

3. Communication and Partnership:

- Networking with our critical care colleagues
- Enhancement and expansion of communication with our members

4. Research:

- Encouraging, supporting, facilitating to advance the field of critical care

5. Membership:

- Strive for a steady and continued increase in CACCN membership

Letter from the Chief Editor

After a time in history that changed the world, we recognize the impact these past few years have had on the nursing profession in general, and critical care nursing specifically. The challenges, the grief, and the physical and emotional impacts have been profound and, despite this, nurses have persevered. They have supported the patients, their families, and the entire system. Nurses don't need platitudes, pats on the back, or pat banging. They do need support, assurance that the crippled system will not be allowed to continue, and recognition that there were many lessons learned.

At CJCCN, we offer a place to document those lessons learned, but also a place to support critical care nursing research. We cannot erase the trauma since 2020, but we can help to document it, in the hope to find a new way forward.

In order to move forward, we have to take a moment to reflect on the past. While the world was in crisis, there were many who just kept moving. At CJCCN, this was not different. After the sudden passing of our beloved editor, Dr. Paula Price, the CACCN Board of Directors stepped in to keep the journal afloat. Dr. Brandi Vanderspank-Wright, with support from Christine Halfkenny-Zellas, COO of CACCN, worked relentlessly to rebuild CJCCN. They, along with Myriam Breau and Michelle House-Kokan, Co-Editors, developed procedures and processes to continue to sustain the production of the journal. Despite numerous challenges, under Brandi's leadership and Christine's watchful eye, CJCCN continued to be the high-quality journal we have grown to expect. Without their incredible dedication and commitment, there was a real possibility we would have lost this valuable resource. They rebuilt CJCCN and reimagined the vision, which the new editorial team has embraced.

I would like to take this opportunity to formally thank Brandi for her leadership, patience, and mentorship as I take over as Chief Editor. I am keenly aware of the responsibility entrusted to me by the CACCN Board of Directors and am excited to lead CJCCN with an amazing new Editorial Team, and the continued support of Christine.

Extraordinary **EVERY DAY**

As Chief Editor of CJCCN, I live and work on Treaty One Territory, Winnipeg, the original lands of the Anishinaabeg, Bree, Oji-Cree, Dakota, and the Dene People, and on the homeland of the Metis Nation. I am fortunate and excited to be joined by three incredible, diverse, and extremely qualified nurses who will join our editorial team as Co-Editors; Michele House-Kokan is a PhD Candidate, critical care nurse, educator, and Faculty Development Lead at the British Columbia Institute of Technology (BCIT), who resides in Vancouver, BC. Ramesh Venkatesa Perumal is a doctoral student and Associate Professor at York University in Toronto, ON, and Catherine Liao is a doctoral student at the University of British Columbia and an Assistant Professor at the University of the Fraser Valley in Chilliwack, BC.

Each member of the Editorial Team brings a wealth of knowledge, experience, and diverse perspectives that I believe will be reflected in future issues of the journal. Our team is committed to producing excellent evidence-informed content for direct care providers, students, educators, and researchers, as well as administrators and policymakers who are focused on critical care nursing. We invite you to help us build content relevant to you, through your submissions, suggestions, and feedback.

We look forward to serving you,



Asha Pereira, PhD, RN
CJCCN Chief Editor

Correction Notification

CJCCN: Fall 2018: In the article “Cultural adaptation of the Nursing Activities Score to the French-Canadian context and reliability evaluation” by Joanie Lachance, MSc (student), RN, Frédéric Douville, PhD, RN, Elaine O. Machado, PhD, (Post doctorate student) RN, Clémence Dallaire, PhD, RN, Henrique C. Oliveira, MSc, Julie Houle, PhD, RN, and Maria Cécilia Gallani, PhD, RN, *Canadian Journal of Critical Care Nursing*, 29(3), 32–38, the following omission to the author names on page 32: Elaine Machado de Oliveira and page 37: Elaine Machado de Oliveira.

CJCCN: Winter 2020: In the article “Validation of the French-Canadian version of the Nursing Activities Score” by Lachance, J., Douville, F., Oliveira, E. M., Dallaire, C., Houle, J., & Gallani, M. C., *Canadian Journal of Critical Care Nursing*, 31(3), 12–22, the following omission to the author names on page 12: de Oliveira, E. M. and page 20: Elaine Machado de Oliveira.

We sincerely apologize for the oversight. The CJCCN 29(3), 32–38, and CJCCN 31(3), 12–22, have been revised and posted on the CJCCN website at cjccn.ca.



CANADIAN
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NURSES

To our Canadian Association of Critical Care Nurses Members and Canadian Journal of Critical Care Nursing™ Readership,

Over the past two years, the Editorial Team, in collaboration with the Editorial Review Board and the National Board of Directors of the Canadian Association of Critical Care Nurses (CACCN), have had conversations regarding *The Canadian Journal of Critical Care Nursing*™ (CJCCN). Our aim has been to ensure that the CJCCN continues to be a major vehicle for critical care nursing scholarship and knowledge dissemination in Canada and internationally. We have engaged in several transition initiatives to achieve this aim.

As we continue to move forward in meeting our aim of producing a high-quality, critical care nursing journal, we are announcing the following:

Co-Editor Appointment

Effective **June 1**, the CJCCN welcomed two new Co-Editors to the Editorial Management Team. The Call for Applications for Co-Editor presented several excellent candidates for consideration. Following review of the applications, the Editorial Management Team conducted interviews via Zoom with the candidates. There were two candidates who more than met the criteria and, as such, we determined we would invite both to join our team.

Catherine Liao, MSc, RN

We are pleased to welcome, Catherine Liao, MSc, RN, from Chilliwack, BC, to the position of Co-Editor from June 1, 2022 to April 30, 2024.

Catherine is a passionate critical care nurse with extensive experience (>20 years) from the United Kingdom and Canada. She is committed to advancing nursing knowledge through scholarship, service, and teaching. Catherine has engaged as a peer reviewer for several journals, has participated in abstract review, and is an adjudicator for university-wide grant applications.

Catherine is a doctoral student at University of British Columbia. She is also an Assistant Professor in the Undergraduate Nursing Program, University of the Fraser Valley, Chilliwack, BC.

Ramesh Venkatesa Perumal, MScN, RN, CCNE, CNCC(C)

We are also pleased to welcome, Ramesh Venkatesa Perumal, MScN, RN, CCNE, CNCC(C), from Toronto, ON, to the position of Co-Editor from June 1, 2022 to April 30, 2024.

Ramesh comes to us with a robust professional background in critical care and academia. He has been a peer reviewer for several national and international journals and an Associate Editor of a textbook and study guide published in 2022.

Ramesh is a doctoral student at York University, where he is also an Associate Professor in the School of Nursing.

We are confident this expanded editorial team, with the support of our editorial review board, will ensure the manuscripts published will meet the high-quality standards we aim for.

Michelle House-Kokan, Co-Editor, and I are excited to welcome Catherine and Ramesh to our team as Co-Editors of *The Canadian Journal of Critical Care Nursing*™ (CJCCN).

CJCCN Editorial Management Team



Dr. Asha Pereira



Michelle House-Kokan



Catherine Liao



Ramesh Venkatesa Perumal

While we anticipate there will be other transitions forthcoming with the journal, we feel the continued success and impact of the CJCCN is essential not only in Canada, but internationally as well. As the Chief Editor of the CJCCN, I am excited to see what the future will bring!

Dr. Asha Pereira, PhD, RN, Chief Editor
Canadian Journal of Critical Care Nursing™

The experiences and perceptions of organ and tissue donation coordinators participating in a team cohesion and communication workshop: An exploratory descriptive qualitative study

VANESSA SILVA E SILVA, LAURA HORNBY, KEN LOTHERINGTON, ANDREA ROCHON, AMINA REGINA SILVA, HILARY PEARSON, LINDA MACNUTT, ADRIAN ROBERTSON, KIM WERESTIUK, DAVID KUHL, PEGGY JOHN, SONNY DHANANI, AND AIMEE SARTI

Abstract

Background/Purpose: Organ and tissue donation coordinators (OTDCs) are usually registered nurses with an intensive care background who work in highly specialized and complex environments that can lead them to experience work-related issues, such as burnout and compassion fatigue. To help tackle these issues, organ donation organizations need to take preventive measures to improve coordinators' work-related well-being. Therefore, the purpose of this study was to explore the perceptions of coordinators following participation in a workshop aimed at improving team cohesion, communication strategies, and work-related well-being.

Methods/Procedures: We conducted individual descriptive qualitative interviews using a semi-structured interview guide with coordinators in an organ donation organization in Canada. The data were analyzed using an inductive thematic analysis process.

Results: Seven coordinators participated in the study. Most participants reported improvements in inclusiveness and cohesiveness among their team after the workshop. Some coordinators reported apprehension about role-playing, but found it to be a

valuable aspect of the intervention. Participants reported a positive experience and indicated they would participate in future workshops. Still, coordinators mentioned that future interventions should have an additional focus on the donation work and how to become a better communicator.

Discussion: The findings from this study brought new insight into the coordinators' team dynamics and their experience in a workshop intervention. The expertise and experience of the facilitators, role-playing, group interaction, and feedback were perceived as valuable components of the workshop.

Conclusion: OTDCs in this study perceived positive impacts on their team cohesiveness, communication skills, and work-related well-being following the workshop initiative. The findings from this study highlight that workshop interventions can be effective in fostering work-related well-being among OTDCs.

Keywords: organ and tissue donation coordinator, workshop, team cohesion, communication

Silva e Silva, V., Hornby, L., Loetherington, K., Rochon, A., Silva, A. R., Pearson, H., MacNutt, L., Robertson, A., Werestiuk, K., Kuhl, D., John, P., Dhanani, S., & Sarti, A. (2022). The experiences and perceptions of organ and tissue donation coordinators participating in a team cohesion and communication workshop: An exploratory descriptive qualitative study. *The Canadian Journal of Critical Care Nursing*, 33(2), 7–13. DOI: 10.5737/23688653-332

Implications for Nursing

- The discussion presented in this paper offers insights into nurses' perceptions with an intensive care backgrounds, who work in organ donation, on their attendance on a workshop grounded in a relationship-centred care model.
- The findings from this paper highlight the importance of implementing focused interventions to improve Organ and Tissue Donation Coordinators (OTDCs) nurses' work-related well-being.
- This paper presents the starting point to further develop interventions to prevent burnout and compassion fatigue among nurses that work in organ donation directly (OTDCs) or indirectly (intensive care nurses).

Background and Purpose

Organ and tissue donation coordinators (OTDCs) are key to effective deceased organ donation programs. Their work and dedication are recognized by donor families (Sarlo et al., 2016; Sarti et al., 2018; Silva e Silva et al., 2016), intensive care nurses, and physicians (Silva e Silva et al., 2020). However, OTDCs deal with highly stressful and emotional scenarios daily, which can negatively impact their mental health and work-related well-being (Silva e Silva et al., 2020; e Silva et al., 2022). OTDCs are usually registered nurses with experience in intensive care units (ICU) and/or specific training in organ donation and transplantation, who manage the organ donation process from donor identification to organ retrieval surgery (Silva e Silva et al., 2020). Balancing all activities related to their role daily can potentially contribute to the incidence of work-related issues such as burnout and compassion fatigue, which are both conditions linked to mental, emotional, and physical exhaustion (Mao et al., 2018; Silva e Silva et al., 2020).

A recent scoping review of the literature conducted by our research team highlighted that there is a lack of publication in this area despite the evidence that work-related issues are common among OTDCs (Silva e Silva et al., 2020). This is in addition to evidence that there is a lack of interventional studies applying tailored interventions to help improve work-related well-being among OTDCs (Chuang et al., 2016; van Mol et al., 2015). Interestingly, despite being susceptible to work-related issues, OTDCs also frequently report having high levels of job satisfaction, which is usually linked with higher levels of resilience and lower incidence of work-related issues (Silva e Silva et al., 2020).

The absence of effective coping strategies to sustain work-related well-being among OTDCs can negatively impact retention, turnover, and the organization's ability to optimize organ donation (Mao et al., 2018). Losing experienced OTDCs may also harm the performance of organizations across multiple domains (e.g., reallocation of resources to train new people, and activities to foster team dynamics with new professionals). In addition to educating hospital staff about the importance of organ donation and promoting a culture of donation locally, OTDCs work synergistically with the members of the ICU and the care team to manage organ donation cases and provide care for donors and their families, (Silva e Silva et al., 2020). In a recent mixed-method social network analysis study mapping the communication during organ donation cases, ICU nurses and physicians described their routine as intense and emotionally charged and having specialized help, such as OTDCs supporting families emotionally and responding to technical questions about the donor maintenance, alleviates some of their workload, which also relates to increased rates of donor identification and donation (Silva e Silva, 2020). Thus, the identification and development of appropriate coping and preventative strategies to improve the well-being of OTDCs are necessary to ensure both continuity and quality in the donation process, and the mental health of those healthcare professionals.

An organ donation organization in a province of Canada hired consultant experts in resilience and interpersonal communication to facilitate a workshop to improve team dynamics and work-related well-being among OTDCs. The workshop used a relationship-centred care framework to strengthen approaches and communication with donor families in order to decrease family decision regret, increase team cohesion, and improve work-related well-being, conversion rates, and donor numbers (Suchman, 2006). The relationship-centred care approach promotes team cohesion, support, collegiality, and personhood of patients, families, and staff (Suchman, 2006). Nearly a year after the workshop, it was determined that it would be valuable to evaluate the impact on OTDCs. Therefore, the purpose of this study was to explore the experiences and perceptions of OTDCs following participation in that workshop.

Methods and Procedures

We used an exploratory-descriptive qualitative approach, with a constructivist paradigm to investigate the experiences and perceptions of OTDCs following a relationship-centred care workshop (Hunter et al., 2019). The qualitative descriptive approach allows participants to share their experience with a lower level of researcher interpretation when compared to other

qualitative methodologies (e.g., grounded theory), which allows researchers to get closer to the data and the events surrounding it (Colorafi & Evans, 2016). Constructivist qualitative research studies emphasize data generated by participants either through observations or interviews, allowing the researcher to understand the phenomenon of interest from the perspective of those experiencing it (Chandler et al., 2017). We also used the COREQ (Consolidated criteria for Reporting Qualitative research) to guide the description of the methods used in this study (Tong et al., 2007). This study was approved by the Ottawa Health Sciences Network Research Ethics Board (OHSN-REB #20190716-01H).

Setting

The target population for the study was OTDCs, working in a Canadian organ donation organization, who participated in the relationship-centred care workshop.

The workshop

A consultant expert group that had previously administered a workshop with the Canadian organ donation organization was invited to deliver a second workshop to expand on the significant foundational work regarding the relationship-centred care approach completed during the first workshop (provided two years prior in 2017).

The workshop was delivered over 2.5 days and was built on the foundation of a healthcare model of service grounded in relationship-centred care, with the perspective that the quality of the workplace in healthcare largely affects quality and satisfaction across the patient, staff, and organizational domains and consequently can influence the work-related well-being. The intent was that as participants improve their understanding of the complexities and impacts of relationships (for self and others), they would enhance their coping strategies and improve their work-related well-being (Hunter et al., 2019). In addition, the workshop sought to address issues related to suffering, vicarious trauma, moral distress, grief, and burnout that OTDCs may experience since these can impair team cohesion, function, and relationships.

The workshop was designed to have participants engaging in experiential group-based learning and included teaching sessions, individual reflection, and group exercises. These activities were used as building blocks toward role rehearsal (playing), which was employed as a process to promote refinement of skills so the OTDCs were better prepared to have challenging conversations. During role rehearsal, participants could pause at any time and request feedback and have the opportunity to incorporate that feedback and approach the scenario differently. The scenarios used were provided by a physician from the organization who used composites of real experiences to ensure they were relevant and useful learning tools for the team.

Sampling

We used convenience sampling as the target population was very specific (Jager et al., 2017). Fifteen OTDCs participated in the workshop in April 2019. At the time of data collection, in March 2020, 10 of those coordinators were still working for the organization and we invited all the accessible population to participate in the study (Thacker, 2020). An email was sent to the organ donation organization manager to request permission to

contact the OTDCs directly to invite them to participate in the study. An email invitation was sent to the OTDCs employed by the organization at the time of the study. The invitation included information about the study, the purpose, and an informed consent form for each participant to sign. A virtual interview was scheduled once the participants returned their signed consent form. The organization manager did not receive information about which OTDCs consented or declined to participate. Eight OTDCs responded to the invitation and signed the informed consent. However, one individual could not participate due to an unexpected change in workload, resulting in interviewing seven participants (participation rate = 87.5%) in March 2020.

Data Collection

Interviews were conducted using a semi-structured interview guide eleven months after the workshop. This model of interview gives guidance and allows participants to insert their perceptions on the discussed topic (Finlayson et al., 2019; van Devanter et al., 2018). When using this type of interview, the main goal is to understand the respondent's views on the topic instead of making generalizations about behaviour (Barrett & Twycross, 2018; Roulston & Choi, 2018).

The semi-structured interview guide was reviewed by the primary investigator (V.S.S.), the senior research (A.S.), and the research assistant (A.R.) prior to beginning the interviews. The interview guide was piloted during the first interview, and no major revisions were required. The interviews were conducted by a female research assistant, (A.R., RN, MScN), who has experience co-facilitating focus groups and collecting qualitative data virtually using Zoom®, an online video- and teleconferencing platform with recording capabilities. The participants were provided with an overview of the study and introduced to the research assistant prior to the interview. Each interview lasted between 45 and 60 minutes, was recorded, and no interview was repeated.

The interviewer used descriptive and reflective field notes to record thoughts and observations during and immediately following each interview (Phillippi & Lauderdale, 2018). The field notes were used to foster self-reflection during the data collection and analysis process, and to help identify emerging themes in the data analysis along with the qualitative thematic analysis conducted (Emerson et al., 2011). The interviewer and the primary investigator also connected throughout the interview process to discuss data saturation. Data saturation was determined based on the repetition of findings among the different interviews.

Data Analysis

We conducted a thematic analysis of the data, as this method is not attached to a particular paradigmatic orientation, and it can be used within post-positivist, constructivist, or critical realist research approaches (Chandler et al., 2017). Analysis was conducted using an iterative process, with interviews, transcription, and analysis occurring concurrently. This process provided opportunities to monitor for data saturation, comprehensiveness of the interview guides, and any issues that emerged during data collection. The digital recordings were transcribed verbatim and anonymized. The data was imported into NVivo®12 (a qualitative data management software) to organize, manage and facilitate the data analysis.

The research team (V.S.S., A.R., A.R.S., A.S) read the transcripts exhaustively to identify key pieces of relevant data within the text before inductively assigning codes to segments of text (Green et al., 2007). Team members iteratively and collaboratively discussed the codes and created a codebook, identified the most appropriate links between them, and created coherent categories (Green et al., 2007). Overarching themes were identified from the descriptive patterns that emerged from the formation of categories (Green et al., 2007). This process of detailed independent analysis of data, followed by collective meaning-making and discussion until consensus is reached, ensure the analytic rigour and dependability of the study findings (Graneheim & Lundman, 2004). The transcripts and findings were not returned to participants.

Results

Seven coordinators participated in this study. All seven participants were women, registered nurses with education and experience in critical care. Three of the participants worked full-time in the multi-organ donor coordinator role, while four of the participants worked full-time in the transplant coordinator role. All the coordinators did on call for the multi-organ donor program. The data analysis resulted in six categories that were combined into two themes: (1) Team dynamics; (2) The workshop (reason for participation, expectations of the workshop, experience participating in the workshop, impact, and recommendations following the workshop).

Team Dynamics

The majority of OTDCs described feeling a sense of inclusiveness and cohesiveness within the team. There was a perceived positive atmosphere with good communication, trust, and peer support. They also described confiding in each other about difficult cases and a perception that their peers are the only ones who can truly understand their role and feelings related to OTDCs' work.

Despite participants' reports of feeling they are part of a team, they also mentioned having a lot of 'solo' work, particularly when working on an organ donation case. As one participant described it:

I feel like when I'm actually working as a deceased donor coordinator on a case, it's very individual. You're kind of on your own. But otherwise, when I'm at work every day, I feel like it's very much like a team.

Participants also mentioned that their sense of team connection and interaction is not as strong with other members of the healthcare team as with the immediate coordinator team.

The Workshop

We explored various aspects of the workshop, such as the reasons for participating, expectations, experiences, impact, and recommendations following the workshop.

Reason for participation

Most participants reported that it was an expectation that they would attend the workshop, while one participant reported they had a positive experience during the previous workshop and they were keen to participate and "continue the momentum".

Because one of the coordinators always had to be on call, not all coordinators could attend to the full workshop. For those who reported that they were expected to participate in the workshop, the majority mentioned they would have chosen to participate regardless. One participant reported, “if it was an option, I would have, either way, but it was the expectation that we’re a team and that the whole team participates because, it was the goal to improve team cohesiveness”, highlighting the importance of the entire team participating. It was the perception of one OTDC that “our team needed it.... I think afterwards, they may have seen the good it brought to the team”.

Expectations of the workshop

Some of the OTDCs experienced the uncertainty of what to expect, and one participant reported feeling ‘afraid of participating’. One OTDC clearly articulated a certain apprehension provoked by the workshop among some team members. “I don’t really care for role-playing... I think a lot of us, we kind of knew that this was coming so it did provoke some pre-meeting anxiety knowing that this was potentially going to be happening.”

Some of the other participants who had exposure to similar training in the past reported different expectations. One participant reported they had a positive experience and was looking forward to furthering self-reflection. In addition, some of the participants acknowledged a desire to improve their knowledge and skills related to having difficult and complex conversations with families to discuss organ donation. For others, there was an incongruence between what they expected from the workshop and the content that was actually presented, demonstrating a lack of clarity around the workshop goals, with one transplant coordinator stating:

I really wanted to feel more comfortable having family conversations because we don’t do it that often and it really depends when you get (...) but at the end of the session, it ended up being a lot more about our team.

Experience participating in the workshop

Overall, the participants reported a positive experience participating in the workshop. One coordinator reflected that it was a “good mix of information sharing, but also learning about our group dynamic... I felt safe to share information and I believe others did as well”. For many of the OTDCs, it was their second opportunity to participate in a session with the team of facilitators. There was difficulty for some discerning what they learned or experienced during the first, compared with the second, workshop. Some of the OTDCs reported a shift in team dynamics after the first workshop, following changes in staffing related to some significant interpersonal issues amongst the team and that, as a group, they were ‘in a better place’, as stated by one participant:

I think, also, we just got to really know each other better and I think spending that two days together, I know some of the coordinators who are more reserved or quiet that I didn’t know well, I felt like I knew them a little bit better after that. (...) I think it brought our team together because we were two days where we really got to get down to really knowing each other and what each other thought of the other person. So, I really think, though, that team cohesiveness did improve after that.

Also, since members of the leadership team were present during this workshop, some of the participants reported different dynamics and experiences. One OTDC reflected that they perceived the focus of the workshop to be more related to improving how they did their job in a more general sense. Although almost all of the OTDCs reported disliking role playing, they found it to be a valuable and useful part of their learning experience, as one coordinator stated:

As much as I hate doing role-playing, I felt like I probably got the most out of that part. Like what we did in the second session, where we kind of put ourselves into situations. We played different roles, and he was able to give advice as to how to deal with that type of situation. I think I got the most out of that.

There were triggers and interpersonal situations discussed during the workshop, which elicited strong emotions for some of the OTDCs. The participants described providing support to the individuals who were particularly impacted by the situations, and one participant reported that “even though you’re alone, you feel that support of your colleagues” and that sentiment was echoed by others.

Impact and recommendations following the workshop

There was consensus that the workshop was well received because the facilitators were effective, supportive, and knowledgeable. In addition, the workshop was perceived as improving different aspects of the work of coordinators, as one participant described it:

I would say I’ve heard others, and I know for myself, that I do feel more confident moving forward to speak to families in a challenging situation. I feel more equipped to empathize with strong emotion, which is a great thing, whether I’m doing this or other things in my life.

While some of the OTDCs reported they were impacted by participating in the workshop, others reported they did not perceive any significant impact or “aha moment”, and another indicated they would have liked for the interviews to be conducted closer to the time of the workshop to improve recall because “so much happens in between.... And it’s hard to tell... what made the difference.” Reminders about some of the basic principles of team cohesiveness such as kindness and respect provided some positive and practical implications for communication in team meetings. One participant described their experience as “confidence-building” and recognized that they were supported during difficult situations.

The majority of the participants reported they would be interested in additional workshops facilitated by the same team. The participants also provided some recommendations for future workshops regarding content, and opportunities to exchange experience with other organ donation programs. One OTDC expressed an interest in participating in a similar session in the future with “more focus on [...] those difficult conversations and really getting to the grunt of how do we become better communicators.” One participant recommended more formal or structured training for novice OTDCs because of the specialty nature of the role, including approaches and conversations with families, while another indicated it might

be beneficial to have someone speak to the team about burnout and compassion fatigue, and actually follow-up with them afterwards. The value in talking with other OTDCs across the country, an opportunity to ask questions, become familiar with what other organ donor programs are doing, and find out what they are doing to manage some of the challenges presented by difficult cases and the OTDC role, in general, were identified as being potentially beneficial.

Discussion

In this study, we explored the experiences of multiorgan donation and transplant coordinators and their experience of participating in a workshop based on relationship-centred care. Through a qualitative approach, we developed a better understanding of the collective perceptions of the coordinators about the impact and importance of participating.

Most of the coordinators reported that participation was an expectation from management. Although some were unsure about the workshop's purpose, they believed it would help strengthen team dynamics, communication skills, and work-related well-being, which may be partially due to their previous positive experience participating in a workshop provided by the same team of facilitators. When people have a positive emotional experience in an event or meeting, their level of rationality relates it to the positive feeling; thus, individuals are more likely to participate in a similar event in the future (Hopkins et al., 2016).

While OTDCs often work independently on donor or transplant cases, participants reported strong communication, trust, and support among themselves and their peers. Despite the strong sense of team with their immediate colleagues, participants of this study reported their sense of team connection and interaction with other members of the healthcare team were lacking. In a recent study conducted in Spain, transplant coordinators, who were both nurses and physicians, reported a strong sense of inclusion and collaboration amongst the interdisciplinary team; arguably this could be as a result of the disciplines working together in the same role (Danet et al., 2020).

The workshop provided a safe place for participants to reflect, share experiences, and feelings. Participants identified that the expertise of the facilitators, role-playing, group interaction, and feedback were valuable components of the intervention. Most of the participants perceived improvements in team dynamics following the session because the workshop explored the relationships among the team members and improved cohesion. One study reported that team cohesiveness and support were fundamental for successful organ procurement among high-performing organizations (Thomas et al., 2017).

Overall, participants in this study were satisfied with the workshop. In a narrative synthesis of the literature, it was identified that team training interventions could improve performance, communication, cooperation among teams, and patient outcomes (Weaver et al., 2014). Ponzin et al. (2015) conducted a prospective survey to evaluate the effects of a team-building

learning project on aspects related to the OTDC role, such as job satisfaction, psychological well-being and work performance and found that the team intervention, although demanding, positively influenced personal commitment and quality of the job in the organ donation/transplantation process (Ponzin et al., 2015). Similarly, the results from this study showed that, while the workshop elicited some strong emotions, it positively influenced team cohesion and work-related well-being. The participants provided recommendations for future workshops, including a greater focus on complex conversations to become a better communicator, address work-related issues, and specific training for novice OTDCs.

Limitations

The small sample size limits the generalizability and transferability to OTDCs and organ donation organizations in other provinces or countries. In addition, the OTDCs who participated in the workshop and subsequently left the organization were not included in the study, which might have led to information bias from those who are still employed by the organization. We mitigated the risk of identifying individuals in the small group of participants by using quotes that highlighted the themes but would not identify an individual. The time between the workshop and the interviews may also have resulted in recall bias, as some OTDCs reported it was difficult to discern between what was learned during the first and second workshops.

Conclusion

Overall, OTDCs were satisfied with the workshop and perceived positive impacts on team cohesiveness and communication skills. Participants who had a previous positive experience with similar workshop interventions were more open to learning and actively engaging. Workshops for OTDCs can be valuable interventions to improve their practical and interprofessional skills when delivered by expert facilitators, including role-playing, group interactions, and feedback. Participants believed that future workshops should focus on complex conversations and specific training for novice OTDCs. The impact of workshops or similar interventions on team cohesiveness may also improve work-related well-being among OTDCs. This study provides insights for the nursing community, so more interventions using similar approaches can be developed in the future, not only focused on OTDC nurses, but also other nursing specialties that may face similar work-related issues (e.g., intensive care nurses). Lastly, the study findings will inform the next phase of a national study investigating burnout and compassion fatigue that will culminate in the development of an intervention to mitigate these work-related issues among OTDCs.

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Ethics Approval

All authors confirm where human patients are involved in the work covered by the manuscript, that ethical approval from all relevant ethical bodies has been received and this information is reflected and/or acknowledged (Research Ethics Board (REB) approval/approval numbers) within the manuscript. All authors confirm when submitting quality improvement reports that ethical conduct and REB approval/exemption has been reported.

Funding and Conflict of Interest

The workshop and this study were funded by Canadian Blood Services.

Ms. Hornby is a paid part-time consultant for Canadian Blood Services.

Ms. Rochon is a research assistant and receives a salary from Canadian Blood Services.

Ms. Silva is a research assistant and receives a salary from Canadian Blood Services.

Ms. Silva e Silva is a paid full-time research coordinator and receives salary from Canadian Blood Services.

Mr. Lotherington is a paid employee of Canadian Blood Services, and the program is a charitable organization funded by federal and provincial governments.

The consultant experts who facilitated the workshop could potentially benefit from the reporting about the results of this study, which examined the impact of the workshop.

The other authors have no conflict of interest to declare.

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Canadian intensive care nurses' infection prevention and control adherence and institutional trust: An update 1-year into the pandemic

SARAH L. SILVERBERG, LISA M. PUCHALSKI RITCHIE, NINA GOBAT, AND SRINIVAS MURTHY

Abstract

Background: Nurses are key healthcare workers whose adherence to infection prevention and control (IPC) measures is integral to the prevention of nosocomial spread of SARS-CoV-2. Institutional trust is an important correlate of adherence. After initially surveying nurses early in 2020, we sought to evaluate how perceptions of IPC measures and institutional trust changed one year into the pandemic.

Methods: We adapted an internationally distributed cross-sectional questionnaire, incorporating validated scales for items including institutional trust, and distributed it by email and Slack via the Canadian Association of Critical Care Nurses between April 29 and May 28, 2021. We evaluated adherence to IPC protocols, barriers and facilitators to IPC guideline adherence, and respondents' level of institutional trust and compared results across the two time periods.

Results: 141 nurses responded to the survey. In 2021, respondents reported lower rates of fear of becoming ill and providing care for patients with COVID-19 ($T = 3.83, p = < 0.001$). They reported higher levels of skill ($T = 3.57, p < 0.001$) and continued to report similarly high levels of professional expectations compared to 2020 ($T = 0.85, p = 0.39$). However, institutional trust dropped in 2021 ($T = 4.31, p < 0.001$), particularly in national and regional governmental trust.

Interpretation: Respondents demonstrated less trust in national and regional governments compared to respondents in 2020, although they reported less overall concern for themselves and their families, and higher skills and knowledge around IPC procedures. Canadian nurses continue to have strong beliefs in the utility of PPE and IPC procedures, and strong social and professional expectations to adhere to IPC measures.

Keywords: COVID-19, infection prevention and control, pandemic preparedness, nurses, pandemics

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Implications for nurses

- Throughout the pandemic, nurses report high levels of skill in infection prevention and control (IPC) and have a strong sense of social norms and professional expectations around proper IPC and PPE use.
- While nurses initially reported high levels of trust in local, regional, and national institutions early in the pandemic, trust in national and regional governments fell significantly. More work at the provincial and national levels to support nurses working during the pandemic is necessary to rebuild trust that was lost.
- Trust-building practices, including transparent messaging, should be continued by local institutions, and improved by provincial and national institutions to support nurses during times of healthcare strain.

Background

The COVID-19 pandemic poses significant issues around the use of personal protective equipment (PPE) and trust in institutions' differing PPE recommendations and requirements (Cook, 2020). While PPE recommendations in hospital settings have been consistent, use and availability

of equipment was variable, particularly at the pandemic onset (Cook, 2020). Trust in government has historically been considered an important determinant of citizens' adherence to public health policies and guidelines. Belief in recommendations from government and public health officials leading to the adoption of necessary behaviours to decrease risk, as well as a decrease in anxieties, stems from effective communication from officials along with actions that follow through and satisfaction with their performance (Han et al., 2021; Quinn et al., 2013). It is likely that these findings regarding public trust in institutions applies to nurses as well.

Critical care nurses have been on the front line of the pandemic, caring for the sickest patients with COVID-19, and have faced challenging ethical issues including lack of access to PPE and other resources (Andersson et al., 2021; Lai et al., 2020; Vincent & Creteur, 2020). Understanding the experiences and beliefs of critical care nurses as they relate to infection prevention and control, their adherence to IPC measures, as well as the institutional bodies providing such recommendations, provides opportunities for improving the adherence to recommendations and safety of nurses at work.

In March through May 2020, we sought to characterize intensive care unit (ICU) and emergency department nurses' perceptions of IPC guidelines they received, adherence to IPC protocols, readiness to adhere to IPC guidelines to prevent SARS-CoV-2 infection in their place of work, their perceived level of personal risk, and their trust in institutional bodies (Silverberg et al., 2021). Our respondents were largely from the ICU setting. One year later, in 2021, we sought to re-evaluate these same measures in a similar sample and to assess the difference in perceptions after one year of pandemic experience. We additionally sought to understand whether experiences in the COVID-19 pandemic or previous epidemics influenced perceptions of IPC guidelines and institutional trust.

Methods

We conducted a cross-sectional online survey to assess the views of Canadian critical care nurses. We sought to follow previously published survey reporting guidelines (Bennett et al., 2010; Burns et al., 2008). Our initial paper provides further background and detail regarding survey development (Silverberg et al., 2021). In brief, the survey comprised basic respondent demographic and pandemic work experience characteristics, as well as a series of closed-ended questions eliciting beliefs and practices of nurses in the context of the COVID-19 outbreak, to understand whether demographic differences or differences in experiences during the pandemic affected beliefs and practices of nurses. The survey was developed by the World Health Organization COVID-19 Research Roadmap Social Science and IPC working groups (van Hout et al., 2020; World Health Organization, 2021). The Theoretical Domains Framework (TDF) was used to evaluate the completeness of the questions included (Cane et al., 2012; Michie et al., 2005). The TDF provides a framework that captures core constructs from multiple behavioural theories into 14 domains (Atkins et al., 2017). Questions for this survey addressed the following TDF domains: knowledge; skills; social/professional role and identity; beliefs about capabilities; beliefs about consequences; environmental context and resources; and intentions, social influences, and emotions. A previously validated measure for institutional trust was additionally included (Freimuth et al., 2014). Items were created on a seven-point Likert scale, ranging from "strongly disagree" to "strongly agree." A total of 41 Likert scale questions were asked.

For the 2021 survey, we added in a question asking for participant's province of residence, as well as whether they were infected while caring for a COVID-19 patient, and the nature of the contact they had with a COVID-19 patient (Supplementary File 1). Three open-ended questions were additionally added to the 2021 survey, with qualitative findings to be reported elsewhere, which aimed to gain an understanding of critical care nurses' perspectives based on their lived experiences and to encourage participants to elaborate on questions to allow for emergence of perspectives that were not specifically addressed in the quantitative survey.

We employed convenience sampling through email and Slack channels (a social media tool) via the distribution lists of the Canadian Association of Critical Care Nurses (CACCN)

(1,100 list serve members). The survey was distributed between April 29 and May 28, 2021, with three reminders sent out. The survey remained open for an additional two weeks following the final reminder. Any critical care nurse on the listserv or Slack was eligible for inclusion. Study data were collected and managed using REDCap electronic data capture tools hosted at BC Children's Hospital(Harris et al., 2009). All questionnaires were self-administered digitally, with voluntary participation, and consent was implied by survey completion.

Statistical analysis

We developed a series of composite scores as a summation of the Likert responses in the category (Silverberg et al., 2021). Likert responses were compiled under the following thematic groups to further interpret the data: emotions, service demand, environment, skills and intentions, beliefs, and social influences/professional role. A validated trust measure was used (Silverberg et al., 2021). We assessed the mean and standard deviation of continuous variables, and numbers and percentages for categorical variables. We analysed responses to composite score measures, including the trust score, using one-way analysis of variance (ANOVA), and categorical and continuous variables using linear regressions and student *t* tests, respectively. Missing data for each question was not analyzed; this occurred at the level of question, rather than full survey. We reported the T-statistic from Student's *t* tests as *T*, the beta from linear regressions as *B*, and the F-statistic from one-way ANOVAs as *F*. We compared responses between the 2020 and 2021 survey results using Student's *t* tests.

Ethics approval

The protocol was approved by The University of British Columbia/Children's and Women's Health Centre of British Columbia Research Ethics Board (Vancouver, BC, Canada) (Reference number: H20-00803).

Results

Respondent characteristics

We analyzed responses from 141 nurses, of which 116 (82%) were bedside nurses. The general survey completion rate for all respondents was 79%. The total response rate was incalculable because of the nature of the distribution network across more than one distribution format. Like our initial cohort, the majority were female (86%), working in academic hospitals (60%), with a mean (SD) age of 41.5 (10.5) years (Table 1). On average, respondents were in practice for 17.1 (10.5) years, and almost all (97%) are providing direct patient care. Almost half (45%) of respondents were from Ontario, with significant responses from Alberta (18%) and British Columbia (12%), and the remainder of respondents scattered across the other provinces. Over half of respondents previously worked in a clinical setting during an epidemic (66%), while 74% had personal experience caring for patients with a novel respiratory pathogen (e.g., SARS, MERS Co-V, H1N1; Table 2). Nearly all (99%) of respondents were working in settings that had provided care for patients with suspected and/or confirmed COVID-19, while over 90% had personally cared for patients with COVID-19. Compared to our initial survey in the Spring of 2020, there was a 30%

Table 1*Respondent Characteristics*

Characteristic	
Age (yr), mean (SD)	41.5 (10.5) <i>n</i> = 92
Gender, n/total N (%)	
Female	121/141 (86%)
Male	14/141 (10%)
Other or prefer not to say	6/141 (4%)
Children < 17 yr. of age, n/total N (%)	
One or more	39/141 (28%)
None	95/141 (67%)
Prefer not to say	7/141 (5%)
Role in healthcare, n/total N (%)	
Bedside nurse	116/141 (82%)
Other nurse (e.g., charge nurse)	25/141 (18%)
Length of time in independent practice (yr.), mean (SD)	17.1 (10.5)
<i>n</i> = 97	
Clinical service setting, n/total N (%)	
Community hospital	54/141 (38%)
Academic hospital	85/141 (60%)
Outpatient setting or Other	2/141 (1%)
Provide direct patient care, n/total N (%)	
Yes	137/141 (97%)
No or Unsure	4/141 (3%)
Job type, n/total N (%)	
Full-time	107/141 (76%)
Part-time	25/141 (18%)
Casual or locum staff	9/141 (6%)
Province, n/total N (%)	
BC	17/141 (12%)
Alberta	26/141 (18%)
Saskatchewan	4/141 (3%)
Manitoba	6/141 (4%)
Ontario	63/141 (45%)
Quebec	9/141 (6%)
New Brunswick	3/141 (2%)
PEI	1/141 (1%)
Nova Scotia	8/141 (6%)
Newfoundland and Labrador	3/141 (2%)
Nunavut	1/141 (1%)

SD = standard deviation

increase in the proportion of respondents with experience caring for patients with suspected and/or confirmed COVID-19.

2021 Survey

Respondents reported a high rate of PPE use for suspected/confirmed cases of COVID-19 (Table 2). More than 99% of respondents indicated positively (agree or strongly agree) that they intend to always use a mask, eye protection, gown and gloves when taking care of suspected or confirmed COVID-19 patients (Figure 1).

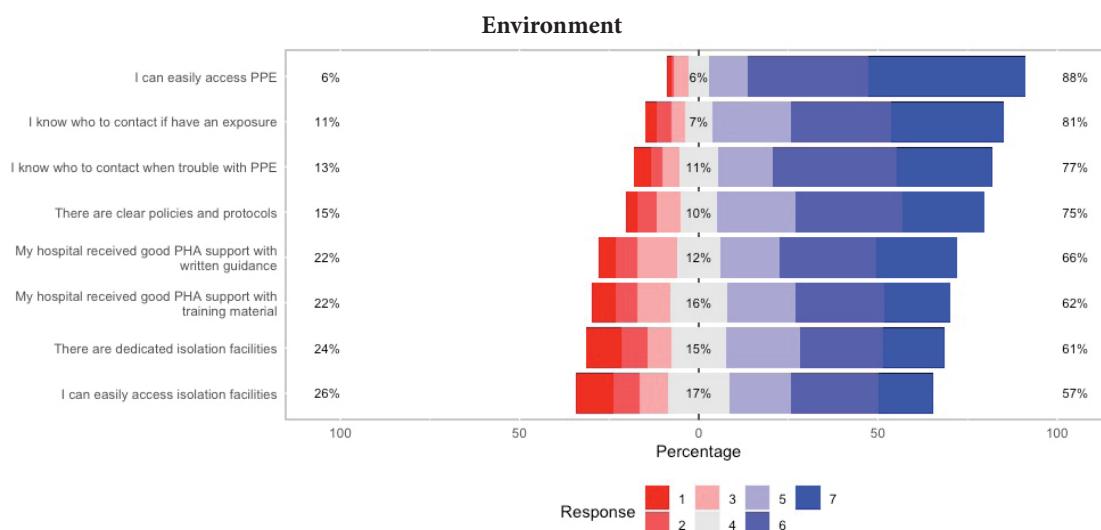
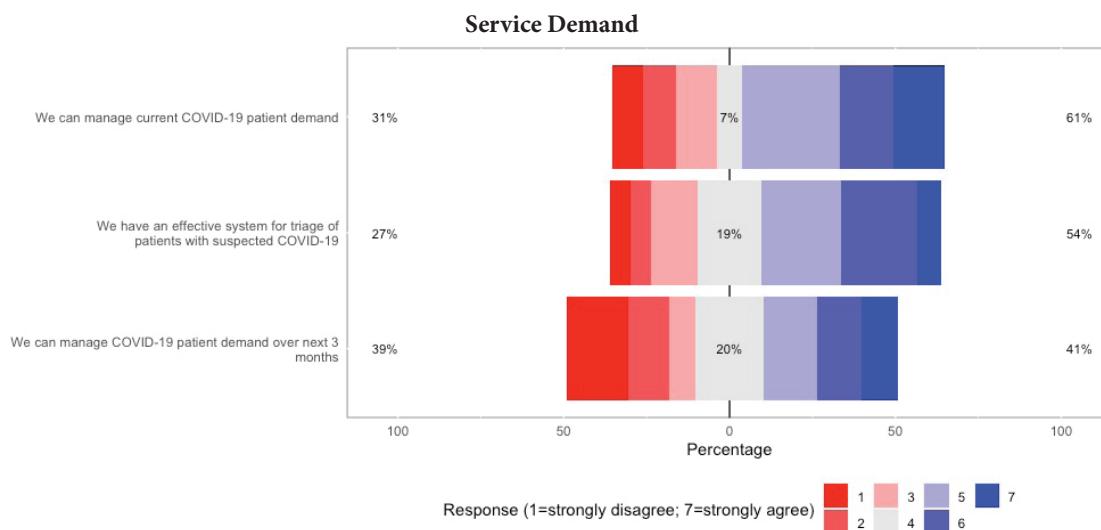
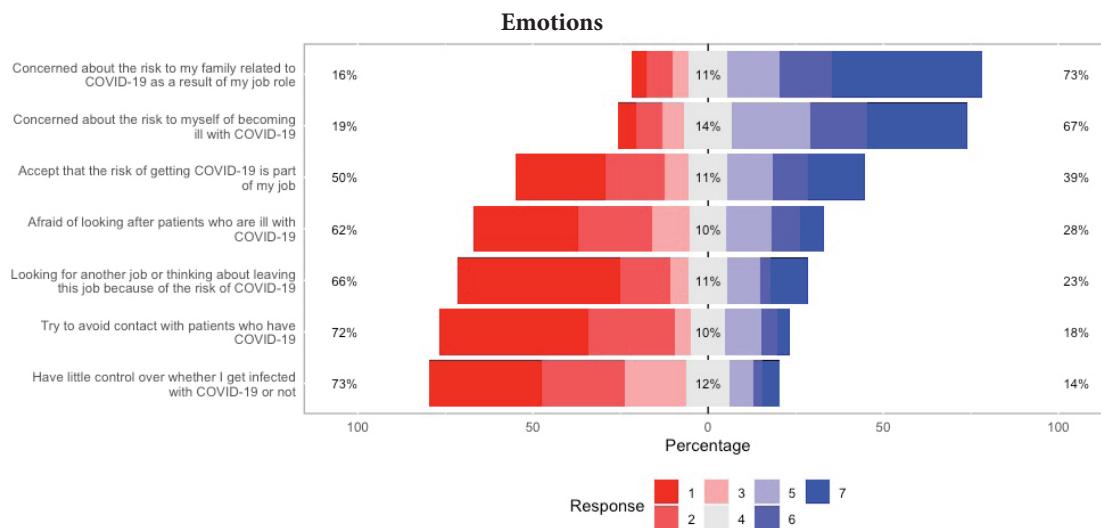
Table 2*Respondent Experiences Related to COVID-19 Epidemic and Previous Outbreaks*

*Percentages reflect the percent of respondents who answered "Yes" to the previous question (whether they have personally cared for a patient with suspected or confirmed COVID-19 infection).

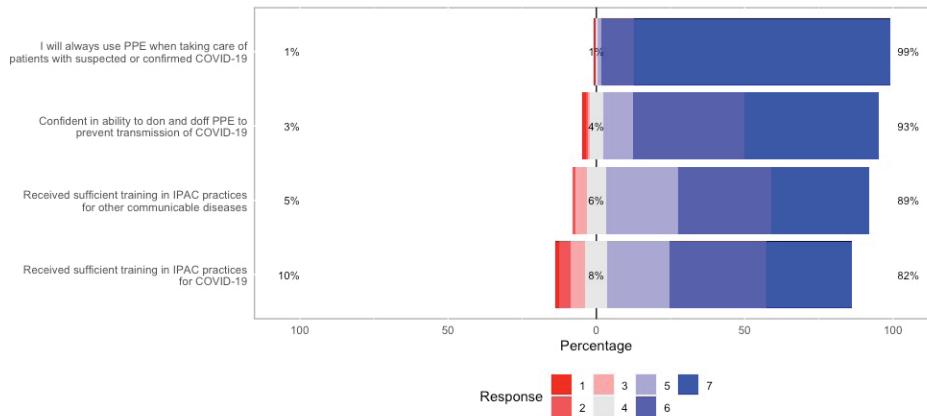
Experience	n/total N (%)
Personal experience previously working in a clinical setting during an acute respiratory epidemic or pandemic	
Yes	110/166 (66%)
No	55/166 (33%)
Unsure	1/166 (1%)
Experience personally caring for patients with suspected or confirmed infection caused by a novel respiratory pathogen in a clinical setting	
Yes	123/166 (74%)
No	38/166 (23%)
Unsure	5/166 (3%)
In your current job role as healthcare worker, how frequently (if at all) do you have direct patient contact?	
Daily	124/166 (75%)
More than one day per week	27/166 (16%)
Less than one day per week	8/166 (5%)
Rarely	6/166 (4%)
No patient contact	1/166 (0.6%)
Has a patient with suspected or confirmed COVID-19 attended the hospital in which you work?	
Yes	164/166 (99%)
No	1/166 (0.6%)
Unsure	1/166 (0.6%)
Have you personally cared for a patient with suspected or confirmed COVID-19 infection?	
Yes	156/166 (94%)
No	10/166 (6%)
What type of contact did you have with a suspected or confirmed COVID-19 case?	
Close contact: directly caring for a suspected/confirmed patient or being within a 1–2 m radius of a suspected/confirmed patient	156/156 (100%)
Healthcare contact: no direct contact with suspected/confirmed COVID-19 case; however, worked in the same facility	0/156 (0%)
What personal protective equipment did you use when you cared for a suspected/confirmed COVID-19 patient? *	
Hand hygiene	155/168 (92%)
Disposable gloves	154/168 (92%)
Face masks	149/168 (97%)
Disposable gowns	138/168 (89%)
Face shields	143/168 (85%)
Isolating patients with confirmed infection	146/168 (87%)
Eye protection	113/168 (67%)
Avoiding patient contact	27/168 (16%)
Full body suits	5/168 (3%)

Figure 1

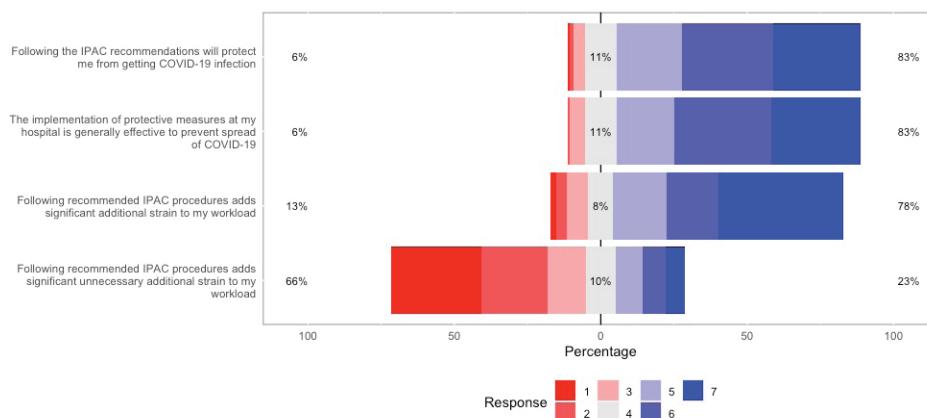
Responses to Individual Likert-Scale Questions by Thematic Category in 2021 Survey



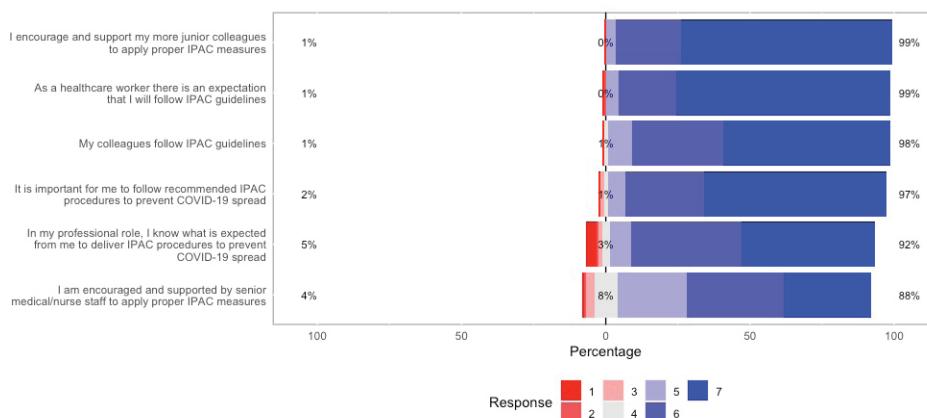
Skills and Intentions



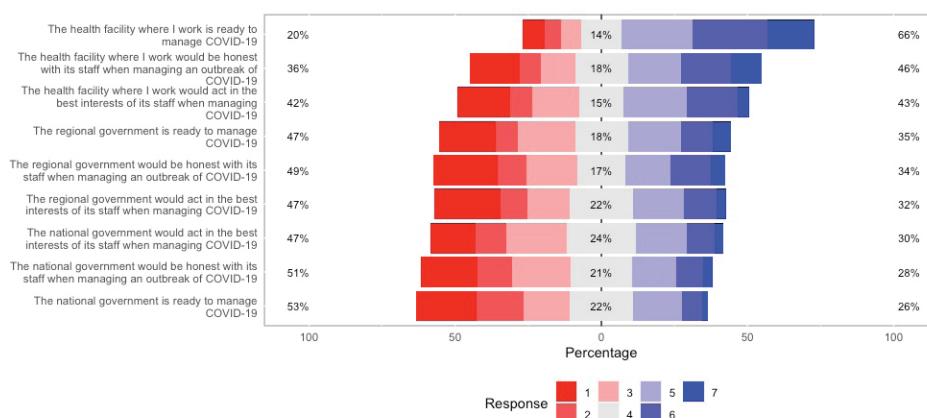
Belief



Social and Professional



Trust



Respondents reported a mean score of 12.8 (SD: 4.9) out of a total 21 points on the service demand score, which reflects perceptions of whether the health system can handle current and future patient demands. They reported a mean score of 24.3 (SD: 3.3) out of a total 28 points on the skills and intention skill, demonstrating high levels of perceived training, confidence, and use of PPE. Respondents reported a mean score of 38.1 (SD: 4.1) out of a total 42 points on the professional and social role score, demonstrating very high association of adherence to IPC measures with role identity and role formation. They reported a mean score of 41.2 (SD: 9.8) out of a total 56 points on the environment score, demonstrating clear guidance of materials and ease of access to PPE and appropriate facilities. Respondents reported a mean score of 25.1 (SD: 7.8) out of a total 49 points, where higher scores reflect more fear and concern for personal risk. Finally, on the beliefs measure, which reflects two positively scored and two negatively scored questions, they reported a mean positive score of 8.71 (SD: 2.9).

Older respondents and male respondents reported lower confidence in PPE and IPC procedures ($B = -0.07, p = 0.007$ and $T = -2.80, 95\% \text{ CI: } -3.69, -0.52, p = 0.01$), although these results do not remain significant after adjustment for multiple comparisons (Supplementary Table 1). Practitioners in academic hospital settings reported higher scores on the beliefs measure, indicating belief in the effectiveness of IPC procedures, but also on the emotions score, perceiving higher personal risk and fear on the job ($F = 3.89, p = 0.01$ and $F = 2.87, p = 0.04$ respectively);

however, these results do not remain significant after adjustment for multiple comparisons (Supplementary Table 1). There was otherwise no difference on any measure amongst participants of different ages, genders, marital statuses, numbers of children, workplace settings, or those with experience working with novel pathogens (Supplementary Table 1). There was no significant difference in any of our scores based on level of exposure and care for patients with COVID-19.

Institutional trust

Respondents with more work experience reported higher levels of trust ($F = 6.07, p = 0.003$), with highest levels of trust reported by respondents in New Brunswick (mean trust score = 53.7), Quebec (mean trust score = 45.3), Nunavut (mean trust score = 43), and Nova Scotia (mean trust score = 41), compared to Alberta (mean trust score = 30.5) and Manitoba (mean trust score = 23.2). Respondents reported the least overall trust in the national government, and particularly in the government's readiness to manage COVID-19 (Figure 1). There was no difference in institutional trust based on exposure to patients with COVID-19 ($F = 0.912, p = 0.341$), or those who contracted COVID-19 while caring for critically ill patients with COVID-19 ($F = 0.158, p = -0.692$).

Comparison between 2020 and 2021: institutional trust

Respondents in 2021 reported lower trust in the system (mean trust score = 33.7) compared to respondents in 2020 (mean trust score = 39.2; $T = 4.31, p < 0.001$; Table 3). Respondents report higher trust in local health facilities, with only a

Table 3

Comparison Between Responses in 2020 and 2021

Measure*	2020 Survey Mean (SD) [‡]	2021 Survey Mean (SD) [‡]	T-test statistic	P
Emotions score	27.9 (7.3)	25.1 (7.8)	3.83	<0.001
Professional / social role score	37.7 (4.0)	38.1 (4.1)	-0.85	0.39
Environment score	40.5 (10.0)	41.2 (9.8)	-0.64	0.53
Beliefs score	6.74 (3.5)	8.71 (2.9)	-6.65	<0.001
Skills and intentions score	23.1 (3.7)	24.3 (3.3)	-3.57	<0.001
Service demand score	13.7 (4.1)	12.8 (4.9)	1.92	0.06
Trust score	39.2 (12.8)	33.7 (12.8)	4.31	<0.001
National government readiness	4.14 (1.6)	3.26 (1.7)	5.29	<0.001
National government honesty	4.18 (1.6)	3.42 (1.7)	4.55	<0.001
National government acting in citizens' best interest	4.61 (1.6)	3.58 (1.6)	6.47	<0.001
Regional government readiness	4.27 (1.7)	3.66 (1.8)	3.45	0.001
Regional government honesty	4.19 (1.7)	3.54 (1.9)	3.55	0.001
Regional government acting in citizens' best interest	4.56 (1.7)	3.49 (1.8)	6.14	<0.001
Health facility readiness	4.68 (1.6)	4.83 (1.7)	-0.87	0.39
Health facility honesty	4.21 (1.8)	4.06 (1.9)	0.78	0.44
Health facility acting in citizens' best interest	4.29 (1.9)	3.83 (1.8)	2.50	0.01

*Measures represent combined responses to multiple seven-part Likert-scale questions to form a combined aggregate thematic score. Emotions score reflects perceived personal risk and fear on the job. Service Demand score reflects perceptions of whether the health system can handle current and future patient demands. Environment score reflects the clarity of guidance materials and ease of access to facilities and PPE. Skills and Intentions combined measure reflects training, confidence, and use of PPE. Beliefs score reflects beliefs in the effectiveness of IPC and the amount of strain procedures create. Professional and Social Role score reflects perception of how IPC measures are reflected in one's role, and the potential influence on others.

[‡]Total number of respondents included for each survey were $n = 319$ in 2020 and $n = 141$ in 2021.

significant drop noted in the perception of the institution acting in the best interest of citizens (Table 3). There was a significant drop in perceptions of the readiness, honesty, and trust in institutions to act in the best interests of citizens at the level of regional and national governments (Table 3). Across all three levels of institutions, there was the most consistent loss of trust in the institution to act in citizens' best interest, while respondents only increased their trust in one domain, being the readiness of health facilities for the pandemic.

Comparison between 2020 and 2021: access to and perception of personal protective equipment

In our combined environment measure, respondents reported similar access to PPE and isolation facilities, and clear IPC policies that were well supported by public health authorities in 2021 compared to 2020 ($T = -0.64, p = 0.526$; Table 3). Similarly, compared to 2020, respondents in 2021 reported there is an expectation to follow IPC guidelines as part of their role, and that there is a culture of support from senior staff to junior staff to adhere to IPC protocols ($T = -0.85, p = 0.394$) (Table 3).

Comparison between 2020 and 2021: Perceived risk of COVID-19 infection

As with our initial survey in 2020, respondents were most concerned about the risk to their families and their own risk of becoming ill (Figure 1). Respondents in 2021 reported an overall lower score on our emotions measure (mean score of 27.9), which reflects a higher level of fear for themselves and their family, compared to respondents in 2020 (mean score of 25.1) ($T = 3.83, p = <0.001$; Table 3). While age and work experience were not significantly associated with respondents' scores in 2021, there was provincial disparity in reported emotions scores, with higher mean scores reported from respondents in central Canada (and particularly Ontario) compared to all other Canadian regions ($F = 5.29, p = 0.006$; Supplementary Table 1).

Respondents in 2021 had a higher overall beliefs score on our combined measure, with a mean score of 8.71, compared to respondents in 2020, with a mean score of 6.74 ($T = -6.65, p < 0.001$), indicating higher confidence in PPE and IPC procedures and a feeling that IPC procedures are less of an unnecessary workload strain (Table 3). Respondents in 2021 also reported higher skills in PPE use and very strong intentions to use PPE, with significantly higher scores on our combined measure compared to respondents in 2020 ($T = -3.57, p < 0.001$; Table 3).

Interpretation

We repeated our survey of Canadian critical care nurses one year after the onset of the COVID-19 pandemic, during the third wave of the pandemic, in comparison to our initial survey during the first pandemic wave. Although respondents in 2021 reported less worry for themselves and their families and higher confidence in their PPE and IPC skills, they reported less overall trust in the system. Compared to 2020, respondents' comfort with IPC procedures surrounding COVID-19 had caught up to their perceived comfort with performing IPC

procedures around other communicable diseases. Access to PPE has eased and no longer dominates concerns from health-care workers, though intentions to use PPE remain somewhat discordant with actual use of PPE, including gowns and face shields, as over 99% of respondents intended to always use PPE when taking care of patients suspected or confirmed to have COVID-19, while only 89% of respondents report using isolation gowns, 85% of respondents report using face shields, and 67% of respondents report using eye protection.

The decrease in health system trust in the 2021 survey is driven by the significant decrease in trust in the national and regional governments, particularly surrounding whether they would act in the best interest of staff when managing COVID-19. While in 2020 there was a mix of trust and distrust across all three levels of government, in 2021 there was consistently higher trust reported of individual health facilities, with loss of trust isolated to whether they act in citizens' best interest, which is somewhat beyond their scope of influence. Such changes reflect the experience of healthcare workers over the year of the pandemic, watching government action and inaction in response to subsequent COVID-19 pandemic waves (Brophy et al., 2021). We found that those with experience during previous epidemics of novel respiratory pathogens had no different levels of trust than those without this experience, and hypothesize whether the much more prolonged and recent experiences with the current pandemic supersede previously held beliefs stemming from previous experience. Our high rates of PPE availability and use, and particularly their consistency between the two studies, does not explain the decrease in institutional trust, unlike other implementations of this study in international contexts (Buowari et al., 2021).

Clear, specific, and knowledge-based messaging have been found in other settings to increase organizational trust (Han et al., 2021): polarisation and the timing of pandemic control measures' introduction by government have been found to further affect levels of trust (Busemeyer et al., 2021). While there has been much judgement and criticism of levels of government across Canada, there has been less unified judgement, polarization around, and criticism of individual hospitals and health authorities, which may explain the changes in levels of trust we found amongst our survey participants. Direct communication with and amongst healthcare providers, and engagement with these frontline staff in decision making is critical for building trust in local institutional policymaking (Brennan & Wendt, 2021; Gilson, 2003; McBeth et al., 2021).

Limitations

Our survey reflects changes year-on-year amongst a similar cohort of respondents, although the limitations of our study design mean we were unable to assess whether we re-surveyed the same respondents as completed the initial 2020 survey, or whether our new cohort represents a new set of critical care nurses. Overall, our study's limited response rate may be related to the high levels of burnout and clinical burden particularly amongst critical care nurses dealing with a third wave of COVID-19 across hospitals in Canada, as well as with research fatigue due to the high volumes of COVID-19 related research

being conducted (Bruyneel et al., 2021; Chen et al., 2021; Kerlin et al., 2021; Wahlster et al., 2021). Similar to our original survey, the gender skew limited our ability to assess the extent to which gender played a role in respondents' perspectives, and our findings might reflect stated rather than actual experiences of respondents, which is a recognized methodology limitation (Rubenfeld, 2004). We were unable to quantify or understand the perceived role and influence of media and public opinion, rather than respondents' personal pandemic experiences, on the beliefs of critical care nurses related to IPC and institutional trust, though these are likely to have played some role in the difference in reported institutional trust between our 2020 and 2021 surveys. As our survey sought to compare data year-on-year and to gather data that could be compared to parallel international studies being conducted through the WHO COVID-19 Research Roadmap; Social Science and Infection Prevention and Control working groups, we were able to make limited adaptations to the study.

Further evaluation of year-on-year comparisons of other jurisdictions who implemented similar studies earlier in the pandemic would broaden the interpretability of our findings. Year-on-year tracking of trust levels as the pandemic continues amongst a broad set of healthcare workers and the public may help track the continuing effect of the pandemic on government healthcare relations.

Conclusion

We repeated and extended a survey of nurses in Canada during the third wave of the COVID-19 pandemic, in comparison to the initial survey conducted during the first pandemic wave. Respondents in 2021 demonstrated less trust, particularly in national and regional governments, compared to respondents in 2020, although they reported less overall concern for themselves and their family, and higher skills and knowledge around PPE and IPC procedures. Canadian nurses continue

to have strong belief in the utility of PPE and IPC procedures, and strong social and professional expectations to adhere to IPC measures. Despite high rates of IPC skills, knowledge, and belief, it is important for institutions to work on maintaining the trust of its nursing workforce to improve care and retention during prolonged system stresses like the pandemic.

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Supplementary Table 1

Associations Between Respondent Characteristics and Aggregated Perspective Scores*†

Measure	Province‡	Time since training‡	Age	Gender§	Marital status‡	Children§	Practice setting‡	Epidemic score‡**
Emotions score	F = 2.49, <i>P</i> = 0.01	F = 1.37, <i>P</i> = 0.26	B = 0.06, <i>P</i> = 0.43	T = 0.47, <i>P</i> = 0.64; 95% CI: -3.48 to 5.48	F = 1.40, <i>P</i> = 0.24	T = -1.46, <i>P</i> = 0.15; 95% CI: -0.80 to 5.15	F = 2.87, <i>P</i> = 0.04	F = 1.06, <i>P</i> = 0.30
Service Demand score	F = 3.54, <i>P</i> < 0.001	F = 1.48, <i>P</i> = 0.23	B = 0.02, <i>P</i> = 0.74	T = 0.21, <i>P</i> = 0.83; 95% CI: -2.59 to 3.17	F = 0.20 <i>P</i> = 0.94	T = -0.26, <i>P</i> = 0.79; 95% CI: -1.49 to 1.94	F = 0.78, <i>P</i> = 0.51	F = 3.39, <i>P</i> = 0.07
Skills and Intentions score	F = 1.08, <i>P</i> = 0.38	F = 0.59, <i>P</i> = 0.56	B = 0.01, <i>P</i> = 0.782	T = 0.16, <i>P</i> = 0.87; 95% CI: -2.59 to 3.01	F = 0.60, <i>P</i> = 0.66	T = 0.28, <i>P</i> = 0.78; 95% CI: -1.17 to 0.88	F = 0.29, <i>P</i> = 0.84	F = 0.64, <i>P</i> = 0.42
Beliefs score	F = 1.48, <i>P</i> = 0.15	F = 1.79, <i>P</i> = 0.17	B = -0.07, <i>P</i> = 0.007	T = -2.80, <i>P</i> = 0.01; 95% CI: -3.69 to -0.52	F = 1.74, <i>P</i> = 0.15	T = 0.80, <i>P</i> = 0.43; 95% CI: -1.43 to 0.61	F = 3.89, <i>P</i> = 0.01	F = 0.65, <i>P</i> = 0.42
Environment score	F = 1.44, <i>P</i> = 0.17	F = 2.77, <i>P</i> = 0.07	B = 0.09 <i>P</i> = 0.33	T = -0.17, <i>P</i> = 0.86; 95% CI: -7.87 to 6.68	F = 0.94, <i>P</i> = 0.44	T = 1.25, <i>P</i> = 0.21 95% CI: -4.90 to 1.10	F = 0.58, <i>P</i> = 0.63	F = 1.17, <i>P</i> = 0.28
Professional and Social Roles score	F = 0.85, <i>P</i> = 0.58	F = 1.66, <i>P</i> = 0.20	B = 0.01, <i>P</i> = 0.76	T = 0.43, <i>P</i> = 0.68; 95% CI: -1.97 to 2.95	F = 0.71, <i>P</i> = 0.59	T = 0.07, <i>P</i> = 0.95; 95% CI: -1.15 to 1.07	F = 0.56, <i>P</i> = 0.64	F = 0.14, <i>P</i> = 0.71
Trust score	F = 3.4, <i>P</i> < 0.001	F = 6.07, <i>P</i> = 0.003	B = 0.13, <i>P</i> = 0.317	T = -0.30, <i>P</i> = 0.77; 95% CI: -11.36 to 8.57	F = 0.84, <i>P</i> = 0.50	T = 0.17, <i>P</i> = 0.10; 95% CI: -8.37 to 0.73	F = 0.322, <i>P</i> = 0.88	F = 2.53, <i>P</i> = 0.11

* Scores represent combined responses to multiple seven-part Likert-scale questions to form a combined aggregate thematic score. Emotions score reflects perceived personal risk and fear on the job. Service Demand score reflects perceptions of whether the health system can handle current and future patient demands. Environment score reflects the clarity of guidance materials and ease of access to facilities and PPE. The Skills and Intentions combined measure reflects training, confidence, and use of PPE. Beliefs score reflects beliefs in the effectiveness of IPC and the amount of strain procedures create. Professional and Social Role score reflects perception of how IPC measures are reflected in one's role, and the potential influence on others.

†The adjusted threshold of significance (using the Bonferroni correction) was *P* = 0.0055. The significant findings are highlighted in bold.

‡Associations evaluated by one-way ANOVA

§Associations evaluated by Student's *t* test

||Associations evaluated by linear regression

** Aggregate epidemic score, based on whether they've worked in a clinical setting in a previous epidemic and cared for a patient in that setting. For each score, an affirmative answer on each of the two questions was awarded one point, with each score comprising two questions worth up to one point each for a maximum of two points per score.

ANOVA = analysis of variance; CI = confidence interval; IPC = infection prevention and control; PPE = personal protective equipment.

“We were treading water.” Experiences of healthcare providers in Canadian ICUs during COVID-19 visitor restrictions: A qualitative descriptive study

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Abstract

Purpose: To explore and describe the impact of COVID-19 restrictive visitation policies on healthcare providers (HCPs) and to identify ongoing challenges and pragmatic solutions that could inform recommendations for patient- and family-centred care (PFCC) in the ICU during pandemic conditions.

Methods: We conducted a qualitative descriptive study within a constructivist paradigm. We used two sources of data collected simultaneously: semi-structured interviews conducted remotely via video or phone and written comments gathered through open-ended response boxes in a questionnaire to explore the perspectives of HCPs working in Canadian ICUs during visitor restrictions resulting from the first wave of COVID-19. Between June–September 2020, eligible participants were invited through email or Twitter by their professional societies: The Canadian Critical Care Society, the Canadian Association of Critical Care Nurses, and the Canadian Society of Respiratory Therapists. Interview transcripts were analyzed inductively to create a

thematic framework, and written comments were analyzed using deductive content analysis to support a richer description.

Findings: Healthcare providers' descriptions of COVID-19 visitor restrictions in ICU revealed five main themes: 1) Impacting Healthcare Providers, 2) Communicating and Connecting, 3) Perceiving the Impact on Families and Patients, 4) Proposing Solutions with Caveats, and 5) Considering End-of-Life.

Discussion: If restrictive visitation policies are justified in the interest of infection prevention and control, healthcare leadership must consider the impact on HCPs, and strategies for mitigating the associated harms, and identify important considerations for PFCC in the context of COVID-19 visitor restrictions. Specifically, there is a need for enhanced communication with patients and families, and between administrators, management, and the healthcare team.

Keywords: intensive care; COVID-19; visitor restrictions; patient and family-centered care; critical care

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Implications for Nurses

Nurse leaders should consider the impact of work demands, communication with families and within teams, and end-of-life (EOL) issues on patient- and family-centred care (PFCC) during restrictive visitation policies. Proposed solutions include using technology as a substitute—but not a replacement—for family presence, provision of specific guidelines for when and how to communicate with families, clear communication with families about restrictive visitation policies, and cohesive team communication to reduce inconsistent messaging. This work has implications for improving PFCC in the intensive care unit (ICU) when families are geographically distant from their loved ones or when other barriers prevent them from being physically present at their loved one's bedside.

Background

Open visitation policies are the foundation of patient-centred care in ICU (Nin Vaeza et al., 2020). Guidelines have

previously identified best practices for PFCC in the ICU, which include 1) Family presence in the ICU; 2) Family support; and 3) Communication with family members (Davidson et al., 2017). The Canadian Association of Critical Care Nurses (CACCN) endorses PFCC (CACCN, 2018). PFCC is known to reduce ICU length of stay and costs, while increasing family satisfaction, patient experience, medical goal achievement, and patient and family mental health outcomes (Goldfarb et al., 2017). Family participation in bedside care, including decision making and contributing to care, is essential for facilitating PFCC (Oczkowski et al., 2017; Olding et al., 2016). Family members' contributions to care in the ICU include active presence, patient protector, facilitator, historian, coach, and voluntary caregiver (McAdam et al., 2008). Contributions to daily care (e.g. bathing, massaging, and cleaning) help loved ones to feel useful, improve communication, facilitate close physical and emotional contact with their relative (Mitchell & Chaboyer, 2010; Mitchell et al., 2009), and increase families' perceptions of respect, collaboration, support in the care partnership (Mitchell et al., 2009). Loved ones may also play a role

in reducing delirium (Kandori et al., 2020; Kotfis et al., 2020; LaHue et al., 2020; Mitchell et al., 2017; Pun et al., 2021) and by using ICU diaries, impact depression, anxiety, and quality of life in ICU survivors (Barreto et al., 2019).

Policies restricting visitation were enacted rapidly and extensively throughout Canadian ICUs in the early months of the COVID-19 pandemic. Prior to March 2020, 73% of Canadian hospitals had “accommodating” visiting policies (Canadian Foundation for Healthcare Improvement, 2020). By April 2020, hospitals from all provinces and territories reported suspension of visitation or significant visitor restrictions (Canadian Foundation for Healthcare Improvement, 2020). A recent environmental scan of Canadian adult ICU visitation policies during the first wave of COVID-19 revealed that 86% of hospitals altered their policies to prohibit or restrict visitors (Fiest et al., 2021). The rationale for these restrictive visitation policies included protecting patients and preserving personal protective equipment (Fiest et al., 2021). Fear of infection, elevated workloads, and emotional exhaustion caused stress for healthcare providers (González-Gil et al., 2021; Trumello et al., 2020). Compared with before the COVID-19 visitor restrictions, critical care providers in Canada reported increased feelings of stress (115/219; 53%) and decreased morale (99/217; 46%) (O’Brien et al., 2021). Meanwhile, more than half (52%) of critical care providers in the USA identified expressed concerns of emotional distress and burnout (52%) and about their health (44%) (Wahlster et al., 2021). Yet, healthcare providers (HCPs) also expressed reservations about hospital policies preventing families from visiting a COVID-19 positive patient (Wakam et al., 2020). Restrictive visitation policies have been further criticized as lacking compassion and failing to protect the psychosocial needs of healthcare providers, patients, and their loved ones during end-of-life (Jones-Bonofiglio et al., 2021). Patients’ family members described difficulties establishing a connection with healthcare providers in ICU and maintaining a connection to their loved one (Kentish-Barnes et al., 2021). Inability to feel connected to the patient and informed about their care contributed negatively to the stress and uncertainty felt by loved ones (Chen et al., 2021). These adverse effects were widely shared in the media prior to scientific publication and, in response, the Institute for Patient- and Family-Centered Care spearheaded a campaign to eliminate restrictive visitation policies (Institute for Patient-And Family-Centred Care, 2020), change the perception of families as visitors to one where family members are seen as essential partners in care, and highlight best practices for advancing PFCC during the pandemic.

In the context of early COVID-19 visitor restrictions—prior to the availability of any vaccines—HCPs balanced infection prevention and control (IPC) and shortages of personal protective equipment with the principles of PFCC such as family presence, caregiver support, and communication for shared decision making (Robert et al., 2020). Recommendations to support PFCC during the COVID-19 pandemic included helping families to understand the rationale for visitor

restrictions and routine and scheduled communication from the healthcare team (Hart et al., 2020). Where communication structures adapted to include non-ICU affiliated staff to support family communication, loved ones appreciated transparency about the patients’ situation, the attention to their well-being, and predictability of daily communication in a time of insecurity (Klop et al., 2021). Yet, primary family contacts have identified they carry an additional emotional burden (Klop et al., 2021). Bedside HCPs have adapted by facilitating video calling or creating virtual rounds to connect family members (Arya et al., 2020; Buba & Delude, 2020; Kennedy et al., 2020; Kettle et al., 2020; Sasangohar et al., 2021; Wakam et al., 2020).

We conjectured that COVID-19 visitor restrictions would have multiple substantial impacts on healthcare providers in Canadian ICUs and on PFCC. To identify the impact of sudden and severe COVID-19 visitor restrictions in ICU, we asked the following research questions: 1) What do HCPs perceive to be the impact of COVID-19 visitor restrictions on PFCC in Canadian ICUs? 2) What ongoing challenges are identified by HCPs that can inform recommendations for PFCC during pandemic conditions? 3) What solutions are identified by HCPs that can inform recommendations for PFCC during pandemic conditions?

Methods

Design

We approached the study from a constructivist orientation and conducted a qualitative descriptive study (Bradshaw et al., 2017; Sandelowski, 2000) to explore the impact of COVID-19 visitor restrictions on HCPs in Canadian ICUs. A qualitative descriptive approach is characterized by its subjective epistemology, inductive process, acknowledgement of researcher subjectivity, and emic position of the researcher. This study was approved by the institutional research ethics board (University of Saskatchewan; BEH-1955, June 5th, 2020). Interview participants received a written informed consent form in advance and provided verbal audio recorded consent at the time of interview; questionnaire responses implied consent.

Researcher Characteristics

Semi-structured interviews were conducted by a registered nurse (FB) with experience in emergency and intensive care settings prior to COVID-19. Qualitative thematic analysis was performed by all team members (two intensive care physicians, a registered nurse, two patient partners, two students, and one research associate). Further details are reported according to the Consolidated Reporting of Qualitative Research checklist (eSupplement 1).

Patient and Patient Family Partnership

To ensure interview questions, data analysis, and the knowledge translation plan were meaningful to patients and patient families, we collaborated with two patient family partners. Patient partners were core members of the research team, contributing a patient perspective to study design, data collection, analysis, knowledge translation, and determining the next steps for research.

Setting and Context

This study explored the perspectives of HCPs working in Canadian ICUs during the COVID-19 pandemic. Data were collected after the first wave of COVID-19 (Fiest et al., 2021) between June-September 2020.

Sampling and Recruitment

We used a purposive sampling design seeking maximum variation to target HCPs working in Canadian ICUs via their professional societies (the Canadian Critical Care Society [CCCS], the CACCN, and the Canadian Society of Respiratory Therapists [CSRT]). This sampling technique was appropriate in attracting information-rich cases – participants with a range of experiences working in a Canadian ICU during COVID-19 visitor restrictions. First, professional societies circulated an invitation to an online questionnaire (O'Brien et al., 2021), and respondents were invited to leave contact information for potential participation in a semi-structured interview. We targeted ten interviews with participants with varying lengths of practice from various healthcare professions and geographical locations within Canada. We interviewed volunteers from four provinces and one undisclosed location.

Data Collection

We included two sources of qualitative data: 1) semi-structured interviews to explore the impact of COVID-19 visitor restrictions in depth; and 2) comments gathered through open-ended responses in an online questionnaire (O'Brien et al., 2021). We conducted semi-structured interviews with HCPs working in the ICU during COVID-19 visitor restrictions to explore HCP perspectives on the impact on PFCC, inform recommendations for PFCC during pandemic conditions, and discover solutions to support PFCC when families cannot be present in the ICU. Interviewees were asked to describe the impact of COVID-19 visitor restrictions on patient care, positive and negative changes encountered, their needs as a bedside healthcare professional, and how COVID-19 visitor restrictions have changed their approach to patient care in the ICU. Audio recorded interviews lasting between 45–55 minutes were conducted remotely via video or phone, using a semi-structured interview guide (eSupplement 2). Transcripts were returned to participants to add, amend, confirm, or delete sections of their transcript.

Written comments were obtained through an online questionnaire in response to the following questions: 1) Can you comment on working conditions during COVID-19 visitor restrictions? 2) How do you think the COVID-19 visitor restrictions have impacted patient care in your ICU? 3) How have these sources of information and support impacted your experience of the COVID-19 visitor restrictions in ICU (supervisor, hospital administration, staff in other areas of the hospital, community-based healthcare providers, colleagues in the ICU, family, and friends)?; and 4) Can you comment on decision-making during COVID-19 visitor restrictions?

Data Analysis

Based on previously described methodology (Braun & Clarke, 2006), interview transcripts were analyzed through a general inductive approach (Thomas, 2006) using thematic analysis. The thematic analysis aimed to describe 1) the perceived impact

of COVID-19 visitor restrictions on PFCC in the ICU; 2) the ongoing challenges identified by HCPs of these visitor restriction policies; and 3) potential solutions identified by HCPs that can inform recommendations for PFCC during pandemic conditions. The thematic analysis allowed us to examine the ways that HCPs in the ICU during COVID-19 visitor restrictions make meaning out of their experiences (Evans & Lewis, 2017; Golinski, 2018). Each author performed independent parallel coding of two to three interview transcripts using open coding to identify concepts to increase trustworthiness through multiple analysts (Patton, 1999). During a virtual video meeting, each member described their initial impressions of each interview and their initial coding and highlighted similarities and differences among interviews. Through iterative discussion, we collapsed codes into themes. Each team member returned to the transcripts to confirm patterns and themes with the data. At a second virtual meeting, we reached a consensus on a framework of themes and sub-themes. Themes were determined primarily based on their contribution to answering the research aims (impact, recommendations, and strategies), rather than their frequency across the dataset.

Next, the written comments were analyzed deductively using content analysis, with the thematic framework serving as the coding framework to ensure informational redundancy (Lincoln & Guba, 1985), to support validity (Patton, 1999), and to support a richer description of working in Canadian ICUs during the COVID-19 visitor restrictions across a broader sample of the target population. In a third meeting, incidents of convergence, complementarity, and divergence/dissonance were highlighted. This influenced our thematic framework by clarifying two subthemes, renaming a subtheme, and adding a subtheme.

Findings

Participant Characteristics

Eight HCPs were interviewed. Participants included five nurses, two intensive care physicians, and one clinical nurse specialist. Four participants had less than 10 years' experience working in ICU, two participants had between 11–20 years, and two participants had more than 31 years' experience in ICU. Of the nurse participants, one had recently retired during and because of the COVID-19 pandemic; another was an ICU nurse practitioner. Participants' practice locations included two in BC, four in Ontario, one in Newfoundland and Labrador, and one undisclosed.

One hundred eighty-seven respondents provided 524 written comments (WC) in response to open-ended questions. These respondents included nurses (149/187, 80%), intensivist physicians (18/187, 10%), respiratory therapists (16/187, 9%), and allied health professionals (3/187, 2%), and one undisclosed occupation. Responses originated from every Canadian province and one territory: British Columbia (45/187, 24%), prairie provinces (45/187, 24%), Ontario (66/187, 35%), Quebec (11/187, 6%), Maritime provinces (18/187, 10%), territories (1/187, 1%), and one undisclosed. Participants were primarily aged 39–49 years (104/187, 56%), with the remainder of participants aged 50–69 years (56/187, 30%), 19–29 years

(25/187, 13%), and two unspecified. Written comments were provided primarily by female respondents (159/187, 85%), with the remainder of comments obtained from males (24/187, 13%) and four undisclosed (4/187, 2%).

Thematic Framework

A thematic framework derived from healthcare provider interviews is presented in Table 1.

Impacting Healthcare Providers

HCPs described the impact of visitor restrictions on their working conditions, including managing work demands, distress, team morale, and safety.

Table 1

Themes and Subthemes About the Impact of COVID-19 Visitor Restrictions in the ICU

Themes	Sub-themes
Impacting Healthcare Providers	<p>Managing Work Demands: “There was a lot more work for us”</p> <p>Distress: “We were treading water”</p> <p>Team Morale: “The team coming together”</p> <p>Safety: “Having visitor restrictions allows you to feel more confident”</p>
Communicating & Connecting	<p>With families: “Everybody had a phone in their pocket”</p> <p>Within healthcare systems and team: “Things changing so quickly”</p>
Perceiving Family and Patient Impact	<p>Families: “They are not able to come in”</p> <p>Patients: “We saw a higher degree of delirium”</p>
Proposing Solutions with Caveats	<p>Technology: “We were doing what we could”</p> <p>Specific guidelines of when, how to communicate with families: “An expectation”</p> <p>Clear communication with families about visitor restriction policies: “To help people understand”</p> <p>Cohesive team communication (RN, MD, administration): “One single source of truth”</p>
Considering End-of-Life in the Context of Visitor Restrictions	<p>Feeling distress when families aren’t let in: “This is not a good end”</p> <p>Needing flexibility and exceptions: “We did make exceptions”</p>

Managing Work Demands: “There was a lot more work for us”

HCPs identified the impact of changing work demands. Overall, “the staff [were] just so busy and trying to keep up with the workflow” (HCP #8, British Columbia). They described decreased patient bedside assessment due to infection control practices, where staff infection prevention procedures and limitations on entering negative pressure rooms resulted in reduced time for patient care: “...it really changed the way that I did bedside nursing, ...I felt like I was not doing ... a very important part of my job by not getting to do a full assessment without the auscultation...” (HCP #4, Ontario).

Yet some HCPs felt visitor restrictions helped them to manage patient care with fewer interruptions, leading timely patient care (getting tasks done). Healthcare providers reported spending “more time on the phone updating family as opposed to at the bedside” (WC #214, British Columbia). Written comments supported and enriched this theme through additional descriptions of the need for HCPs to play new roles of both advocating for patients and families, for example “We are not given decision making options related to visitor restrictions. We may advocate to management if we feel that a visitation is warranted. These are only permitted in very specific circumstances” (WC #510, Ontario), and becoming gatekeepers to family presence:

Many complaints received from families. This added to burden of working with COVID. Considerable amount of time every day spent trying to communicate with families. Even so, many were dissatisfied. Administration placed burden on physicians to be gatekeepers for the odd visitor (e.g., for end-of-life discussions) but then, occasionally criticized those decisions. Quite frequently family members would express profound ...anger with visitor restrictions, and care team members were recipients of this frustration, and occasionally, frank abuse.” (WC #173, Ontario)

Distress: “We were treading water”

HCPs reported the environment was highly charged during COVID-19 visitor restrictions; heightened stress and emotions sometimes resulted in aggression from families. HCPs reported their own emotional distress, the added emotional burden of supporting distressed families, and fear of the virus. Distress commonly originated from lack of support from leadership, conflicting information, from variable application/interpretation of the policies themselves, and from inconsistency/differences of interpretation of communication within healthcare teams. One interviewee described an increase in negative coping behaviours in her co-workers. She indicated that there were “so many repercussions to nurses as far as their emotional health, their psychological health. I saw a lot of people that I know dealt with it by, by drinking alcohol, by smoking more, by binge eating” (HCP #6, Ontario).

Moral distress was one way in which distress was evident – knowing what was right but not being able to carry it out under the circumstances. Staff experienced distress when having to prevent family from visiting loved ones, particularly when family members were distressed: “[m]orally it has been challenging at times keeping families apart in times when they so desperately

want to support loved ones" (WC# 205, British Columbia). Another wrote "*it seems inhumane to have to pick... people who can see the patient especially if they have a large family... This is causing undue moral distress on families, patients, and staff.*" (WC# 144, Prairies).

The amount of additional work, the need to reassure families who could not be present at the bedside, and the expressed lack of adequate debriefing were perceived to lead to HCP burnout. For example, participants reported they "*were really all so drained from dealing with it*" (HCP #6, Ontario) and "*Increased stress, anxiety, and burnout of staff in regard to dealing with unhappy family members over the phone*" (WC #129, Ontario).

Team Morale: "The team coming together"

Healthcare providers reported a feeling of "coming together" as a healthcare team: "*a positive thing we saw was just the support for one another in the team and supporting each other. I think the team in some ways was closer... I think the... ICU team as a cohesive unit was supporting each other quite well*" (HCP #8, British Columbia). Interviewees also expressed gratitude for the support they were receiving from the public and community that they served; it felt good to be publicly appreciated: "*[The public] cheering for health care workers, that was most emotional for me*" (HCP #6, Ontario). Written comments also illuminated that heightened stress was causing nurses to leave ICU for other opportunities: "*Stress levels are palpably higher, morale is lower. Since COVID we have had ...RNs leave the unit for other opportunities*" (WC #263, Maritimes).

Safety: "Having visitor restrictions allows you to feel more confident"

A need to feel safe was expressed prominently by participants; interviewees expressed fear of infecting their families. Infection prevention and control practices (e.g., PPE shortages, family non-adherence to IPC practices, and/or needing education) added to the HCPs' stress.

Healthcare providers felt safer with visitor restrictions, leading to fewer infection control breaches. According to one participant, "*Having visitor restrictions allows you to feel more confident that proper PPE practices are being followed and gives you the time and space to do the work you need to do with acutely ill patients. When visitors of COVID patients come to the unit, you worry that they may also have exposure and it adds to the distress of caring for these patients*" (WC #207, British Columbia). HCPs also identified benefits of visitor restrictions including protecting families and the supply of PPE, and fewer risks to immunocompromised patients in ICU. HCP #1, for example, noted that the restrictions were "*for the safety of them [families], the patient and the healthcare providers,*" while HCP #3 highlighted that visitor restrictions were useful for "*...infection control practices and the safety of having large numbers of people coming in to visit in the intensive care unit, especially given our population is highly immunocompromised.*"

Communicating and Connecting

Interviewees described two distinct forms of communicating and connecting; the first was with patients' families and the second was within health care systems and teams.

With Patients' Families: "Everybody had a phone in their pocket"

HCPs expressed the importance of communicating with families during visitor restrictions, despite challenges, and reported spending more time talking on the phone. They identified frequency of communication with families as being inconsistent and physician-dependent but suggested that COVID-19 visitor restrictions are pushing HCPs to innovate new ways to communicate with patient families, for example, Facetime visits. Recognizing that some patients may not see family members again, HCP #7 noted "*I would make more of an effort than I technically would have to make sure that we have a Facetime, or they are allowed to talk by phone before we get all the procedures that we need to do.*"

Visitor restrictions allowed nurses to "*have a little bit more control*" (HCP #3, Ontario) over when to communicate with families, but required limit-setting, as loved ones could not be connected as much as they sometimes wanted. HCPs encountered families who would say "*connect us again, you owe us*" (HCP #1, province undisclosed). Additionally, HCPs found it hard to communicate changing policies and visitation restrictions; they wanted the healthcare system to provide a single source of information for families. When it came to connecting with their patients, HCPs found it difficult to completely understand the needs of sedated patients when families were not there to speak on their behalf.

Within Healthcare Systems and Team: "Things changing so quickly"

Interviewees reflected on the impact of communication strategies, reporting that repeated messaging, town halls, in-person communication, and electronic communication helped staff feel supported and informed: "*...when they had that information, they felt comfortable, safe, and able to work*" (HCP #2, British Columbia). However, challenges included rapidly changing information, conflicting information, and frustrated families: "*I don't think anybody would say there was a lot of consistency, but that's just a function of things changing so quickly*" (HCP #7, Ontario). Communication among members of the healthcare team was identified as being a reliable source and a source of comfort. HCPs found strength from their co-workers and being able to talk to someone who was living a similar experience.

Perceiving Family and Patient Impact

In both interviews and written comments, HCPs recognized the impact of visitor restrictions on patients and their families. They witnessed "*scared and nervous*" patients and families who could not see each other (HCP #2, British Columbia).

Families: "They are not able to come in"

HCPs perceived many families were understanding about the reasons for COVID-19 visitor restrictions, but were less prepared for changes in their loved one's health when they could not be at the bedside: "*... it was quite shocking. Even though they could kind of see them over Skype, it's not the same as seeing them [loved ones] face to face and to see the deterioration*" (HCP #8, British Columbia). HCPs empathized that, while the situation was difficult for staff, it was even more difficult for families. For example,

HCP#3, from Ontario, claimed “I couldn’t imagine how hard it would be to have a loved one in the ICU and not be able to see them or either a loved one and not being able to communicate normally with my family.”

Exceptions to visitor restrictions were made for some families, and while HCP felt strongly that exceptions should be made, the rationale for the exceptions must be clear. HCPs also recognized the frustration that families felt due to inconsistencies in information.

Patients: “We saw a higher degree of delirium”

HCPs reported distress among patients due to visitor restrictions; patients were frightened and asking for their families to visit. Family presence was recognized as valuable in calming delirium through familiar faces and voices. In the absence of family presence, HCPs reported “*a high degree of delirium*” (HCP #8, British Columbia), resulting in increased use of chemical and physical restraints: “*we’re using more drugs that ... we’ve gotten away from using things like Versed for sedation... We actually were using a lot more Rocuronium and paralyzing people. So, I think we saw a higher degree of delirium because of ... not having family or that familiar voice there and presence. ... it’s also made it harder for patients to ... come out of the delirium*” (HCP #8, British Columbia). Family presence was also noted to be a key factor necessary for understanding the patient as a person and sharing patient needs and preferences with healthcare staff. One participant stated, “*there wouldn’t be the things around the room that would remind you that there really is a patient in the bed. And their people, you know the things that make somebody them, I think that that’s what we were missing*” (HCP #6, Ontario).

In contrast, one interview participant and a minority of written comments reflected that patient care was not impacted or was positively impacted, as there were fewer interruptions to care.

Proposing Solutions with Caveats

Our third research question asked, “What solutions are identified by HCPs that can inform recommendations for PFCC during pandemic conditions?” Interviewees identified both adaptations to practice (e.g., technology as a substitute for family presence) and proposed solutions (e.g., guidelines, clear communication about policies, and cohesive team communication). These ideas included adaptations that were trialed or suggestions that could be adopted in ICU during the COVID-19 visitor restrictions.

Technology: “We were doing what we could”

HCPs adapted their practices to include technology as a solution to—but not a substitution for—family presence at the bedside. HCPs described using phone, video conferencing, and sending photos to facilitate connection and communication with families, and between patients and families: “*When patients are alert enough, we would try and Facetime video chat or Facebook messenger or find other ways to communicate and I think both patients and families felt like we were doing what we could, given the circumstances... and they were thankful for that*” (HCP #3, Ontario). Platforms included Facetime, Facebook Messenger, and Zoom, but HCPs noted this solution

was temporary and insufficient for engaging families: “*communication by phone/Skype not great substitute, but did best we can*” (WC 169, Prairies). To help patients, “*the hospital lent cell-phones to some patients, so their family and the patient could see and talk to each other through Skype, Facetime, etc.*” (WC# 393, Quebec).

Specific Guidelines of When, How to Communicate with Families: “An expectation”

Interviewees identified that both HCPs and patient families would benefit from guidance on the expectations for communication. Patient families would benefit from knowing how frequently (e.g., daily, hourly) they should expect communication from members of the healthcare team, and how frequently it was acceptable to phone their loved one’s nurse: “*an expectation or kind of a guideline... every day you will hear from your physician and you can call your nurse ... X number times per shift, I think it will be helpful perhaps both for families, but also for clinicians to have an expectation, because ... this nurse lets them call every hour, but I am only letting them call once a shift ...so it might be useful to have some kind of standardization...*” (HCP #3, Ontario).

Clear Communication with Families About Visitor Restriction Policies: “To help people understand”

Interviewees identified a need for clear communication with patient families around the rationale for visitor restrictions and what current visitor restrictions were at any given time. One interviewee stated “*There was very kind of general message on the website (about visitor restrictions), but I think it’s a bit more difficult for families of patients in ICU to appreciate those restrictions when it comes to their individual case*” (HCP #7, Ontario). HCPs wanted a “*handout or something clear from the hospital about our visitors policy*” (HCP #7, Ontario). HCPs identified that this communication with families should come from one source—ideally management.

Cohesive Team Communication (RN, MD, Administration): “One single source of truth”

Improving the cohesiveness of team communication was identified as desirable. For example, one interviewee described the volume of new information as such “*We had a lot of communication coming at us from a lot of different people... it kept changing frequently... just having clear communication from those who are making decisions would have helped, so that we could have supported it better*” (HCP #8, British Columbia). Nurses, therapists, physicians, and social workers may not be getting the same information or have the most updated guidelines. One participant commented “*visitor restrictions seemed to change daily, so always going to our Health Authority’s webpage and or asking fellow staff was helpful*” (WC #343, Prairies). Interviewees reported that these HCPs have all provided different information to families, and a single source of truth was desirable: “*...have one person ... that single source of truth would come from this person... that way you are not bombarded with... lots of different emailseveryone was well intentioned, but it got confusing when one person was sharing something that they didn’t realize was actually... yesterday’s policy and had been updated... it just caused a lot of confusion*” (HCP #8, British Columbia).

Considering End-of-Life in the Context of Visitor Restrictions

In the context of end-of-life care, interviewees acknowledged a great deal of distress when families are not let in, and the need for clear guidance around flexibility and exceptions.

Feeling Distress when Families Aren't Let In: "This is not a good end"

For patients who were dying in the ICU, HCPs noted that families had a difficult time grasping the severity of illness and extent of deterioration of their loved one. As a result, families were less prepared for discussions pertaining to goals of care, or transitions to end-of-life care: "*it's harder to make those decisions when families can't see how their loved one is doing*" (HCP #7, Ontario).

HCPs continued to hold compassionate end-of-life care as a priority throughout the spectrum of care. Before intubation, HCPs reported supporting patient-family connection, as patients "may not get to speak to their families again" (HCP #7, Ontario). At the end of life, HCPs were distressed by the lack of physical presence and the comfort this presence can provide. Seeing patients dying alone, without family, or with family watching by videoconference was particularly harrowing for many that we interviewed. Some HCPs would spend more time at the bedside during a withdrawal of life sustaining therapy, attempting to provide comfort when families could not: "*If we couldn't have family in... for some patients I would spend more time in the room when we would withdraw life support more than I typically would be*" (HCP #7, Ontario).

Needing Flexibility and Exceptions: "We did make exceptions"

While HCP identified a need for flexibility and exceptions, they also needed consistent guidance for visitation policies and when exceptions could be made. For patients who were dying of COVID-19, some ICUs allowed visitors to watch through the glass at the end of life, or allowed limited numbers of family members to be in the room with their dying loved one after being coached through proper use of PPE: "*there were other situations where if you know their loved ones were dying in the ICU, we would allow them to come in and visit, as long as their family member wasn't COVID positive*" (HCP #3, Ontario). Specifically, one interviewee described an exception made for a family member because they were an HCP perceived to be capable of donning and doffing safely. In doing so, HCPs were able to support family members, in this case colleagues, to navigate the personal issue of losing a loved one. One interviewee argued that "*not having the physical presence is substandard. I don't know if people feel that there is no real substitute for the physical presence. I think that it remains very, very difficult for everyone*" (HCP #2, British Columbia).

Discussion

We found five themes to describe the impact of visitor restrictions from HCP perspectives: 1) Impacting Healthcare Providers, 2) Communicating and Connecting, 3) Perceiving the Impact on Families and Patients, 4) Proposing Solutions with Caveats, and 5) Considering End of Life.

HCPs identified many changes to their working conditions because of the visitor restrictions, and experience of their working conditions was intricately linked with communication. Communication with families and comforting patients, in a system where policies changed frequently, added to the workload, as well as emotional burden. Yet, the HCPs in this study reinforced the importance of communication in the ICU—among healthcare teams, with families, and between families and patients. Literature shows that communication is important for PFCC, as well as the medical care of the patient (e.g., family proxy assessment of pain) (Devlin et al., 2018). Previous work has recommended early, routine, and bi-directional communications with patients and families to assess their needs and preferences, expectations around frequency and modality of communication, and to allay fears and reduce psychological suffering (Akgün et al., 2020). Our findings reinforce previous work that suggests hospital- and unit-based rules place the burden of communicating these policies upon frontline nurses (Baird et al., 2015; Hancock et al., 2020; Sasangohar et al., 2020; Wahlster et al., 2021). Additionally, we found telehealth and videoconferencing are imperfect solutions to facilitate communication between families, patients, and HCP, similar to other studies (Kennedy et al., 2020; Kettle et al., 2020; Sasangohar et al., 2021).

The description of the impacts of visitor restriction policies on patients and families, though viewed through the lens of the HCP, was particularly heartbreaking. Due to the limited communication with family, HCPs describe a lack of knowledge of the patient as a person, which is a key component of PFCC. Patients dying alone without families to comfort them, and increased delirium treated with the use of pharmacologic and physical restraints paint a harsh picture of the inadvertent consequences of visitor restriction policies. Finally, families themselves, receiving varying degrees of communication from HCPs, had difficulty understanding their loved one's condition, and were less prepared for news that their loved one was dying. The literature supports and reinforces our findings, showing that family presence is protective against delirium, is necessary to understand the patient's condition, and prevents delayed end-of-life decisions (Azad et al., 2021; Krewulak et al., 2020; Pun et al., 2021; Van Rompaey et al., 2009). Our findings contribute to the voices drawing attention to the damage done when patients are alone in the hospital and ICU due to visitor restriction policies (Canadian Foundation for Healthcare Improvement, 2020; Haines, 2020). Of note, the interviews and written comments did not appear to view family as a part of the healthcare team. This contrasts with recent recommendations from the Institute for Patient- and Family Centered-Care to view family members as essential care partners, not simply visitors (Institute for Patient-And Family-Centred Care, 2020). This emerging paradigm of families as essential care partners will require a fundamental shift in how healthcare providers conceptualize their team.

More than 52% of HCPs have experienced burnout and distress during the COVID-19 pandemic in North American ICUs (Hancock et al., 2020; Sasangohar et al., 2020; Wahlster et al.,

2021). Previous studies have identified increasing workload, changing and inconsistent communication, high intensity and emotional situations, and moral distress as risk factors for burnout (Hancock et al., 2020; Sasangohar et al., 2020; Wahlster et al., 2021). Our study particularly highlighted the following risk factors for burnout: 1) increased workload due to communication demands and emotional support for families; 2) conflicting information about visitation policies; 3) variable interpretation and application of the visitation policies; and 4) moral distress from seeing patients die alone. Our findings contribute to the need identified in similar work for hospital leadership to consider these sources of distress and work toward providing clear and consistent information about visitation policies, ongoing support and guidance for front-line HCPs in operationalizing these policies, and psychological support for those who experience burnout and associated symptoms (Canadian Foundation for Healthcare Improvement & Foundation for Healthcare Improvement, 2020; Devlin et al., 2018; Hancock et al., 2020; Wahlster et al., 2021).

The qualitative descriptive design using two sources of data from the target population strengthens our findings, as does our approach to analysis that united perspectives from a diverse team including intensivists, a registered nurse, a researcher, and two patient-family partners. While the findings of 8 interviews could be considered insufficient to reach saturation, sample size in qualitative health research is an area of conceptual debate (Malterud et al., 2016; Vasileiou et al., 2018). Qualitative researchers consider thematic saturation, contribution to answering the study questions, and pragmatic concerns such as the availability of interviewees (Vasileiou et al., 2018). We achieved saturation through deductive analysis of written comments according to the thematic framework of interview themes and subthemes. Therefore, we feel that the richness of the qualitative data and use of multiple analysts mitigates this limitation. Written comments complemented existing themes (e.g., Perceived Impact on Families: “some phone conversations are also challenging when English is not the first language of family members, as [it is] more difficult to understand each other on the phone,” and “retail stores were open and people [were] intermingling there; families [were] distraught why, in light of the public intermingling, they were still unable to see loved ones”), and elaborated on subthemes (e.g., the subtheme Managing Work Demands was expanded to describe adapting to changing roles as gatekeeper and advocate).

Having patient and family partners on our research team made us more accountable by keeping the focus on the PFCC aspect of visitor restrictions, and consistently requiring us to view these findings as only one piece of the puzzle; as such, our findings do not draw conclusions about patient and family experiences and perspectives. One patient partner encouraged us to interview patients in addition to ongoing interviews with patient family members, even though they have been (and continue to be) difficult to recruit.

Future work should include ensuring that patient and family voices are represented in the conversations to find solutions. With this goal, we are currently undertaking a national study

of patient and family perspectives on the impact of COVID-19 visitor restrictions on patient and family centred care in Canadian ICUs.

Conclusion

Our findings have the potential to optimize the Canadian health system’s response to COVID-19 and future epidemics and pandemics. If visitor restrictions are justified in the interest of infection prevention and control, then healthcare leadership should consider the impact on work demands, communication with families and within teams, and care for patients at the end of life. Participants in our study proposed solutions such as using technology as a substitute for family presence, provision of specific guidelines for when and how to communicate with families, clear communication with families about visitor restriction policies, and cohesive team communication to reduce inconsistent messaging. This work has implications for improving PFCC in the ICU even when COVID-19 visitor restrictions are eased, such as when families are geographically distant from their loved one, or when other barriers prevent them from being physically present at their loved one’s side.

Semi-structured Interview Questions for Healthcare Providers

1. Overview of session
 - a. The purpose of this project is to understand the impact of the COVID-19 visitor restrictions on patient, family, and healthcare provider perceptions of care in Canadian ICUs.
2. Use telephone consent and answer any questions they may have.
3. Interview questions
 - a. Describe **your role** and length of experience in the ICU.
 - b. **What has been the impact** of the visitor restrictions implemented on March 14, 2020, on patient care? Can you give some examples?
 - c. Can you describe **some of the changes/challenges** that have been encountered since the COVID-19 visitor restrictions (with examples if needed)? Can you suggest any solutions to those challenges?
 - d. **What are your needs** as a bedside healthcare professional during this time? (Include educational, moral, emotional, psychological, and spiritual needs)
 - e. What would be the best way to **address these needs**?
 - f. Can you share some **positive changes** that you see because of visitor restrictions?
 - g. Can you share what you think is **not working** with visitor restrictions, or what are some **negative changes** that you see?
 - h. How can we **overcome** some of the things that are **not working** or some of the **negative changes**?
 - i. Can you share what you think **needs to be improved** about visitor restrictions? What can we change to improve this?
 - j. How have visitor restrictions **changed** how you approach care of patients in the ICU?

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Appendix

Themes, Subthemes, and Illustrative Quotes from Healthcare Providers About the Impact of COVID-19 Visitor Restrictions in the ICU

1. Impacting Healthcare Providers

1.1 Managing Work Demands: "There was a lot more work for us"

...it really changed the way that I did bedside nursing, ...I felt like I was not doing ... a very important part of my job by not getting to do a full assessment without the auscultation... (HCP #4)

...increased family calls (~ every 2-3 hours) for updates – patients are stable and there is no change. We have to do COVID 19 screening to the families. They have to screen downstairs with security and a nurse. It is redundant. We recently had a family who managed to visit the patient after hours and adamantly refused to leave the patient. (HCP #1)

There was a lot more work for us since we had to make time to connect with families via Zoom ...and video calls. There was a lot of phone calls, and it was quite difficult to get through to families at times. (HCP #5)

... the staff are just so busy and trying to keep up with the workflow (HCP #8)

People constantly calling wanting updates. I think the whole team felt the pressure of trying to give more information and still balance it with, you know, being stuck in the room with all your PPE and trying to do all the patient care and everything else. I think we all felt the lack of visitors quite a bit just because it just added that extra layer of complexity onto an already intense situation. (HCP #8)

...there were no breaks. I have worked twelve hour shifts without not leaving the unit saying things that had been in place like public health is very strict about not having food or drinks at the bedside in a clinical area, which I understand theoretically. However, I can't go twelve hours without some kind of nourishment so my brain can think. I can't physically leave the floor, can't physically leave the unit. (HCP #6)

1.2 Distress: "We were treading water"

...it caused some emotional distress among all of us, for example, for a patient who we know does not have a very good outcome, we had to extend the amount of care provided to them because families were not able to see them in person... (HCP #5)

There will be so many repercussions to nurses as far as their emotional health, their psychological health. I saw a lot of people that I know dealt with it by, by drinking alcohol, by smoking more, by binge eating. (HCP #6)

...it was really hard to care for patients, especially when you knew they were not going to survive, and not to have families there, to have that connection and to have them dying alone or with only one designated person allowed to come, was really awful. (HCP #8)

...we were treading water and just trying to get through day to day. (HCP #8)

We were really all so drained from dealing with it. (HCP #6)

...it is okay to say that, you know, we value families, but right now we couldn't, and I think that's emotional support to have someone to tell you that it's okay to not do things the way you would normally do it or want to do, it was really helpful. (HCP #8)

1.3 Team Morale: "The team coming together"

[The public] cheering for health care workers, that was most emotional for me... (HCP #6)

I can't imagine what huge hospitals did, I think the strength I got mostly was from my co-workers, people that were there, and unlike those bigger centres, we really are close, all of us. (HCP #6)

The team coming together – I don't know if it's a positive change, but I think a positive thing we saw was just the support for one another in the team and supporting each other. The team in some ways was closer. (HCP #8)

We also saw a lot of support from the community reaching out with whether a seven o'clock shoutout.... seeing the public cheering and banging pots and pans for the healthcare workers and staff. I think that did a lot just in terms of appreciation for the work that was being made, was nice. (HCP #8)

I think a positive thing we saw was just the support for one another in the team and supporting each other. I think the team in some ways was closer... I think the... ICU team as a cohesive unit was supporting each other quite well. (HCP #8)

You saw people around the hospitals on their doorsteps with props and paints, that really did that for me more than anything, more than anything someone can do... yeah things like small rocks painted outside the front door of the hospital that has thank you and that kind of things, just little things like that. (HCP #6)

...nurses felt very supported, and they felt like, they were kind of protected. (HCP #3)

1.4 Safety: "Having visitor restrictions allows you to feel more confident"

...improved the supply of PPEs that we need as frontline staff, without having to worry about supplying the same PPEs to families. (HCP #1)

...infection control practices and the safety of having large numbers of people coming in to visit in the intensive care unit, especially given our population is highly immunocompromised (HCP #3)

It is for the safety of them [families], the patient and the healthcare providers. (HCP #1)

...there was a tremendous amount of concern for the bedside nursing staff, which is completely reasonable. And so, they wanted to be able to do the right thing and still be able to support patients but also keep everybody safe. (HCP #2)

...definitely think use of PPE was much more strict and probably a lot better, you know we used to have filters in all of our rooms and kept the room closed... (HCP #4)

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2. Communicating & Connecting

2.1 With families: "Everybody had a phone in their pocket"

Just a lot of time on task where people are spending a lot of time on the phone, updating... we were relying on communication, easily use of the phone, facetime, videoconference. I would say mostly at this time, we were down to the phone. Everybody had a phone in their pocket. (HCP #2)

So, there were multiple phone updates throughout the day either by nursing or physicians or other members of the health care team, that I think relatively well received given the circumstances... I think it was also clinician dependent, some were more flexible to provide more frequent update or kind of smaller update. Whereas others just wanted to provide one or two bigger updates throughout the day, and [would] kind of set up time, and the same of physician, our intensivists rotate every week, so some intensivists will make a daily phone call to every patient family regardless of their clinical status whether they were improving or deteriorating they always got a phone call, and some you know kind of stood by the, you know if you don't hear from us good news view point. So, I mean that was very clinician dependent, not very standardized, which I think could've been challenging for families who obviously don't have the same care provider day after day, it's hard to come to understand, what to expect. (HCP #3)

The other very big positive is that it has made healthcare workers, not just nurses, but especially so doctors, be able to talk to family members and that has been the best thing that's come out of COVID. (HCP #6)

The nurses I think are getting better at communicating with patients' families as well. (HCP #6)

I was cognizant before I would intubate patients that they may not get to speak to their families again, so I would make more of an effort than I technically would have to make sure that we have a Facetime, or they are allowed to talk by phone before we get all the procedures that we need to do. (HCP #7)

...now still most of my updates to families are by phone, so that actually takes more time I find, than before when I could see family at the bedside. (HCP #7)

...if we have a crazy shift in the ICU, when your patient is deteriorating and its just chaos everywhere, and sometimes ... you couldn't provide updates to family because you literally wouldn't have five minutes in your shift, you have to get a colleague to help support family. I think some nurses find it a little bit easier to not have that expectation of oh my gosh I have to go talk to the family, I have to get this done so I could go talk to the family, it's a little bit more in the nurses control, okay I am going to get this done and then I will go and call the family, so the nurses have a little bit more control, that might be one aspect where nurses finding it a bit easier. (HCP #3)

...there is a lot more time spent supporting the families. (HCP #8)

...I may spend more time on the phone in a single conversation, but for the most part, it was talking to family like one a day per family, whereas I think some of the bedside nurses that was like two, three, four times a day. (HCP #8)

I think the whole team felt the pressure of trying to give more information and still balance it with you know, being stuck in the room with all your PPE and trying to do all the patient care and everything else.

...setting up Zoom calls and video calls. There was a lot of phone calls, and it was quite difficult to get through families at times.

..we [nurses] have a bit more control over when to communicate with family.

2.2 Within health care systems and team: "Things changing so quickly"

There were numerous information overload and changing every five minutes about what we were going to do not only about the care of the patient but visitor restrictions. (HCP #6)

I don't think anybody would say there was a lot of consistency but that's just a function of things changing so quickly... Updates were usually by email and sometimes by online TEAMS meetings (HCP #7)

We had a few situations were under no circumstances would our administration allow a family, which is tough because there is a different perspective... I think it's difficult for the bedside providers to sometimes understand how the decisions were being made. (HCP #7)

3. Perceiving Family and Patient Impact

3.1 Families: "They are not able to come in"

I couldn't imagine how hard it would be to have a loved one in the ICU and not be able to see them or either a loved one and not being able to communicate normally with my family. (HCP #3)

They are missing out on a chance to say I have a really stupid question and a nurse saying there are no stupid questions... You just get a phone call. I cannot imagine. (HCP #6)

In ICU we have one set of rules, in High acuity unit there is a different set of rules, on the floor there is a different set of rules- so that's really really frustrating for visitors, who come from a long distance to see their loved ones and they are not able to come in. (HCP #2)

... it was quite shocking. Even though they could kind of see them over Skype, it not the same as seeing them [loved ones] face to face and to see the deterioration. (HCP #8)

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3.2 Patients: "We saw a higher degree of delirium"

...a number of our patients were kind of ventilated and sedated, so they couldn't communicate with us anyways and the ones that weren't, we certainly did hear about how they wanted to speak with family and that they miss their family, which is completely understandable. (HCP #3)

I don't think there is a measurable impact on patient care, as patient care was as high quality as it was prior. (HCP #2)

I think that, for patient care, like I said there were fewer interruptions. (HCP #2)

We have been seeing a high degree of delirium... I think on one hand, we're using more drugs that we hadn't, we've gotten away from using things like Versed for sedation, but because of shortages of Propofol, we ended up using a lot more Versed and just due to ventilation requirements. We actually were using a lot more Rocuronium and paralyzing people. So, I think we saw a higher degree of delirium because of... not having family or that familiar voice there and presence. I don't know for sure, but my guess is that it's made the delirium worse. And it's also made it harder for patients to kind of come out of the delirium, so I think it's been prolonged. (HCP #8)

Often family are very helpful for patients who are delirious, for example they have been extubated in ICU or older patients. I think that's one area where the lack of family presence has really impacted care, because all of the non pharmacologic stuff that we often do to help with delirium, one of the key things is family presence and re-orientation that kind of thing was totally lost. (HCP #7)

...hard for us to a hundred percent understand the patient's needs, and this is both within and without a pandemic context. (HCP #3)

...it's really hard for us as nurses as well because when we wouldn't have these interactions with COVID-19 patient families that we would normally have had, so in other words, there wouldn't be the things around the room that would remind you that there really is a patient in the bed. And their people, you know the things that make somebody them, I think that that's what we were missing. (HCP #6)

But what helps the patient, if you look at like any theory of nursing, the patient is the center, but nobody just lives singularly. ...That's what's missing, the family definitely is, if you're looking at how can I help this patient get better and go home. (HCP #6)

It was hard not having family there to verify or to help calm patients when they are in delirious state, that was very hard being that they were dealing with staff behind masks and behind respirators I think it's said to the delirium not having people who they knew, and familiar faces and familiar voices, I think made the delirium worse. (HCP #8)

4. Proposing Solutions with Caveats

4.1 Technology: "We were doing what we could"

When patients are alert enough, we would try and face time video chat or Facebook messenger or find other ways to communicate and I think both patients and families felt like we were doing what we could, given the circumstances that we are trying to accommodate them, and they were thankful for that. (HCP #3)

We had to find alternative means to communicate like Facetime, Facebook messenger, and video chat as we could, I also think we had more a higher phone calls coming in from families, which I don't think from my experience any nurse or physician certainly was up front of it. (HCP #3)

...we do have iPads, where they (patients) can actually talk to their loved ones (HCP #6)

We did use Skype or Facetime with families... so having resources to do that, having tablets that were capable of doing that, I mean we obviously did not have one per patient, I think our unit has three or four. ...we need more of them [tablets] because I don't know if we were Skyping with families often enough for them to actually see patients. (HCP #8)

...it is really challenging when you let them see him [patient] for like five minutes [via tablet] and it's okay, I need to hang up because another patient needs the tablet, but if we had more just to be able to let them be on and be able to visit with the patient even if the patient could not talk, just so they could see them longer have been helpful in alleviating some of the anxiety. (HCP #8)

...Facetime video chat or Facebook messenger or find other ways to communicate... I think both patients and families felt like we were doing what we could. (HCP #3)

4.2 Specific guidelines of when, how to communicate with families: "An expectation"

...an expectation or kind of a guideline of you know every day you will hear from your physician and you can call your nurse you know, an X number times per shift, I think it will be helpful perhaps both for families, but also for clinicians to have an expectation, because I also heard you know just between colleagues, oh well this nurse lets them call every hour but I am only letting them call once a shift, if there is nothing to tell them, I don't need to talk to them, so it might be useful to have some kind of standardization within that. (HCP #3)

Our restrictions have since changed, where we allow a very limited number of family members in the ICU for a specific time slot, and I think having those expectations, or to kind of have prior knowledge of this is my three-hour window to visit my loved one, and it has to be booked as much as it can be twenty-four hours in advance. (HCP #3)

.. when I do my rounds and not having families around... it was a conscious effort to just remember that I don't see family around, but they still need updates. (HCP #8)

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4.3 Clear communication with families about visitor restriction policies: "To help people understand"

There was very kind of general message on the website (about visitor restrictions), but I think it's a bit more difficult for families of patients in ICU to appreciate those restrictions when it comes to their individual case (HCP #7)

I often found myself having to apologize for you know what we all thought was a really hard policy (HCP #7)

...a media campaign in general because I mean the visitor restrictions weren't solely for critical care, they are for the whole hospital ... maybe having the health authority or the site do a media release [most up to date visitor restrictions] ... to help people understand... why we are doing the things that we are doing. (HCP #8)

4.4 Cohesive team communication (RN, MD, administration): "One single source of truth"

Our social work team did an extraordinary job of kind of, you know they are hardworking, but setting up to help more patients and families, have the ability to communicate with hospital staff a bit more and understand what's going on and organizing kind of video chats with patients and families. (HCP #3)

...if there was something clear and blanket that would have been helpful (HCP #7)

...we had huddles that were done in our unit by one of our psychiatrists to help build resilience... it was really important (HCP #8)

...communication has to be improved during sort of times of pandemic or stress issues in general. We had a lot of communication coming at us from a lot of different people... it kept changing frequently... just having clear communication from those who are making decisions would have helped so that we could have supported it better (HCP #8)

...have one person identified to you know, that single source of truth would come from this person... that way you are not bombarded with... lots of different emails ... everyone was well intentioned, but it got confusing when one person was sharing something that they didn't realize was actually... yesterday's policy and had been updated... it just caused a lot of confusion (HCP #8)

Having that one single source of truth was really, really important. We actually helped people get on to their email so they could check their email from home (HCP #1)

5. Considering End-of-Life in the Context of Visitor Restrictions

5.1 Feeling distress when families aren't let in: "This is not a good end"

What family members missed by not being at the bedside, they miss. Even people with very limited knowledge of health, or that have not had anybody in their family ill. And they come to see their loved one. And they have been with their loved one maybe for the course of a couple of days, and then the loved one gets worse. And they make the decision to put them on a ventilator, and then they see the patient actually getting sicker in that we might be adding more medication or there's more treatments or they're not seeing their family member respond whatsoever. They get it, they see that this is not a good end, that there is no good end in sight. And you don't even have to explain that to them. (HCP #6)

It just takes a human mind to know that your loved one is very ill. And by not letting them see that or seeing the hustle and bustle even in the unit. They are missing out on those cues. (HCP #6)

In terms of making care decisions, it changed quite a bit, because you know you often have family meetings and we'll have families actually present so you can touch base with them and see, so it's harder to make those decisions when families can't see how their loved one is doing... We had people dying alone without any family watching or with family watching by facetime which is totally different than anything we have experienced before. (HCP #7)

If we couldn't have family in, then we would try again to use technology... for some patients I would spend more time in the room when we would withdraw life support more than I typically would be (HCP #7)

We all felt the lack of visitors quite a bit just because it just added that extra layer of complexity onto an already intense situation. (HCP #8)

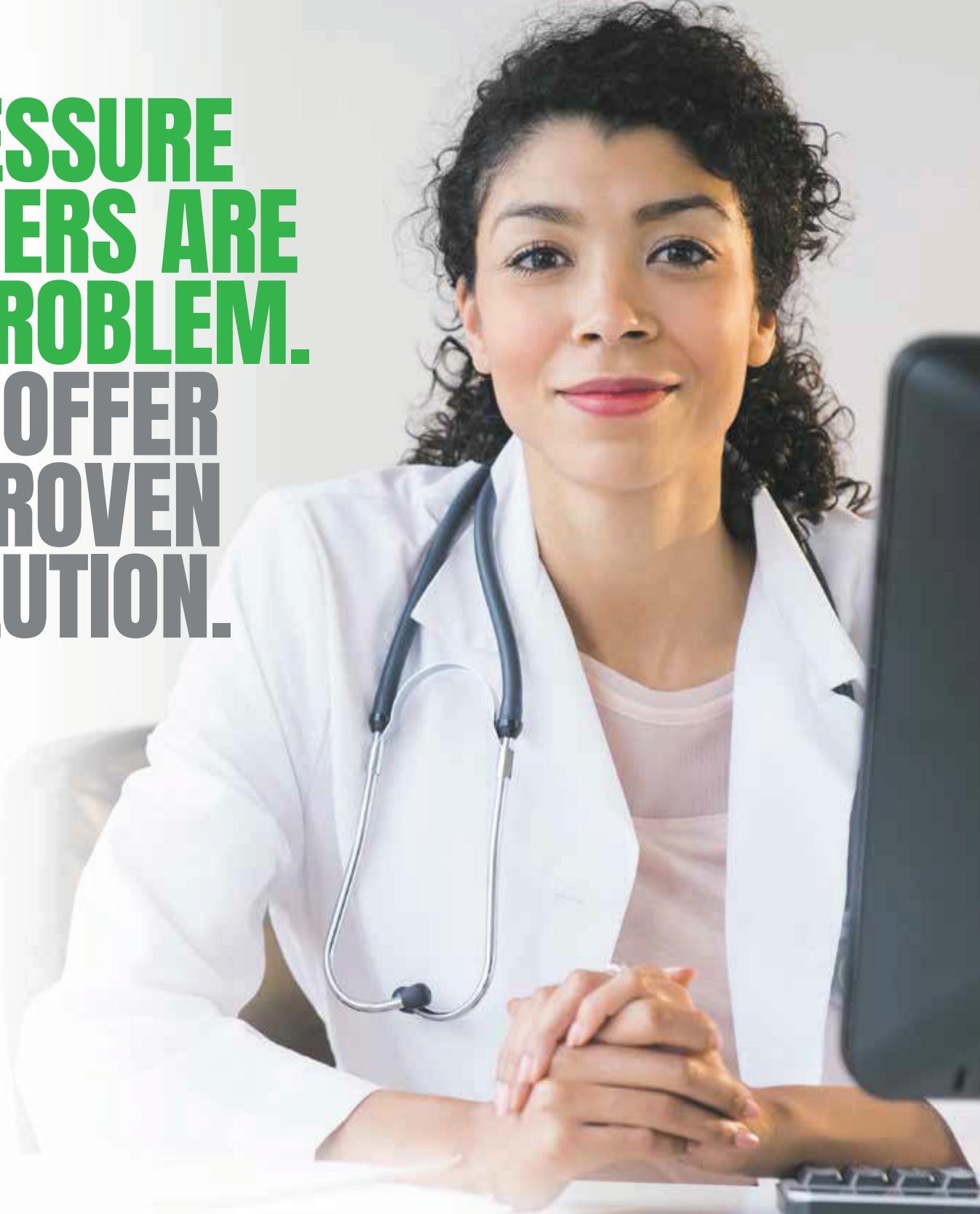
5.2 Needing flexibility and exceptions: "We did make exceptions"

...I just found that sometimes the discussions were maybe take a bit longer and maybe you would come to the same decisions, for example, for withdrawal of life or life sustaining therapy ... you would need to do it a few days later than you might otherwise because the family can't see ...their loved ones until we actually extubate them and withdraw and sometimes you know it's really hard to understand how exactly sick they are. (HCP #7)

we did make exceptions at end of life care to have families come in, or at least a designated person, so one visitor allowed in, so I think it was quite shocking [for families]... there's some patients that had no visitors for you know, four-six weeks and they were only allowed to visit because they were dying, and I think although we are talking on the phone daily, that was really hard for families because they couldn't see the deterioration... (HCP #8)

...there were certainly some circumstances where ... we wanted them [families] to come in, especially for COVID patients but we just we could not, given the COVID positive status of their family members, there were other situations where if you know their loved ones were dying in the ICU, we would allow them to come in and visit, as long as their family member wasn't COVID positive and we just were very diligent to make sure that they were safe and they had PPE (Personal Protective Equipment), and you know they stayed right where within their family member for a very limited amount of time. (HCP #3)

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