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Volume 34, Number 4, Winter 2023

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CANADIAN
ASSOCIATION OF
CRITICAL
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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 scholarship, education, and networking providing 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

From the Desk of the Chief Editor

As 2023 draws to a close, we at CJCCN continue to change and grow. This quarter was particularly challenging for our editorial team, as we are a team of volunteers who, like many of you, are also juggling multiple demands. The impact of the resurgence of COVID, changes in structure and organization, and resources have all led to the significant delay in the production of this issue of the journal. For this, I apologize.

In this edition, we are enclosing the Call for Abstracts for the Canadian Critical Care Nursing Conference, which will be held in Regina, Saskatchewan September 23–25, 2024.

We are seeking papers for a supplementary journal, **Cardiovascular & Critical Care Nursing: Connections to Care**, a collaboration between *Canadian Journal of Critical Care Nursing* (CJCCN), and the *Canadian Journal of Cardiovascular Nursing* (CJCN). Consider adding to this exciting collaboration! All the information you need is in the Call for Submissions.

We are pleased to add another new, ongoing series to support those working directly in critical care units. This series by Dr. Michelle House-Kokan will address precepting in ICU. We are confident this will resonate with many of our readers.

As part of our ongoing partnerships, we have an article from our partners at ISMP in the Medication Safety Practice Corner entitled “Preventing Errors with Intravenous Acetylcysteine.” Practice Pearls by Brenda Morgan will focus on cranial nerve assessment, and this is the second of a three-part series to support direct care providers.

Within this issue, there are three manuscripts, one by Dr. Erika MacIntyre and team to support those caring for patients who require prolonged mechanical ventilation (PMV), and a manuscript by Dr. Olivier Gobeil and his team who are sharing an innovative study that evaluated the use of virtual windows to limit the occurrence of delirium. We are happy to offer a French manuscript by Mylène Suzie Michaud, entitled “Quelles sont les barrières à la prise en charge des personnes ventilées? Perspective des infirmières et infirmiers aux soins intensifs.”

Finally, we are always looking for subject matter experts to serve as peer reviewers. If you have an eye for detail, have earned, or are in the process of earning a graduate degree in nursing, and would like to contribute to the knowledge and science of critical care nursing, please contact me, with your resume outlining your expertise. If you are fluent in both official languages of Canada, please consider volunteering to support the mandate of offering bilingual content in CJCCN. Your name will be added to our list of experts, and you may be called upon to review 1–2 manuscripts per year.

We welcome your feedback at any time. Please email “To the Chief Editor” at cjccneditor@caccn.ca

I wish you a safe and peaceful holiday season.



Asha Pereira, RN, PhD
Chief Editor, Canadian Journal of Critical Care Nursing™
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Precepting in critical care: Building the future of critical care nursing

By MICHELLE HOUSE-KOKAN, EdD, MSN, RN, CNCC(C), CCNE, AND SIMMIE KALAN, MN, RN, CNCC(C)

Abstract

Precepting new graduate nurses and experienced nurses new to the critical care specialty is vital to supporting the growth and development of the critical care nursing profession. However, in today's healthcare and social climates, together with the ongoing global shortage of nurses, preceptors often have little preparation or support for this crucial role. This article is the first in a series

that aims to support new and experienced critical care nurse preceptors as they guide those who will be the future of critical care nursing.

Keywords: clinical education, preceptor, precepting, teaching and learning

House-Kokan, M., & Kalan, S. (2023). Precepting in critical care: Building the future of critical care nursing. *The Canadian Journal of Critical Care Nursing*, 34(3), 6–8. DOI: 10.5737/23688653-3446

With the current health human resource crisis locally and across the globe, the role of preceptors is more vital than ever in developing novice critical care nurses. Preceptors are essential to nursing education, required to build and retain the nursing workforce at all levels of healthcare. It is common for critical care nurses to preceptor both new graduates and experienced nurses new to the specialty while simultaneously caring for their critically ill patients. In the context of a complex healthcare environment and social awareness climate, the additional responsibility for educating these nurses requires health organizations to support the ongoing growth and development of critical care nurses as preceptors and recognize the importance of this role in retention and recruitment.

What is precepting?

Preceptors are experienced clinicians who act as teachers and coaches while supervising nursing students, graduates, and nurses new to a specialty area during clinical rotations. They help students translate theoretical learning to real-world clinical practice to meet clinical objectives and deliver safe, quality patient care (Oermann et al., 2021). As such, the preceptor acts as the link between new nurses and the unit, helping them better understand factors such as standard care practices, policies, procedures, members of the healthcare team, interprofessional communication, and even the unit's culture. The preceptor wears many hats in helping new, inexperienced, or student nurses onboard and acclimate to their new surroundings: role model, socializer, supporter, listener, educator, confidante, and evaluator (Choi & Yu, 2022; Ulrich, 2019).

Who should do it?

The role of the preceptor is important and impactful. The preceptor holds the power to help the newest members of the profession and specialty become successful, competent, and confident critical care nurses. It requires an empathetic, caring, and knowledgeable person to be a successful preceptor, and the role may not be for everyone. Aside from having appropriate clinical competence, evidence shows that some of the most important qualities of preceptors include being intrinsically motivated with an enthusiasm for teaching, possessing an

ability to provide encouragement as well as an ability to constructively provide feedback, resourcefulness, and a passion for the profession (Loughran & Koharchik, 2019). Advanced clinical knowledge is helpful but not always necessary if the preceptor is able to teach or guide clinical reasoning and clinical decision-making skills.

What are the benefits of being a preceptor?

In terms of the critical care nursing profession, preceptors play a vital role in addressing the nursing shortage in the specialty. They enable the expansion of student enrolment in undergraduate and critical care programs, thereby playing a direct role in the profession's growth. Precepting also provides an opportunity to pay forward the dedication and assistance from one's past preceptors by sharing knowledge and clinical stories with future generations of nurses. Precepting not only helps develop teaching and communication skills, but also strengthens one's own practice through knowledge-sharing and the explanation of one's thinking processes and clinical reasoning to learners (Caputi, 2023). Further, precepting is a powerful way to develop leadership skills and enhance a professional resume by demonstrating a willingness to lead, commitment to lifelong learning, and dedication to improving healthcare. Finally, precepting can help renew a passion for critical care, nursing, and healthcare. A new critical care nurse or student brings a sense of enthusiasm and motivation to the unit, which can be inspiring and reenergize a nurse's commitment to the unit and specialty. Preceptors may feel renewed by this unique opportunity for professional collaboration.

What does it involve?

As a teacher, support, and coach, a preceptor has many roles. Preceptors need to establish a trusting relationship with their learners while at the same time considering appropriate teaching and learning strategies and approaches. They need to role model and support effective interprofessional communication with the patient, family, and learner. Preceptors must also offer timely and effective feedback, evaluation, and problem solving.

Finally, this must all be accomplished in a way that respects and cultivates diversity, equity, and inclusion to promote a culturally safe space for learning and healing for all (Ulrich, 2019).

So, where to start? A preceptor should understand the learner's experiences, knowledge, and perspective, as it will help establish a strong teaching-learning relationship. Transition shock, the disorienting experience of discovering that the reality of the profession is very different than expected, can arise when an individual moves from the familiar role of nursing student to professional registered nurse (Duchscher, 2009). It can occur over the first few months of practice and often impedes or even prevents a successful transition to practice. Even experienced nurses moving into the critical care specialty shift from an "expert" stage of professional practice back to a novice stage (Jack et al., 2019), a disorienting shift that can also result in transition shock. Preceptors play a key role in mitigating the negative effects of transition shock by assisting the learners in getting situated in the unit, helping them establish connections and relationships, guiding critical thinking, problem-solving, and priority-setting, and normalizing the transition process by sharing their stories. For example, reflecting on and sharing one's own beginning in critical care establishes connection and trust with the learner and helps ease transition shock. Setting clear shared goals and expectations, while providing a supportive place to ask questions, also helps to establish the relationship between preceptor and learner and mitigate the disorientation of transition shock. One way to do so is to inquire into any worries the learner has prior to beginning and address how those concerns will be navigated while still reaching set learning outcomes and goals. Additionally, having the learner identify their strengths and how they will leverage them in difficult situations will build confidence and awareness into what they do well.

Considering the learner's level of experience is also important in choosing teaching strategies. Like most adult learners, preceptees are often experiential learners who prefer an active, collaborative role in the learning process. Thus, understanding adult learning principles assists preceptors in selecting the most appropriate teaching strategies. For example, adults need to know why they are learning something; they are motivated to learn by the need to solve a problem. Adults build their knowledge on previous experience, so preceptors should respect this experience and link new learning to what their learner already knows and understands, particularly if they are already an experienced nurse. Finally, learning approaches should align with adults' diverse backgrounds, so their differences in learning styles or cultural teaching-learning relationships can guide the approaches used by a preceptor (Merriam & Bierema, 2014). Foregrounding adult learning principles highlights several points about learning that preceptors should keep in mind. For example, since effective learning involves participation, repetition, and reinforcement, the learner needs to care for a patient with a particular diagnosis or perform a procedure in a hands-on experience in order to learn. In this process, some learners will learn quicker than others, requiring preceptors to be patient, reinforce the concept, and find another way to teach, if necessary. Using a variety of teaching and learning methods will enhance learning retention. For example, by using

modeling, preceptors demonstrate both clinical skills and clinical reasoning to their learners, allowing them to notice how theory is used to guide patient care. Observation is another teaching strategy where the preceptor and learner observe each other in the provision of care. Thoughtful, direct questioning fosters critical thinking skills and provides insight into the learner's knowledge base and clinical reasoning. However, it is crucial not to do so in front of patients or staff, or create stress that makes it difficult for the learner to concentrate or feel safe in the learning relationship. Questions such as "What do you think?" and "Why do you think that?" stimulate reflection skills and critical thinking, allowing deeper learning. Similarly, a 'think-aloud' method can also foster clinical reasoning skills. Lastly, coaching learners by providing verbal cues during procedures provides opportunity to build skills in the clinical setting in a supportive way.

Assessment and feedback

A crucial responsibility of the preceptor is providing timely feedback and evaluation. The preceptor should provide frequent and ongoing feedback throughout the preceptorship period. Feedback and a brief discussion should occur at the end of each clinical shift, if possible. This not only provides learners with information on how they are progressing, but also allows them to reflect on and discuss the care they provided, the goals they have achieved, and identify future goals. Effective feedback is not judgemental, but reinforces what has been done well and what needs to be further developed. Involving the learner in the feedback process develops self-reflection and self-assessment, promotes trust between preceptors and learners, and enhances the effectiveness of the feedback (Loughran & Koharchik, 2019). Feedback should be objective, honest, and constructive, and focus on the performance of the learner, not their personality. The preceptor should be intentional and specific about the change that is needed and why it is important, with both the preceptor and the learner working together to devise strategies to improve. Preceptors also provide summative feedback in which they evaluate the learner at pre-set times during the experience. This type of feedback focuses on reviewing the goals and objectives of the preceptorship. As an effective preceptor will have provided ongoing feedback throughout the clinical experience and addressed any concerns as they arose, there should never be any surprises for the learner in the summative evaluation. Evaluations should always be held privately and provided in a timely, professional, and empathetic way (Caputi, 2023). It is also important to the learning relationship that the preceptor ask for frequent feedback on their communication, teaching approach, and opportunities to improve the learner. Doing so supports an equal partnership between preceptor and learner as well as encourages ongoing professional growth.

When things don't go as planned

Feedback can be both positive and negative. Learners can struggle during their preceptorship for many reasons. In this case, the role of the preceptor is to identify and articulate concerns, and inquire with genuine curiosity about the learner's experience and perspective. Is the patient assignment too difficult?

Is the learner too anxious, causing them or their thoughts to freeze? Are they too tired, or do they have another contextual reason for not managing? Is the learner having difficulty with prioritizing care, clinical reasoning, or do they have a knowledge deficit related to the patient's case? Once the issues are identified, the preceptor and learner can work together to address them. The preceptor may need to reassess the patient assignment: is it appropriate to the learner's level? Is it focused and based on the learning goals? The preceptor should communicate with both the responsible educator and the learner, being honest, transparent, objective, and clear in identifying the needed change. A learning plan with clear objectives and a step by step process for meeting them should be developed in collaboration with the learner, having them identify their own strategies to meet the competencies. Preceptors can also consider other modalities to assist learning, such as simulation, role play, observation, or case studies. Regardless of what the

challenges are, all issues should be discussed early and clear expectations set for the required changes and needed supports for both the preceptor and learner. Preceptors should reach out for guidance from a responsible educator or mentor to ensure all avenues have been discussed and effective strategies are in place.

Conclusion

In the context of the current global nursing shortage, as well as the complexity of the critical care environment, precepting is an essential part of developing the future generation of critical care nurses. Effective preceptors help grow the numbers of new critical care nurses and promote their success in, and commitment to, their chosen profession. This invaluable role benefits all participants: the learners, the preceptors themselves, the healthcare teams, and the patients and families.

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Key learnings: Preventing errors with intravenous acetylcysteine

BY CAROLYN HOFFMAN, RN, SYLVIA HYLAND, RPH, MARY HARBER, RN, AND LYNN RILEY, RN

Hoffman, C., Hyland, S., Harber, M., & Riley, L. (2023). Medication Safety Practice Corner: Key learnings: Preventing errors with intravenous acetylcysteine. *The Canadian Journal of Critical Care Nursing*, 34(3), 9–10. DOI: 10.5737/23688653-3449



Report a med error

In this regular column, ISMP Canada will feature a critical care-related medication story and share practical learning for critical care nurses.

ISMP Canada received three reports of death or severe harm involving intravenous acetylcysteine (also known as N-acetylcysteine) overdose related to one type of error—continuation of the loading dose IV infusion rate instead of reduction to a lower rate for the maintenance dose. All resulted in a 10-fold dosing error. An alert was published in 2022, and a follow-up safety bulletin in 2023 shared findings from a multi-incident analysis with recommendations (ISMP Canada, 2022 & 2023). There are many protocols/regimens in use across Canada for the preparation and administration of acetylcysteine, each with potential benefits and risks. This column shares key findings and several strategies to support the safe administration of acetylcysteine. Critical care nurses' specialized expertise in patient monitoring and fluid management is vital for optimal care outcomes.

Reported Incident Example

A patient arrived at the hospital with acetaminophen poisoning. IV administration of acetylcysteine was ordered, and the medication was promptly administered using a protocol that calls for a loading dose, followed by a maintenance dose from the same infusion bag, but at a slower rate. The loading dose was completed, and the maintenance dose was incorrectly programmed to continue at the same rate as the loading dose. The error was noticed when the patient experienced nausea, vomiting, and seizures. The patient subsequently died (ISMP Canada, 2022).

Discussion

Certain medications, like acetylcysteine, are delivered multi-step, using two- or three-dose regimens. In this incident example, the nurse followed an intravenous acetylcysteine protocol that used a one-bag, single-concentration regimen with two steps (i.e., two infusion rates). The nurse had to manually reprogram the pump to administer the maintenance dose after completion of the loading dose. During the programming of the maintenance dose, the pump presented an option to continue the loading dose rate, which increased the likelihood that the incorrect rate would be programmed (ISMP Canada, 2022).

Key risks with acetylcysteine are related to the total amount of medication and the total fluid volume available in an acetylcysteine infusion solution. Given that acetylcysteine for IV administration is often prepared in 5% dextrose in water (D5W), an over-infusion can cause fluid overload, potentially resulting in hyponatremia. The use of a 1-litre bag of dextrose 5% in water (D5W) for administration of acetylcysteine in lower-weight patients increases the risk of harm.

The practice tips below highlight strategies to reduce risk with acetylcysteine administration.

Key Practice Tips

For frontline nurses

- Access the hospital/health region standardized order set and ensure understanding of IV pump setting directions.
- If the poison centre is consulted, ensure that the poison centre has a copy of the standardized order set. Confirm a mutual understanding of the dose being delivered and the next steps.
- Check that smart pump drug libraries include acetylcysteine, with applicable parameters established according to specific directions in the standardized order set.
- Perform an independent double-check process when determining, verifying, and preparing doses and programming the smart pump.
- Engage the family/caregiver/patient in the plan of care. Specifically, explain the medication delivery process and the timeline for infusion. Ask them to report any observed changes in the patient's condition.
 - Signs and symptoms of an acetylcysteine infusion overdose occur early and can include symptoms also associated with hyponatremia. These include confusion, irritability, restlessness, intractable vomiting (despite being given an antiemetic), altered level of consciousness, and/or seizure.
- Consider an infusion error when status changes or new symptoms occur.
- Be aware that lower-weight patients, such as young children (and possibly lower-weight adolescents), are especially vulnerable to the effects of an acetylcysteine over-infusion.

- Ensure ongoing patient monitoring and reporting of abnormal findings to the most responsible physician (MRP). Monitoring includes ongoing bloodwork related to standardized orders, prompt review of results, and signs and symptoms of overdose.
 - If an over-infusion is suspected, take the appropriate actions and seek guidance from the local poison centre.
- At all transfers of care, assess the prescriber's order, the step of the standardized order set in progress (i.e., loading or maintenance dose), and ensure that the IV infusion dose rate/duration has been programmed correctly. Review the critical monitoring parameters together (transferring and receiving nurses) for a common understanding.

For nursing leadership

- Ensure there is a standardized order set, developed with nursing input, to reduce the risk of errors associated with IV administration of acetylcysteine and to ensure a mutual understanding among care team members (including prescriber, nurse, pharmacist, poison centre staff, patient, and family) of how acetylcysteine is being provided and monitored.
 - Include monitoring parameters for early signs of infusion overdose (e.g., headache, confusion, nausea and vomiting, irritability, disorientation, decreased level of consciousness, seizures).

- Ensure acetylcysteine is included in infusion pump drug libraries with specific regimens for adults and pediatric patients.
- Ensure that the intravenous (IV) bag size used to prepare the acetylcysteine dose is appropriate for lower-weight patients at increased risk of harm from fluid overload.
- Provide frontline nurses with ongoing education on smart pump functionality and multi-step infusions.
- Develop a timely process to support nurses when incorrect or missing drug library settings or other related issues are identified and a clear process to remedy the concern.
- Review instances of “no drug selected” and pump override reports to identify quality improvement opportunities.

This **ISMP Canada Safety Bulletin** provides additional information and recommendations for the safe use of acetylcysteine infusion.

Shared learning leads to quality improvement. Every report to ISMP Canada's **Individual Practitioner Reporting program** provides an opportunity to learn and share improvement strategies to strengthen intravenous infusion safety.

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PRACTICE PEARLS

Pupillary light reflex

By BRENDA LYNN MORGAN, MSc, RN, CNCC(C)

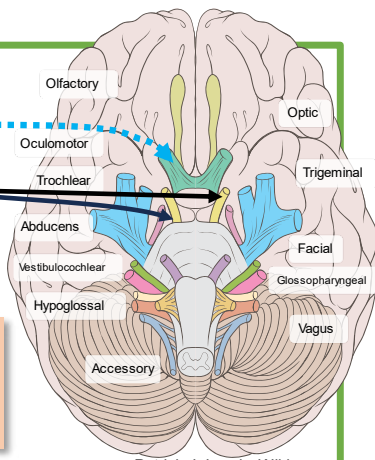
What pair of Cranial Nerves are being tested?

Optic Nerve (CN II)

Light is carried via CN II (sensory nerve).

Oculomotor (CN III)

Both CN III (motor nerves) are automatically stimulated by light reflex. This causes *bilateral* pupillary constriction.

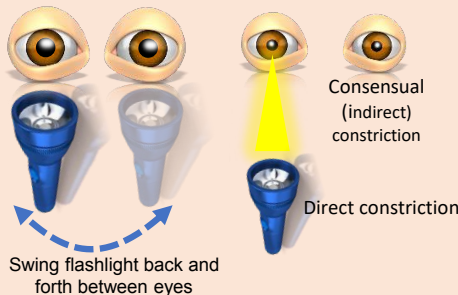


Patrick J. Lynch, Wiki

TESTING STEP ONE: Assess size and symmetry.

Have patient open their eyes or hold patient's lids open if unable. Assess size, shape and equality of pupils to ambient room light. Record the size in mm.

TESTING STEP TWO: Assess for direct and consensual constriction to light. Observe briskness.



CN III defect is presumed if a pupil *fails to constrict* to direct and consensual light, or if one pupil is larger than the other or sluggish. Urgent intervention is needed if present with other neurological change or concern. Pupil constriction is a parasympathetic nervous system function.

Dilation of a pupil to direct light but constriction of that pupil to consensual light suggests an afferent defect (input problem) versus CN III compression. Hippus is the alternating constriction and dilation of a pupil. It may or may not indicate pathology (such as seizure or raised ICP).

Horner's Syndrome causes constriction of the pupil on the affected side. It is caused by unilateral sympathetic disruption (sympathetic system causes pupillary dilation). The affected pupil is smaller and unable to dilate in the dark. The normal pupil is larger and may be mistaken as being inappropriately dilated pupil.

- A. Light source enters (1)
- B. Light enters pupil and crosses to the contralateral retina (red and green arrows)
- C. Light input is transmitted from the retina via the optic nerves (CN II). Input from the nasal visual field is carried along the lateral tract (thick red). Light from the temporal visual field crosses again at the optic chiasm to the contralateral hemisphere (thick green).
- D. Pretectal nuclei (4) in the midbrain are stimulated bilaterally (by both the nasal and temporal field pathways).
- E. Stimuli are carried via interneurons (thin red and green arrows) to the Edinger-Westphal nuclei bilaterally (5).

- F. Both the left and right oculomotor nerves (CNIII) are activated (dotted purple lines).
- G. The input is carried bilaterally via both CN III to the ciliary ganglia (6).
- H. The ciliary nerves exit the ciliary ganglia (7) and carry the stimuli to both pupillary sphincters to cause **bilateral** pupillary constriction.

Pathway for Pupillary Light-Reflex
Morgan, Brenda 2023

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CALL FOR
ABSTRACTS



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CANADIAN CRITICAL CARE NURSING CONFERENCE 2024

Delta Regina, Regina, Saskatchewan
SEPTEMBER 23 TO 25, 2024

The **Canadian Association of Critical Care Nurses (CACCN)** is now accepting abstract submissions for the **Canadian Critical Care Nursing Conference 2024**, the premier Canadian national critical care nursing conference to be held at the **Delta Regina, Regina, Saskatchewan** from **September 23 to 25, 2024**.

IMPORTANT DATES

Submissions Open

January 2, 2024

Submissions Deadline

February 29, 2024



PRESENTATION TYPES

ORAL

- **Fast and Focused:** Designed to speak to a well-defined, singular topic (45-minute session).
- **Concurrent:** Designed to deliver a more in-depth presentation about a topic or topics (60-minute session).
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Identify the patient population of the proposed presentation (i.e., pediatric, adult, mixed).

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Oral and poster presentations must reflect current, evidence-based, evidence informed, best practices. Clearly describe the content of the presentation/poster, identifying key points and relevance to critical care providers, high-acuity health care professionals and the interprofessional team.

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invite submissions for
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*Cardiovascular & Critical Care Nursing:
Connections to Care***

The CJCN and CJCCN are pleased to announce the call for papers for a special collaborative themed issue on cardiovascular and critical care nursing. We invite researchers, clinicians, educators, and administrators to consider submitting short reports on novel research projects, clinical/practice, education, or administrative-related topics related to cardiovascular and critical care.* Accepted papers will be published in a themed issue of the CJCN & CJCCN.

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*Please direct queries/submissions to **Dr. Asha Pereira, Chief Editor, CJCCN at cjccneditor@caccn.ca**

Best practice in prolonged mechanical ventilation: A qualitative study of healthcare provider perspectives

BY MATTHEW MUNAN, MSc, HARLEEN CHEEMA, BSc, KIMBERLY SCHERR, NP, RN, KEVIN SOLVERSON, MD, MSc, FRCPC, SARAH K ANDERSEN, MD, MS, FRCPC, AND ERIKA MACINTYRE, MD, FRCPC

Abstract

Background & purpose: Patients who require prolonged mechanical ventilation (PMV) are a relatively small, but complex and vulnerable subset of patients treated in the intensive care unit (ICU). Significant heterogeneity in practice patterns exists and best practice is largely unknown. The goal of this study is to engage healthcare providers (HCPs) to identify and describe best care practices for patients requiring PMV.

Methods: A qualitative descriptive method was used. Using purposeful sampling, we recruited medical doctors (MD), nurse practitioners (NP), registered nurses (RN) and respiratory therapists (RT) from hospitals across Alberta to participate in virtual, semi-structured interviews. Interviews were recorded, transcribed verbatim and analyzed concurrently using the principles of thematic analysis.

Results: We identified five best practice themes: 1) patient and family engagement, 2) team dynamics: collaboration and autonomy, 3) developing a structured plan and process, 4) ICU physical environment, and 5) discharge and disposition. Overall, these themes represent a collaborative approach to PMV that includes structured planning and comprehensive care.

Conclusion: Patients requiring PMV are a complex clinical population with unique needs. The themes identified can be adopted in existing ICU environments and can guide the expansion of high-quality PMV programs.

Keywords: prolonged mechanical ventilation, healthcare providers, qualitative description critical care medicine, patient-centered care, intensive care unit

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Implications for Nursing

- Best practice for patients on prolonged mechanical ventilation is poorly defined.
- This qualitative study identified five best practice themes from interviews with healthcare providers that can be implemented and improve care for this population.
- The themes of improved patient and family engagement, collaboration and autonomy within the healthcare team, and developing a structured plan and process are not costly and can have a significant impact on patient care.
- Optimizing the ICU physical environment and post-critical illness care will require future resource allocation and will not occur without supporting evidence.
- Research studies like ours are needed so resources can be appropriately allocated by policymakers and providers, along with a greater standardization of high-quality care practices for patients and their families.

Introduction

Invasive mechanical ventilation (IMV) in patients with respiratory failure is a common practice in the intensive care unit (ICU). The majority of these patients are extubated early upon recovery from acute critical illness. However, approximately 5-10 percent of these patients require prolonged mechanical ventilation (PMV) (Lamas, 2014). This term has been variably defined as ≥ 96 hours to ≥ 21 days of IMV (Rose et al., 2017). These patients have long ICU stays and often have multiple complex respiratory and non-respiratory care needs.

The standard ICU model may be insufficient for this population and negatively impact patient care. This is due to the nature of ICU, which is fast paced with intensivists changing weekly and prioritization is given to high-acuity patients (Nelson et al., 2010, Minton et al., 2018).

Liberation from the ventilator, referred to as “weaning,” is often the primary goal for this population in an ICU setting. There are few guidelines and consensus statements available to assist health experts (MacIntyre, 2004; MacIntyre et al., 2005), with significant variability in clinical practice (Ambrosino et al., 2018; Rose et al., 2015; Burns et al., 2021; Kahn et al., 2018; Rose, Blackwood, Burns et al., 2011; Vitacca, 2011). While liberation from mechanical ventilation is important, there is increasing recognition and attention directed to other aspects of the patient’s care including nutrition, mobility, psychosocial factors, and discharge planning (Minton et al., 2018).

A recent ethnographic study by Rak et al. (2020) examined PMV-related care practices and organizational structures that were associated with outcomes of mortality, liberation from mechanical ventilation and functional status. Protocols and pathways were a key theme identified. However, additional aspects of interdisciplinary care approaches and organization practices such as interprofessional communication, lower staff-to-patient ratios and leadership are also needed. There is a paucity of literature in this field. Therefore, we aimed to describe themes perceived by experienced HCPs to be important to the care of patients who require PMV.

Given the complexity and multidisciplinary nature of ICU, it is important that current practice models are continuously evaluated, and best practices are identified and implemented into ICU care.

Methods

Design

This study was performed in Alberta, Canada, a province with approximately 4.4 million people and 17 ICUs with approximately 9.7 adult ICU beds per 100,000 people (Canadian Institute of Health Information [CIHI], 2016; Munan et al, 2023). There is variability in models of care across the province, however most adopt 1:1 or 2:1 nurse-to-patient ratios and provide multi-disciplinary team-based care, which includes respiratory therapists, physiotherapists, and dietitians. Urban centres operate predominantly in a closed model (patients are assigned to an Intensivist), whereas the open model (the attending provider is a non-Intensivist physician) exists in some urban and many rural sites.

This study utilized a qualitative descriptive method (Sandelowski, 2000). Qualitative description (Sandelowski, 2000, Sandelowski, 2010) was chosen as the method, as it aligns with the study's goal to describe best practice themes that are pragmatic and relevant to clinicians. We did not choose a theoretical model and, instead, identified data-driven themes.

Study recruitment and data collection occurred between October 2020 and July 2021. Ethics approval was obtained through the University of Alberta Health Research Ethics Board. Purposeful sampling was used to recruit HCPs who have experience with PMV (Coyne, 1997). The research team contacted clinical colleagues and unit managers working in hospitals across Alberta by email to participate and/or distribute the study information. Participants were eligible if they were a Medical Doctor (MD), Nurse Practitioner (NP), Registered Nurse (RN), or Respiratory Therapist (RT) with self-reported experience providing direct care to patients on PMV. An informed consent document was sent to each participant to read and sign prior to the interview.

The research team used established methods (Kallio et al., 2016) to develop the semi-structured interview guide collaboratively. The interview guide was pilot tested and edited with consultation from RNs, RTs and MDs. The interview guide was modified by HC, MM and EM on three distinct occasions throughout the data collection period to elaborate and expand on themes identified in the completed interviews. See appendix-A for the final interview guide.

Members of the research team (MM, HC) performed one-on-one semi-structured interviews utilizing zoom video conferencing software ($n = 26$) and an in-person approach ($n = 4$). The interviews were approximately 10–45 minutes in duration and were audio-recorded and transcribed by a professional medical transcriptionist. All identifying information was removed during the transcription process. De-identified transcripts were uploaded into NVivo (QSR International Pty Ltd. Version 12, 2018) and analyzed concurrently with data collection. Lead author MM performed inductive, iterative coding on

the transcripts using the principles of reflexive thematic analysis to develop the initial coding frame. The phases of reflexive thematic analysis included familiarization of the text through reading and re-reading the transcripts, coding the transcripts and generating initial themes (Braun & Clarke, 2006; Braun & Clarke, 2021). Once the initial coding frame and themes were identified, author HC, a second-year medical student, utilized this coding frame and independently coded all transcripts to ensure the reliability of findings (Morse, 2015). The last three steps of reviewing and developing themes, refining and naming themes, and writing the report were done collaboratively among members of the research team.

Memos were taken immediately after the interview to record the interviewer's reflections and key points. The research team met after performing and coding every five interviews to collaboratively discuss discrepancies and differences in codes until a consensus was reached. Authors EM, KS, and KS are experts in the field and provided input based on years of clinical experience treating patients requiring PMV. Data were collected until all authors were confident that concepts and variations were sufficiently explored (Saunders et al., 2018). A modified version of the Consolidated Criteria for Reporting Qualitative Research (COREQ) 32-item checklist was developed to ensure rigor and transparency (Tong et al., 2007) and can be found in the Supplementary Information.

Results

Participant characteristics

We interviewed 30 HCPs, (MD; $n = 10$ (33%), RT; $n = 10$, (33%) RN; $n = 5$ (17%) and NP; $n = 5$ (17%)). Our sample included 20 females and 10 males. The majority of participants (28) worked in the major cities of Edmonton and Calgary in Alberta and two worked outside of Edmonton and Calgary. See Table 1 for participant characteristics.

Key themes

We identified 5 key themes and 13 subthemes from qualitative analysis (Table 2).

Patient and Family Engagement

Patients and families were described by healthcare providers as important members of the team and encouraged their involvement in decision making and the development of treatment plans. Healthcare providers indicated that patients with supportive and encouraging families were more motivated to participate in their treatment plan.

“It is a team effort, and the team obviously includes the patients themselves, as well as families. The families are the cheerleader team for the patients that are trying to wean” (NP6).

Active patient and family involvement were believed to lead to clinical improvement including successful weaning, mobility, survival, and ICU discharge. Healthcare providers expressed that there is variability in the level of engagement with some families present and involved while others were not involved in care. Communicating with patients and families about their daily goals was identified as a strategy to increase patient and family involvement.

Table 1*Participant Characteristics*

Study ID	Occupation	Years in Practice
HCP_1	Registered Nurse	≥20
HCP_2	Respiratory Therapist	≥20
HCP_3	Intensivist/Respirologist	≤5
HCP_4	Registered Nurse	5–9
HCP_5	Intensivist/Respirologist	≤5
HCP_6	Intensivist	5–9
HCP_7	Nurse Practitioner	10–19
HCP_8	Nurse Practitioner	≥20
HCP_9	Intensivist	<5
HCP_10	Intensivist	NA
HCP_11	Pediatric Intensivist	10–19
HCP_12	Respiratory Therapist	10–19
HCP_13	Nurse Practitioner	≥20
HCP_14	Nurse Practitioner	10–19
HCP_15	Intensivist	≥20
HCP_16	Respiratory Therapist	≥20
HCP_17	Intensivist	≥20
HCP_18	Respirologist	10–19
HCP_19	Respirologist	≥20
HCP_20	Respiratory Therapist	≥20
HCP_21	Nurse Practitioner	10–19
HCP_22	Respiratory Therapist	10–19
HCP_23	Respiratory Therapist	10–19
HCP_24	Respiratory Therapist	5–9
HCP_25	Respiratory Therapist	10–19
HCP_26	Nurse Educator/Nurse Practitioner	10–19
HCP_27	Respiratory Therapist	5–9
HCP_28	Registered Nurse	10–19
HCP_29	Respiratory Therapist	≥20
HCP_30	Registered Nurse/Unit Manager	5–9

Table 2*Themes and subthemes*

Themes	Subthemes	Interviews containing subthemes
Patient and Family Engagement	Active listening and information sharing	NP: 3, 5, 6, 7, 8 RT: 1, 5, 6, 7, 8, 9, 10 RN: 1, 9, 10 MD: 1, 2, 3, 4, 6, 8, 9
	Patient engagement and empowerment	NP: 5, 7 RT: 3 RN: 2 MD: 1, 2, 7, 8, 9, 10
	Prognosis and disposition discussions	NP: 3, 5, 6, 8 RT: 1, 3, 4, 6, 7, 8, 9, 10 RN: 1, 2, 9, 10 MD: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10
Team dynamics: Collaboration and Autonomy	Collaborative goal setting	NP: 3 RT: 1, 4, 10 RN: 2 MD: 1
	Open communication within the team	NP: 3, 4, 5, 7, 8 RT: 1, 2, 6, 7 RN: 2, 9, 10 MD: 1, 6, 8
	Allied health autonomy	NP: 5, 6, 8, RT: 3, 4, 5, 6, 7, 9, 10 RT: 9, 10 MD: 7, 8, 9
Developing a Structured Plan and Process	Guidelines and protocols	NP: 3, 4, 5, 6, 7, 8 RT: 1, 2, 3, 6, 7, RN: 1 MD: 1, 2, 3, 4, 5, 6, 7, 9, 10
	Progress Tracking	NP: 3, 5, 6, 8 RT: 1, 2, 3, 4, 5, 7, 8, 9, 10 RN: 1, 2, 9, 10 MD: 2, 3, 4, 6, 7, 8, 9
Intensive Care Physical Environment	A blended ICU and non-ICU setting	NP: 5, 6 RT: 1, 3, 5, 10 RN: 1, 9, 10, MD: 1, 4, 8, 9, 10
	Cohorting patient populations based on unique needs	NP: 5 RT: 1, 5 RN: 10 MD: 1, 2, 4, 5, 9, 10
Discharge and Disposition	Early preparation of family and patient for discharge	NP: 5, 7 RT: 6 RN: 1, 10 MD: 9
	Post discharge follow-up	NP: 5 RT: 6, 10 MD: 4, 8
	Establish adequate community-based resources	NP: 5 RT: 1, 4, 6, 7, 9 RN: 9

"I don't think we sit down and ask them, what is your goal today...which we could do...Is your goal today to get off the vent for x amount of time or...is your goal today to sit up in the chair vented for x amount of time" (NP3).

Motivating and empowering patients to understand and participate in their treatment plan was perceived to be a vital aspect of successful liberation from the ventilator. In comparison to other HCPs, MDs were more likely to highlight the importance of patient engagement in the treatment plan.

"They are the one that has to run the marathon, we are just there to cheer them on and give them the tools. It has to be them" (MD7).

Regular updates for families about the patient's prognosis and options regarding disposition should be done with honesty and empathy while being mindful of any language or cultural barriers that may hinder the families' understanding of the situation. This can include utilizing translational services, diversity and inclusivity education and training and identifying barriers between HCPs and patients and families.

"You're stating the facts, but you're stating it in a very gentle manner where the families can understand, and if there is any language barrier or cultural barrier, always be mindful of that as well" (RT6).

Team Dynamics: Collaboration and Autonomy

When participants were asked about the ideal team dynamics for providing care to patients on PMV, HCPs highlighted the importance of collaboratively creating a treatment plan and agreeing on goals to avoid any confusion and ensuring that information conveyed to the families is consistent.

"If we are not all on the same page, on the same plan, communicated regularly, people start to tell patients and families different things and they start to get confused on expectations" (RT5).

Collaborative goal setting could be accomplished through complex patient meetings, which ensure that everyone on the team has an opportunity to share their perspectives and centre the discussion on individual patient goals. NPs and RNs were more likely to highlight the significance of open communication within the healthcare team.

"Something that has improved since we started the complex patient meetings weekly, is that communication piece between physicians about what the patient's goal is" (RN2).

Autonomy for non-physician members of the team was highlighted. While physicians are involved in making any major decisions, nurses and allied health professionals should be empowered to act within their scope of practice to achieve the shared goals. Compared to other HCPs, RTs were more likely to emphasize the importance of autonomy in the weaning process.

"Having autonomy means that you are... Encouraged, as part of that team, to really practice to your full scope of practice" (MD9).

Developing a Structured Plan and Process

When participants were further questioned on the use of specific guidelines and protocols, they reported that the weaning plan should be individualized and adapted depending on the

patient's progress. HCPs shared mixed perspectives about the importance of protocols in liberating patients from the ventilator. Some HCPs preferred using a protocol, while others preferred clinical judgement and perceived protocols to be barriers to success. Protocols and guidelines were thought to assist HCPs that are new to the team, or if a particular disease process has not been handled by the team before.

"It's always good to have kind of a guide, especially to individuals maybe who are just starting" (RT6).

Others reported that, although protocols act as a guide in the weaning process, they are not definitive and need to be modified and tailored to the patient's needs.

"A protocol is a guideline. It is not carved in stone and I think trying to apply them is appropriate, but I think your clinical judgement in the variability that each patient has is going to be your guide" (NP4).

The need to establish a system to evaluate progress consistently on a weekly and monthly basis was a suggested area for improvement. Charts in the patient's room were identified as helpful tools to track progress and mobilization plans in a way that facilitated communication transfer among HCPs. These charts were considered "good visuals" that motivated patients and families to stay engaged.

"We keep a graph or a chart in the patient's room, so that they can see their progress. Usually, it's just a simple bar graph of time, how long they are coming off each day" (RT5).

When HCPs were asked about their approach to evaluating progress and transfer of care, there was emphasis on consistency across disciplines and recognition that care can easily become disjointed when staff physicians change weekly. Progress and tracking can be hindered when the plan and approach are altered frequently.

"Measuring progress, I think sometimes it definitely falls off because care is sometimes disjointed. You will have a staff physician that will come on for a week and off for a week" (NP3).

Intensive Care Physical Environment

There was no clear consensus on the ideal physical space for patients requiring PMV. Some HCPs considered the ICU to be the ideal weaning environment due to the presence of a multidisciplinary team and the expertise of critical care providers.

"Staying in ICU is the best place to wean the patients...they are seen on a regular basis... people are much more tuned into where the patients are at and how much we can push them" (RN1).

Others felt the ICU was not ideal for this population due to excessive noise and a focus on acute patients. A dedicated weaning unit staffed by a multidisciplinary team with expertise in PMV and focused solely on this patient population was thought to be the ideal setting. This would enable cohorting patients based on their unique needs and future direction. In comparison to other HCPs, MDs were more likely to highlight the significance of cohorting patients (Table 2).

"The time it takes with some of these patients is a different time course and some of the expertise and rehab goals are

different than what is done in the day-to-day ICU care. It is beneficial to have a distinct unit or place of care for patients” (MD9).

Discharge and Disposition

Participants noted that preparation for discharge required a significant amount of time and that collaboration with the patients and families was critical to ensure patients have necessary supports in place post discharge.

“When the patient gets here, we start thinking about the discharge plan. It can be very complex, and it can take a very long time. We get to know the patients and get to know the family supports... by talking to them we get a sense for what are the possibilities” (NP5).

Post discharge from the ICU was identified as a clear area for improvement. Participants reported that non-acute illness issues such as speech and nutrition must be addressed. For best care, participants thought most patients should be followed in the clinic, as well as in the community, depending on the patient’s needs and that a connection to the acute care team should remain for a period of time. The ideal model of post-hospital care was somewhat unclear.

“When patients and families leave hospital, we always give them the option of calling back to the ICU if they run into any troubles” (NP5).

Lack of appropriate follow-up by HCPs in the community was attributed to a lack of funding and community resource access. RTs were more likely to highlight the need for better community resources for patients requiring PMV post discharge.

“The follow-up after they get out of the hospital is something that there needs to be a lot of focus on, because the community has always sort of suffered from the funding side of healthcare” (RT7).

Family and caregiver education and role clarity were stressed as necessary for the care of these patients once they have transitioned to a setting outside of the ICU.

“The nursing staff... help transition to the community as well. Ensuring that families are well suited and well prepared, knowledgeable and educated in all these different components that they will be responsible for looking after on their own with much less support” (NP5).

Discussion

We utilized qualitative description to describe five themes and 13 subthemes that reflect the participant’s perspectives of best practices for care of patients requiring PMV. These findings have clinical implications, including recognizing and promoting current models of care that are viewed as favourable and adopting these clinical approaches at underperforming sites and units.

Patient and family engagement in the care plan has been identified in previous studies as vital to successful outcomes in the PMV population (Cederwall et al., 2018). Pettersson et al. (2012) found that patient motivation was important for weaning and psychological support and that motivation from HCP’s can facilitate this engagement. Rose et al. (2022) interviewed patients and found that processes such as communication with

the patient on progress and planning and using communication aids promoted psychosocial well-being.

Patient and family communication with physicians is often inadequate and familial expectations around prognosis can vary significantly from those of physicians (Cox et al., 2009). This reinforces the importance of continual and consistent communication between physicians and family.

The theme *team dynamics: collaboration and autonomy* mirrors findings by Rak et al. (2020) who found that interdisciplinary communication in the form of team meetings and multidisciplinary rounds promoted successful liberation from mechanical ventilation and improved survival. Collaborative decision-making has been shown to be an important factor for weaning and lack of collaboration led to a prolongation of the weaning process due to delayed recognition of changing clinical course and extubation readiness (Rose, 2011). Daily multidisciplinary rounds are a core tenet of ICU care and are associated with a decrease in mortality (Kim et al., 2010). Our findings suggest that in addition to daily multidisciplinary rounds, weekly complex patient meetings should occur to discuss and implement goal setting, progress, and discharge planning. These meetings should include the core clinical team, as well as the patient and family members. Having family members present in the ICU has been shown to promote health and survival for patients (Haugdahl, 2018).

The theme of *developing a structured plan and process* was an interesting and controversial theme. Weaning and liberation from mechanical ventilation is a component of this structured plan. Though using weaning protocols has been shown to be effective and decrease the amount of time in ICU and days on MV (Blackwood et al., 2010; Saura et al., 1996), the selection, uptake and implementation of these protocols is difficult (McLean et al., 2006). Physicians may be reluctant to utilize a protocol due to the perceptions that it restricts clinical judgment and that standard protocols may not be appropriate for difficult-to-wean patients (Hansen & Severinsson, 2009). Since the PMV population is so heterogeneous in disease etiology, and variably defined, standardizing the management of all PMV patients is likely a disservice to many individuals. Nonetheless, care pathways such as the ABCDEF bundle (Pun et al., 2019) are effective, have had good uptake, and have been adapted for the long-term acute care setting (Balas et al., 2016). The development of care pathways and bundles adapted to the PMV population should also be considered.

In the province of Alberta, most patients on PMV are cared for in an ICU. The structure of intensive care in Alberta has many benefits for patients including 1:1 nursing care and a comprehensive multidisciplinary team. However, conventional ICUs may also exhibit deficiencies in PMV care. For instance, clinicians may be obligated to focus their time and attention on short-stay patients who are medically unstable, rather than engaging with PMV users to develop a comprehensive care plan. Patients on PMV also require a different approach to care and specialized expertise that may not be familiar to ICU clinicians who care for these patients infrequently. A study by Minton et al., found that long-term ICU patients had different

care needs than the traditional short-stay ICU patients and this was under-recognized. For example, patients on PMV are often awake more than short-stay ICU patients and may require more communication and psychological supports (Minton et al. 2018).

Specialized weaning centres have been established in other countries such as Germany, Italy and Ontario, Canada (Carpené et al., 2010; Rose & Fraser, 2012; Windisch et al., 2020). These centres have been shown to be cost-effective and have similar outcomes to patients treated in ICUs (Lone & Walsh, 2011; Sison et al., 2021). Lone et al. found that the establishment of a regional weaning unit could reduce acute ICU bed usage by 8-10% (Lone & Walsh, 2011). Given the increasing prevalence of ICU strain (Bagshaw et al., 2017), it may be prudent to establish specialized physical environments where patients requiring PMV can be cohorted to receive dedicated care with a greater focus on rehabilitation, liberation from mechanical ventilation and discharge planning, and staffed by a multidisciplinary team of clinicians with expertise and an interest in this unique population.

In the past decade, *disposition and discharge* following an ICU stay has gained significant attention in literature (Desai et al., 2011; Herridge et al., 2011; Pandharipande et al., 2013). Survivors of PMV have multiple complex transitions in care and significant functional disability that often requires institutional, or homecare supports (Rose et al., 2014; Unroe et al., 2010). A landmark study by Herridge et al. (2011), found that survivors of acute respiratory distress syndrome (ARDS) had significant functional limitations up to five years after hospitalization. Participants in our study identified continuity of care beyond the ICU, including discharge planning, caregiver education, and home mechanical ventilation (HMV) clinic follow-up to be important aspects of the care pathway for patients on PMV.

The transition from PMV to long-term or permanent mechanical ventilation can be especially complex and often requires significant planning and family/institutional support. A recent review performed by Best et al. (2023) found that families often have unmet support needs post discharge. A key theme in our study was that practice models in this population must include pro-active discharge preparation and comprehensive transfers of care that include both patient and family members. Collaborative partnerships with community respiratory therapy programs, homecare services and primary care may all be helpful to ensure patients are adequately supported after discharge. We recommend that clinicians caring for patients on PMV establish and maintain these partnerships. Additionally, the Society of Critical Care Medicine suggests the use of standardized screening tools and functional assessments to facilitate continuity of care and post ICU recovery (Mikkelsen et al., 2020). Our findings suggest that determining best practices for patients who require PMV is and requires more dedicated research.

While the themes identified in this paper provide pragmatic suggestions for healthcare providers and leaders, further study

with patients and family members with lived experience of PMV is necessary to develop best care standards, guidelines, and programs for this population.

Limitations

Participants were all English-language speakers and were recruited in the province of Alberta. Though the authors tried to have representation from all jurisdictions in the province, the rural areas are underrepresented in our sample. Recruitment was done through purposeful sampling by our research team and included a variety of HCPs including RTs, RNs, NPs and MDs working in different jurisdictions throughout the province of Alberta. However, sampling bias may be present, and it is possible we may have selected a cohort of HCPs with an interest in PMV. Some of the HCPs interviewed had experience in pediatric ICUs. We believe this is likely not a strength or a limitation, as there is overlap in the themes that would emerge from both pediatric and adult ICUs, but do note that there are certainly important differences (Henderson et al., 2017). The majority of interviews were performed virtually utilizing Zoom video conferencing software and, therefore, some non-verbal communication and nuances may have been missed. The interviews were conducted only once and represent a single point in time. The study was performed during the COVID-19 pandemic and while there have been changes to practices during the COVID-19 pandemic, most participants had more than five years of practice experience and much of what was stated reflects care models pre COVID-19. We acknowledge that changes in clinical practice during the COVID-19 pandemic could have an impact on the responses provided.

Conclusion

This study utilized a qualitative descriptive approach to identify and describe five key themes that HCPs perceive to support best care for the unique ICU subpopulation who require PMV in Canada. These recommendations are pragmatic, and organizations and HCPs can adopt many without additional cost. Further work is needed to understand the potential benefits of widespread adoption of dedicated PMV units in the Canadian context, and to determine best practices for discharge and follow-up of patients requiring PMV and their families.

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Appendix A

Interview Guide

Introduction

Thank you for being part of the study. The purpose of this study is to understand your perspectives and experiences of caring for patients on prolonged mechanical ventilation in the ICU. For the purpose of this study we define it as ventilation lasting longer than seven days.

We want to obtain your perspectives and experiences on care for patients on PMV. The purpose of this study is to develop guidelines and best care practices for this population. Any identifying information will be removed from your answers.

Semi-Structured Interview Questions

1. What is your position description, where do you work and how long have you been involved in the care of patients with PMV?
2. What is the importance of collaboration and autonomy among members of the healthcare team in the care of patient on PMV?
3. How is progress evaluated for patients on PMV?
4. Are there specific weaning/guidelines or standard management that you use? Do you think these are important?
 - a. How do you reconcile this with experience and clinical judgement?
 - b. What are key components of an effective guideline/protocol?
5. How is discharge planning/transfer of care approached?
 - a. When is discharge planning started?
6. What role do patients and family play in decision making and treatment plans?
7. How do you approach differing prognostic expectations between you and the family?
 - a. How should this be approached in an ideal model?
 - b. Where does this go wrong and what should we NOT do?
8. In your opinion what is the ideal model for care in the PMV population?

Assessing the impact of creating virtual windows on the incidence of delirium in a surgical intensive care unit: A before and after study

BY OLIVIER GOBEIL, MD, VÉRONIQUE SAVARD, RN, AND MICHAEL MAYETTE, MD

Abstract

Introduction: Delirium is a frequent and important problem in the intensive care unit (ICU), and non-pharmacological means of prevention are limited. The importance of the physical environment in the occurrence of delirium in intensive care has been reported, particularly the presence of windows and daylight. We organized a trial to evaluate if the installation of virtual windows in the form of paintings in rooms without an actual window can limit the occurrence of delirium in ICU patients.

Methods: We conducted a retrospective pre and post cohort study in a surgical ICU of a university-affiliated hospital. Patients residing for more than 48 hours in a windowless room before and after the installation of virtual windows were included in the trial. The primary endpoint was the incidence of a positive screening test for delirium during their time in the ICU. The Intensive Care

Delirium Screening Checklist (ICDSC) was used as an objective screening tool to assess the occurrence of delirium.

Results: A total of 400 patients were included in this trial (pre group: $n = 200$; post group: $n = 200$). The groups were well balanced except for the score APACHE II who was significantly higher in the post intervention group. The incidence of a positive screening test for delirium was similar in both groups after correction for confounding factors (29% versus 27%; OR 0,906 [0,584-1,402], $p=0,656$).

Conclusion: The installation of virtual windows did not reduce the incidence of delirium in a surgical intensive care unit.

Keywords: critical care, delirium, windows, prevention, circadian cycle

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Implications for nursing

Delirium is a frequent problem in the ICU and non-pharmacological measures of prevention are important. The addition of virtual windows to windowless ICU rooms did not reduce the incidence of delirium, although a favourable trend emerged, especially in high-risk subgroups. Further research with higher number of patients and/or more realistic virtual windows is required in the future.

Background

Delirium is a complex and mostly reversible neuropsychiatric syndrome, involving multifactorial pathophysiology. It is manifested by a fluctuating disturbance of attention and consciousness, constituting a change in the functional level of the individual (American Psychiatric Association, 2013). It can present as one of three types (hypoactive, hyperactive, or mixed). According to epidemiological studies, about 20% of hospitalized patients will develop delirium during a hospitalization (Bucht et al., 1999) although this condition is not diagnosed in a third of cases (Inouye et al., 1998). In intensive care, the incidence of delirium varies widely in the literature, reaching about 10-50% of patients (Salluh et al., 2010; Roberts et al., 2005; Thomason et al., 2005; Ely et al., 2004; Tomasi et al., 2012; Ouimet et al., 2007). It must be promptly recognized and treated, as this complication is associated with many

clinical and economic implications, including increased hospital time, time spent on ventilator, mortality, and even some form of cognitive dysfunction that can persist after discharge from intensive care (Pisani et al., 2009; Shehabi et al., 2010; Lat et al., 2009; Girard et al., 2010b; Pandharipande et al., 2013).

As the effectiveness of treatments for delirium is limited, efforts are gradually turning to prevention methods. Although several pharmacological interventions have been attempted without much success (Girard et al., 2010a; van Ewijk et al., 2010; Page et al., 2013), current preventive approaches rely mainly on non-pharmacological approaches. The importance of the physical environment in the occurrence of delirium in intensive care has been reported, particularly the presence of windows and daylight (van Rompaey et al., 2009). These findings remain controversial in medical literature, but they are still at the origin of the architectural guidelines for the construction of intensive care units recommending the installation of windows in all rooms (Thompson et al., 2012).

At the CIUSSS de l'Estrie-CHUS Hôpital Fleurimont, eight of the 14 surgical intensive care unit beds do not have windows. Faced with the physical impossibility of creating real windows for these rooms, a grant was obtained to commission local artists to create a series of virtual windows in painting, representing natural landscapes (promoting stress reduction more than urban landscapes) (Ulrich et al., 1991; Ulrich, 1981)

through window frames. The addition of an opaque shade that can be rolled down over the landscapes has made it possible to recreate a day-night alternation, also potentially beneficial in the prevention and treatment of delirium in intensive care (Figure 1).

To our knowledge, no study exists on the effect of virtual windows in intensive care units. Previous studies observed the effect of real windows in intensive care on the occurrence of various events, including delirium. Wunsch et al. (2011) evaluated the effect of windows in a very specific population, i.e., patients presenting with subarachnoid haemorrhage in intensive care without specifically investigating the occurrence of delirium. No beneficial effects could be demonstrated. Kohn et al. (2013) studied several clinical outcomes of a large number of patients in intensive care, comparing patients residing in a room with or without a window. Mortality, length of hospitalization and delirium were among the clinical outcomes observed. Again, no statistically significant difference could be demonstrated. However, delirium was not identified using an objective tool such as the *Intensive Care Delirium Screening Checklist* (ICDSC) or the *Confusion Assessment Method ICU* (CAM-ICU), but rather by the presence of certain words in the notes of the clinical records suggesting the presence of delirium (e.g. confusion, agitation, disorientation, etc.). The probability of underestimating the true incidence of delirium, including hypoactive delirium, was, therefore, very high. Indeed, the incidence obtained in this study was only 3.6%. Since many intensive care units do not have real windows in all rooms, investigating the effect that virtual windows, an easy-to-obtain

non-pharmacological therapy, can have on the occurrence of delirium in ICU patients is important. The aim of the present study was to compare the cumulative incidence of delirium among critically ill patients admitted to windowless rooms before and after the addition of virtual windows.

Methods

Study design and patient selection

We conducted a retrospective pre and post cohort study in the surgical ICU at the CIUSSS de l'Estrie – CHUS, Hôpital Fleurimont, a 14-bed surgical and trauma unit in a tertiary-care centre in Sherbrooke, Quebec. Patients included in the study are all patients who were admitted to one of eight ICU beds without a true window for a period of at least 48 hours after June 2017 (the *post* cohort). June 2017 represents the date of installation of the virtual windows. This cohort was compared to a *pre* cohort of age- and APACHE II score-matched patients who were hospitalized in the same beds, for at least 48 hours, before the installation of the virtual windows (historical controls). Patients in both cohorts had to be older than 18 years at the time of admission and could not have already been included in the study, without any other exclusion criteria.

Primary outcome

The primary outcome of this study was to assess the effect of the installation of virtual windows on the incidence of positive screening for delirium, defined by an ICDSC 4 score obtained at least once during the stay in intensive care. The ICDSC is a validated tool designed for screening for delirium in intensive care. It allows an earlier recognition of this underdiagnosed

Figure 1

Virtual windows with partially rolled shade



clinical entity, since many patients have difficulty communicating adequately or are mechanically ventilated. In literature, this scale has a sensitivity of 99% and a specificity of 64% (Bergeron et al., 2001), in addition to being comparable to the other important screening tool, the CAM-ICU (Plaschke et al., 2008). This score takes into account eight factors: impaired state of consciousness, inattention, disorientation, hallucinations, agitation or psychomotor slowdown, inappropriate speech or mood, sleep-wake disorder and fluctuation of symptoms. Each criterion is worth one point and a score greater than or equal to 4 represents a positive test for delirium. In addition, the inter-rater reliability was 94% in the initial study, demonstrating that this screening method is valid and reproducible. In our community, the ICDSC must be completed by nurses on a regular basis, at least once per shift. The score is documented in the electronic medical record (EMR).

Several factors were also considered to ensure that the two groups were comparable in their innate risk of developing delirium during their stay in surgical intensive care. We extracted risk factors such as chronic alcohol consumption (> 14 drinks per week for women and > 21 drinks per week for men), active smoking (> 5 cigarettes per day) as well as history of stroke and neurocognitive disorders. We also documented severity of disease with the use of Acute Physiology and Chronic Health Evaluation (APACHE) II score for every patient.

Statistical analysis

We estimated that with 400 participants, we were able to detect a 10% difference in the incidence of delirium between the two groups with an 80% power at a 0.05 threshold for significance, and an estimated incidence of delirium of 25%. We believe that it is realistic to achieve with a 10% reduction in the incidence of delirium with a simple non-pharmacological intervention. Indeed, this estimate is supported by a study published by Rosa et al. (2017), which assessed the difference in the occurrence of delirium in a group of patients with restrictive visiting hours (< 4.5h/day) compared to another group with longer visiting hours (12h/day). They managed to demonstrate a significant decrease of 10.9% (9.6% vs 20.5%).

In order to compare the two groups, the analysis of dichotomous variables was done by the Chi-square or exact Fisher tests. The analysis of continuous variables was done using the Student t-test for normally distributed variables or by the Mann-Whitney U-test for non-normally distributed variables. A *p* score of less than 0.05 was considered statistically significant.

Regarding the primary objective, a chi-square test was used for the direct association between the group and the presence of delirium. A univariate and multivariate Poisson regression models were used to compare outcome occurrence. Relative risk (RR) and adjusted RR (aRR) are presented with associated 95% confidence intervals. SPSS version 28.0 (IBM Corp., Armonk, NY) and R version 4.2.1 (Foundation for Statistical Computing, Vienna, Austria) were used for statistical analysis.

Ethics

The study was evaluated and approved by the local Research Ethics Committee without the need for informed consent because of the retrospective nature of the study, as well as the risk-free intervention considered as standard of care in both groups.

Results

Patients

The installation of the virtual windows in the intensive care unit was completed in April 2017. The pre-installation cohort of virtual windows included 200 patients from May to December 2016. The post-installation cohort of virtual windows included 200 patients from June to December 2017. All patients without exception who resided for more than 48 hours in the eight windowless rooms were included in the study.

The demographic, clinical characteristics and co-morbidities related to delirium occurrence of patients are represented in Table 1. The groups were well balanced. The mean age was 64.4 in the “pre” cohort and 63.5 in the “post” cohort. Men represented 66.8% of the included patients. There were 22% of smokers, 8.3% who consumed alcohol significantly, 1.5% with a history of neurocognitive disorders, 7.8% with a history of stroke. The APACHE II score was significantly lower in the pre-well-balanced group with a median of 20 [13–26] compared to the post-group with a median of 22 [16–28] (*p* = 0.002).

Table 1

Baseline Patient Characteristics

Baseline characteristic	Pre group (n = 200)	Post group (n = 200)	<i>p</i>
Age – years (mean ± standard deviation)	64.4 ± 14,2	63.5 ± 14,3	0.519
Male – n (%)	130 (65)	137 (68)	0.460
Chronic alcohol consumption – n (%)	20 (10,1)	13 (6,5)	0.198
Active smoking – n (%)	47 (23,6)	41 (20,5)	0.453
History of stroke – n (%)	16 (8,0)	15 (7,5)	0.852
Presence of major neurocognitive disorders – n (%)	2 (1)	4 (2)	0.685
Deaths – n (%)	12 (6)	14 (7)	0.685
Median APACHE II score – [IQR]	20.1 [13–26]	22.0 [16–28]	0.002

Primary outcome

A total of 28% of patients enrolled in the study had a screening test considered positive for delirium. The cohort after implantation of the windows demonstrated a 7% relative risk reduction of developing delirium, although this change was not statistically significant (incidence of delirium 29% in the “pre” cohort versus 27% in the “post” cohort with a risk ratio (RR) of 0.93 ([95% CI]. 0.68 to 1.28], $p = 0.656$). When adjusted for APACHE II score, the relative risk reduction remained not statistically significant at 13% (RR 0.87 ([95% CI]. 0.63 to 1.19], $p = 0.392$) [Table 2]. Multivariate regression analysis including other confounding factors yielded similar results.

Subgroup analysis [Figure 2] revealed no group with statistically significant benefits from the addition of virtual windows, but higher-risk patients showed a trend towards a greater reduction in delirium. For patients with age greater than 65, RR was 0.83 (95% CI 0.57–1.22, $p = 0.35$) and for patients with a history of stroke, RR was 0.46 (95% CI 0.14–1.45, $p = 0.18$).

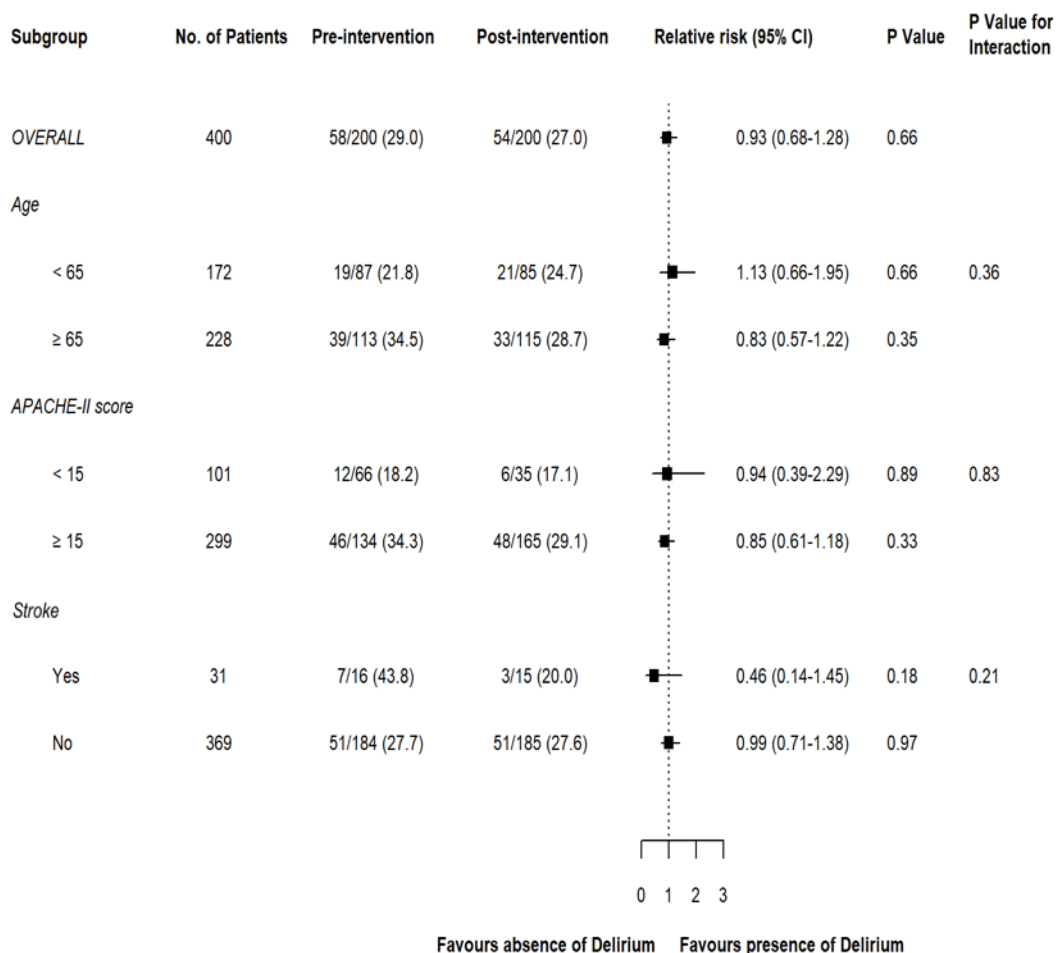
Table 2

Incidence of Testing Positive for Delirium

Results	Pre group (n = 200)	Post group (n = 200)	RR /aRR (IC 95%)	p
Positive screening test for delirium – n (%)	58 (29)	54 (27)	0.93 (0.68, 1.28)	0.656
Positive screening for delirium adjusted for APACHE II score			0.87 (0.63, 1.19)	0.396

Figure 2

Sub-group analysis



Discussion

The present single centre before and after study was unable to demonstrate a statistically significant difference in the incidence of delirium in intensive care when installing virtual windows. Our study demonstrates an interesting trend, especially in patients at higher risk for delirium, namely patients over 65 or with a past history of stroke. Patients with a pre-existing history of major neurocognitive disorders were underrepresented in our cohort, precluding any conclusions on the effects of our intervention on this population. Underrepresentation may be the effect of a selection bias, being a surgical ICU population with mostly high-risk elective surgery patients.

Our study assesses a very relevant clinical question, considering an increasingly older population with several risk factors for delirium. Easy to implement, cheap and risk-free non-pharmacological interventions for preventing delirium should be sought and studied.

One of the important limitations of our study is its retrospective design. This implies a risk of historical bias, as prevention or treatment methods may have changed between the pre- and post-intervention groups. Indeed, after April 2017, a weaning protocol for sedation and mechanical ventilation was introduced in the intensive care unit of the CIUSSS de l'Estrie CHUS. This intervention, validated in the literature as a method of preventing delirium, may, therefore, have interfered with the results obtained. However, given the low adherence to this protocol by medical teams throughout the duration of the analysis, the risk of interference with the results was considered minimal. In addition, it was not possible to correct for all factors that may influence the incidence of delirium. For example, total exposure to benzodiazepines, opioids or sedatives during intensive care hospitalization was not assessed, an important factor in the development of delirium. It is likely that this variable was similar across groups, as practices in this regard varied little over the study period. Finally, generalization to a larger population may be more difficult, since this is a single-centre study, involving only surgical intensive care patients.

In conclusion, the installation of virtual windows has not been shown to be effective in reducing the incidence of delirium in surgical intensive care. Non-pharmacological interventions for the prevention of delirium always seem to be a promising opportunity to counter the health and economic impacts of delirium in intensive care. However, further studies will be needed to demonstrate their effectiveness against this major issue.

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Quelles sont les barrières à la prise en charge des personnes ventilées ? Perspective des infirmières et infirmiers aux soins intensifs

What are the barriers to caring for ventilated persons? Perspective of nurses working in the intensive care unit

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Résumé

La ventilation mécanique est un traitement largement utilisé et essentiel à la prise en charge infirmière aux soins intensifs. Malheureusement, de nombreuses barrières nuisent à la prise en charge globale de la personne ventilée. Au Canada, il y a très peu de connaissances en sciences infirmières quant aux barrières rencontrées dans ce contexte clinique et aux stratégies utilisées pour y faire face. Cette analyse thématique découle d'une étude plus large sur le processus de soins spécifique à la personne ventilée aux soins intensifs et identifie les barrières à la prise en charge infirmière ainsi que les stratégies, les ressources et les recommandations pour les surmonter. Trente infirmières et infirmiers autorisés(es) travaillant dans une unité des soins intensifs pour adultes au Canada, ont participé à des entrevues semi-structurées portant sur leur

expérience à prodiguer des soins directs aux personnes ventilées. Au sein du corpus des données, les principales barrières identifiées sont liées aux conditions de travail (ratio infirmier/ère-personne ventilée, rythme de travail, lieux physiques), aux connaissances et aux compétences (gestion du respirateur, soins psychosociaux), ainsi qu'au champ de pratique infirmier. Celles-ci nuisent à la qualité et à la sécurité des soins prodigués, et limitent la capacité des infirmières et infirmiers à gérer la complexité de la prise en charge et à répondre aux besoins des personnes ventilées et leurs familles.

Mots clés : ventilation mécanique; soins intensifs; infirmière; barrières; qualitative [respiration, artificiel; soins critiques; nurse; barrières; qualitative]

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Implications infirmières

- Lors de la prise en charge de la personne ventilée en soins intensifs, les infirmières et infirmiers sont confrontés à trois types de barrières : les conditions de travail, les connaissances et les compétences ainsi que le champ de pratique infirmier.
- Ces barrières rendent la prise en charge des personnes ventilées difficile et limitent le rôle infirmier ainsi que l'impact des soins infirmiers autant chez la personne ventilée qu'auprès de sa famille.
- Pour assurer une prise en charge optimale des personnes ventilées, il est important d'améliorer la formation et l'orientation du personnel nouvellement embauché, de permettre aux infirmières et infirmiers de pratiquer selon leur champ de pratique optimal et de maintenir un ratio 1:1.

Introduction

Au Canada, comme aux États-Unis, la plupart des aspects techniques de la gestion et du sevrage du respirateur en soins intensifs relèvent de la responsabilité du thérapeute respiratoire (Rose et Nelson, 2006; Rose, Blackwood, Egerod et al., 2011). Ce modèle de soins diffère de celui d'Australie, du Royaume-Uni et d'autres pays situés en Europe (médecin – infirmière/ier), en vue de l'intégration d'un thérapeute respiratoire dans l'équipe de soins de l'unité des soins intensifs (USI) (médecin – infirmière/ier – thérapeute respiratoire).

Dans ces pays, la gestion du respirateur et le sevrage ventilatoire est un processus de collaboration entre les infirmières et infirmiers et les médecins (Rose, Blackwood, Burns et al., 2011). Néanmoins, la prise en charge de la personne ventilée à l'USI repose, en grande partie, sur les infirmières et infirmiers. De façon générale, cette prise en charge vise à gérer 7 dimensions dont 1) l'agitation, 2) la douleur, 3) la dyspnée, 4) la communication, 5) l'hygiène, 6) le sommeil et 7) l'environnement de la personne ventilée (Michaud et al., 2021). Bien que cette façon de concevoir la prise en charge infirmière soit fragmentée et qu'elle se concentre principalement sur le volet physique des soins, elle illustre (en partie) la complexité des soins que nécessite la personne ventilée aux soins intensifs (Michaud et al., 2021).

La ventilation mécanique peut mener à des séquelles psychologiques graves, telles que l'anxiété, la dépression et l'état de stress post-traumatique (Righy et al., 2019; Tripathy et al., 2022). En plus des séquelles psychologiques, des complications sont également à prévoir chez les personnes ventilées (p. ex., pneumonie acquise sous ventilation mécanique [PAV], septicémie, œdème pulmonaire, barotromatisme, embolie pulmonaire, syndrome de détresse respiratoire aiguë [SDRA]) (Center for Disease Control and Prevention [CDC], 2023). Celles-ci peuvent entraîner des résultats négatifs pour les personnes ventilées, notamment une durée plus longue de la ventilation mécanique,

des séjours plus longs à l'USI et à l'hôpital, une augmentation des coûts de santé et un risque accru d'invalidité et de décès (CDCP, 2023). L'infirmière ou l'infirmier en soins intensifs peut influencer positivement les résultats pour les personnes ventilées (p. ex. : durée de la ventilation mécanique, du séjour aux soins intensifs et de l'hospitalisation) (Hirzallah et al., 2019), en plus de l'expérience de la personne ventilée, dont la manifestation d'un rappel explicite (Michaud et Gagnon 2018ab). C'est pourquoi il est important de s'attarder aux barrières auxquelles font face les infirmières et infirmiers lors de la prise en charge des personnes ventilées en soins intensifs.

Certaines barrières sont documentées dans la littérature, telles que le manque de connaissances, le manque de ressources, le manque de soutien, le manque de temps et le manque de collaboration (Cederwall et al., 2018; Costa et al., 2017; Hetland et al., 2018; Lind et al., 2018; Michaud et al., 2021; Mortensen et al., 2019; Saritas et al., 2019). À titre d'exemple, le personnel infirmier trouve difficile d'interagir avec les personnes ventilées, indiquant le manque de connaissances et d'outils nécessaires pour faciliter la communication (Hetland et al., 2018; Holm et Dreyer, 2018; Mortensen et al., 2019). Aussi, en raison de l'utilisation décroissante des sédatifs, les infirmières et infirmiers jugent que la prise en charge des personnes conscientes sous ventilation mécanique est plus exigeante, nécessitant plus de temps et de présence au chevet ainsi qu'une plus grande attention aux besoins psychosociaux (Cederwall et al., 2018; Guttormson et al., 2019; Karlsson et Bergbom, 2015; Laerkner et al., 2015; Mortensen et al., 2019). Dans ces conditions, le manque de contrôle ressenti, les difficultés de communication et l'incapacité de reconforter les personnes ventilées peuvent entraîner de la frustration chez les infirmières et infirmiers (Karlsson et Bergbom, 2015; Mortensen et al., 2019). Les barrières auxquelles font face les infirmières et infirmiers peuvent donc avoir un impact tant sur la qualité de leur prise en charge que sur leur propre expérience.

Au sein de la littérature scientifique qui porte sur la ventilation mécanique, la perspective infirmière est rarement prise en compte. Pourtant, telle que soulignée, la ventilation mécanique fait partie intégrante des soins infirmiers à l'USI. Une exploration de la perspective des infirmières et infirmiers pour mieux comprendre les barrières auxquelles elles et ils font face dans la prise en charge des personnes ventilées est primordiale afin de mettre en lumière la complexité du rôle infirmier dans ce contexte clinique, d'améliorer les soins infirmiers et diminuer les impacts négatifs d'une prise en charge sous-optimale. À notre connaissance, cette problématique de recherche n'a fait l'objet d'aucune étude au Canada. Pour répondre à cet écart et explorer la perspective des infirmières et infirmiers, nous avons réalisé une étude qualitative exploratoire qui comprend deux volets. Le premier volet avait pour but de décrire le processus de soins spécifique à la personne ventilée. Le deuxième volet portait sur l'identification des barrières auxquelles font face les infirmières et infirmiers. Cet article porte spécifiquement sur le deuxième volet. Il résume les barrières identifiées au sein du corpus de données et identifie certaines stratégies mentionnées par les participants pour faire face à ces barrières. Enfin, il propose des pistes de solutions au niveau de la pratique et de la formation.

Considérations méthodologiques

Une fois l'approbation obtenue du comité d'éthique à la recherche de l'Université d'Ottawa (H-03-20-5028) et du conseil d'administration de l'Association canadienne des infirmières et infirmiers en soins intensifs (ACIISI), le recrutement des participants a été effectué, par le biais d'une invitation électronique bilingue envoyée aux membres de l'ACIISI, en août 2020. Pour participer à l'étude, chaque participant devait être une infirmière ou un infirmier autorisé(e); travailler dans une USI pour adultes au Canada, quel que soit le nombre d'années d'expérience; et être en mesure de compléter l'entrevue par téléphone en français ou en anglais. Les participants souhaitant prendre part à l'étude étaient invités à contacter la chercheuse principale par courriel ou téléphone pour fixer une date d'entrevue téléphonique. Au total, 30 infirmières et infirmiers en soins intensifs ont complété une entrevue semi-structurée d'une durée moyenne d'une heure (Tableau 1). La collecte des données a eu lieu du 4 août au 4 septembre 2020, soit à la fin de la première vague et avant le pic de la deuxième vague de la COVID-19 (Institut National de santé publique du Québec [INSPQ], 2022).

Après avoir analysé et conceptualisé le processus de soins selon les principes de la théorisation ancrée, nous avons extrait les données portant spécifiquement sur les barrières rencontrées par les participants. Pour analyser ces données, nous avons fait appel à l'approche d'analyse thématique proposée par Terry et al. (2017). Cette approche comporte cinq étapes : 1) se familiariser avec les données; 2) générer des codes; 3) construire des thèmes; 4) réviser et définir les thèmes; 5) rédiger un rapport. Au cours de la première étape, les transcriptions ont été lues, les bandes audio écoutées et les extraits pertinents identifiés. Ensuite, les extraits où les participants discutaient spécifiquement des barrières ont été codés, ainsi que les stratégies et les ressources pour y faire face, le cas échéant. Lors de la troisième étape, les codes ont été regroupés pour former des thèmes préliminaires. À partir de ces thèmes préliminaires, nous avons identifié des thèmes et sous thèmes reflétant l'ensemble des données.

Critères de rigueur

Trois critères ont été sélectionnés pour assurer la rigueur de l'étude, soit la crédibilité, la transférabilité et la réflexivité (Charmaz, 2014; Chiovitti et Piran, 2003; Hall et Callery, 2001; Lincoln et Guba, 1985). Pour assurer la crédibilité, les participants ont guidé le processus de la collecte des données en informant le chercheur sur les questions à poser pour les entrevues subséquentes. En ce qui concerne la transférabilité, les démarches scientifiques, le contexte clinique, ainsi que les données sociodémographiques des participants ont été détaillés. Pour atteindre le critère de réflexivité, nos réflexions personnelles, nos prises de décisions méthodologiques et nos interrogations ont été rédigées dans un journal de bord tout au long de l'étude.

Échantillon

Le tableau 1 donne un aperçu des caractéristiques sociodémographiques des participants ($n = 30$). En résumé, notre échantillon reflétait bien la réalité actuelle des infirmières et infirmiers aux soins intensifs au Canada. La majorité disait détenir un baccalauréat en sciences infirmières ($n = 27$) et s'identifiait

Tableau 1*Caractéristiques sociodémographiques des participants (n = 30)*

Âge	≤ 25	3
	26–30	8
	31–40	7
	41–50	7
	51–60	5
Genre	Femme	24
	Homme	6
Niveau de scolarité	Diplôme d'études collégiales	3
	Baccalauréat	21
	Maîtrise	6
	Ph.D.	0
	Autre, spécifiez : Certification canadienne en soins infirmiers intensifs	1
Nombre d'années comme infirmier.ère	< 1	1
	1–5	9
	6–10	8
	11–15	6
	16–20	1
	21–25	2
	> 25	3
Nombre d'années comme infirmier.ère aux soins intensifs	< 1	4
	1–5	12
	6–10	5
	11–15	3
	16–20	1
	21–25	1
	> 25	3
Province ou territoire	Québec	10
	Ontario	8
	Alberta	4
	Nouveau-Brunswick	3
	Nouvelle-Écosse	2
	Colombie-Britannique	1
	Manitoba	1
	Île-du-Prince-Édouard	1
	Terre-Neuve-et-Labrador	0
Saskatchewan Territoires	0	

comme des femmes ($n = 24$). On y retrouvait aussi une diversité géographique intéressante. La majorité des participants ($n = 18$) disaient travailler dans les deux provinces où l'on retrouve le bassin d'infirmières et d'infirmiers plus important au Canada, soit au Québec ($n = 10$) et en Ontario ($n = 8$). Quant aux spécificités des unités de soins intensifs où travaillaient les participants, aucune donnée n'a été recueillie pour les fins de cette étude. Par contre, nous avons noté que les ratios infirmière-personne ventilée 1:1 ou 1:2 étaient les plus souvent mentionnés par les participants pour décrire leur unité de soins intensifs.

La figure 1 synthétise l'expérience des participants par tranche de cinq années. Les colonnes gris-pâle correspondent au nombre d'années travaillées aux soins intensifs. Les colonnes gris-foncé représentent le nombre total d'années en tant qu'infirmière et infirmier, y compris les années aux soins intensifs. Selon les données sociodémographiques, le tiers des participants ($n = 10$) cumulaient un total de cinq années et moins d'expérience et près de la moitié ($n = 14$) entre six et quinze années d'expérience en tant qu'infirmière et infirmier. Seulement trois participants avaient entre seize et vingt-cinq ans d'expérience, et le même nombre avaient plus de vingt-cinq années. Pour ce qui est du nombre d'années travaillées aux soins intensifs, plus de la moitié ($n = 16$) y travaillaient depuis 5 ans et moins. Huit participants avaient entre six et dix années d'expérience aux soins intensifs et deux participants entre seize et vingt-cinq années.

En regardant les données de notre échantillon de plus près, nous faisons trois constats : 1) la grande majorité des participants étaient des infirmières et infirmiers novices aux soins intensifs ; 2) il y avait moins de participants avec plus de cinq années d'expérience et encore moins avec plus de dix années d'expérience aux soins intensifs ; 3) plusieurs participants n'avaient pas accumulé beaucoup d'expérience en tant qu'infirmières et infirmiers avant d'entamer une carrière aux soins intensifs.

Résultats

Les principales barrières à la prise en charge des personnes ventilées vécues par les infirmières et infirmiers travaillant dans les USI canadiens étaient liées aux conditions de travail, aux connaissances et compétences, ainsi qu'au champ de pratique infirmier (Tableau 2). Nous présenterons chacune de ces barrières ainsi que certaines des stratégies et ressources mentionnées par les participants. Pour des questions de confidentialité et pour alléger la lecture, nous utiliserons le masculin dans les sections qui suivent. Nonobstant le fait que les entrevues ont eu lieu à la fin de l'été 2020, la COVID-19 n'occupait pas une place importante dans le corpus des données. Nos résultats reflètent ainsi les principales barrières à la prise en charge de la personne ventilée dans un contexte des soins intensifs – et non pandémique.

Conditions de travail

Lors des entrevues, les participants soulignaient le fait que leurs conditions de travail (qualifiées de difficiles) interféraient grandement avec la prise en charge de la personne ventilée aux soins intensifs. Notamment, le ratio infirmière-personne ventilée, le rythme de travail et les lieux physiques des soins intensifs étaient les trois sous-thèmes découlant des conditions de travail.

Figure 1

Nombre d'années d'expérience des participants (n = 30)

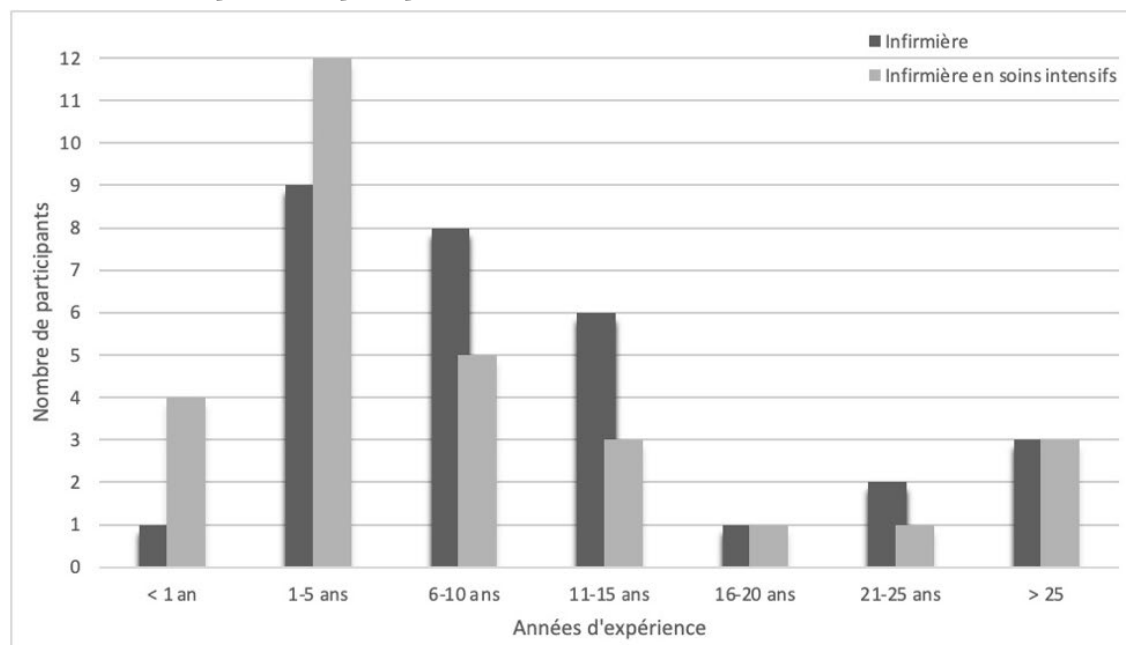


Tableau 2

Barrières à la prise en charge des personnes ventilées

Thèmes	Sous-Thèmes
Conditions de travail	Ratio infirmier/ère – personne ventilée Rythme de travail Lieux physiques
Connaissances et compétences	Gestion du respirateur Soins psychosociaux Champ de pratique infirmier

Ratio infirmier/ère-personne ventilée : Travailler dans un ratio 1:1 n'était pas une pratique courante pour les participants qui avaient à leur charge des personnes ventilées, et ce partout au Canada. La quasi-totalité des participants déplorait un nombre insuffisant d'infirmières et d'infirmiers pour répondre aux besoins complexes des personnes ventilées, ce qui entraînait une lourde charge de travail, un manque de temps, ainsi qu'un risque pour la sécurité des personnes ventilées et du personnel infirmier. Deux des participants expliquent :

You don't get to be there for that patient, I find that's something, I guess I didn't mention that before, ventilators used to be always one to one and now ventilated patients are buddied. I've had occasion where I had two ventilated patients at the same time (...) it's not ideal, and it's obviously a workload issue and it's reported to unions and they're never happy but those situations do happen and it's not uncommon, it's considered, I would argue that it's considered standard now in our ICU (...) it's not really great, I personally think it's not safe, and I don't think it causes good things for patients. (Participant 18)

... if you have two patients and one of them is agitated and intubated, we have had self-extubation that has not gone well, because the nurse is behind the drape, looking after the other patient, but if you have one patient, there's no reason why you cannot be present for that patient. (Participant 24)

Faute de personnel, la grande majorité des participants comp-taient donc sur leurs collègues, qui étaient tout aussi surchargés, pour leur venir en aide. Les participants utilisaient également des stratégies qui ne faisaient qu'aggraver leurs conditions de travail. Par exemple, en écourtant leur temps de repas ou en omettant de manger, en ne prenant pas de pause ou en effectuant des heures supplémentaires. De plus, de nombreux participants soulignaient le fait de devoir prioriser les besoins physiques des personnes ventilées au détriment des besoins psychologiques et ceux de la famille, comme le déplore ce participant :

It's impossible for you to do the amount of work that you need to do for all the psychological pieces for the well-being of the ventilated patient when you're not one to one (Participant 18).

Lorsqu'ils ne pouvaient pas demeurer au chevet, certains participants mentionnaient utiliser les membres de la famille afin de surveiller ou de rassurer la personne ventilée. En dernier recours, certains participants disaient utiliser la contention chimique ou mécanique pour pallier au manque de personnel et à la surcharge de travail. Comme les participants suivants l'expliquent :

I had a patient who I could perhaps manage not restrained if I'd been able to be there, present (...) I have restrained a patient who I would rather have been at the bedside for, but because there was somebody who needed me more in that moment, I try not to do it, but for sure it happens (...) I've had to restrain a patient that I would otherwise not restrain just to make sure, because that patient didn't have eyes on him all the time. (Participant 14)

I know the patient needs, but I can't do it because I have to do other things, if you have two patients and you have to, you can't spend as much time as you want with the patient, you maybe have to sedate them more than what you would want to because you just can't spend that time with the patient. (Participant 27)

Compte tenu de l'impact du ratio sur la prise en charge des personnes ventilées, il n'est pas surprenant qu'un ratio 1:1 fût de loin la recommandation la plus souvent mentionnée par les participants dans le but d'améliorer cette prise en charge. L'ajout d'autres professionnels de la santé (p. ex., thérapeutes respiratoires, physiothérapeutes, orthophonistes et psychologues), était aussi jugé nécessaire pour offrir de meilleurs soins et accorder plus de temps non seulement à la personne ventilée, mais aussi aux membres de la famille. Tel que mentionné par ce participant :

... on manque de ressources, on n'a pas assez de physio, on n'a pas, en fait on n'a pas assez de tout le monde (. ...) si on avait plus de personnel, je pense que la qualité des soins aux patients ventilés se trouverait beaucoup, beaucoup améliorée, on aurait beaucoup plus de temps à leur consacrer. (Participant 28)

Rythme de travail : Le travail infirmier aux soins intensifs était décrit par les participants comme une course sans fin contre la montre qui vise à soigner des personnes « who are threatening to die every minute » (Participant 24). Le participant suivant décrit bien le rythme de travail effréné aux soins intensifs :

I just feel like everything becomes rush, everything is a countdown to do rounds on time, to get this task done on time. I don't find that I spend as much time focusing on the patient; at least, as I would like to be. (Participant 30)

En raison du rythme de travail, la prise en charge de la personne ventilée dans sa globalité devenait alors impossible. Prioriser les soins physiques et les procédures techniques au détriment des soins psychosociaux et soins à la famille devenait une stratégie, comme en témoigne ce participant :

... you don't have the time to invest in chatting with the families much or trying to figure out what they're writing on the clipboard, (...) so you just have to drop off the list and you got to sort of focus on the core things that need to be done right now. (Participant 29)

Le rythme de travail entraînait donc un manque de temps – le temps jugé nécessaire pour répondre à la complexité des personnes ventilées et leurs familles. Certains participants se disaient insatisfaits de ne pas avoir suffisamment de temps à leur consacrer. D'autres se disaient physiquement et psychologiquement épuisés. Pour gérer leur épuisement, et ses répercussions, quelques participants disaient faire appel à des stratégies d'autosoins à l'extérieur des heures de travail (p. ex., exercice physique, repos, réseau de soutien). Toutefois, la solution la plus souvent mentionnée pour prévenir l'épuisement et permettre au personnel infirmier d'offrir de meilleurs soins était bien simplement d'allouer suffisamment de temps pour favoriser une prise en charge globale de la personne ventilée et sa famille. Dans les mots d'un participant : «... ideal care [of ventilated patients] would be having time to do everything that you need to do. » (Participant 18)

Lieux physiques : Les lieux physiques de l'USI pouvaient agir comme une barrière dans la prise en charge des personnes ventilées. Par exemple, la conception de leur espace de travail pouvait entraîner une visibilité réduite nuisant à la surveillance de la personne ventilée, une trop grande distance à parcourir entre les chambres rendait l'organisation des soins moins efficace et un manque d'espace dans les chambres comme tel compliquait les soins aux personnes ventilées.

We have one, two, four rooms that are physically dangerous for the staff or the patients to be in. So there have been issues with ventilated patients in those rooms where the alarms were not heard (. ...) One bed is so far in the corner that they actually put a video camera outside the room so you can see inside the room the patient (. ...) The physical set-up of the unit is a challenge (...) I can't always hear the ventilator in fifteen. (Participant 8)

Malgré le fait que l'organisation des lieux physiques des unités où travaillaient les participants était assez variée (p. ex., chambres individuelles à multiples, poste infirmier central ou décentralisé, etc.), il était clair que les lieux physiques pouvaient faciliter ou nuire à la prise en charge des personnes ventilées en plus d'augmenter ou de diminuer la charge de travail des infirmières et infirmiers.

De façon générale, notre analyse ne laisse aucun doute quant à l'impact des conditions de travail, et plus précisément des ratios, du rythme de travail et des lieux physiques, sur la prise en charge des personnes ventilées. Elles représentaient une barrière importante au sein de notre corpus, à laquelle venaient s'ajouter deux autres types de barrières, les connaissances et compétences ainsi que le champ de pratique infirmier.

Connaissances et compétences

La deuxième barrière soulignée par les participants était le manque de connaissances et de compétences concernant la prise en charge globale de la personne ventilée aux soins intensifs. Notons qu'ici les connaissances renvoient aux notions théoriques et techniques tandis que les compétences font référence à la capacité d'appliquer ces notions en pratique. Le manque de connaissances et de compétences reliées à la gestion du respirateur et aux soins psychologiques était particulièrement récurrent dans l'ensemble des entrevues. Nous aborderons donc ces deux sous-thèmes dans les sections suivantes.

Gestion du respirateur : Un grand nombre de participants considéraient que les notions apprises sur le respirateur lors de leur formation initiale étaient insuffisantes pour bien le gérer. Ce participant le souligne, « I knew not nearly enough to be touching this gigantic piece of equipment. » (Participant 15). L'employeur devenait alors responsable de combler le manque de formation pour les infirmières et infirmiers nouvellement embauchés aux soins intensifs. Encore là, la formation offerte par les milieux hospitaliers sur la gestion du respirateur n'était pas suffisante, selon plusieurs participants. Lors des entrevues, ils disaient ne pas avoir acquis suffisamment de connaissances et de compétences, notamment sur les paramètres ventilatoires (p. ex., PEP, PA, VC) et les réglages, ainsi que les alarmes du respirateur et les problèmes reliés. Ils devaient donc apprendre en travaillant sur le terrain (« on the job »), comme l'explique ce participant :

I mean we were introduced to the ventilator settings and some common alarms that can be triggered and the reason behind that but in terms of, let's say, how much support, how much PEEP they're on, that kind of stuff, all of those numbers are more up to the RT (respiratory therapist) and it took me I guess more on-the-job training to learn about what to do if they're having high peak pressure, or if they're having low volumes, high volumes, that kind of stuff. (Participant 26)

Ils considéraient également que l'orientation à l'USI était insuffisante. Par exemple, les participants mentionnaient le recours à la formation en ligne au détriment de la mise en pratique des connaissances au chevet de la personne ventilée. De façon générale, ils notaient le manque de temps et de soutien nécessaires à l'acquisition de connaissances et au développement de compétences reliées au respirateur lors de leur orientation.

En fait, je n'ai pas eu une orientation complète parce que je viens de l'urgence, fait qu'ils ont comme considéré qu'on savait déjà comment ça fonctionnait, fait qu'ils nous ont un peu pitché là, et ils nous ont dit comme, gère le, tu es capable, s'il y a quelque chose on est là, mais comme c'est toujours différent de se faire dire «s'il y a quelque chose on est là» de «ah vient-on va le faire ensemble». (Participant 12)

Travaillant principalement avec d'autres infirmières et infirmiers novices à l'USI, les participants notaient à quel point il était difficile de se retrouver face au respirateur sans pouvoir faire appel à des infirmières et infirmiers experts(es) sur le plancher. Ils se sentaient alors laissés à eux-mêmes: «... when I went through the orientation we kind of felt like we were left high and dry» (Participant 23). Bien que les modalités d'orientation aux soins intensifs n'étaient pas uniformes au sein de notre corpus, le respirateur présentait un défi particulier pour l'ensemble de notre échantillon. Défi encore plus grand pour ceux et celles embauchés à l'USI en début de carrière qui qualifiaient leurs premières expériences avec des personnes ventilées de difficiles, terrifiantes, stressantes et anxiogènes.

Well, I mean the first time would probably be during orientation, so I was basically terrified. I felt like I didn't really understand the mechanism of mechanical ventilation. (Participant 13)

Pour toutes ces raisons, la majorité des participants disaient se fier aux thérapeutes respiratoires pour la gestion du respirateur et en quelque sorte pour une partie des soins aux personnes ventilées. Tel que souligné par ce participant :

... the knowledge of vents, the knowledge of vents settings, the decision-making process on changing that setting, that's not a piece of heavily educated stuff for nurses. Because we have the RTs, we blindly trust RTs more than I would like, I personally would love to have more vent education. (Participant 15)

Pour pallier ce manquement, et surtout, compte tenu de la complexité du respirateur et des soins à la personne ventilée, la nécessité d'avoir un thérapeute respiratoire présent à l'USI ou du moins plus facilement accessible était soulignée par plusieurs participants.

... having a RT who is easily accessible is definitely ideal, because there are things, the nurse's ability to troubleshoot the ventilator is only so limited and we can't, we're not trained to adjust any settings on the vent, so having an RT on the unit and easily accessible is a definite must. (Participant 26)

Pour combler leur manque de connaissances et de compétences, les participants avaient développé certaines stratégies telles que regarder des vidéos pendant leur temps libre, suivre des cours ou un programme en soins intensifs, obtenir une certification en soins intensifs, consulter leurs collègues de travail et poser des questions, en particulier aux thérapeutes respiratoires :

I did a lot of reading on my own and reading what current best practices were for ventilated patients and a lot of talking to the RT too and finding out what, yeah I felt like my orientation program didn't really adequately explain to me any of the ventilator settings and all things that we see and what they meant and what they were for. So, I definitely talked to the RTs a lot and ask them a lot of questions. (Participant 23)

La majorité des participants recommandait une formation initiale plus approfondie sur les paramètres et réglages du respirateur ainsi qu'une formation continue spécialisée, notamment « I guess more ongoing education with the ventilators rather than just that one time in school I think would really help, would be really helpful. » (Participant 26). Certains soulignaient l'importance d'avoir accès à une infirmière éducatrice aux soins intensifs afin de répondre à leurs questions, d'assurer la formation continue, en plus d'éviter que les infirmières et infirmiers novices se sentent dépassés et que la qualité des soins soit affectée. Aussi, quelques participants proposaient un programme de mentorat avec des infirmières et infirmiers experts(es) afin de pouvoir mieux comprendre la mise en pratique des connaissances acquises.

Soins psychosociaux : Le manque de connaissances et de compétences quant aux besoins psychosociaux de la personne ventilée et de la famille était fréquemment mentionné par les participants. Ils notaient que ce sujet était généralement abordé lors de la formation initiale, de la formation spécialisée en soins intensifs et de l'orientation à l'USI. Toutefois, le contenu et l'accompagnement étaient jugés insuffisants compte tenu de la complexité des besoins psychosociaux des personnes ventilées et de leurs familles. Par exemple, un participant soulignait le manque d'information sur la prise en charge d'un rappel explicite — phénomène où la personne se rappelle des perceptions (sensation et émotions) survenues sous sédation-analgésie lors d'une ventilation mécanique :

I feel like we drop the ball just in health care in general on mental health, knowledge and education in general (...) how to support people to not have traumatic experiences in the first place, and have support throughout the other side, I would love any education that they would be interested in giving. It's not, it's not really a part of it, but mental health education in general is valuable, I think for nurses. (Participant 15)

Malheureusement, en raison du manque de connaissances et de compétences, certains participants ne se sentaient pas outillés pour prévenir ou du moins réduire les conséquences

psychologiques associées à la ventilation mécanique. D'autant plus que l'expérience de la ventilation mécanique n'était généralement pas abordée avec la personne une fois qu'elle était extubée, comme le souligne l'extrait suivant :

Honnêtement, non. Probablement qu'on devrait [aborder cette expérience avec le patient], mais non, ce n'est pas quelque chose qu'on parle de, on dirait qu'on regarde tout le temps comme en avant, et on regarde pas vraiment en arrière. On a tout le temps comme un plan pour la prochaine heure, la prochaine journée, la prochaine semaine, mais on ne retourne jamais en arrière. C'est sûr que si [le patient] m'en parlerait, j'en parlerais avec lui. (Participant 25)

Compte tenu des conditions de travail et du manque de connaissances et de compétences, plusieurs participants disaient ne pas se sentir outillés pour aborder l'expérience de la ventilation mécanique avec les personnes qu'elles soignent et leurs familles. D'autres disaient automatiquement référer vers d'autres ressources ou professionnels de la santé la santé (p. ex., intervenant en soins spirituels, psychologue et travailleuse sociale), ne se sentant pas aptes à les accompagner. À titre d'exemple, même dans des situations complexes impliquant un décès neurologique et une possibilité de dons d'organes, le participant suivant dénonçait le manque de soutien à la famille de la personne ventilée :

On n'a pas le temps la plupart du temps d'écouter les familles (...) nous on peut bien leur en parler, mais tu sais on n'est pas des psychologues et on a surtout, on n'a pas le temps de les prendre tous ensemble et de les faire cheminer avec les bons moyens, nous on est des cliniciens, et on va s'occuper du patient, mais les familles je trouve qu'ils sont vraiment laissés à eux-mêmes de ce côté-là. (Participant 28)

Les participants notaient aussi l'importance d'une formation plus approfondie sur les conséquences psychologiques pouvant survenir à la suite d'un séjour aux soins intensifs (incluant le rappel explicite). Quelques participants proposaient aussi d'inviter des personnes ayant été ventilées aux soins intensifs à témoigner, et ce dans le but de mieux comprendre la trajectoire psychologique et les besoins complexes de la personne ventilée. L'extrait suivant résume ce dernier point :

... moi j'ai pas forcément discuté avec des patients qui se souviennent de leur épisode de soins, alors j'imagine que des rencontres avec des patients des soins intensifs qui viennent parler aux équipes, enfin c'est de faire du lien finalement entre l'avant et l'après parce que bien souvent on ne sait pas nous quand les patients partent on sait pas après la suite on les revoit plus, on ne sait pas ce qu'ils ont vécu. Je sais pas d'avoir des témoignages de patients qu'y ont vécu ça, ça serait important (...) je trouverais ça pertinent d'avoir comme un lien entre guillemets et puis une suite de toutes les actions qu'on pose parce que les conséquences on les connaît pas plus que ça au final. (Participant 7)

En résumé, nos données suggèrent que le manque de connaissances et de compétences reliées au respirateur et aux soins psychosociaux est bien réel et qu'il affecte les soins aux personnes ventilées et leurs familles. Les conditions de travail aux soins intensifs limitent aussi la capacité des infirmières et

infirmiers à apprendre, à poser des questions, à développer des stratégies et à mettre en pratique de nouvelles compétences. À cela s'ajoute le champ de pratique, une troisième barrière que nous aborderons dans la prochaine section.

Champ de pratique infirmier

Le champ de pratique infirmier constituait une barrière importante à la prise en charge globale des personnes ventilées aux soins intensifs, en particulier au niveau de la gestion du respirateur. Le participant suivant décrit clairement cette barrière lorsqu'il dit :

I think that RNs are kind of getting pushed out of practice for the care of a ventilated patient. We don't make changes on the vent, it would be frowned upon if I thought that a patient required less pressure support and if I took the liberty to decrease the pressure support, though I'm comfortable in knowing that it would be appropriate for that patient, and discuss it with the physician. I would probably be reprimanded if I was making ventilator changes without consulting a respiratory therapist, (...) they like to own the scope of practice pertaining to the ventilators and be the sole person. (...) I would like to be more involved in, especially when you don't see a respiratory therapist being on their workload for so long, you would like to make a lot of these changes and you would like to be involved in that component of care. (...) we're kind of just, we page when we have a problem kind of thing but it's certainly something that is a part of our scope of practice and I hope it's something in the future that we can utilize our full scope. That is kind of my argument that ended up getting our initials on the bottom of the respiratory therapy flow sheet was I said "but that's also my scope of practice, it's also within my scope to document these numbers and that's also part of my assessment", I'm like "you can't just expect the respiratory therapist to own that part of the monitoring", I said, "that's also part of my role". So it is kind of a, I wouldn't say it's a problem, it's certainly a shared scope that sometimes has some blurred lines. (Participant 18)

On note donc, au sein du corpus, une tension significative en ce qui a trait au contrôle du champ de pratique entre les thérapeutes respiratoires et les infirmières et infirmiers – tension qui se manifeste au niveau des soins, de la documentation, et de l'autonomie professionnelle. Finalement, on relève des difficultés reliées à la délimitation du champ de pratique de façon à ce que les thérapeutes respiratoires détiennent le monopole du respirateur, ce qui limite grandement l'autonomie professionnelle des infirmières et infirmiers vis-à-vis la prise en charge de la personne ventilée : « ... des fois il y a certaines actions, qu'ils veulent vraiment garder pour eux, ce qui fait que des fois on dépend, on dépend beaucoup d'eux. » (Participant 5).

Dans l'ensemble, nos participants disaient ne pas ajuster les paramètres ventilatoires, et que cette tâche était reléguée aux thérapeutes respiratoires ou, dans certain cas, aux médecins. Par peur de représailles ou de déplaire à leurs collègues de travail, les participants n'osaient pas effectuer certaines interventions et encore moins des changements au niveau des paramètres

ventilatoires, et ce même s'ils détenaient les connaissances et les compétences pour le faire (p. ex., infirmières et infirmiers experts(es) avec plusieurs années d'expérience, formation spécialisée).

On touche vraiment pas au ventilateur, c'est un petit peu garder par les inhalos, comme je vais même pas augmenter la FiO₂ ou rien de ça, on touche vraiment pas au ventilateur. On les appelle, et eux autres ils viennent (...) je ne pense pas que ce soit écrit à nulle part, mais c'est comme une règle. (Participant 25)

Quelques participants soulignaient également qu'ils étaient toujours présents au chevet pour assurer une surveillance étroite de la personne ventilée, alors que le thérapeute respiratoire n'y était que rarement : « ... on les appelle au besoin, ils ont une pagette, puis ils viennent » (Participant 25). Limiter certaines activités aux thérapeutes respiratoires, comme l'ajustement des paramètres, pouvait donc compliquer et fragmenter la prise en charge, en plus de la rendre potentiellement moins efficace lorsque l'intervention d'une tierce personne au chevet de la personne ventilée s'avérait nécessaire.

Il était difficile pour les participants de trouver des stratégies pour faire face à cette barrière, compte tenu qu'elle impliquait des décisions organisationnelles et relevait de la réglementation professionnelle. Il est intéressant de noter qu'à la première vague de la pandémie, une expansion du rôle infirmier a eu lieu. Cependant, un participant fait la remarque que des barrières subsistent :

Mais c'est un peu, c'est un peu flexible parce que pendant la COVID, on n'avait pas le droit, on pouvait pas rentrer quinze dans la chambre fait que, s'il y avait des changements à faire, c'est nous qui les faisons et l'inhalo nous guidait un peu. Fait que c'est sûr qu'on a appris beaucoup de choses sur le ventilateur aussi, mais là on est revenu à la normale et... ils aiment pas trop quand qu'on touche au ventilateur (rire), donc là on leur laisse manipuler le ventilateur, mais normalement on n'a pas le droit d'y toucher. (Participant 4)

Comme le souligne l'extrait, même dans un contexte nécessitant une flexibilité, des tensions demeuraient. Les participants relevaient aussi des tensions lors de situations cliniques où il y avait un chevauchement entre leur champ de pratique et celui des thérapeutes respiratoires. Ceci pouvait entraîner de la confusion, voire même de la frustration. Un participant illustre bien ce genre de situation clinique en expliquant comment l'administration d'aérosols médicamenteux compliquait la prise en charge de la personne ventilée et limitait, sans raison valide au plan professionnel et clinique, le champ de pratique infirmier :

... in our hospital our respiratory therapists are the ones, (...) like they administer the puffers and everything for the mechanically ventilated patients when we're totally capable and knowledgeable of doing that. (...) if I wanted to give like a PRN salbutamol I can't just, even though I'm totally capable of just going in and give it myself, I have to call the RT and be like "hey, this is my assessment can you come and get a PRN of this". So, I just feel like that would be a little bit easier if our policy allowed us to just administer our puffers. (Participant 20)

Cette barrière pouvait aussi occasionner des problèmes et des délais dans les soins prodigués, voire retarder le sevrage du respirateur. La création d'un champ de pratique exclusif pouvait donc poser des risques à la sécurité de la personne ventilée. Le participant suivant l'illustre bien :

Donc, oui c'est arrivé des situations où c'était un peu limite, mais à ce moment-là nous on a pris en charge la ventilation du patient parce qu'on est capable de le faire. Dans des situations comme ça, on va pas attendre que l'inhalo arrive. (Participant 5)

Au final, nos résultats indiquent que les trois types de barrières auxquelles font face les infirmières et infirmiers dans la prise en charge des personnes ventilées n'existent pas en silo. Elles sont plutôt dynamiques et ancrées dans un contexte de soins bien précis. En travaillant à un rythme effréné avec une surcharge de patients et dans un environnement physique qui peut ralentir et compliquer les soins, les infirmières et infirmiers sont déjà limités dans leur capacité de prendre en charge la personne ventilée. À cela s'ajoute un manque de connaissances et de compétences nécessaires pour offrir des soins qui vont au-delà des besoins physiques de la personne, notamment ceux reliés à l'expérience globale de la ventilation mécanique – incluant toutes ses facettes, en commençant par la gestion du respirateur jusqu'aux séquelles potentielles de la ventilation mécanique à court et long terme. Finalement, la limitation du champ de pratique infirmier vient contraindre non seulement la formation, mais aussi la mise en pratique des connaissances et des compétences acquises pour la prise en charge des personnes ventilées, en particulier la gestion du respirateur. Cela restreint l'autonomie professionnelle des infirmières et infirmiers, complique la prise en charge, limite les interventions infirmières auprès des personnes ventilées, et a un impact sur la qualité et la sécurité des soins aux personnes ventilées.

Discussion

Cette analyse thématique a permis d'identifier les principales barrières à la prise en charge des personnes ventilées aux soins intensifs, en plus de certaines ressources et stratégies utilisées par les infirmières et infirmiers pour surmonter, ou du moins pallier, aux conditions de travail difficiles, au manque de connaissances et compétences ainsi qu'aux limites imposées au champ de pratique infirmier. Nous estimons que les résultats issus de cette analyse offrent des pistes de solution afin d'améliorer cette prise en charge, notamment en ce qui a trait à la formation et la pratique clinique.

Les infirmières et infirmiers sont à l'avant-plan de la prise en charge des personnes ventilées aux soins intensifs. On s'attend donc à ce qu'ils aient les connaissances et les compétences requises pour prendre en charge la personne ventilée dans sa globalité. Comme en témoigne notre échantillon, on compte de plus en plus d'infirmières et infirmiers novices aux unités des soins intensifs (Critical Care Services Ontario [CCSO], 2019). À cela s'ajoute à ce phénomène un taux de roulement annuel du personnel infirmier à l'USI qui est plus élevé (26,7%) que la moyenne globale des taux de roulement dans les autres milieux de soins en contexte hospitalier canadien (19,9 %) (O'Brien-Pallas et al., 2010). À l'échelle internationale, une

revue systématique récente a montré que plus de 27,7 % des infirmières et infirmiers en soins intensifs avaient l'intention de quitter (Xu et al., 2023). Selon des données issues de l'Ontario, les infirmières et infirmiers nouvellement embauchés (< 3 ans) constituent le groupe quittant en plus grand nombre les USI (CCSO, 2019). En plus d'être coûteux, un taux de roulement élevé a un impact négatif sur la santé mentale et la satisfaction au travail des infirmières et infirmiers, ainsi que sur la qualité et la sécurité des soins (Bae, 2022; O'Brien-Pallas et al., 2010). Ce roulement, combiné à la forte présence du personnel infirmier novice, entraîne une perte importante de connaissances et de compétences dans les USI (American Association of Critical Care Nurses [AACN], 2019).

Nos résultats mettent en lumière des manquements concernant la gestion du respirateur et les dimensions psychosociales du soin à la personne ventilée. Étant donné que la formation de base en sciences infirmières a pour but de former des infirmières et infirmiers généralistes et que de plus en plus de novices font leur entrée aux soins intensifs, ces manquements doivent être comblés par les employeurs. Il est important de noter qu'il existe au Québec une double passerelle pour la formation initiale des infirmières et infirmiers (DEC ou BAC). Selon l'Institut National d'excellence en santé et en services sociaux [INESSS] (2018), bien qu'il soit recommandé d'offrir une formation de qualité à l'embauche et de manière continue dans les USI, il semble que ce ne soit pas la norme au Québec. Tel que le dénotent St-Pierre et al. (2011), la formation et l'orientation de la relève sont souvent trop courtes, en plus d'être reflées à quelques infirmières et infirmiers expert(e)s en poste, ce qui nuit à la rétention de l'expertise infirmière en soins intensifs. L'acquisition et le maintien des connaissances et des compétences spécifiques aux soins intensifs font également l'objet de contraintes organisationnelles importantes – phénomène qui risque de s'aggraver davantage compte tenu des répercussions de la COVID-19 sur le personnel infirmier (Lauck et al., 2022). Hélas, certaines de ces contraintes, comme le déploiement rapide d'infirmières novices à l'USI, témoignent d'un manque de reconnaissance de l'expertise nécessaire pour y travailler (Wynne et al., 2021).

L'Association canadienne des infirmières et infirmiers en soins intensifs (ACIISI) (2017) a développé des normes pour la pratique infirmière en soins critiques, mais celles-ci ne sont pas spécifiques à la formation et l'orientation du personnel nouvellement embauché. Il serait donc important de développer des normes spécifiques à la formation et l'orientation de façon à créer un seuil de base que les employeurs se devraient de respecter pour assurer la compétence du personnel aux soins intensifs. Selon l'American Association of Critical Care Nurses (AACN) (2019), la formation et l'orientation à l'USI doivent être adaptées au personnel nouvellement embauché. En d'autres mots, l'embauche d'infirmières et d'infirmiers novices nécessite un ajustement de la formation et de l'orientation. Toujours selon l'AACN (2019), la présence d'experts est également importante, car tel que relevé dans nos résultats, les USI nécessitent une formation professionnelle continue. Pour les soins à la personne ventilée, par exemple, la formation initiale ne suffit pas et la formation continue est primordiale afin d'améliorer les résultats de la ventilation mécanique (Guillhermino et al., 2018; Kimura et al., 2023).

En plus des écarts dans la préparation que reçoivent les infirmières et infirmiers pour travailler aux soins intensifs et prendre en charge des personnes ventilées, nos résultats suggèrent que l'expertise acquise par les infirmières et infirmiers cumulant plusieurs années d'expérience n'est pas utilisée à son plein potentiel dans le cadre de la prise en charge de la personne ventilée. La gestion du respirateur et les soins directs à la personne ventilée se trouvent à être assignés à deux professionnels de la santé qui occupent des rôles différents aux soins intensifs (les thérapeutes respiratoires et les infirmiers/ières). La fragmentation de la prise en charge contribue non seulement à limiter le rôle infirmier, mais aussi à restreindre la prise en charge globale de la personne ventilée. Être incapable de pratiquer à son plein potentiel peut négativement affecter les infirmières et les infirmiers, ainsi que les patients (Feringa et al., 2018). Étant les professionnels de la santé le plus souvent au chevet de la personne ventilée, les infirmières et infirmiers à l'USI sont bien placés pour détecter les changements précoces et reconnaître les critères de sevrage (Haugdahl et al., 2014; Khalafi et al., 2016). En fait, l'exclusion de l'infirmière et infirmier peut ajouter des étapes au processus décisionnel entraînant des retards dans les traitements et des risques pour la sécurité de la personne ventilée (Burns, 2009; Rose, Blackwood, Burns et al., 2011). En d'autres mots, l'optimisation du champ de pratique infirmier pourrait assurer un meilleur continuum de soins pour les personnes ventilées. Pour ce faire, il faudrait bien entendu que la formation initiale et continue en soins intensifs permettent l'acquisition et le maintien des connaissances et compétences nécessaires à cette pratique autonome (Guillhermino et al., 2018; Kimura et al., 2023) en plus de mettre en place des stratégies favorisant la collaboration interprofessionnelle (Rose, Blackwood, Egerod et al. 2011), d'améliorer les conditions de travail (Déry et al., 2022) et d'assurer un ratio infirmier/ère–personne ventilée 1:1 (Chamberlain et al., 2018; Rose, Blackwood, Burns et al., 2011).

Évidemment, nous ne pouvons pas passer sous silence le rôle que jouent les conditions de travail dans la création de barrières qui nuisent à la prise en charge des personnes ventilées. Tout particulièrement, l'impact du ratio infirmier/ère–personne ventilée sur cette prise en charge et au sens large, sur la charge de travail du personnel infirmier. Un ratio supérieur à 1:1 peut avoir des conséquences négatives importantes. Il limite la participation des infirmières et infirmiers à la prise de décision concernant le respirateur, en plus de réduire la collaboration interprofessionnelle (Rose et al., 2011). Il augmente le risque de mortalité, de complications et d'infections nosocomiales chez les personnes ventilées (Rae et al., 2021), ainsi que le recours aux contentions mécaniques (Perez et al., 2019). Il réduit les opportunités de mentorat et nuit à la formation des infirmières et infirmiers novices (ACIISI, 2019). Sans aucun doute, un ratio 1:1 est nécessaire pour permettre une prise en charge optimale et sécuritaire des personnes ventilées. Tel que le souligne l'ACIISI (2019), la plupart des patients aux soins intensifs nécessitent un ratio 1:1. Alors, il n'est pas surprenant que l'une des recommandations principales découlant de nos résultats soit de maintenir ce ratio.

Limites

Cette analyse comporte certaines limites. Premièrement, elle découle d'un plus grand corpus de données recueillies dans le

cadre d'une étude de théorisation ancrée visant à comprendre le processus de soins de la personne ventilée. Au vu l'importance des barrières dans les récits des participants, nous avons procédé à une analyse secondaire des données dont les résultats sont présentés dans cet article. Deuxièmement, elle ne comporte pas de données détaillées par rapport aux milieux de soins. Il aurait été intéressant d'inclure certaines informations telles que le niveau de soins des hôpitaux où travaillaient les participants (p. ex., primaire, secondaire, tertiaire) et les spécificités des unités des soins intensifs (p. ex., spécialité des soins, niveau de soins, modèle ouvert ou fermé). Par contre, il n'y avait pas de différences frappantes dans la description de leur milieu de travail en entrevue. Troisièmement, plus de la moitié des participants avaient moins de 5 ans d'expérience aux soins intensifs, mais nos résultats étaient nuancés en fonction de l'expertise infirmière. Notons également que nos résultats se limitent à une perspective infirmière canadienne de la prise en charge de la personne ventilée à l'USI, car la composition des équipes de soins diffère d'un pays à l'autre. Nous considérons que la taille de l'échantillon ($n = 30$), la diversité des milieux géographiques et la représentativité sociodémographique des infirmières et infirmiers aux soins intensifs du Canada contribuent à la richesse des données et justifiaient le besoin de compléter une analyse plus pointue des barrières rencontrées dans la prise en charge des personnes ventilées.

Conclusion

Les résultats de cette analyse thématique ont permis d'identifier trois types de barrières à la prise en charge infirmière des personnes ventilées aux soins intensifs : les conditions de travail, les connaissances et les compétences ainsi que le champ de pratique infirmier. Pour surmonter ces barrières, des changements au niveau de la formation et de la pratique sont nécessaires. De façon plus large, des changements importants au sein de l'organisation du travail infirmier et des soins intensifs sont aussi nécessaires pour assurer une prise en charge globale de la personne ventilée. Tel que le soulignent Guilhermino et al. (2018), la prise en charge des personnes ventilées est hautement complexe

et le rôle infirmier est loin d'être standardisé à l'échelle internationale. C'est pourquoi, nous croyons qu'il est primordial de se tourner vers des pays où le rôle infirmier est plus avancé et autonome, comme les autres pays du Commonwealth (p. ex., Royaume-Uni, Australie, Nouvelle-Zélande) (Rose, Blackwood, Egerod et al., 2011), afin de trouver des pistes de solutions aux barrières identifiées, et ainsi améliorer la formation et la pratique infirmière aux personnes ventilées dans les USI.

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The Canadian Association of Critical Care Nurses (CACCN) develops position statements to provide summaries of CACCN views on issues pertaining to critical care nurses and their nursing practice. Critical care nurses from across the country participate in the creation and review of relevant position statements. CACCN position statements are reviewed at a minimum of every five years to ensure applicability to practice. The following statement was approved by the CACCN National Board of Directors on December 15, 2023. Please visit our website at caccn.ca to view all CACCN position statements.

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CACCN POSITION STATEMENT

Critical Care Nurse Wellbeing

Background

Critical care nursing is a specialized field dedicated to providing patient and family centered care to individuals facing life-threatening health emergencies, while carrying out complex workloads (CACCN, 2017; Mealer & Jones, 2013). Critical Care nurses regularly contribute to navigating complex and high stakes situations including goals of care decision-making, adaptation to life altering diagnosis, palliation, and end of life care (Bruyeel et al., 2021; Moss et al., 2016). Working in critical care environments and caring for critically ill patients can lead to the decline of the wellbeing of nurses, making these nurses prone to higher levels of burn-out than other areas of nursing (Moss et al., 2016; Poncet et al., 2007; Shorter & Stayt, 2009). When encountering the many stressors present in critical care environments, nurses may experience compassion fatigue, post-traumatic stress disorder (PTSD), and other harmful physical, psychological, emotional, and spiritual sequelae which may affect their ability to provide safe patient care (Imes & Chasens, 2019; Jarden et al., 2018; Moss et al., 2016; Papanthanasoglou & Kranikola, 2018). Further, research demonstrates that when there is a deficit of nurse wellbeing there can be reduced quality of care, lower patient satisfaction, an increased number of medical errors, and higher rates of healthcare associated infections (Moss et al., 2016). This can catalyze a downstream negative effect on the retention of nurses in this high acuity area and decreased job performance, low employee commitment to the organization, higher health care costs, and a reduction of employee creativity and innovation (Halbesleben, et al., 2008; Mealer & Jones, 2013).

Acknowledging the limited evidence grounding our understanding of nurse wellbeing it is important that further attention be paid to contexts of practice where nurses are understood to be at increased risk of the negative impacts of their work on their personal wellbeing. The concept of wellbeing is evolving and not well defined (Jarden et al., 2018; Jarden et al., 2019), but a concept analysis by Patrician et al. (2022) has offered a definition as “a nurse’s positive evaluation of oneself and one’s contributions to the work of nursing and allows the individual nurse to be the best whole person mentally, physically, emotionally, and spiritually they can be at any given point in time and the ability to adapt and overcome adversity to the extent

possible” (Patrician et al., 2022, p.645). This endorses the ideal of wellbeing as “the best ‘you’ that you can be and bringing the best ‘you’ to your work, your team, unit, and/or organization.” (Patrician et al., 2022, p.644). Recognizing the crucial role critical care nurses play in patients, family, team, organization, and systems outcomes, it is imperative to prioritize their wellbeing and advocate for strategies that promote their wellness.

CACCN Position

The Canadian Association of Critical Care Nurses acknowledges the importance of critical care nurse wellbeing for the provision of quality patient care, including improved outcomes for patients, family, team, organization, and systems outcomes. Fostering nursing wellbeing is an integrative and shared responsibility between individual nurses, organizations, and health care systems.

CACCN endorses the following to facilitate critical care nurse wellbeing:

1. System Responsibilities:

Government support is needed to ensure safe and healthy workplaces to optimize nurses’ wellbeing. Government bodies carry the duty to protect healthcare professionals (Rhéaume et al., 2022) and nurture the systems that sustain service and support practice. This includes policy, legislation, and funding for supportive work environments and access to mental health services aligned to the needs of critical care nurses (CNA, 2022; Damico et al, 2022; Guttormson et al, 2022; Kranikola et al 2015). Overt, thoughtful, and ongoing government support of the critical care nursing workforce in Canada has the capacity to uncover and address areas where critical care nursing environments can be optimized, work burdens and wellness resources are balanced, and research in this domain of health care provision is prioritized (CNA 2022; Kranikola et al, 2015; Kranikola, 2018).

Nursing professional and regulatory bodies (e.g., unions, licensing bodies, accreditation bodies) can optimize safe patient care by advocating and developing strategies that promote nurses’ mental, physical, social, and professional wellbeing including optimizing nurse workload, facilitating staff retention measures, recognizing specialty nursing practice, and promoting autonomy in nursing and its scopes of practice (AACN, 2020; CNA, 2009; CNA, 2022).

2. Organizational Responsibilities:

Organizations and employers can create culturally safe, respectful, inclusive, and healthy work environments by minimizing work-related stress (Munro et al., 2022; Rushton et al., 2015). This can be accomplished through ensuring collaboration, respectful communication, authentic leadership, shared decision making, meaningful recognition, promotion of self-care, social support, and team engagement (Kranikola & MPouzika, 2018; Leiter & Maslach, 1999; Maslach & Leiter, 2008; McAdam & Erikson, 2020; Munro et al., 2022).

Organizations and employers can develop policies and accessible programs that work to destigmatize mental illness among critical care clinicians (Karanikola & Mpouzik, 2018). Suggested programs can include access to professional psychological services and utilizing peer-to-peer support and peer debriefing (Badger, 2008; Guttormson et al., 2022).

3. Individual strategies:

Critical care nurses not only deserve to feel well but have a professional responsibility to *be* well at work (American Nurses Association, 2015; Canadian Nurses Association, 2017). Although nurses are not solely responsible for creating healthy work environments (Jarden et al., 2019b), they can advocate for interventions that promote their wellbeing in the workplace. Key strategies for wellbeing include physical health, work-life balance, and strong personal relationships; recognizing when they are not well and seeking support accordingly (Jarden et al., 2021; McElligott & Turnier, 2020).

Critical care nurses can engage in self-care practices to improve resilience, promote healing, and enhance compassion for self and others as a preventative measure and intervention (Gee et al., 2022; McAdam & Erikson, 2020; Salmon & Morehead, 2019). They can also advocate for accessible areas of rest, opportunities for mindfulness, reflection, and physical activity at work, strong interprofessional support and collaboration, development of social networks, and an increased sense of community (Gee et al., 2022; Herron et al., 2022; Jarden et al., 2019a; Henderson et al., 2022; Rheume et al., 2022). Individuals can foster wellness within their environment by prioritizing personal and team wellbeing.

Supporting critical care nurses' wellbeing requires a multilevel approach and is a shared responsibility of health care systems. Systems, organizations, and individuals must take responsibility for the wellbeing of nurses by providing adequate educational opportunities, accessible programming, research funding, and the creation of policies promoting safe critical care work environments. In doing so, improved critical care nurse wellbeing will promote staff retention, improve job satisfaction, and optimize patient care and outcomes.

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