CACCN

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Canadian Association of Critical Care Nurses

CACCN National Office

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CANADIAN
ASSOCIATION OF
CRITICAL
CARE
NURSES

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

Letter from the Editor

We are entering an exciting phase at the CJCCN as each volume of 2026 will be themed around a specific topic.

In Volume 1 of 2026, the manuscripts in the CJCCN reflect the important work critical care nurses perform daily with patients who are intubated or unable to communicate for various reasons in the ICU. This further aligns with our Practice Pearls, a case study about sedation vacations. Finally, the Editorial Management Team and the Editorial Advisory Board want to empower all members to become authors and submit a manuscript for review based on the bedside experience. Additional manuscript topics, writing suggestions and guidance for final manuscript preparation have been provided in this volume. We want to hear your story, as it is likely a shared experience with other members.

It is important to continue building community with all CACCN members across Canada. Our experiences connect us, and critical care nurses certainly have them. Wherever you may fall on the novice-to-expert spectrum, as a bedside nurse, clinical educator, critical care nurse researcher, or in leadership, your contributions can impact other members. Please consider how you can impact your colleagues.

I could not find the correct inspiring quote for this volume, so I used the following prompt for ChatGPT: "Please create an original and an inspiring quote specifically for critical care nurses about community and sharing your voice." Here is the product:

> *"Every time a critical care nurse shares a story, a lesson, or a hard truth, our whole profession becomes stronger."*

Here's to becoming stronger through shared voices.

All my best,

Kara Sealock, EdD, Med, BN, RN, CNCC(C), CCNE
Chief Editor
The Canadian Journal of Critical Care Nursing

Emeritus Editorial Advisory Board Members

The Canadian Journal of Critical Care Nursing and the Board of Directors of the Canadian Association of Critical Care Nurses (CACCN) is pleased to thank and recognize the following member for their exceptional long-term service to the CJCCN and the CACCN.

Debbie Fraser, MN, NNP, CNeon(C), FCAN

Debbie Fraser is an Associate Professor in the Nurse Practitioner (NP) Program at Athabasca University, Athabasca, Alberta, and practises as a neonatal nurse practitioner at St. Boniface Hospital in Winnipeg, Manitoba. Ms. Fraser's research interests include the care of extremely low birthweight infants, online education strategies, and curriculum development.

CJCCN Managing Editor

The Canadian Journal of Critical Care Nursing (CJCCN) and the Board of Directors of the Canadian Association of Critical Care Nurses (CACCN) recognizes and thanks Heather Coughlin at Pappin Communications for her exceptional long-term service to the CJCCN and the CACCN. Heather has been the managing editor for the CJCCN since Volume 22, Number 1, issued in Spring 2011, following the retirement of Bruce Pappin at Pappin Communications. The CJCCN and CACCN wish Heather well in her retirement.

The (CJCCN) and the Board of Directors of the Canadian Association of Critical Care Nurses (CACCN) is pleased to announce the new Managing Editor for the CJCCN, **Sherri Keller, Meadowlight Media**. Sherri has been part of the CJCCN and Pappin Communications family for many years. We look forward to our new partnership.

Perspectives of patients in the ICU who are non-speaking, and their families, on goals-of-care and end-of-life discussions

By Fiona Campbell, PhD, SLP, Taylor Chan, BSc(Hons), Cheryl Missiuna, PhD, Joseph B. Orange, PhD, Ashwini Namasivayam-Macdonald, PhD, CCC-SLP, SLP(C), Reg. CASLPO, and Lyn S. Turkstra, PhD, CCC-SLP, BC-NCD(A)

Abstract

***Objectives**: The objective of this study was to explore how patients and their caregivers perceived their communication during goals-of-care/end-of-life discussions and decision-making in the intensive care unit (ICU). The patient participants were temporarily non-speaking due to their medical treatment and used augmentative and alternative communication (AAC) during their stay in the ICU. Results from patient participants were garnered when they reported their experience retrospectively. The long-term goal was to support strategies and assist in the development of AAC tools for patient participation during goals-of-care and end-of-life conversations.*

***Methods**: Participants were recruited via study flyer during their ICU stay and included four adults who were admitted to the ICU and intubated, and their family members. Patients and family participants were interviewed separately about their experiences during goals-of-care and end-of-life discussions, when patient participants were intubated and unable to participate fully. Interviews occurring when participants were speaking again and no longer in ICU, were audio-recorded, transcribed, and analyzed using inductive thematic analysis.*

***Findings**: Participants' reports of their goals-of-care/end-of-life discussions and decision-making were summarized into five major themes: (a) communication partners, (b) feelings and thoughts, (c) matters to talk about, (d) control/power, and (e) how communication occurs. Theme A (communication partners) depicts patients' unmet needs and wants and information/explanations from their healthcare providers. Theme B (matters to talk about) summarizes participants' experiences with ICU care, operations, and interventions. Theme C (feelings and thoughts) characterizes participants' fear, frustration, isolation, wanting to be treated as themselves and ways in which family participants feel overwhelmed. Theme D (control/power) characterizes patient participants' self determination: they know what they want, are tracking activities in ICU and also questioning who has control of goals-of-care decision making. Theme E (how communication occurs) includes the sub-themes: safety, no communication, and lack of staff understanding. Additional subthemes are unaided and aided communication experiences during goals-of-care/end-of-life discussions.*

***Conclusions and Implications for Clinical Practice:** Results suggest a need exists for tools that include ICU-specific vocabulary and communication partner training, so that non-speaking AAC users can fully participate in their own goals-of-care and end-of-life discussions in the ICU.*

Keywords: vocabulary, communication, intensive-care units, delivery of health care, patient care planning

Campbell, F., Chan, T., Missiuna, C., Orange, J. B., Namasivayam-Macdonald, A., & Turkstra, L. (2026). Perspectives of patients in the ICU who are non-speaking, and their families, on goals-of-care and end-of-life discussions. *The Canadian Journal of Critical Care Nursing, 37*(1), 6–21. DOI: 10.5737/23688653-3716

Implications for Nurses

This study offers insights for critical nurses about the communication needs of patients in the intensive care unit (ICU) who are non-speaking. Themes from this study show such patients are tracking their care by monitoring their equipment, medications, and treatments. Patients wish for more information and involvement in their care and treatment discussions and also recognize when medical decisions are made by their family without their involvement.

Results from this study demonstrate that augmentative and alternative communication (AAC) systems are not enough: patients need access to more specific ICU vocabulary and caregiver support if they are to participate in goals-of-care and end-of-life discussions.

Understanding patients' communication needs will help researchers develop a new vocabulary system designed for goals-of-care and end-of-life communication. With such a system, critical care nurses could offer a tool to patients who are non-speaking, to best support their desire to fully participate in goals-of-care and end-of-life discussions and decision-making while also supporting families during this difficult time.

Background

According to Statistics Canada (2022), 56% of total deaths in Canada occurred in hospital and, in 9% of intensive care unit (ICU) stays in Canada, the patient died (Canadian Institute Health Information, 2016). In any given hour in a United States' ICU, 50% of patients will be intubated (Wunsch et al., 2013), and thus unable to produce voice and are rendered effectively non-speaking (Karlsen et al., 2019; Rose et al., 2021). Some patients in the ICU are unable to meet their needs using natural speech because of an acquired medical condition that gives them a speech and/or language impairment (Zaga et al., 2023). Augmentative and alternative communication (AAC) systems help patients communicate. Without access to communication supports, all patients, regardless of the reason they are non-speaking, may be unable to communicate their basic needs (Balandin et al., 2007; Happ et al., 2014; Cheng et al., 2024). If patients do not have access to AAC systems, they rely on substitute decision-makers or use unaided communication, which are both methods that do not fully enable patients to communicate what *they* want to say (Chidwick et al., 2013; Rodriguez et al., 2015). In addition, patients who are non-speaking may experience additional feelings of fear, anger, and being trapped compared to patients who can speak (Khalaila et al., 2011; Tembo et al., 2015). Bartlett et al. (2008) report patients who are non-speaking have more than twice as many reported adverse medical events because of clinical errors than their speaking counterparts.

According to Ontario's *Health Care Consent Act* (1996), all capable patients should give consent for treatments, therapies, and goals of care. Goals-of-care discussions may be considered end-of-life discussions if they involve the plan for a person about whom people would not be "surprised if they died in the next year" (You et al., 2014a, p.426), a common scenario in the ICU as patients are admitted with complex medical conditions. Ideally, goals-of-care and end-of-life wishes are discussed in advance of an ICU admission using advance care directives, but many patients are not prepared or have an unplanned acute medical condition as "no one can foresee, or control events associated with end-of-life care and dying" (Andreassen et al., 2017, p. 3). Therefore, patients may want to express their needs and make decisions about their own care in the midst of their ICU admission.

Patients in the ICU are often supported in their decisions by family members and can be considered relatively autonomous because of their family involvement and influence (Grignoli et al., 2018). Some ICUs rely on substitute decision makers, but there is evidence that providers and family make decisions in line with their own values (Chidwick et al., 2013), which might not reflect those of the patient.

Patients in the ICU who are non-speaking can benefit from AAC systems (Ten Hoorn et al., 2016; Carruthers et al., 2017; LaValley et al., 2024). Augmentative and alternative communication comprises the methods, vocabulary, and tools used to help people communicate when they are cognitively capable but non-speaking (Light et al., 2019). An AAC system uses interfaces that enable patients to select vocabulary they see or hear. An example is the purposefully designed picture-based vocabulary, the Communication Aid to Capacity Evaluation (CACE; Carling-Rowland et al., 2014). People experiencing aphasia used CACE to demonstrate their capacity when making discharge decisions, but it does not cover other decisions (Carling-Rowland et al., 2014). Researchers investigated the vocabulary content of AAC speaking applications for ICU patients (Etchels et al., 2013; Kozalinski et al., 2015; Mobasheri et al., 2016), and found that the applications focused on everyday care needs. There have been no studies of the specific vocabulary needed to support goals-of-care/end-of-life discussions and decision-making. It is important to learn from patients and their families about their experiences. There is limited research reported on how patients who are non-speaking communicate their goals-of-care and end-of-life preferences and decisions using AAC (Torlotti et al., 2023).

Berlin (2017) defined the most important aspects of goals-of-care discussions "as formulating a shared understanding of the patient's prognosis, establishing therapeutic rapport, providing emotional support, and probing for patient preferences" (p.1281). Bomhof-Roordink et al. (2019) recommended a shared decision-making model for goals-of-care and end-of-life conversations, as this ensures that the conversation is two-way and reflects the patient's values, preferences, and questions before decisions are made. If patients who cannot speak simply gesture or answer yes/no questions, they will only be partially able to participate in a shared decision-making process (Rodriguez et al., 2015). Research has shown that partial participation of patients can occur in a couple of ways. First, hospital staff might rely on typing and handwriting, but both may be too difficult and tiring for non-speaking ICU patients (Laerkner et al., 2015). Second, patients may end up with only being informed of goals-of-care decisions after their family and providers have already made the decision for them (Happ et al., 2007). Research on goals-of-care and end-of-life discussions can have a significant impact on healthcare, given the number of people potentially involved in these discussions and those people living with an altered quality of life when discharged following an ICU admission (Nabozny et al., 2016).

Study Objectives

This study aimed to fill the gaps about communication needs in goals-of-care and end-of-life discussions, by interviewing patients and their families about their experiences. Patients and/or families all had some discussions about goals of care when the patient was in the ICU. The interviews in this study took place up to a year after patient discharge from the ICU. The research question was: what are the communication needs of adult patients who are non-speaking, use augmentative and alternative communication, and wish to have quality goals-of-care/end-of-life care conversations? The aim was to identify unmet communication needs that could be supported in the future with goals-of-care/end-of-life AAC vocabulary. This study was designed to be a step toward a long-term goal of supporting full participation of AAC users in goals-of-care/end-of-life discussions.

Method

Study Design

Participants

Patient participants were adults who had been patients in the ICU at a teaching hospital in Ontario, Canada. Healthcare staff invited patients via a study flyer and informed consent process was completed, while the patient participants were in ICU, by a research staff member who was unknown to the participants. Recruitment and consent processes were approved by the Hamilton Integrated Research Ethics Board (HiREB). Participants were interviewed after discharge from ICU. Patient participant inclusion and exclusion criteria are listed in Table 1. One family participant was nominated by each patient participant, and the family participant followed the same consent process as the patient participant.

Table 1

Patient Participant Inclusion and Exclusion Criteria

Inclusion Criteria	Exclusion Criteria
• Age 18 years or older • Admitted to an ICU in the preceding year • Non-speaking in ICU • Used AAC in ICU • Could identify a family member who was involved during their ICU stay	• Medical diagnosis of dementia • No cognitive capacity to be involved in an interview • Non-delirious for less than three days in ICU according to the Confusion Assessment Method (CAM; Inouye et al, 1990) • Remained in ICU • Could not identify a family member who was involved during their ICU stay • Could not remember their time in ICU

Note. There were no inclusion or exclusion criteria for family members other than they were selected by the patient participant.

Design

This study used a qualitative, case-study design with semi-structured interviews, to understand the "uniqueness and complexity of the cases, its embeddedness and interaction with its contexts" (Stake,1995; p.16). The interviewer (FC) used her knowledge of AAC and ICUs to add follow-up questions and elicit participants' descriptions of their experiences. FC and co-author TC used thematic content analysis (Braun & Clarke, 2006), as its interpretive process is ideal in studies of a phenomenon about which not much is known. Analysis was inductive, i.e., researchers coded what the data showed and then further made sense of the data by cross-referencing to a patient participant's diagnosis, length of time in the intensive care unit, and AAC system. All methods were approved by the Hamilton Integrated Research Ethics Board (HiREB).

Researchers

FC is a Speech-Language Pathologist (SLP) with a PhD and co-delivers the AAC service in the ICUs where the study was conducted. TC was an undergraduate student with volunteer experience at a nursing home but no formal healthcare training. LT is an SLP researcher specializing in long-term outcomes after acquired brain injury with minimal experience with AAC in the ICU.

Interview Methods

Semi-structured interview questions were used to probe each patient's experience while non-speaking and using AAC when (a) directing their care, (b) engaging in a discussion of their goals of care with family or staff on a one-to-one basis, (c) having a family meeting to discuss care, and (d) completing the Physician Order Scope of Treatment (POST) with healthcare staff. Patient and family-member participants were asked to describe their experiences when the intubated patient was unable to talk in the ICU and to discuss whether the patient was able to tell people what they needed. Participants were asked retrospectively to name the patient's treatments, including any operations; what treatments they discussed; and with whom they discussed those treatments. Participants were asked about positive and negative aspects of those discussions; participants' level of inclusion; ideas left unsaid; and any aspects of the treatment discussion participants wished they could have changed. Finally, participants were asked about transitioning from discussions to making decisions about goals of care/end of life, and if those decisions reflected the patient's wishes and opinions. Interview questions are listed in Appendix A.

Data Processing

Interviews were audio recorded using an Audacity sound recorder on a Dell ProBook computer. Recordings were uploaded to Microsoft Office 365 for auto-transcription (without storage) using the Microsoft server (https://eastus.api.cognitive.microsoft.com). All identifying information was removed, IDs were coded, and audio files were destroyed. Coded, de-identified transcripts were uploaded to Dedoose (2015) software for analysis.

Data Analysis

Thematic analysis followed the stages shown in Figure 1 (Braun & Clarke 2006).

Researchers FC and TC independently read all transcripts, identified key concepts in the data, and labelled those as initial codes for two transcripts each. Codes were compared (i.e., match vs. mismatch) and grouped to create the final code tree of categories and subcategories (see Supplementary Materials Table 1). A consensus process was used to obtain final agreement (Richards & Hemphill, 2017): (a) the two researchers both coded the transcripts for participants 001, 002, 003, and 004, (b) they met to discuss the data and where the code was applied, (c) they coded the same transcripts for family members (002-2, 003-2), (d) they met again to discuss the data and use of the code tree, and (e) they finished coding transcripts from the remaining participants. Coding of participant 001-2 was completed by FC.

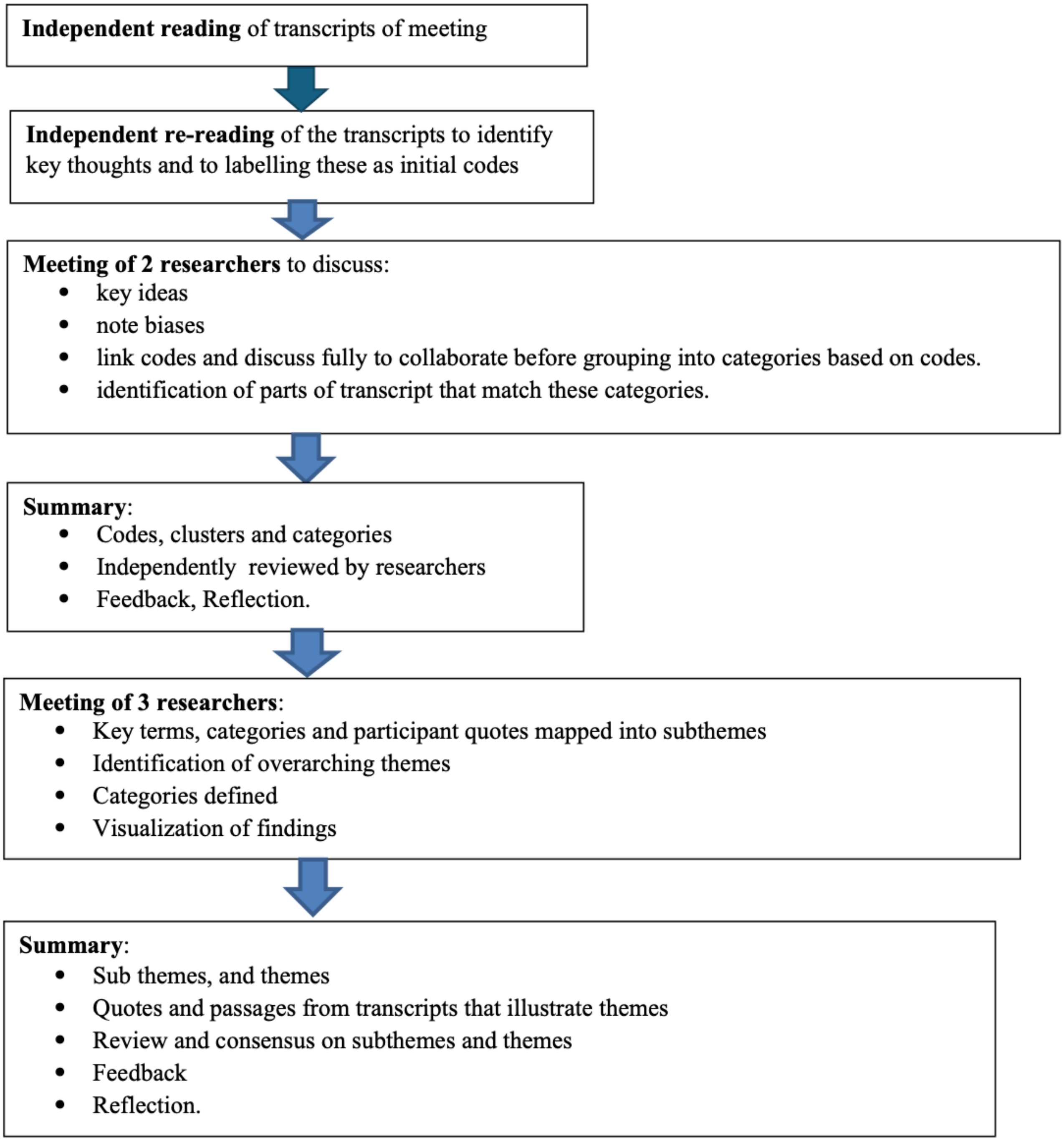
After coding was complete, the two researchers met with a third researcher (LT) to re-examine the data and identified any coded sub-categories with more than 30 quotes as important. Excerpts that "stood out" from the evidence, including views strongly expressed, repeated statements that represented common ideas across a group of people, and statements that highlighted an unmet communication need were noted. Researchers were emailed illustrative excerpts in a table, along with another table of subcategories not reviewed in the meeting and all three researchers gave written feedback.

Data Verification and Consistency of Analysis

Transcription fidelity was verified by TC and FC via comparison of transcripts to audio recordings. Transparency and consistency of the analysis was ensured by having two researchers first blindly coding the same research data, then meeting to establish a clear protocol and codebook (Gibbert et al., 2008) and adding a consensus process in application of the code tree.

Figure 1

Stages of Data Analysis (Braun and Clarke, 2006)



Independent reading of transcripts of meeting

Independent re-reading of the transcripts to identify key thoughts and to labelling these as initial codes

Meeting of 2 researchers to discuss:
- key ideas
- note biases
- link codes and discuss fully to collaborate before grouping into categories based on codes.
- identification of parts of transcript that match these categories.

Summary:
- Codes, clusters and categories
- Independently reviewed by researchers
- Feedback, Reflection.

Meeting of 3 researchers:
- Key terms, categories and participant quotes mapped into subthemes
- Identification of overarching themes
- Categories defined
- Visualization of findings

Summary:
- Sub themes, and themes
- Quotes and passages from transcripts that illustrate themes
- Review and consensus on subthemes and themes
- Feedback
- Reflection.

Findings

Four patient participants met inclusion criteria (see Table 2) and each of them nominated one family member who they recall supported them in the ICU at the time of their admission. No participants dropped out. The eight patient and family participants were interviewed by author FC in a private, quiet location in a hospital, rehabilitation, or community setting, less than 1 year after their ICU discharge date. All patient participants had been loaned an aided communication system during their ICU stay. These aided systems were either high technology (via speaking software on a computer) or low technology (via a communication book and alphabet chart). One participant had a camera mounted on the computer to track their head movements and control the mouse cursor. By hovering the mouse cursor over the letter or phrase the participant was able to make a selection that was spoken out loud by the speaking software. Another participant waited for the computer to highlight different vocabulary options and then pressed a switch to select their choice. Participants using the communication book listened to the vocabulary spoken out loud one phrase at a time and then gestured "yes" to make a choice. They also could listen to letter choices and gesture "yes' to select one letter at a time. Each aided system was prescribed by an SLP and OT and implemented by health care staff on the unit after receiving training. The equipment was assigned to the patient and available for use at all times. During their ICU stay, all participants were both mechanically ventilated and tetraplegic. Before and after their ICU stay, all participants were talking. During the interviews, all participants were talking.

Participants' reports of their goals-of-care/end-of-life discussions and decision- making were summarised into five major themes: (a) communication partners, (b) feelings and thoughts, (c) matters to talk about, (d) control/power, and (e) how communication occurs. These themes were cross-referenced to electronic medical record data on patients' mechanical ventilation, AAC system, and goals-of-care/end-of-life meetings. Themes and subthemes are summarized in Table 3, and details and quotes are provided below.

Theme A: Communication Partners

Subthemes: Healthcare Worker and Family Discussions, Unmet Needs and Wants, and Information/Explanations to Patient

Patients' communication partners were healthcare staff, family, and sometimes friends who visited them in the ICU. Two participants reported goals-of-care/end-of-life meetings: one with both the family and patient participant; and one with the family participant first and the patient participant afterwards. For the remaining participants, goals-of-care/end-of-life discussion was limited to consent for specific surgeries and interventions. One family participant said they were informed about lifesaving measures after the fact without having decided on care specifics, such as ventilation, when they initially agreed to the surgery. Two family participants reported social workers and nursing staff enhanced their understanding of medical information and reduced their distress. Two patient participants appreciated nurses keeping their family members "in the loop" on medical decisions and one family participant felt staff could

Table 2

Participant Characteristics

	Participant			
	001	002	003	004
Age band (years)	60–70	60–70	50–60	20–30
Diagnosis	Spinal Cord Injury	Spinal Cord Injury	Spinal Cord Injury	Stroke
ICU stay	>1 year	>1 year	0–3 months	0–3 months
Type of Ventilation	ETT then tracheostomy, then corked	Tracheostomy (uncuffed) with speaking valve	ETT then tracheostomy, then extubated	ETT then tracheostomy, then extubated
Goals-of-care meeting in ICU	Goals completed with patient and family	Goals completed with family and later with patient	Consents for treatments from family	Consents for treatments from family
Computer hardware	Panasonic Toughpad,	n/a	n/a	Panasonic Toughbook,
Computer software	Grid 3 (Smartbox)	n/a	n/a	Grid 3 (Smartbox)
Vocabulary	ICU Talk and Physician-ordered scope of treatment vocabulary, qwerty keyboard with word prediction	ICU Talk communication book/ AEIOU spelling board, physician-ordered scope of treatment communication book	ICU Talk communication book/ AEIOU spelling board	ICU Talk and high-contrast, large-font Qwerty keyboard with word prediction
Access method	Column-row switch-scanning	Partner-assisted visual and verbal scanning	Partner-assisted visual and verbal scanning	Head mouse on dwell
Access details	Microlight switch selection by downwards movement of lower jaw	Selection via eye blink for "yes"	Selection via nod for "yes"	Traxys headmouse with 1.5 second dwell time

Note. ETT = endotracheal tube; ICU = intensive care unit.

Table 3

Themes and Subthemes of Discussions

Theme	Subtheme
Communication Partners	Healthcare or family discussions Unmet needs and wants Information/explanations to patient
Feelings and Thoughts	Patient feelings and thoughts Family feelings and thoughts
Matters to Talk About	Care-related words and phrases Operations and interventions
Control/Power	Patients are tracking activities Patients know what they want Who holds decision-making power
How Communication Occurs	Safety issues from lack of communication No communication Staff do not understand Unaided communication methods Getting attention Partner has difficulty with my AAC system Physical access to communication system AAC is slow

Note. AAC = augmentative and alternative communication.

learn by listening. One family participant received information shortly after the patient was admitted to the ICU, but was not ready to take it in:

> *"I guess some of the communications I don't, for me, I don't believe sank in. I mean at that point my thought was to sustain life. No idea where that could lead us down the road to a ventilator" (P002-2).*

Two family participants said they ignored negative messages and preferred to hear positive, reassuring messages. Two family participants' rehabilitation pathway described by their surgeon did not match reality, with delays in transfers and discharges. All four patient participants described multiple surgeries and interventions, with varied outcomes that were unexpected, such as new medications and further operations that were not initially described by healthcare staff. One patient participant reported they were under-prepared for the pain of certain procedures. One family participant was familiar with health care but for others everything was new and required them to learn a lot of new information. An example was learning about mechanical ventilation:

> *"They [my family] did not have any idea what [mechanical ventilation] was all about, until they were told I was going to be on it for life and that a lot of the care in hospital was about the breathing tube" (P001).*

Patients reported difficulty meeting their basic needs. One patient participant's basic care happened automatically. Other patient participants found care was not always delivered when they needed it. Patients sometimes had unforeseen needs, and until they had an AAC system, they could not tell people what they needed: "I'm extremely uncomfortable, my neck hurts in this position, but I can't express that unless someone gets here and I'm like please turn me, like with my eyes" (P004). One family participant recommended that staff do hourly check-ins, asking the patient detailed questions, especially regarding position changes and pressure sores (reported by another family participant). Nurses were the consistent source of information for two patient and family participants who were not local and could miss the physician's visits. One family member would read the patient's lips, acting as a translator during goals-of-care/end-of-life discussions. Sometimes a key person for the patient, such as a nurse, would act as a liaison between the patient and their doctors: "I really appreciate her for that. If the charge nurse didn't know she would go and find out" (P001). Two patient participants said they loved their doctor, would have liked to have seen them more, and appreciated their doctor's honesty and direct communication. One family participant blocked patient direct-contact with medical residents to avoid patient distress. One participant reported difficulties relaying their symptoms, asking questions, and communicating what care they wanted to their physicians. Family and patient participants made suggestions to improve their doctor's style of communication:

> *To be positive…You're never going to walk again as negative. We don't believe you're going to walk again; all indications show you're not going to walk again so couch it a little bit more (P002-2).*

Healthcare staff may know a diagnosis but need to be careful.

The ICU stay is a time of much new learning and information for the patient, and repetition can be helpful. As one patient participant said, "He [the OT] came back a couple of times to help [with computer speaking software] because it took a couple of visits to get the hang of that" (P001).

Theme B: Feelings and Thoughts

Patient participants said they were unable to do things for themselves as easily as before because they could not move or speak, so they could be fearful of time left alone or having equipment used on them that might fail, such as the Hoyer lift that is used for transfers from bed to another location (e.g., a wheelchair). After hearing about having quadriplegia, one family participant reported that the patient said, "I'm a burden, I'm just a talking head, all I do is eat and poop" (P003-2). Patient participants appreciated people talking to them and wanted to be treated as themselves: "I wanted them to treat me like I was me because I still was" (P001). Patient participants described feeling frustrated. As P004 said, "I felt very trapped in my body". Patient participants' communication difficulties caused isolation, and they found it hard to be reliant on their communication partners to help them communicate: "I have all the time in the world like we're going to go through this alphabet slowly instead of waiting for the right question" (P004). Patient participant (P001) reported that interventions were done to them, without them knowing – "So, I felt like that was taking away my control and I care all about that" – but they wanted to make choices about their care and discharge locations. One patient participant did not want their family to leave and appreciated family support.

The two family members of patients who had been in the ICU longer than a year were assigned a key worker who was a charge nurse or social worker and ensured patient-led questions were answered, families received updated information, and discharge planning was facilitated. A patient who was in the ICU for a shorter time, had an "involved" Intensivist who provided this information.

Two family participants mentioned the importance of ICU and surgical staff considering not only the information they were conveying but also how their comments would make patients and families feel:

> *Doctor told us maybe that was his job, I didn't appreciate it, and I have no time for him because he's too negative… take a sales course to sell it a little better, that's been devastating the first night to hear that (P002-2).*

One family participant said looking up and understanding the medical facts was not enough. Empathy and listening were important too: "they should put themselves in our shoes and [consider] family member knows too" (P004-2). All family participants said that staff should be careful when they were explaining matters to patients. Patients could get upset when they indirectly overheard medical discussions. Change is not just experienced by the patient: family members also had to deal with significant changes in the patient and could feel overwhelmed: "I was upset when they wanted to put the trache[ostomy] in because I thought oh my God, they're going to think this is permanent like you know so many quads have a trache and it's just overwhelming" (P003-2). Family members did not always take in the information given to them or believe what they were told by physicians.

Theme C: Matters to Talk About

All participants talked about ICU-specific topics, words, and phrases needed for communication about daily care, surgical operations, and invasive and non-invasive interventions. Two patient participants experienced pain that was not always managed: "I kind of went through withdrawal, but I really needed a nurse, but I couldn't say anything" (P004). Pain medications sometimes varied by too much or too little, but they were unable to direct their medication: "The doctor on the floor refused medication for me to sleep" (P002). All patient participants said they were aware of their suction rehabilitation goals, e.g., "I had to get working on 2 or 3 points to get my suctioning down to twice a day "(P001). All patient participants felt urgency when it was hard to breathe: "Like I remember lying down and it being really hard to breathe, and I was like 'oh I need suction', like I need suction immediately" (P004). Patient participants described having surgeries, such as spinal surgery, tracheostomies, insertion of percutaneous endoscopic gastrostomy (PEG) tubes and drains, and diagnostic tests. One family participant remembered how life-saving decisions were made and reflected on how major those decisions were: "I think the surgeon initially made the big decision that he needed to go in and secure the neck, that surgery would have been a major decision to move forward" (P002-2). Patient participants did not like the endotracheal tube (ETT) for ventilation: "I was like please get this out of me I want the trache[ostomy] and PEG" (P004). When they were weaned off the tracheostomy, one participant said they wanted the process to go faster. Two patients found weaning too hard and wanted to stop altogether.

One patient and family participant noted the important role of respiratory therapy for weaning the patient off the ventilator and working toward going home. Patient participants were not always pleased with therapy access, plans, or outcomes. Two patient participants did not have access to all the AAC equipment and reported that they did not have enough physiotherapy and SLP.

Theme D: Control/Power

Subthemes: Patients Know What They Want, Who Holds Decision Making Power, and Patients are Tracking Activities

Three patient participants were not given enough information and did not feel they were always in control of the direction of their care: "I was frustrated when I didn't know. I was like come on tell me" (P004). Patient participants wanted to be part of the conversation about their goals of care: "I like it when they would be like *OK, so this is what's going to happen like this. This is the game plan*. I like to be updated because I can't ask" (P004). All patient participants reported noticing when they did not get to have a say in their care.

> *I bucked them a lot and I overrode some of the directives they were giving like how long I was supposed to be on cork, how long was I supposed to be on that air machine. I wondered if it was going to get her [the respiratory therapist] in trouble with the physician the next day (P003).*

Patient participants showed they knew what they wanted by asking questions using the onscreen keyboard in their AAC system: "Why, I said, are you trying to be weaning me off something you know I have to be on for the rest of my life" (P001). Participants also worried about the reactions of healthcare staff. Sometimes the patient chose to allow their family or a physician to decide for them: "I felt very comfortable with my parents making the decision" (P004). While they allowed other people to decide for them, patients said they still wanted to be informed.

Two patient participants used to be the decider and had lost control over decisions about their care: "Other people [were steering] and it was hard not to be in control of decisions, and I'm the sort of person who resources sources" (P001). Two patient participant's care was provided without them receiving direct consultation, with others, such as family, having the decision-making role. Family member P003-2 said, "Oh yeah, I have all the roles now". One patient participant knew they did not have control: "I did not have a lot of decisions to make in my care"; and was not confident to communicate their treatment preferences. Three patient participants either wondered about negative reactions from staff or noticed staff members' disapproval when the patient asserted their choices or made requests. Participant P001 said, "I remember some of them did mind [me deciding to stop weaning] because they were trying a couple of hours a day and then putting me back on regular [oxygen]".

Patient participants were aware of treatments, surgeries, and diagnostic procedures they needed, and remembered explanations about these interventions. All patient participants were tracking their medications, and three identified when they were given too much medication. One participant said: "One day they over-medicated me for three days" (P002). Patient participants knew the effects of medications on their body, e.g., "they were very heavy on the brain" (P001); and wanted details of their medications. One patient participant noticed when nurses were not specific, such as a nurse saying, "It's time for your medications. I'm giving you all your medications"; and wanted to ask, "like what are you giving me?" (P004). All four patient participants knew the steps in weaning off the ventilator and would check their respiratory monitors:

> *I was watching, as a matter of fact; I even had my wife turn the monitor so that I could see it at nighttime so if I happen to wake up and glance over to make sure what my oxygen levels were. And I didn't want them to drop it below 90 or whatever the threshold was (P003).*

Patient participants did not feel in control of the weaning process, and one patient stated weaning took place when they were asleep, without their knowledge. Patient participants wanted to know about all their medical interventions, not just medications: "I want to know the purpose for [the interventions] and these choices and to send people to talk to me" (P001). They wanted to ask their physician questions: "I was wondering how long I would have the catheter in because I was always getting a urinary tract infection" (P002).

Family participants said patient participants followed everything going on around them, even when they were not able to speak: "She controls, she's tracking. She knows everything... I'm amazed" (P002-2). Patient participants heard information spoken at rounds, watched the monitors and staff.

Theme E: How Communication Occurs

Subthemes: Safety Issues from Lack of Communication, No Communication, Staff Do Not Understand, Unaided Communication, Partner Difficulty with Augmentative and Alternative Communication System

All patient participants reported risks to their health and safety when they were not able to communicate with healthcare staff. Participant P004 reported not having a way to communicate that they were unable to breathe because of mucous blocking the airway: "When I didn't have my mom and I needed a nurse and they couldn't hear me, and I really had no way to communicate for help". Patients couldn't say they had received too much medication or that they needed careful transfers to avoid injury, so staff "just grabbed the top of my arm and my shoulder and yanked" (P003). One family participant referred to an error when transferring to another hospital: "There wasn't a note in that system and if I wasn't there with her, the nurse would have given her twice the blood thinner" (P004-2).

Every patient and family participant reported times when no communication was happening, saying "I get nothing a lot" (P001) and "some of them are not communicating at all" (P004-2). Patient participants understood that they could direct their care and report their symptoms if staff gave them a communication opportunity: "But just like taking the time to ask questions, and it might seem like a lot but it's like OK do you want this, yes or no, yes or no" (P004). Patient participants needed communication opportunities and wanted ongoing explanations and updates: "They didn't continue updating me and I think there were a lot of steps that needed to be taken" (P001). Family meetings did not happen as promised: "That never happened (a family meeting) they said it would, but I was never, if there was one I they never invited me" (P003-2).

Patients suggested staff did not use or understand how to implement patients' alphabet chart or ICU Talk communication book (Etchels et al., 2013) or did not have the time (all the patients needed partner-assisted scanning) and did not ask the right yes/no questions. A patient participant said, "They wouldn't understand me most of the time, so it was very hard to explain, express my feelings, how I'm feeling at the time and what I needed" (P001).

Participants said they used unaided methods to communicate, including blinking or nodding/shaking their head to say *yes* and *no*, mouthing words with no voice, looking toward what they wanted, and gesturing toward people or objects in the room. Patients said that lip-reading was unreliable and skilled lip readers were often elsewhere, which meant patients had to wait to get their basic needs met. Family members acted as lip-readers for ICU staff who had difficulties and would act as the 'translator' during goals-of-care/end-of-life discussions.

Getting attention from healthcare staff was difficult for all patients when they used only unaided communication: "I would've liked to say, 'come and see me'" (P002). Getting attention was particularly hard at night. As P003 said, "it's scary waking up when you're like you really need something but there is no-one there and just kinda hoping they're gonna come in time". The ICU in this study had no call bells, as there typically was a nurse at every bedside. Physical limitations meant three patient participants had no way of getting staff members' attention in the usual ways and the fourth participant would hit the bed with his arm to get attention. That participant's family member said: "They [nurses] would say "don't do that" but he would want something" (P003-2).

Two patient participants encountered barriers to their use of high-tech communication: "A lot of nurses said, 'I don't know how to set that up' and so that yeah that was a big obstacle" (P001). Patient participants wished people would be patient: "Everyone around me was ugh … the scanning is taking so long, but I want to articulate what I'd say, and this is the best way for me to" (P004). One patient participant found inadequate staff time meant not enough AAC training for partners:

> *He did a great job trying to get, trying to teach me how to use it he did a very good job, and he was a really good communication person, but he really is you have to have the resource stuff it just wasn't enough (P001).*

There was a lack of space for accessing and using communication equipment: "[The] step-down [unit] was way too busy. Step down is like cramped. You can't really put, and the nurses can't deal with that, and they kept moving it" (P004-2).

Patient participants did not recommend using spelling only in goals-of-care/end-of-life meetings because it was slow and instead suggested a goals-of-care vocabulary for future ICU patients. They suggested patients could have one or two whole words or phrases that then could be expanded upon by ICU staff. Participants indicated that using a head mouse required too much fine motor control and was difficult for one patient-participant, and low-tech spelling-based systems were tiring for another.

> *It was tiring for me to do all this letters, especially you know if all I could do was shake my head, nod, or you know shake my head about the which if it is the right letter or not, and they would write down ok W-A-K-E you know (P003).*

One patient participant suggested a goals-of-care vocabulary system should have whole words/phrases without having to spell everything.

Discussion

This study was conducted to learn more about how to support patients in ICU who are non-speaking in goals-of-care and end-of-life conversations. Five themes emerged, some that echoed findings from studies of patients who could speak, and others that were unique to AAC users.

Theme A: Communication partners

According to patient participants, communication partners did not always facilitate participation in healthcare discussions, meet patients' basic needs and wants, or give patients sufficient information and explanations about their health status and treatments. These findings suggest most goals-of-care/end-of-life discussions did not involve the patient and did not use a shared decision-making model (Elwyn et al., 2012; Bomhof-Roordink et al., 2019). This study corroborates work by Happ et al. (2007) where patients were informed after the discussion was completed rather than participating in the discussion. Family members' suggestions of partner strategies (e.g., careful phrasing, positive and repeated information) are all suggestions designed to make information easier to understand and less emotionally loaded. This suggests that processing medical information was a complex task for them. Future patients may be aware of their family member's difficulty processing healthcare information and consequently may need vocabulary to tell the healthcare team how to communicate better. This is consistent with the study by You et al. (2015) who identified family members' difficulty understanding the limitations/complications of life-sustaining therapies, as one of the barriers to goals-of-care discussions.

All patient participants in this study approved of their family members' role as a substitute decision maker, but all patients reported a lack of updated information and involvement in goals of care/end of life from healthcare staff. Lindberg et al. (2015) found patient autonomy in six Swedish ICUs was an acknowledged dependence: patients wanted to have agency, co-partner in their care, be invited to participate in goals of care, and be recognized as a person. Patient participants said they were unaware of some decisions, and this is consistent with findings by You et al. (2014) who reported less than 30% concordance of use or non-use of life sustaining treatments with patients' preferences, while in the ICU. Given that patients were able to recall details of their lack of inclusion in goals-of-care/end-of-life discussions, they likely were cognitively capable of participating at the time. Access to healthcare staff during interventions did not provide an adequate forum for goals discussions as all patient participants said they had unspoken opinions about their interventions, unasked questions, and did not get to direct their care plans. This finding suggests that, even though there can be initial goals-of-care meetings with substitute decision-makers when patients are too ill to participate, additional meetings should be scheduled once patients are well enough to participate.

Theme B: Feelings and thoughts

Bomhoff-Roordink et al. (2019) did a systematic review of shared decision-making models and listening to patients' concerns, preferences, and values were elements noted in 65% of the models. The feelings and thoughts noted by participants in this study need to be conveyed using an AAC vocabulary system, if future patients in the ICU who are non-speaking are given the opportunity to discuss their concerns. A previous study of mechanically ventilated patients in the ICU described patient experiences within themes *having to endure* and *being out of control* (Karlsson et al.,2011), similar to the findings in this study. Karlsson et al. (2011) described how patients with feelings of helplessness are more likely to submit to the will of other people. This tendency for submission could affect patients' goals-of-care/end-of-life decisions. McCleod and Sherwin (2000) noted that oppression in medical decision making can occur based on the context in which patients find themselves. It is unknown whether a shared decision-making context with space to hear from the non-speaking patient and family and avoidance of dominance by speaking participants may better support patient autonomy as this has not yet been studied. Participants in this study reported fear, isolation, feeling useless and a burden, which are feelings described in other studies of intensive care patients (Khalaila et al., 2011; Tembo et al., 2015). The phrase "trapped in my body" used by one participant in this study is reminiscent of themes in the Tembo et al. (2015) study of patients who had mechanical ventilation in intensive care.

Theme C: Matters to Talk about

Patient participants reported that they had unmet needs and wants for suctioning, medication, ventilation, therapy, and position changes. They reported feelings of frustration, isolation, loss of autonomy, inability to get attention, and getting ignored. The need to continuously interpret and anticipate patients' needs requires theory of mind, the ability to "impute a mental state to yourself or others" (Premack & Woodruff, 1978; p. 515). The findings in this study are consistent with previous studies that suggest that care needs are not met when patients cannot communicate (Balandin et al., 2007). Thirsk et al. (2022) found nurses brought their own perspectives and biases, which reduces the confidence that they truly can think like the patient. Nurses cannot therefore reflect patients' preferences or make correct inferences, even when applying theory of mind. Healthcare staffs' thinking for patients who are non-speaking could be lessened if patients had consistent access to AAC. Costello et al. (2011) described three phases of communication in intensive care: phase 1 getting attention and responding to yes/no questions, phase 2 communicating basic information, and phase 3 broad and diverse communication. Participants in this study reported difficulties in phase 1 and phase 2 communication opportunities despite stating they were awake, aware, and had a prescribed AAC system. If communication for even basic needs is unsupported, participation in more complex communication topics, such as discussing their goals of care, would require more specific training and tools.

Theme D: Control/power

Quotes from both family and patient participants showed that patients were watching and aware of their care but needed goals-of-care/end-of-life vocabulary to evaluate their care choices and question what they needed. Patients needed vocabulary to convey their thoughts as a decision maker, or to delegate that responsibility. Patients did not want to relinquish their own participation in goals-of-care/end-of-life discussions. Slatore et al. (2012) found that shared decisions with patients were usually based on care that was previously decided by physicians rather than decisions made by the patient. The findings in this study show patients did not participate in decision making as much as they would like, but it is uncertain what factors contributed to a lack of participation. They relied on a key worker, such as a nurse, social worker, or physician, who helped both participants and families with information and emotional support. Comments by participants suggest there may have been a power imbalance between providers and patients, and a lack of patient agency. This power imbalance could be reduced if healthcare workers used techniques like those described by Kettunen et al. (2003), who identified two types of speech practices used by nurses that "facilitated the inclusion of patients' perspectives and preferences and encouraged patients to express themselves" (p. 327). The first was use of "affective questions," which gave patients choices of topics and asked their feelings and opinions. The second was using "tentative speech," which, in an ICU context, might manifest as a phrase like, "This would be a good time to reposition you" vs. "I am going to reposition you now." To use these techniques, staff need time and training, and AAC users need vocabulary to direct healthcare workers to include them and direct the manner of that inclusion.

Theme E: How Communication Occurs

Augmentative and alternative communication is feasible and effective in the ICU with patients who are mechanically ventilated, as identified by Zaga et al. (2019). Rodriguez et al. (2016) showed that with consistent access to tablets with speaking software, communication was less difficult for patients in the ICU. Szymkowicz et al. (2024) found that messages could be transmitted accurately with eye-tracking or a low-tech communication board. In the latter study, however, two-thirds of patients were not satisfied with the communication board, the most common AAC device in ICU (Zaga et al., 2019). Happ et al. (2014) found that even with SLP support, use of AAC was low (6%). These findings resonate with the patient participant's suggestion that people need to understand what it is like not to communicate. It is not enough to provide a patient with alternative modalities and vocabulary: communication partner training is essential. The safety issues from lack of communication reported in this study are similar to findings from Bartlett et al. (2008) who discovered multiple preventable adverse events for non-speaking participants due to drug errors (40%) or poor clinical management (32%).

Limitations

First, as this was a single-site study with narrow inclusion criteria, the sample size was small, making it unlikely everything was captured about non-speaking patients' experience in the ICU. Findings such as safety concerns and lack of decision-making power, however, were similar to those of studies with larger samples (e.g., Bartlett et al., 2008) suggesting that the themes have broader application. Second, this study was limited to communication needs for goals-of-care and end-of-life discussions, although key themes could apply to other patient communication interactions. Third, there was a risk of recall bias by patient participants, who may have been medicated and sleepy in the ICU and their experience was up to a year prior to the interview. Comments from family members were similar, however, which supports the trustworthiness of patients' comments. Fourth, it is recognized that FC has a potential bias from working in the ICU, which could have predisposed FC to negative themes. It was important to have an AAC specialist complete the interviews, to probe participants' experiences using AAC modalities, and potential bias was mitigated by involving researchers with no ICU experience (LT) or no professional training (TC) in analysis.

Conclusion

Results of this study represent the perspectives of a group of adults who had been temporarily non-speaking in the ICU from their medical condition, and their chosen family members, each of whom reflected on their goals-of-care/end-of-life and treatment consent discussions. Participants' comments provide valuable insights into the experiences while a patient in the ICU is temporarily unable to speak. The findings show that patients who are non-speaking have many unmet communication needs related to goals of care/end of life. There is compelling evidence that patients need an AAC vocabulary system that is specific to goals-of-care/end-of-life discussions in the ICU. Developing this tool would enable patients to have discussions and get information and care from ICU healthcare staff. With such a tool they could discuss their feelings and thoughts, talk about ICU-specific topics, and negotiate control and power in a way that meets the needs of medical, physical, and interpersonal contexts in which communication happens. It is acknowledged that the solution to greater patient participation in goals-of-care discussions is likely to be multifactorial. Factors such as the level of training of communication partners and support to remove barriers to use of AAC in the ICU will also be important.

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Supplementary Materials

Table 1
Open Coding of the Data and the Iterative Process of Finalizing the Categories and Sub-Categories of the Code Tree

Researcher #1 or #2 (Different Patients) Initial Codes	Categories	Final Categories	Final Sub-Categories
AAC is slow (#2)	AAC	AAC	
AAC methods used in ICU (#1)		AAC is hard to learn	Physical access to AAC system
		Physical access to AAC system	AAC is slow
Difficulties getting attention (#2)	Communication partners	Communication partners	Answering patient questions
Difficulties with hospital staff (#2)			Decisions without patients
Discussions (#2)			Discussions with patients
Health Care Practitioner’s explanations or information to patients (#1)			Getting attention
Family needs met (#2)			Health care-family discussions
Family as communication partners (#1)			Information/explanations to client
Family struggles with hospital staff (#2)			Met needs and wants
Health Care staff as communication partners (#2)			No communication
No communication in repatriated hospital (#2)			Partner has difficulty with AAC
			Patient family communication
			Positives in health care discussions
			Safety issues from lack of communication
			Staff don’t understand
			Unmet needs and wants
Wants and Needs (#1)	Wants and Needs	Things to talk about	Operations/interventions
Operations and treatments and disease/injury (#2)	Vocabulary		Care related words/phrases
Patient words and phrases (#2)			Conversation topics
Patient’s abilities, cognitive and physical (#2)			Opinions
Treatment received by patients (#1)			
Patients know what they want (#1)	Control/Power	Control/power	Decisions left to partner/family member
Patients are tracking activities (#1)			Patients are tracking activities
Decisions (#2)			Patients want to decide
Who holds the power for decisions (#1)			Who holds decision-making power

Forms of communication (#2) Health care staff as communicators (without AAC) (#1) Patients give up trying to communicate (#1)	Unaided Communication	Unaided communication	Give up trying Lip reading Non-speaking
Feelings about being non-speaking (#2) Family struggles due to non-verbal patients (#2)	Unaided Communication	Feelings and Thoughts	Family feelings and thoughts
Patient thoughts (internal) (#2)	Thoughts		Patient feelings and thoughts Positive/ validations
Family feelings (#2)	Feelings		
Patient abilities, physical and cognitive (#2)	Cognitive	Cognitive abilities	
	Physical Status.	Physical status	
	No Time	No time	

Note. AAC = augmentative and alternative communication; ICU = intensive care unit.

Appendix A

Semi-Structured Interview of Patient Participant

The family interview is identical except that pronouns are changed from you *to* they.

We are inviting you to take part in this study because you were admitted to ICU and unable to speak and we would like to find out more about your experiences while in hospital. We hope to use this information to make sure future patients who cannot talk have the best communication supports.

1. I understand that you were a patient in ICU in the last year. Can you remember not being able to talk when you were in ICU?
    - Can you describe that experience?
2. Were you able to tell people what you needed?
    - getting day-to-day needs met, like medications, positioning in bed, etc.
    - being able to ask for staff and family members?
3. What sort of treatments did you get in hospital? Did you have operations, or support for breathing or eating for instance?
4. Did you get to discuss about some of your treatments with anyone?
    - physicians, nurses or other healthcare staff?
    - with family on a one-to-one?
    - during a family meeting?
5. What sorts of treatments did you discuss?
    - for instance, any operations
    - or breathing tubes, feeding tubes, etc.
6. What were the positive aspects to the treatment discussions?
7. Is there anything that you were unhappy with or wish you would have said?
8. How were you included in the treatment discussions?
    - What did people do to include you?
    - Tell me what supports you needed to communicate your opinion using your AAC system?
    - What words in your AAC system helped you participate in the discussions?
9. What would you have liked to say but couldn't?
10. What would you have changed about your treatment discussions?
11. Did the discussions lead to making goals for your care?
    - And who made these goals?
    - Do you feel these care goals reflected what you wanted?
      If no, who was steering the direction of your care?
    - Was it difficult to communicate your opinion?
      If yes, why was it difficult do you think?

Cultural adaptation in Quebec of the COMHON index: A tool for assessing the risk of pressure injury in critically ill patients

By Annie Perron, MSc, RN, Gwenaelle De Clifford-Faugere, PhD, RN, Cylia Parent-Faubert, BSc, RN, Miriam Predan-Lépine, NP, Angel Cobos-Vargas, RN, Manuel Colmenero, MD, PhD, and Anaïs Lacasse, PhD

Abstract

Background: *Pressure injuries (PIs) are preventable and particularly frequent complications that arise in intensive care units (ICUs). To date, no French-language PI risk assessment tool has been specifically developed for ICUs. The COMHON Index is used to assess the risk of developing PI specifically among patients admitted to ICUs. It is available in several languages, including English, Japanese, and Spanish, and has demonstrated promising psychometric properties.*

Purpose: *The goal of this study was to perform the French translation and cultural adaptation of the COMHON Index for the Quebec (Qc) critical care environment, resulting in the COMHON-Qc Index.*

Method: *The Quebec version of the tool was developed as per the guidelines for the process of cross-cultural adaptation established by Beaton et al. (2000): I) two forward translations into French; II) synthesis; III) two back translations; IV) expert committee review; V) pretesting; and VI) final version.*

Results: *Stages I through IV were performed by a committee made up of five experts. During stage V, 50 ICU nurses participated in a pretest to assess the clarity of the COMHON-Qc Index, which enabled the development of a final version by a committee of experts during stage VI.*

Discussion and conclusion: *The items in the COMHON-Qc Index are comprehensible and relevant for nursing practice in Quebec. Future assessment of the tool's psychometric properties is now required to support its implementation.*

Keywords: pressure ulcer, pressure injury or injuries, intensive care unit, ICU, COMHON index, clinical tool, risk assessment, prevention

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Implications for Nurses

- Pressure injuries (PIs) are a preventable complication. Their detection enables the implementation of preventative measures.
- Nurses play a key role in PI risk assessment and prevention. An appropriate tool can support nurses in effectively fulfilling this role in intensive care units (ICUs).
- The COMHON-Qc Index is developed specifically for ICUs. To our knowledge, this is the first such index in French developed to meet ICU-specific needs.

Background and Purpose

Pressure injuries (PIs) are a significant concern in healthcare facilities. They lead to longer hospital stays and pose a substantial financial burden, with costs reaching up to $CA 90,000 for hospital-acquired stage 4 PIs (Norton et al., 2025; Vanderwee et al., 2011). Furthermore, in 70% of cases, PIs are avoidable complications (Norton et al., 2025). In fact, simple interventions, such as proper skin care and frequent repositioning, reduce the risk of PI (European Pressure Ulcer Advisory Panel et al., 2019).

According to studies and data from healthcare facilities, the prevalence of PIs among hospitalized patients varies between 0.4% and 36.8% (Houghton, 2021; Li et al., 2020). The highest number of PI cases are observed in intensive care units (ICUs; prevalence between 7.78 and 46.7%) due to the critical condition of the patients (Rubulotta et al., 2022; VanGilder et al., 2021). In Canada, the prevalence of PIs in ICUs ranges from 14% to 42% (Leblanc et al., 2019). Factors at play in the high prevalence of PIs in such units include patient hemodynamic profiles and levels of consciousness, along with the use of medical devices specific to critical care settings (e.g., BiPAP masks, endotracheal tubes, or pulse oximeter sensors; Ítalo Lennon Sales de et al., 2020). Through detection of at-risk patients, the number of PIs could be significantly reduced through the implementation of preventative measures (Cobos-Vargas et al., 2023; Labeau et al., 2021; Lovegrove et al., 2020). Considering the impact of PIs on patients, and given their preventable nature and economic impact, it is critical to detect at-risk ICU patients effectively, using a tool designed specifically for critical care settings (Labeau et al., 2021).

Several clinical tools are available to detect patients at risk of PIs, including the Braden Scale (Braden & Bergstrom, 1989), which is available in French and commonly used in Quebec hospitals (Norton et al., 2025). However, these tools were not specifically designed for ICU patients (Lima-Serrano et al., 2018), and related particularities impact the risk of PIs, such as the level of consciousness, hemodynamic profile, or the use of vasopressor agents and mechanical ventilation (Cox, 2017; Fulbrook & Anderson, 2015). The risk factors for developing a PI vary across clinical environments, and the specificity and sensitivity of the same risk assessment tool vary depending on the clinical setting in which it is used (Moore & Patton, 2019). Additionally, the literature shows a lack of consensus on assessment frequency and the threshold at which a patient in the ICU would be considered at risk according to the Braden Scale (Lima-Serrano et al., 2018). When risk assessments are conducted on the day of ICU admission, the Braden Scale demonstrates low sensitivity and positive predictive value of 0.3% and 8.1%, respectively (Lima-Serrano et al., 2018).

The COMHON (level COnsciousness, Mobility, Hemodynamics, Oxygenation, Nutrition) Index, originally in Spanish, was created to assess the risk of developing PIs specifically among patients admitted to ICUs (Cobos-Vargas, 2013). Cross-cultural adaptations of the COMHON Index were performed in English, Japanese, and Mandarin (Lovegrove et al., 2022). Many studies have validated the English version of the tool (Fulbrook & Anderson, 2015; Ítalo Lennon Sales de et al., 2020; Lovegrove et al., 2020). The English version of the COMHON Index was compared to three other PI risk assessment tools: the Braden Scale, the Norton Scale, and the Waterlow Scale (Fulbrook & Anderson, 2015). In this study, the COMHON Index received the highest precision score in terms of PI risk assessment (Cohen's kappa for the COMHON Index: 0.90; for the Braden Scale: 0.66; for the Waterlow Scale: 0.47; Fulbrook & Anderson, 2015). It also proved most sensitive to slight changes in medical conditions, thus making it more effective in detecting at-risk individuals (Fulbrook & Anderson, 2015). Moreover, the COMHON Index showed a strong negative correlation (-0.7) with the Braden Scale (negative due to the Braden Scale's inverted score, p <0.001; Fulbrook & Anderson, 2015). However, no French version of the COMHON Index currently exists and has not been validated in a Quebec setting, Quebec being the only Canadian province where French is the only official language (84% of the Quebec population is French-speaking; Canadian Heritage, 2024).

Several authors have emphasized the importance of the cross-cultural adaptation process to ensure that clinical tools are both valid and reliable within the population where they are used, considering the local language and cultural context (Beaton et al., 2000; Lauzier et al., 2023; Sousa & Rojjanasrirat, 2011). In Quebec, researchers in health sciences have undertaken numerous projects aimed at adapting assessment tools across various clinical fields (Beauchamp et al., 2021; Beaumier et al., 2019; Lacasse et al., 2017; Lavoie et al., 2021; Perron et al., 2022).

The aim of this study was to perform a cross-cultural adaptation of the COMHON Index to French and to provide a culturally adapted tool for clinicians in Quebec ICUs.

Method

Tool description

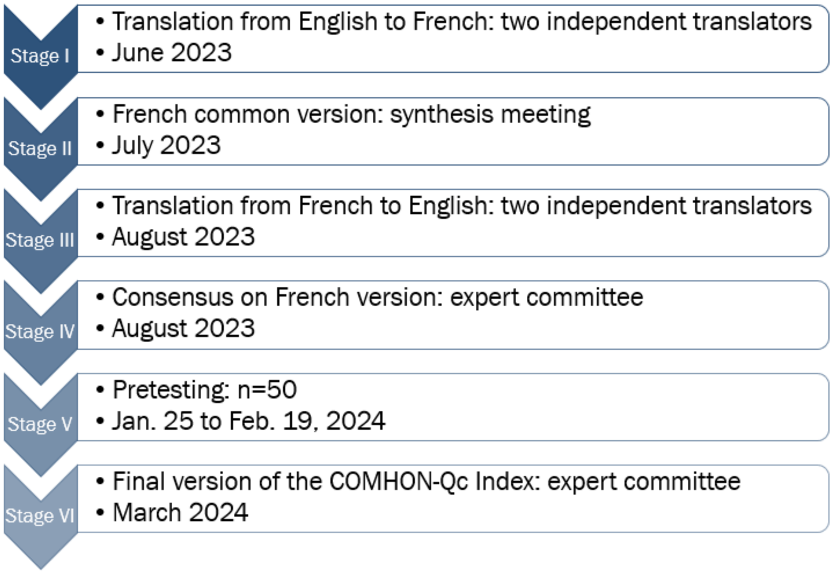
The COMHON Index contains five items: level of consciousness, mobility, hemodynamics, oxygenation, and nutrition. The first section simply presents the items, while the second provides a detailed explanation of each component along with its definition. The items are assessed according to the severity of the individual's medical condition scored on a scale from 1 to 4. The final score, obtained by adding the result of each item, indicates one of three levels of risk of developing a PI: 5 to 9 (low risk), 10 to 13 (moderate risk), and 14 to 20 (high risk; Lovegrove et al., 2020).

Cross-cultural adaptation of the COMHON Index

The Quebec version of the COMHON Index was developed as per the guidelines for the process of cross-cultural adaptation of questionnaires established by Beaton and his collaborators (2000). For practical reasons, we used the English version of the tool as a source document. Permission from the original authors of the original version (Spanish and English) was obtained beforehand. Figure 1 maps out the adaptation process followed.

Figure 1

COMHON-Qc Index Adaptation Process



Stage I: Two forward translations

Two French translations were performed independently by two bilingual nurses whose native language was French and who had never used the COMHON Index in their practice. One of the nurses was from Quebec and the other was from France and had lived in Quebec for several years. One of the translators worked in the field of critical healthcare while the other has expertise in cross-cultural adaptation of measurement instruments. Each translator delivered a detailed written report capturing their suggestions and comments pertaining to the translation and any concerns/issues related to specific sentences.

Stage II: Synthesis

As recommended by the guidelines for cross-cultural adaptation (Beaton et al., 2000), an expert committee, composed of the aforementioned translators and a facilitator with expertise in critical care, sat down to synthesize the translations and discuss the reports produced in stage I. This led to the development of one common version of the COMHON-Qc Index, a Quebec adaptation in French of the original COMHON Index.

Stage III: Two back translations

Using the version of the COMHON-Qc developed in stage II as a source document, two independent translators, whose native language was English and who lived in Quebec, performed two back translations (one each) into English. One of the translators was a nurse with experience in critical health care; the other was not from the field of health care. Neither translator had any prior knowledge of the original English version of the COMHON Index as recommended by guidelines for cross-cultural adaptation (Beaton et al., 2000). Following stage III, a detailed report, including the original English version, the Quebec adaptation (stage II), and both English back translations (stage III), was produced.

Stage IV: Expert committee

An expert committee came together to reach a consensus on the prefinal version of the COMHON-Qc Index. As recommended by Beaton and his collaborators (2000), the committee was composed of both translators from stage I (both native French speakers; one specialized in the field of intensive care), the translator with experience in nursing from stage III, and a facilitator with expertise in critical care. These experts had previously received the comprehensive report from stage III. First, the committee reviewed the overall results of the two forward translations from stage I and the two back translations from stage III and reached a consensus on the semantic choices and accuracy for the prefinal version of the COMHON-Qc Index in terms of the concepts covered. Next, the committee performed contextual adaptations between the original English version and the Quebec version to reflect the practice setting of French-speaking nurses in Quebec better, the outcome of which was the prefinal version of the COMHON-Qc Index.

Stage V: Pretesting

The Beaton guidelines (Beaton et al., 2000) for the cross-cultural adaptation of self-report measurement tools recommend pretesting the prefinal version among 30 to 40 individuals from the target setting. Once ethical approval was obtained (Ethics Certificate No. 2023-10_Perron A), the prefinal version of the COMHON-Qc Index was pretested among a sample of nurses from the province of Quebec using convenience and snowball sampling. The participant selection criteria were as follows: 1) nurse and member of the Ordre des infirmières et infirmiers du Québec (OIIQ); 2) at least 6 months of recent (within the past 5 years) experience in an ICU; 3) ability to understand and complete a questionnaire in French. An invitation was sent to the professional contacts of the members of the research team by email and through social media. Also, an invitation was shared by the Regroupement des infirmières et infirmiers en soins intensifs du Québec (RIISIQ) and the Réseau de recherche en interventions en sciences infirmières du Québec (RRISIQ). Participants completed the web questionnaire anonymously through Microsoft® Forms. The first page of the form outlined the project with sufficient information to allow for free and informed consent. The act of completing the questionnaire constituted in and of itself agreement by the participants. Participants were asked to indicate if each item was clearly formulated and to add comments, if needed, for both sections: 1) items from the COMHON Index; and 2) items with definitions, as per the layout of the original COMHON Index.

Stage VI: Final version

The expert committee examined the pretesting results from stage II. The comments submitted by the participating nursing staff were considered to clarify further the French version of the COMHON Index. The final version, following adaptations, is presented in the results section. Such a version was discussed with the authors of the original COMHON Index.

Results

During stage V, 50 individuals took part in the pretesting process of the prefinal version of the COMHON-Qc Index. A sample of 30 to 40 individuals was required (Beaton et al., 2000); however, a higher number of nurses completed the web questionnaire in a very short period of time. Table 1 shows an overview of the pretesting results along with the adjustments made during stage VI.

The participants made 33 comments on the section of the COMHON-Qc Index, putting forth the items without the definitions; they made 67 comments on the section, including the items and the definitions. One of the main adaptations of the COMHON Index to the Quebec setting was a formatting change aimed at simplifying presentation and adding item definitions alongside the scales. This formatting saves users the burden of having to go back and forth between where the scores were to be entered and the definitions needed to complete the scores. In fact, between 32 and 41 participants reported that the items without definitions were completely intelligible, while this number increases from 38 to 49 for the complete version with definitions. Furthermore, by adding the definitions to the items, 17 of the 33 comments regarding the section outlining the items without definitions were addressed.

Several comments regarding the overall questionnaire (n = 18/110) suggested splitting certain categories or further specifying health conditions. However, the research team

Table 1

Pretesting Results and Changes Made to Create the Final Version of the Questionnaire

Item of the Common Version Following the Forward Translation Process	Proportion of Participants Reporting the Item as Completely Comprehensible (*n* = 50), %	Examples of Comments/ Suggestions Made by Participants Who Reported that the Clarity of the Item Should be Improved	Changes Brought to the Final Version of the French Questionnaire
COMHON Index – Risk assessment			
Niveau de conscience	*n* = 41 (82.0%)	"L'utilisant a tous les jours c'est clair et il est séparé de +4 à -5 dans mon centre alors encore plus facile de l'utiliser." "Je ne comprends pas trop la question et quoi répondre."	Explanation of the RASS, GCS, and tools attached as an annex. Inclusion of item definitions and insertion of required interventions on the back.
Mobilité	*n* = 41 (83.7%) – 1 missing	"indépendant n'est pas marcher avec aide. On met Autonome habituellement"	Rewording: "Marche (seule ou avec aide)"
Hémodynamie	*n* = 32 (64.0%)	"Parler en termes de vasopresseurs et inotrope au lieu de nommer des molécules"	Inclusion of "bolus" as an example under Hemodynamics Rewording: "medication vasopressive"
Oxygénation	*n* = 32 (64.0%)	"mettre FiO2 en pourcentage au lieu de 0,4. ça m'a pris du temps avant de comprendre le 0,4" "Je ne connais pas ce que veut dire Fi02 > ou < que 0,4"	Rewording: "FIO2 inférieure à 40%" Rewording: "FIO2 supérieure ou égale à 40%" Inclusion of the corresponding value in L/min
Nutrition	*n* = 34 (69.4%) – 1 missing		
Item definitions – Niveau de conscience			
Éveillé et alerte (RASS 0, +1) – (Glasgow 15)	*n* = 47 (95.9%) – 1 missing		No changes
Agité, anxieux, confus, mouvements fréquents sans but précis (RASS >1) – (Glasgow 13–14)	*n* = 42 (85.7%) – 1 missing		No changes
Sédaté, mais réactif (RASS -1 à -3) – (Glasgow 9–12)	*n* = 42 (84.0%)	Unfamiliarity with tools	Tools attached as an annex.
Coma, sédaté, non réactif (RASS < -3) – (Glasgow < 9)	*n* = 44 (88.0%)	"Avec un RASS – 4 la personne peut réagir à la douleur ex froncer les sourcils"	Rewording: "Ne réagit pas ou peu aux stimulis"
Item definitions – Mobilité			
Indépendant, marche avec aide	*n* = 44, 88%	"Est ce que aide d'une personne fais partie de la définition?" "Quand on parle de soutient, on parle d'une autre personne ou d'une marchette par exemple? À préciser."	Rewording: "Marche (seule ou avec aide)" Inclusion of examples (walker, cane, person)

Limitée à la chaise ou au lit	*n* = 44, 88%		Inclusion of tool description (items and impacts on PI risk) No changes
Très limitée, mais tolère les changements de position	*n* = 48, 96%		No changes
Ne tolère pas les changements de position ou en position ventrale	*n* = 47, 94%	“Parfois, dans les cas neuro, c’est uniquement la PIC le problème, merci de le rajouter avec instabilité hémodynamique et/ou respiratoire”	Inclusion of “ou neurologique”
Item definitions – Hémodynamie			
Pas de soutien hémodynamique	*n* = 47, 95.9% – 1 missing		
Remplissage vasculaire	*n* = 45, 90%		No changes
Dopamine ou norépinephrine ou adrénaline ou soutien mécanique cardiopulmonaire	*n* = 44, 88%		Rewording: “Besoin de médication vasopressive (ex. norépinéphrine) ou de soutien mécanique cardiopulmonaire”
A besoin de deux mesures de soutien hémodynamiques ci-dessus	*n* = 46, 92%	No comments	
Item definitions – Oxygénation			
Respiration spontanée et FiO2 < 0,4	*n* = 38, 76%		Rewording: “Respire par elle-même sans ventilation mécanique et n’a pas besoin d’oxygène”
Respiration spontanée et FiO2 > 0,4	*n* = 39, 78%		Inclusion of example Ventimax, nasal cannula, high-flow nasal cannula (HFNC) Inclusion of “égale à 40%”
Ventilation mécanique non invasive	*n* = 46, 92%		Inclusion of examples: BiPAP and CPAP
Ventilation mécanique invasive	*n* = 47, 94%		Inclusion of example: intubation
Item definitions – Nutrition			
Alimentation orale complète	*n* = 47, 94%	No comments	No changes
Nutrition entérale ou parentérale	*n* = 46, 92%	“avec ou sans besoins calorique comblées?”	Inclusion of “dans le but de combler ses besoins”
		“nutrition entérale et / ou parentérale”	Inclusion of “ou parentérale”
Diète liquide. Alimentation orale incomplète	*n* = 43, 86%	“diète liquide pourquoi l’ajouter. Elle pourrait être sur une diète molle ou normale et avoir une alimentation incomplète”	Rewording: “Diète liquide ou alimentation orale incomplète”
Aucune alimentation ou nutrition	*n* = 49, 98%		

decided not to implement these changes, as subdividing these items would have no meaningful impact on PI risk assessment. For example, one participant stated that there is a difference between a Richmond Agitation Sedation Scale (RASS) score of -3, -4, and -5, and that the RASS/Glasgow Coma Scale (GCS) scores must be accurate during the evaluation. Clinically speaking, there is a difference. However, the COMHON Index groups the assessment of level of consciousness into four levels (i.e., Awake and alert [RASS 0, + 1; Glasgow 15], Agitated, restless, confused [RASS > 1; Glasgow 13–14], Sedated but responsive [RASS -1 to -3; Glasgow 9–12], and Coma, sedated and unresponsive [RASS < -3; Glasgow < 9]), as the risk of pressure injury does not necessarily increase with each variation in the state of consciousness according to RASS and Glasgow (Fulbrook & Anderson, 2015). We therefore added an explanatory note before the questionnaire items to address such comments and concerns among healthcare professionals during clinical assessment.

The expert committee explored the clinical use of the COMHON-Qc Index and considered the need to review its layout to facilitate daily assessments by healthcare professionals. Moreover, the preventive interventions required according to COMHON scale risk level, which has been developed by a group of international experts, were added to the back of the tool to guide healthcare professionals in preventing PIs by promptly taking appropriate measures (Lovegrove et al., 2020).

Likewise, the expert committee examined the best approach to clarify nutrition-related items in response to comments made by nurses about the notion of "needs met" by the patient. As underlined by three nurses, a person can have a normal diet without their nutritional needs being met. A meeting was held with the authors of the original COMHON Index. Such authors mentioned that the nutrition-based items had actually sparked the most discussion during previous work on the tool. Following these exchanges, the comments on the clarity of such items, and the guidelines on the effects of nutritional status on PIs (Munoz & Posthauer, 2022; National Pressure Injury Advisory Panel et al., 2025), the expert committee decided to add the notion of "met nutritional needs" to the second point of Nutrition. The final version of the tool is shown in Table 2.

Table 2

Assessment of PI Risk in Intensive Care

Échelle COMHON-Qc (**Co**nscience **M**obilité **H**émodynamie **O**xygénation **N**utrition)

L'évaluation du risque de lésion de pression doit être faite par l'infirmière ou l'infirmier à l'admission et à tous les quarts de travail pour chaque personne hospitalisée à l'unité des soins intensifs. Dans cette échelle, certains états de santé différents sont regroupés dans un même item (p. ex. : niveaux différents au RASS), car ils ont un impact similaire sur la peau et le risque de lésion de pression.

	Date / Heure **Initiales**
CONSCIENCE	**Score**
Éveillé et alerte (RASS 0 à +1) – (Glasgow 15) La personne est consciente et orientée dans le temps et l'espace, obéit aux demandes, reconnaît et réagit à tout stimulus dans son environnement.	1
Agité, anxieux, confus, mouvements fréquents sans but précis (RASS >1) – (Glasgow 13 à 14) La personne est consciente, mais elle est partiellement ou de façon intermittente désorientée dans le temps et/ou l'espace. La personne répond de façon inadéquate aux stimuli.	2
Sédaté, mais réactif (RASS -1 à -3) – (Glasgow 9 à 12) La personne est sédatée, mais elle réagit aux stimuli.	3
Coma, sédaté, non réactif (RASS < -3) – (Glasgow < 9) La personne est comateuse, sédatée et ne réagit pas ou peu aux stimuli.	4
MOBILITÉ	**Score**
Marche (seul(e) ou avec aide) La personne marche seule ou a besoin d'un système de soutien pour maintenir son équilibre (ex : marchette, canne, une personne).	1
Limitée à la chaise ou au lit La personne est repos au lit, mais a la capacité de se déplacer par elle-même. **OU** La personne alterne entre des périodes de repos au lit et au fauteuil. La personne peut se lever avec ou sans aide.	2
Très limitée, mais tolère les changements de position La personne est repos au lit et elle ne peut pas se mobiliser sans aide. La personne peut être mobilisée sans affecter son état hémodynamique, respiratoire ou neurologique.	3
Ne tolère pas les changements de position ou en position ventrale La personne est alitée (repos strict au lit) et elle ne peut pas être mobilisée en raison de son instabilité hémodynamique, respiratoire ou neurologique ; ou la personne est en position ventrale.	4

table continued on next page…

HÉMODYNAMIE	Score
Pas de soutien hémodynamique La personne n'a besoin d'aucune médication vasopressive ni de remplissage vasculaire ni de soutien mécanique d'hémodynamie (ex.:, un ballon de contre-pulsion intra-aortique).	1
Remplissage vasculaire La personne a besoin de produits sanguins, colloïdes ou cristalloïdes pour maintenir son état hémodynamique (ex.: bolus).	2
Besoin de médication vasopressive (ex. norépinéphrine) ou de soutien mécanique cardiopulmonaire La personne a besoin d'un ou plusieurs de ces médicaments en perfusion continue OU d'une assistance cardiopulmonaire mécanique (ex.: un ballon de contre-pulsion intra-aortique, une oxygénation par membrane extra-corporelle) afin de maintenir sa stabilité hémodynamique.	3
A besoin de deux mesures de soutien hémodynamiques ci-dessus La personne a besoin d'au moins deux mesures de soutien nommées ci-dessus pour maintenir sa stabilité hémodynamique (ex.: norépinéphrine ET ballon de contre-pulsion intra-aortique)	4

OXYGÉNATION	Score
Respiration spontanée et FiO2 inférieure à 40% (0 à 4L/min) La personne respire par elle-même sans ventilation mécanique et n'a pas besoin d'administration d'oxygène ou d'une administration inférieure à 40 % (ex.: lunettes nasales)	1
Respiration spontanée et FiO2 supérieure ou égale à 40% (5l/min ou plus) La personne respire par elle-même sans ventilation mécanique et a besoin d'une administration d'oxygène supérieure à 40% (ex.: masque, lunettes nasales haut débit)	2
Ventilation mécanique non invasive La personne a besoin d'une ventilation mécanique non invasive (ex.: CPAP, BiPAP)	3
Ventilation mécanique invasive La personne a besoin d'une ventilation mécanique invasive (ex.: intubation)	4

NUTRITION	Score
Alimentation orale complète La personne tolère les liquides et les solides et s'alimente suffisamment pour répondre à ses besoins.	1
Nutrition entérale (ex : par voie nasogastrique) ou parentérale (ex.: HAIV) La personne reçoit une nutrition parentérale, entérale ou les deux dans le but de combler ses besoins, et peut également s'alimenter partiellement par voie orale ou ne pas s'alimenter du tout.	2
Diète liquide ou alimentation orale incomplète La personne a une alimentation inadéquate ou réduite qui ne répond pas à ses besoins et elle n'est pas sous nutrition entérale ou parentérale.	3
Aucune alimentation ou nutrition La personne n'est pas du tout alimentée.	4
Score total	/20

Niveau de risque : Risque F (faible de 5 à 9); **Risque M** (modéré de 10 à 13); **Risque E** (élevé 14 à 20)

Interventions à mettre en place selon le niveau de risque[1]

Interventions	**Niveau de risque**		
	Faible (F)	**Modéré (M)**	**Élevé (E)**
Si la personne est incontinente (urinaire et/ou fécale), mettre en place une culotte d'incontinence	✓	✓	✓
Fréquence minimale de repositionnement	q4h	q2h	q2h
Soulagement de la pression des talons (aide technique ou oreiller)		✓	✓
Matelas préventif (ex.: en mousse)	✓	✓	
Matelas thérapeutique (ex.: avec système d'injection d'air ou à pression alternée)			✓
Utilisation d'un coussin de redistribution de la pression au fauteuil (ex.: en gel)			✓
Utilisation préventive d'un pansement en mousse siliconée aux endroits suivants : Sacrum Talons Trochanter (hanche) Menton et genoux (si position ventrale)			✓
Administrer des suppléments nutritionnels (à discuter avec la nutritionniste)			✓

[1] *Source: Lovegrove et al., 2020.*
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Discussion

The goal of this study is to perform a cross-cultural adaptation of the COMHON Index to the cultural setting of Quebec ICUs. The process enabled the creation of a French-language PI risk detection tool considered comprehensible by nurses working in such units. The addition of recommended interventions based on risk makes this tool both practical and comprehensive in supporting clinical decision-making among such healthcare professionals.

The use of a questionnaire by individuals of different origins than those of the tool's target population requires both translation and cultural adaptation to preserve content validity for the target population (Beaton et al., 2000). In this project, all stages were completed in strict accordance with the cross-cultural adaptation process described by Beaton et al. (2000) in *Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures*. The cultural adaptation setting and certain modifications warrant further discussion.

During stage III (two back translations), the back translations into English showed some inconsistencies with the original version used in stage 1 (two forward translations). For instance, the native English-speaking expert from Quebec preferred formulations such as "Very limited but tolerates changing positions" rather than "Very limited but tolerates position change," and used "respiration" instead of "breathing." These minor discrepancies likely reflect regional variations in English usage. While the original English version of the tool was adapted by an Australian team, our translation involved a Quebec-based expert, which may explain subtle lexical and syntactic differences.

During pretesting (stage V), the Braden Scale was mentioned three times by participants, suggesting using the same items as that scale for the COMHON-Qc Index. Notably, the Braden Scale is widely used in Canadian hospitals (Registered Nurses' Association of Ontario (RNAO), 2024). It is therefore possible that participants compared the two tools and suggested aligning the items for easier use. However, the Braden Scale differs in that it requires a projection over time, while the COMHON-Qc Index reflects the health status upon assessment and must be repeated every shift. The notion of time in the Braden Scale limits its use in ICU settings, and this tool was not developed with consideration of the specific risk factors associated with the ICU (Fulbrook & Anderson, 2015). This is not the case for the COMHON-Qc Index. In ICUs, patients' medical condition can deteriorate rapidly (Lavoie et al., 2016), potentially causing substantial changes to the risk of a PI at any given time (Cox, 2017; Rubulotta et al., 2022). These realities underscore the importance of using a tool designed specifically for ICUs to assess the risk of PI among such patients. That said, management teams must ensure the proper training of nurses before the implementation of the COMHON-Qc Index in ICUs, especially if the Braden Scale is already in use. The implementation strategies for Best Practice Guidelines proposed by the RNAO (2024) can be useful to support a successful implementation.

Regarding the interpretation of the COMHON Index results, a Delphi study by Lovegrove et al. (2020) identified an association between the level of risk based on the COMHON Index and clinical preventive interventions. Their study, involving 67 international experts, provides direct guidance for clinical practice (Lovegrove et al., 2020). Given the impact of preventive interventions on PIs, our expert committee decided to add the interventions recommended by Lovegrove et al. (2020) to those found in the tool. Such interventions address, for instance, the frequency of position changes and the need for pressure relief. They also recommend assessing the PI risk using the COMHON Index every eight hours (Lovegrove et al., 2020). However, the literature offers no consensus on the frequency of PI risk assessments (Lima-Serrano et al., 2018), and further research on optimal assessment frequency is needed. Adding these interventions will guide clinical practice and, ultimately, decrease the risk of PI in Quebec ICUs.

The main adaptation made to the tool is related to the Nutrition item. This item generated the highest number of comments during pretesting. The authors of the original tool in Spanish also highlighted that this item sparked the most discussion during previous projects. It is also noteworthy that no pretesting of the COMHON Index was performed to assess clarity during the English adaptation. Based on the comments and suggestions of the participating nurses concerning the importance of meeting the nutritional needs of patients to prevent PIs and according to the latest guidelines (Munoz & Posthauer, 2022; National Pressure Injury Advisory Panel et al., 2025), the committee decided to add "dans le but de combler ses besoins" to point 2 of the Nutrition item. This addition ensures the creation of a comprehensible tool adapted to the cultural setting of Quebec, and in line with recent empirical data.

Limitations and future studies

While the present study follows the guidelines for the cross-cultural adaptation of measurement tools (Beaton et al., 2000), some limitations should be acknowledged. As the sociodemographic data of participants was not collected, it was not possible to verify the sample's diversity to ensure an optimal representation of nurses in Quebec. Furthermore, all participants who took part in pretesting were from the province of Quebec. Quebec does hold Canada's largest population of French speakers; however, the research team recognizes the existence of several French-speaking communities outside of Quebec and that these communities were not included by this study. Cross-cultural adaptation represents the initial phase in the adaptation and validation process (Beaton et al., 2000). Studies on the psychometric properties of the COMHON-Qc Index are now required (Mokkink et al., 2010).

Conclusion

The present study led to the French adaptation of a PI risk assessment tool designed specifically for ICUs. Improving care quality and reducing PI risks for hospitalized patients can be accomplished through accurate assessment of PI risks and implementing appropriate preventive interventions. The COMHON-Qc Index is therefore a valuable and relevant resource for nursing staff in Quebec ICUs. The present publication of the COMHON-Qc Index is the first step toward implementation by various teams in clinical settings and its assessment in terms of clarity, validity and sensitivity to change.

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Practical Strategies for Hospital-Based Nurses to Write and Publish from the Bedside

By Oliver De Laurentiis, MN, RN, CNCC(C), CHE and Julia St. Louis, MN, RN

De Laurentiis, O., & St. Louis, J. (2026). Medication safety practice corner: Anatomy of an incident analysis – Part 2. *The Canadian Journal of Critical Care Nursing, 37*(1), 32–34. DOI: 10.5737/23688653-37135

Let's be honest: writing from the bedside can feel like trying to fold laundry in a hurricane. Nights, days, doubles, your schedule has the jazz rhythm of an improvisational band. Between patient loads, family conversations, documentation, and the buzz of alarms, the idea of producing a scholarly manuscript can sound like fiction. Yet hospital-based nurses are surrounded by publishable ideas every single shift. You spot the care gap and invent the clever workaround. You notice patterns long before a data scientist catches them in an executive-level meeting. Publishing is not only for those who you may think sit in the ivory tower; it is simply the act of shaping your everyday practice into a story others can learn from (Canadian Journal of Critical Care Nursing [CJCCN], n.d.). The purpose of this article is to offer realistic, bedside bedside-friendly strategies to help you turn what you already know and do into a manuscript that informs practice. We will walk through repurposing existing work, writing in bite-sized blocks, collaborating inside your hospital, choosing the right article format, navigating submission and review, and tapping organizational supports that make the whole endeavour less daunting and more doable (Oermann, 2024). Think of this as your field guide to getting words on the page and pages out into the world, fun included.

Brainstorm Possible Manuscript Topics

Start with what you already have, because chances are good you have achieved more than you realize. If you have ever delivered a grand rounds presentation, run a unit in-service, created a simulation scenario, or compiled teaching slides, you already have the skeleton of a manuscript. Those slide titles, "Background," "Problem Statement," "Intervention," "Outcomes," "Lessons Learned," conveniently mirror how practice-focused papers are organized in critical care nursing journals (Wiley, 2016). Flesh out the talk track you gave, and the questions colleagues asked; they are perfect to inform your introduction and discussion. If you ran a mock code or a complex debrief, outline the scenario, the decision points, determine what went well, and consider what you would change next time. That sequence is more than a story; it is a tidy case report or practice article waiting to happen.

Quality improvement (QI) work is another excellent place to find manuscript ideas. Most QI projects follow a pattern: you spotted a problem, gathered baseline data, tried an intervention, measured something, and then refined the process. Those stages map well to a publishable piece: define the gap, describe the setting and team, explain your approach (Plan-Do-Study-Act cycles count!), share process and outcome measures, and close with practical implications. Clear scaffolding for reporting healthcare improvement work has been developed in the Standards for Quality Improvement Reporting Excellence (SQUIRE) guidelines, including context, intervention, measures, analysis, and ethical considerations (Goodman et al., 2016). Ensure you have an ethics note. In Canada, Tri-Council Policy Statement (TCPS 2; Panel on Research Ethics, 2022a) clarifies the scope of the Research Ethics Board (REB) review and the proportionate approach; many QI activities may be exempt from research ethics review, but you should document your local determination, privacy safeguards, and de-identification (Panel on Research Ethics, 2022b). Journals also expect protection of patient privacy consistent with International Committee of Medical Journal Editors (ICMJE) guidance; if identifiability is possible, obtain and state written consent (ICMJE, 2024).

Case reviews can be spun into compelling narratives that allow a broader audience to learn from a compelling case without breaching privacy. Pick a case that illustrates a puzzling presentation or an interprofessional coordination challenge. Articulate the clinical reasoning: what you saw, what you suspected, how you ruled in or out, and how nursing interventions changed the trajectory. If patient identifiers are tricky, consider a composite case, clinically true, personally untraceable. As long as the logic holds and the lessons are specific, readers will follow and learn. Use the Case Report (CARE) Checklist to structure the report and follow ICMJE privacy/consent expectations for any potentially identifiable details (ICMJE, 2024 & CARE, 2019).

Start the Writing Process

Now, how do you write when time behaves like a slippery fish? You write small, and you write often enough that momentum outruns guilt. Thirty-minute blocks are your new best friend. In a single micro block, do exactly one task: outline five subheadings; draft the method paragraph; convert a run chart scribbled on scrap paper into a basic figure; identify five references to complete your background section. The trick is to choose tasks that fit the time and remembering that there is no rush to the finish line. Evidence and practice advice for academic writers suggest time blocking and micro-writing are effective for sustaining progress under heavy workloads (Nacke, 2023).

For nurses who think best on the move (which are… most nurses), voice-to-text is the secret path to success. Dictate a paragraph during a coffee break or after handover; later, clean up grammar and tone. Prompt yourself with the same questions you answer dozens of times on a shift: What problem did we see? What did we try? What happened? What should others know? Your spoken reasoning is already clear and practical; capture it before it evaporates.

Keep an idea journal. Tag entries by theme: airway, sedation, delirium, communication, family presence, and date them. When you sit down to write, pick one tag and gather three entries into a paragraph. Progress is satisfying when it's visible, so track it. A simple checklist, sections drafted, figures built, references wrangled, feedback incorporated, turns a foggy project into a series of finish lines. And do not be afraid to write out of order. If the discussion is crystal clear today and the introduction feels like pulling teeth, write the discussion. Manuscripts are puzzles; you can fill in the corners first (Oermann, 2024).

Partner with educators and clinical nurse specialists (CNSs); they have teaching objectives, evaluation data, and experience with translating complex ideas into clear writing. Advanced Practice Nurses (APN) can strengthen the clinical rigour and help pinpoint the "so what." Form a writing group, 45 minutes a month, one page per person, and three sharp questions: What is the central message? What's most useful? What's unclear? Early feedback can help to improve writing before it is submitted (Redulla, 2021). Ask a research champion or professional practice lead to co-author a piece. Set a few checkpoints and agree on timelines. Divide and conquer works in manuscripts the way it works on a busy shift: someone handles background, someone owns methods, someone crafts figures and tables, and someone polishes references and the cover letter (Oermann, 2024).

Additional Writing Resources

Hospitals have supports you can leverage, some formal, some discoverable with a polite ask. Protected writing time doesn't have to be grand; two hours a month tethered to a deliverable ("finalise the practice article from our sedation QI project") can make a meaningful difference. Link your request to organizational priorities: quality and safety, accreditation, spread of best practices. Library and information services are unsung heroes, librarians can craft search strategies, find full texts, and help with reference managers (Canadian Association of Critical Care Nurses [CACCN], n.d.). Internal publishing channels (the intranet blog, a clinical bulletin, the corporate newsletter) function as stepping stones; you refine your message, gather feedback, and spark interest before you venture into peer review (Oermann, 2024). Workshops on writing or QI-to-publication demystify the process; if none exist, propose a short series tailored to bedside teams. Leadership support matters too. Share your plan with unit managers and professional practice leads; visibility opens doors for mentorship, co-authorship, and yes, time. Do not underestimate the culture-building power of small wins. A submitted abstract is a win. An accepted poster is a win. A manuscript under review is a win. Celebrate them publicly and watch momentum grow (Wiley, 2016).

If you are worried about pitfalls, here are the usual suspects and their easiest cures. When the project scope is too broad, even strong ideas lose clarity; narrowing the focus ensures the work remains specific and actionable (Oermann, 2024). Similarly, perfectionism often delays progress rather than improving quality. Emphasizing clarity and usefulness early on and refining later helps maintain momentum (Nacke, 2023). Writing in isolation can also slow development. Sharing early drafts with colleagues and posing targeted questions typically results in more efficient revisions (Redulla, 2021). In addition, overlooking journal fit creates unnecessary friction; reviewing recent issues and aligning tone and structure with the target audience can streamline the submission process (CJCCN, n.d.; CACCN, n.d.). Finally, slipping timelines often stem from vague goals. Setting clear weekly milestones and keeping them visible supports steady, timely progress (Oermann, 2024).

Finding Your Voice

Underneath all these tactics is a simple truth: publishing is a skill that grows with practice, and hospital-based nurses have insights that the wider community urgently needs. The bedside is a living laboratory for patient safety, interprofessional teamwork, and practical innovation. Your work is credible. Not because it is perfect, but because it is grounded in clinical realities. Start with one focused idea, perhaps the small change that reduced sedation weaning hiccups or the family communication tweak that calmed a chaotic afternoon. Draft a few paragraphs in a 30-minute block. Invite a colleague to read and provide comments. Choose a format that fits your time and purpose. Use the journal's template, write a clean cover letter, and welcome peer review as part of the craft (CJCCN, n.d.). Use the supports that exist around you, and ask for the ones that do not exist, yet. Your voice belongs in the literature. Now pick one idea, set a timer, and let's get your story into print.

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MEDICATION SAFETY PRACTICE CORNER

Anatomy of an Incident Analysis – Part 2

By Lynn Riley, RN, Carolyn Hoffman, RN, and Dorothy Tscheng, RPh

Riley, L., Hoffman, C., & Tscheng, D. (2026). Medication safety practice corner: Anatomy of an incident analysis – Part 2. *The Canadian Journal of Critical Care Nursing, 37*(1), 35–39. DOI: 10.5737/23688653-37135

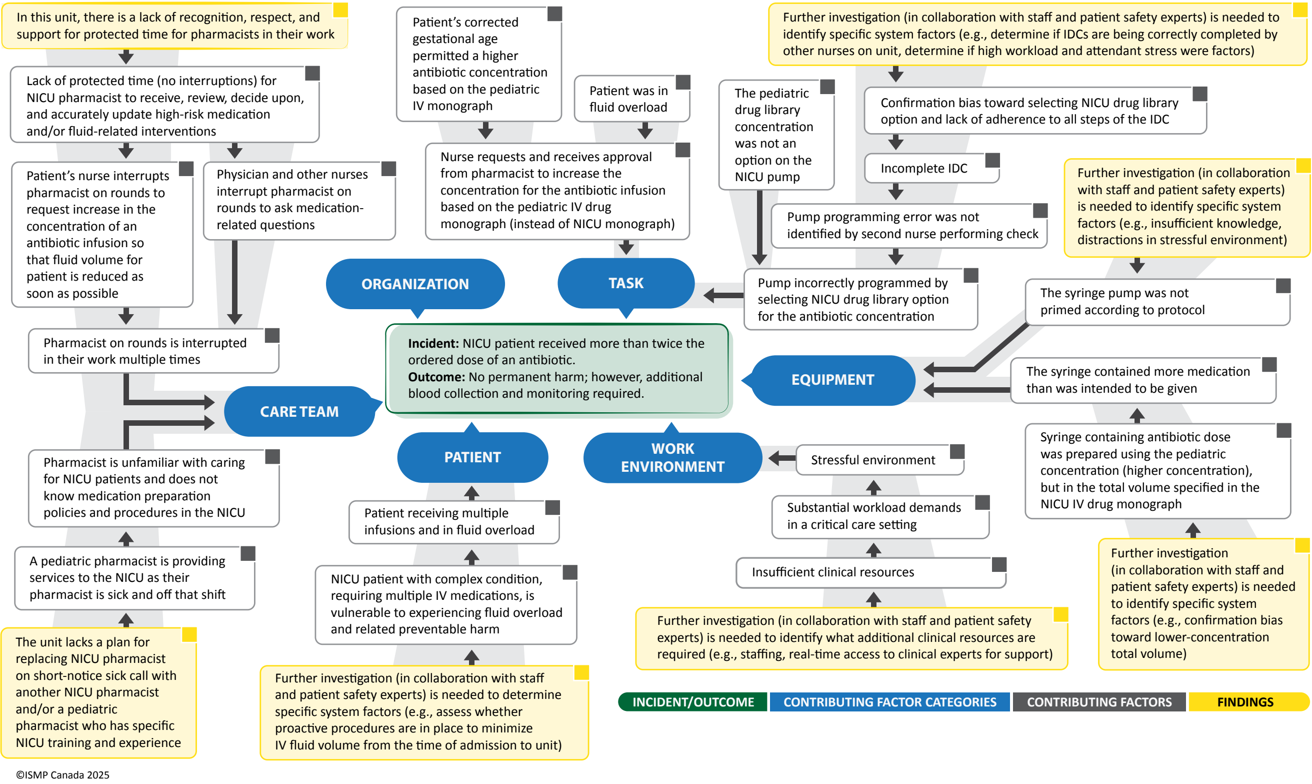
Report a med error

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

The previous Medication Safety Practice Corner (**Anatomy of an incident analysis – Part 1**) described the early steps of the incident analysis process for a medication error involving an infant in a neonatal intensive care unit (NICU) who received approximately double the intended dose of an antibiotic. Key next steps in the analysis process include reviewing the findings (as shown in the constellation diagram, initially presented in Part 1 and reshared here as Figure 1) and designing actions to reduce recurrence of the same or a similar error.

Figure 1

Constellation Diagram Based on the Information Provided in the Incident Report



Note. Shown is an abridged example of a full analysis.
IDC = independent double check; NICU = neonatal intensive care unit; IV = intravenous.

Summarize Findings

Once the constellation diagram has been finalized, the findings are summarized into causal statements.

In this process, the yellow boxes in Figure 1, representing system-level findings, are used to develop the causal statements. The team may also identify key contributing factors (white boxes shown along grey pathways in Figure 1) that should be incorporated into the system findings and then the causal statements. These statements would capture contributing factors that, if corrected, would likely have prevented the incident or mitigated the harm.

Table 1 highlights select examples for communicating findings in the form of causal statements.

Design Actions

After agreeing on the findings and causal statements, the analysis team designs recommended actions to prevent recurrence of the incident or to mitigate harm, thus making care safer (Incident Analysis Collaborating Parties, 2012). Ideally, the recommended actions are supported by a culture of safety and

- address the risk associated with the contributing factors and/or findings
- consider similar recommendations implemented by the organization (e.g., from accreditation processes, internal safety reviews) or derived from a literature review
- use the SMART format:
  - Specific – are clearly defined, with a clear scope
  - Measurable – have a demonstrable impact on processes and outcomes
  - Attainable – can be achieved
  - Realistic – will be accepted and implemented
  - Timely – have a timeframe for implementation
- are guided by the Hierarchy of Effectiveness (ISMP Canada, 2013; Figure 2).

As shown in Figure 2, actions are more likely to be effective if they are system-based. Person-based strategies (e.g., education) are necessary but not sufficient to ensure that an intended action is always implemented safely. Person-based strategies should be paired with at least one higher-leverage strategy for greater effectiveness.

Conclusion

Team development of recommended actions is a critical step of the incident management continuum and depends on the quality of findings obtained earlier in the analysis process. Actions are identified, designed, and implemented to address the findings and contributing factors that allowed the incident to occur (Incident Analysis Collaborating Parties, 2012). Notably, a few carefully considered high-leverage strategies can be more effective than several lower-leverage actions in enhancing the safety of the medication system.

Other key components of the incident management continuum include evaluating the implemented actions and sharing the learning internally (e.g., safety huddles) as well as externally to the organization. Engaging critical care nurses in the incident analysis team is essential to the success of improving medication safety!

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Table 1

Communication of Selected Findings Using Causal Statements

Finding or Contributing Factor*	Related Causal Statement
The independent double check was incomplete.	An incomplete independent double check increased the likelihood that a pump programming error could occur and would not be detected.
The desired (pediatric) drug concentration was not an option in the NICU pump library.	The pediatric drug concentration was not an option in the pump library, which increased the likelihood that a programming error would be made.
The syringe contained more medication than was intended to be given.	The syringe contained more medication than was intended to be given, which increased the likelihood that an overdose of medication would be administered.
Clinical resources were insufficient. Workload demands in this critical care setting were substantial.	The clinical resources were insufficient for a critical care setting with substantial workload, which increased the likelihood that there would not be real-time access to clinical experts for support.

* From Figure 1; yellow boxes representing a finding or white/grey boxes representing a contributing factor

Figure 2

Hierarchy of Effectiveness (ISMP Canada, 2013)

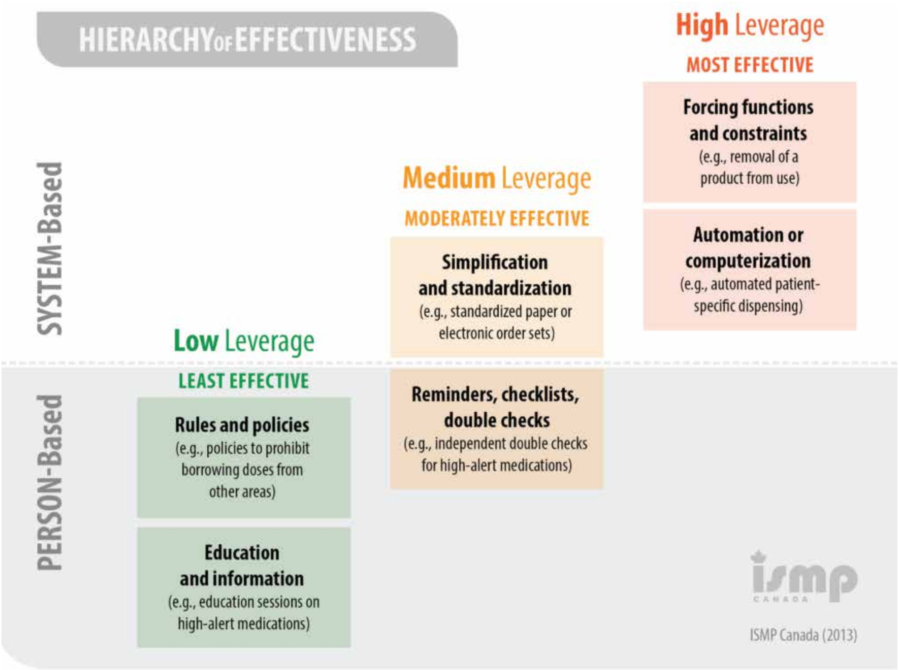

Table 2

Chart of Recommended Actions for Selected Findings

Causal Statement	Recommended Actions	Level of Effectiveness
An incomplete independent double check increased the likelihood that a pump programming error could occur and would not be detected.	• Develop a standardized process for performing independent double checks for all infusions in the NICU.	Medium
	• Provide hands-on training session for the team, with a focus on the standardized process for independent double checks.	Low
The pediatric drug concentration was not an option in the pump library, which increased the likelihood that a programming error would be made.	• Provide real-time clinical support to address gaps in pump libraries, to permit nurses to administer medications in an environment with necessary safeguards.	Medium/High
The syringe contained more medication than was intended to be given, which increased the likelihood that an overdose of medication would be administered.	• Have pharmacy department purchase or prepare ready-to-use medication doses to be administered by injection (i.e., when a syringe is required) to avoid the need for nurses to carry out bedside calculations.	High
The clinical resources were insufficient for a critical care setting with substantial workload, which increased the likelihood that there would not be real-time access to clinical experts for support.	• Develop a staffing model that includes clinical experts for real-time support for front-line nurses and pharmacists.	Medium

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Before Calling It a Failed Sedation Vacation: Nursing Considerations

By Kristina Tsvygun, BScN, RN

What Is a Sedation Vacation and Why Is It Important?

The sedation vacation (also known as a spontaneous awakening trial) is part of the Intensive Care Unit (ICU) Liberation bundle, which involves a complete or partial discontinuation of continuous sedation in mechanically ventilated patients at a specific time or times during the day (Society of Critical Care Medicine, n.d.). Early and daily sedation vacation was found to decrease the length of mechanical ventilation, the incidence of ventilator-associated pneumonia, the rate of ICU-acquired delirium, and overall to reduce ICU and hospital length of stay (Borkowska et al., 2018; Society of Critical Care Medicine, n.d.). The evidence suggests that organizations with nurse-driven sedation protocols achieve higher sedation vacation rates and, subsequently, better outcomes for ICU patients (Green & Staffileno, 2021). However, even with organizational protocols in place, nurses are often hesitant to initiate sedation vacation, with nurses' knowledge and attitudes mentioned among the major barriers (Borkowska et al., 2018). Critical care nurses report a reluctance to start sedation vacation because of concerns for the agitated behaviour, patient discomfort, and the risk of self-extubation (Borkowska et al., 2018). Whether the unit has a specific sedation vacation algorithm available for nurses, understanding the essential components of this process can help nurses to initiate and promote it with confidence.

Case Illustration

You arrive for your shift in the Intensive Care unit. Your patient, Mr. Ben, is a 60-year-old male who has been admitted with acute hypoxemic respiratory failure and has been on mechanical ventilation for several days now. The patient is receiving continuous propofol to support ventilator tolerance and has been deeply sedated since intubation. First, you check whether the patient meets any of the absolute contraindications for sedation vacation.

Absolute Contraindications to Sedation Vacation (Society of Critical Care Medicine, n.d.):

- Agitation (e.g., Richmond Agitation Sedation Scale (RASS) score of 2 and above)
- Neuromuscular blockade
- Active seizures
- Acute alcohol withdrawal
- Abnormal intracranial pressure
- Palliative sedation

Since being initially intubated, the patient has stabilized now. There are no current indications for deep sedation and no contraindications to sedation vacation. Your organization has a protocol for nurse-driven sedation vacations, and you plan to attempt it early in your shift. You are aware that propofol has a short half-time, so you prepare to assess a patient as they wake up and continue to reassess as sedation completely wears off.

Nursing Assessment During Sedation Vacation (Yadav et al., 2025)**:**

- Level of consciousness (e.g., Glasgow Coma Scale)
- Respiratory assessment: breathing pattern, tidal volume, and ventilator synchrony (e.g., consider if a Respiratory Therapist is involved to start a spontaneous breathing trial)
- Monitor for signs of pain (e.g., Critical-Care Pain Observation Tool)
- Monitor for agitation (e.g., RASS)
- Hemodynamic stability (e.g., changing pressor requirements)

Normal Physiologic Responses

As Mr. Ben wakes up, he is restless, and the cardiac monitor displays sinus tachycardia at a rate of 110 beats per minute. Patients may not remember being intubated and could present as anxious, confused, or agitated. Physiologically, the inability to remember the events of intubation could trigger a sympathetic nervous system response, leading to an increased heart rate and blood pressure (Yadav et al., 2025). Nurses should prepare for this normal physiologic response and attempt other non-pharmacological and pharmacological interventions prior to restarting sedation. The immediate physiologic response alone does not always determine whether the sedation vacation was successful or failed. Some questions and interventions to consider prior to restarting the sedation are:

1. Can non-pharmacological strategies help right now? Consider reorienting the patient, modifying the environment, and encouraging family presence.
2. Could pain be the cause of agitation? Consider non-pharmacological pain management strategies, such as repositioning or warm/cold applications. You might also consult a medical team to prescribe short-term analgesics to relieve pain and improve a patient's comfort.
3. Are there signs of delirium? Delirium may become visible for the first time as sedation is interrupted. Deep sedation will only worsen delirium severity.
4. Have I communicated what I am seeing to the team? A collaborative approach with the medical team and respiratory therapists is required to promote an effective sedation vacation.
5. Would reassessing in 5–10 minutes change my decision? Critical care nurses are trained to intervene early and promptly, before their patients' condition worsens. However, sometimes monitoring and reassessing is as important as actively intervening.

Mr. Ben demonstrates signs of pain associated with the endotracheal tube. In consultation with the medical provider, intermittent intravenous fentanyl is prescribed as needed to manage the discomfort while the patient is intubated. You continuously assess whether this intervention is therapeutic and allows the patient to tolerate the ventilation. You also watch out for the signs of sedation vacation failure to resume the continuous sedation if needed.

Signs of Sedation Vacation Failure (Society of Critical Care Medicine, n.d.; Yadav et al., 2025):

- Unmanageable pain
- Sustained severe agitation (e.g., RASS > 2)
- Respiratory distress: respiratory rate >35, oxygen saturation < 88%, use of accessory muscles
- Acute cardiac arrhythmias
- Seizures

In case of sedation vacation failure, sedation is recommended to be restarted at 50% of the previous dose. Continuous sedation should be reassessed again in the next 24 hours.

It is important to monitor the patient closely during sedation removal, follow institutional policies for documentation, and communicate effectively with the patient and their family throughout the trial, ensuring all questions are answered. Plan accordingly with the interdisciplinary team for the next opportunity to attempt another sedation vacation.

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