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DYNAMICS

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Journal of the Canadian Association of Critical Care Nurses

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DYNAMICS

Journal of the Canadian Association of Critical Care Nurses

Volume 23, Number 1, Spring 2012

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Author enquiries: Send manuscript enquiries or submissions to Paula Price, ACCN Program, Faculty of Health and Community Studies, Mount Royal University, 4825 Mount Royal Gate S.W., Calgary, Alberta T3E 6K6, email: pprice@mtroyal.ca

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CANADIAN ASSOCIATION OF CRITICAL CARE NURSES

Canadian Association of Critical Care Nurses

Vision statement

The voice for excellence in Canadian Critical Care Nursing

Mission statement

The CACCN is a non-profit, specialty organization dedicated to maintaining and enhancing the quality of patient- and family-centred care by meeting educational needs of critical care nurses.

Engages and empowers nurses through education and networking to advocate for the critical care nurse.

Develops current and evidence-informed standards of critical care nursing practice.

Identifies professional and political issues and provides a strong unified national voice through our partnerships.

Facilitates learning opportunities to achieve Canadian Nurses Association's certification in critical care.

Values and beliefs statement

Our core values and beliefs are:

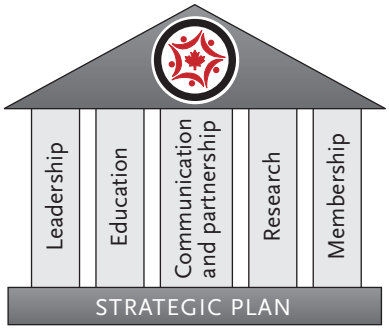
- Excellence and Leadership
  - Collaboration and partnership
  - Pursuing excellence in education, research, and practice
- Dignity and Humanity
  - Respectful, healing and humane critical care environments
  - Combining compassion and technology to advocate and promote excellence
- Integrity and Honesty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

Philosophy statement

Critical care nursing is a specialty that exists to care for patients who are experiencing life-threatening health crises within a patient/family-centred model of care. Nursing the critically ill patient is continuous and intensive, aided by technology. Critical care nurses require advanced problem solving abilities using specialized knowledge regarding the human response to critical illness.

The critical care nurse works collaboratively within the interprofessional team, and is responsible for coordinating patient care using each member's unique talents and scope of practice to meet patient and family needs. Each patient has the right to receive care based on his/her personal preferences. The critically ill patient must be cared for with an appreciation of his or her wholeness, integrity, and relation to family and environment. Critical care nurses plan, coordinate and implement care with the health care team to meet the physical, psychosocial, cultural and spiritual needs of the patient and family. The critical care nurse must balance the need for the highly technological environment with the need for safety, privacy, dignity and comfort.

Critical care nurses are at the forefront of critical care science and technology. Lifelong learning and the spirit of enquiry are essential for the critical care nurse to enhance professional competencies and to advance nursing practice. The critical care nurse's ability to make sound clinical nursing judgments is based on a solid foundation of knowledge and experience.



Strategic plan: Five pillars

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 & 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

It is not what you leave behind... it is what you take with you that counts!

I cannot believe that this is the final *Critical Thinking* column I will write as President of CACCN. My term comes to an end on March 31, 2012. I have thoroughly enjoyed being a part of the National Board of Directors (BOD) for the past five years and the opportunity it provided to me to grow professionally while also sharing my expertise as part of a national team of critical care nurses who serve on the BOD from across the country, ably supported by our talented Chief Operating Officer, Christine Halfkenny-Zellas. It has been an amazing journey for me over these years, as I have learned so much about the issues affecting critical care nursing and nurses. As anyone who has served on the national board will tell you, you come on to the BOD somewhat apprehensive that you will have the skills that are needed to get the job done, but you will be amazed at the skills you gain as your term evolves. These skills are ones I never would have had opportunity to acquire, and every board member has risen to the same challenge and come out wiser with a new skill set that serves her or him well in the future.

Recently I attended a farewell celebration of a valued nursing colleague I had worked with at the IWK Health Centre in Halifax, who was retiring after 34 years in nursing. She said something that day that gave me a new perspective, and I thought I would share it with you. All the people who spoke at her retirement reception told stories of the difference that she had made to the organization and to the people she had mentored and inspired. All spoke about how much she would be missed. When it came time for her to speak at the podium, she reflected on many of the highlights of her career and her love for the work she did. But, rather than talking about everything she was leaving behind (as if it was a loss), she said something that I will never forget and I feel is quite enlightening and refreshing. She said, "It is not what I am leaving behind. It is what I am taking with me that counts." She then listed the many things that follow her into her retirement years, most of which were about relationships and the connections with friends. What a great perspective!

So, for me, at the end of my term on the national board, I feel the same way. It has been an amazing personal journey and along the way I grew into the roles I had, sharing with my BOD colleagues many stimulating online discussions on a topic of interest or a pertinent issue. I have forged lifelong connections with so many people across the country because of being on the BOD. These connections will come forward with me long after I am off the board. I have learned to *Find my Voice* and speak up on issues of national importance on behalf of critical care nurses. I will also use the new skills I have acquired to enhance my own career direction. I feel honoured to have served on the National Board of Directors and particularly in the role of president these last two years.

When we come to the ending of anything we have done in our career or personal life, it is a good habit to remember the positive things that we bring forward with us. Working as a critical care nurse we gain many experiences that shape who we are that we never leave behind. Each patient we care for teaches us something about life and we are changed by those cumulative experiences. I have said this before, but I am going to repeat it... our voice... it is in our stories. We need to tell that story more often than we do now so that the correct image of what we do, as critical care nurses, is accurately portrayed and we are not invisible. If Tim Horton's can launch a campaign called "Every cup tells a story" and Home Hardware can create "Hometown stories" that bring tears to people's eyes over a cup of coffee or a building project, then the stories we have to tell are truly remarkable.

As bedside nurses, we need to remind ourselves when we come to work that the job we do is beyond doubt one that is positioned to make a difference in a meaningful way in the lives of our patients and their families on the path to recovery or to a peaceful death. We are with our patients at their most vulnerable moments and we care for them expertly and with great respect and dignity. It is a privileged position. To critical care educators, clinical leaders and administrators who support the bedside nurse, every role is about caring for patients. There is great passion in critical care nursing. There has to be, as you have to work very hard to be good at what you do in the highly technological environment of the ICU with a patient population with ever-changing needs facing critical illness or injury. Once you get a "taste" of working in critical care, the autonomy of decision making that comes with it and the freedom to act based on your solid clinical judgment and expert technical skills, it is difficult to imagine working in another environment. But we do need to take care of ourselves and each other to have the kind of resiliency it takes to maintain the pace of the critical care environment so that it gives more to you than it ever takes away. Good morale starts with the attitude each of us brings to work every shift. Another colleague of mine has a great line that she uses that she tells me she heard on the Oprah show...

it is a quote Oprah uses attributed to Dr. Jill Bolte-Taylor that says, "Please take responsibility for the energy you bring into this space". Pretty simple but powerful message, eh?! We need to take ownership of our attitude at work and recognize the impact it has on those we work with and the patients and families we serve. Do you want to bring positive or negative energy to where you work? It is a choice you make every day.

And so, as I leave the Board of Directors, I do look back with a great sense of personal satisfaction and not with a wistful thought about what I am leaving behind, but rather with a celebration of what I am moving forward into my future from my board experience that will serve me well. It is the lasting friendships that I will cherish most. It is the connectivity that I will always have with CACCN members across Canada, unified by our common passion for critical care nursing and knowing that our paths will cross again somewhere and we can call each other friends.

I know that your new president, Teddie Tanguay from Edmonton, will be a strong, vibrant and very visible leader for CACCN and will have no trouble in finding her voice!

So until we meet again... friends...

As always... I encourage you to take care of yourself... and each other!

Kate Mahon, BN, MHS, RN,
CACCN President

Dynamics Journal — Call for manuscripts for Cardiopulmonary Nursing Care special issue

We are looking for clinical articles related to the care of patients experiencing any cardiac or pulmonary disorder. Suggested topics for manuscripts include: review of pathophysiologies, treatments, case studies or new interventions.

Send manuscripts to the editor, Paula Price:
pprice@mtroyal.ca

Deadline: May 31, 2012.

CACCN calendar of events

DATES TO REMEMBER!

March 1:	Dynamics 2013 Planning Committee Application deadline
March 27–29:	BOD F2F Meeting, London, ON
March 31:	Chapter Quarterly and Annual Reports (Jan–Mar 2012) deadline
April 21:	CNA Certification Examination
May 1:	Nurses Week Contest
June 1:	Spacelabs Innovative Project Award deadline
June 1:	Braun Sharing Expertise Award deadline
June 1:	The Guardian Scholarship — The Baxter Corporation Award for Excellence in Patient Safety deadline
June 1:	The Brenda Morgan Leadership Excellence Award deadline
June 1:	Cardinal Health Chasing Excellence Award deadline
July 5:	CACCN Board of Director Nomination deadline
August 16:	Dynamics 2012 Early Bird Registration deadline
September 1:	Smiths Medical Canada Ltd. Educational Award deadline
September 6:	Dynamics 2012 Conference Registration deadline
September 20-21:	BOD F2F Meeting, Vancouver, BC
September 22:	Chapter Connections Day, Vancouver, BC
September 23–25:	Dynamics 2012 Conference, Vancouver, BC
September 30:	Chapter Quarterly Reports (July–Oct 2011) deadline
November –	CNA Certification Application deadline
December 31:	Chapter Quarterly Reports (Oct–Dec 2012) deadline

Awards available to CACCN members

Criteria for awards available to members of the Canadian Association of Critical Care Nurses are published on pages 29–34 of this issue of Dynamics.

RESEARCH REVIEW

Salmond, S.W. (2011). When the family member is a nurse: The role and needs of nurse family members during critical illness of a loved one. *Intensive and Critical Care Nursing, 27*, 10–18.

Research question or purpose

To explore the experience of being a nurse family member during the hospitalization of a critically ill loved one.

Research design

Grounded theory qualitative research design was used.

Participants

Participants were purposely selected by the researcher; the inclusion criteria being a nurse with a critically ill adult family member hospitalized within the previous two years.

Twenty-two nurse family members, employed at a variety of health care facilities, participated:

- 27% (6) participants worked at the hospital where the relative was receiving treatment;
- 100% of participants were female;
- the mean years of nursing experience were 18;
- 12 participants were employed as staff nurses, six as educators, and four as nurse managers;
- the relational roles of the nurse family members were widely distributed with the majority being the child of the patient (5).

Data collection

Following informed consent, participants took part in one 45- to 90-minute taped interview, either on the telephone (2) or in person (20). The author used an unstructured interview technique and open-ended questions to encourage the participants to share their experiences. Observations of participant reactions were also documented. Data were then transcribed word for word and included pauses and emotional responses.

Constant comparative analysis of data was used to code data and identify emerging themes from the transcribed material. These themes were then explored with subsequent participants until no further insight was gleaned (saturation).

The interpretation of the responses and corresponding codes and themes were validated by a nurse researcher experienced with qualitative research. Additionally, six participants reviewed the identified themes and validated them. The author shared her conceptual model of the experiences of the nurse as family member with 20 nurse family members not participating in the study to confirm the accurate representation of themes.

Main findings

The intertwining of role identity—nurse and family member, described by the author as "nurse self" and "family self"—was the central or core theme identified. Participants described being unable to separate, as a necessity for the protection of their loved one, from either role. The nursing knowledge each participant brought to the environment set her apart from non-nursing family members. Six major challenges were identified:

1. Heightened emotional turmoil: Fears and anxieties were increased due to the nurses' knowledge base (disease states and the potential for iatrogenic or staff error). These heightened emotions were difficult to express or not expressed due to the need to remain "in control" for other family members.
2. Required to be "in charge": Nurse family members were chosen by the other family members to interpret and relay information, ensure appropriate care was delivered, and "sustain hope". Nurses described masking their own emotions, thus allowing other family members to express their feelings.
3. Surveillance and protection: Nurse family members verbalized the need to be "let in"; to be allowed access to the room to observe the patient, the monitors, and nurse-patient interactions. Those nurses working in the same facility reported greater access to the patient and the feeling of being a member of the team. Restricted access or inconsistent access due to the subjective interpretation of visiting rules resulted in increased anxiety and acted as a barrier to establishing trust.
4. Gaining information and seeking meaning: Nurse family members reported they intentionally worked to develop relationships with staff in order to gain information on their loved one's condition and strived to be non-critical in their communication with nurses to "win the nursing staff over". Information had to be detailed, for example, diagnostic test results, versus general comments of patient well being. One nurse family member commented "…I am an emotional wreck if I don't hear the facts". Information sharing contributed to enhanced collaboration with staff if nurses could then use information to discuss or influence care with members of the health care team.
5. Advocating for: Nurse family members felt responsible for advocating for the patient's needs and collaboration between the nurse family member and staff facilitated this role. Advocacy, including questioning to ensure competent practice/standards were met and complications were prevented, continued in the absence of collaboration. However, collaborative relationships were equated with increased satisfaction with care. Nurse family members recognized that acting in the role of advocate would sometimes make the nursing staff uncomfortable and, at times, hostile. Several nurses reported connecting with nursing colleagues in the absence of collaboration to help them interpret information and advocate for care.
6. Resuming family roles: Access to the patient, access to information and collaboration with nursing staff when advocating for their loved one fostered the development of trust with the health care team and allowed the emergence of "family-self" for nurse family members. This sense of self was heightened when nursing staff personalized their care by spending extra time learning about the patient and anticipating his or her needs.

Conclusions/implications for practice

Through recognition of the roles assumed and challenges faced by nurse family members healthcare, teams may improve satisfaction with care. Three key implications for practice are:

- Recognize that nurses, as family members, may be masking their true emotions in an attempt to maintain an "in-charge" persona. Validate this guise and the accompanying anxiety associated with being responsible to other family members for information and interpretation.
- Allow for unrestricted visiting with the patient to allow for observation and monitoring.
- Share and interpret information about the disease process, and details regarding the treatment plan to enhance collaboration and the nurse-as-family-member's ability to advocate for the patient.

Commentary

Caring for a family that includes a nurse is not an unusual experience for many critical care nurses; yet, there is a paucity of research examining the experiences of nurses as family members to improve interactions. Information from studies addressing family satisfaction with care and family-centred care initiatives may be extrapolated for use. However, care of this unique population warrants further investigation.

The grounded theory method is well suited to this study. Instead of presenting a preconceived hypothesis to explain the phenomenon, this qualitative method of inquiry requires the researcher to identify categories of information (codes) from the interview data, continue to collect and compare data until categories are saturated, and derive themes/theories to explore the phenomenon (Strauss & Corbin, 1994).

The author identified two limitations that restrict the generalizability of the study results and recommendations for practice: Significant conflict between family members was not reported in participant interviews and there were no male nurse participants in the sample.

Researchers exploring family needs have repeatedly revealed that information sharing is critical to satisfaction with care (Eggenberger & Nelms, 2007; Miracle, 2006; Roberti & Fitzpatrick, 2010). This need is again highlighted in this study, with the recognition that nurse family members required specific, detailed information given their knowledge base and awareness of what information may be available. It must be acknowledged that information sharing at this level may be viewed by some health care personnel as a breech in patient confidentiality and these feelings must be discussed and reconciled with both family members and care providers. The argument can be made for an equal focus on the consistency in methods of communication and the timeliness of information.

The need for family member proximity to the patient has also been consistently identified in the literature, with inflexible or restricted visiting negatively impacting family satisfaction with care (Davidson, 2009; Hunter, Goddard, Rothwell, Ketharaju, & Cooper, 2010). Well-meaning intentions aside, the beliefs that inflexible visiting results in interrupted rest, increased risk of infection and heightened stress for the patient have not been supported by research (Hunter et al., 2010; Marco et al., 2006). Rather, unrestricted visiting may result in reduced anxiety and decreased cardiovascular complications for the patient (Fumagalli et al., 2006). The nurse as a family member's need to be allowed unrestricted access to the patient may be reframed as a positive intervention, potentially benefitting patient outcomes while also reducing anxiety and frustration for those expressing the need to maintain vigilance. As noted, trustful relationships between health care providers and the family are facilitated with increased family-patient proximity. This need must be balanced with the patient's right to privacy and, thus, recognition of this right and open dialogue among all parties are required to ensure this privacy is protected.

As noted by the author, a complementary study of staff nurses' experiences and perceptions of caring for patients with nurse family members would shed light on the challenges perceived by these members of the health care team. Unit- or hospital-based family care committees can then use these data to develop strategies to address these challenges, and/or the assumptions and biases associated with caring for nurse family members to positively impact the quality of care for the entire family.

Penny Nickle, BN, MEd, RN, CNCC(C)
Assistant Professor, Mount Royal University
Coordinator, Advanced Studies in Critical Care Nursing Program: Critical Care and Neurosciences streams

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Guardian Scholarship: The Baxter Corporation Award for Excellence 2008

I am grateful to the Baxter Corporation and to CACCN for awarding me one of the two Baxter Guardian Scholarships in 2008 for coordinating pre-printed "Medical-Surgical/Neurosurgical Intensive Care Unit (MSNSICU) Admission Orders". Patients with a subarachnoid hemorrhage who develop cerebral vasospasm often suffer tragic outcomes. Physicians and nurses from different national and international centres work in our critical care units. After discussion with a few physicians and nurses, consistency in the care of MSNSICU patients was a goal of the group and it was thought that having pre-printed physician orders would help to achieve this goal. Also, we realized nurses were wasting time tracking down physicians for missed orders repeatedly. In 2004, an inter-professional group was formed comprising medical-surgical and neurosurgical physicians, nurses, pharmacists, clinical dietitians, a nurse educator, physiotherapists, respiratory therapists, nurse manager and the speech language pathologist. We reviewed pre-printed orders from Trillium Health Centre, St. Michael's Hospital Trauma Unit, and Toronto General's medical-surgical ICU. Several meetings were held with the group and the initial draft was sent to the forms specialist for review. Several discussions and emails took place with the pharmacy and therapeutics committee and the clinical operations committee. Once finalized in 2005, the orders were approved by the medical advisory committee and were printed in August 2005.

I think patient safety has been enhanced, as doctors' orders are consistent. There seems to be more consistency in the care of our patient population. I think nurses are spending less time tracking down physicians for orders specific to our unit. The orders consist of 14 categories including code status and monitoring. If a patient is diagnosed with subarachnoid hemorrhage, physicians are asked to check the patient's risk for vasospasm with "maintain euvolemia" (avoiding dehydration) on the same line. "MD notification for mean arterial pressure (MAP) greater than or less than ___." There are sections for respiratory care, intravenous therapy, and medications including hemodynamic support, anti-hypertensives, analgesia, anti-pyretics, bowel routine, venous thromboembolism prophylaxis, and electrolyte replacement. The physicians have been ordering these medications in online MSNSICU "order entry" in the electronic patient records since approximately 2007. Although the paper orders are still necessary due to periods of "down-time," they are being updated to reduce duplication.

I appreciate the commitment that Baxter Corporation and the CACCN make towards improving patient safety and their support of Canadian critical care nurses.

Marie Dennis, BScN, RN, CNCC(C)
Staff Nurse, Medical Surgical Neurosurgical Intensive Care Unit
Toronto Western Hospital
Toronto, Ontario

We have a new look!

The Board of Directors is excited to launch the new visual identity of CACCN!

We thank everyone who responded to our call for input and who submitted ideas to us. All of your contributions were carefully considered and many of the elements you suggested were provided to our graphics designer at Pappin Communications and incorporated to shape the final logo that was chosen.

We feel the new emblem speaks to the pride we wanted to retain from our founding organizations while the red maple leaf strongly says, "We are Canadian". The five "people" figures holding hands within the circle signify the interdependency and community of practice we share in critical care. And, finally, we wanted both our full name and the initials CACCN to stand out, so it is clear who we are. We feel we have achieved a new and vibrant visual identity that will serve us well in the years ahead.

CANADIAN ASSOCIATION OF CRITICAL CARE NURSES

We would like to express our thanks to the following members for their excellent logo submissions:

- Lissa Currie and Sarah Unrau
- Teresa Coughlan
- Josefa Inot
- Céline Pelletier
- Ariel Rogozinski
- Michael Wheatley

Over the coming months, you will begin to see the logo design being implemented on the website, in the journal, and all our other printed materials. A copy of the new logo along with the graphic standards guidelines can be obtained for your use by contacting National Office.

Dynamics 2013 conference planning committee— Call for participation Deadline fast approaching!

Dynamics 2013 will be held September 22–24, 2013, at the World Trade and Convention Centre in Halifax, Nova Scotia. Dynamics 2013 will be chaired by Kate Mahon. CACCN members interested in working on the conference planning committee should submit a resume/CV and summary of conference planning experience *(planning experience is appreciated, but not a requirement for submission)* to the CACCN National Office by March 1, 2012. Planning Committee selection will take place in March 2012. *Consideration will be given to planning committee applicants who are local to the conference venue or are from chapters/provinces/adjacent to the conference venue.* For further information on this exciting opportunity, please contact the CACCN National Office, P.O. Box 25322, London, ON N6C 6B1, **www.caccn.ca**, email: **caccn@caccn.ca**, phone: (519) 649-5284, fax: (519) 649-1458. *For frequently-asked questions regarding Dynamics conference planning, please visit **www.caccn.ca**.*

Did you notice?

The CACCN Board of Directors and the Dynamics Editorial Review Board have decided to list credentials in *Dynamics* in the order presented by Scott (2011) in *Canadian Nurse* last summer.

This order of credentials essentially starts with the most permanent credential and then continues to the least permanent credential; only the highest degree in each area is listed. For example, our current president's credentials are listed as Kate Mahon, BN, MHS, RN, as her degrees are in two different areas, so the highest in each is listed. Whereas our vice-president's credentials read Teddie Tanguay, MN, NP, RN, CNCC(C), as both her degrees are in nursing. The CNA certification is listed last, as it is the least permanent of her credentials.

This will provide consistency to the format and method of listing credentials, both in our journal and amongst other nursing journals.

Reference

Scott, R. (2011). Reducing post-nominal mix-up. *Canadian Nurse, 10*(7), 13.

find your voice!

Find a member!

CACCN Membership Recruitment Program

Current CACCN members are eligible to receive a $10 coupon toward your next CACCN renewal, for each new member you refer to CACCN. Let's work together and continue to grow!

Criteria:

1. Current / Active CACCN Members may participate.
2. Applicable on NEW member applications only. A new member is one who has not been a CACCN member previously/has not been a CACCN member for a minimum of 12 months.
3. To qualify, your name must be included on the new member's application form or included in the online application submission, as the "sponsor" or "person who recommended joining CACCN". Coupons cannot be awarded if the sponsor/recommending information is not included when the member application is processed.
4. Members may receive a maximum of seven (7) coupons towards their next renewal. Coupons expire on the member's renewal date.

WHAT'S NEW at www.caccn.ca?

President's Blog

Check out the President's blog at www.caccn.ca.

CACCN Members Only!

- Start or join a discussion! The CACCN Members Only Discussion Forum is available to share information and meet nurses from coast to coast.

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Visit us on Facebook for updated information!

Follow us on Twitter: @CACCN1

twitter

Visit us today at www.caccn.ca!

DYNAMIC CAREER CONNECTIONS on www.caccn.ca

CACCN Dynamic Career Connections is the official job site for the Canadian Association of Critical Care Nurses. Our mission is to connect employers with hard-to-fill positions with the brightest, most qualified Critical Care Nurses in Canada.

Job Seekers: This job site provides you with the opportunity to post your resume confidentially, view and apply for positions from some of the best employers in Canada, set up job alerts to search and notify you when a job matches your criteria and, best of all, registration for job seekers is always FREE. *You do not need to be a member of CACCN to register with Dynamic Career Connections. Register your resume today!*

Employers: CACCN knows how important it is for you to find new ways to directly reach Critical Care Nurses. CACCN Dynamic Career Connections provides you with the opportunity to extend your reach to a targeted candidate pool, and post your jobs confidentially. *Register to post your jobs!*

If you are interested in taking advantage of this new service, please visit www.caccn.ca, click on **CACCN Dynamic Career Connections,** and register to start searching for your new career or team member.

JOB LINKS on www.caccn.ca

JOB LINKS is a simplified web link page on the CACCN website designed to provide immediate links to critical care nursing career opportunities in Canada and around the world. If your facility is interested in taking advantage of this service, please visit www.caccn.ca, click on **JOB LINKS,** and view the PDF contract for more information.

Website banner advertising

CACCN is offering the opportunity to have your logo and website link accessible to our members and the general public 24 hours a day, seven days a week. Why not consider a banner advertisement on the homepage of the CACCN website at www.caccn.ca? If you are interested in taking advantage of this new service, please email CACCN National Office at caccn@caccn.ca for more information.

Critical care nurses' information-seeking behaviour during an unfamiliar patient care task

By Kristine M. Newman, MSc, PhD(Candidate), RN, CRN(C), and Diane Doran, PhD, FCAHS, RN

Abstract

Critical care nurses complete tasks during patient care to promote the recovery or maintain the health of their patients. These tasks can be routine or non-routine to the nurse. Non-routine tasks are characterized by unfamiliarity, requiring nurses to seek additional information from a variety of sources to effectively complete the tasks. Critical care units are dynamic environments where decisions are often made by nurses under stress and time pressure because patient status changes rapidly. A non-routine task (e.g., administration of an unfamiliar medication) to the critical care nurse can impact patient care outcomes (e.g., increased time to complete task has consequences for the patient). In this article, the authors discuss literature reviewed on nurses' information-seeking and explore an information-seeking conceptual model that will be used as a guide to examine the main concepts found through the empirical evidence.

Newman, K.M., & Doran, D. (2012). Critical care nurses' information-seeking behaviour during an unfamiliar patient care task. Dynamics, 23(1), 12–17.

Within critical care, registered nurses need to seek information when faced with an unfamiliar or non-routine patient care task. Access to evidence-based information resources is often a challenging prospect for critical care nurses. Appropriate, effective and efficient patient care requires that nurses recognize and act to fulfill information needs when they arise. This expectation is, however, complicated because information may be accessed from different resources due to the expanding growth of knowledge (Pringle & Nagle, 2009). The purpose of this paper is to discuss how critical care nurses seek information and explore how non-routineness of the task, critical care context and nurse characteristics can influence nurses' information-seeking behaviour. It will be noted when the evidence is actually based on studies of critical care nurses and when it is speculatively based on studies of nurses in general. An information-seeking conceptual model will be also discussed to explore these concepts.

Nurses who work in critical care units are responsible for providing care to patients who are experiencing, or are at risk of experiencing life-threatening conditions. Patients typically seen in a critical care unit are those who have had major invasive surgery, major trauma, or patients with multiple organ failure (Futures in Nursing, 2010). Nurses who work in critical care units must assess and monitor each patient closely in order to identify subtle changes in a patient's condition that may require immediate intervention. Patients who are admitted to the critical care unit tend to be medically unstable, requiring constant cardiac and respiratory monitoring and continual adjustment of treatment, such as the titration and dosing of multiple intravenous medications, and changes in ventilator support (Futures in Nursing, 2010). Critical care nurses must be able to seek, interpret, integrate, and respond to a wide range of clinical information to make decisions to complete tasks for patient care (Futures in Nursing, 2010).

McKnight (2006) described critical care nurses' information-seeking as "vigilant surveillance" (p. 149) where they could be browsing or scanning the environment, monitoring, encountering, and being aware of new information that can influence patient care. Critical care nurses can take cues from the familiar environment to make decisions (i.e., monitoring vital signs). If patient care tasks are unfamiliar and, therefore, non-routine, the critical care nurse will have an information need and will need to seek information to complete this patient task. Furthermore, due to the acute, life-threatening nature of its patients, critical care is a specialty area in the hospital that frequently implements experimental or new treatments. Therefore, critical care nurses will often be faced with unfamiliar, non-routine tasks, and information needs will occur to perform those tasks. McKnight (2006) noted that critical care nurses' on-duty information behaviour in this "information ecology" (p. 146) can literally be a matter of life and death.

The nature of critical care nurses' work is highly contextual (Estabrooks, Chong, Brigidear, & Profetto-McGrath, 2005; Spenceley, O'Leary, Chizawsky, Ross, & Estabrooks, 2008). Structural and cultural attributes of the context, in this case the work setting, and the individual nurse characteristics influence how nurses seek information in their practice (Spenceley et al., 2008). Context can be defined as the environment in which nurses perform tasks to provide care. Context impacts how information is sought by nurses for patient care tasks.

The context has influence over nurses' information-seeking behaviour through the availability of administrative support, organizational culture, and training opportunities (Spenceley et al., 2008). Several researchers indicated that factors considered facilitative of information-seeking in the organizational context are time to engage in information-seeking, the availability of up-to-date resource materials, and the existence of administrative and research support (Spenceley et al., 2008). The importance of professional development and collegial interaction around nursing practice topics were also noted as being facilitative of nurses' information-seeking. Furthermore, training related to information access, and the positive influences of workplace cultural factors on information-seeking were noted as enablers. Most significantly, these included the importance of a positive climate for learning and growth, the involvement of nurses in designing new information sources and in deciding how information sources would be incorporated into their practice setting, and the direct involvement of nursing leaders in the information-seeking process (Spenceley et al., 2008).

Moreover, nurses' information-seeking behaviour is influenced by their attributes, primarily level of education, and years of nursing experience (Spenceley et al., 2008). The characteristics of a critical care nurse impact how information needs are identified and sought for patient care. For example, Hall, Cantrill and Noyce (2003) noted that there was more frequent information-seeking activity by nurses in new roles. However, nurses had the expectation that such activity would diminish, as they gained experience in the role. Nurses who lack knowledge and are information-seeking can be identified by other nurses as having inexperience and uncertainty. This labelling decreases the likelihood that nurses will seek information when they have a need. Corcoran-Perry and Graves (1990) indicate that practitioners' characteristics are assumed to influence information behaviour. However, their informal examination of cardiovascular nurses' educational and experiential background did not reveal major differences in cardiovascular nurses' information behaviours. Spenceley et al. (2008) found that advanced practice nurses (APNs) with higher levels of education, such as master's degrees, used journals as one of their top sources of information, along with colleagues, when seeking evidence-based information. The level of education achieved influences resources used for information-seeking. Nurses without these educational opportunities may not have had the chance to learn information researching skills. As the literature indicates, nurses were found to use colleagues as their primary source of information (Doran et al., 2007; Estabrooks et al., 2005; Pravikoff, Tanner, & Pierce, 2005; Spenceley et al., 2008).

Spenceley et al. (2008) noted, "A nurse with particular attributes, education and experience, working in a particular setting, identifies an information need" (p. 963), and his or her individual nurse characteristics can impact how that information is sought to complete patient care tasks. It should be highlighted that there are gaps in the literature regarding critical care nurses' information-seeking since most of the literature is about nurses in general. Further research could assist in our understanding of critical care nurses' information-seeking behaviours. It is important to explore critical care nurses' information-seeking behaviour because they work in demanding, fast-acting environments. Patients are medically unstable and decisions about patient care need to be completed in a timely manner. Easy access to reliable, relevant, and evidence-informed information is vital for the survival of patients, especially in this context. The search strategy for main conceptual concepts found through the empirical evidence in literature will be reviewed.

Literature review

The *Cumulative Index to Nursing and Allied Health Literature (CINAHL)*, *Google Scholar*, and information sciences literature were reviewed. In addition to the electronic search strategy, reference lists of all full-text articles were reviewed to identify potentially relevant articles. Articles were manually retrieved if they were not accessible through the electronic search strategy. As the focus of this literature review is to explore information sought by critical care nurses from resources, the key search terms used were reflective of the concept of information-seeking. They included information, information behaviour, nursing, critical care nursing, information-seeking, information needs, evidence-based, evidence, research evidence, and information tasks. Further, MeSH headings were used to describe other synonymous or similar terms used in the literature, such as, information retrieving or evidence-informed. The Boolean operators of AND/OR were used to combine the key search terms for information-seeking behaviour to refine the search. Titles and available abstracts were reviewed to determine if the full article should be retrieved for further evaluation. The search included peer-reviewed journal articles that were in the English language up to 2011.

Research literature was located and reviewed. The following data were extracted from peer reviewed publications: (a) study design; (b) setting, sample, and response rate; (c) independent and dependent variables, measures of these variables, and properties of measures, specifically internal consistency reliability assessed with Cronbach's alpha coefficient; and, (d) key study results related to the relationships tested. The literature search revealed 99 peer-reviewed papers related to nurses' information-seeking. Of the 99 reviewed, 20 were theoretical papers, nine literature reviews, three thesis dissertations, and 67 empirical studies. However, only three (of 67) papers focused on critical care registered nurses' information-seeking behaviours.

First, Corcoran-Perry and Graves (1990) completed a study with 46 cardiovascular nurses in three metropolitan hospitals investigating supplemental-information-seeking behaviour. One hundred and seventy-five instances of supplemental-information-seeking behaviour were collected. Seventy-six per cent of nurses' reasons for seeking information were

for patient care (i.e., medication administration) and 22% of the nurses sought information for unit and personnel management (i.e., admission or discharge). Another study (McKnight, 2004, 2006) included observation and in-context interviews to describe 50 hours of the observable information behaviour of nurses in a 20-bed critical care unit. Open, in vivo, and axial coding was used to develop a grounded theory model. Nurses' information seeking was centred on the patient. Nurses primarily sought information from people, the patient record and other digital systems. Some of this information they recorded for their personal use during the shift. Barriers to information acquisition included difficult navigation of online systems, and unavailable people. Although nurses understood and respected evidence-based practice, many believed that taking time to read published information on duty was difficult, taking time away from patient care. Nurses indicated a personal information service available to them at all hours of the day or night would be useful.

Shim et al.'s (2006) descriptive study included observation, staff surveys and focus groups of 16 staff nurses working on a cardiothoracic step-down unit. The main themes identified through focus groups were types of information needs, peak demands, most used information sources, level of satisfaction with information sources, and frustrating instances for obtaining information. The authors identified 228 instances of information need and 29 information sources associated with six categories of nursing tasks within the clinical context. Nursing tasks with associated information needs included clinical information, admission/transfer/discharge information, medication information, interdisciplinary communication, test or procedure information, and equipment related information.

Conceptual models were also reviewed through information sciences, nursing and medical literature. Although, Leckie, Pettigrew and Sylvain (1996) described professionals including nurses' information-seeking behaviours, it was not inclusive of individuals' decision making with non-routine tasks. One information-seeking model, Byström and Järvelin's (1995) *Information-Seeking Model*, fit the theorization of information-seeking in the context of non-routine tasks.

Information-seeking model

Byström and Järvelin's (1995) *Information-Seeking Model* focuses on information needs in the context of task complexity. The model posits that if the individual's information needs are satisfied, then the task can be completed successfully. In contrast, if the information needs cannot be satisfied, then the task cannot be completed, or, in the event that sufficient information does not exist to complete the task, then the task must be reformulated. Similarly, when nurses experience gaps in knowledge while performing a patient care task, they will need additional information in order to complete the task, and must seek out resources to satisfy the gap in knowledge. If further information is required, a nurse may initiate a new information-seeking process, or they may interrupt the process, or choose not to proceed (Byström & Järvelin, 1995). The individual's choice of action depends on his or her information needs; the perceived accessibility of information channels related to cognitive, economic, or physical limitations; sources of information; and his or her personal information-seeking style. A source should contain relevant information, whereas a channel should guide the nurse to pertinent sources.

Channels guide the nurse to pertinent sources (i.e., colleagues), whereas sources contain relevant information (i.e., best practice guidelines). Individuals who are more successful in making choices for their information-seeking actions will seek information more often. The individual's information need analysis is shaped by personal factors such as attitude towards seeking information, motivation, and mood. Their personal style of seeking information can also be influenced by context, specifically their organizational culture.

Subjective reasons contribute also, including familiarity with accessing evidence-based resources using an electronic device, or situational factors, such as the amount of time available to seek information (Byström & Järvelin, 1995). Byström and Järvelin (1995) argue that routine tasks are habitual and are often not perceived as task problems because they are familiar to the individual. The inputs, process, and outcomes are *a priori* known, through pre-conceived ideas about knowledge. The solution to these routine tasks is assumed, usually without appropriate empirical investigation. However, non-routine tasks cannot be considered *a priori* known (Byström & Järvelin, 1995).

The above information-seeking model can be used to conceptualize critical care nurses' information-seeking behaviour for patient care. This model can be used as a guide in practice when a nurse has an information need due to an unfamiliar (i.e., non-routine) patient care task. He or she will need to seek information to complete this task using resources (e.g., best practice guidelines or information from colleagues). The results of the studies indicate that critical care nurses seek information for patient care tasks usually from colleagues or the patient record. Some barriers include lack of time to seek information and some nurses believe it is unethical to search for information while caring for the patient. These results fit with the model since, ultimately, it is the nurses' choice of action to pursue information needs when an unfamiliar situation occurs. Educators can assist nurses to learn how to seek and use information efficiently and effectively while administrators can provide unit-accessible, user-friendly resources (e.g., guidelines or clinical nurse specialist). Following is a discussion of key information behaviour definitions.

Key information behaviour definitions

Information-seeking is a pivotal concept for information behaviour in the information sciences and organizational behaviour literature. In nursing, the concept of information-seeking is related to the concept of research or evidence-based seeking.

Information-seeking behaviour describes how nurses identify information needs and then carry out the process of information-seeking. Information-seeking is defined as the actions nurses engage in to satisfy a perceived information need in order to effectively perform a task. Care-related tasks include nursing assessment, intervention, and evaluation.

In this paper, information is defined as knowledge gained as a result of the process of identifying and choosing among alternative resources (Rouse & Rouse, 1984). According to Case (2007), "*information behaviour* encompasses information-seeking, as well as the totality of other *unintentional or passive* behaviours (such as previewing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively *avoiding* information" (p. 5). Some critical care nurses may not even pursue an information need, due to lack of motivation, time or resources, or they may not actively seek evidence for use during patient care (McKibbon, 1996).

An information need, based on the review of the literature, is defined as recognition that the critical care nurse's knowledge is inadequate to perform a task (Case, 2007). Information-seeking covers a variety of behaviours motivated by the recognition of missing information, or information needs (Case, 2007). However, it should be noted that nurses may not perceive or recognize knowledge gaps; therefore, not seek information when they actually have information needs. Recognition of information needs is important because this cues the nurse to complete patient care tasks with consideration of evidence-informed resources. Unfortunately, if the nurse does not recognize the knowledge gap, less favourable practices could be used to complete a patient care task. An adapted definition of information-seeking based on the literature review is a search for resources of practice knowledge to satisfy a perceived information need for a patient care task (Krikelas, 1983). This definition was chosen because it considers the individual's perception of the importance of his or her information need. If the information need is perceived to be important to the nurse, then he or she will choose to seek information.

Empirical evidence — Information-seeking behaviour

Information-seeking behaviour is important since it demonstrates that critical care nurses need to put forth a conscious effort in order to acquire information for a non-routine task. This is an active process. As Case (2007) points out, if critical care nurses choose to remain passive, then they will pass up the information.

In seeking information, nurses are challenged by competing priorities, time pressures, limited information resources, and lack of convenient access to resources (Spenceley et al., 2008). In addition, McKnight (2006) found that critical care nurses experienced barriers to information-seeking in both their paper-based and computerized reporting systems, including equipment failure, unavailability of technicians, inadequate staffing, social protocols (i.e., peer pressure or professional etiquette), and mistakes made while using multiple complex electronic systems.

As MacIntosh-Murray and Choo (2005) point out, front-line nursing staff members are task-driven, with heavy workloads. They generally afford limited attention to, or acknowledge recognition of potential information needs and knowledge gaps. Only tasks that have a visible, practical solution are followed up by nurses (French, 2006). Many critical care nurses even feel that it is ethically wrong to seek and analyze information from resources while at work, as this action takes time and focus away from patient care (McKnight, 2006; McKnight & Peet, 2000).

When critical care nurses do seek information, it is generally accessed through various channels, such as colleagues, as well as from a variety of sources, such as the internet. As McKnight (2006) pointed out, critical care nurses tended to seek information from people, the patient's chart, and computer systems. The information they used was patient-specific, using social networking, as well as available factual resources such as the patient's chart, lab values or cardiac/hemodynamic monitoring results. Occasionally, knowledge-based information was sought, and their decision to pursue patient care-related questions was based on their perception of how important the answer would be to the care of the patient.

Resources. It is important to discuss what resources of practice knowledge critical care nurses seek, specifically the sources and channels sought by nurses, recognizing their preferred information resources and the challenges they encounter in getting information. Knowing what resources critical care nurses use will assist the administrators as to what resources should be made available on the unit. Most importantly, nurses need to have accessible resources, so that they have the capacity to seek information on evidence-based practices to provide quality patient care (Spenceley et al., 2008). A source should contain relevant information, whereas a channel should guide the nurse to pertinent sources. Below, nurses' sources and channels are discussed. However, the main point of the discussion is to highlight critical care nurses' information-seeking practice knowledge resources.

Sources. An information source contains relevant information for a nurse to use to complete patient care tasks (e.g., drug guide or lab results). Critical care nurses require information sources that are accessible from their unit or work location (Leckie et al., 1996). Information-seeking can be limited by lack of resources, whether paper or electronic, or by lack of trust in a source, lack of quick accessibility, or lack of convenience for nurses (Spenceley et al., 2008). Most critical care nurses are required to complete their tasks in defined workspaces, with inadequate information resources that are often of limited applicability, in so much as they are outdated or difficult to find for use during point-of-care activity. Spenceley et al. (2008) found that urgent information needs drove information-seeking.

Nurses mostly use information and library services for course work and formal research rather than for current patient care issues (Urquhart & Davies, 1997). It has also been reported that nurses tend to use the source of information that is most

immediately accessible to them, often including outdated guidelines, even though they realize that this source might not provide the most complete answer (Urquhart & Crane, 1994).

Comfort level with technology also plays a role. For example, Tannery, Wessel, Epstein and Gadd (2007) found that after one year of access to a library's electronic resources, 20% of nurses chose this option over print resources that were more dated. Moreover, Jones, Schilling and Pesut (2011) found that nurses had barriers to using web-based resources such as time requirements to perform a search or nurses' experience and knowledge about the resources or required technology. However, benefits of using web-based resources were also found, including availability and accessibility on the unit and specific characteristics of individual information tools. Electronic devices and resources are now more readily available as resources for nurses in their work environment. However, this does not guarantee a change in their information-seeking behaviour. A possible explanation is that critical care nurses who work in a culture that supports technology and provides training to assist their information-seeking behaviours are more likely to adopt changes related to evidence-based practices. There, too, will be variations to nurses' adaptation to change their information-seeking behaviour depending on their individual characteristics, such as personal experience with technology or their motivation to seek information.

Channels. Critical care nurses may have several sources of information to use during their practice, such as best practice guidelines or clinical research articles. However, channels, usually in the form of colleagues, are currently the most sought-after type of information resource by nurses. Local resources were more often sought due to accessibility and convenience (Spenceley et al., 2008). Corcoran-Perry and Graves (1990) indicate that nurses prefer colleagues as their primary information resource since they are familiar, are perceived to be reliable, can give precise information, are accessible, and can provide immediate answers that are relevant and applicable to the setting. However, the authors also note that information provided by colleagues might not always be accurate. Despite this, nurses still trust information from other colleagues, finding this information more valid than others, and "in their eyes" more questionable, resources (Spenceley et al., 2008).

Similarly, Thompson, Cullum, McCaughan, Sheldon and Raynor (2004) found that nurses sought information from accessible human channels of information. For example, in an acute care setting, the most useful type of information source available was the clinical nurse specialist (CNS). CNSs are able to contextualize and summarize knowledge in a timely manner for nurses, and they are recognizable on the unit, as nurses seek information towards completion of patient care tasks. Since, some nurses feel that the completion of patient care tasks is a priority and searching for information is not a good use of their time, nurses seek information from CNSs because they are easily accessible at the point-of-care, are seen to hold the qualities of knowing, and are perceived as a useful information channel because he or she can directly answer questions posed by nurses. People in the CNS position are perceived to be authoritative in their knowledge, and trustworthy. Nurses perceive that the CNS provides supportive information in an unchallenging manner, without the risk of criticism (Thompson et al., 2004). Nurses are conscious of the time that is needed to give patient care, so they seek quick access to the CNS, rather than searching for information in a library (Thompson et al., 2004). Profetto-McGrath, Bulmer Smith, Hugo, Taylor and El-Haij (2007) found that CNSs used research literature as a primary source of evidence for their nursing practice, and that this information was used in their decision-making processes towards patient care. In this manner, CNSs are perceived to be able to translate their up-to-date knowledge to staff nurses whose main priority is to complete patient care tasks in an effective and timely manner. Nurses develop a trust for the type of channel exemplified by the CNS.

Studies have shown that the top priority for nurses' information-seeking is related to medication administration and management during patient care (Doran et al., 2007; Lange, 1993; Secco et al., 2006). Medication administration can be a complex and time-consuming process, with the resulting tasks occupying up to one-third of nurses' time (Pepper, 1995). These tasks are important, as they relate to patient safety, as well as being part of the care plan. The nurse will devote time to seek out information, especially for unfamiliar medication administration tasks, to prevent errors (Wakefield, Wakefield, Uden-Holman, Borders, & Blegen, 1999) and risk patient safety.

Conclusion

In this article, the authors addressed critical care nurses' information-seeking for patient care tasks. However, further research needs to be completed on how non-routine tasks influence nurses' information-seeking behaviours. We have provided insight into how critical care nurses seek information from resources, including sources and channels, for patient care. Byström and Järvelin's (1995) *Information-Seeking Model* was discussed along with the empirical evidence supporting its propositions. Significant factors, including nurse characteristics and context, influencing information-seeking were also discussed. It is important that nurses use evidence-informed information to guide practice so that quality patient care occurs, especially during non-routine tasks.

About the authors

Kristine M. Newman, MSc, PhD(Candidate), RN, CRN(C), Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, ON.

Diane Doran, PhD, FCAHS, RN, Professor, Scientific Director, Nursing Health Services Research Unit (University of Toronto site), Lawrence S. Bloomberg Faculty of Nursing, University of Toronto, Toronto, ON.

Address for correspondence: Kristine Newman, 100 Main Street East, Suite 39C, Hamilton, ON L8N 3W4. Email: kristine.newman@utoronto.ca; Phone: 905-962-2141.

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Journal club in a critical care unit: An innovative design triggering learning through reading and dialogue

By Isabelle Bilodeau, MScN, RN, CNCC(C), Jacinthe Pepin, PhD, RN, and Lyne St-Louis, MScN, RN, CNCC(C)

Abstract

Journal club has been used for decades to incorporate reading clinical and research articles into professional practice of numerous health care providers to disseminate knowledge and to bridge the gap between research and clinical practice. In this article, the authors describe how such activity was implemented by and for the nursing team of an intensive care unit. This journal club was designed to trigger dialogue among the nurses related to cardiac surgery topics, while providing an organizational support for them aimed to facilitate the incorporation of reading in their professional habits. More specifically, the design of this journal club was intended to create an opportunity for these nurses to keep their practice updated, to review physiological or pathological processes related to the cardiac surgery population, and to explore if, how and why the results described in those research reports should be implemented in their own intensive care unit. The authors describe the phases of this project: the co-development of the journal club, the implementation of the activity and its results. The authors detail how this journal club format incorporated additional teaching aids during each session and used narrative pedagogy as a conceptual framework.

Key concepts: *journal club, cardiac surgery postoperative care, narrative pedagogy, nursing professional development*

Bilodeau, I., Pepin, J., & St-Louis, L. (2012). Journal club in a critical care unit: An innovative design triggering learning through reading and dialogue. *Dynamics, 23*(1), 18–23.

Background

Knowledge derived from research in critical care is perpetually evolving and expanding. Irrefutably, health care providers must adopt continuing professional development strategies in order to keep up to date with new developments in their own field and, ultimately, optimize patient outcomes (Marzlin, 2011). Reading scientific literature from various disciplines, such as nursing, medicine and pharmacology, is an inexpensive and accessible activity. However, researchers report conflicting data on how much nurses integrate reading into their busy schedules (Estabrooks, Chong, Brigidear, & Profetto-McGrath, 2005) and how well that activity translates into their clinical setting. Apart from time constraints, another barrier that nurses encounter when trying to incorporate reading into their practice may be because they prefer to acquire knowledge through interpersonal interactions, as opposed to reading scientific journals (O'Brien, 2008). The purpose of this article is to describe an innovative intervention framed by a pedagogical approach from nursing education. In particular, the authors will present the implementation of a journal club (JC), focusing on cardiac surgery, designed by and for critical care nurses, that aims to facilitate knowledge acquisition through reading and personal interaction.

Literature review

Historically, JCs have facilitated knowledge acquisition through reading and interpersonal interactions and have been used by many health care providers from different disciplines (McLeod, Steinert, Boudreau, Snell, & Wiseman, 2010). Typically, a JC session consists of participants who individually read a pre-selected article and then gather for a discussion led by a facilitator. However, no universal definition of a JC is currently available in the literature.

Deenadayalan, Grimmer-Somers, Prior, and Kumar (2008) conducted a systematic literature review aiming to identify core processes of successful JCs offered to health care providers. Successful common formats of JCs all share some characteristics. Those JCs are offered at regular intervals (monthly) and anticipated meetings are held during an appropriate time. Attendance is mandatory for participants and they receive incentives for their participation. The purpose of the activity is clear and well established. Finally, a trained facilitator leads discussions and distributes articles prior to the session. Our review of the literature showed that the format of a JC may vary by the goal of the JC, the type of discussion that participants have around the articles read, the frequency of the sessions, and the number of articles read per session. The types of discussions, or the angle by which the articles are deconstructed during JC sessions depend on the goal of the JC. Many forms of JCs exist because they are all designed to answer local learning needs. Such flexibility allows the implementation of an activity that can be tailored to the learning needs of various participants (students or clinicians) in both academic and clinical contexts.

The primary goal of a JC is to disseminate knowledge (Rogers, 2009) through reading and dialogue. Specifically, a JC permits participants to read articles they would not normally read (Gloeckner & Robinson, 2010). A JC may lead to many positive outcomes for its participants. For example, participants may improve their ability to read research, as well as critique research findings (Steebeek et al., 2009). Authors also describe anecdotal reports demonstrating that participants attending a

JC report that this type of activity makes them feel more confident and motivated to read (Milinkovic, Field, & Agustin, 2008). With respect to dialogue, since "interpersonal contact may play a pivotal role in knowledge diffusion and utilization" (Thompson, Estabrooks, & Degner, 2006, p. 692), the JC plays an important role in this process through the group discussion. Among other things, a JC creates for participants a forum to reflect on research topics and an opportunity to incorporate their professional reading within their clinical experiences (Lenha, Berger, Truman, Goldman, & Topp, 2010). A JC also facilitates the sharing of an enjoyable dialogue, as participants do not fear criticism when asking a question or providing commentary about their reading (Carrell, 2010). Additionally, a JC facilitates knowledge transfer by bridging the gap between the researcher and the reader (Adams & Titler, 2010). Some institutions bridge this gap by organizing JCs in which researchers and readers are actively participating and discussing together during the same session (Larkin et al., 2007).

Since JCs vary in their format such as duration and frequency, it remains a challenge to establish empirically which format would work best for participants while pursuing the same goal. However, some studies conducted among medical students reveal interesting facts. For example, McLeod, MacRae, McKenzie, Victor, and Brasel (2010) published one of the only multicentre randomized controlled trials aiming to compare two different formats of JCs designed to teach critical appraisal skills between two samples within the same population of surgical residents. The authors concluded that participants who assisted in moderating JC (n=227) scored significantly higher regarding their critical appraisal skills compared to the participants attending an online internet group JC (n=216). Burstein, Hollander, and Barlas (1996) concluded that the introduction of the Structured Review Instrument (SRI) increased the satisfaction of emergency medicine residents (n=18) attending a JC aiming to develop their abilities to critique scientific articles. The use of this reading guide also enhanced the perceived educational value of the activity. To our knowledge, this is the only known existing unblinded, interventional study evaluating the effect of a reading guide using a pre- and post-test. Despite the fact that similar guides are used within the nursing population, no studies have demonstrated their effects. If reading guides are sometimes included as a pedagogical support during the activity, no other learning supports, such as diagrams or medical equipment, have been reported to be introduced during journal club sessions.

The impact of the JC among the nursing population has also been reported in the literature regarding participants with different expertise levels. Mikos-Schild, Endara, and Calvario (2010) described how the JC could benefit recently hired nurses to help them consolidate new knowledge. With regard to more experienced nurses, Lenha et al. (2010) conducted a qualitative evaluation project aiming to analyze the comments of pediatric nurses (n=25) who were reading articles and participating in a virtual JC. Results showed that the JC allowed senior nurses to share their professional experience with their coworkers who had less experience.

Most of the direct patient outcome benefits reported in the literature about JC utilization remain anecdotal. It has always been challenging to quantify the direct benefit effect of a journal club on patient outcomes by using randomized control trials (Harris et al., 2011). A systematic review of 18 studies conducted by the same authors showed that only four used validated tests to evaluate the correlation between JC attendance and the participants' clinical decision-making process. Of these four studies, none were conclusive. Because patient outcomes are influenced by external factors, as well as by the sum of many nurses' clinical decisions, it could be very challenging to measure the direct impact of a JC on patients' outcomes.

Despite the fact that journal clubs have not proven to affect direct patient care, it is certain that they have the power to trigger organizational changes. For example, a JC positively modified critical care nurses' perceptions (n=7) toward evidence-based practice (EBP), as found by Sciarra (2011). Consequently, the nurses' positive perception facilitated organizational transition toward EBP (Ogiehor-Enoma, Leina, & Anosike, 2010). The JC also encouraged nurses to be more proactive in organizational changes, since participants were questioning their own practice, which may contribute to the desire to change patient care (Gloeckner & Robinson, 2010). More specifically, some authors detail concrete examples of organizational changes triggered by the implementation of a JC: Gloeckner and Robinson (2010) described how the implementation of a JC by nurses led to the implementation of comfort rounds aiming to assess patient's needs at the bedside, while Bohan, Fullerton, Oakland, and Oldewage (2010) described how, in combination with other educational activity and performance feedback, a JC offered to physicians and nurse practitioners contributed to improved rates of appropriate arterial hypertension diagnosis and management of patients admitted to the emergency room.

Overall, a review of the literature provides relevant information on how to conduct a JC with different participants and the positives outcomes of this activity on health care providers. However, only a few articles addressed the specificity of JCs for the learning needs of critical care nurses.

Context

The implementation of our JC took place in a 22-bed intensive care unit (ICU) in a teaching hospital in Montreal. Among the 1,000 critically ill patients admitted annually, 550 had undergone some type of cardiac surgery. The nurses of that interdisciplinary team have a profound desire to keep their knowledge current in order to deliver the best care for their patients. Despite many nurses on this unit incorporating professional reading into their personal time, it remained challenging to integrate reading as a group activity. Subsequently, individual knowledge acquired by each nurse from reading a clinical or a research article may not reach the rest of the team. Additionally, since each nurse selected her own topics of reading according to the clinical cases she experienced or according to her professional interest, reading articles related to cardiac surgery topics remained arbitrary. Because Kirchhoff and Beck (1995) posited that JCs centred around a single topic had more potential to trigger knowledge transfer and, therefore, influence clinical practice, it was decided

to implement a JC including only articles that could inform cardiac surgery post-operative care. The activity was implemented with the expectation that it would ensure knowledge transfer among the nursing staff by promoting new knowledge acquisition and contributing indirectly to optimizing quality care in the cardiac surgery population of this hospital.

The project

This JC project was initiated by an ICU nurse in a master's program in nursing science education. The implementation of a JC in this ICU of a teaching hospital in Montreal was a way of facilitating the integration of reading into the ICU nurses' professional practice. Senior leadership supported this activity. Since literature has shown that nurses prefer interpersonal interactions while they are learning, as opposed to the use of printed material (Estabrooks et al., 2005), the JC was the solution to reconcile these two different pathways of knowledge diffusion: reading and dialogue. During the sessions, the dialogue among the nurses initially triggered by the reading of these articles was then enhanced by the sharing of each nurse's unique professional experience.

Pedagogical approach

The planning of each JC session was guided by narrative pedagogy, as described by Diekelmann and Diekelmann (2009). Stemming from research in nursing science education, this pedagogical approach describes the components of an educational session that are necessary for participants to live a significant learning experience: *gathering, assembling, presencing, caring, listening, interpreting, inviting, questioning, retrieving places and preserving*. The authors insist that dialogue is key among participants during a learning activity. It is also important to consider the participant's background of knowledge as a learner and as a clinician. Consequently, the JC sessions were designed to promote verbal exchanges related to professional experience and clinical knowledge. In accordance with the conceptual framework to facilitate knowledge sharing, the participants must feel welcome in each session and feel free to express themselves while they are commenting on the article and critiquing the clinical practice in their unit.

The process

The implementation of the JC within this ICU was designed as a 12-week project. Since the JC can take many formats to suit participants, it was in the best interest of the nurses to determine what kind of journal club should be developed. The first two weeks were dedicated to the co-development of the journal club. Initially, the originator of the JC presented the project to each ICU nurse during individual meetings (n=79). Then, the nurse was asked to describe the most useful way to discuss each article during each JC session. After compiling the data, it was decided that JC meetings would begin with a summary of the article. A review of the main physiological and pathophysiological processes involved in the article would then follow. Subsequently, in order to bridge the gap between theory and practice, it was determined that the scientific findings of the articles would be compared to the practice within the ICU, thus promoting a reflection on the current practice. It was decided that the same article would be discussed four times a day for 30 minutes, every Monday and Friday for two consecutive weeks. The 30-minute duration was seen by the nurses as being the easiest length to manage during lunchtime, before a shift or during the course of the day.

Nurses were encouraged to submit articles they would like to read for the JC. Four articles were discussed during the course of this project. Among all articles proposed by the nurses, the ones chosen for the JC were randomly selected. The articles were left in a dedicated box at the nursing station seven days before the JC. Before each session, the facilitator prepared for the activity by reading other articles to get a deeper knowledge of the topic. The facilitator also anticipated questions that could be asked by the nurses and prepared to lead the discussion in order to answer these questions. Visual support such as anatomical diagrams was also used to review the physiopathology. ICU nursing protocol or pre-existing medical orders were also incorporated into the material presented to nurses, in order to delineate how the knowledge transmitted through the article was reflected in everyday practice. Finally, if the researchers of the article discussed a specific procedure, the equipment needed in order to review this procedure was provided and manipulated on site. After eight weeks of JC, a qualitative survey with open-ended questions was developed (see Table 1) and anonymously completed by ICU nurses (n=37) in order to evaluate the format in terms of length, frequency, structure and the outcomes of the sessions.

Results

Despite a session booked every lunch time, the most popular session was the one held in the middle of the afternoon, directly in the unit, because nurses were able to come and go from the activity while they were continuing to care for their patients. An average of 50 nurses attended the different journal sessions dedicated to the same article. Nurses proposed 21 scientific articles for the journal club, of which we randomly selected two research articles (Anderson et al., 2010; Ho & Tan, 2009) and two clinical articles to be discussed (Bosen & Mackavich, 2010; Kark, 2009) (see Table 2). Regarding the theme of all articles submitted, nurses were primarily interested in topics related to pharmacology and complications associated with cardiac surgery.

Table 1: Open-ended questions survey

1. Was a 30-minute JC session sufficient? Yes No
   If no, explain why:_____
2. Was the presentation of a new article every two weeks sufficient? Yes No
   If no, what are your suggestions?_____
3. Regarding the structure of the JC (summary of the article, physiopathology and clinical applications)
   a) What was the most helpful?_____
   b) What are your suggestions to improve this activity?
   _____
4. Did you find that the JC allowed you to learn from your coworker's professional experiences? What did you learn?
   _____
5. According to you, what was the impact of the JC?
   _____
6. Would you recommend the continuation of this activity?

During the first two weeks of the activity, 14% of the participants had either totally or partially read the article before the activity (see Table 2). That percentage increased during the subsequent weeks to 35%, 44% and 41% respectively.

According to the data obtained with the survey, participants perceived the 30-minute sessions as long enough to exchange ideas about the topic of the article in a brief and relevant way. They also perceived that the introduction of a new article every two weeks was giving them enough time to review the material. Concerning the structure of the JC, the participants reported that the summary of the article given at the beginning of each session allowed participants who had not read the article to join the activity. Because these participants also had a professional background that could contribute to discussion, they were welcomed to join the session. Nurses reported that the visual support integrated with the activity was beneficial, as it had the positive effect of directing knowledge transfer toward a practical application. Reviewing local procedures created an occasion for all participants to manipulate equipment involved in treating a post-surgical complication, giving them a concrete opportunity to bridge the gap between theory and practice. In fact, some nurses perceived that attending the activity increased their confidence and competence in their professional ability to care for the ICU population, since participants felt they were able to anticipate how to intervene in a specific situation. Nurses who answered the survey also declared that the activity informed them about the rationale behind protocols.

As for the overall opinion of the activity, nurses appreciated the informal environment in which the activity was held. Having a facilitator with both clinical and pedagogic expertise was also appreciated. When asked in the survey about what they had learned during the JC, nurses presented various positive answers. Participants reported learning from each other, since every nurse has a unique professional experience that can enhance discussions. They also expressed appreciation at having been asked prepared questions, since it triggered personal reflection. During JC sessions, participants also claimed to have learned a great deal from coworkers' questions, since their colleagues were exposing their thought process before asking a question. Furthermore, this process allowed the participants to readjust their preconceptions about clinical phenomena, thus allowing learning to occur (Diekelmann & Diekelmann, 2009).

Discussion

This survey has its limitations, since it does not reflect actual practice changes by the participants after participating in the activity. However, verbal comments about the activity came directly to the facilitator from the nurses during the JC sessions that contribute to the outcome of the activity. For example, participants with less than two years' experience voiced interest in the clinical application of the content, probably because they were still trying to grasp the ICU routine. They also stated that their senior colleagues had an interesting way of viewing and processing clinical situations. Senior nurses declared that the activity generated a good opportunity for them to review the theoretical knowledge that was relevant for their practice.

During the project, participants demonstrated many efforts to integrate the JC content into their routine. Concerning the high attendance rate, the nurses' participation was also facilitated by some JC sessions being held directly on the unit. An important result was the increase of participants who read the article before the JC. Many reasons could explain this increase. First, this increase may be due to the gaining popularity of the activity. Additionally, nurses started to feel that the activity was even more enjoyable if they had read the article. Furthermore, the nurses were also motivated to read the article because the JC was designed especially for ICU nurses, with a very hands-on approach. This approach directly responded to the nurses' learning needs, as they believed that knowledgeable practice resides in the ability of knowing why and how to do various skills and practices (Copnell, 2008).

The JC facilitator had a positive impact regarding the outcomes of the activity. One of the facilitator roles was to motivate and support participants to read each article proposed for the JC. The increased number of nurses who read the article reflected a positive change in reading habits probably triggered by the support given. Additionally, because reading was not mandatory to participate in the journal club, the facilitator had to develop strategies to integrate participants who had not read the article into the group discussion, as well as the ones who did (Milinkovic et al., 2008). Not doing so would negatively

Table 2: Details of each journal club session

Author(s) of the article presented	Topic	Participants who read the article	Additional material used during each session
(Ho & Tan, 2009)	1. Prophylactic use of corticosteroids in cardiac surgery	7/51 (14%)	• Anatomic schematics of the cardiac conduction system, pre-printed medical orders
(Anderson et al., 2010)	2. Gastrointestinal complications	18/52 (35%)	• Anatomic schematics of the abdominal arteries, pre-printed medical orders
(Kark, 2009)	3. Cardiac tamponade	23/52 (44%)	• Anatomic schematic of the heart chambers, sternotomy tray, internal defibrillator pads
(Bosen & Mackavich, 2010)	4. Mediastinitis	19/46 (41%)	• Anatomic picture of mediastinum, CPR board, intra-aortic balloon pump procedures

influence attendance rates, as well as weaken the discussion held during the activity. Consequently, the nurses who had read the article were asked to give a summary to their colleagues. Moreover, this strategy allowed the facilitator to observe which section of the article attracted the most attention.

Even if the majority of nurses preferred to read clinical articles over research articles, they predominantly submitted research articles for the JC. This can probably be explained by the fact that nurses were developing their abilities to search for articles and still had difficulties finding what they would like to read (Witzke et al., 2008). An interesting strategy would be to present them with a pre-selection of four or five clinical or research articles related to a topic and have them choose among these options. If all articles presented during the JC answered participants' learning needs, their preferences for clinical articles over research articles might change over time.

Additionally, since many continuing education activities are implemented in this institution, the same topic could be approached through several activities such as the JC and a clinical review. In our opinion, using different approaches to access the same topic would create a broader comprehension of it among the participants.

Conclusion

The implementation of a JC in a critical care unit is an effective strategy to facilitate nursing professional development. This strategy promotes learning through reading by facilitating dialogue related to nurses' professional experience. Based on our experience, in order to implement an innovative journal club the integration of several elements should be considered: 1) include nurses in the design process; 2) hold the JC directly on the unit; 3) during the JC, participants need to have access to medical equipment, protocol sheets, and visual support, as well as having the article in their hands; and 4) use nurses' expertise to enhance the JC and use the JC to develop clinical expertise. In order to permanently implement this activity within a staff continuing professional development plan, the JC needs to be supported by senior management who can facilitate access to resources (Gloeckner & Robinson, 2010) such as human and financial, as every article presented for the JC required 20 hours of preparation.

About the authors

Isabelle Bilodeau, MScN, RN, CNCC(C), Nurse Clinician, Critical Care, Jewish General Hospital, Montreal, QC.

Jacinthe Pepin, PhD, RN, Professor, Faculty of Nursing, University of Montreal, Montreal, QC.

Lyne St-Louis, MScN, RN, CNCC(C), Clinical Nurse Specialist in Critical Care and Cardiac Surgery, Jewish General Hospital, Montreal, QC.

***Address correspondence to**: Isabelle Bilodeau, Jewish General Hospital, Intensive Care Unit (local B-305), 3755 Chemin de la Côte Ste-Catherine, Montreal, QC H3T 1E2.*

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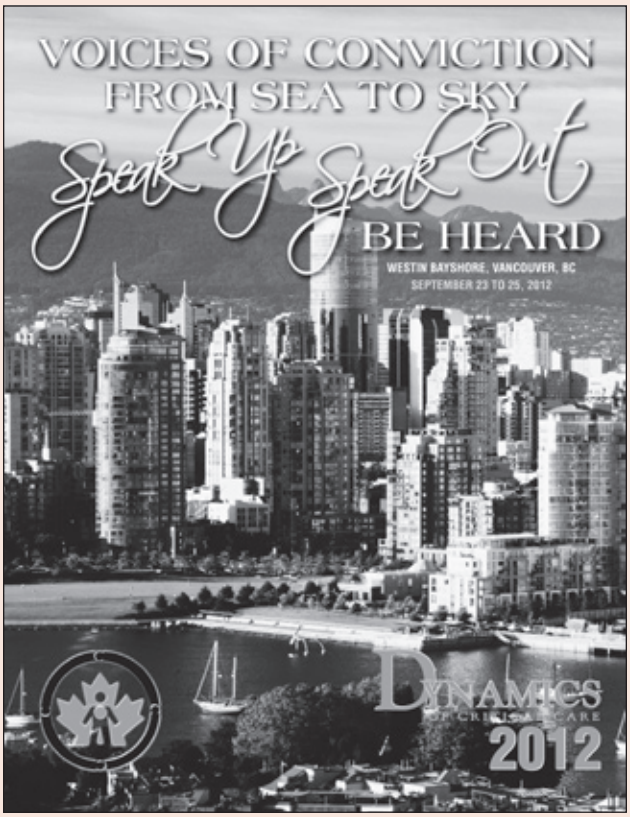


Dynamics 2012

September 23–25, 2012
Westin Bayshore, Vancouver, BC

Dynamics 2012 Conference Brochure

The Dynamics 2012 Planning Committee and the CACCN Board of Directors have made a decision to offer an online brochure for the upcoming conference through the CACCN website.

The summer abstract edition of the *Dynamics* Journal (being released in May 2012) and CACCN communication boards across the country will include a four-page colour flyer providing information on the conference, accommodations and travel. To view sessions and social activities, the full colour brochure will be available on the CACCN website at **www.caccn.ca**

Look for the flyer and brochure to be available by mid-May. We are looking forward to seeing you at Dynamics 2012.

2009–2010 Spacelabs Innovation Project Award

Charting a new course in knowledge: Creating life-long critical care thinkers

By Valerie Banfield, MN, RN, CNCC(C), Barbara Fagan, BScN, RN, CNCC(C), and Carla Janes, BScN, RN, CNCC(C)

Abstract

The Registered Nurses Professional Development Centre's Critical Care Nursing Program situated in Halifax, Nova Scotia, aspires to provide evidence-based critical care nursing education. Using a didactic traditional lecture-based teaching method, the faculty noted that some learners were not prepared for class, preferred memorization of content and were not engaged in their learning. In 2008, faculty acknowledged the need to change their principal teaching method in the full-time program to a method that would foster student engagement and active learning while inspiring registered nurses to become life-long critical thinkers. After consulting with colleagues, attending conferences and reviewing the literature, team-based learning (TBL) was chosen as the strategy to achieve this goal. Although some challenges were experienced during the adoption of TBL, the faculty believed that TBL enhanced the learners' critical thinking abilities and teamwork skills.

Banfield, V., Fagan, B., & Janes, C. (2012). 2009–2010 Spacelabs Innovation Project Award: Charting a new course in knowledge: Creating life-long critical care thinkers. *Dynamics, 23*(1), 24–28.

Critical care nurse educators may find it challenging to select an educational method that will promote active engagement of learners, transfer theoretical core concepts and enhance the students' critical thinking ability. An educational method referred to as team-based learning (TBL) uses active learning strategies with small groups of learners to facilitate in-class learner engagement. Learner engagement "stimulates immediate application of content and concepts, enhancing the learner's assimilation of the content and concepts" (Kelly et al., 2005, p. 113). TBL is purported to not only improve educational outcomes, but also to promote critical thinking, improve communication skills and foster interprofessional teamwork (Clark, Nguyen, Bray, & Levine, 2008). When critical care nursing faculty at the Registered Nurses Professional Development Centre (RN-PDC) became convinced of the benefits of TBL, they were eager to trial the use of this educational strategy. In this article, the authors describe RN-PDC faculty's experience incorporating the TBL method into the full-time critical care nursing program (CCNP).

Background

RN-PDC, situated in Halifax, NS, offers registered nurses a performance-based critical care nursing certification, available either through a part-time e-learning format or a full-time classroom format. Prior to TBL implementation, faculty responsible for teaching in the full-time program commonly relied on lectures as the main teaching strategy. Although faculty occasionally interspersed some active learning activities into the teaching sessions, faculty identified that some students remained passive in their learning. For example, learners would attend class without reading the assigned materials, often did not engage in class discussions and depended on handouts to convey all-important theoretical concepts. Concerned that learners were merely memorizing facts just to pass exams and realizing that lectures along with handouts do not create practitioners who are critical thinkers (Clark et al., 2008), faculty searched for a learning strategy that would challenge learners to apply the critical thinking skills necessary to manage complex real-life patient situations. In addition, faculty wanted an educational method that would further develop the learners' teamwork skills in order to prepare them to effectively collaborate as members of an interprofessional critical care team.

TBL addresses student issues regarding lack of pre-class preparation, in-class participation, accountability for learning, application of critical thinking skills, and teamwork skills. A three-phase learning approach is used with TBL to shift the focus from simply conveying course concepts by the instructor to application of course concepts by the learner. These phases include pre-class preparation, readiness assurance tests, and application of course concepts (Michaelsen, Knight, & Fink, 2004) (see Figure 1). In the pre-class preparation phase, learners are responsible for completing assigned readings prior to attending class. During the readiness assurance phase, the learner completes an individual readiness assurance test (IRAT) designed to determine if the learner is ready to apply core concepts learned from the assigned readings. Once learners submit their IRAT answer sheets, they work as a team to complete the same test referred to as a team readiness assurance test (TRAT). Team members discuss the test questions until a consensus is reached on the answer. In the application of course concepts phase,

learners collaborate to solve challenging issues and are required to reach a consensus on answers to specific application questions. To complete application exercises, students must apply concepts from the two earlier phases. Once the application activity is completed, teams discuss and defend their answers while the instructor facilitates learning by providing feedback and clarifying content. Students receive an academic grade based on tests, applications, and peer evaluation. This grading system rewards individuals, as well as team performance.

Literature review

Various researchers have concluded that medical student engagement is higher in a TBL course, as compared to a lecture-based course (Haidet, O'Malley, & Richards, 2002; Hunt, Haidet, Coverdale, & Richards, 2003). Other researchers using TBL in medical education reported that TBL not only increased learner engagement, but also improved the attitudes of students to teams (Levine et al., 2004) and resulted in "academic performance which was equal or better than when courses were taught using a method other than TBL" (Searle et al., 2003, p. S56). Levine et al. (2004) reported that psychiatric clerkship students engaged in TBL received significantly higher scores on the National Board of Medical Examiners exam compared to the scores of students participating in the traditional lecture-based curriculum. Clark et al. (2008) found that grades on an undergraduate nursing students' course delivered by TBL were comparable to grades from previous semesters when TBL was not used.

Student reactions to TBL vary among research studies with students reporting that TBL promoted engagement in learning and competence in the course content (Haidet et al., 2002), completing the peer evaluation during TBL caused discomfort (Searle et al., 2003), TBL activities were more effective and enjoyable compared to lectures (Levine et al., 2004), TBL improved insight into educational materials and was equal to the learning experiences of a lecture (Dunaway, 2005), and TBL was not as enjoyable as lectures (Clark et al., 2008; Hunt et al., 2003).

Faculty expressed satisfaction with TBL in a majority of the studies reviewed (Clark et al., 2008; Dunaway, 2005; Levine et al., 2004; Searle et al., 2003). Hunt et al. (2003) reported that faculty liked TBL, as it increased the learners' out-of-class preparation and in-class problem solving.

Based on the evidence found in the literature, as well as information gleaned from a TBL conference, faculty anticipated that incorporation of TBL into CCNP would increase students' responsibility and accountability for learning, increase learner engagement and challenge learners to collaboratively solve real practice problems.

Redesign and delivery

Program redesign. In the fall of 2008, CCNP faculty began the redesign process by adhering to the four essential principles of TBL, which include (1) proper group formation and management, (2) ensuring student accountability for individual and team work, (3) providing students with frequent and timely performance feedback, and (4) group assignments that promote learning and team development (Michaelsen, Parmelee, McMahon, & Levine; 2008). Each of these principles is further explained along with a description of how faculty incorporated them into the program.

Proper group formation. TBL philosophy advises that instructors, rather than students, create teams. Self-selected groups can result in an unfair distribution of students' abilities among teams. As well, students tend to form groups based on previously established relationships (e.g., best friends) and this can lead to coalitions, which threaten group cohesiveness (Michaelsen et al., 2008). Conversely, when instructors

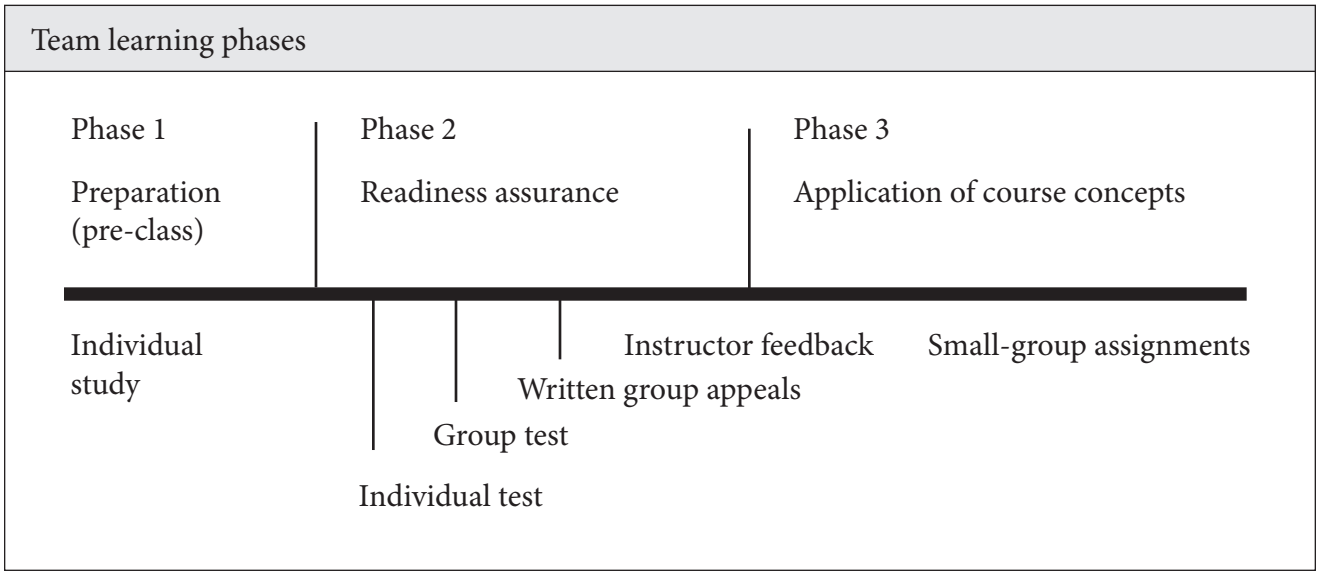


Figure 1: The three phases in TBL
Michaelsen, L., Knight, A.B., & Fink, L.D. (2004). Adapted from Team-Based Learning Instructional Activity Sequence and reprinted with permission.

establish the teams, they can use a variety of criteria and methods to create diverse teams that are equally matched according to the students' academic abilities, skills and experiences. In order to facilitate discussion, it is recommended that teams should consist of five to seven students. These students should remain together for the duration of the course. Permanency in team membership provides the time for trust and open communication to develop among team members. Team members become willing to challenge each other's ideas, thus leading to more effective learning. CCNP faculty divided the 21 CCNP students into four permanent teams using the following criteria: years of work experience, area of previous nursing practice, and other educational and life experiences.

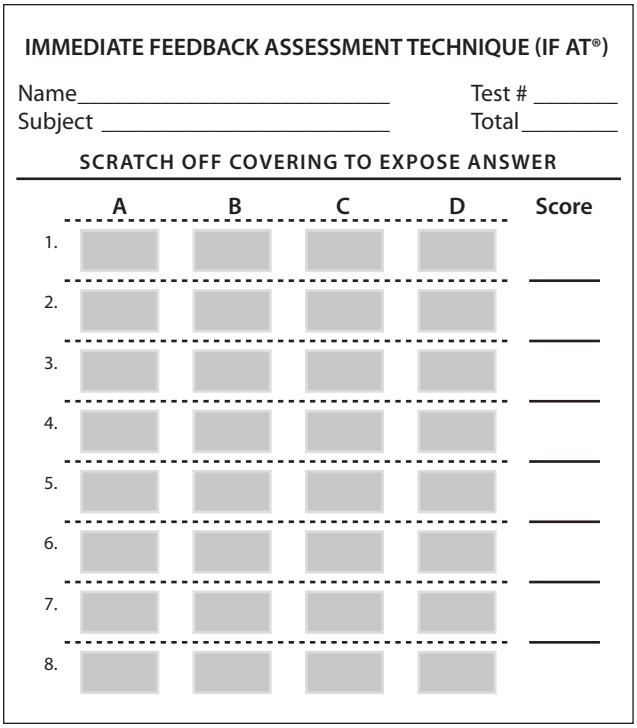
Student accountability. Strategies used in TBL to promote the student's individual and team accountability include readiness assurance tests (RATs), peer assessments and graded weights. Students are individually accountable to complete pre-class readings and complete an IRAT. They are also held accountable to their teammates through the completion of the TRAT. Peer evaluation is considered an essential component of the TBL grading process, as it ensures that students are held accountable for their contributions to their teams. The method used for peer evaluation ensures that students who contribute more to the team receive more credit toward their grade than students who are identified as contributing less to the team.

In order to ensure student accountability, CCNP course materials had to be both revised and developed. Faculty revamped study guides and associated reading lists to assist students to independently learn the theoretical concepts associated with the program's main content areas (e.g., physical assessment, ECG interpretation). Approximately 16 RATs consisting of 15 to 20 multiple-choice questions were created. To facilitate peer evaluation, faculty adapted the Koles' peer assessment method from Michaelsen et al. (2008). CCNP's grading scheme was revised to reward individual and team performance. Total grades were revised to include a weighted percentage from scores achieved on the IRAT, TRATs, application activities, and individual multiple-choice exams. Traditionally learners received total grades at three different assessment points in the program. Faculty elected to keep these assessment points and award a weighted percentage grade for the peer assessment only at the program's end.

Immediate and timely feedback. Crucial to TBL is provision of instant feedback, as it enables learners to determine if they have adequately understood key concepts and it provides the opportunity for the instructor to clarify the learner's misconceptions or mistakes. Thus, CCNP faculty allotted time in the course schedule to provide feedback following the TRATs and application exercises. Faculty also planned to use the immediate feedback assessment technique (IF-AT) self-scoring answer forms during the TRATs. These forms (see Figure 2), recommended for TBL, consist of multiple-choice options that are scratched off by the learners. Once the team achieves a consensus on an answer, the sheet is scratched and a star appears if the correct choice is made. If a star does not appear, the team has selected the incorrect choice and the team must continue to scratch the form until the correct answer is obtained. Full credit is awarded if the team locates the answer immediately and partial credit is awarded based on the number of boxes scratched. IF-AT forms provide learners an opportunity to receive feedback from one another and encourage members to use the intellectual resources of all team members.

Team application exercises. To be appropriate and effective, team application assignments must meet the following four characteristics—referred to as 4–"S" (Michaelsen et al., 2008, p. 47): (1) the application assignment should focus on a *significant* problem of importance to the learner, (2) all the teams work on the *same* problem, (3) team members should be required to make a *specific* choice in order to encourage higher-level reasoning, and (4) teams are required to report their choices *simultaneously* so that the students are accountable for the choice and are motivated to defend and debate the rationale for the choice. To prepare for the application of content, faculty created approximately 16 application exercises to allow learners to directly apply course concepts to complex real life critical care situations.

Program delivery. Delivery of the revised program began in January 2009. Following Michaelsen et al.'s (2008) recommendations, the focus for the first day of the program was to address the following aspects with the students: provide the rationale for the use of TBL, explain how classes would be conducted, alleviate any student concerns regarding the grading


IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)

Name_____ Test # _____
Subject _____ Total_____

SCRATCH OFF COVERING TO EXPOSE ANSWER

	A	B	C	D	Score
1.					_____
2.					_____
3.					_____
4.					_____
5.					_____
6.					_____
7.					_____
8.					

Figure 2: IF-AT Forms
Reprinted with permission from Epstein Educational Enterprises

system, and to form the student teams. After learners discussed TBL, they were placed into their teams and given time to engage in IRAT and TRAT practice exercises. Following the practice session, the majority of learners appeared eager to engage in TBL, but a few learners expressed fears concerning loss of traditional lectures.

As the program proceeded, learners began the three-phase TBL sequential learning process. Learners realized the importance of completing assigned readings in order to successfully master the IRATs and engage in the TRAT. Once team members became more comfortable with TBL and the members on their team, they started to learn from each other's ideas and experiences and became more confident defending their own ideas and opinions. Both the RAP and the application exercises promoted in-depth discussions and healthy debate. In keeping with TBL strategy, learners could not access any course materials to aid in completion of the IRAT or the TRAT, but were able to use course materials for completion of the application assignments. Faculty marked the IRATs while the teams were completing the TRATs, thus ensuring that the learners received immediate feedback during the class. As well, use of the IF-AT scratch answer sheets brought not only immediate feedback to the team, but also an element of fun. More importantly, the TRAT process stressed the value of listening to all team members' rationale in order to determine the correct answers.

As TBL students typically tend to forget how much they have learned and often have reduced lecture notes, it is important to provide learners with a written summary of course concepts along with opportunities to review these concepts in class (Michaelsen et al., 2008). Thus, course concepts were not only highlighted in the CCNP study guides, but also in-class concept reviews were provided for students prior to the three individual multiple choice exams.

According to TBL strategy, peer evaluation should be conducted twice during a course. CCNP faculty conducted the first peer review midway through the program. As learners were unfamiliar with providing peer feedback and were uncomfortable with the process, faculty provided the learners with articles and discussed effective examples of how to give constructive feedback. The first peer evaluation was formative with comments returned to students so they could make necessary changes to their performance. The final peer evaluation was summative and contributed to the student's overall grade.

Benefits

Faculty observed numerous benefits associated with TBL consistent with those described in the literature review. Students were not only more engaged and responsible for their learning, but they also became problem-centred learners. Faculty became facilitators of learning using their expertise to clarify content, as opposed to being expert lecturers. IRATs assisted faculty in identification of learners experiencing difficulty understanding course content thus allowing faculty to provide early support and assistance. During the TRATs and application exercises, students learned from each other, taught each other, and learned to solve problems as a team. By solving problems as a team, learners practised valuable team skills such as being respectful of others' opinions, assertively stating one's own opinions, and accepting responsibility for shared decisions.

Challenges

When challenges arose during the implementation of TBL, faculty used their expertise and the TBL literature to find solutions. Two weeks after the beginning of the program, several learners were adamant that lectures replace TBL. To determine if all learners were of the same opinion, an anonymous learner survey was conducted. Survey results demonstrated that 95% of the learners wished to continue with TBL. To allay fears associated with the loss of lectures, faculty listened to specific learner concerns and provided extra assistance if a learner had difficulty understanding concepts.

Construction of the course schedule was challenging, as faculty had to predict the amount of time required for completion of IRATs, TRATs, application exercises and the provision of adequate learner feedback. As well, since the program encompasses numerous complex theoretical concepts and associated readings, faculty predicted that learners could not adequately complete readings at home and would require time in the in-class schedule to allow the completion of some of the assigned readings. During implementation, faculty found that the time for completion of the RAPs was consistent with TBL literature and ranged from 45 to 75 minutes. Application exercise timeframes varied from one to three hours. The amount of time required for RAPs and application exercise completion depended on content difficulty, amount of discussion/debate and the need for the instructor to clarify content. Learners required the allotted time in the in-class schedule to complete assigned readings.

Although the peer evaluation guidelines used with the CCNP program were consistent with those recommended for TBL, students believed that these evaluation guidelines were punitive, as they did not allow each student on the team to receive the same peer review marks. Faculty thought that this process was necessary to ensure student accountability.

Conflict became a challenge within one team when one of the members became the self-identified team leader and did not respect other members' points of view. When the team members approached faculty to mediate the conflict, faculty provided information on conflict resolution techniques with the expectation that team members work together to resolve the conflict.

Discussion of test questions often resulted in teams expressing their disagreement with an identified correct answer. Although these disagreements led to beneficial learning through an in-depth analysis of theory, there were instances where learners attempted to prolong debate concerning the rationale for their chosen test answer. In order to manage

these situations and use class time effectively, TBL promotes the use of an appeals process. The purpose of the appeals process is to clarify uncertainty regarding the learners' understanding of the concepts. This process requires that the team submit, within a specific timeframe, a written argument supported by references, which addresses one or more of the following issues: ambiguity in the assigned reading material, poorly worded test question, or disagreement between the assigned reading material and the faculty's choice of the correct answer. Only the team that submits an appeal is awarded marks if faculty grants the appeal. Although none of the CCNP teams submitted an appeal, prolonged arguments over test answers subsided once faculty emphasized the appeals process.

One of the greatest challenges for faculty was the increase in workload related to course material preparation. However, faculty believed that sacrifice was justified based on the outcomes observed with TBL. During course delivery, faculty was challenged by feelings of uncertainty (e.g., "are we doing what is best for the learners?" and "are we doing it right?"). Early in the implementation phase, faculty had a tendency to revert back to use of lectures. As the program progressed and both faculty and learners became more confident using TBL, lectures were used less frequently and, when used, were kept to the 20-minute timeframe recommended by TBL experts.

Evaluation

To determine the effect of TBL on learner performance, average course grades of learners engaged in TBL were compared to average course grade of learners engaged in previous lecture-based programs, as well as to learners enrolled in the part-time online critical care program. Average course grades were similar for all programs. Twenty of the 21 participants enrolled in the TBL critical care program successfully graduated as critical care nurses. Results from a learner survey, indicated that the majority found the TBL experience beneficial. The following learner comment is representative of the numerous positive comments received:

> *"TBL is a great thing. It gives us a very good opportunity to apply our critical thinking. Being able to debate together is a good tool for understanding the underlying theory and makes everything go together… It was my first experience with TBL and I really improved my learning skills with this method. Instead of memorizing (and then forget), we can understand (and keep the info) in order to put together all the content we learned on the course."*

Conclusion

Based on the success of the initial implementation, TBL continues to be used as the principal teaching method in the full-time CCNP resulting in 64 additional graduates. CCNP faculty support that TBL enables critical care nursing concepts to be conveyed at least as effectively as the lecture-based method, but with the added advantage of challenging learners to actively use critical thinking skills to solve complex critical care problems. In addition, CCNP faculty believe that TBL is an instrumental stepping stone to prepare learners to work effectively in teams with other disciplines.

About the authors

Valerie Banfield, MN, RN, CNCC(C), Nurse Educator.

Barbara Fagan, BScN, RN, CNCC(C), Nurse Educator.

Carla Janes, BScN, RN, CNCC(C), Nurse Educator.

Registered Nurses Professional Development Centre, Room 211, Bethune Building QEII Hospital, 1276 South Park Street, Halifax, NS B3H 2Y9.

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AWARD INFORMATION

The Draeger Medical Canada Inc. "Chapter of the Year" Award

The Draeger Medical Canada Inc. "Chapter of the Year" Award is presented to recognize the effort, contributions and dedication of a CACCN Chapter in carrying out the purposes and goals of the association.

Award funds available: $500.00 plus a plaque

Deadline for consideration: End of current fiscal year (March 31)

Application process: Eligible chapters are automatically included

Criteria for the award program

- All chapters of CACCN are eligible for consideration of the Chapter of the Year Award provided all quarterly and annual financial/activity reports are on file with CACCN National Office for the qualifying period. If the above conditions are not met, the Chapter will not be eligible for consideration
- The award program will be for the period of April 1 to March 31 of each year
- Chapters may win the award for one year followed by a two-year lapse before winning again.

Conditions for the award program

- A point system has been developed to evaluate chapter activities during the year
- **Chapters will be responsible for ensuring National Office receives all required documentation to validate accumulated points**
- The chapter with the most points will be the successful recipient of the Chapter of the Year Award
- CACCN reserves the right to adjust points depending upon supporting materials submitted
- In the case of a tie, CACCN reserves the right to determine the recipient of the award
- The award winner will be announced at Chapter Connections Day and at the annual awards ceremony at Dynamics
- Announcement of the successful Chapter will be published in CACCN publications
- The successful chapter will be profiled at Chapter Connections Day and Dynamics.

Categories and their corresponding points

- Educational programming—please provide an accompanying brochure/advertisement of events that occurred in the award year:
  Programs between:
  1–3 hours: 25 points each
  3–8 hours: 50 points each
  > 8 hours: 100 points each

- Recruitment: Points are calculated based on the percentage of new members recruited, as compared to the total membership of the previous year:

01–10%:	10 points
11–20%:	20 points
21–30%:	30 points
31–40%:	40 points
41–50%:	50 points
51–60%:	60 points
61–70%:	70 points
71–80%:	80 points
81–90%:	90 points
91–100%:	100 points

Points will be calculated for chapter members who have contributed presentations at local, provincial and national CACCN activities. Points will only be awarded once for a presentation, regardless of the number of times or venues at which it is presented.
Each presentation: 25 points

Points will be calculated for chapter members who have contributed articles to the chapter newsletter, or who have had a paper published in *Dynamics*. Please provide a copy of the associated chapter newsletter.
Each article or paper: 25 points

Projects that provide public education, community service and/or promote the image of critical care nursing or CACCN. These projects must be presented under the auspices of the CACCN chapter (i.e., participating in blood pressure clinics, teaching CPR to the public, participating in health fairs, recruitment booths, etc.).
Each project: 50 points

Good luck in your endeavours!

The CACCN Board of Directors retains the right to amend the award criteria as required.

CACCN Research Grant

The CACCN research grant has been established to provide funds to support the research activities of a CACCN member that is relevant to the practice of critical care nursing. A grant will be awarded yearly to the investigator of a research study that directly relates to the practice of critical care nursing.

Award funds available: $2,500.00

Deadline for submission: February 15

Send applications to CACCN National Office at **caccn@caccn.ca** or fax to 519-649-1458 or mail to: CACCN, PO Box 25322, London, ON N6C 6B1. Mailed applications must be postmarked on or before February 15.

Eligibility:
The principal investigator must:

- Be a member of CACCN in good standing for a minimum of one year
- Note: where a student is submitting the research grant application and is ineligible to act as the principal investigator, the student must be a member of CACCN in good standing for a minimum of one year
- Be licensed to practise nursing in Canada
- Conduct the research in Canada

- Publish an article related to the research study in *Dynamics*
- CACCN members enrolled in a graduate nursing program may also apply
- Members of the CACCN board of directors and the awards committee are not eligible.

Budget and financial administration:
- Funds are to be issued to support research expenses
- Funds must be utilized within 12 months from the date of award notification.

Review process:
- Each proposal will be reviewed by a research review committee
- Its recommendations are subject to approval by the board of directors of CACCN
- Proposals are reviewed for potential contribution to the practice of critical care nursing, feasibility, clarity and relevance
- The recipient of the research grant will be notified in writing.

Terms and conditions of the award:
- The research is to be initiated within six months of the receipt of the grant
- Any changes to the study timelines require notification in writing to the board of directors of CACCN
- All publications and presentations arising from the research study must acknowledge CACCN
- A final report is to be submitted to the board of directors of CACCN within three months of the termination date of the grant
- The research study is to be submitted to the *Dynamics* Journal for review and possible publication.

Application requirements:
- A completed application form
- A grant proposal not in excess of five single-spaced pages exclusive of appendices and application form
- Appendices should be limited to essential information, e.g., consent form, instruments, budget
- A letter of support from the sponsoring agency (hospital, clinical program) or thesis chairperson/advisor (university faculty of nursing)
- Evidence of approval from an established institutional ethical review board for research involving human subjects and/or access to confidential records. Refer to CNA publication *Ethical Guidelines for Nursing Research Involving Human Subjects*
- A brief curriculum vitae for the principal investigator and co-investigator(s) describing educational and critical care nursing background, CACCN participation, and research experience. An outline of their specific research responsibilities
- Proof of CACCN active membership and Canadian citizenship
- Facility approval for commencement of study

CACCN Research Grant Application located at **http://www.caccn.ca/en/awards/index.html** or via CACCN National Office at **caccn@caccn.ca**.

The CACCN Board of Directors retains the right to amend the award criteria.

Editorial Awards

1st place award value: $750.00 Edwards

Runner-up award value: $500.00 CACCN

Deadline: None. Awards committee selection process.

The Editorial Awards will be presented to the authors of two written papers in *Dynamics,* which demonstrate the achievement of excellence in the area of critical care nursing. An award, provided by Edwards Lifesciences, will be given to the author(s) of the best article, and another award is given to the author(s) of the runner-up article. It is expected that the money will be used for professional development. More specifically, the recipient must use the funds:

1. Within 12 months following the announcement of the winners, or within a reasonable time
2. To cover and/or allay costs incurred while attending critical care nursing-related educational courses, seminars, workshops, conferences or special programs or projects approved by the CACCN, and
3. To further one's career development in the area of critical care nursing.

Eligibility:
1. The author is an active member of the Canadian Association of Critical Care Nurses (minimum of one year). Should there be more than one author, at least one has to be an active member of the Canadian Association of Critical Care Nurses (minimum of one year)
2 The author(s) is prepared to present the paper at Dynamics of Critical Care (optional)
3. The paper contains original work, not previously published by the author(s)
4. Members of the CACCN board of directors, awards committee or editorial committee of *Dynamics* are excluded from participation in these awards.

Criteria for evaluation:
1. The topic is approached from a nursing perspective
2. The paper demonstrates relevance to critical care nursing
3. The content is readily applicable to critical care nursing
4. The topic contains information or ideas that are current, innovative, unique and/or visionary
5. The author was not the recipient of the award in the previous year.

Style:
The paper is written according to the established guidelines for writing a manuscript for *Dynamics.*

Selection:
1. The papers are selected by the awards committee in conjunction with the CACCN board of directors
2. The awards committee reserves the right to withhold the awards if no papers meet the criteria.

Presentation:
Representatives of the sponsoring company or companies will present the awards at the annual awards ceremony during the Dynamics conference. Their names will be published in *Dynamics.*

The Spacelabs Innovative Project Award

The Spacelabs Innovative Project Award will be presented to a group of critical care nurses who develop a project that will enhance their professional development.

Award funds available: $1,500.00 total
- $1,000.00 will be granted to the Award winner
- $500.00 will be granted for the runner up
- A discretionary decision by the review committee may be made, for the award to be divided between two equally deserving submissions for the sum of $750.00 each.

Deadline for submission: June 1 each year

Send applications to CACCN National Office at
caccn@caccn.ca or fax to 519-649-1458 or
Mail to: CACCN, PO Box 25322, London, ON N6C 6B1

Mailed applications must be postmarked on or before June 1

Do you have a unique idea?

Award criteria:
- The primary contact person for the project must be a CACCN member in good standing for a minimum of one year
- Applications will be judged according to the following criteria:
  - the number of nurses who will benefit from the project
  - the uniqueness of the project
  - the relevance to critical care nursing
  - consistency with current research/evidence
  - ethics
  - feasibility
  - timeliness
  - impact on quality improvement.
- If the applicant(s) are previous recipients of this award, there must be a one-year lapse before submitting an application
- Members of the CACCN board of directors and the awards committee are not eligible.

Award requirements:
- Within one year, the winning group of nurses is expected to publish a report that outlines their project in *Dynamics.*

The CACCN Board of Directors and Spacelabs Healthcare retains the right to amend the award criteria.

Smiths Medical Canada Ltd. Educational Award

Award value: $1,000.00 each (two awards)

Deadlines: January 31 and September 1 of each year

The CACCN Educational Awards have been established to provide funds ($1000.00 each) to assist critical care nurses to attend continuing education programs at the baccalaureate, master's and doctorate of nursing levels. All critical care nurses in Canada are eligible to apply, except members of the CACCN board of directors.

Criteria for application:

1. Be an active member of CACCN in good standing for a minimum of one (1) year
2. Demonstrate the equivalent of one (1) full year of recent critical care nursing experience in the year of the application
3. Submit a letter of reference from his/her current employer
4. Be accepted to an accredited school of nursing or recognized critical care program of direct relevance to the practice, administration, teaching and research of critical care nursing
5. Has not been the recipient of this award in the past two years
6. Incomplete applications will not be considered; quality of application will be a factor in selecting recipient.

Application process:
1. Submit a completed CACCN educational award application package to National Office (forms package online at www.caccn.ca)
2. Preference will be given to applicants with the highest number of merit points
3. Keep a record of merit points, dating back three (3) years
4. Submit all required documentation outlined in criteria—candidate will be disqualified if documentation is not submitted with application
5. Presentations considered for merit points are those that are not prepared as part of your regular role and responsibilities
6. Oral and poster presentations will be considered.

Post-application process:
1. All applications will be acknowledged in writing from the awards committee
2. Unsuccessful applicants will be notified individually by the awards committee
3. Recipients will be acknowledged at the Dynamics of Critical Care Conference and be published in the journal.

CACCN Chapter Recruitment and Retention Awards

This CACCN initiative was established to recognize the chapters for their outstanding achievements with respect to recruitment and retention.

Recruitment Initiative:
This initiative will benefit the chapter if the following requirements are met:
- Minimum of 25% of membership is **new** between April 1 to March 31, the chapter will receive one (1) full Dynamics tuition
- Minimum of 33% of membership is **new** between April 1 to March 31, the chapter will receive one (1) full Dynamics tuition and one (1) $100.00 Dynamics tuition coupon.

Retention Initiative:
This initiative will benefit the chapter if the following requirements are met:
- If the chapter has greater than 80% renewal of its previous year's members, the chapter will receive three $100.00 coupons to Dynamics of that year
- If the chapter has greater than 70% renewal of its previous

year's members, the chapter will receive two $100.00 coupons to Dynamics of that year
- If the chapter has greater than 60% renewal of its previous year's members, the chapter will receive one $100.00 coupon to Dynamics of that year.

BBraun Sharing Expertise Award

Award funds available: $ 1,000.00

Deadline for submission: June 1 each year

The BBraun Sharing Expertise Award will be presented to an individual who exhibits stellar leadership and mentoring abilities in critical care.

The candidate is an individual who supports, encourages, and teaches colleagues. The candidate must demonstrate a strong commitment to the practice of critical care nursing and the nursing profession. These qualities may be demonstrated by continuous learning, professional involvement, and a commitment to guiding novice nurses in critical care.

Each nomination must have the support of another colleague and the individual's manager. It is not necessary for the candidate to be in a formal leadership or education role to qualify for this award.

Send applications to CACCN National Office at **caccn@caccn.ca** or fax to 519-649-1458 or

Mail to: CACCN, PO Box 25322, London, ON N6C 6B1

Mailed applications must be postmarked on or before June 1

Eligibility criteria:
- Nominee must be a CACCN member for a minimum of one (1) year
- The nominee must have at least three (3) years of critical care nursing experience
- At least one nomination letter must be written by a CACCN member
- Preference is given to a mentor who has CNA Certification
- The nominee must demonstrate an awareness of, and adherence to, the standards of nursing practice as determined by the provincial nursing body, and the Standards of Critical Care Nursing (2009)
- CACCN board of directors are not eligible to apply for the award.

Three (3) letters of support are required:
- The nominator must outline the qualities of the candidate, and reasons the candidate should be chosen to receive the award
- Two additional letters must testify to the eligibility of the candidate, as well as outline his/her attributes (one must be written by the nominee's manager)
- All three letters must be sent by electronic mail by each person on the same day with the subject matter: "BBraun Sharing Expertise Award—Candidate's Name" to the Director responsible for awards at National Office (**caccn@caccn.ca**).

Selection process:
- Each nomination will be reviewed by the Awards Committee in conjunction with the CACCN Director of Awards & Sponsors
- The successful candidate will be notified by email and regular mail
- The successful candidate will be recognized at the annual Awards Ceremony at the Dynamics conference and her/his name will be published in *Dynamics*
- The funds may be used to attend educational programs or conferences related to critical care
- The Awards Committee reserves the right to withhold the award if no candidate meets the criteria outlined.

The CACCN Board of Directors & BBraun Medical retain the right to amend the award criteria.

The Guardian Scholarship – Baxter Corporation Award for Excellence in Patient Safety

Award value: One award of $5,000.00 or two awards of $2,500.00 each

Deadline: June 1 of each year

The Baxter Corporation Guardian Scholarship will be presented to an individual, or an interdisciplinary team, who proposes to make, or who has made, significant contributions toward patient and/or caregiver safety in the critical care environment. Recipients of this award will identify ideas that encompass safety and improve the quality of care in their practice area.

Eligibility:
The applicant must:
- Be an active member of CACCN in good standing for a minimum of one year
- Be licensed to practise nursing in Canada
- Members of the award review committee and/or the board of directors are not eligible.

Application requirements:
- The project will describe an innovative approach, to develop new or revised processes, to encompass patient safety and improve the quality of care at the unit, hospital or health care system level
- The project/proposal will show evidence of collaboration among team members.

A complete application form that includes:
- A proposal of a project, or a description of a completed project, which makes a significant contribution toward patient and caregiver safety in critical care
- The proposal will include the background perspective, statement of the problem, and intended means to change practice. The proposal should include a timeline by which the project will occur
- Brief curriculum vitae for the principal applicant and team

members describing educational and critical care nursing background and CACCN participation
- Proof of active CACCN membership
- If this project requires ethics approval, please submit evidence of approval with your application.

Review process:
- Each proposal will be reviewed by the awards review committee and a representative of the Baxter Corporation
- Proposals are reviewed for their contribution to patient safety, evidence of transferability of the project, innovation, sustainability, and leadership within critical care practice areas
- Deadline for receipt of applications is **June 1** of each year
- The successful candidate will be chosen and notified in writing by **July 1.**

Terms and conditions of the award:
- A proposed project must be initiated within three months of the receipt of the scholarship
- Any changes to the timelines require written notification to the board of directors of CACCN
- All publications and presentations must recognize the Baxter Corporation and CACCN
- An article related to the project is to be submitted to *Dynamics* for publication.

Budget and financial administration
- One half of the awarded funds will be available to support the project expenses immediately
- The remaining funds will be awarded upon the publication of an article describing the project in *Dynamics.*

The total funds available are $5,000.00.

The award funds may be granted to a maximum of two applicants ($2,500.00 each).

NOTE: *The CACCN Board of Directors & Baxter Corporation retain the right to amend the award criteria.*

The Brenda Morgan Leadership Excellence Award

Award funds available: $1,000.00 plus award trophy

Deadline for submission: June 1

The Brenda Morgan Leadership Award was established in June 2007 by the CACCN Board of Directors to recognize and honour Brenda Morgan, who has made a significant contribution to CACCN and critical care nursing over many years. Brenda was the first recipient of the award. Brenda is highly respected for her efforts in developing, maintaining and sustaining CACCN in past years.

This award for excellence in leadership will be presented to a nurse who, on a consistent basis, demonstrates outstanding performance in the area of leadership in critical care. This leadership may have been expressed as efforts toward clinical advances within an organization, or leadership in the profession of nursing in critical care. The results of this individual's leadership must have empowered people and/or organizations to significantly increase their performance capability in the field of critical care nursing.

The Brenda Morgan Leadership Excellence Award has been generously sponsored by CACCN in order to recognize and honour a nurse who exemplifies excellence in leadership, in the specialty of Critical Care.

Send applications to CACCN National Office at
caccn@caccn.ca or fax to 519-649-1458 or
Mail to: CACCN, PO Box 25322, London, ON N6C 6B1
Mailed applications must be postmarked on or before June 1

Eligibility criteria:
Persons who are nominated for this award will have consistently demonstrated qualities of leadership and are considered visionaries and innovators in order to advance the goals of critical care nursing.

The nominee must:
- Have been a member of CACCN for a minimum of five (5) years
- Have a minimum of five (5) years of critical care nursing experience
- Be registered to practise nursing in Canada
- Have demonstrated volunteerism and significant commitment to CACCN
- Have participated in CACCN activities at local or national levels
- Been a member of the CACCN Chapter executive or National Board of Directors
- Have helped to plan a workshop or a conference or indirectly provided support of CACCN activities through management activities—supporting staff to participate in CACCN projects or attend conferences
- Hold a valid adult or pediatric specialty in critical care certification—Certified Nurse in Critical Care—CNCC(C) or CNCCP(C) from the CNA (preferred)
- Have demonstrated a leadership role or have held a key leadership position in an organization related to the specialty of critical care
- Consistently conducts themselves in a leadership manner
- Have effectively engaged others in the specialty of critical care nursing
- Have role modelled commitment to professional self development and lifelong learning
- On a consistent basis, exemplifies the following qualities/values:
  - pro-active / innovator / takes initiative
  - takes responsibility/accountability for actions
  - imagination/visionary
  - positive communication skills
  - interdependence
  - integrity
  - recognition of new opportunities
  - conflict resolution skills/problem solving skills.

Application process:

- The application involves a nomination process
- Please submit two letters describing how the nominee has demonstrated the items under the criteria section of this award
  - Please use as many examples as possible to highlight what this candidate does that makes her/him outstanding
  - The selection committee depends on the information provided in the nomination letters to select award winners from amongst many deserving candidates
- Members of the CACCN board of directors and the awards committee are not eligible
- Award recipients will be notified in writing of their selection for the award
- Recipients will be honoured during the awards ceremony, at the annual Dynamics Conference
- Recipient names and possibly a photo will be published in *Dynamics.*

Selection process:

- Each nomination will be reviewed by the award committee in conjunction with the CACCN Director of Awards and Sponsorship
- The Brenda Morgan Leadership Awards committee will consist of:
  - Two members of the board of directors and Brenda Morgan (when possible)
- The Awards Committee reserves the right to withhold the award if no candidate meets the criteria outlined.

Terms and conditions of the award:

- The award recipient will be encouraged to write a reflective article for *Dynamics,* sharing their accomplishments and describing their leadership experience. The article should reflect on the recipient's passion to move critical care nursing forward, their leadership qualities and how they used these effectively to achieve their outcome.

The CACCN Board of Directors retains the right to amend the award criteria.

Cardinal Health Chasing Excellence Award

Award value: $1,000.00

Deadline: June 1 annually

This award is presented annually to a **CACCN** member who consistently demonstrates excellence in critical care nursing practice. *The Cardinal Health Chasing Excellence Award* is $1,000.00 to be used by the recipient for continued professional or leadership development in critical care nursing.

The *Cardinal Health Chasing Excellence Award* is given to a critical care nurse who:

- In critical care, has a primary role in direct patient care
- Has been a CACCN member in good standing for three or more years
- Holds a certificate from CNA in critical care CNCC(C) or CNCCP(C) (preferred)
- Note: Current members of the national board of directors are not eligible.

The *Cardinal Health Chasing Excellence Award* recipient consistently practises at an expert level as described by Benner (1984). Expert practice is exemplified by most or all of the following criteria:

- Participates in quality improvement and risk management to ensure a safe patient care environment
- Acts as a change agent to improve the quality of patient care when required
- Provides high-quality patient care based on experience and evidence
- Effective clinical decision-making supported by thorough assessments
- Has developed a clinical knowledge base and readily integrates change and new learning to practice
- Is able to anticipate risks and changes in patient condition and intervene in a timely manner
- Sequences and manages rapid multiple therapies in response to a crisis (Benner, Hooper-Kyriakidis & Stannard, 1999)
- Integrates and coordinates daily patient care with other team members
- Advocates and develops a plan of care that consistently considers the patient and family and ensures they receive the best care possible
- Provides education, support and comfort to patients and their families to help them cope with the trajectory of illness and injury, to recovery, palliation or death
- Role models collaborative team skills within the interprofessional health care team
- Assumes a leadership role as dictated by the dynamically changing needs of the unit
- Is a role model to new staff and students
- Shares clinical wisdom as a preceptor to new staff and students
- Regularly participates in continuing education and professional development.

Nominations:

Two letters describing the nominee's clinical excellence and expertise are required, one of which must be from a CACCN member. The nomination letters need to include three concrete clinical examples outlining how the nominee meets the above criteria and demonstrates clinical excellence in practice. In addition, a supporting letter from a supervisor, such as a unit manager or team leader, is required.

Selection:

Each nomination will be reviewed by the awards committee in conjunction with the **CACCN** director of awards and sponsors. The successful recipient will be notified by mail, recognized at the annual awards ceremony at the Dynamics conference and her/his name will be published in *Dynamics.* The awards committee reserves the right to withhold the award if no candidate meets the criteria.

References:

Benner, P. (1984). *From novice to expert. Excellence and power in clinical nursing practice.* Menlo Park: Addison-Wesley.

Benner, P., Hooper-Kyriakidis, P., & Stannard, D. (1999). *Clinical Wisdom and Interventions in Critical Care: A Thinking-in-action Approach.* Philadelphia: Saunders.

Precedex™
(Dexmedetomidine Hydrochloride for Injection)

Prescribing Summary

Patient Selection Criteria

THERAPEUTIC CLASSIFICATION: Alpha$_2$-adrenergic agonist

INDICATIONS AND CLINICAL USE:

Intensive Care Unit Sedation

Precedex™ is indicated for sedation of initially intubated and mechanically ventilated postsurgical patients during treatment in an intensive care setting by continuous intravenous infusion. The Precedex™ infusion must not exceed 24 hours.

Precedex™ has been continuously infused in mechanically ventilated patients prior to extubation, during extubation, and post-extubation. It is not necessary to discontinue Precedex™ prior to extubation. After extubation, the dose of Precedex™ should be reduced by half. The mean time of continued infusion is approximately 6.6 hours.

Conscious Sedation

Precedex™ is indicated for sedation of non-intubated patients prior to and/or during surgical and other procedures by continuous intravenous infusion for the following procedures:

- Monitored Anesthesia Care (MAC) with an adequate nerve block and/or local infiltration; and
- Awake Fiberoptic Intubation (AFI) with adequate topical preparation of the upper airway with local lidocaine formulations.

Due to insufficient safety and efficacy data, Precedex™ is not recommended for use in procedures other than the two listed above.

CONTRAINDICATIONS

Patients who are hypersensitive to this drug or to any ingredient in the formulation or component of the container. For a complete listing, see the Dosage Forms, Composition and Packaging section of the product monograph.

SPECIAL POPULATIONS

Pregnant Women: There are no adequate and well-controlled studies in pregnant women. Precedex™ should be used during pregnancy only if the potential benefits justify the potential risk to the fetus.

Labor and Delivery: The safety of Precedex™ during labor and delivery has not been studied. Therefore, Precedex™ is not recommended during labor and delivery including cesarean section deliveries.

Nursing Women: It is not known whether Precedex™ is excreted in human milk. Radio-labeled Precedex™ administered subcutaneously to lactating female rats was excreted in milk. Because many drugs are excreted in human milk, caution should be exercised when Precedex™ is administered to a nursing woman.

Pediatrics: There have been no clinical studies to establish the safety and efficacy of Precedex™ in pediatric patients below 18 years of age. Therefore, Precedex™ should not be used in this population.

Geriatrics: Precedex™ is known to be substantially excreted by the kidney, and the risk of adverse reactions to this drug may be greater in patients with impaired renal function. Because elderly patients are more likely to have decreased renal function, care should be taken in dose selection in elderly patients, and it may be useful to monitor renal function **(see Dosage and Administration).**

Safety Information

WARNINGS AND PRECAUTIONS

General

Precedex™ should be administered only by persons skilled in the management of patients in the intensive care or operating room setting. Due to the known pharmacological effects of Precedex™, patients should be continuously monitored while receiving Precedex™.

Cardiovascular

Hypotension, Bradycardia and Sinus arrest: Clinically significant episodes of bradycardia and sinus arrest have been reported with Precedex™ administration in young, healthy volunteers with high vagal tone or with different routes of administration including rapid intravenous or bolus administration.

Reports of hypotension and bradycardia have been associated with Precedex™ infusion. If medical intervention is required, treatment may include decreasing or stopping the infusion of Precedex™, increasing the rate of intravenous fluid administration, elevation of the lower extremities, and use of pressor agents. Because Precedex™ has the potential to augment bradycardia induced by vagal stimuli; clinicians should be prepared to intervene. The intravenous administration of anticholinergic agents (e.g., glycopyrrolate, atropine) should be considered to modify vagal tone. In clinical trials, glycopyrrolate or atropine were effective in the treatment of most episodes of Precedex™-induced bradycardia. However, in some patients with significant cardiovascular dysfunction, more advanced resuscitative measures were required.

Caution should be exercised when administering Precedex™ to patients with advanced heart block and/or severe ventricular dysfunction. Because Precedex™ decreases sympathetic nervous system activity, hypotension and/or bradycardia may be expected to be more pronounced in patients with hypovolemia, diabetes mellitus, or chronic hypertension and in elderly patients. In situations where other vasodilators or negative chronotropic agents are administered, coadministration of Precedex™ could have an additive pharmacodynamic effect and should be administered with caution.

Transient Hypertension: Transient hypertension has been observed primarily during the loading dose in association with the initial peripheral vasoconstrictive effects of Precedex™.

Treatment of the transient hypertension has generally not been necessary, although reduction of the loading dose infusion rate may be desirable.

Dependence/Tolerance

Precedex™ is not a controlled substance. The dependence potential of Precedex™ has not been studied in humans.

Endocrine and Metabolism

The available evidence is inadequate to confirm if dexmedetomidine is associated with significant adrenocortical suppression. The adequacy of the adrenocortical function should be individually assessed and managed.

Hepatic/Biliary/Pancreatic

Since Precedex™ clearance decreases with severity of hepatic impairment, dose reduction should be considered in patients with impaired hepatic function.

Renal

Precedex™ is known to be substantially excreted by the kidney, and the risk of adverse reactions to this drug may be greater in patients with impaired renal function. **(see Dosage and Administration)**

Peri-Operative Considerations

Arousability: Some patients receiving Precedex™ have been observed to be arousable and alert when stimulated. This alone should not be considered as evidence of lack of efficacy in the absence of other clinical signs and symptoms.

Withdrawal

Intensive Care Unit

Precedex™ is indicated only for sedation of initially intubated and mechanically ventilated postoperative patients recovering in a post-operative care unit or an intensive care unit. During the use of Precedex™ in an intensive care setting, the patients must be monitored continuously, particularly for their cardiovascular safety indicators.

If Precedex™ were to be administered for more than 24 hours and stopped abruptly, withdrawal symptoms similar to those reported for other alpha-2-adrenergic agents may result. These symptoms include nervousness, agitation, and headaches, accompanied or followed by a rapid rise in blood pressure and elevated catecholamine concentrations in the plasma. Precedex™ infusion must not exceed 24 hours.

Conscious Sedation

Withdrawal symptoms were not seen after discontinuation of short term infusion of Precedex™.

Patient Counselling Information

Precedex™ is indicated for short-term intravenous sedation. Dosage must be individualized and titrated to the desired clinical effect. Blood pressure, heart rate and oxygen levels will be monitored both continuously during the infusion of Precedex™ and as clinically appropriate after discontinuation.

- When Precedex™ is infused for more than 6 hours, patients should be informed to report nervousness, agitation, and headaches that may occur for up to 48 hours.
- Additionally, patients should be informed to report symptoms that may occur within 48 hours after the administration of Precedex™ such as: weakness, confusion, excessive sweating, weight loss, abdominal pain, salt cravings, diarrhea, constipation, dizziness or lightheadedness.

Intensive Care Unit Sedation

A total of 849 patients in the clinical studies were 65 years of age and over. A total of 242 patients were 75 years of age and over. In patients greater than 65 years of age, a higher incidence of bradycardia and hypotension was observed following administration of Precedex™. Therefore a dose reduction should be considered in patients over 65 years of age **(see Dosage and Administration).**

Conscious Sedation

A total of 131 patients in the clinical studies were 65 years of age and over. A total of 47 patients were 75 years of age and over. Hypotension occurred in a higher incidence in Precedex™-treated patients 65 years or older (72%) and 75 years or older (74%) as compared to patients <65 years (47%). Pre-specified criteria for the vital signs to be reported as adverse reactions are footnoted below Table 2 **(see Adverse Reactions)**. A reduced loading dose of 0.5 mcg/kg given over 10 minutes is recommended and a reduction in the maintenance infusion should be considered for patients greater than 65 years of age **(see Dosage and Administration)**.

ADVERSE REACTIONS

Adverse Drug Reaction Overview

Use of Precedex™ has been associated with the following serious adverse reactions:

- Hypotension, bradycardia and sinus arrest **(see Warnings and Precautions)**,
- Transient hypertension **(see Warnings and Precautions)**.

Most common treatment-emergent adverse reactions, occurring in greater than 2% of patients in both Intensive Care Unit and conscious sedation studies include hypotension, bradycardia and dry mouth.

Intensive Care Unit Sedation

Adverse event information derived from the placebo-controlled, continuous infusion trials of Precedex™ for sedation in the surgical intensive care unit setting in which 387 patients received Precedex™. Overall, the most frequently observed treatment-emergent adverse events included hypotension, hypertension, nausea, bradycardia, fever, vomiting, hypoxia, tachycardia and anemia **(see Table 1).**

Conscious Sedation

Adverse event information is derived from the two trials for conscious sedation in which 318 patients received Precedex™. Treatment-emergent adverse events occurring at an incidence of >2% are provided in **Table 2**. The most frequent adverse events were hypotension, bradycardia, and dry mouth.

Post-Market Adverse Drug Reactions

Hypotension and bradycardia were the most common adverse reactions associated with the use of Precedex™ during post approval use of the drug.

DRUG INTERACTIONS

Drug-Drug Interactions

Anesthetics, sedatives, hypnotics, opioids

Co-administration of Precedex™ with anesthetics, sedatives, hypnotics, and opioids is likely to lead to an enhancement of effects. Specific studies have confirmed these effects with sevoflurane, isoflurane, propofol, alfentanil, and midazolam. No pharmacokinetic interactions between Precedex™ and isoflurane, propofol, alfentanil and midazolam have been demonstrated. However, due to possible pharmacodynamic interactions, when co-administered with Precedex™, a reduction in dosage of Precedex™ or the concomitant anesthetic, sedative, hypnotic or opioid may be required.

Neuromuscular Blockers

In one study of 10 healthy volunteers, administration of Precedex™ for 45 minutes at a plasma concentration of 1 (one) ng/mL resulted in no clinically meaningful increases in the magnitude of neuromuscular blockade associated with rocuronium administration.

Cytochrome P450

In vitro studies in human liver microsomes demonstrated no evidence of cytochrome P450 mediated drug interactions that are likely to be of clinical relevance.

REPORTING SUSPECTED SIDE EFFECTS

Toll-free telephone: 1-866-234-2345 • Toll-free fax: 1-866-678-6789
Online at: www.healthcanada.gc.ca/medeffect
Regular Mail: Canada Vigilance Program, Health Canada
Postal Locator 0701C, Ottawa, ON K1A 0K9

Administration

Dosing Considerations

- Precedex™ should be used in only facilities adequately staffed and equipped for anesthesia, resuscitation, and cardiovascular monitoring.
- Precedex™ dosing should be individualized and titrated to the desired clinical response.
- Precedex™ is not indicated for infusions lasting longer than 24 hours.
- Precedex™ should be administered using a controlled infusion device with adequate precision.

Recommended Dose and Dosage Adjustment

Intensive Care Unit Sedation

- Precedex™ is indicated for post-surgical patients in an intensive care setting, e.g. in Post Anesthesia Care Unit or Intensive Care Unit.
- An assessment of the level of sedation and the need for Precedex™ should precede the initiation of Precedex™.
- Another intravenous sedative (e.g. midazolam or propofol) may be added if Precedex™ provides inadequate sedation at the highest recommended dose level.
- The need for Precedex™ continuous infusion post-extubation must be assessed individually.

If the continuous infusion is needed post-extubation, the infusion speed should be reduced by half. The mean time of continued infusion is approximately 6.6 hours.

- Precedex™ use should not exceed 24 hours in an ICU setting.

A dose reduction for both the loading and maintenance infusions should be considered in patients with impaired hepatic or renal function and in patients over 65 years of age.

Initiation: For adult patients, Precedex™ is generally initiated with a loading infusion of up to one mcg/kg over 10 to 20 minutes, if needed. For patients being converted from alternate sedative therapy a loading dose may not be required.

Maintenance: Adult patients will generally require a maintenance infusion of 0.2 to 0.7 mcg/kg/hr. The rate of the maintenance infusion should be adjusted to achieve the desired level of sedation.

Conscious Sedation

- Based on the Ramsay and Observer's Assessment of Alertness/Sedation Scales, the loading infusion provides clinically effective onset of sedation 10 to 15 minutes after start of infusion.
- For use in Monitored Anesthesia Care, an adequate nerve block and/or local infiltration should be used.
- For Awake Fiberoptic Intubation, the upper airway should be topicalized with proper lidocaine formulations.

Initiation: For adult patients, Precedex™ is generally initiated with a loading infusion of one mcg/kg over 10 minutes. For patients over 65 years of age or those undergoing less invasive procedures such as ophthalmic surgery, a loading infusion of 0.5 mcg/kg over 10 minutes may be suitable.

Maintenance: The maintenance infusion of Precedex™ is generally initiated at 0.6 mcg/kg/hr and titrated to achieve desired clinical effect with doses ranging from 0.2 to 1 mcg/kg/hr. The rate of the maintenance infusion should be adjusted to achieve the targeted level of sedation. Following the load in awake fiberoptic intubation, a fixed maintenance dose of 0.7 mcg/kg/hr is recommended until the endotracheal tube is secured.

Dosage Adjustment: Due to possible pharmacodynamic interactions, a reduction in dosage of Precedex™ or other concomitant anesthetics, sedatives, hypnotics or opioids may be required when coadministered. A dose reduction for both the loading and maintenance infusions should be considered in patients with impaired hepatic or renal function and in patients over 65 years of age.

Administration

Precedex™ must be diluted in 0.9% sodium chloride solution to achieve required concentration (4 mcg/mL) prior to administration. Preparation of solutions is the same, whether for the loading dose or maintenance infusion.

Strict aseptic technique must always be maintained during handling of Precedex™.

To prepare the infusion, withdraw 2 mL of Precedex™ and add to 48 mL of 0.9% sodium chloride injection to a total of 50 mL. Shake gently to mix well. Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration, whenever solution and container permit.

Study References

1. [a]PRECEDEX™ (Dexmedetomidine Hydrochloride for Injection) Product Monograph, December 8, 2009, Hospira Healthcare Corporation.

Supplemental Product Information

Clinical Trial Adverse Drug Reactions: *Because clinical trials are conducted under very specific conditions, the adverse reaction rates observed in the clinical trials may not reflect the rates observed in practice and should not be compared to the rates in the clinical trials of another drug. Adverse drug reaction information from clinical trials is useful for identifying drug-related adverse events and for approximating rates.* **Intensive Care Unit Sedation** Adverse event information derived from the placebo-controlled, continuous infusion trials of Precedex™ for sedation in the surgical intensive care unit setting in which 387 patients received Precedex™. In these studies, the mean total dose was 7.06 mcg/kg (SD = 2.86), mean dose per hour was 0.51 mcg/kg/hr (SD = 0.39) and the mean duration of infusion of 15.6 hours (range: 0.17 to 29.08). Midazolam or propofol was used as the rescue medication for patients on Precedex™ or placebo. The population was between 19 to 83 years of age, 43% > 65 years of age, 73% male and 97% Caucasian. Treatment-emergent adverse events occurring at an incidence of >1% are provided in Table 1.

Table 1: Treatment-Emergent Adverse Events Occuring in >1% Of All Dexmedetomidine-Treated Patients in the Randomized Placebo-controlled Continuous Infusion Short-Term Intensive Care Unit Sedation Studies

Adverse Event	Randomized Dexmedetomidine*	Placebo with Midazolam Rescue	Placebo with Propofol Rescue
	(N=387)	(N=181)	(N=198)
Hypotension	28%	15%	10%
Hypertension	16%	13%	23%
Nausea	11%	9%	10%
Bradycardia	7%	3%	2%
Fever	5%	6%	4%
Vomiting	4%	6%	6%
Atrial Fibrillation	4%	4%	3%
Hypoxia	4%	5%	3%
Tachycardia	3%	7%	3%
Hemorrhage	3%	6%	4%
Anemia	3%	4%	1%
Dry Mouth	3%	2%	<1%
Rigors	2%	3%	4%
Agitation	2%	3%	3%
Hyperpyrexia	2%	3%	2%
Pain	2%	3%	1%
Hyperglycemia	2%	3%	1%
Acidosis	2%	<1%	3%
Pleural Effusion	2%	<1%	2%
Oliguria	2%	1%	<1%
Thirst	2%	<1%	<1%

*Data combined from studies conducted in post-surgical patients recovering in an ICU setting.

Conscious Sedation event information is derived from the two trials for conscious sedation in which 318 patients received Precedex™. Midazolam was used as the rescue medication for patients on Precedex™ or placebo. The mean total dose was 1.6 mcg/kg (range: 0.5 to 6.7), mean dose per hour was 1.3 mcg/kg/hr (range: 0.3 to 6.1) and the mean duration of infusion of 1.5 hours (range: 0.1 to 6.2). The population was between 18 to 93 years of age, 36% > 65 years of age, 52% male and 61% Caucasian. Treatment-emergent adverse events occurring at an incidence of >2% are provided in Table 2. Pre-specified criteria for the vital signs to be reported as adverse reactions are footnoted below the table. The decrease in respiratory rate and hypoxia was similar between Precedex™ and comparator groups in both studies.

Table 2: Adverse Events with an Incidence >2% – Conscious Sedation Population

Body System/Adverse Event	Precedex™ N = 318 n (%)	Placebo N = 113 n (%)
Vascular disorders		
Hypotension[1]	173 (54%)	34 (30%)
Hypertension[2]	41 (13%)	27 (24%)
Respiratory, thoracic and mediastinal disorders		
Respiratory depression[5]	117 (37%)	36 (32%)
Hypoxia[6]	7 (2%)	3 (3%)
Bradypnea	5 (2%)	5 (4%)
Cardiac disorders		
Bradycardia[3]	45 (14%)	4 (4%)
Tachycardia[4]	17 (5%)	19 (17%)
Gastrointestinal disorders		
Nausea	10 (3%)	2 (2%)
Dry mouth	8 (3%)	1 (1%)

1 Hypotension was defined in absolute and relative terms as Systolic blood pressure of <80 mmHg or <30% lower than pre-study drug infusion value, or Diastolic blood pressure of <50 mmHg **2** Hypertension was defined in absolute and relative terms as Systolic blood pressure >180 mmHg or >30% higher than pre-study drug infusion value or Diastolic blood pressure of >100 mmHg. **3** Bradycardia was defined in absolute and relative terms as <40 bpm or <30% lower than pre-study drug infusion value. **4** Tachycardia was defined in absolute and relative terms as >120 bpm or >30% greater than pre-study drug infusion value. **5** Respiratory Depression was defined in absolute and relative terms as respiratory rate (RR) <8 bpm or >25% decrease from baseline **6** Hypoxia was defined in absolute and relative terms as SpO_2 < 90% or 10% decrease from baseline

Post-Market Adverse Drug Reactions *The following adverse reactions have been identified during post approval use of Precedex™. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.*

Table 3: Adverse Events Experienced During Post approval Use of Precedex™

Body System	Preferred Term
Body as a Whole	Fever, hyperpyrexia, hypovolemia, light anesthesia, pain, rigors
Cardiovascular Disorders, General	Blood pressure fluctuation, heart disorder, hypertension, hypotension, myocardial infarction
Central and Peripheral Nervous System Disorders	Dizziness, headache, neuralgia, neuritis, speech disorder, convulsion
Gastrointestinal System Disorders	Abdominal pain, diarrhea, vomiting, nausea
Heart Rate and Rhythm Disorders	Arrhythmia, ventricular arrhythmia, bradycardia, hypoxia, atrioventricular block, cardiac arrest, extrasystoles, atrial fibrillation, heart block, t wave inversion, tachycardia, supraventricular tachycardia, ventricular tachycardia
Metabolic and Nutritional Disorders	Acidosis, respiratory acidosis, hyperkalemia, increased alkaline phosphatase, thirst, hypoglycemia
Psychiatric Disorders	Agitation, confusion, delirium, hallucination, illusion
Red Blood Cell Disorders	Anemia
Renal disorders	Blood urea nitrogen increased, oliguria
Respiratory System Disorders	Apnea, bronchospasm, dyspnea, hypercapnia, hypoventilation, hypoxia, pulmonary congestion
Skin and Appendages Disorders	Increased sweating
Vascular disorders	Hemorrhage
Vision Disorders	Photopsia, abnormal vision

Compatibility with Other Fluids Precedex™ has been shown to be compatible when administered with the following intravenous fluids: Lactated Ringers, 5% Glucose in Water, 0.9% Sodium Chloride in Water, 20% Mannitol in Water. Dexmedetomidine has been found to be compatible with water solutions of the following drugs when administered via Y-site injections: thiopental sodium, vecuronium bromide, pancuronium bromide, glycopyrrolate bromide, phenylephrine hydrochloride. **Compatibility with Natural Rubber** Compatibility studies have demonstrated the potential for absorption of Precedex™ to some types of natural rubber. Although Precedex™ is dosed to effect, it is advisable to use administration components made with synthetic or coated natural rubber gaskets. **Incompatibilities** Precedex™ infusion should not be co-administered through the same IV catheter with blood, serum, or plasma because physical compatibility has not been established. Precedex™ has been shown to be incompatible when administered with the following drugs: amphotericin B, diazepam. **OVERDOSAGE** The tolerability of Precedex™ was studied in one study in which healthy subjects were administered doses at and above the recommended dose of 0.2 to 0.7 mcg/kg/hr. The maximum blood concentration achieved in this study was approximately 13 times the upper boundary of the therapeutic range. The most notable effects observed in two subjects who achieved the highest doses were first degree atrioventricular block and second degree heart block. No hemodynamic compromise was noted with the atrioventricular block and the heart block resolved spontaneously within one minute. Five patients received an overdose of Precedex™ in the intensive care unit sedation studies. Two of these patients had no symptoms reported; one patient received a 2 mcg/kg loading dose over 10 minutes, experienced bradycardia and/or hypotension. One patient who received a loading bolus dose of undiluted Precedex™ (19.4 mcg/kg), had cardiac arrest from which he was successfully resuscitated. **STORAGE AND STABILITY** Store at controlled room temperature, 25°C (77°F) with excursions allowed from 15 to 30°C (59 to 86°F). (See USP.) **DOSAGE FORMS, COMPOSITION AND PACKAGING** Precedex™ (dexmedetomidine hydrochloride for Injection) is a sterile, nonpyrogenic solution suitable for intravenous infusion following dilution. Each 1 mL of Precedex™ contains 118 mcg of dexmedetomidine hydrochloride equivalent to 100 mcg dexmedetomidine and 9 mg of sodium chloride in water. The solution is preservative-free and contains no additives or chemical stabilizers. Precedex™ (Dexmedetomidine Hydrochloride for Injection), 100 mcg/mL as the base is available in 2 mL clear glass vials (200 mcg/2 mL). Vials are intended for single use only.

Product Monograph available upon request at 1-866-488-6088 or at www.hospira.ca

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DYNAMICS

Information for Authors

Dynamics: The Journal of the Canadian Association of Critical Care Nurses (CACCN) is distributed to members of the CACCN, to individuals, and to institutions interested in critical care nursing. The editorial board invites submissions on any of the following: clinical, education, management, research and professional issues in critical care nursing. Critical care encompasses a diverse field of clinical situations, which are characterized by the nursing care of patients and their families with complex, acute and life-threatening biopsychosocial risk. While the patient's problems are primarily physiologic in nature, the psychosocial impact of the health problem on the patient and family is of equal and sometimes lasting intensity. Articles on any aspect of critical care nursing are welcome.

The manuscripts are reviewed through a blind, peer review process.

Manuscripts submitted for publication must follow the following format:

1. Title page with the following information:

- Author(s) name and credentials, position
- Place of employment
- If there is more than one author, the names should be listed in the order that they should appear in the published article
- Indicate the primary person to contact and address for correspondence

2. A brief abstract of the article on a separate page.

3. Body of manuscript:

- Length: a maximum of 15 pages including tables, figures, and references
- Format: double spaced, 1-inch margins on all sides. Pages should be numbered sequentially including tables, and figures. Prepare the manuscript in the style outlined in the American Psychological Association's (APA) Publication Manual 6th Edition
- Use only generic names for products and drugs
- Tables, figures, illustrations and photographs must be submitted each on a separate page after the references
- References: the author is responsible for ensuring that the work of other individuals is acknowledged accordingly. Direct or indirect quotes must be acknowledged according to APA guidelines
- Permission to use copyrighted material must be obtained by the author and included as a letter from the original publisher when used in the manuscript

4. Copyright:

- Manuscripts submitted and published in *Dynamics* become the property of CACCN. Authors submitting to *Dynamics* are asked to enclose a letter stating that the article has not been previously published and is not under consideration by another journal.

5. Submission:

- Please submit the manuscript electronically as a Word attachment to the editorial office as printed in the journal. Accepted manuscripts are subject to copy editing.
- All authors must declare any conflicts of interest and acknowledge that they have made substantial contributions to the work and/or contributed substantially to the manuscript at the time of acceptance.

Revised November 2011

WHY CACCN?

Vision: The voice for excellence in Canadian Critical Care Nursing

CACCN Mission Statement

The CACCN is a non-profit, specialty organization dedicated to maintaining and enhancing the quality of patient- and family-centred care by meeting educational needs of critical care nurses.

Engages and empowers nurses through education and networking to advocate for the critical care nurse.

Develops current and evidence informed standards of critical care nursing practice.

Identifies professional and political issues and provides a strong unified national voice through our partnerships.

Facilitates learning opportunities to achieve Canadian Nurses Association's certification in critical care.

CACCN Values Statement

Our core values are:

Excellence and Leadership
- Collaboration and partnership
- Pursuing excellence in education, research, and practice

Dignity & Humanity
- Respectful, healing and humane critical care environments
- Combining of compassion and technology to advocate and promote excellence

Integrity & Honesty
- Accountability and the courage to speak for our beliefs
- Promoting open and honest relationships

Revised November 2010

Application for membership

Name: _____

Address: _____
(Street)

_____ _____ _____
(City) (Province) (Postal code)

W (____) ____ - _____ H (____) ____ - _____ F (____) ____ - _____

E-mail: _____

Employer/School: _____

Position: _____

Area of Employment: _____

Nursing Registration No.: _____ Province: _____

Chapter Affiliation (if known): _____

Sponsor's Name: _____
(If applicable)

Type of membership:
Please review types of membership noted below and check one (all include applicable GST/HST):

❏ New Member—one year $75.00 ❏ New Member—two years $140.00
❏ Renewal—one year $75.00 ❏ Renewal—two years $140.00
CACCN Number _____
❏ Student Member—one year $50.00

Are you a CNA member? ❏ Yes ❏ No

Signature: _____

Date: _____

Please Note: This application is for both national and chapter membership.

Make cheque or money order payable to:
Canadian Association of Critical Care Nurses (CACCN)
Mail to: CACCN, P.O. Box 25322, London, ON N6C 6B1
Or fax with Visa/MasterCard number, expiry date to: 519-649-1458
Telephone: 519-649-5284; Fax: 519-649-1458; Toll-free: 1-866-477-9077
e-mail: caccn@caccn.ca; website: www.caccn.ca

Types of Membership

Active Member: Any registered nurse who possesses a current and valid licence or certificate in the province, territory or country in which the registered nurse practises.
Student Member: Any student in an accredited professional nursing program, who is currently not licensed as a registered/graduate nurse.
Associate Member: Any person with an interest in critical care, but who does not meet the requirements for an Active Member.

Nurses: Movers and Shapers

Celebrating 2012 National Nursing Week

Submit a photo, story or poem showing how nurses are transforming critical care and nursing!

Win Early Bird Tuition to Dynamics 2012, September 23 to 25, 2012, Vancouver, BC

Contest Deadline: May 1, 2012

Submit to: CACCN, P.O. Box # 25322, London, ON, N6C 6B1 or
By facsimile to: 519-649-1458
or by email to caccn@caccn.ca

Canadian Association of Critical Care Nurses
2012 National Nursing Week Contest
Entry Rules

- Current/active CACCN members may participate
- Only original entries will be accepted
- Photos must be accompanied by a CACCN photo consent form (visit www.caccn.ca/Media)
- Individual and/or team entries will be accepted

Entries must include the following information:

- Contact name
- Contact address
- CACCN membership number
- Contact email address
- Contact telephone number

Entries must be received by May 1, 2012 @ 2359 hrs to qualify (no exceptions)
Contest winner will be notified in writing by May 7, 2012
Winning entry receives ONE FREE early bird Dynamics 2012 Tuition (approx. value $440)
Entries may be published in CACCN publications and on our website

CANADIAN ASSOCIATION OF CRITICAL CARE NURSES

find your voice!