VOLUME 22, NUMBER 1, SPRING 2011

DYNAMICS

IN THIS ISSUE:

Journal of the Canadian Association of Critical Care Nurses

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DYNAMICS

Journal of the Canadian Association of Critical Care Nurses

Volume 22, Number 1, Spring 2011

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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 & Humanity
  - Respectful, healing and humane critical care environments
  - Combining compassion and technology to advocate and promote excellence
- Integrity & Honesty
  - Accountability and the courage to speak for our beliefs
  - Promoting open and honest relationships

Philosophy statement

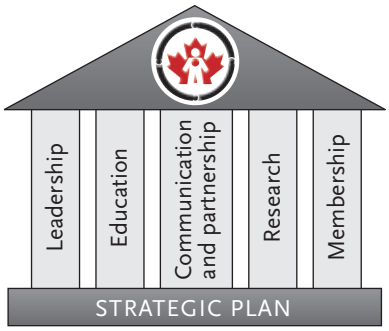
Critical care nursing is a specialty that exists to care for patients who are experiencing life-threatening health crises within a patient/family-centred model of care. Nursing the critically ill patient is continuous and intensive, aided by technology. Critical care nurses require advanced problem solving 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 all about perspective...

This spring I will be 31 years as a nurse. A pediatric nurse, in fact. And for 29 of those years it has been my privilege both as a bedside nurse and as an administrator, to serve children and families who face life-threatening illnesses or injuries. In life we wear many hats, but pediatric critical care nurse has been an identity that I have proudly held over these many years. All of us in CACCN share that identity with the same pride. You know what I mean… someone finds out you work in critical care and he/she says "Wow… that must be so hard!" Or makes the comment "It takes a special person to do that." We often don't know how to respond to this and, so, to reply to the first question we might say, "Yes it is hard." Or "Yes it is challenging, but I enjoy the work." To the second comment we may shyly shrug off the remark, almost embarrassed to say anything for fear of looking self-serving. That is normal. But I want to say now that it is time to begin to answer those questions differently. It is time that critical care nurses begin to provide the real insight on what we do "inside" the critical care units across Canada where our members work. It is time to find our voice!

As I write this column in late January, I am making a transition in my nursing career that will alter my path over the next few years of my working life, pre-retirement. As I ponder what I wish to do during this time, I am taking an inventory of my skill sets and reflecting on what I have to offer, and what I would like to do. Whatever it is, it will be my choice. It is still a little daunting to think about at this time, yet very exciting and energizing in so many other ways. It is about a new beginning. So, in starting to take inventory of my skills and to think about creating this next stage of my career, I am reflecting on ALL that I have learned, ALL that I have witnessed, ALL the ways I have responded under pressure and ALL the incredible critical care nurses I have worked with over the years, both in my own hospital, as well as those I have met across the country networked through CACCN. No matter where we work in Canada, we are connected. We do know what goes on behind the doors of the intensive care unit and we share that bond. We have an amazing amount of talent to offer, as a group and as individuals. With this knowledge and insight, I have confidence that my career transition will be an exciting opportunity for me.

The national board of directors (BOD) is very actively planning to increase the profile of critical care nurses in Canada so that our voice is sought on issues of national and local importance. We are drawing upon the skills we learned to speak on behalf of the patients and families we serve at the bedside to now speak to the media, to write for the press and to dialogue with other American and international critical care nursing associations. We are the "Voice for Excellence in Canadian Critical Care Nursing!" And we want to be heard. With this in mind, the BOD will be boldly (not shyly) speaking on issues that we know are of importance to us in the workplace. We will be speaking to the public on what we do and how we do it. We will describe what "that must be hard" looks like and, yes, we will show what "special people we are!"

Recently, I was presented with the statement "Your nurses have been described as elite at times and some people who don't work there can be intimidated by their manner." My reply: "Critical care nurses often get that criticism. I accept it in a positive way. The environment we work in demands quick thinking, courageous and bold leadership by nurses who are exceedingly knowledgeable and skilled and who are not afraid to take action and make decisions under pressure. They have to take charge on a moment's notice to do the right thing for their patient because to settle for less is unacceptable. Winning for your patient is everything in critical care when moments count to do the right thing. You would not survive in the ICU environment with a personality that is demure and risk averse. So when others see that style, I can understand why it may be intimidating to them. Elite? It does not feel like that when you are on the 'inside.' Special? Absolutely!"

Being a critical care nurse gives one perspective on what is truly important and what is not so important in life. As we work with families facing critical illness, we see what the definition of courage is every day. It changes us. I was very much reminded of this when I was saying my farewells to some of my teams and staff this month. I was feeling sad to be leaving behind those I

continued on page 6…

CACCN calendar of events

DATES TO REMEMBER!

March 1: Call for Dynamics 2012 Planning Committee members deadline

March 23–25: CACCN Board of Directors F2F Meeting, London, ON

April 30: Twin and Win deadline

April 30: Chapter Quarterly Reports (Jan.–March 2011) and Annual Reports (April 1, 2010–March 31, 2011) due in National Office

May 1: Nursing Week Contest deadline

June 1: Spacelabs Innovative Project Award deadline

June 1: BBraun 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 4: Dynamics 2011 online conference registration available

July 5: CACCN National Board of Directors—Nomination deadline. Visit **www.caccn.ca** or contact National Office for nomination packages.

July 31: Chapter Quarterly Reports (April–June 2011) due in National Office

September 1: Smiths Educational Award Application deadline

September 2: Dynamics 2011 Early Bird Conference Registration deadline

October 3: Dynamics 2011 Conference Registration deadline

October 10: CACCN Annual General Meeting Proxy Vote deadline

October 13–14: Board of Directors F2F Meeting, London, ON

October 15: Chapter Connections Day, London, ON

October 16–18: Dynamics of Critical Care 2011, London, ON

October 16: CACCN Annual General Meeting, London, ON

October 31: Chapter Quarterly Reports (July–Sept. 2011) due in National Office

November 13–16: Critical Care Canada Forum

December 31: Chapter Quarterly Reports (Oct.–Dec. 2011) due in National Office

Awards available to CACCN members

Criteria for awards available to members of the Canadian Association of Critical Care Nurses are published on page 27–32 of this issue of Dynamics.

…continued from page 5

worked with for so many years. But as I came into the emergency department an ambulance had just arrived with a nine-month old baby, CPR in progress. The child was found by a parent, pulseless after being put down for a nap. The child could not be resuscitated. I saw once again what true tragedy looks like. Perspective once again.

I am happy to report that CACCN membership numbers are slowly but steadily rising in the last seven months (June-December 2010) compared to the same timeframe last year. This is very encouraging, as there appears to be the beginning of a reversing trend of the first three months of this fiscal year (and previous years). Finally we are gaining more members than we are losing, which is a combination of finding new members and retaining previous members. But we are far from where we can and should be in representing critical care nurses across the country and that is where we need each of our current 1,131 members to find your voice! I challenge you once again to speak to one co-worker and get them to join. Be bold. Do the right thing. Take action. Find a member.

So, as the spring season is approaching, it is a time of growth and renewal in nature. For me, this is exceedingly true, as I consider my career options in critical care. For CACCN, we are also heading into a period of planned growth based on a strategic direction to increase the profile of critical care nursing in Canada and abroad. It starts with each one of you finding your voice and NEVER being afraid to speak out for the right thing and to do the right thing, whether that is for your patients and families, your colleagues or yourself. Anything less is compromise. Anything less is unacceptable. The high road is the road less travelled. CACCN is setting its GPS to travel along the high road! Stay on for the journey and pick up a hitchhiker along the way!

Take care of yourself and one another,
Kate Mahon,
President

Note: This column is particularly dedicated to the staff of PICU at the IWK Health Centre in Halifax for always doing the right thing even when the right thing is very difficult! I am proud of you.

Call for Dynamics 2012 conference planning committee members

Dynamics 2012 will be held September 23–25, 2012, at the Westin Bayshore in Vancouver, British Columbia, and will be chaired by Tricia Bray. CACCN members interested in working on the conference planning committee should submit a resume/CV and summary of conference planning experience to the CACCN National Office by **March 1, 2011.** Planning Committee selection will take place in March 2011. For further information on this exciting opportunity, please contact the CACCN National Office, PO Box 25322, London, ON N6C 6B1; **www.caccn.ca**; email: **caccn@caccn.ca**; phone: (519) 649-5284; fax: (519) 649-1458. (Planning experience is appreciated, but not a requirement for submission.)

FROM THE CLINICAL EDITOR

It is a new year and all of us on the editorial board for *Dynamics* wish you a safe, healthy and prosperous year. Watch for some exciting changes to the journal this year—beginning with this issue and its new look and the title shortened to just "*Dynamics*". We would love to hear from you and your comments about the new look.

In congruence with President Mahon's theme of "Finding Your Voice," we hope this will be the year for you to find your voice in whatever manner that may take—sharing your stories in the journal, submitting an abstract for the national fall conference, or presenting locally to your chapter. We encourage you to raise your voice and advocate the differences critical care nurses make every day across the nation.

In this issue we have one original article. Doucette and her students share the experiences of the student nurses who completed their first medical-surgical rotation in a critical care setting. They also share with us how this setting can contribute to the enrichment of future nursing education and practice. We also include our regular columns—Research Review and ISMP Canada.

Also, a reminder that we hope to produce a special issue of *Dynamics* this year on end of life in the ICU. Manuscripts are due to me by May 1, 2011. If you need assistance, please contact me or any member of the editorial review board.

P. Price, RN, PhD
Clinical Editor

Journal redesign

On behalf of the CACCN Board of Directors and Editorial Review Board, I am very pleased to present a new look for our journal, *Dynamics*.

Spring brings the promise of warmth and sunshine; it is a time of renewal and new growth, and so it seemed an appropriate time to present a refreshed *Dynamics*. It has been 11 years since the dark green cover was introduced, a change from the grey covers.

You will notice that the journal name has been simplified to *Dynamics* and each original article shows the full citation at the end of the abstract. The print type has changed and the page format has been altered to, what I hope you find, a very reader-friendly view. The colouring and format of the new look was inspired by our CACCN website.

I wish to thank Heather Coughlin and Sherri Keller from Pappin Communications for their ideas, creativity and support.

Tricia Bray
Publications Chair
CACCN National Board of Directors

Call for manuscripts

We are planning a special issue of Dynamics with the theme of "End-of-Life and Critical Care Nursing."

Please submit your manuscript to Paula Price by **May 1, 2011.**

For enquiries, please contact Paula Price at **pprice@mtroyal.ca**

Future sites of Dynamics conferences

Dynamics 2011:
October 16–18, London, ON

Dynamics 2012:
September 23–25, Vancouver, BC

Dynamics 2013:
September 19–24, Halifax, NS

Dynamics 2014:
September 20–23,
Quebec City, QC

Dynamics 2015:
TBD, Winnipeg, MB

Nursing: The Health of Our Nation
Celebrating 2011 National Nursing Week

Submit a photo, story or poem promoting "Nursing: The Health of Our Nation" and Critical Care Nursing

Win Early Bird Tuition to Dynamics 2011 October 16 to 18, 2011, London, ON

Canadian Association of Critical Care Nurses 2011 National Nursing Week Contest

Contest Deadline: May 1, 2011

Submit your entry to: CACCN, P.O. Box # 25322, London, ON, N6C 6B1 or
Fax to **519-649-1458** or email to **caccn@caccn.ca**

find your voice!

Entry Rules

- Current / Active CACCN Members may participate
- Only original entries will be accepted
- Individual and / or team entries will be accepted
- Entries must include the following information:
  - Contact name and address
  - CACCN membership number
  - Contact email address and telephone number
- Winning entry receives ONE FREE early bird Tuition (value $440)
- Entries must be received by 2359 hours on **May 1, 2011** to qualify (no exceptions)
- Contest winners will be notified in writing by May 7, 2011
- Entries may be published in CACCN publications

Critical care nursing research

Are you interested in critical care nursing research? CACCN is building a national network of critical care nurses with an interest in research. Our long-term goal is to conduct a national nursing study. Please submit your name and contact information to CACCN National Office at **caccn@caccn.ca**.

For enquiries, please contact Tricia Bray, Director, Publications and Research, at **publications@caccn.ca**

Spacelabs Innovative Project Award

We've moved the date!

In order to better serve our members with a streamlined approach to award submissions, the deadline for the Spacelabs Innovative Project Award has been moved to **June 1.** Do you have a unique idea relevant to critical care nursing? Does it impact professional development or quality improvement? Then consider the Spacelabs Innovative Project Award with its new application deadline of **June 1.**

We would like to thank Spacelabs Healthcare for their recognition of the exceptional work of the members of CACCN, through their continued sponsorship of this award.

Finding Our Voice

Did you know?

- CACCN is regularly asked for permission to adapt and reproduce information and figures from articles published in *Dynamics.*
- *CACCN Standards for Critical Care Nursing (4th edition)* can now be found on the CNA NurseONE portal.
- Critical care nurses in Ireland requested, and were granted, permission to use and adapt our standards to help develop their own document.
- CACCN Standards were a part of the curriculum revision presentation to the British Columbia government by the British Columbia Institute of Technology for their critical care certificate program.
- Copies of the standards were provided to a Nova Scotia hospital for inclusion in their orientation binder for new critical care nurses.

The CACCN develops position statements to provide summaries of CACCN views on issues pertaining to critical care nurses and their nursing practice. Critical Care Nurses from across the country participate in the creation of all position statements. CACCN position statements are reviewed at a minimum of every five years to ensure applicability to practice. The following statements were approved by the CACCN National Board of Directors on January 19, 2011. Please visit ***www.caccn.ca*** *to view all CACCN position statements.*

Canadian Association of Critical Care Nurses

POSITION STATEMENT: Providing End-of-Life Care in the Intensive Care Unit

CACCN Document: Providing End of Life Care in the Intensive Care Unit 2010. Statement date: January 19, 2011. This statement replaces CACCN Position Statement: Withholding and Withdrawing of Life Support 2001. ***Permission to reproduce statement is granted. Please acknowledge the Canadian Association of Critical Care Nurses (CACCN).*** Canadian Association of Critical Care Nurses. (2011). Position statement: Providing end-of-life care in the intensive care unit. *Dynamics, 22*(1), 9–10.

CACCN Position

Critical care nurses have an important and integral contribution to make in the provision and enhancement of end-of-life (EOL) care through their varied roles. Due to the fact that end-of-life care is emerging as a comprehensive area of expertise in ICU, these contributions can be provided through direct practice, research, education, administration and policy. EOL care demands the same level of knowledge and competence as all other areas of ICU practice (Truog, Campbell, & Curtis, 2008). CACCN endorses the Canadian Nurses Association (CNA) position statement on "Providing Nursing Care at the End of Life". End-of-life care is rooted in the CNA's Code of Ethics for Registered Nurses. The code endorses that nurses strive to foster comfort, alleviate suffering, provide adequate pain and symptom relief, and support a dignified and peaceful death.

CACCN endorses that the **following factors are essential for nursing practice** for patients who must spend their final days in the ICU environment:

- Every patient and their significant others, as defined by the patient, have a right to information about prognosis and the benefit of interventions. The term "benefit" may range along a continuum from significant, uncertain to no benefit.
- The provision of knowledge regarding prognosis and benefit of interventions allows the patient and family to make informed decisions about the suitable course of action including, when applicable, the withdrawal or withholding of life support.
- Frequent, clear, understandable, consistent and updated information must be provided as close as possible to admission and throughout the course in critical care in order to enhance mutual trust and diminish the possibility of conflict. A holistic approach to the provision of care, focused on continuity, comfort, and palliation, assists the patient and family to feel supported.

CACCN endorses that both health care institutions and provincial associations have a responsibility in directing the process of the provision of end-of-life care.

- Nurses in critical care need opportunities through education and mentoring to develop their competency in providing end-of-life care around the areas of: communications skills to advocate for patients and families, standardized approaches to pain and symptom management and seeking and providing emotional support to patients, families and members of the health care team, including the nurse.
- Health care institutions need to develop policies and procedures to support the critical care nurse in the provision of end-of-life care. These processes should be developed in conjunction with the critical care nurse, collaborative interprofessional team and organization to reflect a culture of caring and demonstrate a family-centred approach.
- Processes and clinical guidelines must be developed and implemented to prevent or resolve conflict at the family level and between the health care team and family ensuring that decisions are made in the best interest of the patient.
- On-site debriefings or counselling must be available to support the critical care nurse and the interdisciplinary team.

Background

This position statement on providing end-of-life care is based on certain ethical values and principles:

- Health care professionals ought to act in ways that promote and respect informed decision-making of the individual for whom they are providing care. This provision of care ensures the preservation of dignity and maximization of health benefits.
- Patients have a right to information about diagnosis, prognosis, and treatment options, including benefits and risks. Patients who are considered capable to make treatment decisions but are non-verbal due to ventilation or sedation require opportunities to be informed about their current health status through alternative methods of communication and sedation interruptions (when possible) to allow them to make treatment decisions including continuation of life support*.
- Patient-/family-centred care is continuous and is especially important at end of life in order to support families faced with making decisions that would reflect the patient's wishes when the patient is not able to do so.
- Discussions with the patient are essential to determine wishes about end-of-life care. If the patient lacks the capacity to make treatment decisions, discussions must then take place with the designated decision-maker(s) and/or family to ascertain if they are aware of the patient having any expressed end-of-life care wishes.
- Nurses work collaboratively with the interdisciplinary team to advocate for the implementation of the patient's wishes ensuring that the patient and family have information, knowledge and support to come to consensus about end-of-life decisions.
- When advanced care directives** are in place, every effort must be made to ensure that these directives are followed in order to respect the rights and wishes of the patient.
- The plan of care for each patient must be developed with respect to all aspects of the individual's diversity.

* Life support refers to the provision of any or all of the following: assisted ventilation, inotropic/vasopressor support, and all or any mechanism utilized to maintain and/or support the life of a patient. The decision to provide cardiopulmonary resuscitation and life support should be supported by clear organizational guidelines.

** Advanced care directives may be defined as a formal written document outlining the wishes of the patient with regard to health care.

Approved by the CACCN Board of Directors
Date: January 19, 2011

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Canadian Association of Critical Care Nurses

POSITION STATEMENT: Advanced Nursing Practice in Critical Care

CACCN Document: Advanced Nursing Practice 2010. Statement date: January 19, 2011. This statement replaces CACCN Position Statement: Critical Care Advanced Nursing Practice 2002. ***Permission to reproduce statement is granted. Please acknowledge the Canadian Association of Critical Care Nurses (CACCN).*** Canadian Association of Critical Care Nurses. (2011). Position statement: Advanced nursing practice in critical care. *Dynamics, 22*(1), 11.

The Canadian Nurses Association's (CNA) Advanced Nursing Practice National Framework (2008) identifies the demand for collaborative, innovative clinical practitioners who can serve as leaders in health care. Nurses in advanced nursing practice (ANP) roles are well positioned to respond to the changing needs of health care and, as such, the Canadian Association of Critical Care Nurses (CACCN) believes that a national definition of ANP in critical care (ANP-cc) is crucial to the continued development of these roles in Canada. CACCN's first position statement was published in 2002. The purpose of this revised statement is to continue to promote a common understanding of ANP-cc and to enhance role definition and implementation, specifically the clinical nurse specialist in critical care (CNS-cc) and nurse practitioner in critical care (NP-cc). Therefore, CACCN has continued to build on the landmark papers from CNA (2000, 2002, and 2008).

ANP-cc is an umbrella term. It describes an advanced level of nursing practice that maximizes the use of in-depth nursing knowledge and skill in meeting the complex health care needs of patients (individuals, families, groups, and communities) requiring critical care nursing. ANP-cc may occur in such settings as neonatal, pediatric, adult, medical, surgical, trauma, cardiac, and neurologic critical care units located within secondary, tertiary or quaternary level facilities.

CACCN endorses that all nurses in an ANP-cc role hold a master's or doctorate degree in nursing and have demonstrated clinical expertise in their critical care specialty. Therefore, nurses in an ANP-cc role have expertise in critical care practice such that they are able to analyze, synthesize and apply an advanced level of knowledge that is grounded in nursing theory and other theoretical foundations, as well as research, and the individual's unique experience.

Nurses in ANP-cc function both autonomously and in collaboration with patients, families and other health professionals to comprehensively manage the health care needs of a specific critical care population. The focus of ANP-cc is to manage complex situations and/or the complex needs of patients with episodes of actual or potential acute and/or life-threatening illnesses, minimize complications, restore maximal health potential, and provide holistic nursing care. Health care interventions in this setting may be restorative, rehabilitative, maintenance or palliative in nature.

Competencies related to clinical, consultation and collaboration, leadership, and research are woven into ANP-cc practice. These competencies incorporate the previously identified five interrelated domains of practice: clinical, education, research, consultation, and leadership (CACCN, 2002). The proportion of time dedicated to each competency will continuously vary depending on the setting in which nurses in ANP-cc roles are employed, the needs of the patients cared for in that setting, and the expertise of the nurse in the role. Although there are variations in the implementation of the competencies, ANP-cc practice always includes a clinical practice component. Integrated within the practice of each competency are expert skills related to communication, collaboration, and ethical decision-making, as well as effectively moving through the transition of change. Nurses in ANP-cc roles apply these competencies across three spheres of influence: the patient (and family); nursing, both the individual and the profession; and organizational systems.

Approved by the CACCN Board of Directors
Date: January 19, 2011

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Canadian Association of Critical Care Nurses

POSITION STATEMENT: Nurse Practitioner in Critical Care

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Definition

The nurse practitioner in critical care (NP-cc) is a registered nurse in an advanced nursing practice (ANP) position with a minimum of a master's in nursing and additional educational preparation from an accredited acute care or critical care NP program and who has clinical expertise in a critical care nursing subspecialty. The NP-cc has advanced knowledge, skill and training in health assessment, physiology, pathophysiology, pharmacology, diagnostic reasoning, clinical decision-making, therapeutic interventions, family nursing, and ethical decision-making. The NP-cc has the authority through an enhanced legislated scope of nursing practice to diagnose, order and interpret diagnostic tests, prescribe and perform restricted procedures (CNA, 2009).

Qualifications

- Registered nurse
- Minimum of master's degree in nursing
- Current critical care expertise
- Current appropriate life support certificate(s) (e.g., ACLS, PALS, N-ERP)
- Licensure as appropriate for jurisdiction
- CNA's specialty certification in critical care or equivalent to critical care subspecialty (recommended)

Scope of practice

The NP-cc is expected to practise in each of the following ANP core competencies: clinical, consultation and collaboration, leadership, and research (CNA, 2008). These competencies incorporate the previously identified five interrelated domains of practice: clinical, education, research, consultation and leadership (CACCN, 2002). These competencies are not separate and distinct, but are woven into the everyday functioning of the NP-cc role. The NP-cc applies these competencies across three spheres of influence: the patient (and family); nursing, both the individual and the profession; and organizational systems. Integrated within the practice of each competency are expert skills related to communication, collaboration, and ethical decision-making, as well as effectively moving through the transition of change.

The NP-cc devotes the majority of time to direct patient/family clinical care, which includes complex monitoring and therapies and high-intensity interventions within the full range of high-acuity and technologically complex care. The NP-cc integrates the skills and knowledge from nursing and medicine within a broad framework of advanced nursing practice. The NP-cc functions both autonomously and in collaboration with physicians and other health professionals to: (a) stabilize and manage, in a comprehensive manner, the complex, multisystem, life-threatening illnesses of an assigned number of acute and chronic critically ill patients (and their families); (b) minimize complications; (c) restore maximal health potential; (d) provide holistic nursing care to the patient and family; (e) implement strategies to minimize or prevent the problems for which these patients are at risk; and (f) facilitate and coordinate quality end-of-life care when curative goals cannot be achieved.

The NP-cc shares specialized knowledge with other members of the interdisciplinary team to achieve treatment goals and provide continuity of care. The NP-cc acts as a resource person, preceptor and mentor for nurses, students and other professionals. The NP-cc advances the education of nurses and clinical partners through publications and presentations. As a clinical expert within the critical care specialty, the NP-cc partners with nursing colleagues to facilitate the patients'

and/or families' learning and promote an environment that maximizes their understanding, participation, and control in their health.

The NP-cc shares specialized knowledge and provides consultation to patients, nurses, other health professionals (both internal and external to the organization), health care facilities/institutions, organizations (local, national, and international), and policy-makers. The NP-cc consults with others to improve patient care, and to deal with complex and challenging situations faced in the critical care setting.

The NP-cc enhances excellence in critical care nursing by critically appraising research findings and implementing strategies to translate them into practice to improve patient care. The NP-cc has knowledge in research methodology, identifies, conducts, and collaborates in the development of nursing and/or interdisciplinary critical care research and quality improvement projects.

The NP-cc provides professional leadership in the development of standards, policies, procedures, and outcome measures related to critical care and the development of NP-cc advanced practice. The NP-cc plans, implements, and evaluates changes in clinical practice. The NP-cc provides clinical leadership by acting as a resource, facilitator, coordinator, role model, and advocate. The NP-cc's leadership responsibilities should enhance the clinical focus of the role.

CACCN believes that time, opportunity and other supports are needed for the NP-cc to engage in the full scope of the role. The integration of the core competencies will continuously evolve depending on the critical care subspecialty in which the NP-cc is involved, that is, the predictability and complexity of the patients/families cared for by the NP-cc in the critical care setting, the needs of the nursing staff, as well as the education and experiential learning of the nurse in the NP-cc role.

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Canadian Association of Critical Care Nurses

POSITION STATEMENT
Clinical Nurse Specialist in Critical Care

CACCN Document: Clinical Nurse Specialist in Critical Care. Statement date: January 19, 2011. This statement replaces CACCN Position Statement: Critical Care Clinical Nurse Specialist 2002. ***Permission to reproduce statement is granted. Please acknowledge the Canadian Association of Critical Care Nurses (CACCN).*** Canadian Association of Critical Care Nurses. (2011). Position statement: Clinical nurse specialist in critical care. *Dynamics, 22*(1), 14–15.

Definition

The clinical nurse specialist in critical care (CNS-cc) is an advanced nursing practice role in critical care (ANP-cc) who holds a minimum of a master's degree with clinical expertise in a critical care specialty. The CNS-cc's practice is based on an in-depth knowledge of critical care nursing and other sciences gained through advanced nursing education and clinical experience. The CNS-cc influences change at the individual and system levels to impact the delivery of health care to the patient and family. The CNS-cc functions both autonomously and in collaboration with other health care professionals to manage, support, and coordinate the care of acute and chronic critically ill patients.

Qualifications

- Registered Nurse
- Minimum of master's degree in nursing
- Current critical care expertise
- Current appropriate life support certificate(s) (e.g., ACLS, PALS, N-ERP)
- CNA's specialty certification in critical care or equivalent to critical care subspecialty (recommended)

Scope of practice

The CNS-cc is expected to practise in each of the following ANP-cc core competencies (CNA, 2008): clinical, consultation and collaboration, leadership, and research. These competencies incorporate the previously identified five interrelated domains of practice: clinical, education, research, consultation and leadership (CACCN, 2002). These competencies are not separate and distinct, but are woven into the everyday functioning of the CNS-cc role. The CNS-cc applies these competencies across three spheres of influence: the patient (and family); nursing, both the individual and the profession; and organizational systems. Integrated within the practice of each competency are expert skills related to communication, collaboration, and ethical decision-making, as well as effectively moving through the transition of change.

The foundation of the CNS-cc role is grounded in advanced critical care clinical practice. The CNS-cc is prepared to assess and intervene in complex, actual or potential acute and/or life-threatening health problems within the selected critical care subspecialty. To ensure continuity of care, the CNS-cc leads and facilitates the transition of these patients and their families across the continuum of acute and critical care services, which may span a variety of settings, including, but not limited to, the critical care unit, alternate care facilities, ambulatory-care, in-patient units, emergency, and the home. The CNS-cc provides evidence-based nursing care to meet the unique needs of the acutely and critically ill patients and families through direct care, education, and consultation, as well as education and consultation to their nursing colleagues and other members of the health care team.

The CNS-cc promotes an environment conducive to learning for staff nurses, students, and other health professionals. The CNS-cc functions as a resource person, program planner, preceptor, teacher, mentor, and patient educator in collaboration with others in educator roles. The CNS-cc shares research and theoretical knowledge through publication, presentations, and educational programs.

The CNS-cc shares specialized knowledge and provides consultation to patients (and families), nurses, other health professionals, health care institutions, organizations, and policymakers. The CNS-cc consults with others both internal and external to the organization to improve patient care, and to deal with complex and challenging situations faced in the critical care setting.

The CNS-cc enhances excellence in critical care nursing research by role modelling the utilization, participation, and dissemination of research. The CNS-cc has particular responsibility for

critically appraising research findings and implementing strategies to translate research findings and theoretical frameworks into practice to improve patient care in the critical care setting.

The CNS-cc has expertise in research methodology, conducts critical care nursing research, and participates in interdisciplinary critical care research. The CNS-cc encourages nurses to identify critical care nursing research questions and to participate in nursing research.

The CNS-cc promotes quality care through the development of standards, policies, procedures, outcome measures and clinical programs and services related to their specialty area. The CNS-cc directs nursing care activities, as well as plans, implements, and evaluates changes in clinical practice, especially through engagement in quality improvement activities. The CNS-cc provides clinical leadership by acting as a resource, facilitator, coordinator, role model, and advocate.

CACCN believes that time, opportunity and other supports are needed for the CNS-cc to engage in the full scope of the role. The integration of the core competencies will continuously evolve depending on the critical care subspecialty in which the CNS-cc is involved, that is, the predictability and complexity of the patients/families, the needs of the nursing staff, as well as the education and experiential learning of the nurse in the CNS-cc role.

Approved by the CACCN Board of Directors
Date: January 19, 2011

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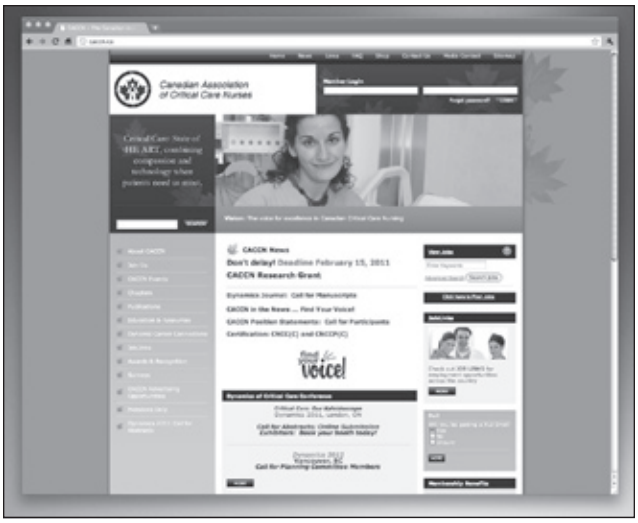

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RESEARCH REVIEW

Kirchhoff, K.T., & Kowalkowski, J.A. (2010). Current practices for withdrawal of life support in intensive care units. *American Journal of Critical Care, 19*, 532–541.

Research question or purpose

The researchers examined withdrawal of life support practices in intensive care units in the United States from the perspective of critical care nurses, including perceptions of educational preparation for withdrawal and support for nurses in this process.

Research design

Questionnaire survey design.

Setting

With the assistance of the American Association of Critical Care Nurses (AACN), a random sample of 1,000 bedside nurses from the AACN member list was obtained by the researchers. To be eligible for the study, the nurses had to work in an intensive care unit (ICU) in the United States and provide care to adult patients.

Participants

The eligible sample for the study was 981 nurses, and a total of 475 nurses responded to the survey (48.4% response rate). The respondents were predominantly female (90.8%), with a median age of 48 years, a median of 22 years of experience as a registered nurse, and a median of 18 years of experience in critical care. Respondents worked a median of 36 hours per week in various types of ICUs (32.5% in ICU/coronary care units, 29.2% in medical and/or surgical ICUs, and 21.8% in cardiovascular/cardiovascular surgery/coronary care units), with the majority working day shift (60%) in not-for-profit hospitals (73.2%).

Method

The researchers developed a 48-item (16-page) questionnaire, consisting of multiple-choice and short-answer questions. Questions explored nurses' educational preparation for and experience with withdrawal of life support, unit practices related to withdrawal, supports available to nurses, and nurses' role in family conferences. The questionnaire was pilot-tested with six ICU nurses and reviewed by survey research experts, then revised based on their feedback. Once approved by a university research ethics board, the questionnaire was mailed out to the sample of nurses with a stamped return envelope. After two weeks, a reminder postcard was mailed out, followed three weeks later by a second questionnaire, to those nurses who had not submitted a response. Frequencies and descriptive statistics were calculated using SPSS version 16.0.

Main findings

The majority of respondents (77.5%) had been involved in up to five withdrawals of life support in the year prior to the survey, with 19.7% involved in up to 15, and 2.9% in more than 15.

In terms of the process of withdrawing life support, 87.5% of respondents indicated they attended family conferences when withdrawal was discussed, and 11.3% reported they initiated the conferences. Not one respondent reported using clinical practice guidelines for withdrawal and only 17.8% indicated that a form designed for this process was used in their unit. Nurses' actions were guided by physicians' orders (63.8%), care plans (20%), and standing orders (11.8%). Respondents reported experiencing emotional (66.1%), ethical (46.4%), and procedural (34.6%) difficulties with the process of withdrawing life support. They felt most supported emotionally by other nurses (49.8% always and 38.2% usually, n=406) and pastoral/spiritual care staff (20.9% always and 29.5% usually, n=397) during withdrawal and by other nurses (43.3% always and 43.3% usually, n=416) and their own family members (25.6% always and 26.9% usually, n=391) after withdrawal. A number of respondents indicated that patients' family members provided them with emotional support during (11.3% always and 33.8% usually, n=397) and after (10.9% always and 36.5% usually, n=395) withdrawal.

With regard to educational preparation, only 3.2% (n=467) of respondents reported that they felt confident or very confident in their ability to care for patients during withdrawal after their basic nursing education (41.8% were not confident at all), while 29% (n=461) reported feeling confident or very confident after critical care orientation. When asked about content related to the withdrawal of life support, 78.7% (n=451) of respondents indicated that no courses were offered covering this process in their basic educational programs and 63.1% (n=463) indicated that they had not received any training related to this process during orientation for their work in critical care.

Conclusions

The researchers found "deficiencies in training, support, and guidance" (p. 540) for critical care nurses who care for patients as life-sustaining therapies are withdrawn. Links are made between participation in this process and burnout, particularly given the lack of preparation for and policies related to treatment withdrawal, and the authors put forward an argument for improvements in the education of nurses and standardization of procedures based on practice guidelines and evidence.

Commentary

This study is an interesting extension of the work of Karin Kirchhoff and colleagues on end-of-life care in the ICU (Beckstrand, Callister, & Kirchhoff, 2006; Kirchhoff, Palzkill, Kowalkowski, Mork, & Gretarsdottir, 2008; Kirchhoff et al., 2002). The strengths of Kirchhoff et al.'s (2008) study include the use of a small number of ICU nurses and experts in survey development to assess the questionnaire prior to sending it out and the use of a random sample of nurses. The researchers provide a solid discussion of the limitations of the study, including

concerns regarding the clarity of some questions, the length of the questionnaire, and selection bias, given that all respondents were members of AACN. One limitation not discussed is the absence of evidence of open-ended questions to enable respondents to explain some of their answers. While it is useful to learn that a high percentage of nurses reported emotional, ethical, and procedural difficulties in the withdrawal process, it is also important to understand the nature of those difficulties, information best obtained through follow-up open-ended questions. The same holds true for the data presented regarding emotional support. We learn who provides the most support to nurses in this process, but would also benefit from knowing what it is that nurses, other team members, and patients' family members do to make nurses feel supported. These data may have been collected, but it is not presented in the report.

The findings of Kirchhoff et al.'s (2008) study draw attention to concerns regarding nurses' preparation for withdrawing life support in ICUs in the United States and the guidance provided to nurses in this process. One wonders how similar or different the responses to this questionnaire might be in Canada. There have been calls in this country for more education for nurses and physicians, quality improvement initiatives, and research related to end-of-life care in the ICU (Canadian Association of Critical Care Nurses, 2001; Cook, Rocker, & Heyland, 2004; Mawdsley & Northway, 2007). Indeed, end-of-life care was chosen as an area for improvement by the Canadian ICU Collaborative for Patient Safety (Mawdsley & Northway, 2007). The Canadian Nurses Association (2008) has identified that nurses have "an important and integral contribution to make in the provision and enhancement of end-of-life care" (p. 1). The authors of this study reinforce that we (e.g., educators, members of the interdisciplinary team, administrators, researchers) have work to do to assist and support critical care nurses in the pursuit of quality end-of-life care in the ICU.

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The intensive care unit as an untapped learning resource: A student perspective

By Elaine Doucette, RN, MScN, Danielle Brandys, BScN Student, Bea Kristine Canapi, BScN Student, Allison Davis, BScN Student, Jessica DiNardo, BScN Student, and Isabelle Imamedjian, BScN Student

Abstract

The nursing student's clinical experience serves to form a bridge between the theoretical knowledge of the classroom and its application to patient care. The intensive care unit (ICU) has not traditionally been considered an ideal placement for undergraduate nursing students (Ballard & Trowbridge, 2004). However, in the fall of 2008, with a rise in enrolment, the school was faced with finding more clinical sites to accommodate our placement needs. Twelve of our students in the first semester of their second year of the baccalaureate program were challenged with meeting the objectives of our curriculum in four of the ICUs located in our partnering hospitals at the McGill University Health Centre. The successful outcome of this rotation, from both a student and a faculty perspective, was that this critical care experience facilitated a strong clinical foundation, a comprehensive view of health and illness, and a direct link between theory and practice (Hoffman, 2001).

The purpose of this article is to share the personal experiences of the student nurses who completed their first medical-surgical rotation in a critical care setting. We will also discuss how this setting can contribute to the enrichment of future nursing education and practice.

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The intensive care unit (ICU) has not traditionally been considered an ideal placement for undergraduate nursing students (Ballard & Trowbridge, 2004). However, some nurse authors strongly support placing students in a critical care environment during the early stages of their clinical education (Cochrane, Heron, & Lawlor, 2008; Swinny & Brady, 2010). This unique experience has been shown to strengthen the link between theory and practice in a challenging environment. It can provide ample opportunity to observe and perform a variety of skills, and the one-on-one mentoring facilitates a supportive learning environment. It has also been shown to reinforce the knowledge and skills of staff by giving them the opportunity to verbalize and share their knowledge while demonstrating care and skills to a patient and family. Ultimately, it becomes a win-win situation, where the student benefits from the new learning opportunities, and the role of mentor allows the staff to showcase their expertise. Finally, in our current environment of nursing shortages, it can certainly enhance recruitment to this specialty care area after graduation (Swinny & Brady, 2010).

The purpose of this article is to share the students' journey and progression through their first medical-surgical clinical placement—the ICU and, subsequently, to discuss why we believe this experience can contribute to the enrichment of future nursing education and practice.

Students in the ICU were exposed to a multitude of beneficial learning opportunities. From the beginning, each worked with a nursing preceptor. This gave access to the thinking and decision-making processes of the critical care nurse. In addition, the constant presence of a mentor enhanced the acquisition of many technical skills.

The ICU setting also provided exposure to multisystem health issues, demonstrating the complex interactions of the human body. This direct application of in-depth physiology promoted their ability to provide holistic patient care. High acuity ICU cases pushed them to meet the demands of critically-ill patients and their families. In addition to challenging their knowledge of physiology, working with families in their most vulnerable states enriched their therapeutic skills, inspiring greater insight into a humanistic approach to caring for the critically ill (Ballard & Trowbridge, 2004).

These critical care areas also exposed the students to a wealth of knowledge and experience by allowing them to work within a multidisciplinary care team. Drawing from the expertise of specialists such as critical care nurses, physicians, respiratory therapists, dietitians, pharmacists, and occupational and physical therapists, learning was enhanced beyond the scope of basic nursing tasks. Participation in multidisciplinary rounds further increased confidence as patient advocates and set a precedent of interdisciplinary respect and teamwork (Cochrane et al., 2008).

Clinical rotation description

Several variables in the health care environment are currently limiting the availability of clinical placements. These include competition among universities and colleges for settings, increased enrolment, staffing shortages and bed closures, and heavy workloads on medical-surgical units. This situation prompted the McGill University School of Nursing to approach the critical care settings as potential placement sites for their students.

The clinical rotation consisted of 13 weeks, with two days per week spent in the ICU. A total of 12 second-year baccalaureate students were placed in four different critical care sites for their first medical-surgical rotation. A clinical instructor was present in each setting to guide students through their experience. Every clinical day, the instructor paired each student with a nurse preceptor. The day ended with a post-clinical conference, where all of the students met with their clinical instructors to debrief on the day's events. Students were also expected to write a weekly, literature-based, clinical case study about a patient/family experience that they were directly involved with, along with personal reflections on their practice.

The McGill Model of Nursing

Despite having differences in client populations, students found they were united by their theoretical foundation in the McGill Model of Nursing. This model consists of several concepts that provide a framework for practice. At this point in their education, the students' hospital experience was limited to a six-week rotation in maternal-child care. Thus, students relied heavily on this framework's unique approach to guide their nursing practice. For instance, students entered the clinical rotation with the perspective that health and illness are not two distinct entities, but rather, the two coexist. Despite the high acuity of the critically ill patients, students stated that they were perpetually mindful of the fact that health exists in illness, even when the circumstances seemed discouraging (Gottlieb & Feeley, 2000).

During the critical care rotations, students identified three other main concepts from the McGill Model that became extremely influential in their nursing practice. One of these, situation responsive nursing, is an approach that requires the nurse to respond to each patient's individual concerns, recognizing that every patient and every clinical situation requires a tailored approach (Kravitz & Frey, 1989). Another concept from the McGill Model stresses that the client should be viewed in his or her unique context, taking into account the interactions between the client and his or her environment. This places a particular weight on the importance of the family, and necessitates that nurses take a family-centred approach to care (Gottlieb & Gottlieb, 2007). In accordance with this approach to nursing, a final concept from the McGill Model states that nurses should collaborate with clients and families in order to develop goals that are valued by both the health care team and the client/family (Gottlieb & Feeley, 2000).

The ICU Experience

Students described several common themes relating to their ICU experience once they were immersed in the clinical setting. They were struck by the constant application of the theoretical knowledge learned in the classroom, the myriad of opportunities to practise and master technical skills, the great opportunity to be incorporated into a diverse and highly skilled inter-professional team, and the constant challenge to offer psychosocial support to clients and families during periods of acute distress. These themes will be explored.

Application of theoretical knowledge. As university students in a demanding science program, it was not uncommon for them to be overwhelmed by all the formulas and theories taught in courses such as microbiology, physiology, pharmacology, pathology and more. After completing a 13-week clinical rotation in the ICU, the students found the critical care environment facilitated the application of classroom knowledge. These critical care settings also provided constant exposure to a wide variety of high-acuity cases, where critical thinking and thorough analysis of the patient's physiological status was not only encouraged, it was the standard.

The concept of using the ICU as a learning environment is reinforced by the basic principles of adult learning theories. These theories suggest that the adult learner is best facilitated when he or she is self-directed, and there is immediate value and application of the new knowledge (Knowles, Holton & Swanson, 1998). Thus, the ICU provided a perfect learning environment, as students were able to go beyond their textbooks and draw on personal experience in the immediate application of the knowledge they received in the classroom. One student reflected on her semester with an experience from the Neonatal Intensive Care Unit:

> *While I was doing my head-to-toe assessment with my nurse preceptor, our patient began to have arrhythmias. My nurse preceptor acted instantly by drawing blood electrolytes that showed elevated levels of serum potassium. As the arrhythmias worsened and the infant began to go into ventricular tachycardia, calcium gluconate was administered. Later in the semester, while taking my pharmacology midterm, I had no problems remembering the connection between potassium and the heart's electrical system.*

Cochrane et al. (2008) validate these reflections:

> *Recognizing when a child is critically ill, and the changes that occur during deterioration, can be learned in the lecture theatre, but these facts are brought to stark reality in clinical practice. This first hand experience is unforgettable; the knowledge can be transferred to any other setting and may be life-saving if it aids early recognition of a problem (p. 26).*

One student also confirmed this idea: "*What better place is there to explore human physiology and the complexity of illness than in an ICU setting?*" The patients' critical states often resulted from multi-system complications. This helped the students understand the relationships between various body systems and to appreciate human physiology, pathology, and pharmacology beyond what was taught in the classroom.

Historically, the critical care nurse delivers patient care in a way that is unique to the critical care setting. Rather than being assigned four or more patients, the critical care nurse provides

care to one or two patients. This allows nursing students time for in-depth analysis of their patient's emotional and physical condition. The students stated that they felt less pressure to master technical skills immediately. This also allowed them to collaborate with their nurse preceptor, while focusing their efforts in exploring the complex multi-system cases they encountered. Approaching each patient in this manner provided a daily review of classroom knowledge, as well as allowing students to link information from different disciplines into a complete understanding of body-systems interactions. In the words of one student: "*It was extremely empowering to be exposed to so much information, and to be able to witness and be involved in the different aspects of illnesses and procedures that are unique to this setting*".

Mastery of technical skills. One of the most striking realities for students in the ICU is facing the multitude of new machinery and technology (Cochrane et al., 2008). ICUs rely on the technological support of ventilators, multiple IV pumps, cardiac monitors, dialysis machines, tracheostomies, and more. The critical care setting also requires the nurse to perform daily head-to-toe assessments, blood procurement, monitoring of vital signs, dressing changes, tracheostomy care, cardiac monitoring, et cetera. Consequently, it is not surprising that students may feel overwhelmed when initially faced with the equipment and skills encountered in the ICUs.

Cochrane et al. (2008) state that critical care nursing aims to maintain focus on the patient, rather than being distracted by the amount of technological equipment. Overall, students felt that the vast array of nursing interventions in the ICU provided them with numerous opportunities to perform technical skills, which allowed them to overcome the anxiety related to skill acquisition and to gain a broader view of their patient's health situation. One student stated: "*I realized by the end of my ICU rotation that I was able to do a dressing change, talk to the family of my patient, and make accurate assessments all at the same time*". Indeed, once comfort with new technology and skills was attained, students were better able to see and care for their patients and families in a holistic way. The student continued by saying:

> *Due to the high acuity of ICU patients, I had many opportunities to practise such skills. For example, many of my patients required blood work every hour, giving me plenty of opportunities to gain confidence in my skills. Gaining confidence in technical skills allowed me to focus on the other aspects of nursing, such as time management and emotional support of the patient and family.*

Inter-professional teamwork. As patient care requires a holistic approach, effective teamwork can have a significant impact on patient well-being. For instance, studies have shown that patient rounds with multidisciplinary teams often result in decision-making that welcomes input from all members of the team (Jain, Belt, King, & Berwick, 2006). This approach to rounds has also been shown to decrease the number of adverse events, while improving overall patient outcomes (Jain et al., 2006). In fact, multidisciplinary rounds are standard practice across the critical care settings of the McGill University Health Centre.

Students stated that during their ICU clinical rotations, one of the most valuable lessons stemmed from the opportunity to collaborate with, and to learn from the expertise and input of the various members of the health care team. This included critical care nurses, physicians, respiratory therapists, physical therapists, occupational therapists, pharmacists, dietitians, social workers, pastoral services, as well as other professionals who were consulted. The following quote illustrates a student's perspective on the interdisciplinary approach to care: "*One of the things that struck me the most about the pediatric ICU was the overwhelming sense of being part of a kind of family, bound together by the unique experience of caring for critically ill children and their families.*" Thus, being placed in this environment fostered a greater appreciation within the students of the importance of the nurse's role as the hub of the interdisciplinary team.

Psychosocial support. Chan (2002) stated that supportive, non-judgemental clinical environments are essential for providing the required learning atmosphere and for facilitating an overall positive experience for students. Nursing graduates specifically recommended that students seek a supportive environment when choosing an undergraduate clinical placement to maximize their learning experience in the clinical setting (Hartigan-Rogers, Amirault, Cobbett, & Muise-Davis, 2007).

Students in the ICU setting felt the additional pressure to excel, and were also anxious about this high-acuity placement due to their lack of previous experience. Instructors and preceptors were supportive and eased this stress by being open to questions and allowing a period of observation when learning new skills. One student said: "*Our instructor was open and responsive to our concerns. She encouraged us to talk to her, provided reassurance when needed, and worked with us to find ways around our issues*". Henderson, Twentyman, Heel, and Lloyd (2006) found that "the main components of the more successful clinical placement models appear to relate to staff consistency and the establishment of relationships" (p. 569). Consequently, it was seen that students who perceived their clinical learning as positive, and experienced supportive relationships in their placements, often returned to practice in that area after graduation (Edwards, Smith, Courtney, Finlayson, & Chapman, 2004).

In addition to receiving psychosocial support from clinical instructors, preceptors and staff, students also found support and strength among themselves. This came from their common experiences in caring for the critically ill in their first medical-surgical placement. Drawing from each other's strengths allowed them to provide much-needed support to patients and families. This was demonstrated in the following quote from a student placed in the neonatal ICU: "*Being at the bedside of a dying newborn baby, and being able to support the family is something I never thought I would be able to do. It's something we would never be able to learn from a textbook or in the classroom.*"

Coping with challenges. Being placed in an ICU for a first medical-surgical rotation prompted many emotions. Witnessing families in distress, patients receiving devastating diagnoses, as well as participating in cardiac arrests, dealing with ethical dilemmas, and withdrawing and withholding treatment are all difficult situations that commonly occur in an ICU setting. In

particular, students unanimously expressed that encountering death in their practice for the very first time was a jarring, yet defining experience. An example of such a challenging situation was described by one student:

> *I remember attending a family meeting where the decision was made to stop my patient's life-sustaining Levophed. I watched his blood pressure slowly drop and he died two days later. This was really challenging because it was so engrained in my mind that we were supposed to save lives no matter what, and there I was, watching my patient die.*

It was helpful to be exposed to distressing situations, as students, rather than to fear experiencing them for the first time as staff nurses. One student stated:

> *As difficult as it was for me, as a student, to be a part of these moments, I found that the opportunity to do it while I still had the support of a preceptor and a clinical instructor was extremely valuable, and will set me up to cope with difficult situations as an independent nurse in the future.*

As such, students placed in the ICU setting shared the belief that the stress of various difficult situations enriched their learning. In fact, experiencing and subsequently overcoming challenges filled the students with a sense of satisfaction that motivated them to succeed:

> *One of the biggest challenges I faced during the semester was witnessing a family grieve as a 23-year-old girl, a girl my own age, was being taken off a ventilator due to irreversible brain injuries she sustained in a car crash. The family's suffering was so intense, it was palpable. I carried some of this suffering home with me. But my fellow nursing students and my instructor supported me and encouraged me to talk about the experience. Although I am pretty sure that this part of nursing will never get any easier, I now know that I have the strength to cope with the tragedies I will inevitably face.*

These hardships contributed to a more holistic understanding of nursing practice. Another student stated:

> *Confronting these challenges has helped me to develop my own passion for nursing. As I have come to realize, the reason that we all love nursing so much is the knowledge that today, maybe, I helped make a family's, or patient's, or best friend's worse day a little less scary or a little less hard.*

In retrospect, the students shared feelings of anxiety and apprehension prior to commencing their ICU rotations, but all were equally grateful for the experience; one student even called it "*the best learning experience I have ever had as a nursing student*".

Despite often feeling stressed and overwhelmed, students found ways to cope with the great psychological and physical challenges of intensive care nursing. Strategies that minimized the negative impact of challenging situations included debriefing sessions after each clinical day, writing weekly case studies, observation periods with the preceptor prior to participating in patient care, and a non-judgemental attitude adopted by clinical instructors and preceptors. In fact, Cochrane et al. (2008) maintained that "the support of others and opportunities to talk can help put any emotions that arise as a result of painful experiences in perspective" (p. 27).

Implications for future practice

The authors believe that the ICU environment is suitable for nursing students at any level of their education, even as a first medical-surgical rotation. However, as with any clinical placement, it is essential to determine whether a nursing student is compatible with an ICU placement. These individuals and their clinical preceptors felt that displaying the characteristics of maturity, independence, self-motivation, and the readiness to take on a challenging rotation, helped them to embrace this critical care rotation as an opportunity to better themselves and to increase their learning, despite the stressful demand of this high tech and fast paced environment.

Furthermore, most students reported that feeling overwhelmed was a significant challenge in their ICU experience, and that additional preparation prior to the rotation would have been beneficial in reducing anxiety related to this steep learning curve. This may have involved activities such as introducing students to ICU equipment and technology, or a presentation to acquaint them with common clinical cases that they can be expected to encounter in the setting. Also, the formation of peer support groups between students in ICU settings could be valuable, as it would provide a non-intimidating environment for students to openly discuss their experiences.

Finally, ensuring continuity with the same nurse preceptor not only allowed the students to form a trusting relationship with their nurse preceptors, but also it enhanced learning by providing ample opportunity to evaluate student progress.

Conclusion

The insight and experience students gained into the critical care nursing process positively influenced subsequent clinical experiences and nursing education. Students found that the clinical experience in the ICU increased their confidence to handle future situations. Furthermore, the skills and knowledge gained in these critical care settings were valuable and transferable to other settings, such as medical-surgical floors, psychiatry and community health placements.

Guided by the McGill Model of Nursing, students were provided with a broader perspective on the spectrum of illness when faced with the challenge of promoting health in a setting where illness is notoriously complex. This unique opportunity to apply the concepts of this model in a high-acuity setting enhanced their understanding of the all-too-delicate balance of health and its counterpart.

The writers strongly believe that critical care clinical placements can be pivotal in helping to shape the knowledge and skills of future nursing students and, in doing so, serve as an essential step in the current pursuit to redefine a higher standard of care and higher expectations of all those in the nursing profession.

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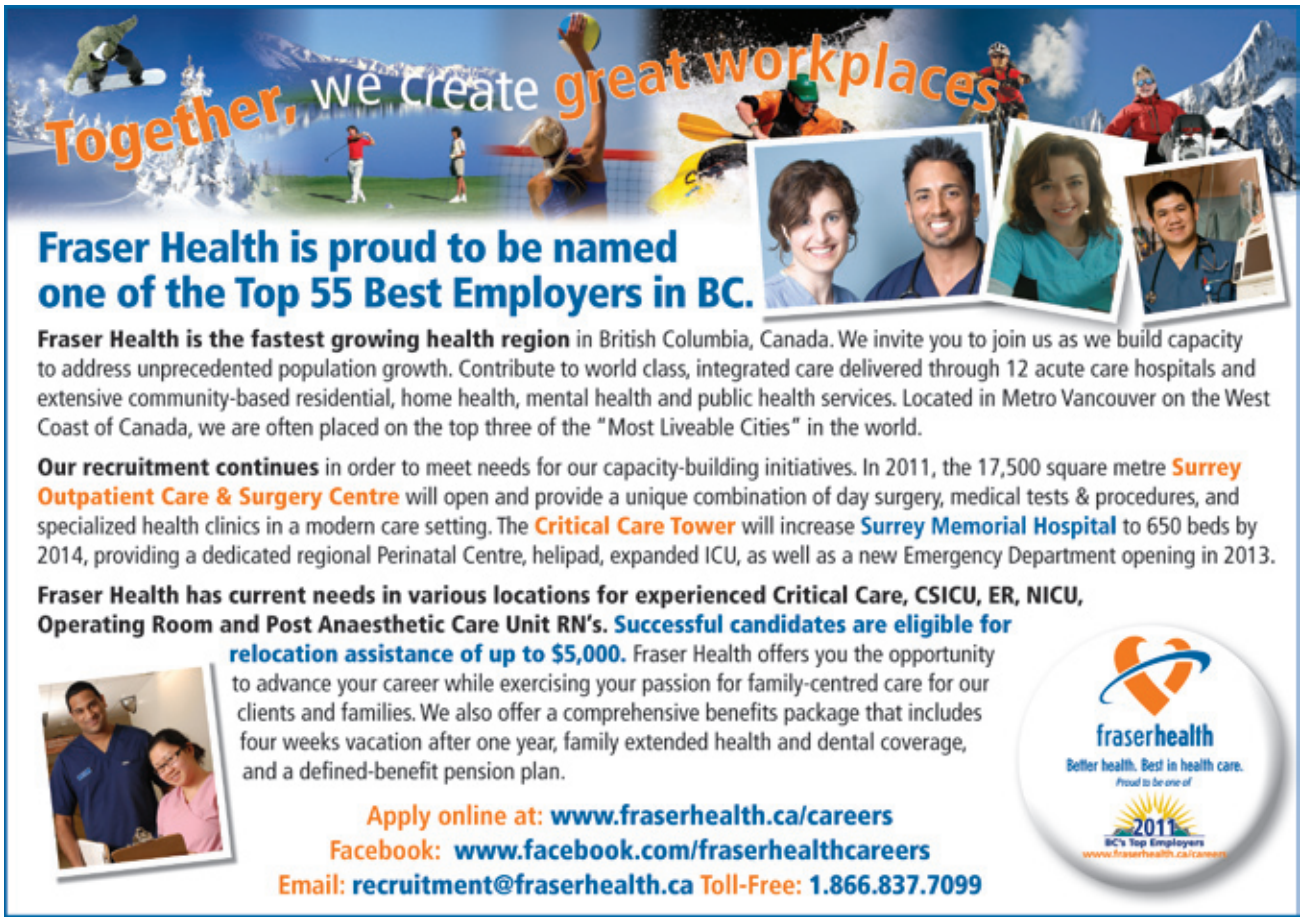

ALERT: Mix-ups between conventional and lipid formulations of amphotericin B can be extremely dangerous

By Christine Koczmara, RN, BSc, Heather Richardson, RN, BScN, MSN, Sylvia Hyland, BScPhm, MHSc (Bioethics), Carol S.Y. Lee, CHIM, and Nicky Hillebrand, BPharm (Hons)

Abstract

In this column, the authors review Amphotericin B incidents reported to ISMP Canada. In particular, we focus on incidents reported to have resulted in patient harm due to mix-ups between the conventional (non-lipid) formulation and lipid formulations of amphotericin B. Although amphotericin B may be less commonly used today because of alternative antifungal agents available, incident reports suggest there continues to be a need to alert practitioners to the different formulations, and to implement system safety strategies.

Koczmara, C., Richardson, H., Hyland, S., Lee, C.S.Y., & Hillebrand, N. (2011). ALERT: Mix-ups between conventional and lipid formulations of amphotericin B can be extremely dangerous. *Dynamics, 22*(1), 24–26.

An *ISMP Canada Safety Bulletin* was published in 2002 about two incidents where patients received conventional (non-lipid) amphotericin B desoxycholate (Fungizone®) IV, instead of the intended lipid formulation amphotericin B product (Abelcet® and AmBisome®). The safety bulletin highlighted information about such mix-ups, and included information about deaths that had been reported in the United States (ISMP Canada, 2002). Since then, there have been other similar errors reported internationally (Groeneveld, Verweij, Hek, Bökkerink, & Warris, 2008; Mohr, Hall, Ericsson & Ostrosky-Zeichner, 2005) including two fatal cases in the United Kingdom, where non-lipid amphotericin B was ordered and administered, but at doses calculated using lipid-based amphotericin B dosing guidelines (NPSA, 2007). An overview of the learning from a review of the ISMP Canada incident database involving amphotericin errors is shared here. Learning from an incident report recently received from the critical care setting is also shared, along with system improvement opportunities.

Intravenous amphotericin is currently marketed in Canada as conventional (non-lipid) amphotericin B (Fungizone®) and as lipid formulations (AmBisome®—a liposomal formulation, and Abelcet®—a lipid complex formulation). ISMP Canada has received a total of 41 voluntary reports of incidents involving intravenous (IV) formulations of amphotericin B over a period of almost 10 years (January 2001 to November 2010 inclusive); reports include those received from the intensive care unit (ICU) setting. Of the 41 incident reports received, 22% (n=9) were reported to have resulted in patient harm. The majority of these harmful incidents (n=5) involved mix-ups between conventional (non-lipid) amphotericin B and lipid formulations of amphotericin B. (The other four incidents reported with an outcome of harm were: two incidents in which the amphotericin B doses were administered too quickly IV, one incident in which the amphotericin B was administered at the wrong frequency, and one incident in which the first dose was inadvertently omitted in a patient diagnosed with cryptococcal meningitis.) In four of the five incidents involving mix-ups between the conventional and lipid formulations, conventional (non-lipid) amphotericin B was administered when the lipid formulation was intended; (the remaining incident lacked the detail needed to determine the mix-up type). Although it is impossible to infer or project the probability of specific incidents on the basis of the voluntary reports received by ISMP Canada, the information available can be used to identify issues that may require additional investigation or attention.

Information from an incident recently reported is shared:

> *An ICU patient weighing approximately 60 kg was receiving 300 mg IV daily of lipid complex amphotericin B (Abelcet®). After seven days of therapy, a specialist reviewed the patient's treatment and suggested that the amphotericin B be continued (i.e., 'continue amphotericin B'). After approval by the most responsible physician, a copy of the order was inadvertently not sent to pharmacy. For the next two days, nurses caring for the patient retrieved a supply of the conventional (non-lipid) formulation of amphotericin B (Fungizone®) from an automated dispensing cabinet (ADC) and administered 300 mg IV daily. During administration of the Fungizone®, the patient suffered episodes of hypotension requiring treatment. On the third day, the error was identified when the ADCs in the ICU required replenishment of amphotericin B (Fungizone®). The amphotericin B was put on hold and the patient's renal function was monitored closely. The patient experienced acute renal failure, which, fortunately, resolved over time.*

The guidelines for conventional (non-lipid) amphotericin B note that the dose **should never exceed 1.5 mg/kg/day** (Bristol-Myers Squibb Canada, 2009). Doses of the lipid formulations of amphotericin B are higher, but vary among products and indication. For example, the usual dose for the lipid complex Abelcet® is 5 mg/kg/day (Sigma-Tau Pharmaceuticals, 2010) and the usual dose for liposomal AmBisome® is 3 to 6 mg/kg/

day (Astellas Pharma Canada, 2009). [Refer to the drug-specific drug product monographs for more information (Astellas Pharma Canada, 2009; Bristol-Myers Squibb Canada, 2009; Sigma-Tau Pharmaceuticals, 2010).] The inadvertent administration of conventional non-lipid amphotericin B at the higher dose intended for a lipid-based formulation can lead to permanent renal damage and also to potentially fatal cardiac or cardio-respiratory arrest (Bristol-Myers Squibb Canada, 2009).

> Amphotericin B (Fungizone®)—conventional (non-lipid) formulation:
>
> *"Under no circumstances should a total daily dose of 1.5 mg/kg be exceeded. Amphotericin B overdoses can result in potentially fatal cardiac or cardio-respiratory arrest." (Bristol-Myers Squibb Canada, 2009, p. 7).*

A number of potential contributing factors to the incident highlighted above were identified by the facility, including:

- Similar names of the two products: amphotericin B and lipid complex amphotericin B.
- The suggested order to continue therapy with lipid complex amphotericin B was incomplete.
- A copy of the new order was inadvertently *not* sent to the pharmacy.
- Six vials, each containing 50 mg of conventional non-lipid amphotericin B (Fungizone®), were available in each of the two ADCs in the ICU.

In an effort to prevent a similar mix-up from recurring, the pharmacy now places only one vial of non-lipid amphotericin B (Fungizone®) in each ADC in the ICU—a maximum of 100 mg or two vials in total. A warning also appears that requires confirmation that the non-lipid amphotericin B is the correct medication.

The following are suggested strategies that can be used by nurses, as well as physicians and pharmacists in an effort to prevent mix-ups between the conventional (non-lipid) and lipid-based formulations of amphotericin B:

- When writing orders or communicating order information, use additional identifiers and both the **complete generic name** and the **brand name:** amphotericin B (Fungizone®) **or** liposomal amphotericin B (AmBisome®) **or** lipid complex amphotericin B (Abelcet®). For Fungizone®, ideally additional descriptors such as "conventional" or "regular" should also be added to the generic name (ISMP, 2007; ISMP Canada, 2002).
- When re-ordering, rewrite the full order, including the **brand name** and **dose**. "Continue amphotericin B" should be considered an incomplete order (ISMP Canada, 2002).
- Ensure that the Medication Administration Record (MAR) includes both the complete generic name and the brand name (Cohen, 2007; ISMP, 2007; ISMP Canada, 2002).
- Ensure that both the generic name and brand name appear in computerized order entry systems for prescribers and in pharmacy. Computer systems, when optimized, can provide critical medication system safeguards, including prevention of an excessive dose (ISMP Canada, 2002). (It may be of interest to note that a commentary submitted by an ICU pharmacist and published in the *British Medical Journal* highlights a reduction in the number of amphotericin formulation mix-ups from several per year to none after several changes were implemented; one of these changes was the inclusion of the brand name in the computerized prescriber order entry system [Badman, 2007].)
- Add warning statements (or warning screens) describing the risk for error, and add maximum dose "flags" to computerized medication order entry systems (ISMP, 1998; ISMP, 2007; ISMP Canada, 2002).
- Amphotericin B products are best restricted to preparation, labelling, and dispensing by pharmacy, where there are built-in checking processes (ISMP Canada, 2002). All labels used in dispensing should include both the generic and brand name (ISMP Canada, 2002).
- The storage of amphotericin B products in patient care areas and automated dispensing cabinets (ADCs) is discouraged (ISMP, 2007; ISMP Canada, 2002). However, it is recognized that an antifungal agent such as amphotericin B may need to be made available to areas such as critical care for urgent after-hours situations and where an on-call pharmacist is not readily available. Related risks with storage, however, must be minimized and may include:
  - Establishing a maximum quantity to be available.
  - Inclusion of the complete generic name and brand name on selection screen.
  - Ensuring a warning appears on the ADC about the error potential between amphotericin B and amphotericin B lipid formulations.
  - Establishing a requirement for an independent double-check for use of the override function for automated dispensing cabinets (e.g., if order cannot be double-checked by a pharmacist and, thus, cannot be profiled for the patient) (ISMP Canada, 2007).
  - Ensuring that overrides occurring with medications such as amphotericin B are reviewed by a pharmacist as soon as possible (ISMP Canada, 2007).

  Similar considerations are also applicable to storage and access of amphotericin B from an "after-hours supply" or a "night cupboard".
- The storage of different amphotericin products in pharmacies needs to be well differentiated. Consider the use of cautionary labels or another mechanism (e.g., warning sign) to remind staff about the differences between the products (ISMP, 2007; ISMP Canada, 2002).
- Add a prominent warning statement to any intravenous manuals, drug charts, or other documents produced by the hospital, specifically describing the potential for error-induced injury with amphotericin B products. (ISMP Canada, 2002; ISMP, 2007). One example of such a warning is the boxed warning found in the product monograph for conventional amphotericin B (Fungizone®) (Bristol-Myers Squibb Canada, 2009).
- Ensure that drug information is easily and readily accessible for all practitioners (ISMP, 2007; ISMP Canada, 2002). Consider preparing an information document to be placed in the patient's chart when amphotericin B is dispensed.
- Verify and double-check the dose prior to prescribing/dispensing/administering amphotericin B, especially if you are unfamiliar with the drug or its dosing (Cohen, 2007; ISMP, 2007; ISMP Canada, 2002).

- If staff, patients or family members notice a change in the solution's appearance, stop and verify that the correct drug is being used. Lipid-based products may be seen as having a "milky" amber colour, rather than the clear amber-coloured solution of the conventional product. In one of the cases described by ISMP (U.S.), the patient's spouse raised concerns on noticing that the colour of the IV solution (Fungizone®) was darker than what had previously been administered, that is, the lipid-based solution (Cohen, 2007; ISMP, 1998; ISMP Canada, 2002).
- Share this information widely in an effort to raise awareness about the availability of different formulations of amphotericin B and that these products require different dosing and are *NOT* interchangeable. It is especially important that any staff required to handle amphotericin be familiar with the various formulations that are available (Cohen, 2007).

It is hoped that this article raises awareness among critical care practitioners about the potential for serious patient harm if a mix-up occurs between conventional and lipid formulations of amphotericin B, and the need for system safeguards.

Acknowledgement

This article was written using materials from ISMP Canada, with permission.

ISMP Canada gratefully acknowledges the valuable lessons learned and information reported by professionals in the Canadian health care community that can then be shared to enhance medication system safety. All ISMP Canada Safety bulletins are available from **http://www.ismp-canada.org/ISMPCSafetyBulletins.htm**

ISMP Canada is an independent national not-for-profit organization committed to the advancement of medication safety in all health care settings. ISMP Canada maintains a national voluntary medication incident and 'near miss' reporting program founded for the purpose of sharing the learning experiences from medication errors. Our collaborative goal is implementation of preventive strategies and system safeguards to decrease the risk for error-induced injury.

ISMP Canada is a key partner in the Canadian Medication Incident Reporting and Prevention System (CMIRPS). Medication Incidents (including near misses) can be reported to ISMP Canada: (i) through the website http://www.ismp-canada.org/err_report.htm or (ii) by phone: 416-733-3131 or toll free: 1-866-544-7672.

ISMP Canada guarantees confidentiality and security of information received, and respects the wishes of the reporter as to the level of detail to be included in publications.

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AWARD INFORMATION

CACCN Chapter of the Year Award Program

Award value: $500.00 plus a plaque

Deadline: There is no application process, rather the award program will be for the period of April 1–March 31 each year.

Purpose: The Chapter of the Year Award is to recognize the effort, contributions and dedication of a chapter of CACCN in carrying out the purposes and goals of the association.

Criteria for the award program:

1. Chapters may win the award for one year followed by a two-year lapse before entering again
2. A point system has been developed to evaluate chapter activities during the year. The chapter with the most points will be the winner of the Chapter of the Year Award. CACCN reserves the right to adjust points depending upon supporting materials submitted
3. The award winner will be announced at Chapter Connections Day and at the annual awards ceremony at Dynamics.

Conditions for the award program:

All chapters of CACCN are eligible to participate provided they have on file at national office all of their financial (quarterly) and activity (annual) reports required for the qualifying period. Chapter website must be current. If the above conditions are not met, the entry will be disqualified.

Announcement of the winner will be published in CACCN publications.

Categories and their corresponding points that will be used to determine the winning chapter are as follows:

1. Any educational programs that occurred during the fiscal year.
   Programs between:
   1–3 hours.....25 points each
   3–8 hours.....50 points each
   > 8 hours 100 points each

2. A list of new members recruited during the fiscal year, including national CACCN membership numbers. Calculate your points based on the percentage of new members recruited as compared to the total membership of the previous fiscal year (prior to the qualifying period).
   1–10%.....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

3. Evidence of chapter members who have contributed articles to either the chapter newsletter, or had a paper published in **Dynamics.**
   25 points for each article/paper

4. Projects that provide public education, community service and/or promote the image of critical care nursing. 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). Validation must be provided that the event was a CACCN-sponsored project by, for example, submitting a letter from the receiving group or a picture of the event, etc.
   50 points for each project

In the case of a tie, CACCN reserves the right to determine the winner. Good luck in your endeavours!

Sorin Group sponsors this award

CACCN Research Grant

Award value: $2,500.00

Deadline for submission: February 15 of each year.

Grant available: A CACCN research grant has been established to provide funds to support the research activities of a CACCN member that are 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.

Eligibility:

The principal investigator 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 findings in **Dynamics.**

CACCN members enrolled in graduate nursing programs may also apply. Members of the CACCN board of directors and the awards committee are not eligible.

Application requirements:

- A completed application form
- A grant proposal not in excess of five pages exclusive of appendices. Appendices should be limited to essential information, e.g., consent form, instruments and budget
- A letter of support from the sponsoring agency (hospital, clinical program) or thesis chairperson/adviser (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 the CNA publication **Ethical Guidelines for Nursing Research Involving Human Subjects**
- 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 is to be included
- Proof of CACCN active membership.

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:
- A research review committee will review each proposal. 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
- Deadline for receipt of application in CACCN national office is February 15. The recipient of the research grant will be notified by mail.

Terms and conditions of the award:
- The research award 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
- An article related to the research study is to be submitted to **Dynamics** for publication.

Editorial Awards

Edwards

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

Award value: $ 1,500.00 (Total)

Deadline: June 1.

The award funds of $1,500.00 will be granted annually:

- $1,000.00 will be granted to the Award winner and $500.00 for the runner up.

Do you have a unique idea?

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.

The primary contact person for the project must be an active member of CACCN (for at least one year).

If the applicant(s) are previous winners of this award, there must be a one-year lapse before submitting again.

Applications will be judged according to the following criteria:

1. the number of nurses who will benefit from the project
2. the uniqueness of the project
3. the relevance to critical care nursing
4. consistency with current research/evidence
5. ethics
6. feasibility
7. timeliness
8. impact on quality improvement.

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

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 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.

Chapter Recruitment and Retention Award

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 value: $1,000.00

Deadline for nominations: 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.

Criteria:

- Nominee must be a CACCN member
- 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)
- Members of the CACCN board of directors are not eligible.

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 and 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 awards committee reserves the right to withhold the award if no candidate meets the criteria
- The funds may be used to attend educational programs or conferences related to critical care.

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.*

Revised March 24, 2010
Board of Directors

The Brenda Morgan Leadership Excellence Award

Award value: $1,000.00

Deadline: June 1 of each year

The Brenda Morgan Excellence 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 is the first recipient. 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.

This 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.

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:

a) Have demonstrated a leadership role or have held a key leadership position in an organization related to the specialty of critical care
b) Demonstrated volunteerism and significant commitment to CACCN, i.e., have participated in CACCN activities at local or national levels (been a member of provincial executive or national board of directors, 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
c) Have been a member of CACCN for a minimum of five years
d) Have a minimum of five years of critical care nursing experience
e) Be registered to practise nursing in Canada
f) 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)
g) Consistently conducts themselves in a leadership manner
h) Have effectively engaged others in the specialty of critical care nursing
i) Have role-modelled commitment to professional self-development and lifelong learning
j) Have inspired and mentored others to contribute to critical care nursing
k) 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
   - committed/passionate/dedicated/motivator
   - advocates for patients and families.

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.

The winner will be awarded The Brenda Morgan Leadership Excellence Award and honoured during the awards ceremony at the annual Dynamics Conference. The winner's name will be published in **Dynamics.**

Terms and conditions of the award:
The award winner will be encouraged to write a reflective article for the **Dynamics,** sharing their accomplishments and describing their leadership experience. The article will reflect on their passion to move critical care nursing forward, their leadership qualities and how they used these effectively to achieve their outcome.

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 Excellence 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.

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 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 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 inter-professional 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. 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 Occurring 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, 30% > 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 coadministered 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 (twice the recommended loading dose) and one patient received a maintenance infusion of 0.8 mcg/kg/hr. Two other patients who 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 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 physiological 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, one-inch margins on all sides. Pages should be numbered sequentially including tables, and figures. Prepare the manuscript in the style as outlined in the American Psychological Association's (APA) Publication Manual 6th Edition.
- 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. Hard copy manuscripts may also be submitted through the national office. Accepted manuscripts are subject to copy editing.

October 2009

Precedex™–*Now available in Canada*

PrPrecedex™ (dexmedetomidine hydrochloride for injection) 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.

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.

Patients should be continuously monitored while receiving Precedex™. 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. Because Precedex™ has the potential to augment bradycardia induced by vagal stimuli; clinicians should be prepared to intervene. 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. 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.

Hospira

www.hospira.ca
For more information, please call
Hospira Clinical Support at 1-866-488-6088, Option 4

Pr Precedex™
(Dexmedetomidine Hydrochloride for Injection)

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See prescribing summary on page 33