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ORNAC Journal

A peer-reviewed Journal published by Clockwork Communications Inc. for the Operating Room Nurses Association of Canada

Published Quarterly ✦ Volume 31, Issue 2, June 2013

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ORNAC Journal
c/o **Clockwork Communications Inc.**
PO Box 33145, Halifax, NS, B3L 4T6
Tel: 902.442.3882 Fax: 888.330.2116
E-Mail: Contact@ClockworkCanada.com
www.ClockworkCanada.com

SUBSCRIPTIONS:

Canada - $36 plus GST/HST • Outside Canada - $59
Single Copies - $15 + tax in Canada • $22 outside Canada
subscriptions@clockworkcanada.com

GST/HST# 84200 7148 • ISSN 1927-6141

Indexed in CINAHL, Ebsco Publishing, and part of the EBSCOHOST suite of CINAHL programs.

Publications Mail Agreement No. 40951517
Return Undeliverable Canadian Addresses to
PO Box 33145 Halifax NS B3L 4T6

ADDRESS CHANGES:

ORNAC members / Membres de l'AIISOC:
www.ORNAC.ca for address changes / pour effectuer un changement d'adresse.

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ORNAC MISSION

The Operating Room Nurses Association of Canada (ORNAC) is an organization of Perioperative Registered Nurses and Associates dedicated to the:

- Promotion and advancement of excellence in the provision of safe perioperative care for patients;
- Professional growth, competence and personal enhancement of the ORNAC membership; and
- Progression of perioperative professional practice at a regional, provincial, national & international level.

MISSION DE L'AIISOC

L'Association des infirmières et des infirmiers de salles d'opération du Canada (AIISOC) est un organisme d'infirmières et d'infirmiers autorisés en soins périopératoires et d'associés se consacrant :

- À la promotion et à l'avancement de l'excellence quant à la distribution de soins périopératoires sécuritaires à nos patients;
- A l'amélioration des compétences tant sur le plan professionnel que personnel; et
- À la progression de la pratique professionnelle des soins périopératoires à l'échelle provinciale, nationale et internationale.

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PRESIDENT'S MESSAGE

Karen Frenette, RN, BN, MN, CPN(C), ORNAC Past President is the Surgical Suite Nurse Manager at Chaleur Regional Hospital, Bathurst, NB, a part time instructor for the University of New Brunswick Faculty of Nursing, Bathurst Campus, and the past Chair of the ORNAC Research Committee.

This is the last message I will write as President of the Operating Room Nurses Association of Canada (ORNAC). Two years have passed so quickly. This has been a time of planning as ORNAC sets the groundwork for change. This change was necessitated by revisions to Industry Canada's Not for Profit Act as well as challenges facing ORNAC and healthcare as a whole.

Perioperative practice has, as I stated in my first President's Message, evolved dramatically over the past few decades. With this in mind ORNAC has analyzed its role in this evolution and developed a strategic plan to position the association to face the future. Change, although necessary, is never an easy task. Change and acting on opportunities consumes much time and energy… but the rewards are beneficial to all. The implementation of the strategic plan is now in progress. The time to be involved with ORNAC is now! The success of any organization is a result of its members. Become part of the change! In a very few years the new ORNAC will be fully established and ready for all new opportunities and challenges.

This has been a wonderful journey that began at the 2011 National Conference in Regina and this stage in my journey with ORNAC ends at the ORNAC National and International Conference with IFPN in Ottawa this April. My passion for perioperative nursing has not wavered during this journey and I now have a better understanding of the importance of the role ORNAC plays in the pursuit of excellence in patient care. At this time it is my pleasure to introduce you to Rupinder Khotar the 15th ORNAC President. I wish Rupinder all the best in her new role.

PRESIDENT'S MESSAGE

Rupinder Khotar RN, BScN, CPN(C), ORNAC President is the OR Nursing Supervisor at Providence Health Care – St. Paul's site, Vancouver, BC, and the Past Chair of the ORNAC Standards Committee.

This year ORNAC celebrates its 30th Anniversary - thirty years of promoting excellence through the development of perioperative professional practice and care standards, provision of perioperative nursing education, creation of networking opportunities for nurses and industry partners and pioneering growth through relationships with other health care stakeholders . ORNAC has evolved over the years and been sustained by the passion, vision, and connectedness of perioperative nurses who saw the potential in collaboration across the entire country. What started as isolated efforts to mobilize operating room nurses, in a handful of provinces, has become a national group dedicated to perioperative nursing practice and patient care.

It is fitting that a review is being done on the future direction of the organization. The strategic plan implementation is underway and will bring significant change in the next couple of years. ORNAC will reach out to individual members across Canada and bring attention to those issues that affect perioperative nursing practice and overall patient care. Now is the time to be part of the change. Add your voice to the national perioperative voice and allow its power to resonate.

Congratulations to ORNAC for 30 years of dedication and commitment to excellence in perioperative nursing. It is with tremendous gratitude to those who have served the organization over the years that I would like to thank you all. I also thank you for the honour of serving ORNAC as its next President. I wish Past President, Karen Frenette, every success in her future endeavours.

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MOT DE LA PRESIDENT

Karen Frenette, IA, B. Sc. Inf., M. Sc. Inf., CSP(C), ancienne présidente de l'AIISOC est infirmière gestionnaire du bloc opératoire de l'Hôpital régional Chaleur, à Bathurst, au N.-B., chargée de cours à temps partiel pour la faculté de soins infirmiers de l'Université du Nouveau-Brunswick au campus de Bathurst et ancienne présidente du Comité de recherche de l'AIISOC.

Voici mon dernier message à titre de présidente de l'Association des infirmières et infirmiers de salles d'opération du Canada (AIISOC). Ces deux années ont filé à toute allure. Ce fut une période de planification alors que l'AIISOC prépare le terrain pour que des changements s'opèrent. Ces derniers étaient nécessaires en raison des révisions apportées par Industrie Canada à la loi régissant les organismes à but non lucratif ainsi que par les défis auxquels l'AIISOC et le système de santé en général faisaient face.

Comme je l'ai mentionné dans mon premier mot de la présidente, la pratique périopératoire a considérablement évolué au cours de la dernière décennie. Compte tenu de ce fait, l'AIISOC a analysé son rôle dans cette évolution et a élaboré un plan stratégique pour que l'association soit apte à faire face à l'avenir. Même s'ils sont nécessaires, les changements ne sont jamais chose facile. Il faut beaucoup de temps et d'énergie pour établir des changements et cerner les occasions, mais les résultats sont bénéfiques pour tous. La mise en œuvre du plan stratégique est en cours. C'est maintenant le temps de vous impliquer dans l'AIISOC! Le succès de tout organisme repose sur ses membres. Faites partie du changement! Dans quelques années, la nouvelle AIISOC sera entièrement établie, prête à profiter de nouvelles opportunités et à faire face à de nouveaux défis.

Ce fut une merveilleuse aventure qui a commencé en 2011 lors de la conférence nationale qui s'est tenue à Regina et qui se terminera, en avril, lors de la conférence nationale de l'AIISOC et de la conférence internationale de l'IFPN à Ottawa. Ma passion pour les soins périopératoires n'a pas diminué au cours de cette aventure et je possède maintenant une meilleure compréhension de l'importance du rôle que joue l'AIISOC dans la poursuite de l'excellence dans le domaine des soins au patient. Je suis donc heureuse de vous présenter Rupinder Khotar, la 15e présidente de l'AIISOC. Je souhaite à Rupinder la meilleure des chances dans son nouveau rôle.

Karen Frenette

MOT DE LA PRESIDENT

Rupinder Khotar, IA, B. Sc. Inf., CSP(C), présidente de l'AIISOC est infirmière surveillante du bloc opératoire de Providence Health Care – site de St. Paul, à Vancouver, en C.-B. et l'ancienne présidente du comité des normes de l'AIISOC.

Cette année, l'AIISOC célèbre son 30e anniversaire — trente années à promouvoir l'excellence par le biais du développement de la pratique professionnelle des soins périopératoires et des normes de soins, de la distribution d'éducation en soins périopératoires, de la création d'occasions de réseautage pour les infirmières, les infirmiers et les partenaires de l'industrie ainsi que d'une croissance innovante grâce à nos relations avec les autres intervenants en soins de santé. Au cours des années, l'AIISOC a évolué et a été soutenue par la passion, la vision et la connectivité des infirmières et infirmiers en soins périopératoires qui ont vu le potentiel pour de la collaboration à travers tout le pays. Ce qui a commencé comme des efforts isolés pour mobiliser les infirmières et les infirmiers en salle d'opération dans quelques provinces s'est transformé en un groupe national se vouant à la pratique des soins périopératoires et aux soins apportés aux patients.

Il convient donc de revoir l'orientation future de l'organisme et c'est pourquoi nous avons mis en œuvre un plan stratégique qui, dans les prochaines années, apportera des changements considérables à l'organisme. L'AIISOC rejoindra les membres à travers le Canada et éveillera leur intérêt quant aux problèmes touchant la pratique périopératoire et les soins au patient en général. C'est maintenant le temps de faire partie du changement. Joignez-vous à votre organisme pour faire entendre votre voix et faites-la résonner.

Félicitations à l'AIISOC pour ces 30 années de dévouement et d'engagement envers l'excellence en matière de soins périopératoires. C'est avec une sincère gratitude que j'aimerais remercier tous ceux et celles qui, au cours des années, se sont impliqués dans l'organisme. Je vous remercie également de m'accorder l'honneur de servir l'AIISOC à titre de prochaine présidente. Je souhaite à l'ancienne présidente, Karen Frenette, beaucoup de succès dans ses projets.

Rupinder Khotar

Editorial Review Panel

If you're interested in joining the ORNAC Editorial Review Panel review panel e-mail journal@ornac.ca for more information.

EXECUTIVE DIRECTOR'S MESSAGE

Catherine Harley, RN, eMBA, ORNAC Executive Director
executivedirector@ornac.ca

Building the ORNAC Team

People in every organization talk about "building the team", "working as a team", and "my team" but few understand how to create the experience of teamwork or how to develop an effective team. Belonging to a team involves feeling part of something larger than yourself and it has a lot to do with having an understanding of the mission or objectives of your organization.

In a team-oriented environment everyone contributes to the overall success of the organization. Even though you have a specific job function in one area of the organization – be it the Board, a committee or in a general volunteer role – you are connected with other members in order to accomplish the overall objectives. The bigger picture drives your actions and your actions serve the bigger picture.

From the ORNAC strategic planning process, begun two years ago, to the restructuring of ORNAC and alignment with the new Canada Not-for-profit Corporations Act, the work was handled by a very specific team in the form of the ORNAC Board of Directors. ORNAC is now entering a new phase in its restructuring and must broaden the scope of the team in order to continue to be effective.

How can we achieve this goal? First we must, as an organization, set clear expectations. All team members must understand why the team was created and what its goals are. ORNAC must be consistent in its purpose and support the team with the necessary resources of people, time, and money. The work of the team needs to be prioritized in terms of the Board of Directors' time, discussion, attention and interest.

It is important to put the next steps of the implementation of the new ORNAC structure into context. Members of the ORNAC Team must understand why they are participating in the organization and how, together, we can build a future that supports patient safety, enables best practice in perioperative care, and strengthens the profession of perioperative registered nurses. Every team member is important to ORNAC. Every ORNAC member has a role to play in the achievement of the organization's goals, mission, vision and values.

As ORNAC moves forward we look to all members for their commitment to the future of this association. Now is the time to get involved in fulfilling the ORNAC mission and expected outcomes. Your service is valuable – not just to ORNAC but also to your own career growth and development. By working on ORNAC projects you will develop new networks, experience new ideas, and become involved in learning about the decision-making and governance processes. I am excited and challenged by this new phase and look forward to welcoming all of you on to the ORNAC Team.

As ORNAC moves forward we look to all members for their commitment to the future of this association.

MESSAGE DE LA DIRECTRICE GÉNÉRALE

Catherine Harley, IA, M.B.A. pour cadres, directrice générale de l'AIISOC
executivedirector@ornac.ca

Renforcer l'équipe de l'AIISOC

Les membres d'organismes parlent souvent de « renforcer leur équipe », de « travailler en équipe » et de « leur équipe », mais peu comprennent comment créer l'expérience du travail en équipe ou comment développer une équipe efficace. Le fait de faire partie d'une équipe signifie sentir que l'on fait partie de quelque chose qui est plus grand que nous-mêmes et cela repose grandement sur la compréhension que l'on a de la mission ou des objectifs de notre organisme.

Au sein d'un environnement axé sur l'équipe, chacun contribue au succès général de l'organisme. Même si vous avez une fonction précise dans un domaine de l'organisme, que ce soit dans le conseil d'administration, au sein d'un comité ou en tant que bénévole, vous êtes lié aux autres membres dans le but de réaliser les objectifs globaux. La vue d'ensemble conditionne vos actions et vos actions encouragent cette vue d'ensemble.

Depuis le processus de planification stratégique de l'AIISOC, commencé il y a deux ans, à la restructuration de l'AIISOC et aux changements apportés pour se conformer à la nouvelle loi canadienne régissant les organismes à but non lucratif, le travail a été dirigé par une équipe bien précise, soit le conseil de direction de l'AIISOC. L'AIISOC entame maintenant une nouvelle phase de sa restructuration et doit élargir la portée de son équipe pour continuer à être efficace.

> À mesure que l'AIISOC progresse, nous nous tournons vers tous ses membres pour leur engagement envers l'avenir de cette association.

Comment pouvons-nous atteindre cet objectif? Nous devons d'abord, en tant qu'organisme, fixer des attentes claires. Tous les membres de l'équipe doivent comprendre pourquoi l'équipe a été créée et quels sont ses objectifs. L'AIISOC doit être cohérente en ce qui concerne ses objectifs et doit appuyer l'équipe en offrant les ressources nécessaires, que ce soit des ressources humaines, humaines et monétaires. On doit établir en ordre de priorités le travail de l'équipe en ce qui a trait au temps, aux discussions et aux intérêts du conseil de direction.

Il est important de mettre en contexte les prochaines étapes de la mise en œuvre de la nouvelle structure de l'AIISOC. Les membres de l'équipe de l'AIISOC doivent comprendre pourquoi ils participent au sein de l'organisme et comment nous pouvons bâtir ensemble un avenir qui appuie la sécurité des patients, encourage les pratiques exemplaires en soins périopératoires et renforce la profession des infirmières et des infirmiers en soins périopératoires. Chaque membre de l'équipe est important pour l'AIISOC. Chaque membre de l'AIISOC a un rôle à jouer dans la réalisation des objectifs, de la mission, de la vision et des valeurs de l'organisme.

À mesure que l'AIISOC progresse, nous nous tournons vers tous ses membres pour leur engagement envers l'avenir de cette association. C'est maintenant le temps de vous impliquer pour remplir la mission de l'AIISOC et atteindre les résultats escomptés. Votre aide est précieuse, pas seulement pour l'AIISOC, mais aussi pour la croissance et le perfectionnement de votre propre carrière. En travaillant sur les projets de l'AIISOC, vous développerez de nouveaux réseaux, vous serez exposé à de nouvelles idées et vous acquerrez des connaissances au sujet des processus de prise de décisions et de gouvernance. Je suis impatiente d'entamer cette nouvelle phase pleine de défis et de vous accueillir dans l'équipe de l'AIISOC.

INTRODUCTION DE LA CHIMIOTHÉRAPIE HYPERTHERMIQUE INTRAPÉRITONÉALE PEROPÉRATOIRE (CHIP) AU PROGRAMME DE CHIRURGIE

Auteur : *Trevor Small, IA, B. Sc. Inf., M. Sc. S., est directeur des services chirurgicaux à l'hôpital de la communauté des sœurs grises, à Edmonton, en Alberta. M. Small a déclaré n'avoir aucune affiliation qui pourrait être perçue comme étant en conflit d'intérêts avec la publication de cet article.*

Les normes de l'AIISOC relatives à cet article figurent dans la publication Normes, lignes directrices et énoncés de position pour la pratique en soins infirmiers périopératoires (9e édition) de l'Association des infirmiers et infirmières de salle d'opération du Canada (AIISOC) de juin 2009, section 3, p. 248, norme 3.2.1 et section 4, p.340, norme 2.5.1.

RÉSUMÉ :

La chimiothérapie hyperthermique intrapéritonéale peropératoire (CHIP) offre la possibilité de prolonger la survie, voire de guérir, les patients faisant face à des types spécifiques de cancers envahissants de l'abdomen. Cet article examinera les aspects peropératoires de la mise en œuvre d'un programme de lutte contre les cancers péritonéaux qui comprend le traitement avec la CHIP. En analysant ce traitement, nous en partagerons les expériences dans le but d'optimiser les soins au patient pour les programmes de chirurgie potentiels et le personnel périopératoire. Cette analyse illustrera les domaines respectifs de développement du programme, tels que la formation, les exigences budgétaires et les considérations en matière de soins au patient. De plus, le dialogue se penchera sur la sélection des patients, la préparation préopératoire et les considérations peropératoires. Pour terminer, cet article démontrera les résultats spécifiques à court terme et à long terme pour le patient en commençant par la phase postopératoire immédiate.

KEYWORDS: CHEMOTHERAPY, ABDOMINAL CANCER, HIPEC, CYTOREDUCTIVE SURGERY, PERITONEAL MALIGNANCY, HYPERTHERMIA, INTRAPERITONEAL.

INTRODUCTION OF HYPERTHERMIC INTRAOPERATIVE INTRAPERITONEAL CHEMOTHERAPY (HIPEC) TO THE SURGERY PROGRAM

Author: *Trevor Small, RN, BScN, MHS, is the Director of Surgical Services at the Grey Nuns Community Hospital, Edmonton, AB. Mr. Small has no declared affiliation that should be perceived as a conflict of interest in publishing this article.*

ABSTRACT:

Heated Intraoperative Intraperitoneal Chemotherapy (HIPEC) offers a chance for extended survival, or cure, to patients facing specific types of invasive abdominal cancer. This article will explore the perioperative facets of implementing a peritoneal malignancy program that includes the HIPEC procedure. In exploring this procedure, experiences will be shared with the intent of optimizing patient care for potential surgical programs and perioperative staff. The examination will illustrate the respective program development areas such as training, budgetary requirements and patient care considerations. Further, the dialogue will investigate patient

The goal of the procedure is to improve the cancer cell kill rate by circulating heated chemotherapy to the cancerous tissues.

selection, preoperative preparation and intraoperative considerations. Lastly, the article will reveal the specific short-term and long-term patient outcomes starting with the immediate post-operative phase.

INTRODUCTION:

Roman author Cicero once wrote, "While there's life, there's hope."[1] Heated Intraoperative Intraperitoneal Chemotherapy (HIPEC) offers hope to patients facing specific types of invasive abdominal cancer. This procedure provides a surgical possibility for abdominal cancer patients who previously had a minimum chance of survival. Patients may experience three to five more years of life and, in some cases, a cure.[2] The article will explore the administrative, preoperative, intraoperative and postoperative facets of caring for patients undergoing a HIPEC procedure for surgical tumour reduction. It includes such topics as the procedure's historical foundations, surgical technique, equipment and safety, and patient centered learning relating to care needs and family support. An extensive literature search and case experience from the Covenant Health Peritoneal Malignancy program at the Grey Nuns Community Hospital in Edmonton, Alberta, are used to illustrate the surgical introduction of HIPEC. In exploring this surgical procedure the author's experiences will be shared with the intent of optimizing patient care for other potential surgical programs and perioperative staff looking to introduce the HIPEC procedure.

Historical Foundation and Surgical Technique

The HIPEC procedure was pioneered in the early 1980s at the Washington Cancer Centre in Washington, DC, by Paul Sugarbaker, MD.[3] HIPEC involves the circulation of heated chemotherapy solutions through a circuit which follows a cyclical loop between the patient's abdomen and hyperthermia pump (includes pump, heat exchanger, temperature monitoring device and pressure monitoring system.[4] (See Appendix A). The goal of the procedure is to improve the cancer cell kill rate by circulating heated chemotherapy to the cancerous tissues. Cancer cells are more sensitive to heat than other tissue cells and so combining heat and chemotherapy results in higher cancer cell kill rate.[2] The procedure, and its applicable perfusion, can be performed as an open or closed procedure. The Covenant Health program, and its primary surgeon Dr. Erika Haase, uses the open system technique to facilitate the chemotherapy administration. The procedure involves surgically opening the patient's abdomen and debulking or cytoreducing tumours to a size no larger than 2mm. The strength of the procedure lies in its effectiveness against cancers that are too small to be seen – such as scattered small peritoneal tumours or cancerous cytology found in abdominal fluid.[5]

Appendix A:

Apon completion of tumour cytoreduction the technique then

Figure A1: The Intraoperative Hyperthermic Chemotherapy Circulation Circuit

As the operating room is traditionally not an area that employs chemotherapy certified nurses, specialized training is required prior to the introduction of a HIPEC program.

involves inserting inflow and outflow catheters into the patient's abdomen. These are used to circulate the chemotherapy solution (see Appendix B). During catheter placement, intra-abdominal temperature probes are also positioned. Smoke evacuation is used to remove any potential cytotoxic fumes that may be aerosolized during the procedure. (See figure B2 - purple tubing shown in figure B2) The abdomen is draped with a plastic cover to reduce OR staff exposure to the heated chemotherapy agent fumes while it is being circulated. A trained operating room nurse, with chemotherapy certification, infuses the patient's abdomen with heated dialysate until it reaches 42 degrees Celsius. At this point, concentrated chemotherapy is added to the circulating heated dialysate solution until it reaches the desired concentration of chemotherapy. Chemotherapy agent selection and related concentration are primarily reflective of the type of cancer being treated and its suitability for intraoperative hyperthermic administration. The solution is then circulated for one to two hours while the nurse monitors the patient, the solution temperatures, and maintains a balanced inflow/outflow rate between 750ml-1L/min. During the circulation phase, the surgeon passes a double gloved hand through the port created in the plastic covering to manipulate the solution and abdominal structures (see Figure B1 and B2). The surgeon's intent is to ensure that the peritoneal cavity is uniformly exposed to the heat and chemotherapy.

Figure B1: Surgeon manual manipulation of abdominal structures via hand port

Appendix B:

Upon completion of the circulation phase, the dialysate solution is drained from the abdomen and disposed of following applicable cytotoxic disposal procedures which are discussed in the postoperative section of this article. The surgeon then irrigates the patient's abdomen with copious amounts of saline and repairs or reconstructs any remaining bowel components. The saline is also treated as cyto-contaminated fluid and disposed of appropriately. The patient's incision is then closed in the customary fashion, dressings are applied and the patient is transferred to the relevant post operative unit where postoperative care and monitoring is performed. The patient may require time in the facility's intensive care unit as the HIPEC procedure can take many hours and is physically demanding on the patient.

PROGRAM DEVELOPMENT CONSIDERATIONS:

Training and Safety

As the operating room is traditionally not an area that employs chemotherapy certified nurses, specialized training is required prior to the introduction of a HIPEC program. In order to ensure that there is a team of highly qualified staff who can adequately care for the patient and handle the cytotoxic materials, senior team members who have advanced knowledge of perioperative care should be considered first for this training. In addition, the operating team must be directed to use the correct steps to prepare and protect the extremely vulnerable HIPEC patient. The processes must be systematic, logical and organized in a way that optimizes safety. Imagine the horrific

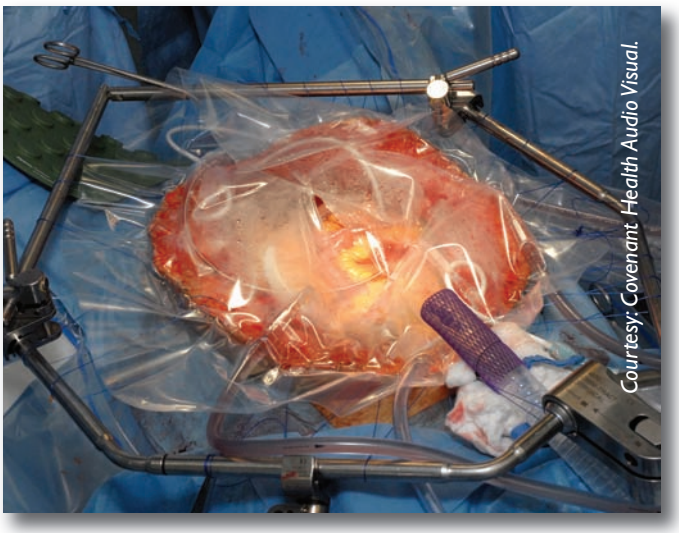


Figure B2: Open HIPEC approach with plastic cover

scene of an ill managed patient whose circulating chemotherapy has overflowed spilling cytotoxic agents onto (would it spill on to the patient? If so include the risk to patient safety as well as to staff) poorly protected patient and staff. It is imperative, for all concerned, that practice standards be strictly enforced. In the spirit of championing safe and competent care, a three pronged strategy for teaching HIPEC fundamentals should be utilized. The three initiatives include an in-service with a post-in-service test, surgical simulation scenarios, and preceptored peer-review.

Teaching Strategies

Wright advocates that post-in-service tests work well to measure cognitive skills in the technical domain.[7] As the majority of training areas for this technique are of a cognitive nature a post-training test provides a strong measure of the HIPEC knowledge retained by the trainee. All candidates must successfully complete the post-in-service exam prior to proceeding to the simulation component of the training.

Simulation is often viewed as a safe way to allow learners to work through the cognitive materials at their own pace. Jeffries discusses the importance of using simulation to replicate clinical crises in a safe climate allowing learners to assimilate information without compromising real patients.[8] Alinier illustrates, however, that one best not become falsely secure as simulation cannot fully replicate the robust dynamics of actual patient care.[9] It is proposed that the mock scenarios allow staff to work on building strong team dynamics and learning the steps in the process while not facing the risks posed by real cytotoxic materials. Staff can focus on the proper way to wear personal protective equipment (PPE), setting up equipment, and prioritizing the complex aspects of the procedure. Once the staff have mastered the basics of the mock simulation, the educator can introduce potential emergencies for the newly formed team to deal with. These encounters may range from

chemotherapy spills to equipment failure or even a patient crisis, such as heat stroke. These simulations provide a realistic progression toward their own peer-preceptored clinical experience.

Having the opportunity to work with a senior preceptor allows staff the ability to integrate into the team without being fully responsible for having senior knowledge. The use of clinical teaching opportunities ensures that staff members are presented with the chance to work in actual patient situations in order to solidify the knowledge they have already obtained and to acquire new skills under experienced supervision. As some criticize patient simulation training as not providing enough "real world" skills and information assimilation the ability to supplement it with a structured mentorship program allows students to transition their simulated skills into actualized patient care and to build the strength of the team dynamic. These learning progressions must be honoured in order to foster a safe environment and cannot be compromised for any reason – including dealing with staff shortages or other competing priorities. The operating room clinical educator needs to assess students based on the specific HIPEC teaching measures and provide them with regular "action plans" on how to improve and work toward the desired goals.

Figure C1: Example of nurses operating hyperthermia pump and administering chemotherapy agent.

The teaching strategies were built in such a way that they can be tailored to several different job classifications while still having all participants accountable to the same standard of educational information. Documentation of the training strategies provides a legal record that the staff member has been given all of the required regulatory safety based information. Management holds a legal responsibility to ensure staff members comply with regulatory and site-based procedural requirements.

Budgetary Considerations

HIPEC procedures have one-time and ongoing cost implications which should be recognized before proceeding with program development. The equipment used during the procedure is the HIPEC pump, high volume smoke evacuator, and heating/cooling blanket. In most operating rooms the HIPEC pump is likely not already present and thus is the paramount purchasing consideration (see Appendix C). In the Covenant Health program, there are duplicates, on standby, of the major pieces of equipment in case of any equipment failures. Handling equipment malfunction was a significant portion of the team's training during the simulation exercises. As the procedure requires the delivery of heated chemotherapy for the required period of time it is essential to have backup equipment readily available.

Appendix C:

The ongoing costs for HIPEC are related to the medication and supplies needed and the related PPE. These are in addition to the usual costs involved in performing a major abdominal general surgery case. The HIPEC case will involve additional costs of approximately CAD$5,000 per procedure -- with four-fifths of this cost being for the chemotherapy drug. The remaining costs are for the procedure's consumables such as the HIPEC tubing circuit, the disposable protective equipment (e.g. impervious disposable gowns) and the prescribed chemotherapy agent.

Collaborative Approach

In the development of a Peritoneal Malignancy Program, it is necessary to create and foster key collaboration among the staff. Mohamed & Moran offer that teamwork is essential in HIPEC and that a multidisciplinary team

Theatre personnel review their volunteer patient's medical profile.

is required to optimize outcomes, minimize risks, and deal with problems as they arise.[10] They illustrate that HIPEC should be implemented in "high volume centers" that are mindful of the learning curve and are willing to learn from the mistakes of others. The team must learn to work together as a highly developed group that is willing to train together through a variety of patient simulated scenarios. The HIPEC program interfaces with many areas including pharmacy, housekeeping, supply chain, surgery and the intensive care unit. The program lead should foster interdisciplinary collaboration so that the respective surgeons, anaesthetists, and hospital staff can work together to meet the patients' perioperative needs. Working together will result in the creation of processes that allow for the successful mixing, transportation, use and disposal of chemotherapy that reflect safe practice and are fiscally responsible. Intraoperatively, as not every patient will be deemed suitable for the HIPEC procedure, a collaborative process can save pharmacy time, by avoiding mixing drugs needlessly, and save the operating room thousands of dollars in potentially wasted drug costs.

The program may also need to develop external relationships with oncology centres that can work in collaboration with the surgeon, in regards to chemotherapy selection, and be used to support the ongoing post-operative patient care and follow up. The oncology centre can also be approached to assist in the oncology training of the surgical staff. As an example, the Covenant Health HIPEC Program and a local oncology centre worked in reciprocating collaboration to teach each other's staff various components of patient care. Each site benefited from this approach and ultimately patients at both sites reaped the benefit. The HIPEC program also sent representatives to another hospital site where HIPEC procedures are performed on a regular basis. The numerous site visits gave the intraoperative, postoperative, and anaesthesia representatives a greater understanding of the procedure and helped to better prepare the program for a successful implementation.

PREOPERATIVE CONSIDERATIONS:

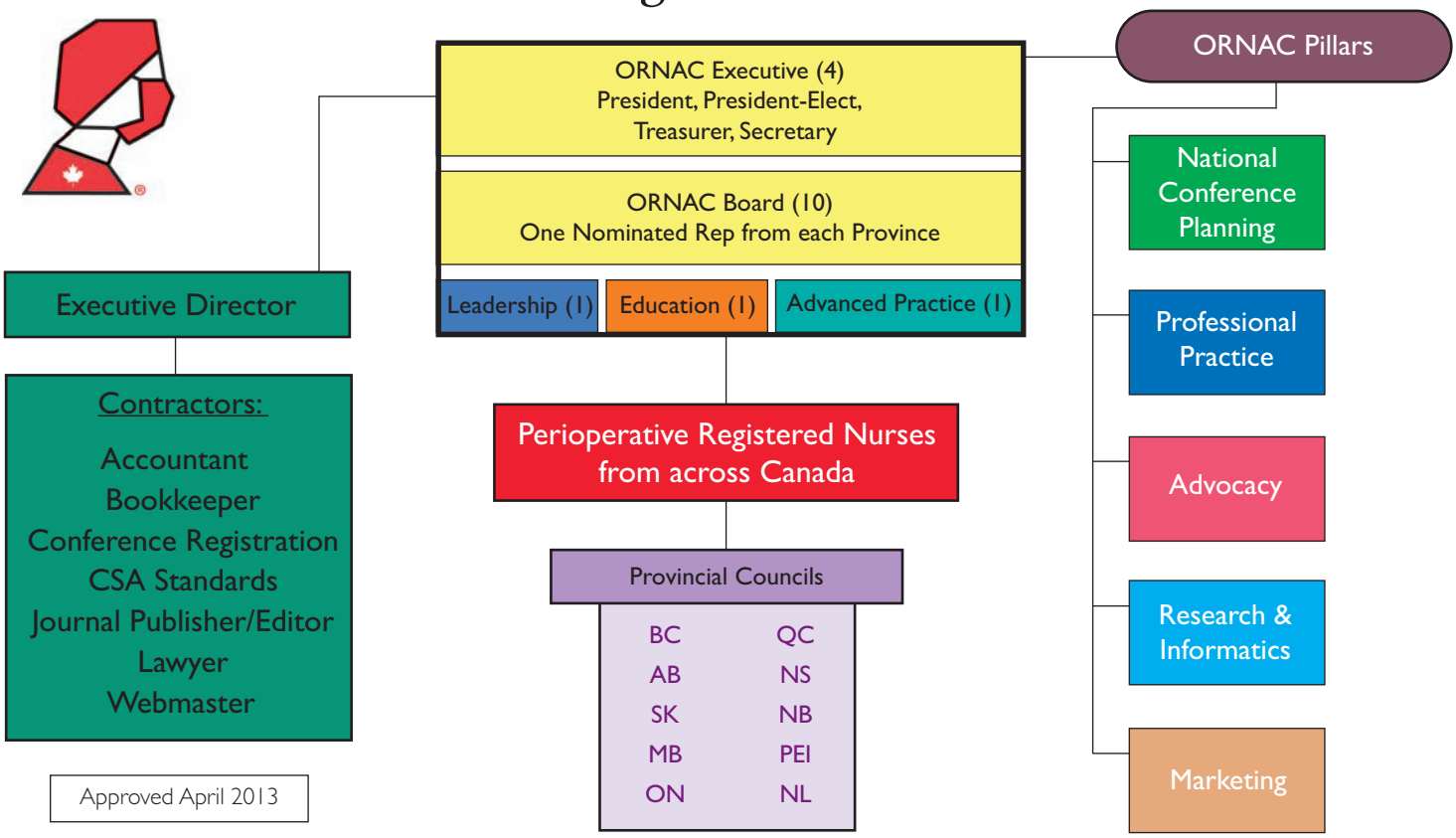
Patient Selection and Booking

Cotte et al. propose that cytoreductive surgery and HIPEC is most beneficial in young patients, under 65, who present with low volume of disease being treated intraoperatively and when the procedure is performed in a centre that specializes in treating peritoneal malignancy.[11] Once the patient selection process has been completed it is vital that the pertinent booking information be submitted so that the many areas impacted can begin

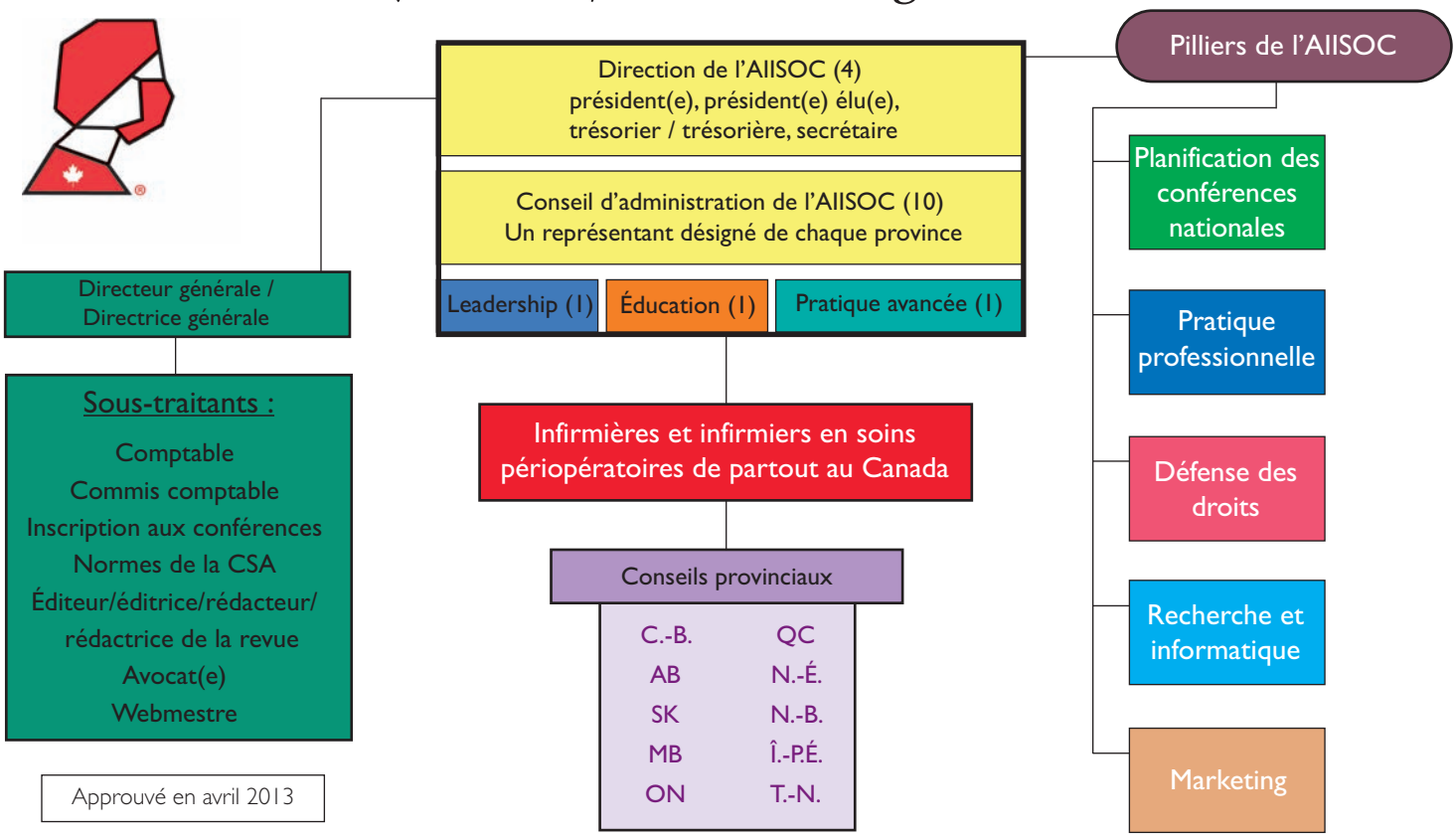
EVACUATING AN OR cont. on page 28

The HIPEC program interfaces with many areas including pharmacy, housekeeping, supply chain, surgery and the intensive care unit.

Operating Room Nurses Association of Canada (ORNAC) Organizational Structure



Association des infirmières et infirmiers de salles d'opération du Canada (AIISOC) Structure organisationnelle



SPOTLIGHT ON ORNAC MEMBERS

AN INTERVIEW WITH ALINE TITIZIAN, RN, BSCN.

Submitted by: *Catherine Harley, RN, eMBA, ORNAC Executive Director.*

Aline Titizian, RN, BScN, is a Perioperative Registered Nurse at the Hospital for Sick Children (SickKids) in Toronto, ON. She began her career at Hôtel Dieu de France hospital in Beirut, Lebanon and received her perioperative nursing certificate from Université Saint-Joseph, in Beirut Lebanon, in 2000. After moving to Toronto, in 2004, she focused her career on paediatric nursing.

What prompted you to get involved in paediatric perioperative nursing?

When I began my career as a perioperative cardiac nurse at Hôtel Dieu de France, which served individuals of all ages, I was always the RN called on for paediatric procedures. My attraction to working with kids began at that time and continued to grow until I arrived in Toronto. I was glad to be offered a position at SickKids because it allowed me to continue the type of work that I had enjoyed so much.

Tell us about your professional development. How did you prepare for working in the operating room in such a specialized area?

In preparing for perioperative paediatric nursing I benefited substantially from the orientation program at SickKids. The program was organized around both clinical and in-class sessions. It prepared me well for this type of work and built on my previous experience and knowledge to help make me a successful paediatric nurse.

Please describe the Perioperative Team at SickKids.

The multidisciplinary perioperative team (surgeons, anaesthesia, nursing, x-ray techs, neuromonitoring, anaesthesia assistants) at SickKids practices within a progressive environment that provides tertiary/quaternary care for children and adolescents with complex health issues in acute and chronic phases of illness. Our staff are our greatest strength. They work hard to provide a supportive work environment where everyone can give their best.

The team delivers care that has a profound impact on both the patients and their families. The team comprises expert practitioners who provide the best standard of surgical care to children while advancing paediatric practice. They work in a multi-faceted and collaborative environment and are leaders and advocates who pushing the boundaries of practice with innovative models of care and initiatives that improve the care and the lives of children and their families.

Could you walk us through a typical day in the OR at SickKids?

A typical day starts at 7:25 a.m. when nurses check in at the front desk. The three perioperative nurses on duty, once in the theatre, discuss the allocation of roles. At 7:35 a.m. the "huddle" occurs -- the entire team (anaesthetist, nurses, and surgeon) gathers and plans the day according to the patients' needs and the procedure requirements. The scrub and circulating nurses check the supplies and instruments sent by central services and cross-reference these with the surgeon's preference book and the information provided during the huddle. The induction nurse consults with the anaesthesia provider regarding anticipated needs during the case – this includes, but is not limited to, IVs and fluids, arterial line requirements, blood product requirements, warming requirements, and any anticipated airway issues. The induction nurse also prepares the positioning devices.

The induction nurse also, during the pre-operative assessment, works to create a bond with the patient by making use of various strategies that take into consideration the patient's age and psychological status. The focus is on distraction by doing things such as giving toys or stickers, providing an iPad to play with, asking them about their favourite toy or cartoon character

> How we communicate and bond with the child reassures the parents that we will be providing their loved one with the best care possible.

SPOTLIGHT ON ORNAC MEMBERS (cont.)

AN INTERVIEW WITH ALINE TITIZIAN, RN, BsCN.

(for the youger kids) and favorite sports (for the older ones).The nurse also reassures and comforts the parents and answers any questions they may have. This pre-operative assessment allows the anaesthetist and the induction nurse to evaluate the emotional state and mental status (for challenged children) of the patient and plan the best strategy for transferring the patient to the theatre. At this time decisions on premedication and presence of the parent during induction are made based on the patient's needs and with the parents' consent and collaboration.

Once in the OR the patient is laid on the bed, induction begins and the perioperative nurse comforts the patient , sometimes by singing a lullaby, telling a story, holding their hand, or cuddling them.

From the start of the day and throughout the case the nursing team analyses, on an ongoing basis, the situation in the theatre and plays a proactive role by anticipating the needs of the various team members.

How do you provide support for your patients' families?

The staff at SickKids provide support to patients and their families by always remaining aware of the pain and anxiety parents feel when they have to trust another person with the care of their child. It is an emotional experience and, for that reason, we need to provide appropriate support.

We have found certain strategies very helpful in helping minimize anxiety. We speak to the patient and their parents based on their level of understanding and in a way that respects their culture and beliefs. During the pre-op assessment we walk both the patient and the parents through the process and what they should expect. By explaining things, such as where the surgery will take place, where the parents' waiting room is, where to get a cup of coffee, when their child will wake up and what they should expect when this happens, we help to alleviate fear and anxiety.

How we communicate and bond with the child reassures the parents that we will be providing their loved one with the best care possible.

What have been the major challenges involved in working in a pediatric setting?

Working in a paediatric setting presents several challenges that differ from an adult care setting. It is important to note that the majority of the cases we deal with are related to cong enital problems and are usually combined with multiple health issues. When dealing with a child's anatomy issues like airway management and IV access become more challenging. The physiology of paediatric patients often leads to desaturation, bradicardia and laryngospasm during induction. Children are at higher risk for hypothermia and hyperthermia and, as a result, very close attention must be paid to temperature monitoring.

The developmental and psychological level of a child depends on the age of the child and varies from patient to patient. Young children often experience separation anxiety and may benefit from the presence of a parent during induction. Teenagers can be very anxious and therefore pre-induction sedation may be beneficial. It is important to use language appropriate to the developmental stage of the child and we often have to adapt for children who do not yet know how to speak or do not speak English. This can make it a challenge to alleviate their fears and understand their needs.

Pharmacology can also be a challenge as the dose of medications or fluids are weight-dependant.

Photo Courtesy: A Titizian

Aline Titizian, RN, BScN

What would you consider the most valuable tools for a perioperative registered nurse?

Compassion, critical-thinking, life-long learning, strong communication skills, the ability to work under pressure, and patient advocacy are the tools I have found necessary throughout my career.

If you could go back in time is there anything you would have changed in your career?

My experiences have all, throughout my 19 years in the perioperative setting, shaped the nurse I am today. I would not change anything about my career.

Any words of advice to nurses interested in working in the paediatric perioperative setting?

Regardless of the challenges and difficulties present in the paediatric perioperative setting it is very rewarding to work with children! I highly recommend it.

UPCOMING EVENTS / PROCHAINS ÉVÉNEMENTS

For details visit www.ornac.ca

Perioperative Nurses Week is November 10-16, 2013

PROVINCIAL & REGIONAL CONFERENCES

Saskatchewan (SORNG workshop)	Saskatoon, SK	Sept 21, 2013
Newfoundland & Labrador	Grand Falls, NL	Oct 3 - 5, 2013
Ontario	London, ON	April 25 - 27, 2014
24th BC Biennial OR Conference	Vancouver, BC	May 7 - 10, 2014
Saskatchewan (Provincial Conf)	Regina, SK	Sept 19 - 21, 2014
26th Atlantic OR Conference	Fredericton, NB	Sept 24 - 26, 2014
Alberta	Red Deer, AB	Sept 24 - 27, 2014
Quebec 35th Provincial Conference	Montreal, QC	Sept 24 - 27, 2014

ORNAC CONFERENCES www.ORNAC.ca

24th ORNAC National Conference	Edmonton, AB	May 3 - 7, 2015

INTERNATIONAL CONFERENCES

AORN (www.aorn.org)	Chicago, IL	March 29 - April 3, 2014
EORNA (www.eorna.eu)	Rome, Italy	May 8 - 10, 2015

RELATED PROFESSIONS

CAS (www.cas.ca)	Calgary, AB	June 2013

21 ORNAC NATIONAL CONFERENCE

BRIDGING EXCELLENCE IN PERIOPERATIVE PRACTICE

MAY 3rd–7th 2015

Shaw Conference Centre
EDMONTON, ALBERTA

ORNAC / AIISOC

for further information, please go to
www.ornac.ca and click on National Conference

PERIOPERATIVE LASER SAFETY WORD SEARCH

Submitted by: *Joan Porteous RN, BN, CPN(C).*

Please answer the following laser safety questions and locate the answers on the word search puzzle.

1. _____ injury may occur form a misdirected laser beam to the eye.
2. The optical density of protective eyewear is the ability of the lens to absorb the specific _____ of laser light.
3. _____ are one of the most significant hazards associated with laser use.
4. Alcohol-based prep solutions, dry sponges and some anesthetic gas mixtures are all _____.
5. When a laser beam strikes tissue in a non-fluid environment _____ is produced
6. _____ plume is comparable to laser plume.
7. Different laser wavelengths require different _____.
8. Laser-specific _____ tubes should be used to prevent a fire.
9. Laser smoke should be _____.
10. Never fire a laser beam at a _____ surface.
11. Remove the laser _____ when the laser is not in use.
12. In the event of an airway fire, the fist step is to stop the _____.
13. _____ sponges should be placed around the laser impact site.
14. An open container of _____ should be available close by in the room.
15. Laser plume may contain viable micro_____.
16. Hospital _____ are good resources to consult in order to promote laser safety.
17. Hospital _____ contain nursing practice guidelines for perioperative laser safety.
18. The appointment of a laser safety _____ within the facility provides an important laser safety resource.
19. Laser settings are recorded in a laser _____.
20. Some soft contact lenses may absorb laser _____.

WORD SEARCH PUZZLE

*See **page 34** for answers.*

Locate the correct answers to the perioperative laser safety questions on the word search puzzle below.

This puzzle has an **extra challenge** – there are many other perioperative terms, phrases and abbreviations hidden in it. **How many can you find?**

I	W	O	R	K	H	A	R	D	E	R	Q	U	E	L	I	S	D	P
P	A	T	I	E	N	T	E	A	L	F	A	L	L	O	U	T	O	E
E	V	A	C	U	A	T	E	D	W	I	E	Y	E	W	E	A	R	R
I	E	S	T	A	N	D	A	R	D	C	A	R	E	U	R	P	G	I
L	L	H	O	E	E	N	D	O	T	R	A	C	H	E	A	L	A	O
O	E	Q	K	K	S	T	E	R	I	L	I	Z	A	T	I	O	N	P
V	N	B	D	E	G	C	O	S	E	T	I	M	E	O	U	T	I	E
E	G	C	E	A	Y	S	R	E	U	T	E	R	I	G	S	Y	S	R
M	T	O	L	E	U	G	N	U	D	O	I	A	S	H	M	T	M	A
Y	H	R	E	R	N	O	A	Y	B	K	T	N	M	S	O	E	S	T
J	O	R	G	E	U	O	C	T	I	S	Y	P	A	S	K	F	K	I
O	G	E	A	F	R	D	F	L	A	M	M	A	B	L	E	A	I	V
B	R	C	T	L	S	E	M	A	P	O	L	I	C	I	E	S	T	E
Y	K	T	I	E	E	D	O	S	X	I	B	A	R	R	I	E	R	A
P	E	C	O	C	S	U	R	E	N	S	W	Q	E	A	D	B	T	I
R	L	O	N	T	R	C	N	P	U	T	U	C	D	F	L	U	I	D
G	A	U	I	I	O	A	A	T	Y	M	I	O	L	B	I	R	E	E
O	I	N	M	V	C	T	A	I	J	F	O	X	Y	G	E	N	G	S
W	E	T	P	E	K	O	T	C	F	L	R	E	P	O	R	S	G	E
N	O	D	U	S	T	R	N	O	B	B	T	P	R	L	A	T	E	X

2013 ORNAC ESSAY WRITING CONTEST WINNER

1st Place Essay by Antoniette Labricciosa RN, BScN, MEd, CPN (C), from Ontario.

Antoinette won registration, hotel and travel to the 2013 ORNAC Conference as well as a copy of the Standards.

Enhancing Teams through Collaborative Practice

There is, perhaps, no other specialty where nurses have been able to demonstrate teamwork and collaboration more than they do in Perioperative Services. As a nursing graduate in 1987, new to both the Operating Room (OR) and nursing in general, I was overwhelmed at the level of collaboration exhibited by team members working within the OR.

In the past, for example, nurses were able to conduct pre-operative visits with patients who would be undergoing surgery. Such actions allowed nurses to capitalize on establishing caring relationships with patients and their families, while addressing patient's questions, concerns, and allaying their fears. More recently, nurses, anaesthetists, surgeons, and ancillary staff, such as Anaesthesia Assistants, have the opportunity to interview patients, gather information, and share resources that will optimize a patient's perioperative experience. Nurses, however, still play a paramount role in gate-keeping, and also in making that pertinent connection with patients that will forever influence their perception of their perioperative experience. The discussion with patients in holding areas often reveals unspoken dreams, concerns about their families who will be waiting for them during their surgery, and hopes for the future. This is a unique role that nurses direct and influence by their ability to gain trust from, and connect with patients, and in turn, this information is shared with team members in personifying the 'patient on the table'.

As another example, perioperative nurses play an invaluable role in the care of patients requiring multi-disciplinary approaches to their care. These cases require that particular patient needs be communicated pre-operatively to the Charge or Clinical Resource Nurse. In turn, the nurse shares this information with other team members including nursing, anaestheisa, various surgical specialists, and post-operative care units. Special requirements, such as positioning-aids, equipment, blood requirements, and staffing resources, are co-ordinated pre-operatively and as the case progresses, in order to ensure safe, timely, and efficient patient care provided by the surgical team.

The Perioperative nurse also plays an imperative role in providing family-centred care, as well as exceptional care to patients. It is well-documented that the provision of intra-operative visits to families waiting for their loved ones decreases anxiety and improves patient satisfaction scores. In collaboration with both the surgical provider and anaesthesia, the information to be shared with families is discussed. This information is then provided by the perioperative nurse on behalf on the surgical team while families wait in surgical waiting areas.

Finally, the perioperative nurse has a symbiotic and collaborative role with the many 'players' of the surgical team. On any given day, the nurse will interact with other health professionals, industry partners, SPD personnel, and Infection Control, to name only a few, of the many individuals who may directly or indirectly affect the patient's care. As a team player, the nurse communicates needs, discusses outcomes, relays information, sets parameters, teaches, organizes and sets priorities amidst these interactions, always with the goal of optimizing the care of surgical patients.

In the preceding discussion, it is evident that the perioperative nurse enhances team performance through collaborative practice. The historical evolution of the perioperative nurse's role, from pre-operative visits, through to the co-ordination of multi-disciplinary team members and actions that will meet the physical and psychologial needs of the patient, providing timely visits to families, and the discussions and teaching with support staff, demonstrate the multi-faceted ways that perioperative nurses enhance teams through collaborative practice.

2013 ORNAC ESSAY WRITING CONTEST WINNER

2nd Place Essay by Karen Storey RN, RNFA, CPN(C), from Ontario.

Karen won registration and hotel for the 2013 Conference as well as a copy of the Standards.

Enhancing Teams through Collaborative Practice:
Peri-Operative Nurses use Innovation to Provide Patient Centered Care

Working in an operating room since 1991 has allowed me to witness many changes over the years. In the past, the roles of scrub nurse and circulating nurse were learnt on the job, lead by experienced nurses, experts in their field. Since that time, roles and duties have changed as have the educational requirements. Non-nursing personnel work closely with us to perform our non-nursing duties. Opportunities have emerged for the registered nurse to work in expanded roles. Registered practical nurses are now taking on more responsibilities within the operating room. These changes over the years have affected the dynamics of the operating room team, with the continued purpose for delivery of safe patient care but with increased efficiency.

Unregulated health care providers influence our environment. Fiscal responsibilities have lead to non-nursing duties being given to this group of people that bring to the operating room new perspectives and different life experiences. Once trained, they allow nurses to spend their time being nurses. Although they provide this important aspect and support, supervision of delegated tasks is required to insure safe practice and best patient outcomes.

As a registered nurse first assistant (RNFA), I have experienced first hand one of the opportunities for growth as a registered nurse in the OR. The RNFA role empowers the experienced nurse to facilitate a stronger operating room team, bringing the meaning of assistant to a whole new level. Collaborating with all personnel involved with a patient, RNFAs have the ability to enhance care while keeping the patient in the center of their focus. They influence the quality of care throughout the surgical experience. ORNAC recognizes this expanded practice role, and has created competencies specific to RNFAs.1 Additional roles in the OR, such as RN anesthesia assistants, present additional opportunities for nurses to further enhance their career. These roles open the door to collaborative problem solving and decision making with the goal of better patient outcomes based on collaborative care.

Also taking on additional responsibilities are registered practical nurses in the OR. There are more RPN's in the workforce, having the highest gain in membership in recent years.2 Roles which have not been typically available to them in the past are now being revisited and revised to allow them to exercise their full potential. Some of these team members have grown beyond the scrub role, and are now circulating in some centers.

Affecting all personnel is the advancement of technology. Tools of communication have changed. Email and voice recognition systems expedite messages to each other. Information can be gathered quickly and efficiently. Using information to their advantage, team members expect to use evidence based practices, no longer accepting the adage "because it was always done that way". As technology continues to expand, the operating room nurse must be ready to embrace the advancements it brings.

I am privileged to work in an operating room which employs minds from various generations that complement one another. Through education and technology, nurses are looking for rewarding and challenging careers. Our dynamic manager was not yet 40 years old when she accepted this demanding role. Our energetic nurse clinician, only 37; one of our orthopedic resource nurses, 26 years old. As these nurses gain momentum and experience, they will be ready for future challenges. Opportunities for advancement past the traditional roles now exist in the operating room, and can enhance a nurses' satisfaction and encourage retention.3 Advanced roles for RN's will continue to grow to become standard roles, as will the growth of other team members in the OR.

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3. (2010). Expectations, Perceptions, and Satisfaction of Graduate Nurses. Journal for Nurses in Staff Development, 26(2), E11-E12.

2013 ORNAC ESSAY WRITING CONTEST WINNER

3rd Place Essay by Alma Dirpaul, RN, from Saskatchewan.

Alma won registration to the 2013 ORNAC Conference as well as a copy of the Standards.

Enhancing Teams through Collaborative Practice:
Patient Interaction: Taking a Second Look

When I decided to enter perioperative nursing, I had been a ward nurse for 4 years. I told another nurse, who had many years of ward nursing experience, about my plans. I remember her reaction and my subsequent feelings to this day. Her comment went something like this, "Oh well, I guess you won't have much to do with the patients anymore." What she meant was that I would be so focused on the surgery and instruments that my actual "eye-to-eye" contact and interactions with the patients would be very minimal. At that time I had only observed in the Operating Room so I couldn't agree or disagree. In spite of this somewhat negative comment I knew without a doubt I wanted to work in the operating room.

I began my perioperative training shortly thereafter. I remember the daunting task of memorizing the names of all the instruments. Why are there so many kinds of scissors? How do you tell the difference between a Kelly forcep and a Nelson Robert forcep? Then trying to remember it all during a surgery with the pressure of time on you constantly was almost overwhelming some days. In the early days being so focused on learning new tasks and information, did make it hard to interact with the patient in a meaningful way. I relied on my co-workers to show the empathy they needed at a time when it as difficult for me show it because I was so focused on my learning needs.

Over the years, as I became more adept at the tasks at hand, I was able to show empathy for the patient while still performing the necessary tasks. I began to see that even though our "eye to eye" time with patients may be short, it can have an extremely meaningful impact on their experience in the Operating Room. I learned a lot from watching the other members of the perioperative team interact with patients. These were the things not taught in the textbooks. This became very evident to me as I watched interactions between children awaiting surgery and the staff assigned to their care. Being able to help an adolescent conquer a frightening experience and maintain his/her dignity at the same time gave me an overwhelming feeling of satisfaction at the end of the day.

For years I thought that the pre-op time when the patient is awake as the only time that I am supporting the patient. Yes, it is the only opportunity to talk with the patient and reassure them. But then I began to understand that when they are anesthetized, I am "there for them" even more because they can't speak up for themselves. Everything we do shows a concern for the patient when they are perhaps at their most vulnerable and unable to speak up for themselves. These tasks that I spent so much energy learning – correct surgical counts, careful patient positioning, learning the correct use of the instruments, maintaining a sterile field – were no longer were just tasks. The tasks became my way of advocating for my patients. In a sense, this is how I interact with my patient now.

If I were to have that same conversation with that nurse now after 20 years in the Operating Room, I would have a different response. I would comment how we use our short time in the Holding area to quickly develop a relationship of trust with the patient. I would comment how effectively the Surgical Confirmation Checklist has brought the Operating Room team and patient together with the purpose of protecting the patient. I would comment how the patient is being cared for days before his surgery when the instruments are being brought in, processed and gathered together with one specific patient in mind. I would comment how during the entire surgery I am guarding the sterile field in order to keep the patient free from infection. Everything we do as an Operating Room team involves interaction with the patient.

The last 20 years as a perioperative nurse have challenged and excited me. I take great pride in my job and see it as so much more than a job. I am glad to be part of a team of caring people that make a difference in someone's life. I look forward to more great patient interactions in the next 20 years.

Surgeon's manual manipulation of abdominal structures via hand port.

planning for the procedure. The booking should include details of the chemotherapy agent that will be required and should clearly identify the proposed post-operative bed plan. The patient should attend a preadmission clinic for routine preoperative testing and to allow for an assessment of the patient's social network. Within the Covenant Health program the unit supervisor from the applicable post-care unit meets the patient and their respective family/support system, provides them with an overview of the pending experience, and assesses the patient's support network. HIPEC is not only physiologically taxing but also carries with it many of the mental burdens that result from a lengthy hospital stay, dealing with invasive cancer, and the potential end of life. A percentage of candidates will, during the procedure, be deemed unacceptable for HIPEC therapies. It is vital that the patient has strong support, from both their family and the hospital staff, as they confront a confirmed palliative diagnosis.

Preoperative Preparation

Prior to the patient being received in the OR, it is recommended that the circulating nurse place a heating/cooling blanket on the OR table to prepare for the possibility of body temperature variations that the patient may experience. A urinary catheter is inserted in order to give the anaesthesia team the ability to monitor fluid imbalances that may result from variances in hydration and medications administered to enhance urine output. A smoke evacuator should also be present during the procedure in order to remove any potential aerosolized chemotherapy. White proposes that the circulating nurse also perform a double check protocol with the surgeon in order to verify the correct chemotherapy agent that should be used.[12] This check can be performed in the same fashion as is used on blood products or medications that are prepared for the scrub nurse's back table. The circulating nurse's primary role is related to safety, spill management and assisting the anaesthesia team should the patient become hyperthermic. The circulating nurse must, in addition to the regular responsibility of assisting the sterile scrub nurse in the preparation of the back instrument table, take on the role of safety advocate by ensuring that the room's regular trash receptacles have been replaced with appropriate biohazardous containers, that spill kits are readily accessible in the room, that the doors to the theatre have proper "HIPEC protocols" signage posted, and that any support staff that may be involved in the surgical case (i.e. housekeeping, operating room attendants) are aware of the HIPEC procedure.

The scrub nurse prepares the surgical back table for major abdominal surgery but also adds the supplies needed for the HIPEC circulation and the protective clothing that the team will wear during the procedure. White proposes that the scrub nurse ensure that all the supplies for the procedure (such as the proper catheters, temperature probes and pump tubing) are available.[12] Upon commencement of chemotherapy circulation all instruments and the sterile field are to be considered "chemo" contaminated. Staff need to change their gloves every thirty minutes. Double gloving using

It is vital that the patient has strong support, from both their family and the hospital staff, as they confront a confirmed palliative diagnosis.

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HIPEC (cont.)

> Double gloving using "non powder" latex gloves is a standard of care throughout the procedure and its cleanup.[13]

"non powder" latex gloves is a standard of care throughout the procedure and its cleanup.[13] Chemotherapy rated nitrile gloves are also a suitable glove choice. The scrub nurse should be a diligent advocate for appropriate PPE and the use of safety precautions once cytotoxic agent circulation begins and should continue monitoring safety compliance until the case is completed.

Preoperatively, the surgeon is responsible for preparing the patient's position and abdomen for the procedure. The surgeon needs to be prepared to withstand the lengthy procedure, which includes performing the laparotomy, tumour debulking, and placement of the inflow and outflow catheter and temperature probes. The surgeon works with the staff running the chemotherapy HIPEC pump to ensure the proper circuit of tubing is primed and available for placement intraoperatively.

A dedicated trained chemotherapy certified nurse or anaesthesia technician is responsible for ensuring that the HIPEC pump is in working order and that a secondary system is available in the event of an equipment failure. White proposes that the pump staff member check the medication label on the chemotherapy agent, perform the "rights" of drug administration (right patient, right medication, right dosage), and follow the hospital chemotherapy protocols.[12] Another responsibility of the pump staff member is to assist the anesthesiologist in maintaining proper patient fluid balances and ensuring adequate urine output. Anaesthesia staff also monitor the patient's endotracheal temperature and respond, as needed, with appropriate measures.

INTRA-OPERATIVE CONSIDERATIONS:

The team works, intra-operatively, to mitigate four major patient risks during the procedure. They are:

1. Nerve damage or deep vein

During this 48 hour period all body fluids are to be treated as cytotoxic and appropriate precautions should be taken.

thrombosis resulting from lengthy surgery;
2. Fluid and temperature imbalances from the surgical procedure and hyperthermic solutions;
3. Potential pulmonary complications from anaesthesia; and
4. Renal toxicity related to chemotherapy.

The surgeon will, during the procedure, be gently agitating the fluid in the abdomen to help circulate the chemotherapy within the peritoneal cavity. All staff must be aware of the chemotherapy spill risks and be ready to administer spill protocols as required. The pump staff monitor the HIPEC circulation and record all pertinent data, such as the patient's height, weight, and body surface area; chemotherapy dosages; temperatures; and urine output levels.[12]

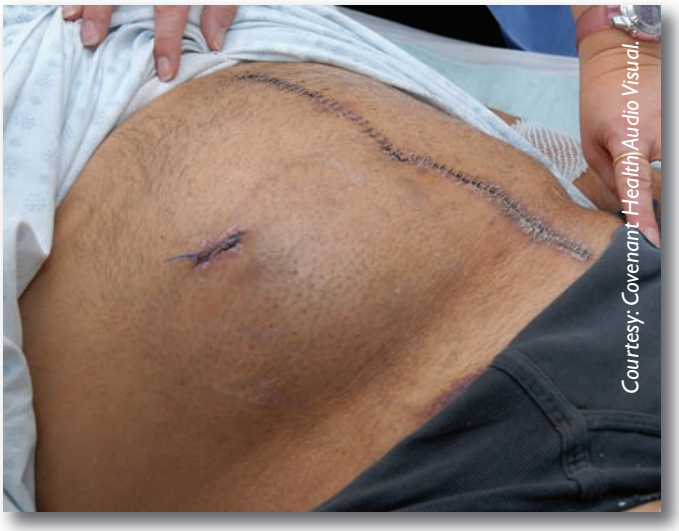
Laboratory staff and pathologists need to be alerted to the potential of receiving specimens from the operative procedure and need to have an understanding of how to process cytotoxic body fluids or tissues. The scrub and circulating nurses are responsible for ensuring all specimens that leave the operative field and OR theatre are appropriately labeled including cytotoxic warnings.[14]

POSTOPERATIVE CONSIDERATIONS

Theatre Cleaning / Chemotherapy Disposal

The OR theatre should be cleaned, postoperatively, using strict routine precautions and all trash should be clearly identified as chemotherapy contaminated and display appropriate warning labels. Protective impervious barrier garments should be worn by all staff involved in post-op cleaning and chemotherapy disposal.[12] The main risks of exposure are from medication dust or droplets, absorption via the skin, or ingestion through food and other oral contact. Protective eye-wear must be worn in order to minimize the risk from potential splash. Wearing proper personal protective equipment (PPE) is every staff member's responsibility and should not be taken lightly.

A spill kit and respirator masks need to be readily available to the staff, in case a spill occurs, as surgical masks do not provide enough protection against an aerosolized agent. Garbage and laundry bags must be removed following cytotoxic hospital policies and disposed of in the appropriate regulatory fashion as applicable in a designated hazardous waste facility. The patient is transferred to the applicable postoperative unit where the same precautions continue to be applied. The patient may still have cytotoxic fluids being released from



Patient Wound Closure Post HIPEC Procedure.

surgical sites and, therefore, precautions must continue until at least 48 hours after the surgery.[12] During this 48 hour period all body fluids are to be treated as cytotoxic and appropriate precautions should be taken. These precautions impact on the patient's post-operative care as all ward staff must have chemotherapy training and adhere to the required PPE protocols.

Post-operative Care

Post-operative HIPEC patients present with similar complications as patients who have undergone other major general surgical procedures. Esquivel illustrates that the three main complications that resulted in re-operation were fistula, anastomotic leak and bleeding. He further adds that these complications were only seen in 11 percent of the 356 HIPEC cases that had been studied. Esquivel also reports the median length of stay was 21 days.[15] It is only during the first 48 hours, of the three week post-operative stay, that the patient and his/her bodily fluids must be treated with chemotherapy precautions. Signage should be applied and appropriate PPE be worn during this 48 hour period. Special information sharing is required during hand-off from one department to another. Within the Covenant Health program, for example, the intraoperative team places a unique chemotherapy alert wristband on the patient to identify the chemotherapy status to all postoperative teams. The intensive care unit, or post-operative ward, track the period of time following chemotherapy administration and place the patient in a "chemo hot" status until the conclusion of the 48 hour period. Nurse to patient ratios may need to be increased, during the immediate post-operative period, to support patient acuity and in recognition of the increased time required to properly put on and take off the required PPE.

Outcomes

Glockzin et al. report that, as reflected in numerous studies, cytoreductive surgery and HIPEC provide a promising therapeutic option for selected patients with a variety of cancers. They add that a number of studies have demonstrated that cytoreductive surgery and HIPEC may improve oncologic outcomes as compared with palliative chemotherapy alone.[16] Both Glockzin et al. and Esquivel propose that the procedures' optimized success is a result of the combined approach of complete cytoreduction and HIPEC.[15,16] Esquivel adds that results support 60% success at 2 years and approach 40% success at 5 years. Tuttle et al. reported that in a prospective study, of 35 HIPEC patients, those surviving had functional assessments done at four month intervals, over the course of the first year post-op, with results demonstrating that quality of life measurements had returned to baseline after four months and shown significant improvement after 8 and 12 months. Rather than reporting that "I am sad" or "I worry about dying" the patients stated feedback such as "I am able to

Acknowledgement:

The author wishes to thank the staff at the Foothills Hospital, Calgary, AB, and at the Cross Cancer Institute, Edmonton, AB, who supported and mentored in the creation of the HIPEC program in Covenant Health. Thanks also to the staff at Covenant Health for their considerable efforts in the establishment of the Covenant Health HIPEC program and to Kimberly Small RN, BScN, NCMP, and Karen Schuster RN, for their assistance during the preparation of this article.

work again" and "I am content with my quality of life." These results lend support to the belief that HIPEC, with tumour cytoreduction, will continue to play a role in the treatment of peritoneal malignancy.

CONCLUSION:

The HIPEC procedure offers select patients, with peritoneal malignancy, a surgical opportunity to increase their survival and the possibility of a cure. During this article's exploration, the many facets of the HIPEC program were explored including the administrative, preoperative, intraoperative and postoperative phases. The discussion also revealed the critical importance of safety, training and team collaboration when planning to undertake a procedure that includes intraoperative chemotherapy. The article outlined the vital importance of establishing strong patient supports as they face the myriad of challenges including a lengthy hospital stay, a physiologically taxing procedure, and the potential end of life. The provided overview empowers surgical programs considering HIPEC to build a peritoneal malignancy program that respects the safety considerations, fiscal stewardship and the collaborative nature required for success. Clinicians and administrators need to apply this knowledge to continue on the journey toward improving hope and extending life for these vulnerable patients.

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ORNAC Standards pertaining to this article can be found in the Operating Room Nurses Association of Canada (ORNAC) (May 2011) Standards, Guidelines, and Position Statements for Perioperative Registered Nursing Practice (10th edition). Section 3, p. 207, Standard 3.2.1 and Section 4, p. 266, Standard 2.5.1.

PERIOPERATIVE LASER SAFETY WORD SEARCH

Submitted by: *Joan Porteous RN, BN, CPN(C).*

Please answer the following laser safety questions and locate the answers on the word search puzzle.

ANSWERS TO LASER SAFETY WORD SEARCH (*from page 24*)

1. Retinal
2. Wavelength
3. Burns
4. Flammable
5. Smoke
6. Electrosurgery
7. Eyewear
8. Endotracheal
9. Evacuated
10. Reflective
11. Key
12. Oxygen
13. Moist
14. Fluid
15. Organisms
16. Policies
17. ORNAC
18. Officer
19. Log
20. Plume

I	W	O	R	K	H	A	R	D	E	R	Q	U	E	L	I	S	D	P
P	A	T	I	E	N	T	E	A	L	F	A	L	L	O	U	T	O	E
E	V	A	C	U	A	T	E	D	W	I	E	Y	E	W	E	A	R	R
I	E	S	T	A	N	D	A	R	D	C	A	R	E	U	R	P	G	I
L	L	H	O	E	E	N	D	O	T	R	A	C	H	E	A	L	A	O
O	E	Q	K	K	S	T	E	R	I	L	I	Z	A	T	I	O	N	P
V	N	B	D	E	G	C	O	S	E	T	I	M	E	O	U	T	I	E
E	G	C	E	A	Y	S	R	E	U	T	E	R	I	G	S	Y	S	R
M	T	O	L	E	U	G	N	U	D	O	I	A	S	H	M	T	M	A
Y	H	R	E	R	N	O	A	Y	B	K	T	N	M	S	O	E	S	T
J	O	R	G	E	U	O	C	T	I	S	Y	P	A	S	K	F	K	I
O	G	E	A	F	R	D	F	L	A	M	M	A	B	L	E	A	I	V
B	R	C	T	L	S	E	M	A	P	O	L	I	C	I	E	S	T	E
Y	K	T	I	E	E	D	O	S	X	I	B	A	R	R	I	E	R	A
P	E	C	O	C	S	U	R	E	N	S	W	Q	E	A	D	B	T	I
R	L	O	N	T	R	C	N	P	U	T	U	C	D	F	L	U	I	D
G	A	U	I	I	O	A	A	T	Y	M	I	O	L	B	I	R	E	E
O	I	N	M	V	C	T	A	I	J	F	O	X	Y	G	E	N	G	S
W	E	T	P	E	K	O	T	C	F	L	R	E	P	O	R	S	G	E
N	O	D	U	S	T	R	N	O	B	B	T	P	R	L	A	T	E	X

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ADDITIONAL PERIOPERATIVE NURSING WORDS, PHRASES AND ABBREVIATIONS

I	W	O	R	K	H	A	R	D	E	R	Q	U	E	L	I	S	D	P
P	A	T	I	E	N	T	E	A	L	F	A	L	L	O	U	T	O	E
E	V	A	C	U	A	T	E	D	W	I	E	Y	E	W	E	A	R	R
I	E	S	T	A	N	D	A	R	D	C	A	R	E	U	R	P	G	I
L	L	H	O	E	E	N	D	O	T	R	A	C	H	E	A	L	A	O
O	E	Q	K	K	S	T	E	R	I	L	I	Z	A	T	I	O	N	P
V	N	B	D	E	G	C	O	S	E	T	I	M	E	O	U	T	I	E
E	G	C	E	A	Y	S	R	E	U	T	E	R	I	G	S	Y	S	R
M	T	O	L	E	U	G	N	U	D	O	I	A	S	H	M	T	M	A
Y	H	R	E	R	N	O	A	Y	B	K	T	N	M	S	O	E	S	T
J	O	R	G	E	U	O	C	T	I	S	Y	P	A	S	K	F	K	I
O	G	E	A	F	R	D	F	L	A	M	M	A	B	L	E	A	I	V
B	R	C	T	L	S	E	M	A	P	O	L	I	C	I	E	S	T	E
Y	K	T	I	E	E	D	O	S	X	I	B	A	R	R	I	E	R	A
P	E	C	O	C	S	U	R	E	N	S	W	Q	E	A	D	B	T	I
R	L	O	N	T	R	C	N	P	U	T	U	C	D	F	L	U	I	D
G	A	U	I	I	O	A	A	T	Y	M	I	O	L	B	I	R	E	E
O	I	N	M	V	C	T	A	I	J	F	O	X	Y	G	E	N	G	S
W	E	T	P	E	K	O	T	C	F	L	R	E	P	O	R	S	G	E
N	O	D	U	S	T	R	N	O	B	B	T	P	R	L	A	T	E	X

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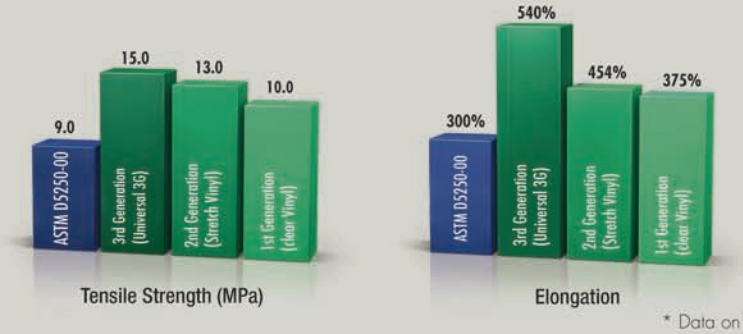

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