

Canadian  
**Operating**  
**Room** Nursing  
Journal

Published Quarterly. Volume 13, No. 3, September/October, 1995

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Canadian Operating Room Nurses Association of Canada

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# Canadian Operating Room Nursing Journal

Published for the Operating Room  
Nurses of Canada by  
Health Media Incorporated.

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V4P 1P7

Phone: (604) 535-7933

FAX: (604) 535-9000

### Subscription Rates:

	1 Year	2 years
Canada	\$ 17.00	\$27.00
United States	\$ 22.00	
Other Countries	\$ 26.00	
Single Copy orders	\$ 5.00	

Add GST @ 7% to all orders. R102310323  
Canadian Operating Room Nursing Journal is in-  
dexed in *Index Medicus*, the Cumulative Index to  
Nursing and Allied Health Literature.

I.S.S.N. No.-0712-6778

Canadian Publications Mail Product

Sales Agreement No. 0584304

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## Promoting Excellence

By Vija Hay, RN, CPN (C)

Our motto: "Promoting Excellence" captures the essence of ORNAC's Mission, Values and Vision Statements. The Mission Statement describes what ORNAC is all about:

"The Operating Room Nurses Association of Canada is an organization of Registered Nurses dedicated to:

- **The Promotion and Advancement of Excellence in Perioperative Patient Care.**
- **The Professional and Personal Enhancement of Operating Room Nurses™.**

The key words in ORNAC's Values Statement express our basic beliefs. They are:

**Knowledge,  
Collaboration,  
Respect,  
Professionalism and  
Continuous Quality.**

The Vision Statement of what we want ORNAC to be is to **Enhance and Advance Perioperative Nursing Practice.**

ORNAC has lived up to these Statements in many ways, the most significant at this time being Perioperative Certification. I am proud and pleased to announce that the first Certification Examination in June was a tremendous success. Many of you took the challenge in writing the first exam. Ninety-seven percent of the candidates met the certification requirements. I wish to acknowledge and congratulate all Operating Room Nurses who were certified in Perioperative Nursing and have earned the important professional credential CPN (C). **Well done!**

Certification in perioperative nursing confirms our commitment to nursing excellence and validates our professional and personal achievements.

Many of you demonstrated commitment and dedication to advancement of perioperative nursing by working with the Canadian Nurses' Association to develop the certification exam. I thank you for your contribution to "promoting excellence". It is now up to us to encourage all OR nurses to become certified.

The next step in our pursuit of excellence and professional growth is to make Advanced Practice a reality. We have an opportunity to expand the perioperative role to advance in the continuum to excellence. Much work has already been undertaken to explore, promote and develop the advanced perioperative practice in Anaesthesia and Surgery. But much work is still to be done.

Let us take the opportunity on November 14th, O.R. Nurses Day/Week to focus on "Promoting Excellence" for patient care and for professional and personal development. Share with your colleagues, other health care workers and the community your distinct expertise in perioperative nursing, your achievements and your vision of advanced practice. Celebrate your achievements and successes.

Vija Hay, RN, CPN (C), is President of the Operating Room Nurses Association of Canada. She is Director of Nursing Services, Queensway Carleton Hospital, Nepean, Ont.



# World Conference of Operating Room Nurses IX

September 10-15, 1995 - Hamburg, Germany

## Report by Gloria Stephens, International Planning Committee, Canadian Representative

### Theme

The theme and education activities of the World Conference were identified by an International Planning Committee (IPC), in 1994. The group was made up of representatives from: Australia, Austria, Canada, Denmark, Finland, France, Germany, Greece, Italy, Japan, Spain, Switzerland, United Kingdom, United States and AORN Staff. The theme: "Touching Lives and Building Futures", gave direction to the Conference and activities to gain new perspectives for the future of perioperative nursing practice and for the operating room nurse.

### Registration

Forty five (45) countries were represented by 1,732 participants and guests. There were 69 Exhibitors having 170 booths, with a registration of 470. Per country, the highest number was the USA with 294 registrants, closely followed by Germany with 222, Italy 217, and Australia with 126. Only 33 Canadians attended the IX World Conference.

### Translation

The presentations were translated into English, German, French, Italian and Japanese, but not for every session - one had to carefully check the program to see which language would be translated. The translation, on the whole, was the best of any World Conference to date.

A deposit of 50 Deutsche Marks was required for each translation headset, but was refunded at the end of the conference.

### Opening Sessions

The Canadians sat in a group, as did other countries, for the Opening Session, and cheered when their country was called out as in a "roll call" system - alphabetically by country. The flags of each country were placed on the platform and when a country was called, the IPC representative went on stage and stood by the appropriate flag.

AORN President Ellen K. Murphy opened the conference and welcomed all from around the world. Margot Ende, Director of Nursing Services at the Universitäts Hospital, Münster, Germany, read greetings from Herr Detlef Hohlin, President of the German Nurses Association (DBfK).

Professor Doctor Ursula Rabe-Kleberg of Martin Luther University Halle gave the Keynote address. She stressed the importance of operating room nurses being included in discussions of interpersonal communications with patients.

### Presentations

The presentations for this conference were particularly well coordinated with the theme, objectives and the slides were of good quality. Canada was represented by four speakers whose papers were well received. In keeping with the Canadian tradition, the IPC representative met each speaker in the speakers' lounge and presented a corsage and small gift to each speaker. Pictures were taken of this event and copies will be sent to the ORNAC Historian. The gift this year was the 'look-alike' Tilly hat and ORNAC crest.

Each speaker presented twice during the day, morning and afternoon.

The first to present, September 12, was Audrey MacDonald, Nurse Manager, OR, PACU/CSD, Milton District Hospital, Milton, Ontario. The session was "Measuring Quality". Audrey's paper - "Evaluating Personnel Competencies" explored the concept that ensuring quality is a personal responsibility and the best method for measuring quality is by evaluation of personnel competencies. First she gave an overview of the historical perspectives of what constituted quality and how quality had been measured. Indicators were outlined and correlated to improve personnel competency and patient outcomes. Each person must take responsibility for quality care and to help each other person achieve quality through improved personal performance, so stated Audrey.

Two speakers presented Wednesday, September 13, Marnie Simon and Gloria Stephens, both of Vancouver, B.C.

Marnie Simon, Operating Room Nurse Specialists, British Columbia Institute of Technology, titled her paper "Intercultural and Interdisciplinary Teams". The concepts of intercultural sensitivity, communication and collaboration was explored during the presentation through use of examples from practice and education. Marnie stressed the need for open-minded acceptance, respect and empathy for the cultural differences of patients and staff members. She also suggested strategies that could be utilized in order to be an effective member of an intercultural or interdisciplinary health care team.

"Planning for the Profession: Delivery of Post Basic OR Education, Career Laddering and Manpower Planning" was the main title for the other Wednesday paper. Gloria Stephens, recently retired as Nurse Clinician - Operating Room, St. Paul's Hospital, Vancouver, was one of the three presenters for this session. Gloria's presentation "Planning for the Nursing Profession of the Future" stressed the need to study the history of nursing, to care about the nursing profession in order to plan for the future; Post Basic OR Programs are essential and to be valued, and to be credible must provide career laddering for the graduate. Mrs. Stephens stated that... "if we are to survive as a profession we must honor, respect and value ourselves, our interpersonal and interprofessional relationships. To plan for the future we must consider: Recruitment, Retention, Research and Resources".

Thursday, September 14th, the fourth Canadian speaker presented in the session: "Managing Difficult Situations. Sharon Gabriel of Mount Sinai Hospital, Toronto Ontario, presented: "Fostering Positive Relationships". Sharon described measures that promote positive relationships between nurses, patients, families and other health care providers. Watch for this excellent presentation in the November/December, 1995 issue of this Journal.

### Moderators

The moderators were first chosen from the members of the IPC members and thereafter from the host country Germany and other countries. Canada was represented by Gloria Stephens who moderated for two sessions. Tuesday, Sept. 12 for "Ethical Concerns". Speakers for this session were: Heather Lloyd-Jones of the United Kingdom. The content of her talk identified the responsibilities of a donor team related to enhancing the relationships and communication

between those who care for the donor and those who care for the recipient. From Australia, Phillis Mary Davis described ethical issues that have been raised in her country in an effort to deal with the high cost of health care, such as rationing of specific care according to age and/or diseases which are self-inflicted. The third speaker, Eleanora Thiene of Italy, presented a paper on the importance of avoiding hypothermia and outlined nursing protocols and actions which would help prevent the condition.

The second session moderated was Thursday, September 14 on "Day Surgery/Outpatient Surgery". The speakers were: Nazaré Pellizzetti of Brazil who described how an outpatient surgery department was planned to demonstrate that quality care was in fact carried out. Ann Brown of Lancaster, England, discussed the concept of perioperative nursing in relation to day surgery. The third speaker, Claudio Roncada described in detail how an ambulatory surgery centre in Belgium was developed.

### Fellowship Night

In keeping with tradition an evening was set aside for "International Fellowship Night", held at the Congress Centrum. This grand party was open to all participants and exhibitors for a fee. The decor in the Centrum was of a German Beer Garden and in that atmosphere everyone was soon in a party mood. Most of the participants arrived in attire which could be identified as unique to their country. The food was a variety of delicious German dishes accompanied by exhilarating music, merriment, photos with colleagues and dancing. Another World tradition - trading souvenirs - went on in earnest throughout the evening.

### International Form

Wednesday, September 13, 1615-1745 hours, an International Form was moderated by Lene Noerkjaer of Denmark. An interesting outcome of this session was the fact that many countries have similar problems and are seeking assistance in problem-solving. No conclusions were formally made but there was a healthy sharing of ideas and empathy.

### Special Events for Canadians

For several World Conferences, Johnson & Johnson Medical Products has held a cocktail party for Canadian attendees the Sunday evening prior to the Opening Sessions on Monday. This time the Australians were invited and a great time was had by all. It is a convenient way to discuss strategies for opening and closing sessions and International Night.



Four speakers were among the 33 Canadians attending the IX World Operating Room Nurses Conference in Hamburg, Germany, September 10-15, 1995. Total registration was 1,732.



Marnie Simon (left) Speaker, presents corsage to IPC Representative Gloria Stephens.



Sharon Gabriel of Mount Sinai Hospital, Toronto, was IX World Speaker.



Vija Hay (left) presenting ORNAC gift to Ellen Murphy, AORN President.



Audrey MacDonald (left) Speaker, with Vija Hay, ORNAC president.

## ORNAC Gifts

Immediately following the final session special Canadian gifts were presented to the Presidents of AORN and the German Association in the Office Headquarters. ORNAC's President Vija Hay presented Ellen Murphy, AORN President with a Native Canadian Indian carved pewter spoon. Gloria Stephens, IPC representative, presented Margot Ende, German representative with a small carved pewter plate. Also in attendance were a few Canadians and Lola Fehr, Executive Director of AORN.

## Last Day

Friday morning, September 15 - the general session was titled "Challenging Nursing Myths and Traditions". Marilyn Williams, was the first speaker. She is Lecturer in Nursing, United Midlands College for Nursing and Midwifery, United Kingdom, and spoke on traditions that can inspire and myths that can be dangerous in operating room nursing.

## Closing

The closing session, entitled "Building Futures", featured three speakers: Libby Campbell, Chairman National Association of Theatre Nurses, St. John's Hospital at Howden, Scotland. She identified ways to 'build futures' through leadership, communication and touching lives. "We can build the future and ensure success by using the concept of building a bridge. The careful construction of sturdy structures by which we 'touch lives' and communicate with all people is the basis of civilisation .... Walls keep people apart whereas bridges will bring people together".

Petra Ebbecke, Advanced Nursing Educator, Teacher, Stadtisches, Klinikum, Braunschweig, Germany, described how implementation of quality assurance will allow nurses to advance in the collaboration of all professional groups.

The third speaker Lene Noerkjaer, head nurse, University Hospital, Aarhus, Denmark, discussed ways nurses could work together on an international level, related to cultural and ethical differences as we build futures together.

## Closing Remarks

Vija Hay, wearing the magnificent chain of office as president of ORNAC described the meaning of the words Canada and Toronto as they relate to the

Canadian Aboriginal Language in her invitation and warm welcome to all nurses, exhibitors, friends etc. to attend the Tenth World Conference of Operating Room Nurses, September 8 to 12, 1997, Toronto, Canada. Plan Now to attend.

Ellen K. Murphy, President of AORN and Margot Ende of Germany gave closing remarks. Thanks were extended to Exhibitors, Translators, IPC members, speakers, moderators and all participants for their careful attention to the program content.

An acceptable tradition of World Conferences - the whole auditorium stood and broke in song - "We are the World..." with lots of hugs and picture taking as we turned our attention homeward bound.

## International Planning Committee (IPC)

The IPC met Sunday, September 10th to discuss final preparations for Opening of the Conference and to review the weeks activity to see that everyone and everything was in place. Once this was completed items could brought to the table from the floor. The following items were suggested from Canada's IPC Representative:

- Speakers complimentary fee for week's registration;
- IPC members given an opportunity to provide input as to where World Conferences are to be held;
- and Budget report, to name a few suggestions offered, plus other items from various other countries were presented by representatives at the table. These items were discussed at the post conference meeting. After reviewing the week's activities, time ran out and all items were not addressed but the budget was briefly reviewed. There will be an IPC meeting called to complete the agenda items. ORNAC Executive and Board will be fully informed.

It was a great honor and pleasure for me to represent Canada on the International Planning Committee as well as being a speaker and moderator. This completes my term on ORNAC Executive and Board as Past President. I extend my best wishes to the current Executive and Board for a great future.

**Gloria Stephens, IPC Representative**

**X World Conference  
of Operating Room Nurses  
September 8 - 12, 1997  
Toronto, Canada**

**Plan Now to attend !**

## What are the odds?

By Elaine Hersey, R.N., B.N.

What are the odds? This is a phrase that is familiar to all of us. We use it every day but disregard its inference. For example, when we walk past a lotto booth, we ask ourselves "What are my odds of winning?" We walk across the street against the proper crossing signal and we ask, "What are my odds of making it?" Life is a gamble. We are always betting against the odds.

However, this question takes on a greater impact when applied to the area of health care. For some reason the odds take on more significance. If I need surgery I question my odds of making a complete recovery. If a woman discovers a lump in her breast she automatically questions, "What are the odds that it is benign?"

When we talk about the operating room, invasive surgical procedures, compromised patients, aseptic technique and surgical outcomes the "odds game" takes on an even greater meaning. If microorganisms are 1 micron in size what are the odds that some will penetrate through a 20 micron pin hole!

The 1900's have brought advances that have proven to be mixed blessings. The rapid development of antibiotics used prophylactically and therapeutically has saved countless lives. But it has also resulted in the emergence of resistant strains of microorganisms. The 1990's has seen the isolation of methicillin resistant staphylococcus aureus; the increase of HIV; the advent of Hepatitis C and an increase in resistant strains of TB.

Advances in diagnostic monitoring and therapeutic modalities have saved lives, but have also provided new sources and reservoirs of microorganisms.

The goal of infection control should be to work in tandem with all health care disciplines to provide quality patient care through the application of the principles of microbiology, epidemiology and infection control. Infection control is everyone's responsibility from housekeeping to the medical staff. There must be a coordinated effort of medical, nursing and

ancillary personnel in the prevention and control of infection. Everyone is important in stacking the odds in favor of the patient.

Microorganisms are hitchhikers and love to travel via hospital personnel. They are not prejudice nor discriminatory. They will accept a ride from anyone and enjoy travelling throughout the entire institution.

We as Operating Room nurses regard ourselves as the patient's advocate. We speak for the patient when he/she is unable to do so. We are to go the extra mile; to ask the extra question; take the extra precaution of checking the equipment and supplies and stacking the odds in favor of the patient. Is that what we are doing when we ignore slips in aseptic technique; when we are not as diligent in our standards and practice as we should be; when we give way to pressure from the surgical staff; or when we compromise our standards of care?

Perhaps the time has come for us as O.R. nurses to take a closer look at ourselves and our practices and the reason for our "being". Perhaps we should ask ourselves the question, "What are the odds that one day I will be the patient putting my trust in a nurse who is betting against the odds?"

Elaine Hersey, R.N., B.N., is a staff nurse in the Operating Room, Victoria Hospital, Halifax, N.S.

### Call for Abstracts for

1997  
ORNAC  
National Conference  
OTTAWA, Ontario

Please forward your Abstract to:  
Sharon Ball  
Program Committee  
2611 Addingham Cres  
Oakville, Ontario  
L6J7K6

Please submit by March 1, 1996

## Congratulations ! to Canada's 505 Certified Perioperative Nurses

The Canadian Nurses Association (CNA) conducted a one-day multiple choice examination June 3, 1995 for the certification of seven nursing specialities. Of the 1,627 nurses sitting for the exam in 40 writing centres 505 were Perioperative Nurses, representing the largest turnout of any specialty group.

### Congratulations!

Each of the successful candidates received a diploma, a wallet size identification and can use the certification credential CPN(C).

The next Certification exam will be held in all

major centres across Canada

**March 30, 1996.**

Deadline for application to write is:

**November 30, 1995.**

Contact:

**Certification Coordinator,  
Canadian Nurses Association**

**50 The Driveway**

**Ottawa, Ontario**

**K2P 1E2**

**Toll free phone 1 - 800 - 450 - 5206**

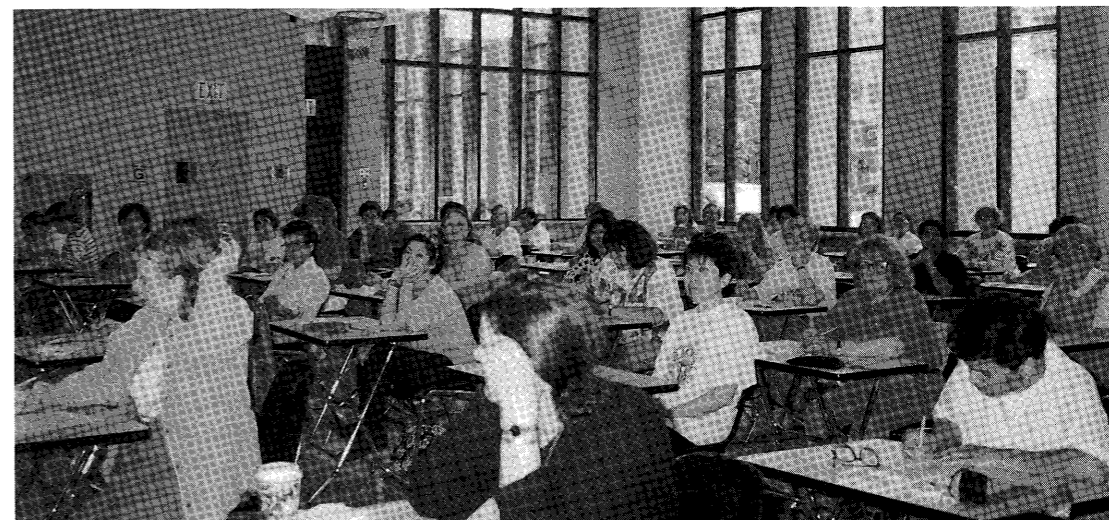


Photo above and below show Perioperative Nurses getting set to write their Certification exam June 3rd, 1995 at the Mitchener Institute of Technology in Toronto.



# Bursary for OR Nurses

By Shelly Zareski  
Chairperson  
ORNAC Awards Committee

This bursary was established to financially assist ORNAC members in furthering their education in areas that will enhance perioperative nursing practice. The ORNAC Awards Committee, comprised of members from across the country, choose successful applicants in accordance with established selection criteria

## Eligibility Requirements

The applicant must be a registered nurse who is licensed with the Provincial Professional Association. The applicant must also be an active member of the Provincial Operating Room Nursing Association two consecutive years prior to submitting the application. The individual must be employed, with a primary focus on perioperative nursing, according to the official ORNAC definition.

Funding is available for post basic operating room nursing programs approved by ORNAC, Baccalaureate nursing programs and Masters and Ph.D. nursing programs related to health care and considered an enhancement to existing perioperative employment.

## Application Requirements

The personal profile / resume must be typed and supporting data enclosed with the completed application form. The application will not be considered if this criteria is not met. This data includes letters of reference as indicated on the application form, photo

copies of nursing license, membership in a provincial OR association, perioperative nursing certification (if applicable) and proof of acceptance in an education program.

The complete, typed application form and supporting documentation must be submitted to the Chair of the ORNAC Awards Committee before is **March 15th each year**. This information can be found in every issue of the *Canadian Operating Room Nursing Journal*. Late submissions will not be considered.

This bursary is jointly funded by Johnson & Johnson Medical Products and ORNAC and is administered by the ORNAC Awards Committee. The applications are judged by the committee based on established criteria. If there are no suitable applicants, the award will not be presented and funds will be carried over to the next year. Bursary funds are designated specifically for tuition and books. Final approval for disbursement of funds rests with the Awards Committee and the ORNAC Board of Directors. At the end of the term, proof of successful completion of the course must be forwarded to the Chair of the Awards Committee in order to close out the file.

ORNAC recognizes that the education of perioperative nurses plays a pivotal role in providing a strong and successful national organization. The ORNAC Executive and Board of Directors appreciates the financial support provided by Johnson & Johnson Medical Products.

# Operating Rooms Don't Have To Be So Scary !

By Ellen McQuabbie, R.N.

For the past four years, we at Stony Plain Municipal Hospital have been striving to make the operating room experience less frightening for our patients of all ages. There are a number of actions we have taken to accomplish this.

1. All our patients who are receiving general anaesthetic are seen in the pre-op assessment clinic by both the anaesthetist and a nurse, usually one of the O.R. nurses. This is very helpful, not only for O.R. staff who learn of patient problems and challenges prior to O.R., but also for children who then come to a familiar place on surgery day. They see familiar faces and surroundings. Weight, consent and lab work, if necessary, are all obtained at this time, so patients do not need to come into hospital more than 1 1/2 - 2 hours prior to surgery. In pre-op assessment, they are given written instructions for their surgery day, as well as a contact phone number.

2. We now send two EMLA patches home with the parents of each child at preoperative assessment. They are given instructions on application and told to apply one patch to the back of each hand of their child about 2 1/2 - 3 hours prior to surgery time. We are finding this gives optimum anaesthetic effect prior to the intravenous needle.

We are finding our present method is far superior in comparison to the results we were getting previously, when the nurses put the EMLA ointment on each child's hand upon arrival to hospital the morning of surgery. Since these patients are all out-patients we recover our cost by charging parents for the patches.

Where age is applicable, the children receive a wonderful 21 - page fun and games coloring book at their pre-op assessment.

3. Children can play with an assortment of toys in our holding area and loved ones may remain with patients of any age until he/she is actually taken into the Operating Room.

4. It has long been thought that music "soothes the soul". One of our Recovery Room Nurses translates this thought to action by supplying an assortment of tapes and CD's for the holding area and recovery room. Comments and reactions from visitors and patients alike are very positive and encouraging.

In the recovery room there is a rocking chair for parents to cuddle and rock a child who needs to be comforted while waking. As a parent who has had children go through surgery, I am well aware of the benefits of this to parent, as well as to child!

5. We instituted a "Volunteer Program" to assist our patients and families while they await their surgery. We feel this pre-operative waiting period can be most frightful, as imaginations run rampant. Our volunteers are handpicked and highly trained to assist in this area. Their duties include playing with the children, reading to them, directing parents and visitors to the bathroom or cafeteria and acting as liaison between patient/family and O.R staff. The volunteers sit with ophthalmology patients and keep them company while the patient is in our waiting area. Following surgery, volunteers direct the ophthalmology patients to the cafeteria and may even sit with them

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## Author

Ellen McQuabbie, R.N. is the Operating Room Charge Nurse at the Stony Plain Municipal Hospital, Stony Plain, Alberta.

until their family arrive to take them home.

On two occasions we have utilized a volunteer to follow a cataract patient into the O.R. and sit with him during the procedure. The patient may have otherwise had to have a general anaesthetic because of fear or apprehension and the inability to lie quietly. He knew and trusted the volunteer because she had been with him preoperatively. It worked beautifully.

### Follow-Up Phone Calls

On post-operative phone calls that I make to a cross section of all patients, I receive comments such as these:

- "My son said the best part of the operation was 'the lady who played soldiers with him'."

- "Please thank your volunteer person. She put me at ease and kept my mind occupied."

From the volunteers themselves I hear:

- "E.N.T. day is a grandmother's heaven with all those little children, I love them all!"

- "With cataract patients I get such a feeling of satisfaction when I can comfort them and make them less afraid." *Note: the volunteer remains with the patient when the anesthesiologist injects the freezing.*

- "I enjoy people, young or old. I felt a need to do something for the community. In our busy life-style of the 90's, no one seems to have time to really listen. As a volunteer I take time to just listen, to share and to accept them as they are and, hopefully, lessen some of the uncertainties. A problem shared is a problem halved! Feedback has been positive and I feel a great deal of anxiety has been reduced through the work of a great team of medical personnel in Stony Plain. I've enjoyed it greatly!"

### Acknowledgement

I wish to acknowledge our volunteers, past and present, for their dedication and care to our surgical patients:

Doris Stonehouse	Shelly LeFebvre
Doris Larsen	Tammy Bishop
Carole Woloshyn	Marilyn Ulmer
Isobel Baron	Vi Criss
Betty Marshall	

I must also recognize Maureen Eykelenboom, the volunteer coordinator who began this program here at Stony Plain Municipal Hospital and who approached me with a question, "Do you think there could be any place for volunteers with surgical patients?"

There absolutely is a very important place for them. Thanks, Maureen.

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# Risk Management

By Darlene Beudet, RN, BScN

### Introduction

Risk is encountered by everyone everyday. Since the beginning of time, humans have had to deal with risk. Controlling and eliminating the known risks are what we call risk management.

Risk management (RM) dates back 6000 years. In Babylonia in 4000 B.C., evidence has been discovered which indicates that efforts were made to minimize damage by fire and cargo loss at sea. Still, health care risk management is relatively new. In 1965, the case of Darling vs. Charleston Community Memorial Hospital set a precedent. In that case, the Illinois Supreme Court held that a hospital could be liable if the nursing staff failed to notify medical and hospital administration when they knew that a patient was receiving inadequate care from a physician, or if the hospital failed to review and monitor treatment by physicians, and failed to enforce medical staff bylaws requiring physicians to obtain consults when necessary. The private physician in this instance was a general practitioner who had been allowed by the hospital to practice orthopedics even though his competence had not been reviewed in more than 30 years (Southwick, 1988).

The medical malpractice crisis of the mid-1970's in the U.S. emphasized the need for risk management in health care.

### RM, QA, CQL & TQM

What is risk? The Oxford dictionary defines risk as an "exposure to chance of injury or loss". Risk management may therefore be defined as "a management function aimed at the identification, evaluation, and treatment of risks that could result in a loss (Youngberg, 1994)." The purpose of risk management is to maintain the financial viability of the organization.

How does this differ from quality assurance? QA is "a process of systematic evaluation to ensure excellence in health care (Meisenheimer, 1992)." The goal of QA is continuous improvement of patient care.

Continuous quality improvement or CQI is meant to continuously monitor, improve and account for quality of performance. TQM, total quality management, "is a systematic way of ensuring that organized QA activities occur, and that they occur not only to ensure quality of care, but also to continuously improve care. This approach includes collaboration of individuals from all disciplines at all levels of the organization" (Meisenheimer, 1992).

### Purpose of QA & RM

Quality assurance strives for improvement but does not count the cost or the risks, whereas, risk management may not make us feel better, but it might keep us out of trouble.

Risk management is a system or a process. There are six basic steps to follow in risk management:

1. Identification of a risk or problem,
2. Analyze the problem or risk identified,
3. Develop alternate techniques or corrective actions,
4. Choose the best techniques or corrective actions,
5. Treat the risk or implement corrective action, and
6. Evaluate the strategies.

### Author

Darlene Beudet is Unit Manager of the Operating Room/Post Anesthetic Care Unit at the Windsor Regional Hospital, Metropolitan Campus, Windsor, Ontario.

## Risk Identification

Risk identification is a first step in the decision making process in which the risk manager becomes aware of risks that constitute potential loss exposures for the institution; i.e., property loss, net income loss, liability loss and personnel loss. Some sources of this information can be obtained from:

- Incident reports
- Infection reports
- Occurrence screening in conjunction with the QA program
- Walk through inspections
- Past accreditation and licensure surveys
- External consultants reports
- Occupational Health and Safety reports
- Informal discussion with staff employee incident reports, and
- Preventive maintenance records.

The first step of the risk management process, risk identification, makes certain that reports are made of any adverse occurrence. Therefore, staff must be educated to recognize and reliably report any such occurrence.

Probably the greatest obstacle to overcome is resistance from medical and hospital staff to get involved in risk identification. The risk manager must have the ability to plan and coordinate activities so everyone is involved. An example is the strides that anaesthesiologists have made through implementing standards in monitoring. Professional associations, such as the Canadian Anaesthesiology Society, adopted minimal monitoring standards that require the use of pulse oximetry during anaesthesia to reduce the risk of injury from hypoxia.

## Risk Analysis

In this step of risk management, an assessment is made of the potential severity of a loss associated with an identified risk, and the probability that a loss will occur. Some risks have a high frequency of occurrence, but low severity, such as lost personal property. Other risks have low frequency of occurrences, but high severity of loss when they do occur, i.e., a surgical mishap. The severity of a loss usually refers to direct financial loss, however, damage to a hospital's reputation could lead to economic losses in the future.

		FREQUENCY	
		LOW	HIGH
SEVERITY	LOW	Visitor Falls	Most medication errors
		Some Adverse Reactions	Most Patient Falls
		Some Equipment-Related Issues	Lost Dentures and Other Personal Property
		Surgical/Anaesthesia Mishap	Fatal or Severe Medication Error
	BIRTH-RELATED PROBLEMS	Fracture or Neurological Injury from Patient Fall	
HIGH	Emergency Service Related Problems	Failure to Diagnose Fractures/Disease	

## Development of Alternative Techniques or Corrective Actions

Risk treatment falls into two categories:

1. Risk control to stop, reduce, or minimize losses
2. Risk financing or risk transfer to pay for losses.

Control is equal to loss prevention aimed at reducing the frequency of loss and loss reduction aimed at reducing the severity when it does occur. This may include exposure avoidance in which an institution may choose to not provide a high risk service, or risk transfer, in which independent contractors are hired.

Some other measures that can be used as risk control are staff education, policy and procedure development and revision, preventive maintenance, and use of universal precautions in patient care.

## Selection and Implementation

The selection of the best techniques for managing risks often result in a combination of risk control and

risk financing strategies. Risk control strategies require support and cooperation from department heads, physicians, and employees. Risk management must involve key people early in the process to make implementation a successful phase.

## Monitoring and Evaluation

Once again, involve the key personnel. The risk manager must use empirical evidence to evaluate the effectiveness of a chosen method. These can be claims activity reports, surveys, incident reports, reports to safety and QA committees. Monitoring is on-going. Watch for trends from occurrence screening reports. Get feedback from physicians and nurses. Are procedures being followed? Are additional corrective actions necessary? Provide feedback to staff members on the results so that reporting will continue.

## Risk Management Functions

The activities of risk managers usually include some or all of the following: •risk identification •loss prevention •loss reduction •Occurrence and incident reporting and investigation •overall insurance and claims management •involvement in the discovery process (e.g., interrogation, deposition scheduling) •educating all medical, executive, volunteer and employee staff in the process of liability control •reviewing new products/services to identify and assess potential risk •ensuring compliance with accreditation standards •ensuring compliance with federal, provincial, and local laws and regulations (ECRI, Perspectives 1,1992).

## Staff Education

The risk manager must educate staff at all levels on the purposes and goals of risk management, as well as on specific risk issues. He/She must coordinate educational programs with medical, nursing and technical schools if working in a teaching facility. When preparing for a presentation, the risk manager should work closely with the department head or supervisor to ensure that information provided is relevant to the day to day operations and concerns of the department.

Two goals of risk management education are:

1. Foster support and cooperation on the part of staff for the risk management program, and,
2. prevent or reduce the frequency and severity of incidents and accidental losses through the provision of information and feedback (ECRI, Perspectives 1, 1992).

Do not exclude those on off shifts and weekends. Remain visible and accessible.

## Other Actions to Manage Risk

Risk financing is comprised of two essential strategies. As a companion of various risk control actions, it provides a financial safety net to cope with incidents that were not anticipated. Risk financing falls into two groups:

1. the facility retains the financial obligation, or
2. transfers the obligation to another organization (Wilson, 1992).

When the facility retains control of the financial obligation, that is known as risk retention. Risk retention options include:

- use of a current account to finance minor claims such as belongings or equipment,
- a funded reserve for larger damages or claims out of which payment is made,
- borrowing through a prearranged line of credit to pay for losses incurred, or,
- an insurance fund in which the program carries commercial insurance for claims over a certain amount.

In risk transfer, commercial insurance is purchased by the hospital which is allowed to participate for a variety of liabilities and obligations. This transfers the financial risk to another corporation as opposed to transferring the risk control. This transfers to another corporation the financial burden for loss (Wilson, 1992).

## The Essentials of Facility Wide RM

The responsibility for risk is everyone's. Everyone is a risk manager.

Risk management is not new to health care. Facilities already operate programs whose sole function is to address a risk. For example, Occupational Health and Safety deals with environmental hazards, accidents to staff, and patients or visitors. Infection Control deals with nosocomial infections or contagious diseases. QA monitors and evaluates performance and improvement. In addition, risk is being managed in many ways in line departments each day. Kitchen sanitation, radiation protection, employee screening, Workplace Hazardous Materials Information System (WHMIS), are all part of risk management. Many facilities however, lack the crucial element of risk management. There is no one specific person who knows what risk events are occurring, what risks are being addressed,

and how effective the facilities RM activities are. Many facilities have risk management as a responsibility shared by many as part of their jobs, but neither supervised nor shared.

As an alternative to setting up another committee or program, senior management could create a system that confirms management's role in handling risks, sets standards on how it will be done, and receives reports and provides feedback to existing programs.

At the same time, management must empower department heads to manage risks within their departments, monitor and evaluate activities that make them more effective, identify aspects of the facilities operations where risks are not being managed, and, fulfil the obligation of the governing body to ensure that risks to patients, residents, staff, visitors and property are being managed effectively (CCHFA, 1991).

The CEO may designate him/herself or someone within the facility as the Risk Manager.

The picture of the facility-wide risk management that emerges is of risks, wherever they occur, being addressed by means of a standard process through either line risk management, or one of the risk management programs, and communicated to the risk manager, who will be responsible for the effective operation of the risk management system (CCHFA, 1991).

This distributed system of risk management respects the efforts of existing programs to manage risks. It promotes communication between risk management, line departments and their programs, and supports their activities. It also supports the motto "everyone is a risk manager", and empowers employees to manage risks. In this way, utilizing existing programs, management and staff, additional costs are limited to what the facility can afford.

## Conclusion

In conclusion, this article wants to emphasize the idea that everyone is responsible for risks, and is therefore a risk manager. Education is a key component, however. If all staff at all levels understand the importance of minimizing financial loss for the institution, they then can understand that this may in fact impact on their own positions within that institution. In order to function, institutions must remain financially viable. This allows them to be in a position to provide safe, effective patient care with the right amount of resources. This in turn also allows them to be an active part of the community which they are meant to serve.

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# Parse's Nursing Theory and the Practice of Perioperative Nursing

By Kimberly Andrus, R.N.

As a registered nurse with experience in perioperative nursing, I have my own philosophy of nursing consistent with theorists such as Dr. Martha Rogers and Dr. Rosemarie Rizzo Parse, in the simultaneity paradigm. In her nursing theory *Man-Living-Health: A Theory of Nursing*, Dr. Parse states that nursing is a human science and "the human sciences aim at understanding the connectedness of life itself" (Parse, 1981, 11). I, however, was educated with Roy's Adaptation Model and have been practising using that model. I did not realize, until studying theories such as Rogers' *Unitary Human Being Model* and Parse's *Human Becoming Theory*, why I was so frustrated with my nursing career. My philosophy of nursing, which is congruent with Dr. Parse's view, had been grossly inconsistent with the venue in which I practice nursing.

It is because of this theoretical work that I feel enlightened and encouraged to take my practice of

perioperative nursing into a more productive and appropriate direction. I hope to utilize my interpersonal skills to more accurately reflect my philosophical beliefs in the simultaneity paradigm. This paper describes my philosophy of nursing as it relates to Parse's *Human Becoming Theory* within the nursing metaparadigm.

## The Human and the Environment

Based on my personal observations of people and human nature, coupled with my years of experience in perioperative nursing, I feel that every individual is unique. Although we share some similarities, no two individuals experience or react to life in exactly the same way. I also believe that because of their uniqueness, people continually make individual choices in their lives and must assume ultimate responsibility for their choices. This concept is consistent with Parse's opinion that "a person is viewed as an open being who is more than and different from the sum of the parts" (Wesley, 1995, 131) and "in having to choose how he will comport himself in a given situation, man is a thinking, feeling being, who bears responsibility for his choices" (Parse, 1974, 20).

Furthermore, like Parse, I believe that the human and his environment cannot be separated. An individual reacts to his environment in his own unique way, therefore, the two elements (the human and the

## Abstract

Many nurse theorists have emerged in the midst of the Nursing Profession's struggle for recognition as a science. To gain autonomy we as nurses must first examine our personal philosophies of nursing. Then we can examine why so many nursing professionals experience "burn out" so early in their careers. I propose that we must change how we define our practice from the use of the medical model to our own model. Although we work closely with medicine, we are not physicians or medical aids; we are nurses.

## Author

Kimberly Andrus, R.N., is a perioperative nurse at Mount Sinai Hospital in Toronto.

universe) add up to a totality that is "inseparable from, complimentary to, and evolving together" (Wesley, 1995, 131).

Realizing these concepts we, as nurses, must be aware and respectful of the person to ensure he remains in control of his own nursing care. For example, in the operating room most people waiting for surgery are given heated blankets in the holding area to make them more comfortable in the cold operating room environment. I have observed many nurses and health care providers give warm blankets to people without considering how they feel. As health professionals we can assume the person is cold because he has been NPO for several hours, there is room temperature intravenous fluid (which is lower than body temperature) entering his blood stream, and he is wearing a thin hospital gown. Although we make these assumptions about the person, I feel strongly that as nursing professionals we must consider how the individual feels and allow him to assume responsibility for his own health care. Instead of imposing my assumption and belief on the person, I ask him, with a broad question, how he feels and whether he needs anything. These broad questions allow the person to be in control of his environment. This action shows that, as a Parse nurse, I am aware that "man is postulated as a unitary being simultaneously and mutually co-creating with environmental rhythmical patterns of relating" (Parse, 1981, 39).

With respect to the blanket, I make it a point to inform the person that warm blankets are available but I try to leave the decision making to the individual. Only half of the people with whom I have come in contact have asked for a warm blanket. This observation illustrates my philosophy of nursing with respect to the human and environment metaparadigms as viewed by Parse, who explains that "the human is an open being, freely choosing meaning in situation, bearing responsibility for decisions" (George, 1995, 337).

I feel that the nurse must be respectful of the individual to allow him to utilize nursing as a resource to attain his own health care goals rather than being Roy's passive, "recipient of nursing care" (Andrews and Roy, 1986, 18).

## Health

I prefer Parse's view of health as a state of becoming to Roy's view of health, "as the goal of the person's behaviour and the person's ability to be an adaptive organism" (Wesley, 1995, 110). People flow

with changes in their lives. It is irrelevant whether the change is positive or negative, acceptance or denial, or "adaptation" or "maladaptation" (Andrews and Roy, 1984). Unlike the totality paradigm, Parse's Human Becoming Theory defines health as an "unfolding that cannot be prescribed or described by societal norms; it can only be lived by the person" (George, 1995, 334). To define a person by his health is disrespectful of the human because it disregards the individual. This view focuses on quality of life from the person's perspective rather than as a promotion of health or a prevention of disease as it is viewed by societal norms. The following example will show that my own nursing philosophy is in line with this belief.

The people with whom I come in contact as a perioperative nurse have already made important decisions regarding their health with the assistance of medical and nursing professionals. Occasionally, upon arriving at the operating room, people are faced with more last minute decisions regarding their care. Depending on various medical rationales, the anaesthesiologist will offer the person a choice of anaesthetic (epidural/general anaesthetic). Some people become overwhelmed with this decision because they were not aware that they could choose the mode of their anaesthesia. Other factors may be involved, such as the short period of time the person is allotted to make a decision; possible anxiety related to the person's expectations of the perioperative phase of treatment; or the person's lack of knowledge of the advantages and disadvantages associated with each type of anaesthetic. As a nurse with strong convictions consistent with Parse's philosophy and theory, I move with the person in "a loving true presence to enhance" (Parse, 1992, 40) his ability to remain autonomous and make clear decisions regarding his care.

According to Parse, "true presence is a special way of *being with* in which the nurse bears witness to the person's or family's own living value of priorities" (Parse, 1992, 40). Once the aforementioned situation regarding the choice of anaesthetic presents itself, I make it a priority to remain in *true presence* with the person until he arrives at a decision and the appropriate anaesthetic is administered. I move with the person in the same way Parse describes her three specific principles.

First, in true presence, I ensure the person has all the available information required to make his decision. This is provided by myself or the anaesthesiologist, describing the advantages and disadvantages of each anaesthetic. Then I remain with

him as he considers the information and what it means to him. This action is parallel to Parse's principle of *illuminating meaning*. "The nurse in true presence with the person or family invites the person or family to relate to the meaning of the situation" (Parse, 1992, 39).

Next, I remain with the person while he decides what anaesthetic he prefers. I answer any questions the person may have and encourage him to describe how he feels as he weighs the options, leaving the ultimate decision to him. This behaviour illustrates Parse's principle of *synchronizing rhythms*. "The nurse practicing from the human becoming theory does not try to calm uneven rhythms but rather goes with the rhythms set by the person or family. The nurse in true presence moves with the rhythm as the person or family discusses and recognizes the struggles of the situation" (Parse, 1992, 39-40).

Finally, once the person has decided what anaesthetic he will have, I move with the person, in true presence, to the next phase: the commencement of the operative phase. Before transporting the person into the operating room, I describe to him what to expect before the anaesthetic begins and encourage him to express his feelings about his experience. Parse defines this as *mobilizing transcendence*. "Mobilizing transcendence happens in true presence with the nurse as individuals and families move beyond the moment, planning to reach the hopes and dreams that have been illuminated through the process of being with the nurse" (Parse, 1992, 40).

This example of my personal philosophy of health reflects Parse's view and demonstrates the use of Parse's practice methodology in the perioperative setting. I would prefer to extend this perioperative phase to preoperative visits. The hospital venue, however, does not acknowledge the value of this role due to the current philosophy being rooted in the totality paradigm and the current economic climate.

## Nursing

Nursing, in my view, is a resource to be utilized by people to assist them in making decisions about their own health and health care. As illustrated by the previous examples, I feel that the person is clearly the expert in defining what is important to his own quality of life. By being with the person in *true presence* the nurse helps him understand his own values in a given situation. Parse defines, "true presence as an interper-

sonal art grounded in a strong knowledge base reflecting the belief that each person knows the way somewhere within himself" (Parse, 1992, 40). This is how I have always attempted to relate to people and my philosophy of nursing is strongly rooted in this belief.

In nursing school, I was nursing an elderly woman who, although she was alert and aware of her surroundings, was uncommunicative and withdrawn from her surroundings. The woman always refused her medications and meals and I remember accepting her refusals of her medical treatments as her own choice of how to live her life. In *true presence*, I sat with her and listened to music, talked about her pictures on her bedside table, and held her hand. The non-verbal message I received from this woman was that she was not accepting of her quality of life. I continued to spend whatever time I could with her and I was fortunate enough to be there for her when she died.

As nurses and doctors gathered around her administering oxygen, measuring vital signs, and discussing her Cheyne-Stokes respirations, I sat next to her and held her hand, talking to her and reassuring her that she was not alone because I was with her.

This beautiful connection with another human being remains as my most memorable and rewarding experience. The practice of this role demands creativity and sensitivity, traits that are artistic in nature. "Parse defines nursing as a scientific discipline, the practice of which is a performing art" (George, 1995, 334). Parse continues to describe nursing in a most eloquent fashion:

So too, the nurse, an artist like the dancer, unfolds the meaning of the moment with a person or family consistent with personal knowledge and cherished beliefs. The nurse artist creatively lives knowledge about the human-universe-health connectedness (nursing's phenomenon of concern), which incarnates personal cherished beliefs. The knowledge and beliefs are there in the way the nurse approaches the person, the way the nurse talks and listens to the person, what the nurse is most concerned about and how the nurse moves with the flow of the person. When the nurse artist is guided by a particular nursing theory or framework, the art form reflects that theory or framework, which represents a school of thought in nursing (Parse, 1992, 147).

## Conclusion

In conclusion, nursing theories are essential to the practice and growth of nursing. Without these theories we become merely aids to the medical profession.

Although I have discovered that I prefer Parse's Human Becoming Theory, I am aware that the other theories have important and relevant implications to nursing practice. I feel it is important to have a number of different theories within the nursing discipline because no one theory can clearly define the practice of nursing.

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## CONGRATULATIONS !

To all of Canada's "Certified Perioperative Nurses (Canada) who successfully completed their June, 1995 exams. See President's message p. 5 for more details..

# BCAM STERILE "A Lesson in Asepsis"

By Regina Leonard, RN, BScN, MEd

The practice of strict asepsis is critical in the operating room as the patients are perhaps at their most vulnerable stage of their hospital stay. In the operating room the body's protective mechanisms are disrupted at several levels. The most obvious is the invasiveness of the surgical incision. The immune system is affected because of the associated stress, the digestive system is slowed down because the patient is fasting, the chances of dehydration are increased and thus the lesser the volume of fluid to transport the nutrients required for optimal homeostasis. Added to this is the increased risk for wound introduction of pathogenic microorganisms.

Operating Room personnel have a responsibility to their patients to maintain aseptic technique in order to prevent the transport of microorganisms. Contamination and eventual infection of the surgical patient may occur from four main sources: the patient, the environment, the supplies used and/or the personnel involved in the patients care.

Asepsis is defined as the condition of being free from disease causing microorganisms. Aseptic technique is the method used to maintain asepsis. The basic tenet of aseptic technique is the "surgical conscience" which is guided by the theory and clinical

## Abstract

This article presents the principles and rationale for aseptic practice in the operating room. The mnemonic "BCAM STERILE" has been chosen as the framework in which the principles are presented. The principles apply to all personnel who care for the patient during the intraoperative experience.

application of the Principles of Asepsis. The surgical conscience is the foundation on which development of O.R. personnel is built. It involves continuous assessment, planning, implementation and evaluation of patient care and personnel practices.

The Principles of Asepsis, listed as being anywhere from eight or more, are based on theory and consensus more so than on scientific conclusions. They are strongly recommended guidelines for optimum practice. Once these principles are understood, application becomes more obvious.

For the purpose of this presentation I have chosen the Mnemonic "BCAM STERILE" (pronounced "Become Sterile") in order to present the principles and rationale for aseptic practice. The focus is on the intraoperative phase of the patient's care, although the principles are utilized in the preoperative and postoperative phases of the patient's perioperative experience. The mnemonic breakdown is as follows:

- B - Boundaries**
- C - Contact**
- A - Arms and Axilla**
- M - Moisture**
- S - Sterility**
- T - Touch**
- E - Edges**
- R - Reach**
- I - Individual Surgical Conscience**
- L - Level**
- E - Elimination**

## Author

Regina Leonard, RN, BScN, MEd, has experience in operating room clinical practice, management and education. She is currently Staff Nurse at the University of Alberta Hospital, Edmonton, Alberta.

## Boundaries

### Principle

Sterile persons stay within the sterile boundaries. A wide margin of safety is required between sterile and unsterile persons and items. A sterile person faces the sterile area, turns back onto and keeps a safe distance from unsterile areas and persons, and is ever alert to the barrier between sterile and unsterile. Unsterile persons stay well out of the sterile boundaries and are constantly aware of their proximity to the sterile field.

### Rationale

The chances for contamination are increased as the sterile and unsterile boundaries are overlapped. The scrub team should stay as close as possible to the sterile set-up, the draped patient, and/or each other. A safe margin of movement is required. Wandering around the theatre, chatting with other personnel, reading the chart, loitering in the anaesthesia area, etc. should be avoided at all times.

## Contact

### Principle

The scrub team members should keep contact with the sterile items to a minimum. Items should not be handled any more than is necessary and the instruments should not be handled by the tips. Avoid leaning on the sterile set-up and on the draped patient.

### Rationale

The chances of contamination increase in direct proportion to the amount of contact with the item. This may occur through tearing of gloves or other supplies, dropping of instruments, dislodging of drapes, etc.

## Arms and Axilla

### Principle

Gowns are considered sterile at the front from the nipple line to table level and on the arms from fingers to below the axilla.

### Rationale

The hands, arms and sterile prepared packages should not be placed in the axilla as this area contains a high degree of microorganisms. The hands should be visible at all times and held in front at waist level whenever possible.

## Moisture

### Principle

Permeation of the sterile field by moisture provides a medium for contamination. The operative set-up and sterile patient field require the use of impermeable draping materials and cool instrument sets.

## Rationale

Articles which are damp or wet should not be delivered to the sterile field. Water is an excellent transport medium for microorganisms. They enter the sterile field by a wicking effect. Whenever solutions or other moisture laden items are placed on the sterile set-up they must be contained in a nonporous receptacle. The area beneath the receptacle should be protected in case of inadvertent spillage.

## Sterility

### Principle

All articles used on the sterile field must have been through a sterilization process. All packaging must be intact and items stored in a controlled area. If in doubt about sterility, the item should be discarded from the set-up and the operative field.

### Rationale

The purpose of sterilization is to destroy all microorganisms on items which are for use at the sterile field. If there is any uncertainty as to the sterility of an item, the item should not be used. If in doubt, throw it out.

## Touch

### Principle

The scrubbed personnel touch only items which are considered sterile. The unsterile personnel do not touch the sterile items on a set-up. If contamination is suspected the article needs to be discarded.

### Rationale

Contamination of the sterile set-up and personnel increases proportionate to the crossover of sterile/unsterile barriers. The circulating and scrub personnel must maintain safe margins from each other.

## Edges

### Principle

When package integrity has been interrupted during the delivery of items to the sterile field, the item is considered sterile within the confines of the package only. The edge of packaging that encloses sterile contents is considered unsterile.

### Rationale

The edges of the package are not considered sterile. The edges must be rolled back and kept well away from the enclosed item. Leave as much distance as possible between the outer edge of the wrapper and the sterile person's hands whenever an item is being received on the sterile field.

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## Reaching

### Principle

Unsterile persons should not be reaching over the sterile field. Sterile persons should avoid reaching and leaning over the unsterile field.

### Rationale

Close proximity of unsterile supplies to the sterile field increases the chances for contamination. The use of unsterile objects and hands for pointing over the sterile field increases the risk of contamination from dropping and flaking of microorganisms onto the sterile field.

## Individual Surgical Conscience

### Principle

The operating room personnel are guided by their surgical conscience, a term used to encompass the practice and provision of safe operating room patient care. This conscience is an inherent component of all aseptic principles.

### Rationale

This conscience is developed from accrued knowledge, experience, communication skills and overall O.R. patient care practices. Each patient's procedure is performed with optimal sterile technique and minimal compromise is allowed in the application of aseptic principles. The individual operating room personnel are ultimately responsible for acting as the patient advocate throughout the patient's surgical experience. Each person is accountable for his/her practice and for ensuring that the principles of asepsis are not violated. Corrections to breaches in technique are noted and corrected as they occur.

## Level

### Principle

The horizontal surface of the set-up and patient field are considered sterile. Hands should remain visible and above table tops at all times.

### Rationale

The borders of the sterile field are identified. The horizontal surface of the sterile field is considered sterile. The vertical and undersurface of the set-up and draped field are not visible and therefore can not be monitored. All items falling below the operative field and table top should be discarded as they are potentially contaminated.

## Elimination

### Principle

As microorganisms can not be totally eliminated, they must be kept to an irreducible minimum at the sterile field.

### Rationale

The introduction of microorganisms to the sterile field is from the patient, environment, personnel and supplies. It is impossible to create and maintain a 100% sterile set-up. It is essential to complete vigilant monitoring of the activities and practices of self and others during the surgical experience of the patient.

## Summary

The Principles of Asepsis as they pertain to the sterile field and the personnel involved in the surgical experience have been reviewed. Efforts are required to ensure that microorganisms are kept to a minimum. This can be achieved through personnel education and practice, guidance of the surgical conscience, environmental and patient cleanliness, and ensuring that all supplies have been through the sterilization process and are maintained in a sterile state to the point of usage. The main goal to be achieved from the practice of Aseptic Technique is optimal patient health, integrity and recovery.

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Manuscripts are reviewed by the editorial review board members appointed by ORNAC, and when necessary by outside experts. Submissions are invited on new surgical techniques, descriptions of new technologies or new programs and educational material. Selection is based chiefly on the following criteria: originality, timeliness and relevance to the needs of the journal's readers.

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# Negative Pressure Pulmonary Edema

By Hilary G. Miller, R.N.

Recently, pulmonary edema associated with negative airway pressure is believed to be a result of acute airway obstruction. A literature review reveals that postanaesthetic laryngospasm is the most common cause of upper airway obstruction leading to negative pressure pulmonary edema (NPPE) in adults (Tami et al, 1986).

## Abstract

Pulmonary Edema associated with negative airway pressure caused by upper airway obstruction is a most serious complications in anaesthetic practice (Tami et al, 1986). Laryngospasm associated with intubation and general anaesthesia is the most common cause of upper airway obstruction leading to negative pressure pulmonary edema (NPPE) in the anaesthetic adult (Tami et al, 1986). Other risk factors for the development of upper airway obstruction are identified, and individuals at risk should be observed closely while they remain at risk during the post anaesthetic period.

NPPE appears to be related to markedly negative intrathoracic pressure due to forced inspiration against a closed upper airway resulting in transudation of fluid from pulmonary capillaries to the interstitium.

The following is a presentation of a case of a healthy young male who developed NPPE secondary to airway obstruction caused by biting down on the endotracheal tube while awakening from general anaesthesia.

Acute NPPE following post anaesthetic laryngospasm is uncommon and potentially life threatening and therefore demands early diagnosis and prompt treatment (Holmes et al, 1991). The underlying risk factors for upper respiratory obstruction are:

- laryngospasm
- mechanical airway obstruction (i.e. biting on endotracheal tube or foreign body in the tube)
- hypolaryngeal obstruction
- airway tumor
- obesity with obstructive sleep apnea
- vocal cord palsy
- nasopharyngeal abnormalities
- infections such as epiglottitis, croup and
- bacterial tracheitis (Lorch & Sahn, 1986, and Holmes et al, 1991).

## Case Report - NPPE Post Extubation

A previously healthy 25 year old male presented to the operating room for emergency exploratory laparotomy following a gunshot wound to the abdomen. He was given a general anaesthetic and had a stable intraoperative course with no cardio/respiratory difficulty. Prior to extubation, the patient forcefully started biting down on the endotracheal tube (ETT), totally occluding the tube and making respiratory efforts against the occluded airway. The ETT was forcibly removed by the anaesthetist and an attempt to put in a Guedal tube was unsuccessful. The

## Author

Hilary G. Miller (DaBreo), R.N., is a staff nurse in the Post Anaesthetic Care Unit at the Bow Valley Centre of the Calgary General Hospital, Calgary, Alberta.

patient developed respiratory distress with vigorous respiratory effort. Pulse oximetry indicated SpO<sub>2</sub> 70%. He was reparable with succinylcholine and reintubated. In addition he was given midazolam, d-tubocurarine and propofol. The patient was monitored in the operating theatre until he was ready for extubation. At this time extubation was performed successfully and a Guedal tube was left in. He continued to bite on the Guedal tube but was able to ventilate well with and SpO<sub>2</sub> 85%. He was then transferred to PACU with oxygen at 15 L/min by face mask.

In PACU he was put on oxygen at 100% by non-rebreathing mask. Vital signs were: BP 160/70, RR 32/min, SpO<sub>2</sub> 58-68%. The patient became extremely combative and restless with respirations laboured and rapid. In addition, diffuse bilateral crackles were heard in both lung fields. The patient was treated with the diuretic Lasix IV, resulting in diuresis, and adventitious sounds less pronounced. A chest x-ray showed diffuse interstitial pulmonary edema, eliminating the possibility of aspiration. Arterial blood gases with the patient receiving oxygen via the non-rebreathing mask were: pO<sub>2</sub> 43%, pH 7.24, pCO<sub>2</sub> 52, HCO<sub>3</sub> 22. Despite high flow oxygen, the SpO<sub>2</sub> was 80 - 90% over the next 1 1/2 hours, gradually falling to 75% with a pulse rate of 140/min. The patient became very diaphoretic, cyanotic and increasingly drowsy. Respirations became more shallow and rapid to a rate of 56/min. Attempts at bag-mask ventilation assist were unsuccessful in raising the SpO<sub>2</sub>. The patient was then reintubated and placed on mechanical ventilation with PEEP. The endotracheal tube was suctioned for small amounts of pink frothy secretions. Pulse oximetry showed SpO<sub>2</sub> 92%. His colour improved, BP 110/70, heart rate 118. The patient was transferred to Intensive Care for continued monitoring and treatment. His condition improved significantly overnight and in the morning he was weaned from ventilator support, extubated and subsequently transferred to the nursing unit later that day. He continued to do well and was then discharged from hospital.

## Discussion

The predominant mechanism of NPPE is increased negative intrathoracic pressure due to forced inspiration against a closed upper airway. This results in large negative intrapleural and trans-pulmonary pressure gradients, producing the transudation of fluid from the pulmonary capillaries into the interstitium (Lorch & Sahn, 1986). Blood return to the right heart is abruptly

increased secondary to increased venous return with a redistribution of the central circulation. This results in increased pulmonary vascular resistance secondary to hypoxic pulmonary vasoconstriction. Left heart output is decreased due to increased afterload, acidosis and hypoxia. The resultant increase in pulmonary blood volume and hydrostatic pressure along with negative interstitial pressures and increased capillary permeability facilitates the development of pulmonary edema (Tami et al, 1986, Nishizawa et al).

## Upper airway obstruction

The upper airway obstruction in this case was induced by biting down on the endotracheal tube and laryngospasm after his first extubation. The patient was young and muscular, thus his ability to generate excessive negative intrathoracic pressure was enhanced. The marked decrease in oxygen saturation might have been the result of hypoventilation caused by tube obstruction and impairment in alveolar gas exchange caused by pulmonary edema.

The pulmonary edema resolved with the aggressive treatment of diuretics and mechanical ventilation with positive airway pressure. The use of a Guedal tube or bite block during anaesthesia might have avoided this complication. However, the risk of dental injury remains significant with a Guedal airway.

The potential complication of NPPE should be anticipated before placement of an artificial airway, especially in those patients with a severe degree of upper airway obstruction (Bonadio & Losek, 1991). A heightened awareness of the problem in high risk groups should involve special considerations including choice of anaesthesia, precautions on extubation, monitoring in the recovery phase, and if laryngospasm is observed, use of rapid therapeutic intervention.

The majority cases of NPPE present within minutes of the development of acute severe upper airway obstruction (Lang et al, 1990). Resolution is typically rapid over a period of a few hours and rarely is anything more required for management than the maintenance of a patent airway, supplemental oxygen and in a few cases mechanical ventilation with PEEP (Lang et al, 1990).

Although the majority of cases of NPPE develop shortly after the onset of airway obstruction, delayed onset has been reported. Therefore, careful observation is required for several hours after an episode of upper airway obstruction from any cause (Tami et al,

1986, Nishizawa & Goto, 1993).

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### Correction

to ORNAC's Recommended Standard #8  
"Scrub, Gown, Glove"

Section 8.13 should read:

If a glove becomes contaminated or sustains a pin hole, the glove shall be changed as soon as the situation permits by one member of the sterile team regloving the other member. If not possible, by open glove method.

#### Rationale:

Once the original gloves are donned, the gown cuffs are considered contaminated.

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