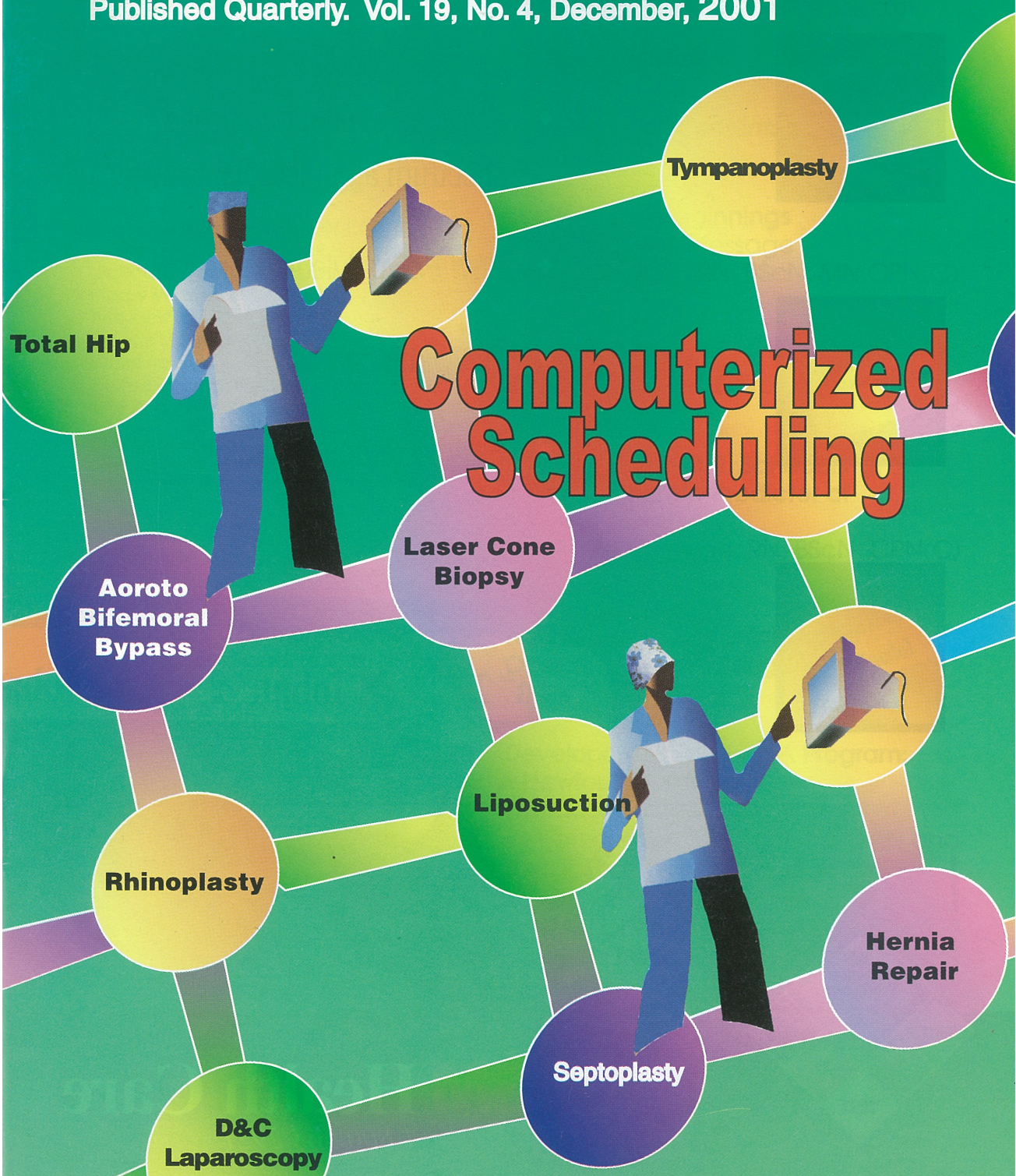


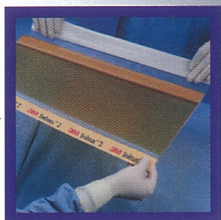
Canadian  
**Operating**  
**Room** *Nursing Journal*

Published Quarterly. Vol. 19, No. 4, December, 2001

**Computerized Scheduling**



# 3M™ Ioban™ 2 EZ

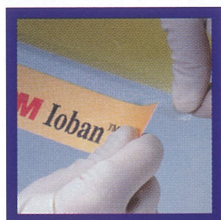


- ◆ Provides continuous broad spectrum antimicrobial activity\*



- ◆ New Polyethylene liner

- ◆ Full width handle



- ◆ Easy to remove handle

n™ 2 3M Ioban™ 2 3M Ioban

\* Data on File, 3M Healthcare



**3M Health Care**  
1 800 563 2921

# Canadian Operating Room Nursing Journal

Published Quarterly, Vol. 19, No. 4, December, 2001

A Peer-Reviewed Journal Published Quarterly for the Operating Room Nurses Association of Canada by Health Media Incorporated.

Editor: Agnes Forster

Editorial Board:



**Kim McLennan Robbins**, RN, CPN(C)  
University of Alberta Hospital, Edmonton.  
(Editorial Board Chairperson)  
**Marcy McKay**, RN, CPN(C)  
**Tina Kennah**, RN, CPN(C)  
**Lucette McLean**, RN, CPN(C)  
**Claire Tremblay**, RN, CPN(C)  
Corresponding: Rosemarie Atwill,  
and Jean-Yves Latreille

## Editorial Contents

- 4 Endings and Beginnings**  
The President's Message  
By Mary Knight, RN, BScN, MN, CPN(C)
- 6 Parting Words**  
By Agnes Forster, Editor
- 7 Computerized O.R. Scheduling:  
Is It An Accurate Predictor of  
Surgical Time ?**  
By Margaret Sorge, RN, BScN, CPN(C)
- 19 How to Submit Your article to the  
Operating Room Nursing Journal**
- 20 Development of an RNFA Program:  
A Newfoundland and  
Labrador Adventure**  
By Patricia K. Harkins RN, BSN, MN and  
Perri L. Brazill RN, CPN(C), RNFA
- 27 ORNAC/Johnson&Johnson Medical  
Products Bursary for OR Nurses**
- 31 ORNAC Executive, Board of  
Directors and Provincial Reps**

Canadian Operating Room  
Nursing Journal,  
effective January 2002  
will be published by

**Clockwork Communications**  
3700 Kempt Road, Halifax, NS  
B3K 4X8

Phone: (902) 497 - 1598

FAX: (902) 423 - 1961

email: clockwork1@iprimus.ca

Subscription Rates:	1 Year	2 Yrs
Canada	\$ 20	\$27
United States	\$ 25	\$35
Other Countries	\$ 26	\$40
Single Copy orders	\$ 10	

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

# Endings and Beginnings

By Mary Knight, RN, BScN, MN, CPN(C)

ORNAC has reached another milestone. Our Editor, Agnes Forster and our Publisher, Ron Forster will be retired by the time you are reading this. We have come a long way together since the first issue was published in February 1983. With their retirement, Ron and Agnes have turned the Journal over to ORNAC, and I would like to express our heartfelt appreciation. Best wishes for a happy retirement!

When the Journal was created in 1983, ORNAC was still just a vision in the hearts of O.R. nursing leaders. General duty staff nurses, educators and managers from across Canada saw the value of creating an organization to promote the issues and concerns of perioperative nursing. Many of the members of the 1983 National O.R. Executive Committee, ORNAC's predecessor, continued to contribute as ORNAC formed and developed. No less than four ORNAC Presidents, one ORNAC Treasurer, three ORNAC Secretaries and several ORNAC Board members came from the Executive Committee pictured in that first Journal!

In that first issue, Ron Forster, Publisher of the *Canadian Operating Room Journal* wrote: "The creation of this national publication for the operating room nurses of Canada initially seemed an impossible undertaking. Indeed, it would have been a more difficult task, but for the dedication, encouragement and advice of so many, many fine people."

Muriel Shewchuk, President and National O.R. Executive Chairperson, provided food for thought in her message entitled "Gold Fish in a Bowl". "Nowhere in the field of nursing is a nurse as exposed as in the operating room theatre where intense, complex, multifaceted patient care is at its height". Muriel then set the scene of a day in the "fish bowl" life of an O.R. nurse, ending with the

comment: "The intraoperative process can be greatly enhanced by the highly skilled, educated, caring nurse – truly a gold fish of bright shining colors".

Other articles included in that first Journal were: Meet the Team – A Case Study; Facing the Trauma of Death as an OR Nurse; Risk Management for Operating Room Staff; and, Preventing Infection in the Operating Room (in English and French). These timeless topics are as appropriate today as they were nearly nineteen years ago!

To our Publisher, the Editors, contributing authors, advertisers, and past and present members of the ORNAC Editorial Advisory Committees, thank you for all your hard work over the years in ensuring the success of this publication!

As we end one era, we begin another one for ORNAC's official publication! Members of the ORNAC Editorial Advisory Committee, chaired by Kim McLennan-Robbins (Alberta), have been working diligently over the past year to meet the challenge and launch a new Journal early in 2002. Details will soon be available - watch for news on the ORNAC website ([www.ornac.ca](http://www.ornac.ca)).

## Reference:

Shewchuk, M. (1983). Gold Fish in a Bowl. *Canadian Operating Room Nursing Journal*, 1 (1), p. 13-14.



Mary Knight, RN, BScN, MN, CPN(C), is President of the Operating Room Nurses Association of Canada. She is Project/Systems Coordinator, Adult OR, Health Sciences Centre, Winnipeg, Manitoba.



Reusable vs. disposable—when it comes to diapers, you know what's best instinctively.

And the worries are pretty much the same even though it's not diapers we make but OR drapes and gowns.

How dependable is the barrier? Is it sanitary (where has it been before)? Are there worn spots or patches? Will it leak? How does it fit? Is there a good choice of sizes and styles?

Does it require special handling?

So, just as you already know what's best for baby at home, you know instinctively what's best for patients and staff in the OR.

Yet things can get cloudy if you let them. For example, reusable gown

and drape systems often seem more economical than they really are. People tend to forget the considerable costs of sorting and tracking inventory, replacing lost pieces and disrupting a controlled ordering, delivery and disposal system. Moreover, these hidden costs are very easily lost in a financial proposal.

That makes comparisons difficult, because, with single-use gowns and drapes, you always know *all* the costs up front.

Here's another example. You're likely to think single-use items are more harmful to the environment. After all, they consume more landfill space, and that concerns us, too, since the environment is something

we all care about. But the flip side is that reusable items result in more water pollution and make heavier demands on water supplies.

In fact, as far as their overall stress on the environment goes, surprisingly, single-use and reusable items are almost equal as the best evidence indicates.\*

So whether it's baby diapers or OR drapes and gowns, be clear. You've always known what's best. You still do.

\*Arthur D. Little, "Disposable Versus Reusable (Cloth) Diapers: Environmental, Health, and Economic Considerations," *Environmental, Health, and Safety Management*.

**Convertors. The comfort of being well protected.**

© Copyright 1999, Allegiance Healthcare Corporation. All rights reserved.  
Allegiance Healthcare Canada Inc. 60 International Drive, Toronto, ON M9W 6J2

We Operate With You

**Allegiance**  
Convertors

# Parting Words

By Agnes Forster, Editor

This being my final issue, some parting words are offered before passing over the ownership of the *Canadian Operating Room Nursing Journal* to ORNAC and its future publisher.

After 19 years and 91 issues I am pleased to be retiring and happy to pursue other challenges, at a much leisurely pace. I am sad to leave the work I loved, and especially sorry to part company with the many great OR nurses who authored all the outstanding articles. My thanks to the guidance of the ORNAC Review Board members I've had the pleasure to know, and most especially, the eight outstanding ORNAC presidents with whom I worked so closely.

I share a sense of accomplishment with my husband Ron Forster in creating a small publishing business that launched five nursing-related journals and supported several talented editors and support staff, notably Frank Fagan, the OR Journal's first editor from 1983 to 1990. It was an exciting experience being involved in the launch of the national OR association and in assisting with the publicity of their developments, projects, positions and conferences over the years.

Many remarkable manuscripts passed through our hands and many editorial firsts were achieved. In 1984 the Journal was the first to describe "The Separation of Conjoined Twins", and many hospitals urgently sought copies of articles providing information on Laser Surgery, Latex Allergy and Latex Protocol, and Universal Precautions. *Microscopic Tuboplasty* was published in 1983 and many of the first descriptions of new Laparoscopic and Laser procedures were presented to OR nurses, authored by Canadian OR nurses in their own journal. These exciting records were not our achievements, but those of the individual nurses who wanted to share their knowledge and expertise with their nursing colleagues. We were simply the medium, they provided the important messages.

Perioperative nurses who excel in their clinical practice and those who freely give of their time, talents and energies to enhance their specialty are highly regarded by their colleagues. Unfortunately, the number of these committed nurses, these 'special warriors' is small, but their efforts over the years, such as the development of the ORNAC Standards, Research Grants, Education Bursaries, and Approval of Education Programs (to name only a few) are undertakings that benefit all ranks of OR nurses. One can only hope that more and more young perioperative nurses get involved in their local groups and provincial association and make their unique contribution.

Articles are in very short supply these days, undoubtedly due to the turbulence within hospitals and in our lives. Who has time to prepare a manuscript? Who has the time or energy for professional activities? Amazingly, many do. Without the extra effort and dedication of the few individuals who do actively participate in association work, there would be no ORNAC. Without the shining efforts of those who do write, the Journal could not exist and perioperative nursing would lose a valued communications tool that has the capacity to inform, educate and inspire.

I thank the many advertisers who used the Journal's pages to market their products throughout the years. Without them, the Journal could not exist. Johnson & Johnson Medical Products has been in every issue since 1983. Other regulars included Allegiance Healthcare, 3M Health Care, and Karl Storz Endoscopy.

To the Journal's 3,300 subscribers - thank you for your support. ORNAC and its new publishers will carry on in 2002 with renewed energy, youthful enthusiasm and ingenuity. I salute you all. It has been an honor and grand pleasure to know you and be your "first assistant".

Good Luck to the new publishers and continued success to ORNAC and all its members. □

# Computerized O.R. Scheduling: Is It An Accurate Predictor of Surgical Time ?

By Margaret Sorge, RN, BScN, MSHCA, CPN(C)

## Chapter I: The Problem Defined

The Surgical Suite at the Peter Lougheed Center of the Calgary General Hospital implemented a Surgical Suite information system (Surgiserver) in 1996. Automation of the scheduling and inventory control functions is a critical requirement to ensure that information is accurate and timely. The intent of the system was two fold. Firstly, to provide information to upper management that is consistent with other hospitals within the Calgary region and to assist in the strategic planning for surgical services within the region. Secondly, to provide the Surgical Suite management with the necessary information to effectively manage the resources

for one of the largest cost centers within the hospital. The initial focus was to implement the scheduling component of the information system to more accurately predict the surgical time requirements for at least 15,000 surgical cases per year.

Scheduling of surgical cases before implementation of computerized scheduling was facilitated manually, with the physician providing his anticipated time requirements. Thus, surgeons were largely self directing their surgical scheduling with the occasional intervention by the Surgical Suite manager. The automated scheduling system averages the skin to skin time (when the surgeon makes the first cut until completion of skin closure) from the last ten identical procedures. The system then eliminates the highest and lowest skin to skin time and averages the times from the eight remaining cases. In addition, standard times have been given to the other components of surgery such as room set up, anaesthesia, preparation of the patient and the time from skin closure until the patient leaves the room. Although some clinical judgment is occasionally exercised, scheduling is primarily facilitated through the computer-generated times. Retrospective reviews appear to indicate that the computer-generated time is often accurate, however physician response continues to be doubtful of the systems' accuracy. This research will be conducted to determine if the computer-generated time is an accurate predictor of actual surgical time.

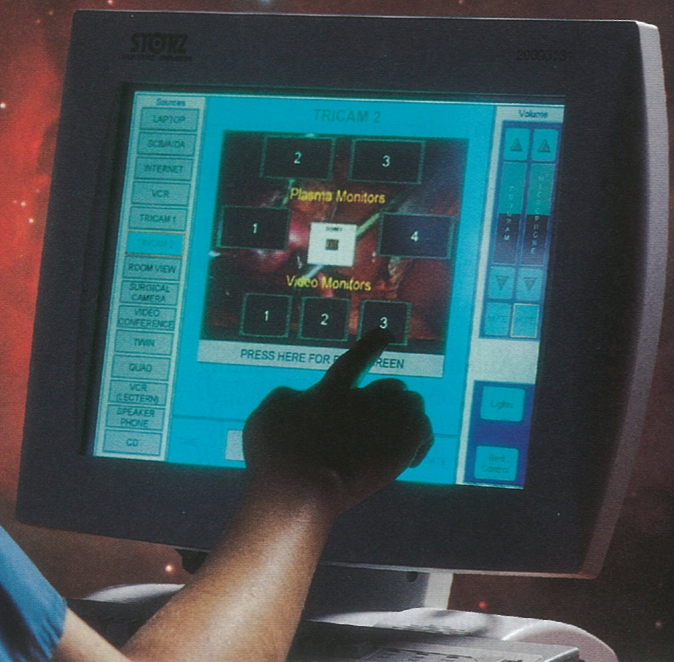
### Abstract

The goal of this project was to determine whether a standardized surgical time, generated by the Operating Room Information System (ORIS), could be used as an accurate predictor of actual surgical time. Utilizing retrospective, quantitative data from the ORIS database, frequency distributions by surgical speciality, were completed. Chi-square analysis was applied to determine the significance of the frequency distributions. The study outcome indicates that ORIS computer generated procedure times were not an accurate predictor of actual surgical time. Further follow-up will be required to determine if alternate scheduling methodologies would lead to higher accuracy rates.

### Author

Margaret Sorge, RN, BScN, MSHCA, CPN(C), is the Patient Care Manager, Surgical Suite at the Peter Lougheed Hospital, Calgary, Alberta.

# OR1.™ Infinite Possibilities.



## The Future Of Endoscopy Starts With One.

Imagine everything you want in an OR. Then imagine more. That's the promise of Karl Storz and OR1.™

OR1.™ gives you the power to integrate virtually every OR component into a single, optimized system. The power to control medical devices, teleconferencing, hospital computers, room and surgical lighting is yours—all from a centralized station—inside or outside the sterile field.

What's more, OR1.™ places no limits on the way you configure your surgical suite. Karl Storz will custom build it to your specifications, including the latest technological advances. And with its PC-based architecture, your OR1.™ suite can be easily upgraded with future software updates.

Learn how infinite possibilities can become your reality. Just call **1-800-268-4880**. And discover the power of one.

**STORZ**  
Karl Storz Endoscopy  
[www.karlstorz.com](http://www.karlstorz.com)

### Problem Statement

Is the standardized surgical time generated by the Operating Room Information System, an accurate predictor of actual surgical time?

### Purpose of the Study

This study will compare the computer generated standardized surgical time to actual procedure time to ensure optimal utilization of available surgical time. The findings of this study will be used to determine if more clinical judgment needs to be utilized in conjunction with the computer-generated time.

### Research Questions

- 1) Is the historical averaged surgical time an accurate predictor of future surgical time?
- 2) Should more clinical judgement be used in conjunction with the computer generated time when predicting the length of surgical procedures?

### Definition of Terms

The data to be studied is the standardized time generated by the Operating Room Information System (ORIS) for elective surgical procedures in comparison to the actual surgical time. The dependent variable is the computerized standardized time and the independent variable is the surgical procedure. Factors that may influence the outcome is the surgeon doing the procedure, whether a resident is performing the procedure, other personnel in the room and whether there are any delays related to the surgical team, instrumentation or supplies.

**Standardized ORIS time:** The time required to complete an entire procedure, beginning when the patient enters the theater and ending when the patient leaves the theater. ORIS is capable of generating times, which break down the procedure into multiple time periods. For the purposes of this study, the total time allocated will be used. The system generates this time by averaging the time taken for the last ten identical procedures and eliminating the highest and lowest times.

**Actual procedure length** is the actual, documented time that the procedure takes and also reflects patient into theater and out of theater. For the purposes of this study, the total time will be used.

### Limitation of Study

The limitation of the study is that data will only be collected from the surgeons that perform

specific procedures in the Surgical Suite at the Peter Lougheed Hospital. In addition, multiple procedure times will not be considered in this study. The results of this study may not be generalizable to other Surgical Suites or surgeons.

## Chapter II - Literature Review

Healthcare restructuring has caused Canadian hospitals to become increasingly accountable for their business practices. Many sources identify that there is an increased requirement for accurate and timely data, as well as optimization of resources and containment of costs (Magerlein, Hancock, Butler, Mallett, & Young, 1978; Masterson, 1990; Mathias, 1990; Meikle, 1993; Patterson, 1996; Warnock-Matheron, Sorge, & Depalme, 1997; Williams, Sowell, & Smith, 1997). According to WHO (1988), "handling of information comprises 25-30% of hospital activities, in terms of costs" (p. 39) Wright, Koopenberg, Bonar, and Bashein (1996) reported that surgical suites can consume nine percent of a hospital's annual budget while Kanich and Byrd (1996) identify that 30.1% of all health care expenditures are related to surgical expenditures. Similarly, Lowery and Martin (1989) report that operational costs typically make the surgical suite the fifth most expensive hospital department to operate. Automation of operating room scheduling and inventory control functions is a critical requirement for managing a high volume of data and management of one of the largest cost centers in the hospital. Further, "inaccurate scheduling can also have an economic impact on other aspects of hospital operation, including the recovery room, intensive care unit, and ancillary services such as x-ray and clinical laboratories" (Wright et al., 1996, p. 1235).

Operating room scheduling has historically been accomplished manually and primarily used data provided by the physician. Although this method was somewhat effective, the physician often forgot that surgical time also needed to reflect many other factors, including anesthesia and nursing time, turnover (room change over) and teaching time. "Effective scheduling allows managers to proactively monitor requested case length, evaluate usage of block time, and coordinate equipment requirements" (Kanich & Byrd, 1996, p. 161). Austin and Laufman (1987) also report that information systems can demonstrate measurable benefits, including improvements in efficiency and productivity of the operating room and its

support services. Automation of scheduling allows the scheduler to use a historical average of the surgeon's times in addition to predetermined anesthesia, nursing and turnover times. The system also produces reports that can be utilized to monitor the accuracy of the anticipated times. However, as Wright et al. (1996) states, "scheduling software uses only historical data to make its estimates and does not take into account surgeon input or patient related factors" (p. 1236). Therefore, inaccuracies can occur and surgeon knowledge about the degree of complexity of the individual patient may have a major impact on operating time.

In a study done by Wright et al. (1996), surgeon predicted times were compared with the computerized time and they found that the accuracy of both was marginal. They concluded that a "model that combined the surgeon's estimate with historical data reduced the prediction errors significantly" (Wright et al., 1996, p. 1244). In an article by Dexter (1996), he reviews the study by Wright, et al. and says that the study should not be used as a determinant as to whether computer scheduling should or should not be used to schedule cases. This article questions the statistical methodology of Surgiserver (Omniserver) and discusses a study in which the accuracy and precision of the software's statistical method was examined. Dexter concludes that the system's mean times were a poorer predictor of actual time and that median time was a more accurate predictor, thus questioning the performance of the Surgiserver software.

Bross, Gamblin, Holtzclaw, and Johnston (1995) compared computer generated procedure lengths for singular procedures to actual procedure lengths. The data was grouped by surgical specialty and then by the surgical procedure lengths, based on the minutes they differed from estimated lengths. They concluded that computer generated times were accurate sixty five percent of the time and ultimately, beneficial to the Operating room.

Sier, Tobin, and McGurk (1997) introduce a mathematical model that incorporates constraint factors that affect scheduling. The model was evaluated by examining twenty of the most frequently performed operations at a hospital over the period of one month. They conclude, "while not necessarily providing the optimum solution, this technique seems to provide a reasonable procedure which will handle the requirements of hospitals" (Sier et al., 1997, p. 891). The drawback of this model is that hospitals would need

to tailor a package appropriate for their needs and incorporate hospital specific constraint factors.

Regardless of the system or model used, the OR cannot function optimally if cases are not scheduled accurately. "Computerized information systems have helped by collecting data on operating times" (Patterson, 1996, p. 22). "Relevant, timely, and accurate statistical data are essential and critical for nurse executives in problem solving, identifying trends, and, particularly, forecasting new assumptions and revisioned changes" (Mueller, Marinari, & Kunkel, 1995, p. 22). Although the need for OR data is documented well in the literature, there is inconsistency as to whether a scheduling system can accurately and consistently predict operating time requirements.

### Chapter III: Methodology

#### Population/Sample

There were 7028 surgeries performed at the Peter Lougheed Center of the Calgary General Hospital between September 1, 1999 and February 28, 1999. Six surgical service categories were selected from the surgical services at the hospital. The rationale for the selection was the prominence of the program at the Peter Lougheed Hospital and the amount of cases performed by the service category (see Table 1). The service categories included General, Gynecology, Orthopedic, Peripheral vascular, ENT (ears, nose and throat) and Plastic surgery. Within each service category, ten surgical procedure categories were selected (convenience sampling), ensuring that the procedure ORIS standardized time varied, therefore including long and short procedures (Appendix A). Emergency procedures were not included because they were not booked in the ORIS system. The sample data was chosen from performed procedures and excluded multiple procedures.

Ten surgical cases from each procedure category were then randomly selected from an ORIS report, ensuring anonymity of the patients by covering the patient's names.

#### Data Collection Method

Descriptive research was done utilizing retrospective (historical), quantitative data from the ORIS database. An ORIS report generated the actual surgical time and the surgical schedule was used to determine the ORIS time given to the procedure. The data was entered onto a data collection form (Appendix B).

**Table 1**

Surgeries performed by service at the Peter Lougheed Center Between September 1, 1998 to February 28, 1999

	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Total
General Surgery	241	279	258	248	269	255	1550
Orthopedic Surgery	315	326	337	296	350	365	1989
Plastic Surgery	120	71	114	74	94	88	561
Vascular Surgery	51	79	51	52	53	63	349
Gynecology Surgery	298	323	300	285	298	331	1835
ENT Surgery	75	95	97	57	102	78	504
							<b>6788</b>

### Data Analysis Method

ORIS generated time (mean time) was compared with actual surgical procedure completion time. The data was manually grouped into procedure lengths, based on the number of minutes they differed from the ORIS computer generated time. An interval scale was used to group the data into fifteen-minute intervals, up to one hour (Appendix B). Procedures, which ended within fifteen minutes of their scheduled procedure length, were considered an accurate prediction. Frequency distributions were completed, first grouping the data by service category and

then amalgamating the data to include all service categories. Chi-square analysis was used to determine the significance of the frequency distributions by comparing accurate procedure times generated by ORIS to the number of inaccurate procedure times.

**Table 2**

Frequency Distribution for General Surgery

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
1	0	0	0	0	6	1	2	0	1	10
2	0	0	0	0	0	1	0	0	0	1
3	0	0	0	2	3	3	0	1	1	10
4	0	0	0	1	0	1	0	2	1	5
5	0	1	0	0	1	0	0	0	1	3
6	0	0	0	1	9	0	0	0	0	10
7	0	0	1	0	7	2	0	0	0	10
8	0	0	0	1	6	2	0	0	0	10
9	0	0	0	0	7	1	1	0	0	10
10	0	0	0	1	9	0	2	0	0	10
<b>Total</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>6</b>	<b>48</b>	<b>11</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>80</b>
%	0	1.27	1.27	7.60	60.76	13.92	6.33	3.80	5.06	100.06
Exact	48		Not Exact 32							

The hypothesis of this study is that the ORIS generated time is an accurate predictor of actual surgical time. Procedures, which ended within fifteen minutes of their scheduled procedure length, were considered an accurate prediction.

The null hypothesis is that the ORIS generated time is not an accurate predictor of actual surgical time.

The study was discussed with the Administrative Leader of Surgical Services and the Medical Director of the Surgical Suite and both have given their support. Written permission was received from the Medical Director of the Surgical Suite. The data was collected over a period of six months beginning September 1, 1998 and ending February 28, 1999.

### Chapter IV: Data Analysis

See Appendix C for a summary of the number of procedures actually collected by service and procedure code.

In the service category of General surgery, eighty surgeries were collected from the ORIS codes. Table 2 shows the number of cases collected for each code. Three codes did not meet the expected outcome of ten cases, therefore the sample was decreased by twenty.

Forty-eight surgeries were in the exact category, therefore thirty-two cases were booked inaccurately. This meant that 60.76% were booked accurately and

39.25% were inaccurately booked. 29.11% of the cases went overtime, while 10.11% were completed early. Chi square analysis shows that 1.6 is smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

Forty-nine surgeries were in the exact category, therefore forty-seven cases were booked inaccurately. This meant that 51.04% were booked accurately and 48.95% were booked inaccurately. 30.21% of the cases went overtime, while 18.74% were completed early. Chi square analysis shows that .021 is smaller

than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

With Plastic Surgery, it is shown in Table 4 that sixty-seven cases were collected. Six cases did not meet the expected outcome of ten cases, including one code with no cases.

Twenty-seven cases were in the exact category, leaving forty cases with inaccurate booking time. 40.3% were booked accurately and 59.71% were inaccurately booked. 41.8% of the cases went overtime and 17.91% were completed early. Chi square analysis shows that 1.261 is smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

**Table 3**

**Frequency Distribution for Orthopedic Surgery**

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
1	1	0	4	1	1	2	1	0	0	10
2	0	0	0	3	6	0	1	0	0	10
3	0	0	1	0	5	3	0	0	1	10
4	0	0	0	0	7	3	0	0	0	10
5	1	1	1	3	1	3	0	0	0	10
6	0	0	0	0	8	1	0	0	1	10
7	0	0	0	0	1	3	1	0	1	6
8	0	0	0	0	4	1	1	1	3	10
9	0	0	0	0	8	2	0	0	0	10
10	0	0	1	1	8	0	0	0	0	10
<b>Total</b>	<b>2</b>	<b>1</b>	<b>7</b>	<b>8</b>	<b>49</b>	<b>18</b>	<b>4</b>	<b>1</b>	<b>6</b>	<b>96</b>
%	2.08	1.04	7.29	8.33	51.04	18.75	4.17	1.04	6.25	99.99
Exact	49		Not Exact 47							

**Table 4**

**Frequency Distribution for Plastic Surgery**

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
1	0	0	0	2	5	3	0	0	0	10
2	0	0	0	0	2	4	2	0	2	10
3	0	0	1	0	1	1	2	1	2	8
4	0	0	1	0	1	1	0	0	1	4
5	0	0	0	1	3	0	1	1	0	6
6	0	0	0	0	9	1	0	0	0	10
7	0	0	0	1	0	0	0	0	2	3
8	0	0	0	3	5	2	0	0	0	10
9	0	0	0	0	0	0	0	0	0	0
10	0	1	1	1	1	1	1	0	0	6
<b>Total</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>27</b>	<b>13</b>	<b>6</b>	<b>2</b>	<b>7</b>	<b>67</b>
%	0	1.49	4.48	11.94	40.30	19.40	8.96	2.99	10.45	100.0
Exact	27		Not Exact 40							

Table 3 shows that in Orthopedic surgery, ninety-six cases were collected with one code not meeting the expected outcome of ten cases.

smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

Peripheral vascular surgery had fifty-two cases collected. Table 5 shows that two ORIS categories had no elective cases booked and four other codes did not meet the anticipated sample of ten. This service's sample was therefore reduced by approximately 50%.

Seventeen cases were in the exact category, leaving thirty-five cases in the inaccurate category. Therefore, 32.69% were booked accurately and 67.32% inaccurately booked. 42.31% of the cases were in the overtime category, while 25.01% were completed early. Chi square analysis shows 3.115 is smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

In the service of gynecology, eighty surgeries were collected. As shown in Table 6, four ORIS categories did not meet the expected outcome of ten cases. This service's sample was therefore reduced by twenty.

Fifty-five cases were in the exact category, while twenty five were inaccurate. 68.75% of the cases were accurately booked and 31.25% were inaccurately booked. 26.25% of the cases went overtime and 5% were completed early. Chi square analysis shows

**Table 5**

**Frequency Distribution for Peripheral Vascular Surgery**

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total	
1	0	0	3	1	3	1	1	1	0	10	
2	0	0	0	1	0	0	1	0	5	7	
3	1	0	0	1	0	0	0	0	0	2	
4	1	0	1	1	4	1	0	2	0	10	
5	0	0	0	1	3	4	1	1	0	10	
6	0	0	1	0	6	3	0	0	0	10	
7	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	1	1	
10	0	0	0	1	1	0	0	0	0	2	
<b>Total</b>	<b>2</b>	<b>0</b>	<b>5</b>	<b>6</b>	<b>17</b>	<b>9</b>	<b>3</b>	<b>4</b>	<b>6</b>	<b>52</b>	
%	3.85	0	9.62	11.54	32.69	17.31	5.77	7.69	11.54	100.0	
Exact	17		Not Exact 35								

that 5.625 is larger than Critical Chi (3.841), therefore reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

In ENT surgery, sixty-three cases were collected. Table 7 shows that six procedure codes did not meet the expected sample, including one code that reflected zero cases.

Forty-two surgeries (66.7%) met the criteria for the exact category, leaving twenty-one cases (33.33%), which were inaccurately booked. 25.4% of the cases went overtime, while 7.93% were completed early.

**Table 6**

**Frequency Distribution for Gynecology Surgery**

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
1	0	0	0	0	2	2	1	1	0	6
2	0	0	0	1	7	1	0	1	0	10
3	0	0	0	0	3	2	0	0	0	5
4	0	0	0	0	10	0	0	0	0	10
5	0	0	0	0	9	1	0	0	0	10
6	0	0	0	1	4	5	0	0	0	10
7	0	0	0	1	9	0	0	0	0	10
8	0	0	0	1	6	3	0	0	0	10
9	0	0	0	0	4	0	1	0	0	5
10	0	0	0	0	1	1	2	0	0	4
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>	<b>55</b>	<b>15</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>80</b>
%	0	0	0	5.00	68.75	18.75	5.00	2.50	0	100
Exact	55		Not Exact 25							

Chi square analysis shows 3.5 is smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

Lastly, Table 8 shows that all surgical specialties had a total sample of 437 (anticipated 600). 238 were in the exact category, leaving 199 cases, which were inaccurately booked. Therefore, 54.46% were accurately booked and 45.54%, inaccurately booked. 31.81% of the cases went overtime, while 13.73% were completed early. Chi square analysis shows 3.028 is smaller than Critical Chi (3.841), therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

## Chapter V: Summary, Conclusions and Recommendations

### Summary

The purpose of this study was to determine if the standardized surgical time generated by the Operating Room Information System is an accurate predictor of actual surgical time or whether more clinical judgement needs to be utilized in conjunction with the computer generated time.

Chapter I reviewed the history of surgical scheduling at the Peter Lougheed Center. Prior to the implementation of Surgiserver, scheduling was facilitated manually, with the physician predicting the

surgical time required. With the implementation of ORIS, the computer primarily generated scheduling time by averaging the skin to skin time of specific procedures. Although retrospective reviews appeared to indicate that the computer time was fairly accurate, physician response continued to be doubtful of the system's accuracy. In most cases the physicians expressed that they were under utilizing their time.

In Chapter II, a review of the literature recognized the requirement for efficient use of the Surgical Suite and that "inaccurate scheduling can also have an economic impact on other aspects of hospital operation" (Wright et al., 1996, p. 1235). Similarly, Austin and Laufman (1987) reported that information systems can demonstrate measurable benefits, including improvements in efficiency and productivity of the operating room as well as other support services. However, Wright et al. (1996) identified that historical averages do not take surgeon input or patient factors into account, supporting the belief that surgeon knowledge about the degree of complexity can have a major impact on operating time. In a study done by Wright et al. (1996), the authors found only marginal accuracy between surgeon predicted times and computerized time, however a model that combined both, significantly reduced prediction errors. Conversely, Bross et al. (1995) wrote that computer generated times provided sixty five percent accuracy and concluded this was beneficial to the operating room. In Sier et al. (1997), the authors recommended the use of a more complex mathematical methodology,

thus requiring a customized computer system. This literature review demonstrated that there was inconsistency as to whether a computer system can accurately and consistently predict operating time requirements.

Chapter III identified that ten elective ORIS proce-

dures were selected from six service categories. Ten cases were randomly selected from the ORIS procedure category. An ORIS report generated the actual times and the computer-generated time was manually determined from the surgical schedule. The case times were then manually

entered into frequency distributions for each service category and a final frequency distribution for all service categories. Cases ending within fifteen minutes of their scheduled procedure length being considered accurate. The null hypothesis was that the ORIS generated time is not an accurate predictor of actual surgical time. Chi square analysis was used to determine the significance of the frequency distributions by comparing the number of accurate surgical times to inaccurate times.

The data analysis in Chapter IV, showed that the predicted sample was 600, however the actual sample for all surgeries was 437. The outcome of Chi square analysis in the service categories of General, Orthopedic, Plastic, Peripheral Vascular and ENT surgery, was do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time. However, in Gynecology surgery, the outcome of Chi square analysis was to reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time. Lastly, Chi square analysis of all surgical specialties was smaller than Critical Chi, therefore do not reject the null hypothesis that the ORIS time is not an accurate predictor of actual surgical time.

### Conclusions

The data analysis indicates that with the exception of the gynecology service, the ORIS time did

Table 8

Frequency Distribution for All Surgical Specialties										
Service	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
General	0	1	1	6	48	11	5	3	4	79
Orthopedics	2	1	7	8	49	18	4	1	6	96
Plastics	0	1	3	8	27	13	6	2	7	67
Vascular	2	0	5	6	17	9	3	4	6	52
Gynecology	0	0	0	4	55	15	4	2	0	80
ENT	0	2	0	3	42	10	2	1	3	63
<b>Total</b>	<b>4</b>	<b>5</b>	<b>16</b>	<b>35</b>	<b>238</b>	<b>76</b>	<b>24</b>	<b>13</b>	<b>26</b>	<b>437</b>
%	.92	1.14	3.66	8.01	54.46	17.39	5.49	2.98	5.95	100

Exact 238 Not Exact 199

Table 9

Comparison of Services by Percentage of Time the Cases are Booked Accurately, Overtime and Under Booked

Service	Accurate	Overtime	Under Booked
General	60.76	29.11	10.11
Orthopedics	51.04	30.21	18.74
Plastic	40.3	41.8	17.91
P. Vascular	32.69	42.31	25.01
Gynecology	68.75	26.25	5
ENT	66.7	25.4	7.93
<b>All</b>	<b>54.46</b>	<b>31.81</b>	<b>13.73</b>

not accurately predict surgical times. This is contrary to the findings of Bross et al. (1995), who found that overall, the system achieved a sixty five percent accuracy rate. This study however, is consistent with Wright et al. (1996) and Dexter (1996), who concluded that computer averaging did not provide the required accuracy. Their conclusion was that alternate scheduling methodologies would lead to higher accuracy rates.

It is of interest that gynecology had a higher rate of accuracy than any other service and the least cases that were under booked. Further investigation would be required to determine if discrepancies between services exist. For instance, the system could be manipulated if surgeons booked inappropriately by booking a specific surgery to allow the least amount

Table 7

Frequency Distribution for ENT Surgery

Procedure	< 60	< 45	< 30	< 15	Exact	> 15	> 30	> 45	> 60	Total
1	0	0	0	1	1	0	0	0	0	2
2	0	1	0	0	0	0	0	0	3	4
3	0	0	0	0	7	1	2	0	0	10
4	0	0	0	0	3	1	0	0	0	4
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	2	2	0	0	0	4
7	0	0	0	1	9	0	0	0	0	10
8	0	1	0	1	3	3	0	1	0	9
9	0	0	0	0	8	2	0	0	0	10
10	0	0	0	0	9	1	0	0	0	10
<b>Total</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>42</b>	<b>10</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>63</b>
%	0	3.17	0	4.76	66.7	15.87	3.18	1.59	4.76	100.03

Exact 42 Not Exact 21

of time but actually planning a more lengthy procedure. In addition, data discrepancies were identified while performing this research. Discrepancies could result from data entry error or judgement discrepancies in data entry. Broad procedure categories mean that data entry personnel sometimes need to make decisions as to where an unspecified procedure may fit. Broad procedure categories may also mean that more complicated procedures may have to be entered under a procedure code that is most similar. Further research would be required to determine procedural discrepancies and investigate whether other methodologies would provide an increased level of accuracy.

Table 9 shows each service and the percentage of accurate case bookings, the percentage of times cases were under booked and the percentage of times that cases went over the booked time. The figures are interesting because it is evident that cases were more likely to go overtime than to finish early. Therefore, physician's perceptions that they are under utilizing their time, are inaccurate and in fact, they are often over utilizing their block time. The over utilization is also supported in a Utilization Report that was developed to measure the utilization of surgeon's and service designated times and whether they are using the time adequately. The report actually differentiates between scheduled hours used and overtime hours used. Overtime hours increase staffing costs because in many situations the staff will need to be paid at the overtime rate.

This study determined that the historical averaged surgical time is not an accurate predictor of future surgical time. Although it did not identify that more clinical judgement would lead to more accuracy, it is a methodology that should be examined. This is supported in the literature by Wright et al. (1996), who found that a model that combined both the computerized time and surgeon predicted time, significantly reduced prediction errors.

With the exception of gynecology, the null hypothesis outcome was, do not reject that the ORIS time is not an accurate predictor of actual surgical time.

### Recommendations

- Investigate the feasibility of incorporating more surgeon input into the booking process and then review the accuracy of the combined system.
- Develop data entry guidelines to improve the reliability of the post operative data entry.

- Examine the feasibility of expanding the in-house procedure coding system to reduce the combining of procedures with variable complexities and therefore, differing time requirements.

- Examine individual surgeon booking practices, including whether there is continuity between what the surgeon books and the actual procedure performed.

- Monitor and maintain the computer system data to ensure the integrity of the data.

- Further research is conducted, to ensure that surgical suite time is optimized and cost efficient.

### References

Austin, H., & Laufman, H. (1987). Strategic automation for surgery. *Computers in Healthcare*, 8 (11), 44-53.

Bross, B, Gamblin, B.B., Holtzclaw, S.L., & Johnston, S.E. (1995). Using a computerized scheduling system to predict procedure lengths. *AORN Journal*, 61 (6), 1054-1061.

Dexter, F. (1996). Application of information systems to Operating Room scheduling. *Anesthesiology*, 85 (6), 1232-1234.

Dexter, F. (1996). Application of prediction levels to OR scheduling. *AORN Journal*, 63 (3), 607-615.

Kanich, D.G., & Byrd, J.R. (1996). How to increase efficiency in the operating room. *Surgical Clinics of North America*, 76 (1), 161-173.

Lowery, J.C., & Martin, J.B. (1989). Evaluation of an advance surgical scheduling system. *Journal of Medical Systems*, 13 (1), 11-23.

Magerlein, D.B., Hancock, W.M., Butler, F.W., Mallett, G.M., & Young, D.R. (1978). New systems can mean real savings. *Hospital Financial Management*, 32 (5), 18-26.

Masterson, C. (1990). Ambulatory approach: Increasing volume and decreasing costs in the Ambulatory Surgical Unit. *Journal of Post Anesthesia Nursing*, 5 (1), 38-41.

Mathias, J.M. (1990). Manager's bane: scheduling and utilization. *OR Manager*, 6 (12), 12-13.

Meikle, S.M. (1993). Local area network. *AORN Journal*, 58(4), 708-713.

Mueller, J.F., Marinari, B., & Kunkel, S. (1995). Flipping assumptions and revising perioperative services. *Journal of Nursing Administration*, 25 (3), 22-26.

*Omniserver user reference manual: operating room scheduling and management system*. 1997. Minneapolis, MN: HBO & Company.

Patterson, P. (1992). ORs facing pressure for higher utilization. *OR Manager*, 8 (1), 1-9.

Patterson, P. (1996). What makes a well oiled scheduling system? *OR Manager*, 12 (9), 19-23.

Sier, D., Tobin, P., & McGurk, C. (1997). Scheduling surgical procedures. *Journal of the Operational Research Society*, 48, (9), 884-891.

Surgery teams make strides on OR delays. *OR Manager*, 14 (1), 1-18.

Warnock-Matheron, A., Sorge, M., & Depalme, M. (1997). New opportunities and challenges during

restructuring. In P. Fisher & W. Chung (Eds), *COACH Conference Proceedings* (pp. 218-224). Edmonton, AB: HC & CC.

Williams, P.W., Sowell, P.M., & Smith, C. (1997). Implementing an informatics system in a perioperative environment. *AORN Journal*, 65 (1), 94-97.

World Health Organization. (1988). *Informatics and telematics in health*. Geneva: Author.

Wright, I.H., Kooperberg, C., Bonar, B., & Bashein, G. (1996). Statistical modeling to predict elective surgery time. *Anesthesiology*, 85 (6), 1235-1245.

### APPENDIX A

ORIS Surgical Cases List Including Service Category, Surgical Case Name and ORIS Procedure Code

General Surgery		Peripheral Vascular	
Mastectomy: Total Nodes	7BRMSND	Abdominal Aortic Aneurysm	7VSAAA
Total Colectomy	7BWCOTL	Aorto Bifemoral Bypass	7VSBYAOB
Bowel: Hemicolectomy	7BWCOLHE	Femoral to Femoral Bypass	7VSBYFM
Bowel: Restorative Proctocolectomy	7BWPROR	Carotid Endarterectomy	7VSCSTEND
Open Nissen Fundoplication	7HERNFDO	Varicose Veins- Bilateral	7VVSTCV
Breast Biopsy- Needle Localization	7BRBXNLU	Varicose Veins- Unilateral	7VSVVU
Laparoscopic Cholecystectomy	7CHOLL	Profundoplasty	7VSPRO
Hemorrhoidectomy	7HEMECT	Vascular Embolectomy- Femoral	7VSEMBF
Inguinal Hernia Repair (Unilateral)	7HERINOU	Aorto-Bifemoral	7VSBYABR
Rectal Sphincterotomy	7RCINTSP	Repair False Aneurysm	7VSFA
Orthopedic Surgery		Gynecology	
Hip: Total Revision	7HIPTLRV	A & P Repair	7BLANPORO
Replacement: Total Hip	7HPTRVSP	Abdominal Hysterectomy	7HYSOSOB
Shoulder Repair- Anterior	7SHDRAN	Vaginal Hysterectomy: A & P Repair	7VAGAPRN
Total Knee Arthroplasty- Biomet	7KNTBIO	Laser Cone Biopsy	7CNB
Knee ACL- Arthroscopic	7KNACLAS	Hysteroscopy, D & C	7HYSCOPY
Knee Arthroscopy	7KNASCPY	Vaginal Hysterectomy	7HYSVG
Shoulder Acromioplasty	7SHDACP	Laparoscopic Tubal Clipping	7LAPTC
Shoulder: Total Joint Replacement	7SHDTRP	Laparoscopy, D & C	7LAPDCC
Shoulder: Arthroscopy	7SHASCPY	Bladder: Burch Repair	7BLBRCH
Tendon Repair	7TNDRP	Laparotomy- Myomectomy	7LAPMYOM
Plastic Surgery		ENT	
Breast Augmentation	7BRAUGB	Flap- Neck Reconstruction	7FPNKRCN
Breast Reduction	7BRRDB	Tympanoplasty	7EARTYPL
Face: Lift, Rhytidectomy	7FCRHYT	Stapedectomy	7EARSTAP
Panniculectomy	7ABPANEC	Esophagoscopy	7ESOPENT
Liposuction	7LIPOSI	Bilateral Myringotomy and Tube	7EARMYTB
Nerve Repair	7NVAP	Laryngoscopy- Micro Suspension	7LRYSCMS
Rhinoplasty	7NSRHPL	Submandibular Gland Excision	7NKSGBGEX
Skin- Z-plasty	7SKNZP	Septoplasty	7NSSEPPL
SMR	7NSSMRP	Tonsillectomy	7TNECT
Wound Closure	7WNDCL		

### APPENDIX B

Frequency Distribution

Procedure	<60	<45	<30	<15	Exact	>15	>30	>45	>60	Total
-----------	-----	-----	-----	-----	-------	-----	-----	-----	-----	-------

Surgical Specialty	Surgery	ORIS Code	# of procedures actually collected
General Surgery	Mastectomy: Total nodes	7BRMSMD	10
	Total Colectomy	7BWCOLTL	1
	Bowel: Hemicolectomy	7BWCOLHE	10
	Bowel: Restorative Proctocolectomy	7BWPROR	5
	Open Nissen Fundoplication	7HERNFUDU	3
	Breast Biopsy: Needle Localization	7BRBXNLU	10
	Laparoscopic Cholecystectomy	7CHOLL	10
	Hemorrhoidectomy	7HEMECT	10
	Inguinal Hernia Repair (Unilateral)	7HERNIUO	10
	Rectal Sphincterotomy	7RTINTSP	10
Orthopedic Surgery	Hip: Total Revision	7HIPTLRV	10
	Replacement: Total Hip	7HPTDEND	10
	Shoulder Repair: Anterior	7SHDRAN	10
	Total Knee Arthroplasty- Biomet	7KNTBIO	10
	Knee ACL - Arthroscopic	7KNACLRA	10
	Knee Arthroscopy	7KNASCU	10
	Shoulder Acromioplasty	7SHDACP	6
	Shoulder: Total Joint Replacement	7SHDTLRP	10
	Shoulder Arthroscopy	7SHASCPY	10
	Tendon Repair	7TNDRP	10
Plastic Surgery	Breast Augmentation	7BRAUGB	10
	Breast Reduction	7BRRDB	10
	Face: Lift, Rhytidectomy	7FCRHYT	8
	Panniculectomy	7ABPANEK	4
	Liposuction	7LIPOSI	6
	Nerve Repair	7NVAP	10
	Rhinoplasty	7NSRHIPL	3
	Skin- Z-plasty	7SKNZP	10
	SMR	7NSSMRP	0
	Wound Closure	7WNDCL	6
Peripheral Vascular	Abdominal Aortic Aneurysm	7VSAAA	10
	Aorto Bifemoral Bypass	7VSBYAOB	7
	Femoral to Femoral Bypass	7VSBYFM	2
	Carotid Endarterectomy	7VSCTEBD	10
	Varicose Veins- Bilateral	7VVSTCV	10
	Varicose Veins- Unilateral	7VSVVU	10
	Profundoplasty	7VSPRO	0
	Vascular Embolectomy- Femoral	7VSEMBF	0
	Aorto-Bifemoral	7VSBYABR	1
	Repair False Aneurysm	7VSFA	2
Gynecology	A & P Repair	7BLANPORO	6
	Abdominal Hysterectomy	7HYSOSOB	10
	Vaginal Hysterectomy: A & P Repair	7VAGAPRN	5
	Laser Cone Biopsy	7CNB	10
	Hysteroscopy: D & C	7HYSCOPY	10
	Vaginal Hysterectomy	7HYSVG	10
	Laparoscopic Tubal Clipping	7LAPTC	10
	Laparoscopy, D & C	7LAPDCC	10
	Bladder: Burch Repair	7BLBRCH	5
	Laparotomy- Myomectomy	7LAPMYOM	4
ENT	Flap- Neck Reconstruction	7FPNKRCN	2
	Laryngectomy	7LRYECT	4
	Tympanoplasty	7EARTYPL	10
	Stapedectomy	7EARSTAP	4
	Esophagoscopy	7ESOPENT	0
	Bilateral Myringotomy & Tube	7EARMYTB	4
	Laryngoscopy- Micro Suspension	7LRYSCMS	10
	Submandibular Gland Excision	7NKSBGEX	9
	Septoplasty	7NSSEPPL	10
	Tonsillectomy	7TNECT	10

# Submit Your Article to the OR Journal and Win \$3000

The Canadian Operating Room Nursing Journal is intended to serve the information needs of perioperative nurses in hospitals and clinics throughout Canada. Readers include staff nurses, head nurses, nursing supervisors, coordinators, clinical instructors, directors of nursing and other perioperative nurses. The journal is peer-reviewed and published quarterly by **Clockwork Communications** under the aegis of the Operating Room Nurses Association of Canada (ORNAC).

Manuscripts are reviewed by the editorial review board members appointed by ORNAC, and when necessary by outside experts. Submissions are invited on new surgical procedures, 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 3,300 OR Nurses.

Preferred length is approximately 10 to 15 typed, double-spaced pages, numbered consecutively throughout (including tables, figures, references, which should be on separate pages). Authors should submit three copies (one should be the original or an excellent photocopy) of the manuscript and include:

1. An abstract summarizing the article.
2. An autobiographical statement that includes the author's full name, current title and academic qualifications. e.g. Jane M. Smith, RN, MNSc, is head nurse, Thoracic Surgery, General Hospital, Perth, ON.

The author should submit the original manuscript and two(2) copies for reviewers. A copy of the edited text will be sent to the author for final approval.

References are arranged in alphabetical order by author surname. References are cited in the text by author-date method of citation, e.g. (Smith, 1987). Follow the APA Manual for style when typing the list of References, e.g.: Smith, M. & Curtis, J. (1987). Ethics in Nursing (2nd ed). New York: Oxford University Press.

Share your knowledge, expertise and experience with your operating room nursing colleagues.

## **J&J Author Award valued at \$3000**

In 1983 with the launching of the Journal, Johnson & Johnson Medical Products committed an annual \$3000 award to be presented to the author of the best article of the year. The award recognizes Canadian nurses who contribute to the advancement of perioperative nursing knowledge and education of their colleagues through the medium of the written article.

The award is presented yearly at a National or Provincial Conference. So, get writing! The Journal needs your articles - especially those describing new surgical procedures and the related nursing care plan.

Submit your articles to the attention of:

**Deborah Murphy**  
**Clockwork Communications**  
**Re: Canadian Operating Room Nursing Journal**  
**3700 Kempt Road**  
**Halifax, N.S.**  
**B3K 4X8**

# Development of an RNFA Program: A Newfoundland and Labrador Adventure

By Patricia K. Harkins RN, BSN, MN and  
Perri L. Brazill RN, CPN(C), RNFA

In early 1994, we began a long adventurous journey. The Chief of Cardiac Surgery for the Health Care Corporation of St. John's was eager to investigate the possibility of creating a nursing role for first assisting in the cardiac operating room. This was a fairly new concept for our organization and presented a unique opportunity and challenge. This idea was presented to the Steering Committee for Advanced Nursing Practice within the organization. The Steering Committee then began a number of initiatives related to researching the role and gaining approval from appropriate organizations for this role.

## Process

An ad-hoc committee began reviewing the Registered Nurse First Assistant (RNFA) role. RNFA was the official title used in the United States where this

role was fairly well established; however, the role of nurses first assisting in the operating room in Canada was in its infancy.

In Canada, there were several nurses employed in a Toronto hospital cardiac program (Dale, Bos, & Espin, 1996). These nurses were provided with in-house training and education. Several other nurses also took the initiative to pursue RNFA programs offered in the United States, but had difficulty with recognition and employment in Canada (Blaskovits, 1996; Groetzsch, 1998). In 1996, Quebec initiated the first pilot RNFA program in Canada that successfully educated two nurses for the cardiac operating room.

The Operating Room Nurses of Canada (ORNAC) also recognized this role (1994) and began developing guidelines and a blueprint for curricula development for the first assisting role (1996). The term ORNAC used for the role at this time was Perioperative Nurse

## Abstract

This inquiry was to determine the feasibility of creating a nursing role for first assisting in the cardiac operating room in Newfoundland and Labrador. A committee was struck to review the role as it existed in the United States and Canada. Following this, the committee gained approval from appropriate professional associations and began developing the program.

The result is that three nurses are currently working as RNFA's in Cardiac Surgery and two nurses are piloting a RNFA Program for General Surgery.

## Authors

Patricia Klimashko Harkins, RN, BSN, MN, is the Associate Director Continuing Nursing Studies for the Centre for Nursing Studies, which is operated by the Health Care Corporation of St. John's. This article is based on her experience with developing, implementing, and coordinating the RNFA programs in Newfoundland and Labrador. Perri Brazill, RN, CPN(C), RNFA, is the Patient Care Coordinator of the Cardiac Operating Room at the General Hospital Site of the Health Care Corporation of St. John's. She was the first person to complete the RNFA Program for Cardiac Surgery and is currently working in this role. She is also involved in program development and implementation.

Surgery (PNS), however it has subsequently been changed to RNFA (Farley, 2000). Lobbying was done by this group to have the PNS recognized as an important member of the perioperative team.

While the committee was reviewing the current role in Canada, the Association of Registered Nurses of Newfoundland and Labrador (ARNNL), the Newfoundland Medical Board (NMB), and the Newfoundland and Labrador Medical Association (NLMA), were approached and began holding meetings to discuss support and approval for the role. Approval for this role in cardiac surgery was consequently received from these three organizations.

After the preliminary work was completed by the ad-hoc committee, a subcommittee was formed to coordinate curriculum development, to identify the number of RNFA's needed for cardiac surgery, and to facilitate classification in coordination with Human Resources. An important part of this process was to develop a job description for the RNFA in Cardiac Surgery.

## Program Development and Delivery

The Perioperative Program and the Centre for Nursing Studies (Continuing Nursing Studies department), two programs within the Health Care Corporation of St. John's, initiated development of the curriculum for the RNFA in Cardiac Surgery. The major tools used to develop the curriculum were: an extensive literature search, ORNAC Blueprint for Curricula Development for the Role of Perioperative Nurse Anesthesia (PNA) and Perioperative Nurse Surgery (PNS) (1996), Core Curriculum for the RN First Assistant (AORN, 1990), various operating room textbooks, medical textbooks, journal articles, and a textbook written for RNFA's (Rothrock, 1993).

It was identified early in the curriculum development process that the program needed to include a theoretical and a clinical component. Developing the theory component for the program using distance education methods was also a priority. The theory included: five self-learning modules, several on-site lectures, and observational experiences in the Cardiac Catheter Laboratory and Peripheral Vascular Laboratory. The clinical component was composed of a suturing and knot-tying workshop and a 225-hour mentored experience with the surgeon (see Table 1).

This program, which began in 1998, was delivered and coordinated by the Continuing Nursing Studies department; however, the Perioperative Program facilitated the delivery of the clinical component of the

program. To date, three nurses have completed the program and are working in this role in cardiac surgery and two nurses are currently enrolled in the program.

When the program was developed an extensive evaluative process was incorporated which included feedback from the learners, managers in the operating room, and surgeons. Based on the feedback, revisions have been made to this program to include the ever-changing practice of cardiac surgery.

After this program was developed we received requests from many other health care boards across Newfoundland and Labrador regarding the possibility of developing a program for general surgery. A program has since been developed for general surgery and is being piloted with two nurses from the Grenfell Regional Health Services Board. The learners in the pilot will complete the program in early 2002. The theoretical and clinical components are very similar to the cardiac surgery program (see Table 2).

## Challenges

A number of challenges related to this role and the educational program have yet to be addressed. Two major challenges include approval of programs and recognition.

The Centre for Nursing Studies has already received approval and support from the ARNNL and the NMB within our province. National approval and recognition will now be pursued from ORNAC for the RNFA Programs for Cardiac Surgery and General Surgery. Feedback received from the current offerings of the RNFA for Cardiac Surgery and the pilot for General Surgery will be scrutinized and revisions will be made before application is made for approval.

Recognition is another major challenge, formally for classification and salary and also from peers and other members of the perioperative team.

After the job description for the RNFA in Cardiac Surgery was developed, a formal submission was made to the Provincial Government Classification and Pay Division to obtain reclassification status. Reclassification and increase in salary were denied to the nurses acting as RNFA's. The Provincial Government provided rationale that RNFA's were not acting independently, but working under the direction of the physician. Therefore, it was not considered to be an independent role for nurses. Further initiatives must be made to ensure that RNFA's are recognized financially for their work. They deserve more recognition and compensation for their increased knowledge,

**Table 1**

**RNFA Cardiac Surgery Program Content**

<u>Module</u>	<u>Contents</u>	<u>Evaluation</u>
<b>Module One</b>	Section	
Role and Responsibilities of the RNFA	I Scope of Practice	Exam 1
	II Legal Regulation	
	III Ethical Issues	
	IV Communication Skills, Stress Management, and Collaborative Practice	
	V Leadership Skills	Exam 2
	VI Health Care Delivery System	
	VII Nursing Research	
<b>Module Two</b>	Unit:	
Asepsis and Infection Control	1. Chain of Infection	Exam
	2. Body's Response to Infection	
	3. Asepsis	
	4. Infection Control	
	5. Multiple-Resistant Organisms	
<b>Module Three</b>	Unit:	
Cardiovascular System and Surgical Procedures	1. Anatomy and Physiology Review of the Cardiovascular System and Fluid/Lytes/Acid-Base Balance	Exam 1
	2. Diagnostic and Therapeutic Procedures and Monitoring	
	3. Open Heart Procedures	Exam 2
	4. Peripheral Vascular Procedures	
<b>Module Four</b>	Unit:	
Use of the Nursing Process for Clinical Decision Making	1. Patient Assessment and Preparation	Exam
	2. Anesthetic Interventions/Common Drugs/Hemodynamic Monitoring	
	3. Intraoperative Patient Considerations	
	4. Immediate Postoperative Considerations and Evaluation of Outcomes	
	5. Complications and Management of Surgical Crisis	
<b>Module Five</b>	Unit:	
Surgical Techniques Related to the RNFA	1. Soft Tissue Handling	Exam Suturing Workshop Research Paper Mentored experience in the OR with the cardiac surgeon. (225 hours)
	2. Methods of Providing Exposure	
	3. Providing Hemostasis	
	4. Needles and Suturing	
	5. Harvesting Vessels for Grafting	

**Table 2**

**RNFA General Surgery - Program Content**

<u>Module</u>	<u>Contents</u>	<u>Evaluation</u>
<b>Module One</b>	Section	
Role and Responsibilities of the RNFA	I Scope of Practice	Exam 1
	II Legal Regulation	
	III Ethical Issues	
	IV Communication Skills, Stress Management, and Collaborative Practice	
	V Leadership Skills	Exam 2
	VI Health Care Delivery System	
	VII Nursing Research	
<b>Module Two</b>	Unit:	
Asepsis and Infection Control	1. Chain of Infection	Exam
	2. Body's Response to Infection	
	3. Asepsis	
	4. Infection Control	
	5. Multiple-Resistant Organisms	
<b>Module Three</b>	Unit:	
Cardiovascular System and Surgical Procedures	1. Self-learning Module for Anatomy and Physiology (Optional)	Exam 1
	2. Anatomic and Physiologic Considerations	
	3. Review of Planned Procedure	
	4. Assisting Considerations	Exam 2
	5. Evaluation of Postoperative Patient Outcomes	
These five areas of content will focus on the following surgical procedures: (i) General Surgery (Inguinal Hernia Repair, Cholecystectomy, Colon and Small Bowel Resection, Thyroidectomy, and Mastectomy); (ii) Gynecology (Abdominal and Vaginal Hysterectomies, C- Section, and Bladder Neck Suspension); (iii) Urologic Procedures (Prostatectomy and Ureteral Lithotomy); (iv) Peripheral Vascular Surgery (Fem-Pop); and (v) Orthopedics (Total Knee, Total Hip, and Discectomy).		
<b>Module Four</b>	Unit:	
Use of the Nursing Process for Clinical Decision Making	1. Nursing Process	Exam
	2. Cardiac and Hemodynamic Considerations	
	3. Respiratory/Metabolic/Hematopoietic Considerations	
	4. Anesthetic Considerations	
	5. Perioperative Considerations	
<b>Module Five</b>	Unit:	
Surgical Techniques Related to the RNFA	1. Soft Tissue Handling	Exam Suturing Workshop Research Paper Mentored experience (200hrs) in the OR with the general surgeon.
	2. Methods of Providing Exposure	
	3. Providing Hemostasis	
	4. Needles and Suturing and Knot tying	

expertise, and responsibility.

Acceptance by peers and colleagues is also of monumental importance. The nursing shortage and budget deficits have caused our colleagues to question how our role might affect them. They have verbalized such things as, "what else will we have to endure" or "how will this role affect staffing and day-to-day OR functioning"? Other questions of concern for the RNFA include: "Will there be resentment for the RNFA, when our nursing peers feel abandoned, overworked, and understaffed" and "Will our colleagues be there to support us, when there are feelings that we should be functioning in the role of a perioperative nurse?"

Acceptance by physicians is another concern. Physicians who work side-by-side with the RNFA are extremely supportive, while those on the periphery tend to appear resentful. Some physicians believe that nurses are overstepping their boundaries and that the RNFA is actually taking a job from a physician. It is difficult for them to understand that the RNFA is a physician driven role and that there is no one else available or prepared to do this work.

The challenge for the RNFA is to continuously promote, network, and improve working relationships with both peers and physicians. Communication is a vital aspect of the RNFA role. Disseminating information about "who we are and what we do" is essential in order to gain an understanding and appreciation of the role. In Newfoundland and Labrador we are still at the stage where we must continuously define ourselves, therefore, it is important to keep the major players, the community, physicians, nursing colleagues, and our provincial associations informed of our role and responsibility. This will be the first step to successful recognition. Verbalizing the importance and value of the RNFA in the surgical setting should be a priority.

## Future

The future looks bright for RNFA's in Newfoundland and Labrador. Initial approval for the RNFA in Cardiac Surgery has expanded to include approval for the RNFA in General Surgery. This is a major step forward for nurses in the province. They will have the opportunity to complete their formal education and become employed by their institutions. Our expectation is that the number of RNFA's within our province will increase. Increased numbers will facilitate more effective lobbying for the role. In this age of deficits and decreasing health dollars, RNFA's will be able to

promote themselves and their value as experienced, cost effective employees. They may also receive the recognition they so richly deserve for their knowledge, expertise and commitment to this expanded perioperative nursing role.

## Summary

Our experience in promoting and developing the role of the RNFA in Newfoundland and Labrador was primarily a positive one. Performing an extensive review of the role in the United States and Canada and searching the literature allowed us to put essential elements in place and avoid previous pitfalls. The essential elements included: having approval, support and a formal job description from the agency wishing to educate and hire RNFA's; approval from the provincial nurses association for this expanded role and educational program; and support from appropriate medical associations. By assuring that these elements were in place, a smooth pathway was created for development and implementation of the RNFA role.

## References

- Association of Operating Room Nurses, Inc. (1990). *Core curriculum for the RN first assistant* (Revised Edition). Denver, Colorado: Author.
- Association of Registered Nurses of Newfoundland and Labrador. (1999). *Standards governing perioperative nurse surgery practice*. St. John's: Author.
- Blaskovits, L. (1996). The rocky road to RN first assist. *Canadian Operating Room Nursing Journal*, 14 (4), 12-14.
- Dale, L.R., Bos, J., & Espin, S. (1996). The registered nurse surgical assistant. *Canadian Operating Room Nursing Journal*. 14 (2), 10-16.
- Farley, M. (2000). ORNAC in a nutshell. *Canadian Operating Room Nursing Journal*, 18 (1), 23-24.
- Groetzsch, G. (1998). Reflection of a Canadian RNFA past, present, and future. *Canadian Operating Room Nursing Journal*, 16 (2), 15-19.
- Operating Room Nurses Association of Canada. (1994). *Perioperative Nurse Surgery (PNS)*. Author.
- Operating Room Nurses Association of Canada. (1996). *Blueprint for curricula development for the role of preoperative nurse anesthesia (PNA) and perioperative nurse surgery (PNS)*. Author.
- Rothrock, J.C. (1993). *The RN first assistant. An expanded perioperative nursing role* (2nd edition). Philadelphia: J.B. Lippincott Company.

**"I don't want to cause my patients unnecessary discomfort."**

**"BladderScan's noninvasive monitoring has helped reduce infections."**

*The Diagnostic Ultrasound BladderScan™ is noninvasive, so it maintains patient comfort and*

*dignity while improving clinical outcomes.*

*Noninvasive bladder measurement means less urethral catheterization and helps reduce*

*infection rates. BladderScan™ helps you give better patient care while managing your time much more efficiently.*



## Earn 4 CE credit hours

The article titled *Integrating Bladder Ultrasound Into A Urinary Tract Infection Reduction Program* details the effective use of noninvasive bladder volume measurement to improve clinical outcomes.

The test to earn credits on the article can be taken in hard copy or online by logging on to [www.dxu.com](http://www.dxu.com) and following the links.

**For a FREE reprint, or a product demonstration, call toll-free 1-800-331-2313 or log on at [www.dxu.com](http://www.dxu.com)**

**BladderScan™**  
Noninvasive bladder volume instrument

DIAGNOSTIC  
ULTRASOUND

0900-0444-00-86

# TRISEPTIN®

## THE BRUSH-FREE SCRUB™



## The Latest Technology in Surgical Scrubbing

Triseptin with patented Trizenol Technology is chemically engineered to meet the needs of today's O.R. environment:

- Quick brush-free application to reduce abrasion
- Contains emollients to help moisturize hands
- Superior efficacy compared to products containing CHG and PVP-I<sup>1,2</sup>
- Fast-acting, broad-spectrum, persistent microbicidal activity

<sup>1</sup> Chlorhexidine Gluconate, Povidone-Iodine.

<sup>2</sup> Following scrub procedures performed according to label directions.

**HEALTHPOINT®**  
1-800-441-8227  
www.healthpoint.com

136276-0801

ORNAC/Johnson & Johnson Medical Products

## Bursary for OR Nurses

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, employed full time in perioperative nursing practice, or at least .5 FTE or .5 equivalent casual hours in perioperative nursing practice. 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.

### Present/Past Contribution are Guidelines for Scoring of Bursary Candidates

- Has served on ORNAC Board of Directors.
- Has served at the provincial level on the Executive or chaired a committee.
- Has chaired a provincial, national or international OR conference.
- Has served at the regional level on the Executive or chaired a committee.
- Has presented at an OR related conference.
- Has served on an ORNAC Committee.
- Has served as a member on a committee at the provincial or regional level.
- Has published an article in the Canadian Operating Room Nursing Journal.
- Has been a provincial/regional member for two or more consecutive years and has attended meetings on a regular basis.
- Award an additional five points if applicant has been a member for five or more consecutive years and has attended provincial/regional meetings on a regular basis.
- Is a Canadian Perioperative Certified Nurse.

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.

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

### Deadline for Submissions

The complete, typed application form and supporting documentation must be submitted to the Chair of the ORNAC Awards Committee before March 15th each year. 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.

Write for a Bursary Application to:

**Kathy Bruce**

**Chair, Awards Committee**

**16 Lorraine Court**

**Bowmanville, ON L1C 3L6**

PH: (905) 623-9313 FAX: (905) 967-1424

Email: [kbruce@lakeridgehealth.on.ca](mailto:kbruce@lakeridgehealth.on.ca)



The planning committee for the BCORNG Biennial Conference 2002, met this past summer to make arrangements for the Kelowna meeting - April 17 - 20.

## Conference Dates:

### April 17 - 20, 2002

British Columbia Operating Room Nurses Group - Biennial Conference 2002. Kelowna, BC. Theme: "The Time is Ripe". Contact: Marlene Boback - email: meboback@home.com

### May 5 to 8, 2002

Operating Room Nurses Association of Ontario are sponsoring their 7th Biennial Conference at the Hilton Hotel in Windsor, ON. The theme of the 3-day conference is "IMPACT ZONE". Topics are applicable to all operating room and day surgery nurses. Contact: Abby's Secretarial Service. Phone (905) 685-7675, FAX (905) 685-8136. Email: abbys@vaxxine.com

### June 2 - 5, 2002

Community and Hospital Infection Control Association - Canada, (CHICA-Canada) sponsoring a National Education Conference, Delta St. John's, Newfoundland. Contact: Gerry Hansen, Conference Planner, PO Box 46125 RPO Westdate, Winnipeg, MN R3R 3S3. Email: chicacda@mb.sympatico.ca

### September 25-28, 2002

Atlantic Conference Meeting, Charlottetown, PE.

## Drinking tea slows plaque growth on teeth

You want to keep the dentist away? Drink at least a cup of tea a day.

Research at the University of Illinois at Chicago College of Dentistry shows that polyphenols in tea

can slow plaque growth and can also lower plaque's ability to stick to teeth.

Plaque, a compound of more than 300 bacteria that bind to teeth, turns the sugar in food into acid that causes cavities and gingivitis. Even so, regular brushing and cleaning are still the best way to remove plaque. ( If only teens would drink tea.)

## Correction Notice

In the October, 2001 issue of this Journal there is an error on page 22 of the article "Infected Cardiac Myxoma: An Unusual Phenomenon" By Perri Brazill. In the opening paragraph it reads: "seventy-eight percent". It should correctly read: "seven to eight percent". This error should also be corrected in the Abstract. The Editor apologises for this error.

## Wound healing delayed in those suffering depression

As if people suffering from depression or anxiety don't have enough to contend with... A recent item in *American Pharmacist* indicates that depression and anxiety may contribute to retarded wound healing, according to a study from the UK.

In a study of 53 adults with leg wounds, 16 were diagnosed with anxiety, and another 13 with depression. Of the 16 patients with anxiety, 15 experienced delayed wound healing, as did all 13 who were diagnosed with depression.

**CUSTOM-PAK®**

Just what you ordered!



## Look to the Leader™ in Ophthalmic Custom Paks

- Increases OR Efficiency
- Saves You Time
- Personalized to Your Surgical Needs
- Controls Hospital Inventory and Procedure Costs

**Alcon**<sup>MD</sup>  
CANADA  
www.alcon.ca



Canadian Operating Room Nurses Association of Canada

## Executive and Board of Directors - 2001/2002

**Past President**  
Marlene Hill  
OR Staff Nurse,  
Queen Elizabeth Hospital,  
Charlottetown, PEI

**President**  
Mary Knight  
Project/Systems Coordinator,  
Adult OR,  
Health Sciences Centre, Winnipeg.

**President -Elect**  
Gloria Nemecek  
Clinical Coordinator,  
Surgical Suite  
Lethbridge Regional Hospital.

**Secretary**  
Marg Farley  
Perioperative Educator  
Regina Health District,  
Regina, SK

**Treasurer**  
Sheila Billiard  
Staff Nurse, Surgical Suite  
Western Memorial Regional  
Hospital, Corner Brook, NF

## Provincial Representation - 2001/2002

**British Columbia**  
Rob Richardson  
President BCORNG  
Nurse Manager  
Trail Regional Hospital  
Trail, BC

Region, Saskatoon, SK  
Linda Socha, RNFA  
President-Elect SORNG  
Saskatoon District  
Health Region,  
Saskatoon, SK

**Québec**  
Claire Tremblay  
President  
CIISOQ/CORNQ  
Nurse Educator,  
Hopital Laval,  
Quebec City, QC

Diana Mabbett  
President Elect  
Staff Nurse, OR  
QEI I- Victoria General  
Site, Halifax, NS

Marcy McKay  
President Elect  
Staff Nurse - Victoria  
General Hospital  
Victoria, BC

**Manitoba**  
Ray Larkins  
President, MORNA  
Project/Systems  
Coordinator,  
St. Boniface General Hosp  
Winnipeg, MB

**Newfoundland**  
Lynn Anderson  
Past Pres., N&LORNA  
Clinical OR Nurse  
(Orthopedics)  
Health Sciences Centre  
St. John's, NF

**Alberta**  
Kim McLennan Robbins,  
President - ORNAA  
Clinical Educator,  
Surgical Suite, University  
of Alberta Hospital  
Edmonton, AB

Lucette McLean  
President Elect  
General Duty RN, OR  
St. Boniface General Hosp  
Winnipeg, MB

**New Brunswick**  
Tina Kennah  
President NBORN  
OR Nurse Manager  
Dr. Everett Chalmers  
Hospital, Fredericton, NB

Laura Ellsworth  
Pres-Elect N&LORNA  
Staff Nurse  
Health Care Corporation  
- St. Clare's Site St.  
John, Nfld.

Peggy Ziegler  
President Elect  
Staff Nurse, University  
of Alberta Hospital  
Edmonton, AB

**Ontario**  
Kathy Bruce  
President - ORNAO  
Program Leader,  
Surgical /Maternal/ Child  
Lakeridge Health  
Bowmanville, ON

**Prince Edward  
Island**  
Janice Shephard  
President, ORNPEI  
Staff Nurse  
Queen Elizabeth Hosp.  
Charlottetown, PE

**Saskatchewan**  
Marla Ewen, RNFA  
President SORNG  
Saskatoon District Health

Susan Bell  
President Elect  
Clinical Nurse Special-  
ist - The Hospital for  
Sick Children,  
Toronto, ON

**Nova Scotia**  
Lyn Thorne  
Past President ORNANS  
Staff Nurse  
QEII Health Sciences  
Centre. Halifax, NS

Theresa Thomas  
Pres-Elect, ORNPEI  
OR Staff Nurse  
Queen Elizabeth Hosp.  
Charlottetown, PE



## Exciting changes

## in Career and Lifestyle!

If you're seeking new experiences, new skills and new friends, you'll find all this and more in a career with the North Okanagan Health Region! NOHR provides acute, residential and community health services to a population of 125,000 in the communities of Armstrong, Enderby, Revelstoke, Salmon Arm and Vernon. The region itself offers a stunning location and vibrant lifestyle that our employees thrive in.

Located in the heart of British Columbia, the beautiful North Okanagan region offers pristine mountain lakes and a superb climate: hot, sunny summers and moderate winters. Outdoor recreation ranges from golf to skiing, while concerts, festivals and museums provide cultural flavour. Our growing communities also offer excellent schools, shopping and sports amenities.

## OPERATING ROOM NURSES

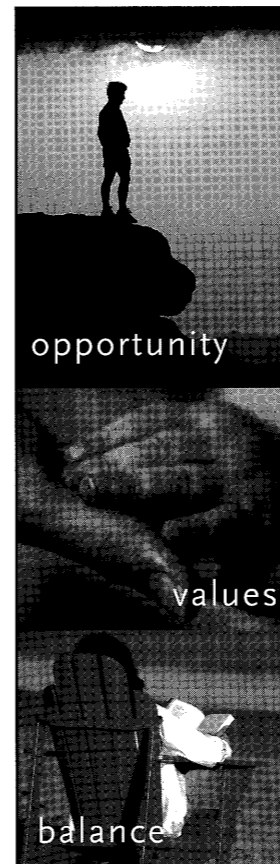
**Vernon Jubilee Hospital, Vernon, BC**

• Regular Full-time and Part-time positions available immediately.

Registration with RNABC, a recognized post-graduate operating room course, plus two years' recent experience is required.

For a challenging career in a supportive, welcoming environment, and a lifestyle that will make the most of your free time, the North Okanagan Health Region has it all! **For more information on the North Okanagan Health Region, please visit [www.nohr.org](http://www.nohr.org).**

Recruiting Consultant, 2740 Haugen Avenue, Armstrong, B.C. V0E 1B1  
Phone: (250) 546-8994 local 201. Fax: (250) 546-9943. E-mail: [careers@nohr.org](mailto:careers@nohr.org)



## what are you looking for?

Victoria, BC

### Join us at our new Diagnostic & Treatment Centre

One of the most highly-ranked healthcare regions in Canada (#6 by Maclean's magazine), the Capital Health Region provides a full-spectrum of healthcare – from acute care to a broad array of excellent public health services. With a staff complement of 9,500 employees working in our 30 facilities, we service a population of 340,000. We are pleased to announce the opening of a brand new facility to meet the health care needs of the community we serve.

Opening in spring 2002 at the Royal Jubilee Hospital, our new Diagnostic & Treatment Centre will be a state-of-the-art complex complete with medical and surgical units, several outpatient clinics and related support areas. The new area will have 11 OR theatres with the capacity to expand to 16. These include **overhead patient lifts, nursing columns** and a **core/case cart system** with 3 separate Ophthalmology procedure rooms. This is your chance to broaden your career in a leading-edge environment.

We offer:

- relocation assistance
- competitive wages
- ongoing educational sessions for personal/professional growth.

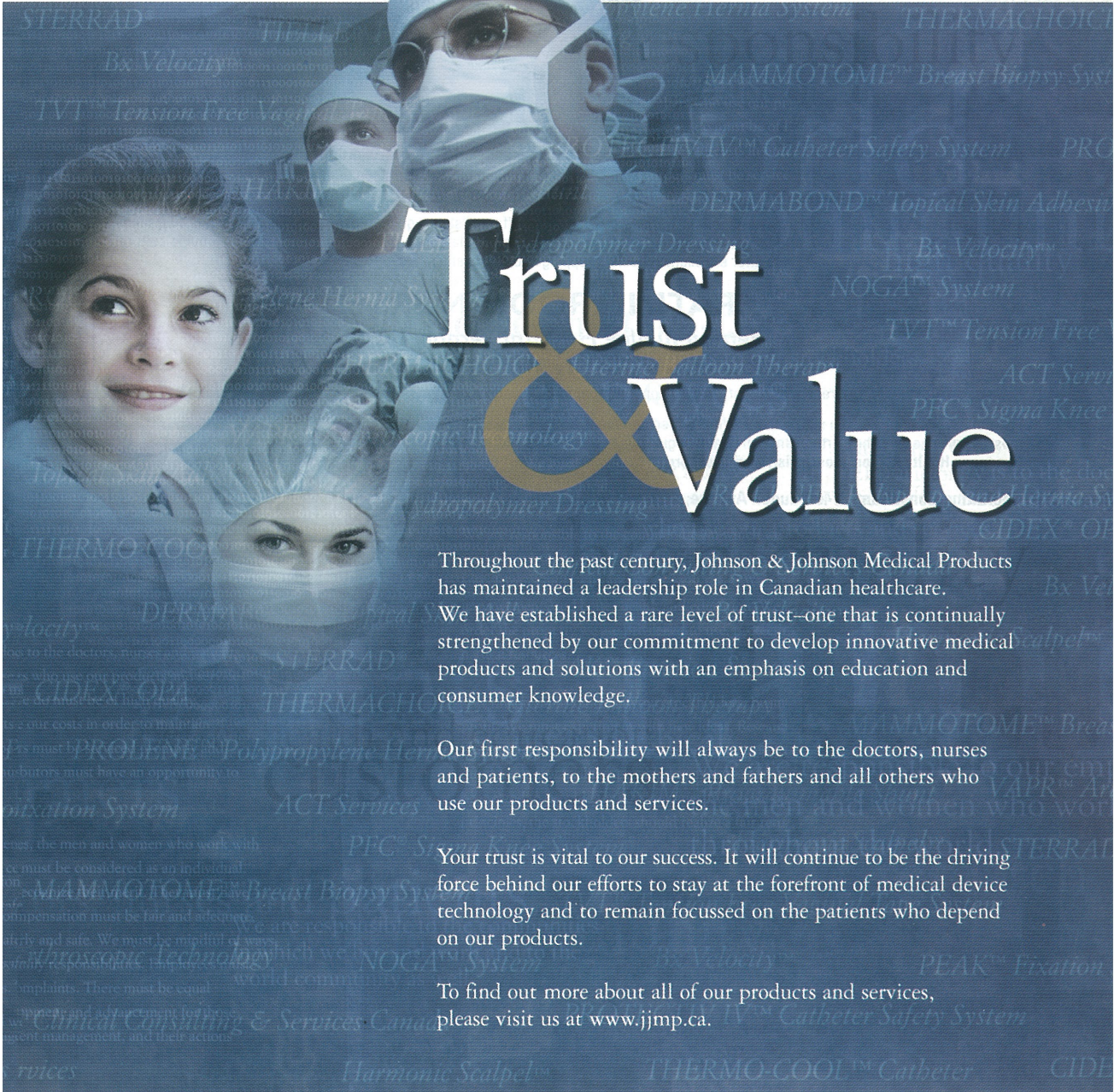
Our care and our work continuously reflect our values and beliefs, thus creating positive and meaningful experiences for both patients and staff. We understand the importance of balance between work and personal life and in sharing the values of our employees.

### Capital Health Region HR-Recruitment Services

1900 Fort Street, Victoria, BC V8R 1J8  
Toll-free: 1.888.296.3963  
Fax: 250.370.8570  
Email: [jobs@caphealth.org](mailto:jobs@caphealth.org)  
Résumés must quote #1535/ORJ.



[www.caphealth.org/careers](http://www.caphealth.org/careers)



# Trust & Value

Throughout the past century, Johnson & Johnson Medical Products has maintained a leadership role in Canadian healthcare. We have established a rare level of trust—one that is continually strengthened by our commitment to develop innovative medical products and solutions with an emphasis on education and consumer knowledge.

Our first responsibility will always be to the doctors, nurses and patients, to the mothers and fathers and all others who use our products and services.

Your trust is vital to our success. It will continue to be the driving force behind our efforts to stay at the forefront of medical device technology and to remain focussed on the patients who depend on our products.

To find out more about all of our products and services, please visit us at [www.jjmp.ca](http://www.jjmp.ca).

PRODUITS MÉDICAUX

**Johnson & Johnson**

MEDICAL PRODUCTS