the *Standards for Patient Care in the Operating Room.* The previously published professional (1986) and technical (1988) standards will be amalgamated in the next, soon to come, edition. This edition will also have a section "Competencies of the O.R. Registered Nurse".

To assist in validating the registered nurses presence in the operating room, once again, the certification process will be investigated. ORNAC Board foresees many advantages for having certification available to our members. In the near future there will be more concrete information to report.

There is a void among our peers and the public in general, as to the actual role, functions and the amount of critical, complex knowledge and skills an O.R. registered nurse requires, in order to function effectively and efficiently in giving care to the surgical patient. It is up to us to 'sell ourselves', to actively promote our valuable presence in an operating room as the patient's advocate and to maintain standards of patient care. It is important to reach the public school system as well as other health care personnel and the public in general. ORNAC will do its part through a Public Awareness committee but the most important ingredients for success is you - the membership. Start now by making plans for O.R. Nurse Day on Nov. 14 or the week thereof.

Another concern for ORNAC is the process of handling waste and the management of waste in operating rooms. We will be working cooperatively with industry and governments on this issue.

ORNAC has developed a strong relationship with CNA and will play an active role at the annual CNA meeting in Saint John, NB, this June where many of these issues will be discussed and acted upon.

Please refer to the 'Conference Calendar' within this Journal for dates and details on several important upcoming O.R. conferences.

ORNAC is very involved in promoting Operating Room Nursing on many fronts and the success of this involvement depends on the support of all Provincial Executives, but most importantly the success depends on each member of an O.R. organization. This membership must grow. If each of you recruited one more nurse, think of our strength? Your input counts and no matter how small, it is very much appreciated. As the saying goes: "A chain is as strong as its weakest link". Let's pull together on all our projects. Be pro-active!

Gloria Stephens is President of the Operating Room Nurses Association of Canada, and the Clinical Instructor, St. Paul's Hospital, Vancouver, B.C.

Bursary Fund for OR Nurses

Sponsored by ORNAC and Johnson & Johnson

1. Purpose of the Fund

To financially assist ORNAC members in furthering their education.

2. Factors Influencing Assistance Available

1. Other financial assistance requested and / or granted.
2. Previous bursary funding granted by ORNAC.
3. Length, place and content of educational program.

Note: Financial assistance is not available for salary replacement.

3. Application Process

1.Fill out application form and submit an application form to ORNAC.

2.Reference letters- two, (2) from most recent employer which states the applicant's professional competence and experience, (ORNAC will request the reference).

3.Reference letter should address applicants potential to succeed in the program.

4.Submit autobiographical to include career accomplishments, education, goals.

5.Proof to be submitted of registration for the program.

4.Responsibility of Applicant Receiving Funding

1.Signed contract to be returned to ORNAC Executive within 30 days of receipt of contract, otherwise funding will be withdrawn.

Criteria For Selection for the ORNAC/Johnson&Johnson Fund

1. Applicant must be a member of a provincial group for minimum of three (3) years.
2. Primary employment focus - the Operating Room Nursing (staff,education, administration).
3. Applicant has actively participated in their respective Provincial Group and/or with ORNAC. Applicant's participation to be listed & submitted with application form.
4. References (2) indicate the applicant promotes professionalism, is responsible and accountable, and has potential to succeed.
5. Applicant's future plans at the completion of the program must include perioperative nursing.

**Perioperative nursing defined in (Rules & Regulations) Information Manual.*

For more information or to apply for the Bursary Fund please contact ORNAC's Awards Committee Chairperson:

Muriel Shewchuk
Director of Nursing, OR/RR/Surgery
Foothills Provincial General Hospital,
1403-29 Street N.W,
Calgary, Alberta
T2N 2T9

Development of an Operating Room Nursing

Workload Measurement System

By Elaine Friedberg, Lila O'Reilly & Jo-Ann Theriault

Introduction

After the Ottawa General Hospital became one of the test sites for the Canadian MIS Project in 1985, we began to introduce retrospective "Workload Measurement Systems" (WLMS) in nursing and diagnostic service departments. At this time Specialty unit WLM systems, inclusive of the Operating Room system, were in developmental stages. We decided to proceed with the systems implementation program, assuring compliance with retrospective requirements.

An important factor in play at this point was that we had recently obtained approval to proceed with the introduction of an Operating Room (OR) computerized Scheduling System. In developing the functional requirements for the selection of scheduling system software, we clearly defined a necessity for a system with architecture which was sufficiently flexible to permit inclusion an OR WLMS.

What follows is a description of the development of a WLMS in conjunction with the 1990 implementation of an automated Operating Room Scheduling System .

System Development

A development committee, whose members included the Nursing Director of Critical Care, the Operating Room Charge Nurse, the Operating Room Clinician and the Quality Assurance Coordinator, was formed to begin work on the system development. The committee was later expanded to include the Operating Room Scheduling System Project Coordinator. We decided that the typical activity based system would not be appropriate since OR nursing is largely influenced by non nursing functions. A literature search on OR WLMS revealed very limited applications available to assist in our project. The National Hospital Productivity Improvement Program had recently published the "Operating Room Workload Measurement System and Staffing Methodology". This document was reviewed in detail. It did not provide information on how this methodology and resulting system related to the MIS Guidelines. In 1986 the MIS project produced a guide to the implementation of the above system in accordance with MIS guideline criteria. As very little information about OR workload measurement systems was available, we were left to create our own unique system.

We determined that we should define case and nursing functions carried out in the OR, and should sort these into categories of work described in the MIS guidelines.

We recognized that the OR system would have to meet some minimal criteria. It would have to be responsive to the MIS guidelines meeting both the global and departmental dimension requirements. This system had to be user friendly and require minimal time to maintain, and moreover, it had to provide valid and reliable data in a timely fashion.

Authors:

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Jo-Ann Theriault, R.N., is presently the Charge Nurse of the Eye Institute of the Ottawa General Hospital. Formally she was the Operating Room Scheduling System Project Coordinator.

Two major areas of classification were required to achieve our goal of utilizing what we saw as a matrix approach to the system design. We needed to classify OR nursing activities into the major categories of nursing, related, support and other support care, as defined by the MIS Guidelines. We also needed to classify all Operating Room surgical cases and anaesthesia procedures into groupings based on complexity and thus time based components. These classifications would provide the framework for our system.

Nursing activities for which standard times would be employed were defined. These activities include the following:

Nursing Care	- Admit patient to the bay - Ready supplies - Set-up case - Admit the patient to the OR theatre
Related Care	- Nursing time allocated per case that is associated with the functioning of the unit in general
Support Care	- Case specific - Transfer patient to the Operating Room - Assist with positioning - Clean-up
Support Other	- Nursing time allocated per case that is associated with activities that could be carried out by other personnel

Time study tools were developed and staff were taught to complete them. Nursing staff carried out the time studies to determine the standard nursing care and support care times related to each case. The data were analyzed and standards times assigned for eleven surgical specialties and three sub-classifications within each specialty.

The case classification activities involved input to the system of approximately 1200 procedures and indicating a category for each procedure of A, B, or C. The A, B and C category indicates the degree of complexity; and thus time required, on average, to provide for essential OR nursing functions of case preparation, clean-up, patient admission, induction and discharge.

In addition to the above mentioned time studies, nurses were asked to carry out studies to determine the time factors for related care and other support.

The MIS guidelines divide personnel into unit-producing (those personnel whose primary function is to provide patient care - MIS guidelines, 1985) and non unit-producing categories. Studies were carried out to determine what proportion of time the clerks and attendants spent carrying out unit-producing activities. As well, the time factor to admit the patient to the Operating Room bay was determined from data collected in these studies. Analysis of the data revealed that clerical time was 25% unit-producing, while attendant time was 30% unit-producing.

Once the standard times were developed, we decided that the system should be tested. Nursing workload per case would be calculated in the following manner:

Nursing care =		
	Admit Patient to the bay	standard time
+	**Set-up Case & Admit Patient to Operating Room theatre**	standard time
+	**Intra-operative time**	real time
+	**Related Care**	standard time
+	**Support Care =**	
	Case Specific	standard time
+	**Support Care - other**	standard time

At what point would the intraoperative time begin? It was decided that for the first scrub nurse the intraoperative time would be calculated starting with the patient prep and concluding with the end of the procedure. For the first circulating nurse the intraoperative time would start when the patient entered the theatre and end when the patient left the theatre. If at any time there was more than one scrub or circulating nurse involved in the case, the time they were in the room within the above stated time frames would also be calculated.

Pilot Study

One of the purposes of conducting the pilot study was to ensure that the system did not double count activity times. This was a distinct possibility, since there is an overlap of activities in the Operating Room. An example relates to clean up, which can begin before the procedure ends.

To conduct the pilot study and to accurately calculate the intraoperative time, the following time elements were required, namely when:

- patient entered the theatre
- prep started
- procedure ended
- patient left the theatre
- each scrub and circulating nurse entered and left the theatre

Initially, there were concerns related to the collection of information from the OR record. Although this record was adequate for current needs, it did not facilitate documentation of all the actual times required to complete the pilot study. A revised OR record, designed to facilitate accurate recording of the actual times, was introduced just prior to implementation of the computer system.

Staff undertook to collect actual case times from each OR theatre and each service using a prototype of the new OR record. Initially, the project coordinator was present in the theatres during the actual cases to collect the data. This was very time consuming; however, it proved to be beneficial, since it allowed the coordinator to test the new OR record, meet staff, explain new systems that were being implemented, and serve as an "ambassador of change" .

Data from the evening and night shifts were retrieved retrospectively from the OR record. Staff collaborated in the data collection process and endeavoured to diligently record all the required times, on the current OR record.

Data, collected on approximately 450 cases and encompassing all services, were analyzed; and productivity was calculated. It was known that there were times when no cases were taking place in the OR. It was therefore concluded that there should not be a productivity of more than 100% in any 24 hour period. This was confirmed by the data, since the calculated productivity, although high, was always less than one hundred per cent. Because of the consistently high productivity scores however, there was still concern that some of the standard times may have been too generous. A process of validation of standard times was undertaken. We identified that standard times for two services required adjustment.

Computer Applications

The software purchased for the OR scheduling system did not include a workload measurement component. Software modifications were defined and incorporated to facilitate our WLMS, inclusive of computer screen design corresponding to the elements of the OR record.

As indicated previously, our system contained a predefined database of procedures classified by service and workload measurement category of A, B & C. As a result, there would be little workload data input entered by the data entry clerk. When the scheduling clerk would enter a procedure into the system, the workload measurement standard times would automatically be assigned to that procedure. If a case had more than one procedure associated with it, the workload for the case would be determined from the procedure with the highest numeric value.

Consequently, for each post-operative case entered, the system calculated the hours worked, by adding the standard times as predefined, to the actual times. Actual times were calculated by the system using the intraoperative staff times. The system would default the intraoperative times from the information entered off the OR Record.

- the 1st scrub nurse's times, equivalent to:
  the PREP START and END of PROCEDURE times.
- the 1st circulating nurse's times, equivalent to:
  the PATIENT ENTERED THEATRE and PATIENT LEFT THEATRE times.

The default times could be overridden. Only additional, or relief nurses participating in the case had their real times, as recorded on the OR record entered by the data entry clerk.

A number of concerns were identified almost immediately when we began to actually produce workload reports. The first problem identified was one of the software. The calculation of workload time for a case that ran across midnight, thus covering two calendar dates, was inaccurate and produced workload times of more than 24 hours per case. This fault was subsequently rectified by the vendor company.

The second problem was one of data entry, related to clerical compliance and the obvious learning phase which influences accuracy levels. Written reference material resolved this problem.

Change

The new OR record was a major change associated with the introduction of the workload measurement system as well as the computerized scheduling system. Collaboration and cooperation of the team in designing the new record produced good results. The new record was comprehensive and easy to use, followed the sequential course of the case and the screen sequence and formats. The significant change for nurses was that they must now record the times they enter and leave the case. The new record provided for capture of information needed to generate not only workload measurement reports, but many other OR management reports which were actually the initial requirement of the system.

Concluding Thoughts

Our system became operational in May, 1991 and

is functioning well. With the implementation phase complete, a number of things became evident.

1. For the OR nurses, the system is easy to use, the major impact being the accurate entry of their in and out times on the OR record of each case. Inservice sessions introducing the system, prevented any major problems.

2. Although the Ottawa General OR workload measurement system is one component of an automated OR management system, it can nonetheless be introduced as a stand alone manual system. The many calculations to be done however, can be time consuming. During the pilot phase the OR computer system was not yet installed and data collected were analyzed using a P.C. and a spreadsheet package. This process seems to be a viable alternative for an institution that does not have a computerized OR Management System.

3. The reporting capability of the system is most flexible. It is now possible to generate reports of the total workload generated per case, as well as per service, by specific days or by week. To further enhance the system and to facilitate the calculation of productivity ratios, the OR Management System with its workload measurement units will have to be linked to the actual staffing information in the payroll system. In addition, case specific information from the OR will have to be integrated to data generated from the Global dimension reporting system so that total costs per case can be determined.

4. Even without the enhancements, the system has produced almost immediate benefits. As we began to analyze the data we saw which services and cases were utilizing the greatest number of nursing resources. As more data are collected nursing will have the information to determine the cost and effect of the expansion or reduction of various types of specialties or services. In addition, nursing will be able to assess the manpower costs and effects of any increase or reduction of different types of OR procedures. Data to assist the manager to make informed decisions is now readily accessible.

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The Regulated Health Professions Act

By Pat Mandy, R. N., B.A., M.P.A.

The Keynote Address to the Operating Room Nurses Association of Ontario

Our places of work, our health care system, in fact our whole world is in the midst of major unrest and change. No one knows for sure where it will all end. Sometimes we feel like Ogden Nash when he said, "Progress may have been good at one time, but it's gone too far."

At times we feel threatened or overwhelmed. We must not let this happen. We have choices and these choices will allow us to influence the constant change that surrounds us. Change will happen in spite of us. It is up to us to establish our role.

The Ministry of Health in Ontario is now establishing its role as one of leading and managing change in the health care system. The government is encouraging partnerships among those concerned with health and health care and is requiring new accountability from consumers and providers.

Change within hospitals will be a prerequisite for survival...the era of unlimited resources and unchecked growth of expenditures and services has ended. We once had an unlimited budget in health care and we exceeded it.

The pressures for change are not only financial. Numerous studies have demonstrated that different models of health care delivery can more effectively meet the needs of the consumer. It has also been demonstrated that the balances and linkages between the various institutions and agencies can and should be used to make the best use of the health care dollar.

The adjustment for nursing in this environment will be significant. Although the system shifts are in keeping with the fundamentals of our profession's beliefs, many nurses will need to learn new skills and approaches to practice. This takes place in a climate where there is a high emphasis on competence and growing demand for public accountability. Nursing will have to redesign its role and responsibility if it is to meet the needs of society.

The government has given health care reform a very high priority. Just some of the legislation currently under review or at some stage of its development, includes the regulated health professions act and the 22 accompanying profession specific acts, the public hospitals act, the independent health facilities act, the advocacy, consent to treatment and substitute decision acts and the cancer treatment act. With little exception, the new legislation reflects a strong direction of public or consumer choice and involvement, as well as encouraging partnerships amongst health care providers and a team approach to health care.

We are about to have new health professions legislation in Ontario and it offers the nursing profession an enormous challenge.

One of the challenges of the regulated health professions act will be the development of collaborative and cooperative, rather that competing relationships with other health care providers and the public.

However the greatest challenge for nursing will be reaching agreement within the profession.

One day a group of nurses were given the opportunity to meet with God and ask her some questions. One

Author

Pat Mandy, R.N., B.A., M.P.A., is Director of Nursing, Henderson Division, Hamilton Civic Hospitals, Hamilton, Ontario. This address is an abridged version of her keynote address which compliments and supports the opinions expressed in the keynote address to the B.C.O.R.N.G. three days earlier,

(See page 14).