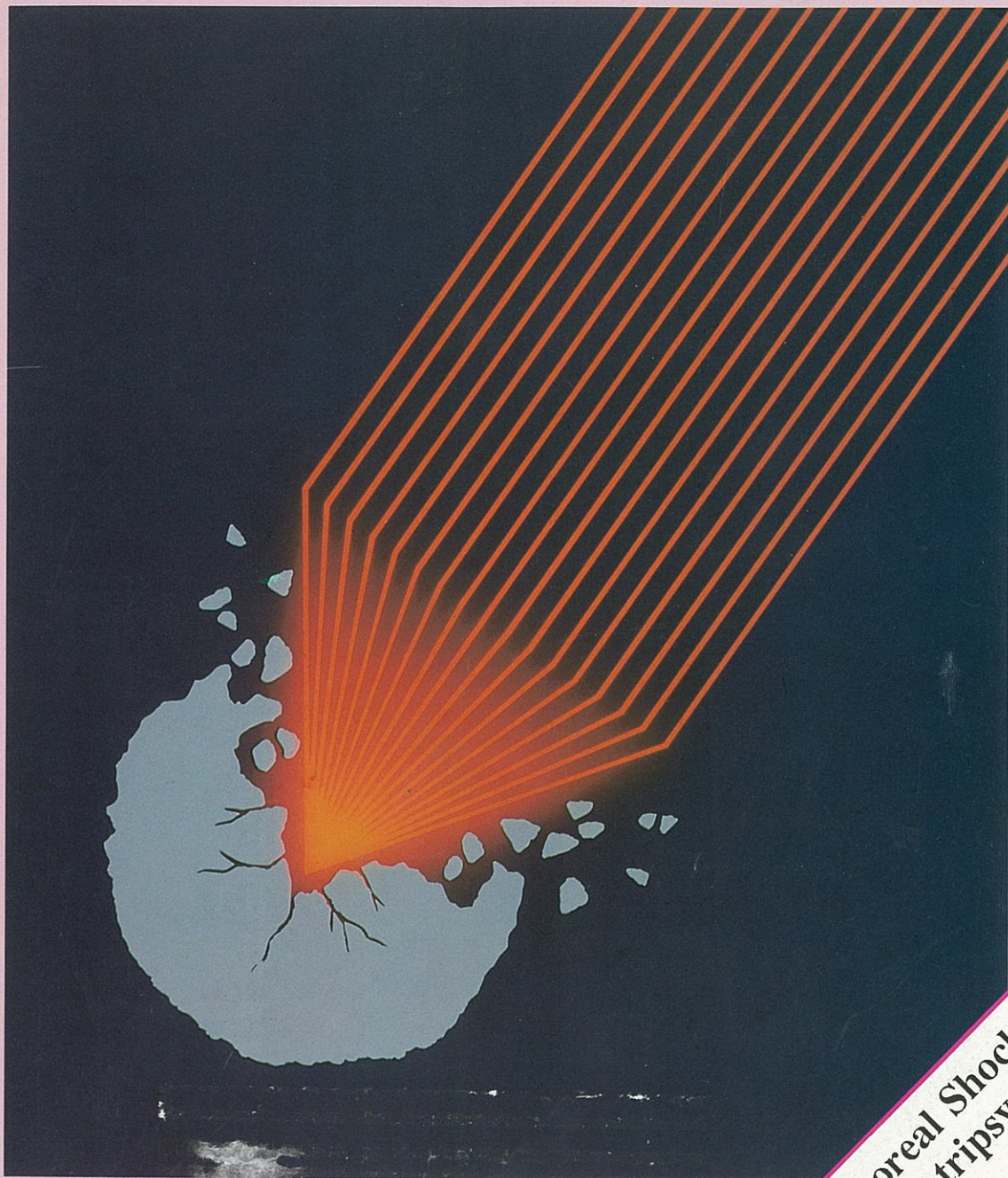


CANADIAN

# Operating Room Nursing Journal

Volume 7, Number 3, June/July, 1989



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**Feature Articles**

**05 The laser plume: is it a health hazard?**

Is there a danger to the health of operating room staff subjected to smoke-polluted air during laser surgery? This issue is examined in depth with the author (1) describing how the laser plume is produced, (2) discussing recent studies that examined the possible hazards of the plume, and (3) commenting on a questionnaire that was distributed on the effects of the laser plume. This is followed by an article discussing laser safety procedures as they apply to laser plumes.

By Agnes Jacques, B.Sc.N.

**13 ESWL - a treatment synopsis**

Extracorporeal shockwave lithotripsy (ESWL) is one of the newest forms of treatment for the formation of urinary calculi. This submission is a synopsis of the activities at the Health Sciences Centre in Winnipeg, Manitoba where ESWL has been used on more than 500 patients in the past 16 months.

By Darcy Kasprick, R.N.

**20 The nurse as "Good Samaritan"**

Nurses are sometimes warned not to stop at accident scenes and offer their professional expertise, as they can get into legal trouble! Is this really true, or is it yet another medico-legal myth? The journal's legal writers examine the issue and clarify some important legal considerations that come to the fore when a nurse volunteers to be a "Good Samaritan."

By L.E. and F.A. Rozovsky

**26 First ORNAO Biennial Conference**

Post-conference coverage of the first provincial-wide operating room nurses conference ever held in the province of Ontario

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**Acknowledgement:**

The Journal wishes to acknowledge the kindness and support of Siemens Electric for the front cover photography and the illustrations found on pages 14, 15 and 16.

# The laser plume: Is it a health hazard?

By Agnes Jacques, R.N., B.Sc.N.

The controversial issue of second-hand cigarette smoke has taken on added significance since research has shown it to be harmful to individuals who do not smoke but who are exposed to it on a secondary basis. In this instance, segments of society have decided to take action and fight for their right to a smoke free environment.

In a similar vein, why should operating room staff be subjected to smoke-polluted air, and even more so, to air that contains diseased particles that are potential health hazards?

This smoke in the operating room, produced during laser surgery, is called the laser plume.

Although there are a number of safety measures to consider during laser surgery, the main concern in this submission will focus on the plume aspect. The content will also examine how the laser plume is produced, the composition of the plume, and the possible effects that contact with the plume may produce. This will be followed by laser safety measures that focus on smoke evacuation. We will also look at what is on the market for protection against laser plumes, what is used and how it is used.

The response to a questionnaire on laser plumes which was prepared for the operating room staff at the Hotel Dieu Hospital in Kingston, Ontario will also be discussed.

## The laser plume

The laser plume is defined as the smoke produced from vaporized tissue during laser surgery. The laser beam creates intense heat which is delivered to a precise area of tissue. The heat built up is so intense that cellular explosion occurs and the tissue is vaporized, thereby producing the smoke. Surface cells can be blown into the air from the explosion and could be inhaled by the OR team and the patient as well.

Researchers have identified the particles in the

laser plume as being the same size as the dust particles that cause black lung (chronic lung disease/pneumoconiosis). There is potential for OR personnel, when breathing in this particulate matter, to develop viral lesions, as they are too small to be filtered by the standard mask. Therefore "the viral transfer from laser plume cannot be conclusively ruled out." (AORN, 1988, p. 462).

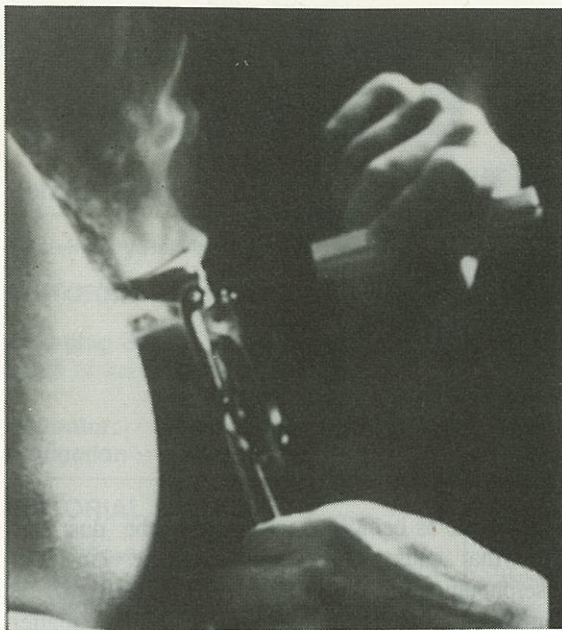
In a recent study, "scientists found that plumes of debris and smoke created during laser surgery can contain hazardous bacterial viruses." (Office of Science and Technology, 1989, p. 619). Among the less harmful products "laser plume consists of water, carbonized particles, morphologically intact cells, and a distinctive odor." (Ball, 1986, p. 4).

Laser plume contents also depend on the type of laser used for the procedure. The carbon dioxide (CO<sub>2</sub>) laser, for example, causes a different tissue reaction than the Nd: YAG or Argon lasers. The difference lies in the tissue reaction to the specific laser being used. (Ball, 1986, p. 4).

## Effects of plume

A study was undertaken to determine the effects of laser smoke on the lungs of rats. A 10cm<sup>2</sup> by 10cm<sup>2</sup> of planed pigskin was vaporized with a 1.5 to 2mm diameter CO<sub>2</sub> laser beam delivered to the target via a micromanipulator. (Baggish et al., 1987, p. 1260). The study was done in three phases in which smoke exposure was increased with the second group, then increased again for the third group of rats.

The results showed that the first phase rats developed a remarkable pulmonary inflammatory response. The lungs were grossly and microscopically congested. The microscopic pattern was consistent with the congestive phase of interstitial pneumonia. The pulmonary vessels were dilated and congested,



Photograph of a laser plume from a hand held CO<sub>2</sub> laser during surgery

and the terminal bronchioles were thickened and showed hypertrophy and hyperplasia of the ciliated epithelium. The alveolar ducts were distended, and a

large mononuclear inflammatory infiltrate filled the walls of the alveoli.

The animals treated in phase two showed accentuated features of the lungs described in phase one. In addition, peripheral areas of the lungs demonstrated emphysema and extensive peribronchiolar and interstitial lymphocytic infiltration. Pulmonary capillaries were also thrombosed.

The animals treated in phase three showed even more extensive emphysema and tremendous bronchiolar mucosal proliferation. Numerous goblet cells were seen. The bronchiolar lumina were narrowed by the epithelial proliferation, and an acute and chronic inflammatory cellular exudate was observed. Lymphoid follicle formation around the bronchioles accentuated the findings. (Baggish et al., 1987, p. 1261-1262). It is apparent that with increased exposure to the laser plume, there are more severe effects. Even in short-term plume exposure, the study demonstrated harmful pathologic response in rat lungs.

### Laser safety

It is accepted that eye protection is of utmost importance during laser surgery. Many articles have been written on the damage that can occur if the

laser beam is directed into someone's eyes without protection. Thus, eye protection is recognized and understood as an area where major laser safety precautions are slavishly adhered to. Warning signs are placed at all entrances requiring that protective eye glasses must be worn beyond this point.

However, it has only been since January of this year (1989) that proposed recommended practices mention that "health care workers should be protected from inhaling fumes associated with laser use." (AORN, 1989, p.286). People are starting to realize that the laser plume is not something to be brushed aside and that the problem needs to be dealt with more seriously.

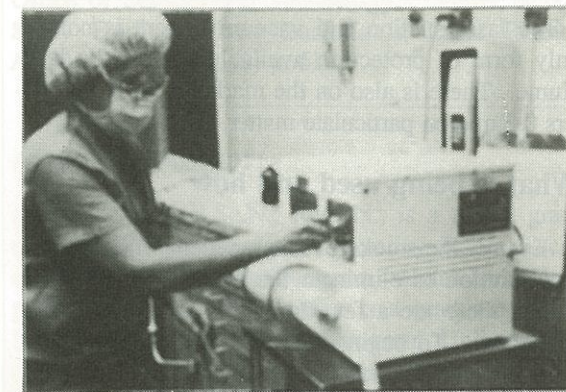
### Air pollution

During an experiment in Japan, Shigenoby Mihashi vaporized 1 gram of excised canine tongue with a CO<sub>2</sub> laser and found the amount of plume within the immediate surgical area to be 52 times greater than that allowed by the government's environmental standards. This finding indicates that the air is definitely polluted by the smoke that is produced by laser irradiation. (Ball, 1986, p. 4).

To offer some protection from the noxious laser

fumes, a smoke evacuation machine is utilized. There are different kinds of evacuation systems on the market and... "various types of filtration methods must be considered... The filter should remove particulate matter efficiently down to at least 0.5mm in size." (Ball, 1986, p.8) The frequency of the filter change should be written in the guide manual and should be followed accordingly.

Keeping the filter clean is important for effective elimination of plume. Only clean air should be redistributed into the room, otherwise it would defeat



An OR nurse prepares suction equipment for use during laser surgery



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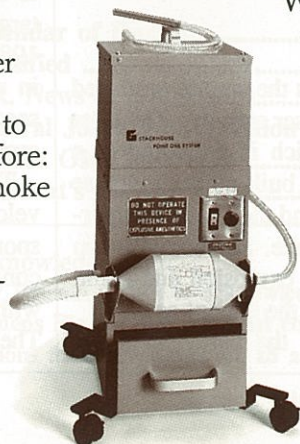
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<sup>1</sup>Garden, J. et al (1988) Papillomavirus in the Vapor of Carbon Dioxide Laser —Treated Verrucae. JAMA, 259: 1199-1202.

<sup>2</sup>Walker, N. et al (1986) Possible Hazards from Irradiation with the Carbon Dioxide Laser. Lasers in Surgery and Medicine 6: 84-86.

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the purpose of the evacuator. In cases where only a small amount of laser plume is produced, a wall suction with a laser filter would be sufficient. This method must be monitored carefully as the filter can get quickly clogged with large amounts of plume.

There are also guidelines as to the type of evacuation needed for the different types of laser surgery. These recommendations are set by a number of organizations in the health care field, the Occupational Safety and Health Administration, and the courts.

The laser suction and vacuum system is not the only form of protection available against the laser plume. There is also on the market a mask that filters 0.3 micron particulate matter. (Kapsar, 1988)

### What is being used and how

Even if the smoke evacuator seems like the perfect solution to eliminate the problem of the laser plume, there are a few downfalls where its use is concerned. To begin with, the hand piece releases nitrogen gas to cool the hand piece and to blow away debris from the operative site. This of course scatters the plume in the room, thus making smoke evacuation more difficult.

Quite often the smoke evacuator is not used properly as when the hose tip is not held close enough to the tissue being lasered. Obviously, the further away the hose tip is from the site, the greater the amount of plume allowed to escape into the air. When the vacuum is not being used properly, the person responsible for holding and keeping the hose tip close to the operative site is either unaware that the wand is not close enough, or unaware of its potential hazard. Possibly, the attendant does not even care if the smoke escapes in the room, only to be inhaled by the operating room staff.

### The questionnaire

As this scenario was envisioned, it brought to mind questions as to how harmful the vaporized tissue was to individuals who were exposed to it. If there is some truth to its hazardous effects, why are people not more cautious when handling the smoke evacuator? It is hard to imagine that something that poses a threat to our health can be taken so lightly. Thus, the questionnaire was prepared in order to provide answers to these and other questions. The purpose of the questionnaire was to find out what individuals (who are part of the OR staff) knew about laser plume, its effects, if they believed it was harmful and if they cared about protecting themselves.

Select individuals were asked to identify them-

selves according to their line of work at the hospital. The respondents were: nursing staff, surgeons, anaesthetists, and residents. The questionnaire was given to the nursing staff in an informal manner by placing the questionnaire, with the individuals name written on it, in the nurse's lounge. The purpose of the study was explained. Those not present at the time were approached on an individual basis. There was over an 80% response from the nursing staff.

Results show that almost everyone knew the answer to the first two questions concerning the harmful constituents and effects of the laser plume. Only one nurse did not believe the laser plume could be harmful and everyone cared about protecting themselves from inhaling the smoke. Less than 10% knew a special mask, that offers protection from laser smoke, existed and no one has ever worn that mask. When asked if they would wear the mask even if it was difficult to breath through, all responded positively, except one, whose answer stated that it depended on the degree of difficulty.

Five residents either from anaesthesia or surgery were approached with the questionnaire. Three responded. In this category the answers varied from knowing all about plumes and caring about self-protection from the smoke, to having no knowledge about it and not concerned with protection.

In the anaesthetic group, 50% responded to the questionnaire. The questionnaire was sent to them through the hospital inter-departmental mail system. They were all aware of the plume's effects and cared about protecting themselves, but one said he would not wear the mask anyway. Here again, one of the respondents questioned the difficulty of breathing with the special mask on.

In the surgical group, 40% responded. The questionnaire was sent as above by the hospital mailing system. The results show they were all knowledgeable of the laser plume effect and they all cared about protecting themselves. Half of the surgeons did not know a special mask existed, but they would all wear one if it was available. Here again one questioned the degree of difficulty in breathing through the mask. Why no one has ever worn the special mask that offers protection against laser plumes by filtering 0.3 microns of particulate matter, lies in the fact that they are not currently available in the hospital.

### Questionnaire conclusions

It was concluded from the questionnaire that the majority of the people do care about protecting themselves from laser smoke. However, had all the surgeons and anaesthetists responded, the results may

have been different. The surgeon has considerable influence on surrounding co-workers. If the surgeon does not believe the laser plume is harmful, and does not want to fuss over the proper use of the smoke evacuator, the staff may be more amenable to the surgeon's influence.

### Future laser use and conclusion

Current literature emphasizes that laser use and laser technology will increase at a considerable rate. Predictions state that the cost of surgical lasers will be reduced and therefore will attract more users.

"According to Dr. Pierre Blais of the Bureau of Radiation and Medical Devices, Health and Welfare Canada, the field of laser therapy in Canada as applied to surgery will increase fourfold by the beginning of the next decade." (Fagan, 1986). We should also expect a growing number of laser surgery cases involving other procedures than the cases already being performed today. More hospitals and institutions will use the laser and it will become an indispensable tool.

Laser technology is evolving and new laser techniques are constantly being introduced. This means an increased need for protection since we can expect to be exposed to the laser plume more frequently.

Additional research is needed to determine the viability of the cells with the laser plume. At this point no one can assume the laser plume is safe to the environment and caution should be taken to protect both the patient and the staff involved. ■

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### About the Author:

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### Laser plume questionnaire

#### Definition:

Laser plume is the smoke produced from vaporized tissue in laser surgery.

1. Researchers have identified that the particles in the laser plume are the same size as the dust that causes black lung. Are you aware of this? Yes\_\_\_ No\_\_\_
2. Research shows there is the potential for personnel breathing in the particulate matter to develop viral lesions as viruses are too small to be filtered by the standard surgical mask. Are you aware of this? Yes\_\_\_ No\_\_\_
3. Do you believe laser plumes can be harmful? Yes\_\_\_ No\_\_\_
4. Do you care about protecting yourself from inhaling laser smoke? Yes\_\_\_ No\_\_\_
5. Do you know that a mask that filters 0.3 microns of particulate exists? Yes\_\_\_ No\_\_\_
6. Have you ever worn a special mask to protect yourself from laser smoke? Yes\_\_\_ No\_\_\_
7. If that mask was available would you wear it, even if it was difficult to breath through? Yes\_\_\_ No\_\_\_

## Following the guidelines eliminate the risks involved in laser surgery

Last Fall, an international congress on the applications of laser and electro-optics was held in Santa Monica, California. During this congress, one of the sessions discussed various aspects of the potential for harm from the debris and by-products produced during laser surgery. The session was organized through the efforts of the Laser Institute of America and the United States Food and Drug Administration.

One of the four speakers and panelists invited to speak on the subject was laser surgeon, Dr. Alex Ferenczy of the Sir. Mortimer B. Davis Jewish General Hospital in Montreal, Quebec.

Dr. Ferenczy reported on tests he had carried out using a DNA/RNA kit for detecting papilloma virus (epithelial tumors of the skin or mucous membrane, i.e., warts, condylomas, and polyps).

### One positive result

He tested the smoke evacuator tube and the pre-filter of his plume evacuation system. He reported that of 65 patients with condyloma warts known to be positive for the human papilloma virus, only one positive result was found when testing the contents of the smoke evacuator or pre-filter.

In addition, using the same testing measures, samples taken from his own nose, ears and face after he had performed numerous laser surgeries have never been found positive.

Dr. Ferenczy mentioned that he had previously tested the skin area surrounding the laser surgery and on many occasions had obtained positive test results for virus presence.

### Thermal killing area

However, when the area of thermal treatment was extended a few millimeters, the positive test results for the virus were eliminated. Dr. Ferenczy believes that the incidence of wart recurrence has also decreased markedly with the use of this enlarged area of thermal damage. He further believes that the

failure to have positive findings results from the thermal killing of any virus by the CO<sub>2</sub> laser. This effect (extending the thermal area) also appears to kill any virus present outside the actual surgical site, thus reducing the recurrence rate of warts in his patients.

### Other sources of debris

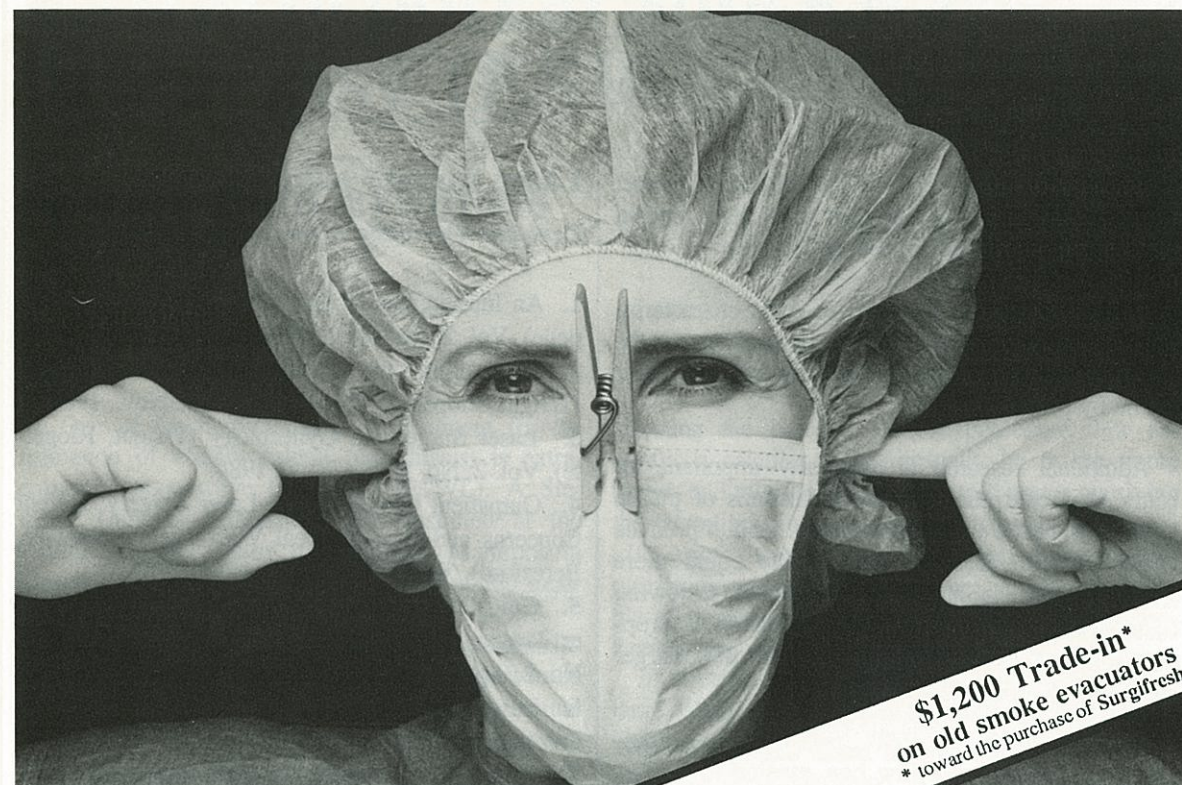
Recapping the results of other tests reported as well as comments from other surgeons on the panel, it was concluded that lasers are not the only source of debris/smoke in the surgical suite. Other instruments which spin, sputter or whine (surgical saws, bone drills, skin abrasion instruments and electrocautery devices) also generate plume or debris.

Since these devices are used, as is the laser, in the presence of blood or to treat lesions which contain viable particles, these also are potential sources for the transmission of harmful material.

At the conclusion of the panel discussion, held in



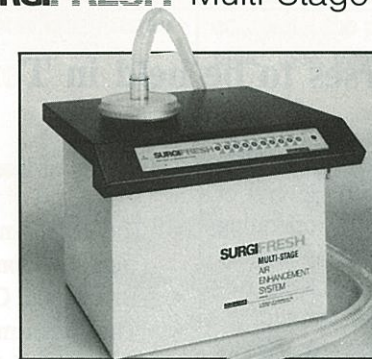
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early November of last year, it was felt that general agreement was reached on the following points:

### Conclusions

- Surgical lasers are not the only devices that can produce a plume that could potentially contain material harmful to the patient or operating room nursing and medical staff;
- In most cases, no matter what the debris source, the precautions one would take to increase patient and operating room personnel are the same;
- Further research is necessary to better characterize either the specific nature of the by-products or the potential reactivity/carcinogenicity of these laser plume by-products.
- Additional research is especially important for better characterization of the interactions of pulsed lasers with tissue since pulsed lasers tend to produce larger particle sizes and presumably could more easily transfer viable material. However, following the recommended safeguards on evacuation, appropriate covering should also protect from these larger tissue particles.
- If the users of surgical lasers employ the safeguards recommended, i.e., confirmation that the laser is an advantage over other conventional surgical in-

strumentation, a proper smoke evacuation system, gloves, gowns and the wearing of appropriate masks and eyewear, then there is probably little or no significant risk to the patient or surgical team.

Excerpted from the *Journal of Laser Applications*, Volume 1, Number 2, March, 1989; pp. 4.

### Laser surgery submissions...

*Canadian Operating Room Nursing Journal*

1. An Introduction to Surgical Lasers (Wright, Riopelle), Vol. 2, No. 5, Oct./Nov., 1984.
2. Controlling the Hazards of Laser Surgery (Wright, Riopelle), Vol. 2, No. 5, Oct./Nov., 1984.
3. Laser Surgery in Gynecology (Wright, Riopelle), Vol. 2, No. 5, Oct./Nov., 1984.
4. Outpatient Gynecological Laser Surgery: Patient Concerns and How to Deal With Them (Gervaise, Beresford), Vol. 2, No. 5, Oct./Nov., 1984.
5. Guidelines for Establishing an Institutional Laser Program (Gauntlett, Wright, Riopelle), Vol. 3, No. 2, April, 1985.
6. Laser Safety for CO<sub>2</sub>, Argon and Nd:YAG Lasers (Ball), Vol. 4, No. 2, April, 1986.
7. Health Care Industry to Feel Impact of Laser Technology (Fagan), Vol. 4, No. 4, Sept., 1986.

## Laser program for nurses to be held in Toronto in July

A series of post-graduate programs in laser surgery is to be offered this July in Toronto. Several of these programs are of special interest to operating room nurses/laser nurses and out-patient/day surgery nurses. All programs will be held at the King Edward Hotel on King Street in downtown Toronto.

The program most pertinent to nurses is "Lasers in Nursing," which will be held July 14 and 15. However, depending on the laser procedures performed at your institution, any of the others may be of interest. Other laser programs include:

- Basic Colposcopy - July 12 - 13
- Update in HPV/Genital Neoplasia - July 12 - 13
- Gynecologic Laser Surgery - July 14 - 15
- Lasers in General Surgery - July 14 - 15
- Lasers in Nursing - July 14 - 15
- Laser Assisted Angioplasty - July 16

This series of laser programs are sponsored by:

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# Extracorporeal shockwave lithotripsy (ESWL)

## A treatment synopsis

By Darcy R. Kasprick, R.N.

One of the newest forms of treatment for the formation of urinary calculi (urolithiasis) is extracorporeal shockwave lithotripsy (ESWL). A Siemens' Lithostar lithotripter was installed at the Health Sciences Centre in Winnipeg, Manitoba in March 1988 (Photo A). Since then, over 500 treatments have been performed.

Prior to the installation of this unit, a lithotripter was being used which required the patient to be emerged in a water bath with a general or spinal anaesthetic. With our new generation lithotripter, the treatment is performed without water emersion, without anaesthesia, and usually on an out-patient basis.

The following is a synopsis of the activities in our centre for treating a condition previously requiring up to ten days hospitalization.

affecting the outcome of the procedure. For example, a calculus may originally be in the upper ureter, and migrate down to the mid ureter overlying the sacroiliac joint by the time of treatment.

If a urinary tract infection is suspected, a urine culture is obtained. If positive, the patient should be placed on antibiotics prophylactically to prevent bacteremia during treatment (Cochran et al, 1988).

A ureteric stent is inserted for the treatment of large calculi (15-20mm) as the stent will cause some dilation of the ureter. This will facilitate the passage of fragments, and will also minimize ureteric obstruction after treatment as the stent will facilitate continuous urine drainage. With the preparations complete, the patient is ready to be positioned on the table (See photo B). The shockwave heads, or the

### Preparation & procedure

Special preparation prior to treatment is not required for a patient undergoing ESWL. However, nausea and vomiting may be associated with the treatment, possibly from the pain experienced from the shockwaves, or as a side effect of the analgesia being administered. Thus, the patient is advised to have a light meal on the day of treatment.

A kidney, ureter, bladder X-ray (KUB) is taken on the day of treatment to determine the position of the calculus. This is important as the calculus may have migrated from its original position, thereby

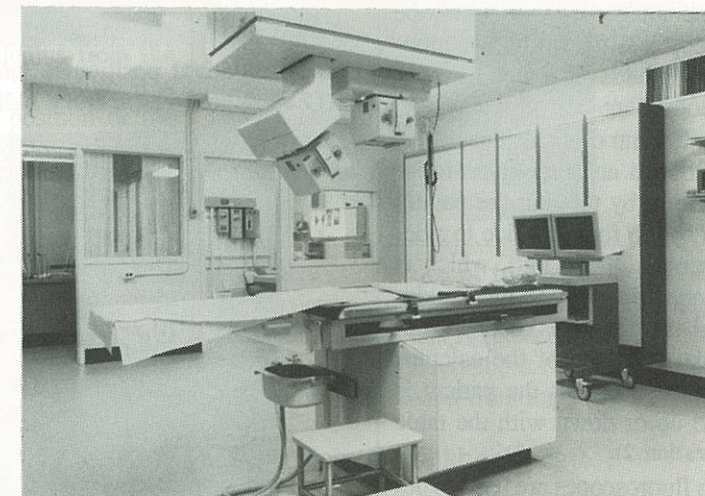
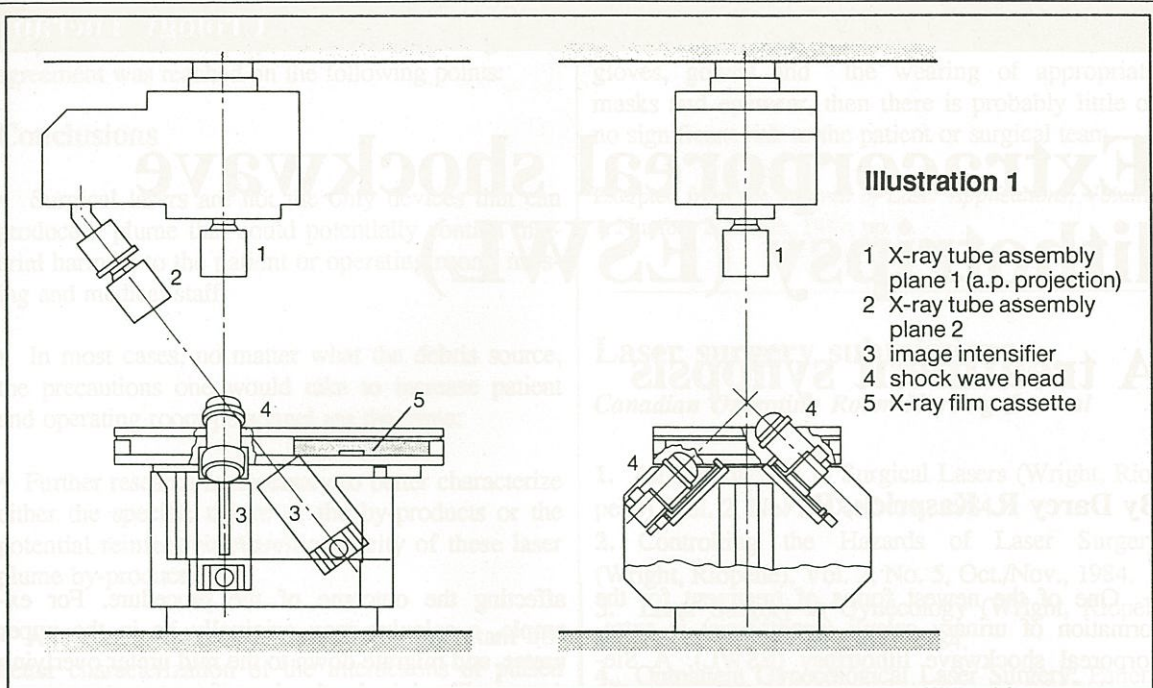


Photo A: ESWL treatment centre with control room in background. Fluoroscope monitors are attached overhead.



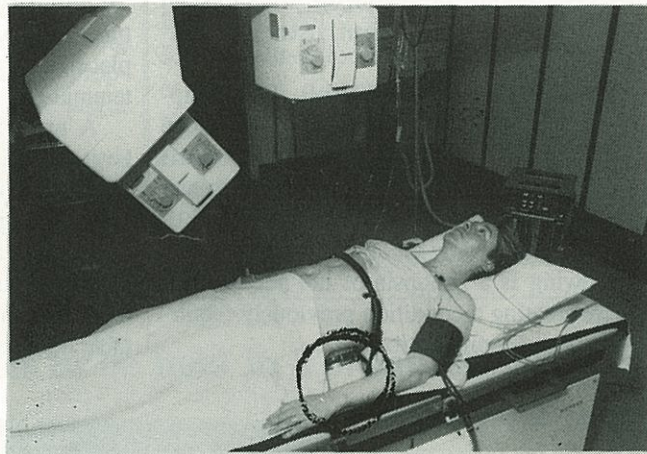
shockheads, are located within the unit on either side (Illustration 1 above). For the calculus to be fragmented the patient must be appropriately positioned within the path of the shockwaves.

### Treatment

Two fluoroscopy monitors (anterior-posterior, and oblique) located on a ceiling mount, are used to locate the calculus (See photo A). The image depicted from the fluoroscopes is transmitted to monitoring screens in a nearby control room (Photo C).

Localization of a calculus is performed with an anterior-posterior X-ray unit, by moving the patient from head to foot and side to side. A second X-ray unit, which is positioned in an oblique caudocranial fashion, is used to determine the depth of the calculus within the body, as the patient is moved up or down with the table (Illustration 2).

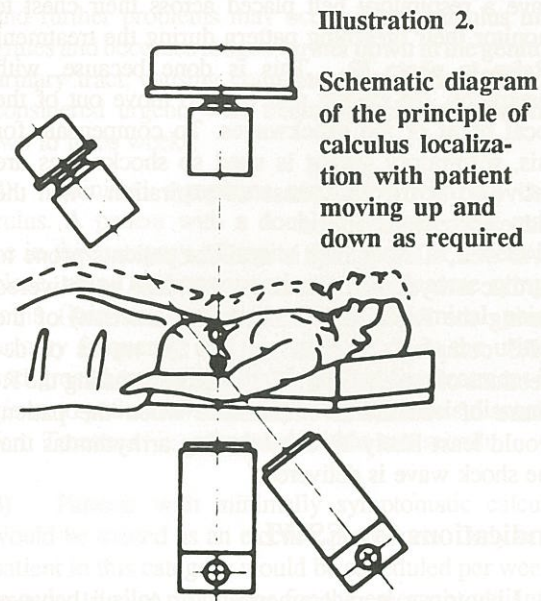
Both fluoroscopes are used to determine the exact position of a calculus. The anterior-posterior fluoroscope may also be used to obtain



**Photo B: Patient positioned. Note shock head against flank, EKG leads and respiratory belt**



**Photo C: Control room showing control panel, fluoroscopy monitors and EKG monitor**

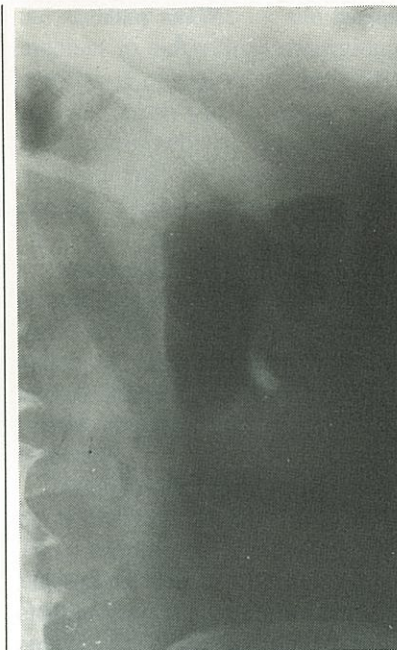


plain hard-copy X-rays. Ideally, the calculus should be as central as possible on both fluoroscopy monitors, as the average width and length of the focal point of the shockwave is 8mm and 20mm respectively. Therefore, if the calculus is central on the fluoroscopes, this will allow for the maximum amount of energy from the shockwaves to "pulverize" or fragment the calculus.

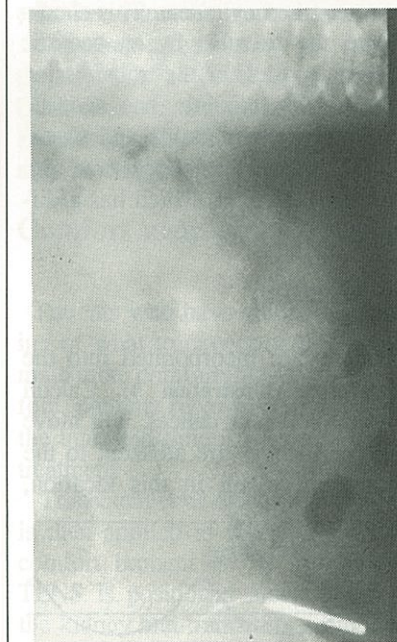
Once localization is satisfactory, the shockwave head is raised from within the table and positioned or "coupled" firmly against the patient's skin (See photo B, circled area). An ultrasound gel is used to improve contact with the skin allowing for transmission of the shockwaves. The shockwave head in the raised position tends to move the patient laterally, thereby displacing the calculus from the centre of the fluoroscopy monitors. Therefore, it is very important to redetermine the position of the calculus with fluoroscopy prior to initiating the treatment. If the calculus has been displaced from its original position, fine table adjustments are made to reposition the calculus.

The energy for the shockwave is measured in kilovolts (KV) ranging from 10.0 - 19.0 KV. The shocks are delivered beginning at low energy level which is gradually increased depending on how the patient tolerates the energy changes.

The lithotripsy treatment continues until the calculus is "fuzzy" or difficult to visualize with the fluoroscopes. At this time, a plain abdominal X-ray is taken and compared with the pre-treatment film (Photo D1-D2). This will help determine (1) the amount fragmented, (2) if treatment is to continue



**Photo D1:**  
A plain x-ray of a calculus in left renal pelvis before treatment

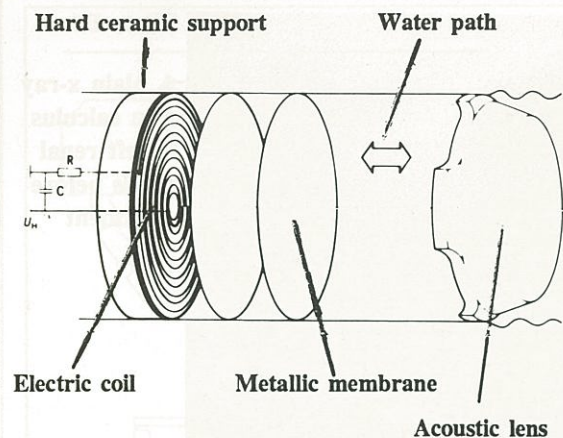


**Photo D2:**  
After receiving 4700 shocks  
  
Note moth-eaten appearance of the calculus after treatment indicating good fragmentation

until there is evidence of fragmentation, or (3) until the maximum number of 6000 shocks is delivered. The manufacturer has suggested that each treatment should not exceed 6000 shocks in order to minimize the risk of renal trauma from the shockwaves.

### Principles of the shockhead

The shockwave head or shock head is depicted in (Illustration 3). An electrical current produces an electromagnetic field when it passes through a

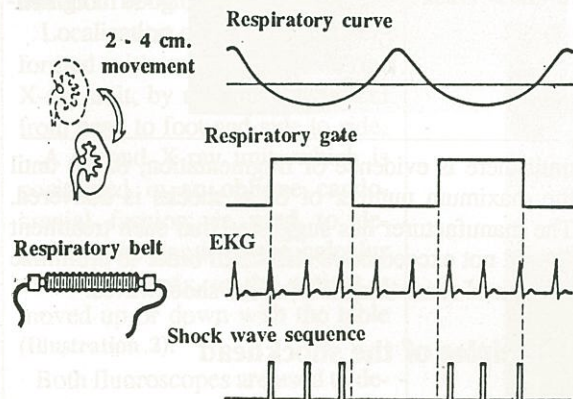


**Illustration 3: Cross section of the shock head illustrating the principles of its mechanics**

coil. In turn, this electromagnetic field causes the metal membrane to become instantaneously attracted and then pushed away from the coil. The movement of the membrane produces a shockwave which propagates up the water-filled cylinder. This shockwave is focused onto the calculus by an acoustic lens. A water medium is used for the transmission of the shockwaves, as this medium has acoustic densities similar to that of body fluids and tissue. Fragmentation results when the shockwave encounters a foreign body (calculus) which has a different acoustic density.

### Features of the Machine

Some special features are incorporated into the Lithostar lithotripter unit (Illustration 4). Calculi located within the renal pelvis or calices, will move with respiration, as the kidneys are adjacent to the diaphragm. Patients with calculi in this location,



**Illustration 4: Diagram showing the principles of respiratory and/or EKG (cardiac) gating**

have a respiratory belt placed across their chest to monitor their breathing pattern during the treatment (Refer to photo B). This is done because, with respiration, the calculi will tend to move out of the focal point of the shockwaves. To compensate for this, respiratory gating is used so shockwaves are delivered at the end phase of expiration when the kidneys are motionless.

As well, EKG gating is used for patients prone to cardiac arrhythmias. Shockwaves would be delivered during the R-phase (ventricular contraction) of the QRS complex (as indicated by the waves or deflections of the electrocardiogram). It is during the R-phase of ventricular contraction when the patient would least likely be experiencing arrhythmias that the shock wave is delivered.

### Indications for ESWL

Lithotripsy is recommended for calculi between 2mm and 20mm (Wilbert et al, 1987). This is the arbitrary size, allowing adequate visualization on fluoroscopy as well as gravel particles small enough for spontaneous passage. If calculi are larger than 20mm, alternative procedures such as open or percutaneous extractions should be considered.

(See *Canadian Operating Room Nursing Journal*, Vol. 4, No. 6, Dec., 1986, "Retrograde Nephrostomy," and Vol. 3, No. 1, Feb., 1985, "Ultrasonic Percutaneous Lithotripsy.")

Generally, symptomatic calculi are treated with a lithotripter. Struvite calculi or calculi associated with infections are also treated with a lithotripter, provided the patient is adequately covered with antibiotics to prevent bacteremia.

### Booking System

A booking category system has been devised to prioritize the urgency of the treatment. The categories range from 1-4, with 1 being the most emergent. The following are criteria for each of the categories:

1) The presence of severe renal colic which is usually associated with nausea and vomiting. If an acute obstruction to the path of urine is present, a ureteric catheter or stent is preferred prior to treatment for decompression. This is considered an emergent treatment, as prolonged obstruction may lead to severe renal damage. Treatment should be scheduled within seven days if immediate obstruction is not relieved with the above procedures.

2) Less severe colic with some associated nausea and vomiting. A partial obstruction may be present

and further problems may occur if the calculus migrates and becomes lodged further down in the genitourinary tract, causing complete obstruction. This is considered urgent, with treatment scheduled within two to three weeks.

3) Minimal symptoms associated with the calculus. A patient with a double-J ureteral stent may be in this category. Despite the benefit of a stent in place, many patients experience troublesome symptoms (loin or flank pain, lower abdominal pain, urinary frequency and nocturia, debris in the urine, and gross hematuria). Consideration for treatment is given to patients with stents to alleviate this discomfort. Treatment is scheduled within one month.

4) Patients with minimally symptomatic calculi would be treated as an elective procedure. Only one patient in this category would be scheduled per week in order to allot more time for the emergent patients to be treated.

### Contra-indications

**General:** Lithotripsy does cause some trauma to the kidney, such as damage to blood vessels, bruising, hematomas, and interstitia bleeding (Kaude, 1985). Therefore, patients with uncontrolled bleeding disorders are not treated. A patient with an aortic aneurysm would not be treated with ESWL as there is a risk that shockwaves may cause the aneurysm to rupture. Pregnant women may experience some damage to the fetus from the shock waves, or as a result of the radiation used. In this case, other forms of therapy should be considered. In addition, children are not suited for ESWL treatment. A child's thorax is proportionately larger than the abdomen, thereby increasing the risk of pulmonary contusions.

**Technical:** Lithotripsy may not be possible for some patients. Some obese patients make localization of a calculus very difficult, and sometimes impossible. The calculus must be within the path of the shockwaves for fragmentation to occur, and this path is very difficult to establish or position in obese patients.

Some calculi are located in an area of the genitourinary tract where fluoroscopic visualization is very difficult without any adjunctive procedures. For example, a calculus overlying the sacroiliac joint may not be visualized with fluoroscopy as the sacrum interferes with the view of the ureter. Therefore, a cystoscopy and insertion of retrograde catheter is performed attempting to manipulate the calculus back into the renal pelvis. If this is not successful,

the catheter is left in situ to administer contrast medium to aid with visualization, or the tip of the catheter is moved to the base of the calculus. The catheter itself will facilitate visualization and the shockwaves will be focused on this. However, if these attempts are not successful, the patient cannot undergo shockwave treatment.

**Urological:** For lithotripsy to be performed, calculi should be of an appropriate size so the treatment can be performed safely with minimal complications. Calculi 30mm and larger are not recommended for lithotripsy, as there is an over-abundance of gravel particles that usually do not pass spontaneously.

Calculi, once fragmented, must be able to pass down the genitourinary tract to reach the bladder. Thus, calculi are not treated in a nonfunctioning kidney, nor if an obstruction is present distal to the calculus impeding the passage of particles. For example, a calculus in the mid ureter, with distal obstruction to the lower ureter due to either another calculus or ureteric stenosis, would not be treated.

Cystine calculi may be considered a relative contraindication, as this type of calculus is resistant to shockwaves. However, if the calculus is in a good location, and is of an appropriate size, treatment may be considered.

### Comfort measures

Patients who have gained an adequate understanding of what to expect of this treatment seem to remain more comfortable during the procedure. Therefore, patients receive written instructions, a tour of the unit, and time for learning with a nurse prior to treatment.

Transcutaneous electronic nerve stimulator (TENS) is then applied to the patient to alleviate skin discomfort brought on by the shockwave. (Photo E). TENS is positioned along the dermatome route of the kidney and transmits a tingling sensation to the skin surface which may assist in blocking nerve sensation.

Establishing an intravenous will allow analgesia to be administered for relief of discomfort. Fentanyl Citrate (Sublimase) is a narcotic analgesic with actions qualitatively similar to those of morphine and meperidine. Its principle actions are analgesia and sedation. This is an ideal analgesic to use on out-patients since this drug peaks approximately 1-2 minutes after administration, and has an analgesic effect of short duration, with the patient experiencing minimal effects upon discharge. On treatment

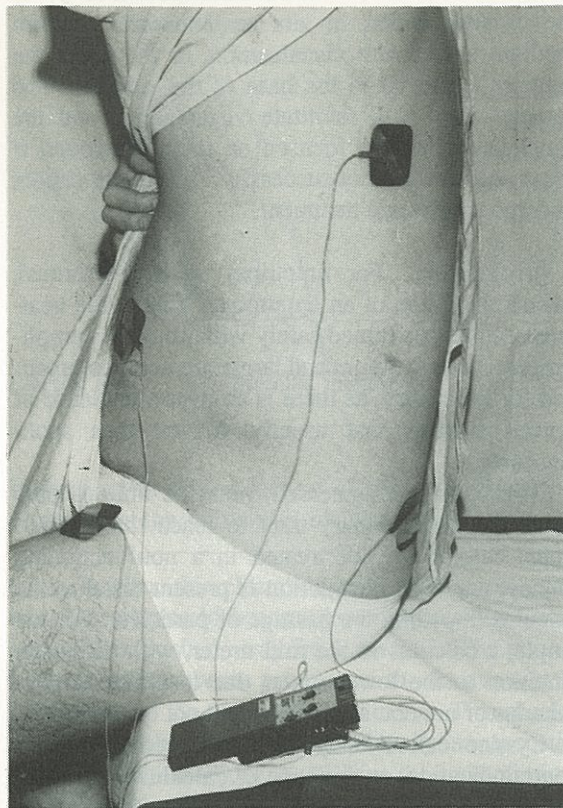


Photo E: Transcutaneous electronic nerve stimulator (TENS) is shown positioned on the patient

day, the nurse reviews the patient's expectations and preparations, and updates information as indicated. The nurse assesses the patient's comfort level and vital signs as the treatment progresses, and works in collaboration with the physician regarding pain control, positioning, and evaluating treatment progress.

The patient must remain in the optimum position for the duration of treatment. Therefore, the patient is positioned as comfortably as possible to facilitate the effectiveness of the shockwaves being focused on the calculus.

### Post-shockwave treatment

The patient is given a strainer to strain all the urine. Gravel fragments may be passed in the urine for several weeks. The patient is instructed to strain the urine until there has been no gravel fragments for several days. Gravel fragments may not be visible in the urine. In some patients, gravel fragments are very fine and may go unnoticed. If fragments are noticed in the urine, they should be saved and sent for analysis to determine the composition.

Hematuria is usually present with the first void post treatment, and pinkish or discoloured urine may

be present for 1-2 weeks. However, if a patient has a stent in situ, the hematuria may continue until the stent is removed.

Dysuria is also common with the passage of fragments, as gravel may irritate the bladder and urethra.

Severe renal colic may be experienced when the fragments are eliminated. The fragmented particles may or may not obstruct the ureter. Patients are instructed to report to an emergency department promptly if severe renal colic is experienced, or if the patient is unable to urinate.

Erythema, petechiae, and cutaneous bruising are usually present on the skin surface at the shock wave entrance site.

After treatment, a normal diet should be resumed. An increased fluid intake is advised to aid with gravel passage, and to keep the urine well diluted, with the hopes of preventing further calculus formation. The patient may resume all the activities of daily living, and continue taking prescribed medications, unless told otherwise by the urologist.

### Complications

Complications of ESWL can be related to the actual shockwaves, or to the degree of fragmentation and the passage of the gravel particles. The major complication associated with the passage of gravel fragments are ureteric colic and ureteric obstruction with or without associated urosepsis.

With fragmentation of calculi with ESWL, bacteria may be released from a calculus. The shockwaves administered may create a great deal of tissue trauma which may in turn allow bacteria to enter the bloodstream, causing urosepsis (Roth et al, 1983; Coptcoat et al, 1986).

Ureteric obstruction occurs when one fragment or a group of fragments are lodged in the distal ureter. This is known as "steinstrasse," meaning "street of stones." Ureteric obstruction may be asymptomatic so the patient must be observed on a regular basis.

The shockwaves may cause some renal trauma with damage to some blood vessels, resulting in hematuria after the treatment. This may also be secondary to the passage of fragmented particles.

At present, long term complications of treatment are speculative. Hypertension and renal failure have been implicated (Williams et al, 1988; Kaude et al, 1985). The mechanisms are yet to be elucidated.

### Post lithotripsy follow-up

The examination of patients post lithotripsy should continue on a regular basis, to evaluate the passage of gravel particles, and to document any

complications. It is very important to determine that the gravel particles are being passed without causing obstruction. As already mentioned, ureteral obstruction may be asymptomatic, and only be detected with an intravenous pyelogram (IVP). Generally, patients are seen in follow-up one week after the treatment. A KUB is done to determine the amount of gravel remaining in the genitourinary tract. If good fragmentation and passage of particles has occurred, a stent, if in situ, would be removed at this time. If ureteric obstruction is suspected, or the patient has radiolucent calculi, an IVP is performed.

A 3-6 month follow-up visit is recommended. The patient may be seen on a more regular basis, depending on whether the patient has active calculus progression, or any residual calculi in the genitourinary tract.

### Conclusion

ESWL is a new technology allowing calculi in the genitourinary tract to be fragmented and passed spontaneously. With this procedure possible on an out-patient basis, the positive impact on patient morbidity and lost time from work can be extremely beneficial. However, the impact on health care costs has yet to be determined. With further experience and newer technology, many operative procedures may well become obsolete. ■

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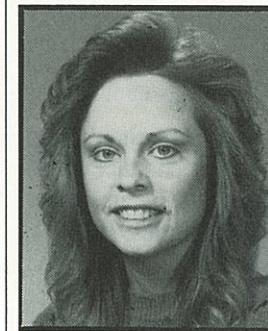
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### About the author

Darcy R. Kasprick R.N., is senior nursing member, Lithotripsy Unit, Health Sciences Centre,



Winnipeg, MB. She is a graduate of the Misericordia School of Nursing. With her ample experience in high risk surgical patient care, and operating room technique, she was chosen to assist in initiating the Lithotripsy Program at the Health Sciences Centre in Feb., '88.

### PAR nursing conference scheduled for Toronto

The Ontario Post Anaesthetic Nurses Association (OPANA) will be holding its 4th Annual Conference in Toronto this September. The annual gathering will be held at the Chestnut Park Hotel September 29 and 30.

#### Agenda highlights include:

- a panel discussion on current issues affecting the post anaesthetic nursing specialty
- a debate on "solo staffing"
- the legalities of being a PAR nurse: "Keeping Yourself out of Court"
- Fluid balance
- PCA (patient controlled analgesia)
- other topics impacting on PAR nursing

For more details, contact: Gail Skene:  
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# The nurse as "Good Samaritan"

By L.E. and F.A. Rozovsky

Nurses are sometimes warned: "Do not stop at the scene of an accident! You can only get into legal trouble." Is this really true, or is it yet another one of those medico-legal myths that continue to influence health professionals, much to the frustration of lawyers who act on their behalf?

## Basic principles

The traditional law of the "Good Samaritan" is no different from the law governing the conduct of the nurse and other health professionals in any other situation. It consists of two basic principles.

The first is that no one has any duty to go to the aid of any other person regardless of need - except when they are obliged by law to do so. It is quite permissible to stand on the beach and watch someone drown. There has been no traditional legal duty under English Common Law to make any attempt to save the victim.

This principle applies not only to the average lay person, but to those who are trained to be of assistance, such as a nurse.

This principle may fly in the face of ethical and religious obligations, and even professional obligations. The law is not saying that the passer-by must not be a "Good Samaritan." It is saying that the passer-by need not be a "Good Samaritan."

Not all communities accept this principle. Quebec, for example, requires people to be a Good Samaritan, as do most European countries. In many countries, it is a serious criminal offence not to be a "Good Samaritan."

## The duty of the "Good Samaritan"

Once a nurse, or anyone else, becomes a "Good Samaritan" and goes to the assistance of someone in need, the legal duty which is imposed is no different than the duty imposed on the nurse who is rendering

assistance in the course of employment.

The principle is that every person who provides a service to any other person must act in an average, reasonable and prudent manner in order to avoid reasonably foreseeable injury.

In the case of a nurse, this duty is higher. The duty of a nurse towards anyone who is receiving those nursing services is to act as would the average, reasonable and prudent nurse in the circumstances. What is average, reasonable and prudent depends on the circumstances.

The fear of many is that it is not possible for the nurse to meet these standards at the scene of an emergency or accident. This is a misconception. The required standards in an emergency are not the same as in a well-controlled hospital setting. They must be appropriate to the circumstances of the emergency.

## The myth

It is believed by many that a nurse responding voluntarily to an emergency situation will not be able to meet average, reasonable, and prudent standards and will be held responsible for any injury that results. This is not true.

What is true is that the nurse will be held responsible for any injury resulting from the failure to meet the standards of an average, reasonable and prudent nurse in a similar situation. The law does not require the nurse to meet the standards which a nurse would meet in the emergency department of a well-equipped hospital, or even an emergency in a hospital in which support staff and equipment are available. The issue is what is reasonable at an accident scene on the highway, or on a sidewalk, perhaps in the rain, or in a tangled automobile. Therefore, the fear that a successful lawsuit can result from failing to meet the usual standards is totally unrealistic.

A further problem is that the patient who wishes to be a plaintiff and sue the nurse would have to

prove that the injury resulted, not from the accident or other emergency, but from the nurse's failure to meet these appropriate emergency standards. This would be extremely difficult.

## The nurse "out of practice"

A real dilemma faces the nurse who has not done any practical nursing in many years. This once-trained professional may now be an expert consultant, insurance claims assessor, or administrator.

Arriving on the scene of an accident, she carries the title "nurse." This assumes that she meets the standards of the average, reasonable and prudent nurse in an emergency situation. The key is what the law refers to as "holding out."

If a nurse holds herself/himself out as having a certain expertise and training, she is expected by law to meet the standards of an average, reasonable and prudent nurse having that expertise and training. The "holding out" often comes about not by what the nurse says, but by what the nurse does.

If a nurse undertakes a particular task or procedure, she/he is in effect "holding herself/himself out" as being capable of carrying out that task in an average, reasonable and prudent manner. The lesson, therefore, is that the nurse who is not capable of carrying out certain tasks should not carry them out.

Frequently at the scene of an accident, someone other than the nurse is present. This may be a physician, a first-aider or a police officer. The issue then arises whether the nurse should replace whoever is providing care, such as CPR, or turn the care over to the newcomer.

The answer is not found in the title "nurse." The fact that the other person is a physician may not mean that the patient will receive better care. A psychiatrist would not provide the proper standard of care, despite the fact he/she is a physician. Similarly, a first-aider may, in some circumstances, be more proficient than a nurse who ordinarily does not work in emergency situations.

The other precaution that should be taken is to record briefly what happened in a personal diary. This should be done immediately after the event.

## The state steps in

Despite the fact that in Canada there has never been a "Good Samaritan" lawsuit, health professions are still motivated by the fear of a malpractice suit.

To encourage people to be "Good Samaritans," many American state legislatures have enacted what are known as "Good Samaritan" laws. A number of Canadian provinces have followed suit.

There has been a great deal of difficulty in adopting the European compulsory approach now that Canada possesses the Canadian Charter of Rights and Freedoms. In fact, legislation might be regarded as contravening the person's constitutional right to security of the person.

The approach throughout North America has been to make it more difficult for a patient to sue a "Good Samaritan" in the hope that it will reduce the fear of a potential "Good Samaritan" and thus encourage him/her to render assistance. The way in which this is done is to prevent a "Good Samaritan" from being held responsible for any injury caused by negligence unless the negligence could be considered as "gross negligence."

The problem with these laws, which exist in most provinces and American states, is that there is no uniformity. In some legislation, the protection is only given to doctors. In others, it is given only to doctors who are licensed in that jurisdiction. In some it is extended to doctors and nurses, whereas in others it is given to all "Good Samaritans," regardless of their qualifications.

## Reducing the fear

The lesson to be learned from all this is that if a nurse is to be sued for malpractice, it is highly unlikely to arise from a "Good Samaritan" situation. It is much more likely to arise from a normal institutional incident when full professional support and equipment are available.

Legislation has been passed solely to lessen the fears of health professionals from a totally unrealistic threat.

## Conclusion

Nurses should not be afraid of a malpractice suit in a "Good Samaritan" situation as long as they abide by average, reasonable and prudent standards in the circumstances. If a nurse cannot meet those standards in an emergency situation, he/she should not be a "Good Samaritan."

## About the authors

Lorne E. Rozovsky, is a Halifax lawyer with the firm of Patterson Kitz, and adjunct associate professor of law and medicine at Dalhousie University. Fay A. Rozovsky, J.D., M.P.H., president of LEFAR Health Associates, is a visiting lecturer in health law, Harvard School of Public Health.

# Calendar of Events

## July 12 - 15, Toronto, Ontario:

Lasers in Nursing (and related laser programs for physicians and laser therapists/technicians), King Edward Hotel. Sponsored by St. Joseph's Hospital, London, Ontario; Biomedical Communications, Komoka, Ontario; and University of Toronto, Dept. of Obstetrics and Gynecology. Details contact Mary Ann Riopelle, Biomedical Communications, Box 224, Komoka, Ontario N0L 1R0).

## August 28 - September 1, Vienna, Austria:

Sixth World Conference of Operating Room Nurses.

## September 15 - 17, Saskatoon, Sask.:

5th Annual Saskatchewan Operating Room Nurses Group Conference. Sheraton Cavalier Hotel, Saskatoon. (Contact Darlene Stuttard, Provincial Co-ordinator, City Hospital, 7th Ave. & Queen Street, Saskatoon, SK. S7K 0M7 (306) 934-8030).

## September 22 - 23, Toronto, Ontario:

16th Annual Meeting, Canadian Society for Aesthetic (Cosmetic) Plastic Surgery, Toronto General Hospital and L'Hotel. (Surgical assistants/nurses are usually registered by the surgeon for this event).

## September 28 - 29, North Bay, Ontario:

15th Annual Conference, Northern Ontario Operating Room Interest Group - NOORIG. (For details Mary Rankin, North Bay Civic Hospital, 750 Scollard Street, North Bay, Ontario P1B 1C1).

## September 29 - 30, Toronto, Ontario:

4th Annual Conference, Ontario Post Anaesthetic Nurses Association (OPANA), Chestnut Park Hotel. (Contact, Gail Skene: Work: 1-416-633-9420 Ext. 6615 Home: 416-884-5697).

## October 4 - 6, Montreal, Quebec:

23rd Annual Provincial Conference, L'association des infirmiers(es) des salles d'operation du Quebec, Centre des Congres de Laval a Laval, Montreal, Quebec. (Contact Monique Dugay, Hopital General LaSalle, 8585 Terrasse Champlain, LaSalle, Quebec H8P 1C1 (514) 365-1510).

## October 11 - 14, Halifax, Nova Scotia:

18th Atlantic Operating Room Nurses Conference,

Hotel Nova Scotian. (Contact: Bernadette Frances, Conference Chairman, 11A Victoria General Hospital, Halifax, Nova Scotia B3H 2Y9).

## October 19 - 22, Medicine Hat, Alberta:

Annual Provincial Conference, Operating Room Nurses of Alberta, Medicine Hat Lodge and Cypress Centre. (For information contact Marge Ensminger, Chairperson, 340 - 14th Street North East, Medicine Hat, Alberta T1A 5V8 (403) 527-2122).

## November 3 - 4, Vancouver, B.C.:

Post Anaesthetic Nursing Conference, Hyatt Regency Hotel. (Sponsored by the Canadian Association of Critical Care Nurses and the Vancouver Community College, Continuing Education, Nursing and Health. (For details and registration, Continuing Education, Nursing and Health, Vancouver Community College, 250 West Pinder Street, Vancouver, B.C. V6B 1S9 (604) 687-1757).

## April 2 - 6, 1990, Toronto, Ontario:

11th National Operating Room Nurses Conference, Harbour Castle (Westin) Hotel. Delegates contact Audrey MacDonald, Operating Room, Mount Sinai Hospital, 600 University Avenue, Toronto, Ontario M5G 1X5. Exhibitors contact Valerie Shirreff, Operating Room, Mississauga Hospital, 100 Queensway West, Mississauga, Ontario L5B 1B8.

## General Journal Information

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## ORNAC President's Message

During my term of office as President of the Operating Room Nurses Association of Canada (ORNAC), I have attempted to attend as many provincial and regional conferences as possible. Unfortunately, it is not always possible to find the time as it becomes somewhat difficult to juggle meetings, conferences, job responsibilities and family demands.

Choosing priorities has taken on new meaning for me since June of 1988 when I assumed the ORNAC presidency.

I am indebted to the Sackville Memorial Hospital, where I am Director of Nursing, for their support and encouragement in allowing me to fulfill my ORNAC obligations. As well, many other hospitals across Canada, where ORNAC executive and board members are on staff, are to be commended for their understanding and support of ORNAC.

The time spent in preparing for meetings often stimulates the grey matter, and certainly the travelling time allows one to dream a little. Out of these dreams, I envision, with the support and dedication of the other ORNAC executive and board members, ambitious and exciting things for the association and our nursing specialty in Canada.

To share with you the current activity level, I have listed below the meetings and conferences I have attended, for both work and ORNAC, since the beginning of the year.

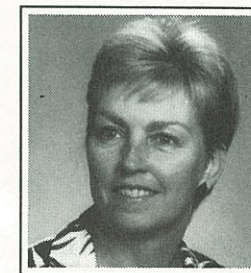
During the Newfoundland and Labrador Operating Room Nurses Association Conference, I had the pleasure of hearing Lorne Rozovsky. It is interesting to note that "The Captain of the Ship"

is now considered to be the head nurse or operating room supervisor. It is noteworthy that physicians are granted privileges to work in hospitals and therefore are "guests," so to speak, "in our house." Something for all OR nurses to ponder.

At all of these conferences, there is a serious side and a "not so serious" side, as it is important that we have fun together. These gatherings provide the ideal stage for information exchange and learning. And as important as every OR nurse is to one another at these functions, so too are our exhibitors. They make important contributions to our functions and are truly our friends. In short, we in ORNAC cannot survive without each other. We need each other's support, loyalty and friendship.

In the months ahead, I am convinced that the Operating Room Nurses Association of Canada will accomplish great things. The enthusiasm, commitment and cohesive spirit that I have observed at the various, national, provincial and regional meetings reassures me that our dreams are realistic and possible.

*Wishing everyone a productive and enjoyable Summer*



**Joan Donald  
President, ORNAC**

- Standards Committee Meeting (ORNAC)
- AORN Congress
- Atlantic Provinces Conference Planning Committee
- ORNAC executive, Pre-board & Board Meetings
- Operating Room Nurses Association of Ontario First Provincial Conference
- Trustees, Administrators, Physicians and Nurses Conference
- Spring Institute (New Brunswick O.R. Nurses)
- Tenth Annual Conference Newfoundland & Labrador O.R. Nurses Association
- January 20-22, Vancouver, B.C.
- February 19-24, Anaheim, California
- March 3-4, Halifax, Nova Scotia
- April 21-26, Toronto, Ontario
- April 24-26, Toronto, Ontario
- April 28-29, Moncton, New Brunswick
- May 5-6, Moncton, New Brunswick
- June 2-4, Corner Brook, Newfoundland

# 1989 Annual Conference Operating Room Nurses of Alberta

Medicine Hat Lodge & Cypress Centre  
Thursday, October 19 - Sunday, October 22, 1989

## Program

### Thursday, October 19, 1989

- 1600 - 2030 Pre-registration
- 2000 - 2200 Opening of exhibits
- 2000 - 2330 Wine and cheese party

### Friday, October 20, 1989

- 0730 - 0830 Registration & continental breakfast
- 0830 - 0915 Opening ceremonies/remarks
- 0915 - 1015 Keynote address - Carl Hiebert
- 1015 - 1030 Refreshment break
- 1030 - 1130 Annual general meeting
- 1130 - 1445 Lunch/viewing of exhibits
- 1445 - 1600 Concurrent sessions
  - a. Teamwork: Lucy Jo Atkinson
  - b. Ambulatory surgery: B. Barrett
  - c. Stat emergencies: Dr. Forestell

### 1800 - 0100 Exhibitors Banquet/Dance

### Saturday, October 21, 1989

- 0730 - 0830 Registration
- 0830 - 0945 Concurrent sessions
  - a. Technical standards: (M. Shewchuk)
  - b. Monitoring standards: (Dr. B. Soklofske)
  - c. Universal precautions: (J. Robbins)
- 0945 - 1015 Refreshment break
- 1015 - 1130 Concurrent sessions
  - a. Staff motivation: L. Iwasiw
  - b. Malignant hypothermia: (Dr. R. Passuke)
  - c. Middle ear disease: Dr. Harris

- 1130 - 1430 Lunch/viewing of exhibits
- 1430 - 1545 Concurrent sessions
  - a. Computers in the O.R.: (Donne Prokopczak)
  - b. Orthopaedic implant surgery
  - c. AIDS - a practical viewpoint: (Irene Kahler)

### 1830 - 0100 Planning Committee Dinner

### Sunday, October 22, 1989

- 0800 - 0830 Registration
- 0830 - 0945 Assertiveness: David Irvine
- 0945 - 1015 Refreshment break
- 1015 - 1130 Self-esteem: David Irvine
- 1130 - 1200 Conference recap: Lucy Jo Atkinson
- 1200 - 1215 Closing remarks followed by brunch

## Registration Information/Fees

ORNAA members: \$165. Non-members: \$185.  
 (Above fees if registration made 3 days prior to  
 Sept. 15. Registration after Sept. 15, fees are:  
 ORNAA members: \$185.00  
 Non-members: \$205.00

### Daily registration:

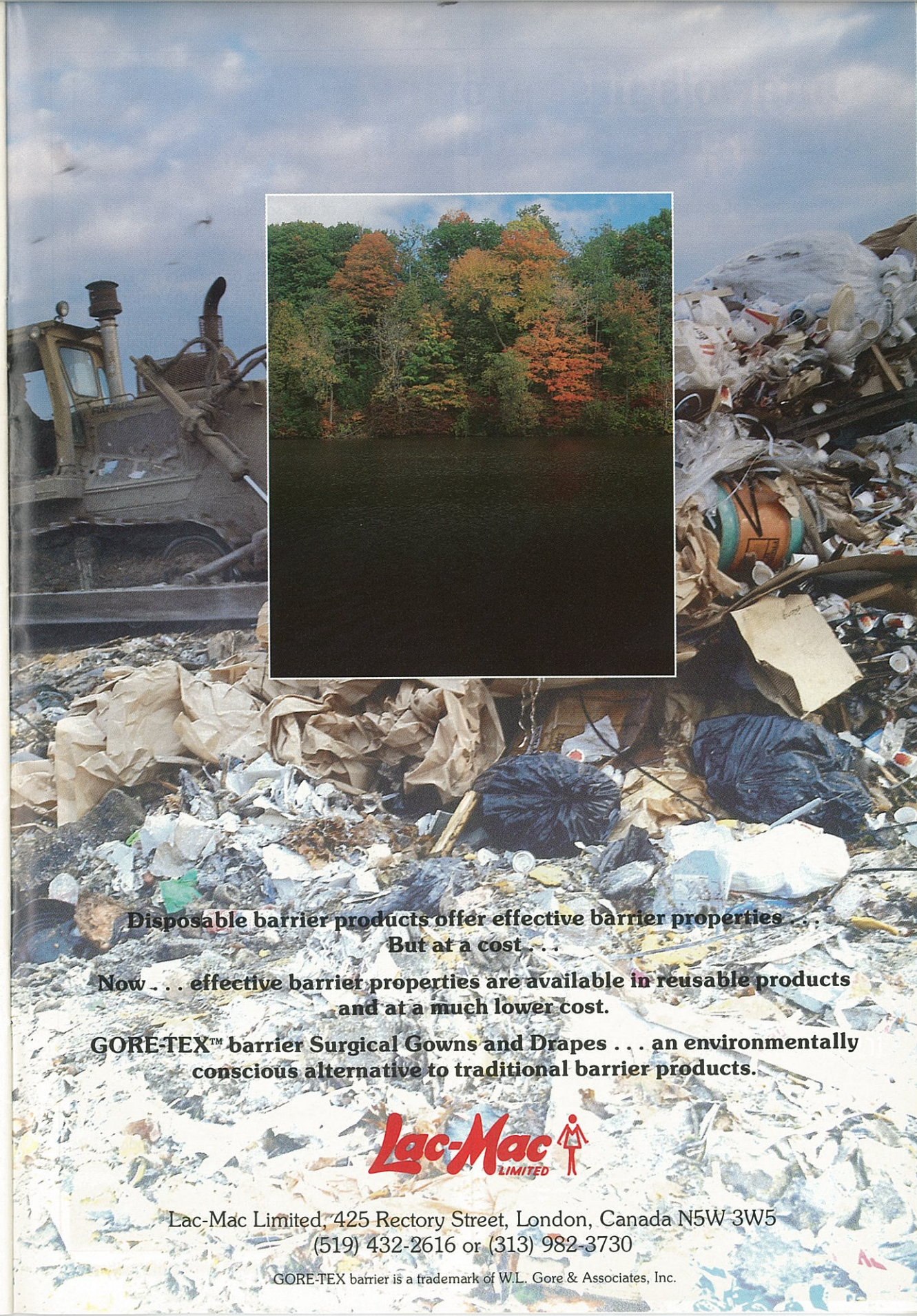
#### Friday or Saturday:

ORNAA member: \$75.00. Non-member: \$85.00  
 Saturday: Member: \$60.00, Non-member, \$65.00

- Registration includes: • All program sessions  
 • Wine and cheese party/breakfast/lunches/brunch  
 • Exhibitor's and planning committee's socials

### For further information, contact:

Marge Ensminger, Conference Chairman  
 340 - 14th Street N.E., Medicine Hat,  
 Alberta T1A 5V8



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# Ontario's first provincial O.R. conference a resounding success

The number of delegates registered for a conference is not necessarily indicative of overall success. If it were, the First Biennial Conference of the Operating Room Nurses Association of Ontario (ORNAO), held in Toronto in late April, could be declared a resounding success.

Over 700 delegates registered for the three-day event, making it the largest operating room nursing conference to be held in the province.

## "United for the Future"

Attendance, however, is only one criteria. Other indications that this historic gathering was a success included the positive feedback received from the delegates, the quality of agenda topics, the speakers chosen, the "must hear" dialogue that preceded the sessions, and the accolades that followed. Even the social activities, despite an electrical storm and power outage during one event, were fun-filled, exuberant and memorable.

The theme of the conference, "Uniting for the Future," has now been laid to rest, as a more appropriate post-theme should read "United for the Future."

The eight regional groups making up the provincial body worked in unison to stage a productive and stimulating three days. Provincial-wide representation was evident. There are more than 275 hospitals in Ontario with either operating room departments, out patient/day surgery arrangements, or facilities that are contemplating establishing a surgical department. The great majority of these facilities sent representatives to the conference.

The occasion of the First Biennial Conference of the Operating Room Nurses Association of Ontario also marked the first combined ORNAC executive and board meeting since the national conference in Vancouver in May of 1988. These meetings ensured a "national" flavour, as every province had operating room nursing personnel in attendance.

## First general meeting - ORNAO

There were a number of highlights at the First General Meeting of the Operating Room Nurses Association of Ontario; among them, the acclaiming of a new provincial executive, and the announced establishment of a \$4000.00 O.R. nursing scholarship.

The purpose of the scholarship, donated by Ethicon Ltd., will be to assist operating room nurses in the province of Ontario pursue advanced educational opportunities: baccalaureate or masters programs, or other educational courses that meet the criteria to be established by the ORNAO scholarship committee.

The new ORNAO executive, acclaimed by the standing-room-only gathering, includes only one change from the incumbent officers:

- President: Carol Lenox (Mississauga Hospital)
- Past-pres.: Carole Starr (Peterborough Civic)
- Pres.-elect: Hilda Gatchell (Oshawa General)
- Secretary: Jane Cunningham (St. Joseph's Health Centre, Toronto)
- Treasurer: Jocelyn Staynes (St. Catherines General)
- Publicity: Donna Kaufman (Women's College Hospital, Toronto)
- Committee Co-ordinator: Darlene Beaudet (Windsor Western Hospital, Windsor).

This executive will hold office until April, 1990.

The 2nd Conference of the Operating Room Nurses Association of Ontario will be held in the Spring of 1992. This event would have been scheduled for 1991, but there will be a national Conference that year, and the provinces have agreed to defer their conferences when their is a national event taking place. See pictorial highlights of the 1989 ORNAO Conference on this and following page.



Exhibitors Reception and Dinner/Dance was a memorable and gala affair. Even a power failure during the dancing failed to reduce the energy level. Above at the reception, L-R: Gabriella Coe, Royal Victoria Hospital, Barrie; Norm Harding, Smith & Nephew; Marlene Muir, Orthopaedic and Arthritic Hospital, Toronto; Boyd Collins, Incare Medical; Wanda Ward, Orthopaedic and Arthritic Hospital.



Ethicon Inc. will be donating \$4000 annually for an O.R. nursing scholarship. Above, following the announcement: Arnold Maclean, President, Ethicon Inc.; Carol Lenox, ORNAO president, and Dave Ames, Ethicon.



Some of the operating room staff from Peel Memorial Hospital, L-R: Meg Murphy, Mary Macdonald, Tris Perry, Betty Bell and Patricia Carr.



Head table guests at Opening Ceremonies: Joan Donald, ORNAC President, H. Gordon Cunningham, President, OHA, and Elinor Caplan, Ontario Health Minister. Below, at the Exhibitor's Reception (l-r): Jean Mitchell-Bain, North York General; Jane Cunningham, conference chairman; and Donna Kaufman, Women's College Hospital.



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## Southern Maine Medical Center Central Services Eliminates Wet Packs and Reduces Sterilizer Maintenance Costs by 32%

Ray Averill, Central Services Supervisor for Southern Maine Medical Center (S.M.M.C.), Biddeford, Maine, reports that he has eliminated a serious and costly wet pack problem, increased productivity by 25%, eliminated staining of sterilized instruments, and reduced maintenance costs by 32% with the installation of steam filters on his two sterilizers.

Central Services provides all instrumentation for the four operating rooms at S.M.M.C., a 150-bed, 7-year-old institution. This heavy demand requires both sterilizers to be in use 24 hours a day, seven days a week.

"After about three and a half years of operation, we started averaging as many as six wet loads a day, black particulate matter was being blown into the sterilizers, the sterilizer check valves were gumming up to a point we couldn't get through a two-month PMA (Preventative Maintenance Agreement). We were scrubbing the sterilizers every week trying to keep the junk out of them. It was a nightmare, a real nightmare.

"We're one of those hospitals that doesn't have the ideal steam generator. We have hard water, and they treat the water for hardness as well as adding amines to keep the pipe scale down. Things were gum-

ming up to the point where I couldn't keep a (steam) trap element two months. They would gum, stick open, causing steam to pour out of the chamber even with the doors open. It was unbelievable!"

Mr. Averill's maintenance logs showed that every part of both sterilizers was being affected. Some of the problems listed were: sterilizer chamber not vacuuming; blowing off jacket pressure; jacket pressure assembly required repair; intermittent sticking in pre-vacuum; and sticking in cycle, all problems being attributed to the gunk in the lines.

"When you're averaging 24 loads a day and six of them are being rejected because of moisture problems you're losing 25% of your productivity. That's a lot of wasted dollars."

In addition to his moisture problem, Mr. Averill was also experiencing staining of instruments. "We were using muslin at the time. The muslin would come out of the sterilizer brown and stained. If you opened an instrument tray in the O.R. you could see where the stains had splattered onto the instruments. Because we do all the instruments for the operating rooms for the entire facility, our equipment is right there under the spotlight all the time. We were getting complaints about the appearance of our product."

To alleviate the problem, steam filters were recommended and installed on both sterilizers by Balston, Inc., Lexington, MA.

"When we put the Balston filters in, it immediately took care of the moisture and gum. It was like night and day."

Mr. Averill calculates "the two filters paid for themselves in the first two months they were in use." Prior to the Balston steam filter installation, preventative maintenance costs were averaging \$5400 for contract maintenance per year plus an additional \$5000 in replacement parts and emergency service calls. After the Balston steam filter installation, replacement parts were reduced to a nominal cost of \$2500 and engineering service calls were eliminated altogether—an identifiable annual savings of \$2500.

This savings does not reflect in-house labor costs for redoing rejected sterilizer loads, an average of six per day, at a cost ranging between \$150 to \$400 per load depending upon what the load consisted of.

"Our main concern is the quality of product we deliver to the patient. We pride ourselves on producing a quality product because we do a lot more to our instrumentation than most places do. For instance, we hand wash everything before we machine wash, which makes a big difference in their appearance. Now that we've installed the Balston steam filters, we're not getting the spotting, rusting, staining like we did before. Our dirty instrument ratio now is like 1%. You might find one out of 114 instruments that's dirty, but that's because of human error, not because of something the sterilizer did to them."

Comments Mr. Averill, "As far as I'm concerned, Balston steam filters are the solution to my problem. We did have a serious moisture problem, we don't any more."

For complete information and prices on Balston steam filters call 416-272-1516.



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### RECOMMENDED TECHNICAL STANDARDS

ORNAC

This document represents the profession's responsibility to promote excellence in operating room nursing practice. The "Recommended Technical Standards" are an adjunct to the already published "Recommended Standards for Operating Room Nursing Practice" (June, 1986).

The Recommended Standards consist of 114 pages bound in a sturdy, ring-bound cover. These standards are based on current nursing practice, nursing literature, research, other disciplines, informed opinions and accepted past practices.

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**Mr. G. Bleiler**  
**Director of Personnel Services**  
**KELOWNA GENERAL HOSPITAL**  
**2268 Pandosy Street**  
**Kelowna, B.C.**  
**V1Y 1T2**

## Post-op nursing conference planned for Vancouver this Fall

A conference on post-anaesthetic nursing scheduled for Vancouver this fall will have state-of-the-art content for operating room and post-anaesthetic recovery nurses.

Sponsored by the Canadian Association of Critical Care Nurses and the Vancouver Community College, Continuing Education, this intensive two-day conference is particularly directed toward nurses in the O.R., PAR, surgical ICU and day care, paediatric PAR, EOR and dental surgical offices.

The conference will be held

November 3 - 4 at the Hyatt Regency Hotel in Vancouver. There will also be an exhibition of anaesthetic/patient care products.

### Registration Information

\$150.00 non-members CACCN;  
\$135.00 CACCN members.

### One-day registration:

\$80.00 non-members;  
\$75.00 CACCN members.

When registering by mail, make

cheque payable to Continuing Education, Nursing and Health, Vancouver Community College, 250 West Pender Street, Vancouver, B.C. V6B 1S9.

### Program topics:

- Caring for the patient in the critical care period
- The art of caring
- Patient with neurological dysfunction
- Regional anaesthesia - Nursing priorities
  - Focus on the paediatric patient post-op.
  - Management of diabetic patients in PAR
  - Risk management: "prevention - the best cure"
  - Documentation in special care areas
  - Trauma session: "it ain't over-yet!"
  - Practical hints for the nurse witness
  - Future trends in day surgery
  - Volume replacement: "topping up the patient"
  - Pain management for the post-op patient
  - Caring for yourself: "the super-women syndrome"

For more details contact:

**Sheila Stickney,**  
Senior Co-ordinator,  
Vancouver  
Community College,  
Continuing  
Education Division  
250 West Pender St.,  
Vancouver, B.C.  
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## Sterile Supply Department

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## Assistant Manager

The successful candidate will assist the Manager in the planning and directing of functions and services of the department. We are seeking an experienced leader with demonstrated ability in problem solving. Knowledge of Operating Room nursing and the principles of aseptic techniques an asset. B.S.N. required plus a minimum of three years recent related experience.

## Supervisor

An individual with effective communication and organizational skills is required to fill this challenging position. Good interpersonal relations, demonstrated leadership and management skills are essential. Candidates must be currently registered with the R.N.A.B.C. and have previous supervisory experience as well as recent clinical experience in an Operating Room.

If you are interested in either of these positions please submit your resume to:

**Mrs. Jean McPhail**  
Employer Relations Department  
Vancouver General Hospital  
855 West 12th Avenue  
Vancouver, B.C. V5Z 1M9  
(604) 875-4256

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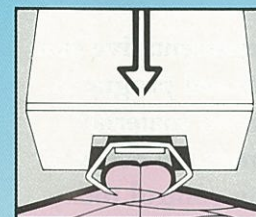
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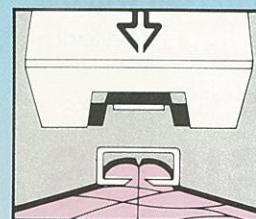


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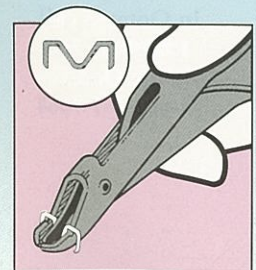
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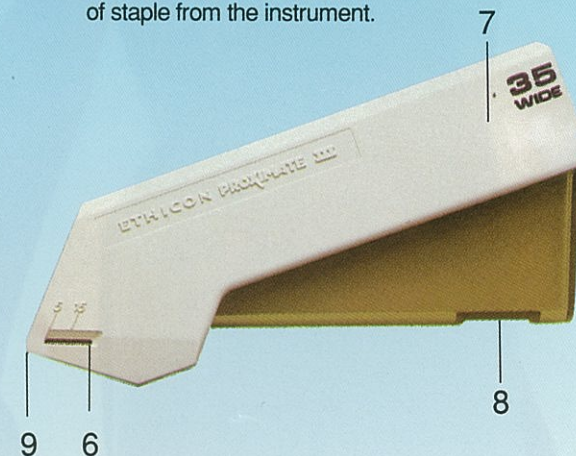
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