outlook
the official journal of the National Emergency Nurses' Affiliation Inc.

Volume 28, Number 1, Spring 2005

In This Issue:

NENA

Call for nominations: "secretary" and "treasurer"

Are you interested in serving on the board of directors? Then read on – this year there are two available positions. The secretary and treasurer positions are two-year terms that will begin July 1, 2005 and run to June 30, 2007. Both positions would begin following the annual general meeting in Kelowna, BC. The board of directors meets twice yearly. Both meetings are three days in length. Typically, the spring meeting, though, is held in conjunction with a regional or national conference, so time away from home is usually longer.

As secretary, you are expected to carry on the affairs of the corporation under the supervision of the officers of the board. You are expected to attend all meetings and to record all votes and minutes from these meetings. You will ensure that all board members will receive board meeting minutes in a timely fashion and, as well, you are responsible for producing the incorporated minutes. You will set the agenda for the board meetings in collaboration with the president. There may be additional duties that would be assigned to you by the president.

As treasurer, you are entrusted with the funds and securities of the corporation and you shall keep full and accurate accounts of all assets, liabilities, receipts and disbursements. You will be responsible for depositing all monies, securities and other valuable effects in the name and to the credit of the corporation. As well, you will be responsible for the disbursement of such funds. You are expected to prepare and deliver an accounting of all financial transactions at each board meeting. You will be expected to submit an annual accounting to the membership at the AGM. There may be other duties assigned to you by the president.

Two NENA members must nominate candidates and the nominee must be a NENA member in good standing. A nomination form has been included for your use. Please forward completed nomination and curriculum vitae to Linda Jackson. Her address is listed on the nomination form. Nominations for these positions may also be made from the floor at the AGM. Announcement of successful candidates will be made following the election at the AGM in Kelowna, BC.

Outlook

Nomination Form

NENA executive position

Positions:

- Secretary
- Treasurer

We, the undersigned voting members of NENA, do hereby nominate:

_____

for the position of

_____

on the NENA executive.

_____

(nominee) is in good standing with NENA.

1. Name: _____

Date: _____

Signature of nominator: _____

2. Name: _____

Date: _____

Signature of nominator: _____

I, _____,

do hereby accept this nomination for the position of

_____

on the NENA executive.

Signature: _____

Date: _____

Please return this letter of intent and CV, by April 30, 2005, to: Linda Jackson, PO Box 756, Greenwood, Nova Scotia B0P 1X0 fax: 902 765-1534.

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Editorial staff

Editorial board

For information on advertising, contact Heather Coughlin, Advertising Manager, Pappin Communications, The Victoria Centre, 84 Isabella St., Pembroke, Ontario, K8A 5S5, telephone (613) 735-0952, fax (613) 735-7983, e-mail heather@pappin.com. Rate card available at www.pappin.com

Send manuscript enquiries or submissions to: Valerie Eden, RN, ENC(C), Outlook Editor, 34 Bow St., Dartmouth, Nova Scotia, B2Y 4P6 e-mail: valeden@hfx.eastlink.ca

NENA elected executive

President
Carla Policicchio, 4712 Whitemud Road, Edmonton, AB, T6H 5M3
(H) 780 434-5119; (W) 780 472-5116; fax: 780 472-5191; pager 780 445-2083; e-mail: cpolicic@cha.ab.ca

President-Elect
Janice Spivey, 112 Old River Road, RR#2, Mallorytown, ON, K0E 1R0
(H) 613 923-5539; (W) 613 548-2333; fax: 613 923-5539; e-mail: Spiveyj@ripnet.com

Secretary
Janet Calnan, 1500 Burnside Road West, RR#3, Victoria, BC, V9E 2E2
(H) 250 727-2795; (W) 250 727-4181; fax: 250 744-5939; e-mail: jcalnan@caphealth.org

Treasurer
Jerry Bell, 10 Laval Drive, Regina, SK, S4V 0H1
(H) 306 522-6295; (W) 306 766-2238; pager: 306 565-5757; fax: 306 766-2770; e-mail: jbell@accesscomm.ca

Communication Officer
Valerie Eden, 34 Bow Street Dartmouth, NS B2Y 4P6
(H) 902 461-1897; (W) 902 465-8340; fax: 902 465-8435; e-mail: valeden@hfx.eastlink.ca

Provincial directors

British Columbia
Clay Gillrie, 160 52A Street, Tsawwassen, BC, V4M 3P6
(H) 604 948-2981; (W) 604 451-7878 e-mail: clay_gillrie@bcit.ca

Alberta
Judy Skanderup, RR#1, Tilley, AB, T0J 3K0
(H) 403 377-2567; (W) 403 501-3220\ fax: 403 377-2849; e-mail: sskander@eidnet.org

Saskatchewan
Bonnie Briere, 22 Hicke Bay Regina, SK, S4R 7G5
(H) 306 543-0242; (W) 306 766-2731 fax: 306 766-2770 e-mail: bonnie.briere@rqhealth.ca

Manitoba
Irene Osinchuk, 495 St. Anthony Ave., Winnipeg, MB, R2V OS4
(H) 204 586-4547; (W) 204 787-3486 e-mail: iosinchuk@hsc.mb.ca

Ontario
Ted Sellers, 396 Ormond Drive Oshawa, ON, L1K 1J4
(H) 905 435-3413; (W) 905 576-8711 ext. 4439; e-mail: t5isellers@rogers.com

New Brunswick
Alison Duncan, 280 rue Centrale, Memramcook, NB, E4K 3S4
(H) 506 758-3997; (W) 506 857-5353; fax: 506 857-5360; e-mail: abulmer@nb.sympatico.ca

Nova Scotia
Linda Jackson, PO Box 756, Greenwood, NS, B0P 1N0
(H) 902 765-6659; (W) 902 765-1494 ext. 5422; fax: 902 765-1534; e-mail: l.Jackson@ns.sympatico.ca

Prince Edward Island
Cynthia Bryantor, PO Box 412, Kensington, PEI, C0B 1M0
(H) 902 836-5574; (W) 902 438-4322; e-mail: kevinb@pei.sympatico.ca

Newfoundland & Labrador
Joanne Collins
49 Ennis Avenue, St. John's, NFLD, A1A 1Y7
(H) 709 579-3133; (W) 709 777-6115; fax: 709 777-8007; e-mail: Joanne.Collins@nf.sympatico.ca

Committee chairs

Awards/Bursaries
Janet Calnan, 1500 Burnside Road West, RR#3, Victoria, BC, V9E 2E2
(H) 250 727-2795; (W) 250 727-4181; fax: 250 744-5939; e-mail: jcalnan@caphealth.org

Professional Practice and Documents
Alison Duncan, 280 rue Centrale, Memramcook, NB, E4K 3S4
(H) 506 758-3997; (W) 506 857-5353; fax: 506 857-5360; e-mail: abulmer@nb.sympatico.ca

Research
Clay Gillrie, 160 52A Street, Tsawwassen, BC, V4M 3P6
(H) 604 948-2981; (W) 604 451-7878 e-mail: clay_gillrie@bcit.ca

Nominations
Linda Jackson, PO Box 756, Greenwood, NS, B0P 1N0
(H) 902 765-6659; (W) 902 765-1494 ext. 5422; fax: 902 765-1534; e-mail: l.Jackson@ns.sympatico.ca

National Course Administration Committee
Karen Latoszek, 115 Healy Road, Edmonton, AB, T6R 1V4
(H) 780 430-6983; (W) 780 407-8616 e-mail: Klatosze@cha.ab.ca

Political Action Committee
Janice Spivey, 112 Old River Road, RR#2, Mallorytown, ON, K0E 1R0
(H) 613 923-5539; (W) 613 548-2333; fax: 613 923-5539; e-mail: Spiveyj@ripnet.com

President's message

This year is NENA's 25-year anniversary. It is a time to celebrate emergency nurses and emergency nursing in Canada. Our membership continues to grow each year. We currently have more than 1,600 members, one of the largest specialty groups in the Canadian Nurses Association.

There are nine provincial associations. All provinces except Quebec are represented as well as the Northwest Territories. The nine provincial directors and the executive make up the board of NENA. There are two national meetings per year. The annual meeting is held in the spring in conjunction with a national or regional conference. There are also provincially sponsored educational conferences offered throughout the year.

Educational courses such as TNCC, ENPC and CATN are available through NENA. Through collaboration with our physician colleagues at the Canadian Association of Emergency Physicians (CAEP), we have participated in the development and implementation of the PEDS CTAS teaching program and the soon-to-be-released adult CTAS educational package. In response to the need to orient less-experienced nurses, NENA developed the orientation template that can be used to develop department-specific orientation programs. With the pressures experienced by triage nurses, NENA has also developed a triage education template that can assist emergency departments in developing a comprehensive triage education program.

In response to members' requests to have more communication with NENA, this spring was the official launch of the redesigned NENA website. It is a much more interactive site. Check it out at www.NENA.ca. There is one official publication, Outlook, which is published twice yearly. It continues to grow and evolve as a journal. If you are a member of NENA, you will be able to access past issues on the website.

NENA has close professional relationships with Canadian Nurses Association and CAEP as well as other professional and lay groups. We continue to work with CNA on issues of certification. With CAEP, we jointly developed and issued a position statement on overcrowding in the ED and both groups continue to keep this major issue in the political and public limelight.

While the struggles for emergency nursing are ongoing and, at times, seem to be overwhelming, we continue to grow and evolve as a professional nursing specialty.

We celebrate our past and current accomplishments this year at the national conference in Kelowna, B.C. I hope that you can join us there. Once again, the conference will be action and information packed. It provides the opportunity to network, reconnect with old friends and make new friends in a positive learning environment.

On behalf of the board of directors and executive, I take this opportunity to say, Happy 25th Anniversary! Best wishes to all emergency nurses and to those nurses who were the founders of NENA.

Carla Policicchio,
RN, MA, BScN, ENC(C)

Outlook
Guidelines for submission

Editorial Policy

1. **Outlook** welcomes the submission of clinical and research articles, case studies, and book reviews relating to the field of emergency nursing.

2. Statements or opinions expressed in the articles and communications are those of the authors and not necessarily those of the editor, publisher or NENA. The foregoing disclaim any responsibility or liability for such material and do not guarantee, warrant or endorse a product or service advertised in this publication, neither do they guarantee any claim made by the manufacturer of such product or service.

3. Authors are encouraged to have their articles read by others for style and content before submission.

Preparation of Manuscripts

1. The original copy of manuscripts and supporting material should be submitted to the **NENA Outlook** editor. The author should retain one complete copy.

2. Manuscripts must be typed, double-spaced (including references), on 8 1/2" x 11" paper with adequate margins. Manuscripts longer than one page must be submitted in a disk format in Word Perfect or Word. Submissions are accepted via e-mail to the communication officer.

3. Author's name(s) and province of origin must be included.

4. Clinical articles should be limited to six pages.

5. Direct quotations, tables and illustrations that have appeared in copyrighted material must be accompanied by written permission for their use from the copyright owner, and original author and complete source information cited.

6. Photographs of identifiable persons, whether patients or staff, must be accompanied by signed releases, such as the following: "I hereby give (author's name) authorization to use the photograph of (subject's name) in the **NENA Outlook**.

Please submit articles to:
NENA Outlook Editor,
34 Bow Street,
Dartmouth, NS B2Y 4P6
valeden@hfx.eastlink.ca

Deadline dates:
February 20 and August 16

Letter to the editor...

I am forwarding this as an example of how emergency nurses can educate the public about the emergency department. The Provincial Health Services Authority in Prince Edward Island offers monthly health columns to local newspapers. The Authority includes the Provincial Addictions Treatment Facility, Queen Elizabeth Hospital, Hillsborough Hospital and Prince County Hospital. Anita Gray, manager of the emergency department at the Queen Elizabeth Hospital, wrote a column about services and waiting times in emergency departments at the Island's two largest hospitals.

Cynthia Bryanton,
Provincial Director, PEI

Talking health

It seems that everyone has a story to tell about their trip to an emergency department. Some tell of the long wait they had, while others tell about how they got in to see a doctor right away. Why is there such a variation in wait times?

When patients arrive at an emergency department, a registered nurse assesses and triages them. The triage process determines how quickly the patient has to be seen. The nurse checks vital signs such as temperature, pulse and blood pressure. The nurse asks why the patient is there, how long they have been ill, their pain level, other health problems, allergies and medications currently being used. Triage priority is assigned according to national guidelines and determines the timeframe in which the patient will be seen. Emergency departments use the rule "worst is first" - physicians see more seriously ill patients before those who are less seriously ill or injured.

While sitting in the waiting room, patients will often see others arrive and get in to see the physician before them, even though they might not think the other person looks as sick as they feel. Not all patients who are seriously ill look sick, but they do require immediate medical attention.

Out of sight of the waiting room, there are several other areas in an emergency department where patients are seen. Patients who arrive by ambulance are triaged in the same manner as all other patients in an emergency department. Arriving by ambulance does not necessarily mean that the doctors will see the patient any faster. Some patients who arrive by ambulance require immediate attention for conditions such as heart attacks and major traumas. These types of patients may occupy physicians for several hours at a time and, as a result, less seriously ill people may have longer waits for service.

Regrettably, emergency department staff cannot give out telephone advice. When patients call in, health care providers are not able to physically see them and are therefore unable to assess how sick they really are. Staff do not tell callers the names of physicians working in the emergency department on any particular day, or discuss the current waiting time. People who are unwell and are not able to access their family doctor or a walk-in clinic in a timely manner should come to the emergency department, regardless of the waiting time or doctors on duty that day.

Nationally, hospitals are moving toward delivering more ambulatory care whereby patients remain at home and only come to the hospital for short-term treatment. The new Prince County Hospital has an extensive ambulatory care service. The Queen Elizabeth Hospital has some ambulatory services, but they are not yet comprehensive or centralized in a single location. As a result, many patients requiring treatments such as IV antibiotics or dressing changes come to the emergency department. They do not require the services of a physician and are looked after by the nursing staff as soon as possible. This may include patients who are seeing a medical specialist or the mental health crisis response nurse.

Every attempt is made to see each patient in a timely fashion, however, unavoidable waits do occur. Wait times are influenced by many factors including the number of patients in the emergency department at any given time, the seriousness of each patient's condition, availability of an appropriate treatment room to assess and manage the patient's particular problem and the number of admitted patients waiting for an inpatient bed.

The dedicated staff, management and physicians in the emergency department are working to ensure appropriate staffing is in place and to develop better patient flow to help address the wait-time issue. Work is also underway to redesign the Queen Elizabeth Hospital emergency department to develop improved access to non-urgent ambulatory care.

The QEH emergency department works closely with the PCH emergency department and other regional emergency departments to provide the best possible service to those with urgent medical needs. This sometimes requires referrals between hospitals for specialty services when a specialist is available only at another location.

The family physician's office and evening clinics are strongly recommended for receiving non-urgent health care, however, emergency departments are there 24 hours a day, seven days a week to address pressing health concerns.

Editor's Note:

An apology to Marg Smith's husband Bill who was in error called Bob Smith in the last issue of Outlook.

The Annual Emergency Nurses Interest Group (ENIG) Conference
"Emergency Nurses Everyday Heroes…Each and Every Day"
At the Executive Resort in Kananaskis, September 29-October 2, 2005, with a pre-conference workshop on September 29.
Check for more details at **www.nena.ca/enig**

2005 Canadian Injury Prevention and Safety Promotion Conference
"Evidence to Action: Injury, Violence and Suicide Prevention"
November 6-8, 2005, Westin Nova Scotia Hotel, Halifax, Nova Scotia.
Call for Abstracts: **Deadline April 30, 2005.**
Website: **www.injurypreventionconference.ca**

CALL FOR ABSTRACTS

NENA National Conference – May 4–6, 2006

Ottawa, Ontario

"Stayin' Alive"

The National Emergency Nurses' Affiliation, Inc. (NENA) would like to announce a Call for Abstracts for our National Conference in May 2006. The conference will be held in Ottawa, Ontario, at the Westin Hotel. The theme of the conference is "Stayin' Alive", with a focus on relevant clinical practice, education and research, ways in which nurses are taking care of themselves and how emergency nurses continue to provide excellent patient care despite the many challenges that are faced.

We welcome the submission of abstracts for poster presentations, individual podium presentations, workshops and symposia.

Abstract Instructions

Submissions

- The deadline for submission is June 1, 2005.
- The submission of abstracts will be acknowledged upon receipt.
- A review and selection will be made by the abstract review subcommittee of the NENA 2006 planning committee.
- Selections will be completed and acknowledged by June 30, 2005.
- Successful presenters must indicate their commitment to participate by July 15, 2005.

Format

- Written in English and a 500-word maximum.
- Electronically submitted in Microsoft Word to: stayinalive2006@ottawahospital.on.ca
- The abstract should include title, purpose, summary of content and implications for practice.
- A cover page should be included which identifies the abstract title and the author's name(s), credentials, current position, address for correspondence, e-mail address and phone number.

Other information

- Concurrent presentations will be 60 minutes in length with a 10-minute question period included.
- Keynote speaker presentations will be 75 minutes in length with a 10-minute question period included.
- Poster presentations will be displayed in prominent locations throughout the conference.

Abstract Review Subcommittee of the NENA 2006 Planning Committee
Ottawa, Ontario
stayinalive2006@ottawahospital.on.ca

Emergency nursing in a postcard: Banff National Park

By Pam Little, RN, Alberta

Banff National Park, Canada's oldest national park, was established in 1885 to protect the land for public understanding, appreciation and enjoyment while maintaining the park unimpaired for future generations. Located on the eastern slopes of the Rocky Mountains of Alberta and near the border of British Columbia, the park covers 6,641 square kilometres (2,564 square miles) of mountains, valleys, forests, meadows, rivers, lakes and glaciers. In 1985, Banff National Park was included in the UNESCO World Heritage Site of the Canadian Rocky Mountain Parks. More than four million visitors are welcomed to Banff National Park each year.

Most visitors to Banff National Park come for rest and relaxation and do not plan to be injured, ill or die in the park. Yet, with the volume of vacationers in a wilderness setting and others driving through the park on one of several highways, tragedy is bound to find its victim.

Emergency nurses in Banff work in a unique setting and deal with many unusual situations. The problem-solving and critical thinking abilities of the nurses are continually tested. Providing a high level of emergency nursing care to the ill and injured is the most important aspect of the emergency nurses' role. However, tourists present with needs not often encountered in the typical rural emergency department. It is not unusual to find the emergency nurse booking rooms at a local hotel or assisting with transportation issues. Locating an interpreter to assist with diagnosing and caring for the out-of-country patient is not extraordinary. Taking photos of the patient for the folks back home or posing for photos is often part of the emergency nurses' day. Nurses establish international relationships with insurance companies, tour guides and families as part of their nursing practice. Nurses must utilize community support in creative ways. For example, I had to find clothes for a woman whose belongings were last seen floating down the Bow River after a vehicle rollover into the river.

Kathleen O'Connor arriving at work at Banff Mineral Springs Hospital.

Sustaining an injury or having a loved one die while on vacation can be devastating. The emergency team has to deal with the person experiencing the initial shock, loneliness and then the reality of what to do next when someone is injured, dead or ill. This is truly family and patient-centred care. Banff Mineral Springs Hospital emergency nurses have a long history of providing this type of care to park visitors.

Dr. Brett, a Canadian Pacific Railway surgeon, cared for local people out of a boxcar on a siding in Banff until he established the first hospital in 1887. Records state that he cared for injured workers, delivered babies and provided medical care for those ill with typhoid due to poor sanitation. Dr. Brett's hospital cum spa/sanitarium was frequented by people seeking treatment for arthritis and rheumatism with the piped-in thermal waters of Sulphur Mountain. Dr. Brett sold his hospital to the Sisters of St. Martha, a Catholic order of nuns from Antigonish, Nova Scotia, in 1930.

Being a hospital in a tourist destination had its benefits for the nuns. During the depression, one Sister said they were "always grateful to see an American patient those days because he would probably be able to pay his bills". In 1942, the first emergency room was designated in the hospital to care for the rising number of tourists. In 1952, before the days of Medicare, the Sisters of St. Martha rented hospital rooms to tourists to raise money to keep their hospital open. The Sisters recognized the need for medical and nursing care in the environs of Banff National Park. To keep pace with the growing tourist numbers in the region, the Sisters of St. Martha, with the help of the community of Banff, built a new hospital in 1958. This building was replaced by the present hospital built in 1987. Today, Banff Mineral Springs Hospital provides emergency care and services to approximately 16,000 patients annually.

Emergency services in Banff National Park are a collaborative effort. The Mineral Springs Hospital emergency department and ambulance service, Parks Canada Public Safety Wardens, Banff and Lake Louise Fire and Rescue Departments, the Royal Canadian Mounted Police detachments, Bow Valley Victim's Assistance Program, the ski area Professional Ski Patrollers and a medical clinic in Lake Louise townsite work together to provide emergency services.

Statistics for cause of deaths and injuries in Banff National Park (BNP) are sketchy. Existing records and anecdotal evidence point to motor vehicle collisions as a major cause of death and injury. The Trans Canada Highway plus two other major highways (93 north & south) run through or near the park. Many of the deaths and injuries that occur in BNP are unique to the park's wilderness. Parks Canada Wardens carry out an average of 130 search and rescue missions per year in BNP and the surrounding mountain parks. There are an average of 12 deaths per year related to outdoor recreation in Banff National Park.

In 2004, there were 21 deaths that occurred in the park. Twelve of these deaths occurred during the following outdoor recreation activities: mountaineering, ice climbing, hiking, scrambling, ski touring, kayaking, cycling, snowshoeing, and camping. Most of these deaths were related to trauma sustained in avalanches, falls, drowning, lightning strikes, and a suicide. Three deaths were related to cardiac arrest and one to a brain aneurysm that occurred while hiking. The remaining deaths resulted from motor vehicle collisions. There were no deaths related to wildlife encounters in 2004, but several traumatic injuries such as puncture wounds, contusions, bites and tears were documented. Close encounters by tourists with mountain sheep, bears, cougars, elk, deer and ground squirrels can cause injury and death. Perhaps the most publicized cause of death in the park is bear attacks. Avalanche deaths also receive more press nationally, especially since the Trudeau death.

Snowboarding has increased the patient numbers in the Banff emergency department over the past 10 years. Predominant injury patterns seen in snowboarding are related to wrist, back, spleen and head injuries. Falls while skiing continue to cause knee, leg, shoulder and head injuries. Emergency nurses and physicians at Banff Mineral Springs Hospital become experts in providing procedural sedation to accommodate fracture and dislocation reductions.

The amount of teaching that occurs in the Banff emergency department by nurses and physicians is worth mentioning. A typical patient requires teaching about their new appliance, injury prevention, road, work and sport safety equipment, rehabilitation and physiotherapy. An occupational therapist, several physiotherapists, three family physician clinics, a plastic surgeon and two orthopedic surgeons provide follow-up care to emergency patients in Banff National Park.

Emergency nurses have many stories about the care provided to patients and families experiencing injuries, illnesses and deaths in Banff National Park. The unique features, the tragic circumstances and unfortunate victims provide additional dimension to emergency nursing in our postcard lives of Banff National Park.

References

Parks Canada. (2005). **Record of Deaths Banff National Park.**

Parks Canada: National Parks. Retrieved January 20, 2005, from www.parkscanada.ca

Whyte, J. (1980). **Commemorative Booklet: Mineral Springs Hospital.**

NENA's "Win a trip to the national conference" contest rules

NENA Inc. will biannually sponsor a NENA member's attendance at the national conference/AGM, for an article published in **Outlook.** The winner will be chosen by lottery.

1. The contest will be advertised in **Outlook.**
2. Provincial representatives are encouraged to promote the contest among their membership.
3. Articles must be submitted directly from the author. Provincial newsletters forwarded to the communication officer for selection of items to include in **Outlook** will not be considered in the lottery. Please refer to the submission guidelines included with this issue.
4. Primary author's name will be entered into the draw (in the event of multiple authors).
5. Names will be entered into the draw beginning with the spring 2005 edition of **Outlook** and ending with the fall edition of 2005.
6. The communication officer will maintain a record of names entered into the lottery.
7. The NENA president will randomly draw the name of the winner.
8. The NENA president (or delegate) will notify the winner and will communicate with the winner to ensure conference registration, hotel booking at the convention rate, and travel arrangements are made at the most economical rate to the maximum value of $2,000.00.
9. The draw will occur in January prior to the national NENA conference to allow the winner to arrange his or her time off to attend. In addition, this allows time to obtain the best fares and booking of a hotel room at conference rates.
10. The winner of the lottery will have three weeks in which to accept his or her prize. In the event the winner is unable to claim his or her prize, a second name will be drawn. The prize is non-transferable.
11. The winner will make his or her own travel arrangements.
12. The winner's name will be published in **Outlook.**
13. The winner must be a NENA member at the time of submission.
14. NENA board of directors and **Outlook** section editors are exempt.
15. Articles are published at the discretion of the communication officer.
16. NENA board of directors has approved the contest rules.

The next National Emergency Nurses Conference is in Ontario in 2006.

The NENA Bursary

NENA recognizes the need to promote excellence in emergency care, and, to this end, to provide financial aid to its members. NENA will set aside a predetermined amount of monies annually with the mandate of providing a high standard of emergency care throughout Canada. All sections of the emergency nursing team are eligible for consideration including staff nurses, managers and educators.

Applications must be submitted prior to the spring board of directors meeting of NENA for review by the standing committee for bursary disbursements. On April 1 of each year the number of bursaries awarded will be determined by the number of registered members per province for that NENA fiscal year i.e.:

1-99 members - 1 bursary
100-199 members - 2 bursaries
200-299 members - 3 bursaries
300-399 members - 4 bursaries
400-499 members - 5 bursaries
500-599 members - 6 bursaries
600 + members - 7 bursaries

One bursary is to be available to NENA board of directors members and one bursary per year will be available to an independent member.

Successful candidates can only receive a bursary once every three years.

NENA Bursary application process

Each candidate will be reviewed on an individual basis and awarded a number of points as set out below:

1. Number of years as a NENA member in good standing
- 2 years.....1 point
- 3-5 years .....2 points
- 6-9 years .....3 points
- 10 + years .....5 points

2. Involvement in emergency nursing associations/groups/committees:
- Provincial member.....1 point
- Provincial chairperson .....2 points
- Special projects/committee
  - provincial executive .....3 points
- National executive/ chairperson.....5 points

3. Candidates with certification in emergency nursing and/or involved in nursing research will receive an additional five points.

If two candidates receive an equal number of points, the committee will choose the successful candidate. All decisions of the bursary committee are final.

Each application will be reviewed once per spring board meeting.

Preference will be given to actively involved members of NENA and those actively pursuing a career in emergency nursing. Those members requesting assistance for emergency nursing certification, TNCC, ENPC, CATN, as well as undergraduate or post-graduate studies that would enhance emergency care will also receive preference.

Candidates must have completed Forms A, B and C (included with this issue of **Outlook**). The provincial director may forward applications at the spring board meetings.

Any incomplete forms will be returned to the provincial director for correction if possible.

Eligibility
- Current RN status in respective province or territory. (Proof of registration required.)
- Active member in NENA Inc. for at least **two** consecutive years. (Proof of membership required.)
- Working at present in an emergency setting which may include:
  - Emergency department
  - Nursing station
  - Pre-hospital
  - Outpost nursing
  - Flight nursing

Application process

Candidates must complete and submit the following:

a. NENA Bursary application form "A"
b. Bursary reference form "B"
c. 200-word essay
d. Photocopies of provincial registered nurse status and NENA registration

Provincial representative responsibilities:

a. Completes bursary candidate's recommendation form "C"
b. Ensures application forms are complete before submission
c. Brings to board of directors meeting all completed applications

Selection process

The standing committee for bursary disbursements will:

1. Review all applications submitted by provincial representatives and award bursaries based on selection criteria.
2. Forward names of successful candidates to the board of directors for presentation.

Methamphetamine intoxication and related emergency situations

By Carole Rush and Steve Walton, Calgary, AB

A 19-year-old male arrives by ambulance at the emergency department with a chief complaint of polysubstance abuse. He has been camping with friends for the past three days, during which he apparently consumed quantities of alcohol, Ecstasy, 'mushrooms' and crystal methamphetamine. His friends had called an ambulance after the patient was found unresponsive. On arrival, the patient was combative, verbally abusive, dehydrated, cold and wet. He was reported to have not slept for the past three days. During his 12-hour stay in the emergency department, he required respiratory support, intravenous fluids, benzodiazepines, physical restraints and close monitoring. He was discharged in the care of his father. Clinical management of patients with polysubstance abuse can be complicated, especially if the patient history is vague. This article will focus on acute methamphetamine intoxication and related emergency situations surrounding this drug.

Methamphetamine is a psychostimulant. It currently belongs to a diverse group of illicit, synthetic drugs known as "club drugs". These substances arrived on the social scene in the 1990s and were named such due to their association with raves and dance parties. The drugs were used primarily to enhance the experience through the distortion of light, motion, sound and time. Club drugs have been gaining popularity because it is believed that they are not as dangerous or addictive as other drugs. In fact, club drugs can be especially risky because they are often manufactured in unsanitary, makeshift laboratories, making it virtually impossible for the user to know the exact contents, quality and potency of the drugs (Students Against Destructive Decisions, 2003). In North America, methamphetamine is largely produced in clandestine laboratories, many of which are located in rural areas and controlled by organized crime. Secret labs have been found in homes, garages, apartments, sheds, barns, hotel rooms, and even the trunks of cars. Individuals also make the choice to become 'meth cookers' to supply the drug for themselves and their friends. Recipes can easily be found on the internet. Common ingredients such as pseudoephedrine, drain cleaner and batteries can be purchased at local hardware stores and pharmacies.

Table One: Brief history of methamphetamine

(Hoecker, n.d., Walton, 2001, Derlet & Albertson, n.d.)

Year	Development
1880s	Documentation of a substance made from ephedrine, an organic substance used as a medicine in China for centuries
1919	Japanese pharmacologist first synthesized methamphetamine
1932	Sold in the U.S. as an inhaler for treatment of rhinitis and asthma
1937	Release of a report stating amphetamine could enhance intellectual performance through enhanced wakefulness
1930s-40s	First epidemic of methamphetamine abuse in Japan. Used by Allied and Axis troops to improve soldier's performance during WW 2
1960s	Second epidemic of methamphetamine abuse amongst students, athletes, shift workers, truck drivers; Drug known as Speed. Historic link between production of speed and outlaw motorcycle gangs.
1970	Controlled Substances Act passed; Methamphetamine production regulated.
Late 1980s	Smokable forms of methamphetamine introduced. New epidemic started in Japan and Korea, then spreads to Hawaii and the western U.S.
1990s	Used in 1991 Operation Desert Storm, allegedly to increase wakefulness and attention. Methamphetamine epidemic spreads eastward; heavy use and production in California, Arizona, Utah and western region.
Present day	Methamphetamine is the most widely used dangerous drug in the United States.

In Canada, methamphetamine is classified as a Schedule III drug under the Controlled Drugs and Substances Act. It is not approved for any medical use. The United States has classified methamphetamine as a Schedule II stimulant with approval for treatment of attention deficit disorder and exogenous obesity. It is used off-label for the treatment of narcolepsy (Hoecker, n.d.). In both the United States and Canada, enforcement tries to control the illicit manufacturing and distribution.

Although methamphetamine may not be the most frequently used illicit drug among emergency patients across the country, the numbers are increasing. An article in The Calgary Herald (October 26, 2004) claims crystal methamphetamine is emerging as the most prominent drug in Alberta, with law enforcement agencies and organizations that treat addicts reporting increased signs of its use and production. There are geographical patterns of illicit drug use. Health care providers need to stay current with drug use patterns in their locale.

History and pharmacology

The prototype of methamphetamine is the drug amphetamine which was first synthesized in 1887 and is structurally related to the natural occurring stimulant ephedrine (Walton, 2001). Table One outlines a brief history of methamphetamine use and abuse.

Methamphetamine is a very powerful and highly addictive central nervous system stimulant. Once the synthesis from ephedrine to final product is accomplished, the result is an extremely dangerous hallucinogenic amphetamine. Use of methamphetamine results in an accumulation of the neurotransmitter dopamine. This excessive dopamine concentration appears to produce the stimulation and feelings of euphoria into areas of the brain that regulate pleasure (National Institute on Drug Abuse, n.d.). Prolonged stimulant effects are due to the longer duration of action and larger percentage of the drug that remains unchanged in the body.

This drug can be seen in many forms including pills, gel caps, chunks and powder. It can look like small pieces of glass with a colour range from clear to white, yellow, brown, green and

Table Two: Key facts about crystal methamphetamine

(Walton, 2001, National Institute on Drug Abuse, n.d., Derlet & Albertson, n.d., Wolkoff, n.d.)

Classification of drug	**Central nervous system stimulant**
Common street names (varies according to geographic location)	Ice; glass; crystal; jib; batu; shabu
Physiological responses	Tachycardia; tachypnea; hypertension; hyperthermia; euphoria; hallucinations leading to confusion; anxiety; aggression; diaphoresis; sleeplessness; anorexia
Eye characteristics	Constricted or dilated; extremely rapid eye movement
Onset of action	Rapid, within seconds
Duration of action	Half-life ranges from 10 to 20 hours, depending on the urine pH (half-life is shorter in acidic urine), history of recent use, and dosage. A difficult 'crash' can be experienced with significant fatigue and depression, which can last a few days to a week (longer with chronic or heavy users).
Effects of use	The euphoria experienced is similar to base cocaine. However, the effects last much longer
Methods of use	ICE is normally smoked in a pipe. However, it can be ground into a powder and injected or inhaled. Leaves a residue that can be resmoked.
Negative effects of use/safety	Extreme paranoia**;** strong violent tendencies
Issues for medical personnel	Withdrawal causes severe depression; users can engage in binge type behaviour and go without sleep or food for days
Possibility of physical addiction	Extremely addictive
Physical characteristics of substance	ICE appears as clear, shiny crystals, varying in size from rice grains to the size of the distal metacarpal of your fifth digit
Odours associated with substance	Chemical smell when burned
Drug paraphernalia	Broken light bulbs which are used as pipes
Dosage	ICE is measured in tenths of grams; each tenth of one gram = three to four 'hits'
Associated drugs	Base cocaine; studies show that eight to 20% of street-available stimulants contain both drugs

pink. The routes of administration are diverse; they include oral ingestion, nasal inhalation and, due to the drug's solubility in water, intravenous injection. This drug is commonly smoked and, in this form, the vernacular of the street refers to the drug as crystal methamphetamine. Table Two outlines some key facts about crystal methamphetamine, which has been converted from its original form by a simple chemical process. The popularity of smoked methamphetamine is largely due to the immediate euphoria that results from the rapid absorption in the lungs and deposition in the brain, without the risks inherent with intravenous access. An analogy that can be drawn would be to say that Ice is to Methamphetamine what Crack is to Cocaine (Walton, 2001). Ice is viewed as very dangerous because of its purity and rapid addiction (Sullivan, 1995).

Emergency treatment after acute intoxication

Patients who are under the influence of methamphetamines will present with a variety of symptoms dependent on the dose, time elapsed, and history of previous usage (Derlet & Albertson, n.d.). Table Three outlines the general approach to the methamphetamine-intoxicated patient. Consultation with a clinical toxicologist through a regional Poison Centre is recommended for critically ill patients.

The safety of the emergency care team cannot be overemphasized. Users can present in a state of paranoia with violent behaviour and require both physical and chemical restraints. Security personnel are often required to help protect the patient and staff from harm.

Emergency care focuses on those presenting symptoms as well as trying to minimize damaging complications to major organs. Clinical toxicity of methamphetamine primarily affects the cardiovascular and central nervous systems (CNS); if the drug is inhaled or smoked, pulmonary symptoms may occur (Derlet & Albertson, n.d.). The more common patient presentations will be discussed.

Central nervous system

- Agitation and anxiety: Benzodiazepines are most commonly given to manage agitation; large doses may be required (Bebarta, 2003).
- Hallucinations: There are no antidotes for hallucinations. In addition to benzodiazepines to reduce agitation, haloperidol may be the most appropriate medication for patients experiencing primarily the mind-altering effects of the methamphetamine (Bebarta, 2003). A calm environment (difficult in a busy ED), reassurance and avoidance of injury are also indicated.
- Psychosis: Methamphetamine can induce an acute toxic psychosis in previously healthy persons and precipitate a psychotic episode in those with psychiatric illness (Derlet & Albertson, n.d.). Antipsychotics such as haloperidol are indicated. Again, large doses may be required.
- Seizures: Methamphetamine-induced seizures have been viewed as isolated events, or associated with hyperthermia, coma, metabolic acidosis, secondary rhabdomyolysis, renal failure and shock (Derlet & Albertson, n.d.). Treatment includes airway management, benzodiazepines, supportive care and further investigations for the cause of the seizures.
- Unresponsiveness: Some patients who have used methamphetamine present unconscious to the emergency department. Decreased level of consciousness may be caused by the concurrent use of other drugs such as opioids and alcohol, from the direct effects of intravenous methamphetamine, or secondary to amphetamine-induced seizures (Derlet & Albertson, n.d.). Treatment includes the basics of oxygenation and ventilation, seizure precautions and monitoring of blood glucose. If the patient presents with both CNS and respiratory depression, an opioid antagonist such as naloxone may be given. It is sensible to titrate the dose of naloxone to reverse respiratory and CNS depression without precipitating withdrawal (Bebarta, 2003).

Other potential serious CNS disorders induced by amphetamines include CVAs caused by hemorrhage or vasospasm, cerebral edema and cerebral vasculitis (Derlet & Albertson, n.d.).

Cardiovascular

- Tachycardia: The direct stimulant effect of methamphetamine may cause tachycardia, or it may be a compensatory mechanism for overall dehydration. Users at parties can dance for hours without stopping. Intravenous crystalloids will replenish the depleted circulatory volume.
- Atrial and ventricular arrhythmias: Advanced cardiac life support (ACLS) protocols should be followed for the treatment of symptomatic cardiac arrhythmias. Beta

Table Three: General emergency care of the methamphetamine-intoxicated patient

(Hoecker, n.d.)

Airway management; supplemental oxygen; cardiac monitoring; 12-lead EKG; intravenous fluids; core body temperature monitoring; laboratory blood tests
(CBC, serum electrolytes, glucose, creatinine, coagulation studies, fibrinogen liver function tests, arterial blood gas)
Urine drug screen Activated charcoal (oral ingestions)

blockers, such as propranolol, should be avoided, because they may potentiate coronary artery vasoconstriction (Hantsch & Seger, 2003).

- Chest pain, myocardial ischemia: Chest pain following methamphetamine use may result in myocardial ischemia. Patients are at risk for ischemia because of accelerated atherosclerosis from chronic drug use and other less well-understood mechanisms (Derlet & Albertson, n.d.). Concurrent use of ethanol will potentiate the cardiac effects. Nitroglycerin, analgesics and other cardiac interventions may be used (Hantsch & Seger, 2003).
- Hypertension: Elevated blood pressure from stimulant toxicity is usually short-lived (Hantsch & Seger, 2003). A hypertensive crisis may be treated with alpha antagonists such as phentolamine, or alpha/beta antagonists such as labetalol (Hoecker, n.d.). Vasodilators such as nifedipine or nitroprusside may also be used (Hoecker, n.d.).

Respiratory

- Dyspnea and wheezing: Supplemental oxygen and nebulized bronchodilators are used to alleviate these symptoms.
- Drug-induced hyperthermia syndrome: Users at a crowded, hot dance party are at increased risk of dehydration and heat exhaustion. The diuretic effect of concurrent alcohol use will contribute to the degree of dehydration. More serious, drug-induced hyperthermia is a life-threatening complication that

Table Four: Abuse cycle of high-intensity and binge abusers of methamphetamine
(Walton, 2001)

Stage	Duration	Comments	Specific Safety Issues
First Stage: RUSH	Five to 30 minutes	Body metabolism increases Feelings of pleasure	
Second Stage: HIGH	Four to 16 hours	Abuser feels aggressively smarter and may become argumentative	
Third Stage: BINGE	Three- to 15-day high where each ingestion of drug results in a diminishing RUSH until there is no rush or high	Abuser becomes mentally and physically hyperactive in attempting to maintain HIGH as long as possible	
Fourth Stage: TWEAKING	A Tweaker has likely been three to 15 days without sleep	Nothing the abuser does can take away the emptiness the binge has created Some "Tweakers" take depressants such as alcohol or heroin to ease feelings of emptiness	Most dangerous stage of cycle Hallucinations are vivid; do not need provocation to react violently Six steps in dealing with a Tweaker: • Keep your distance • Lower the lights • Slow your speech; lower your voice • Slow your movements • Keep your hands visible • Keep the Tweaker talking
Fifth Stage: CRASH	Abuser sleeps from one to three days revitalizing their body		
Sixth Stage: NORMAL	Two to 14 days	Abuser returns to a normal state which is slightly deteriorated from that prior to BINGE stage. As the frequency of the binge increases, the duration and degree of 'normal' decreases	
Seventh Stage: WITHDRAWAL	Varying length of time	Abusers realize they are withdrawing from effects of drug, many become depressed and suicidal. Only 10 to 20% of abusers who seek treatment for dependence actually succeed in defeating this cycle of abuse.	

requires rapid recognition. Active cooling measures, similar to treatment of heat stroke, are indicated. These include iced intravenous fluids and cool water bladder washes (Hoecker, n.d.).

Concurrent injuries

Methamphetamine users tend to engage in high-risk activities. The drug is a GABA agonist and inhibits access to certain parts of the brain, especially the frontal lobe where 'executive functions' are contained. There is a generic tendency to incorporate poor judgment and make bad decisions when actively high on this drug. As a result, users can incur injuries from altercations and motor vehicle crashes due to aggressive and erratic driving. Sexual assaults may occur with either the perpetrator and/or victim high on this drug. Methamphetamine toxicity will complicate the management of a trauma patient.

High intensity and binge abusers

Methamphetamine is often used in a 'binge and crash' pattern. Tolerance for the drug occurs within minutes; the pleasurable effects disappear even before the drug concentration in the blood decreases significantly (National Institute on Drug Abuse, n.d.). Users try to maintain their high by binging on the drug. High intensity and binge abusers can then enter into an abuse cycle, which takes weeks to complete. Table Four describes each of the seven stages. Abusers are most likely to present to the emergency department during the second, third, fourth and seventh stages of this cycle. Rehabilitation for methamphetamine addiction can be a huge challenge; the failure rate of detoxification programs is up to 90% (Walton, 2001).

Other related emergency situations

It is obvious that methamphetamine is detrimental to the health of the user. In a broader sense, the drug can impact people other than the actual consumers. By virtue of their profession or occupation, innocent individuals can be forced to deal with methamphetamine users and, as a result, could be placed in harm's way when dealing with an irrational, violent drug consumer.

Another major safety consideration revolves around the clandestine production of the drug. 'Meth labs' have been discovered in neighbourhoods in every level of society and production facilities have been located in a diverse range of facilities. The labs can be small enough to fit in a suitcase, or large enough to fill a commercial warehouse (Alberta Fire Protection Commissioner, 2003). The varying combinations of chemicals may produce fire and explosion risks, toxic gases, and chemical spills (Hantsch & Seger, 2003). Common household items used in methamphetamine production, such as farm fertilizer, brake cleaner and drain cleaner will contribute to the chemical hazard (Slobodian, 2004). For every pound of methamphetamine produced, six pounds of hazardous toxic waste are left behind (Slobodian, 2004). EDs may care for fire department, law enforcement, emergency medical personnel, innocent bystanders or those involved with the illicit manufacturing of methamphetamine. Occupants of 'meth lab' homes, especially children, may require testing and treatment for exposure to the powder that is so prevalent in these environments. Children can also suffer from physical abuse and profound neglect when their caregivers are 'strung out'.

The last decade has seen an increase in the use and production of the drug that was formerly better known as speed. While law enforcement agencies continue to dedicate resources designed to cause dysfunction in production and distribution networks, health care systems continue to feel the negative ramifications of the use of this volatile substance.

References

Alberta Fire Protection Commissioner. (2003, August). What first responders need to know about meth labs. **Alberta Fire News,** 8-9.

Bebarta,V. (2003). Opioids. In V.J. Markochick & P.T. Pons (Eds.), **Emergency Medicine Secrets** (3rd ed.). Philadelphia: Hanley & Belfus, Inc.

Derlet, R., & Albertson, T. (n.d.). **Methamphetamine Toxicity.** Retrieved November 2, 2003, from http://www.emedicine.com/EMERG/topic859.htm.

Hantsch, C.E., & Seger, D.L. (2003). Mushrooms, hallucinogens and stimulants. In V.J. Markochick & P.T. Pons (Eds.), **Emergency Medicine Secrets** (3rd ed.). Philadelphia: Hanley & Belfus, Inc.

Hoecker, C. (n.d.). **Designer drugs in adults**. Retrieved April 1, 2004, from http://www.utdol.com/applicatio.topic/…enr_med/11925&type=A&selectedTitle=1~12.

National Institute on Drug Abuse. (n.d.). **Research report series: Methamphetamine abuse and addiction**. Retrieved April 26, 2004, from www.drugabuse.gov/researchreports/methamph/methamph4.html

Slobodian, L. (2004, March 5). Grow Ops: The Danger Next Door. **The Calgary Herald**, p. A5.

Students Against Destructive Decisions. (2003, Spring). Beware the new club drugs. **Decisions 2003**, 1.

Sullivan, E.J. (1995). **Nursing Care of Clients with Substance Abuse** (p. 33). St Louis: Mosby.

Walton, S.C. (2001). **First response guide to street drugs** (2nd ed., Vol. 1). Calgary: Burnand Holding Co. Ltd.

Wolkoff, D.A. (n.d.). **Methamphetamine abuse: An overview for health care professionals**. Retrieved November 2, 2003, from http://www.wolkoff.net/methamphetamine.htm.

About the authors

Carole Rush, RN, MEd, CEN, is an Emergency Staff Nurse and Injury Prevention Specialist with the Calgary Health Region in Calgary, Alberta.

Contact Information

Address: 179 Bayview Drive, SW, Calgary, Alberta T2V OL4

Phone + FAX: (403) 238-6587

Work Phone: (403) 943-8116

E-mail: ***carole.rush@calgaryhealthregion.ca***

Detective Steve Walton (retired) is a 25-year veteran of law enforcement. For the last 10 years, he was assigned to a drug unit and has been qualified in the criminal justice system as an expert with respect to street drug-related matters. Steve has published numerous articles in a variety of publications in Canada and the United States and is the author of the award-winning, bestselling book ***First Response Guide to Street Drugs****, Volume 1. He lives in Calgary, Alberta.*

Oh, no, it's the Poison Centre, tell them I'm busy!

**By Thelma Sonier, RN, BN, SPI,
and Teri Cole, RN, BN, SPI,
Poison Control Centre, IWK Health Care Centre,
Halifax, NS**

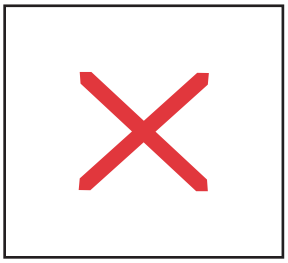
"Joan, can you take the phone please, it's the Poison Centre. They want to talk with Mr. Brown's nurse…"

Does this line sound familiar? Most emergency nurses have had the opportunity to speak with a poison specialist at one time. The Poison Centre is often asked, **"Why do you need to know all this, ….you want the patient's name, isn't that confidential…"** Well, hopefully this article answers these questions and clarifies the roles of nurses, pharmacists and physicians at the Poison Centre.

The **mandate** of the IWK Regional Poison Centre in Halifax, Nova Scotia is to provide information regarding the toxicological care of the poisoned patient and to follow these patients to determine the outcome. Having answered the phone and established a patient/provider relationship, the health care professionals at the IWK Regional Poison Centre accept part of the responsibility for ongoing care of this patient. Whether the patient, family or other health care provider made the initial contact with the Poison Centre, the staff at the Poison Centre must, to the best of our ability, ensure that everything possible is done to provide current, best evidence-based care (Thompson, 2004). The Poison Centre staff relies on your continuing cooperation to recount clinical, laboratory, and follow-up information on patients so that treatment recommendations can be modified as the patient's situation changes.

Additional reasons for follow-up include:

- Monitoring trends through surveillance of toxic exposures and patient outcomes
- Enhancing toxicological research by linking patient outcomes with specific toxins
- Developing more efficient treatment management guidelines related to toxic exposures
- Increasing public safety promotion programs related to toxins



As for confidentiality, all members of the Poison Centre are obligated by law to protect the confidentiality of the information to which they have access.

When a patient arrives in the emergency department with an exposure, an immediate call to the Poison Centre may help triage that patient more effectively. It may also help to initiate proper treatments/ antidotes as early as possible. In order to provide the appropriate recommendations, the Poison Centre staff may need specific information regarding the exposure (product or medication involved, time of exposure, patient's medical history, allergies, symptoms, etc.).

The following are actual cases where the Poison Centre was consulted:

Case One

A toddler presented to an emergency department following an ingestion of nail polish remover. The triage nurse thought this was not a problem in a small amount (few mouthfuls), but proceeded to call the Poison Centre for confirmation. After researching the product, the poison specialist discovered that this particular brand of nail polish remover contained Methanol 98%. Ethanol therapy (antidote) was initiated. The patient had bloodwork processed and eventually was discharged after methanol levels were detected as "nontoxic".

> Did you know 1 teaspoon of oil of wintergreen is equal to 7000 mg of salicylate?

Did you know that toxicity may occur from ingestions of 0.25 ml/kg of 100% methanol? This is equivalent to only 3 mls of many windshield washer fluids in an 11 kg toddler. As well, fatalities may occur from ingestion of 0.5 ml/kg of 100% methanol. This is the same as 5.6 mls of many windshield washer fluids (Micromedex Health Series, 2005).

Case Two

An adult presents to the emergency department with tooth pain. She has had this problem for the past five days and is asking to have the tooth removed. She indicated that she felt nauseated and has vomited today (probably because of the pain). Upon further assessment, it is determined that she has been taking acetaminophen extra strength for the past five days – one gram every three hours.

The patient's liver enzymes were elevated (in the 1,000 range) and she had a detectable acetaminophen level. The patient received the IV 48-HOUR N-acetylcysteine protocol. The outcome was favourable for this patient and subsequent referral to a dentist was initiated.

There are various proposed theories on the treatment of chronic acetaminophen. The IWK Regional Poison Centre maintains consistent, defined management for cases such as these. As atypical acetaminophen ingestions are confusing, it is suggested that the Poison Centre be contacted to help in a theoretical approach to the patient's care.

Chronic/supratherapeutic APAP defined as:
Adult: >4 gms over 24-hour period
Child: >90 mg/kg over 24 hours

Case Three

A two-year-old male was brought to a small rural hospital 15 minutes after an ingestion of a "mouthful" of a heavy-duty drain clog remover. The product had a pH of 12-13 (alkaline corrosive). The child presented with gagging and retching and had vomited twice. A small burn was noted on the tip of his tongue. The Poison Centre was consulted and advised the emergency staff to clean the oral area and keep the child NPO. It was also recommended to transport the child to a tertiary care centre for consultation with gastroenterology and consideration of an endoscopy.

The patient continued vomiting en route (via ambulance) and arrived 2.5 hours post-ingestion. Upon presentation at the tertiary centre, the child had stopped vomiting and had no evidence of stridor or drooling. Following a bronch/endoscopy, it was determined that there were extensive tracheal and esophageal burns. The patient was admitted to ICU, intubated, and ventilated for five days. He was later discharged home, with follow-up arrangements.

Although this child had evidence of a small oral burn and had vomited, his symptoms did not reflect the severity of his ingestion. The absence of visible symptoms such as oral burn, stridor and drooling cannot preclude a possible serious esophageal injury.

Case Four

The Poison Centre received a call from a triage nurse at an emergency department. The nurse was requesting information on Paroxetine to be faxed to the department. The nurse had assessed an adolescent who presented to the department with complaints of involuntary "tics" or movements of the head and neck. The poison specialist questioned the history, as the patient's symptoms were not reflective of a Paroxetine exposure. The poison specialist asked if the patient had been taking Diphenhydramine. The triage nurse indicated that yes, the patient had been taking Gravol for several days.

Dystonic posturing, restlessness, torticollis and trismus have been noted in children and adolescents following therapeutic oral doses of Diphenhydraime (Micromedex Health Services, 2005).

50 mg of dimenhydrinate contains approximately 25 mg of diphenhydramine

Overall, the Poison Centre receives over 10,000 calls annually. While 68% of patients are managed at home, 19% are already in a health care facility, and the Poison Centre refers 13%. The majority of calls are generated from the public (75%), while others received are from hospitals, 911, EHS, veterinarians, etc. More than 50% of calls are related to exposures in children under 10 years of age and the other 40 to 50% are related to youth, adults and seniors.

The top ten toxins involved in exposures include:

Analgesics	21%
Cleaners	17%
Sedatives	12%
Cosmetics	11%
Antidepressants	11%
Foreign bodies, toys, and misc.	10%
Alcohols	7%
Food	6%
Cough and cold	5%

The Poison Centre is staffed by nurses, pharmacists and physicians and is available to discuss any exposures 24 hours a day.

Talk tox with the Poison Specialists!
Contact the IWK Regional Poison Centre:
1-800-565-8161 or (902) 470-8161

References

Thompson, M. (2004, Dec.). **Toxicology Times.** Vol. 2, Issue 4.

Thomson Micromedex. (2005). **Micromedex® Healthcare Series.** Volume 124. Greenwood Village, CO.

Thomson Micromedex. (2005). **Micromedex® Healthcare Series.** Volume 124. Greenwood Village, CO.

In-service on Wilson's Disease

By Ted Sellers, RN, BHScN, ENC(C), Oshawa, ON

Facts about Wilson's Disease....

- Wilson's Disease is also called hepatolenticular degeneration.
- It is a rare, autosomal recessive inherited disease (occurs equally in men and women).
- It causes an accumulation of copper in tissues all over the body, but mainly in the liver, brain, kidneys and cornea.
- Copper is usually excreted in bile.
- Accumulation starts in the liver – once the liver is injured, copper spills into the bloodstream affecting other organs and tissues.
- Mostly occurs in young patients ages eight to 20 years, but can occur up to age 40. In children, symptoms usually start around age four.
- Liver disease occurs in 50% of the patients – can be seen as acute hepatitis, chronic active hepative hepatitis, cirrhosis or fulminant hepatitis.
- Affects one in a million people, mainly Europeans, Sicilians and southern Italians.
- Wilson's Disease is always fatal if not diagnosed and treated.
- Liver disease is most common in children and neurological disease is most common in young adults.
- The gene associated with Wilson's Disease is called ATP7B.
- Wilson's Disease affects chromosome 13.

Diagnosing Wilson's Disease

- Diagnostic triad includes Kayser-Fleischer rings – low serum ceruloplasmin <20 mg/dl and increased amounts of liver and urine copper levels.
- Blood tests, ceruloplasmin, urine copper, eye test for Kayser-Fleischer rings and liver biopsies are used to confirm diagnosis.
- If there is an acute liver injury – this causes hemolytic anemia due to acute release of copper into the bloodstream. Usually seen in fulminant hepatitis.
- If the disease is in a chronic state, then copper accumulates in the brain.

Signs and symptoms

Neurological – resting and intention tremors usually in arms and hands, spasticity, rigidity, chorea.

Dystonic – slowness of speech, unsteady gait, dystonic faces, posturing, difficulty swallowing.

Kayser-Fleischer ring – this is caused by copper deposits on the cornea – greenish or golden brown rings are seen.

Psychiatric – psychosis, neurosis, homicidal/suicidal behaviour, depression, aggression.

Other – may include jaundice, vomiting blood, abdominal swelling.

In women – may experience menstrual irregularities, absent periods, infertility or multiple miscarriages.

Treatment

Medication – must take oral medication for the rest of their lives. If medication is stopped, the copper will accumulate and symptoms will recur usually within three months. Medication choices include: **Penicillamine (Cuprimine, Depen)** – the response on this medication is slow, usually up to one year for maximum effects. This medication binds the copper and increases urinary excretion. **Trientine Hydrochloride (Syprine)** – this medication removes copper from tissues, binds copper and increases excretion in urine. **Zinc Acetate (Galzin)** stops intestines from absorbing copper and promotes copper excretion.

Diet – patients need to take Vitamin B6 and require a low-copper diet. This includes no mushrooms, nuts, liver, chocolate, shellfish and dried fruits.

For more information about Wilson's Disease, feel free to visit the following websites:

http://www.medstudents.com/metdis/metdis2.htm
http://www.1uphealth.com/health/wilson_disease_info.html
http://digestive.niddk.nih.gov/ddiseases/pubs/wilson/index.htm
http://www.ncbi.nlm.nih.gov/disease/Wilson.html
http://www.medhelp.org/wda/lit_what.htm

Enough winter already! What to do when cabin fever hits

By Linda Edgecombe

It's pretty pathetic when a gal from Kelowna, B.C., admits I've had enough of the white stuff and it's only the middle of January. Not only have we had record snowfalls, we've reached record low temperatures. It hasn't been this cold since 1979. At least in 1979, wearing a full-length fur was not yet a criminal offence. So keeping things politically correct, I'll keep to my micro fibre jackets and layer, layer, layer…

So, it's too cold to golf and too hot at home, actually the country song was the other way around. What do we do when the Christmas and New Year's celebrations wane, the bills start coming in, and you realize you should have purchased several thousand dollars of RRSPs just to keep your taxes within reason? We eat, of course, wear expandable pants and pray no one sees us as we shop at our local grocery and video stores wearing our kids' hat and mitt combinations.

By the end of February, most of us have given up on our New Year's resolutions and are now planning a new program to start right after the Easter chocolate has been consumed.

This is so depressing, it's almost humorous. To add to this mood, as I write this short article, the band Bread is playing on the radio. Now there's a pick-me-up. A very good friend once advised me, "If you insist on sitting in the outhouse of life, only stay as long as it's warm, then **GET OUT!"**

Taking the next step

In my opinion, we have two options:

A. We can hunker down and hope that the local cable company has great movies lined up for the next three months, or

B. Start with a good Perspective Kick in the literal butt.

First and foremost, stop whining!

Motivation comes from movement. No one's advice can motivate you to do anything. All it takes is **you** to move on one goal. Go for one walk, call up one friend, have one day of eating healthy choices. As the green soldier in **Toy Story** commanded: "Move, Move, Move people!"

So, let's start right here, right now. Think of one thing you could do tomorrow that you know would alter your mood. Off the top of your head. What's that one positive action that would move you forward? For most of us, we come up with something that would allow us to be more active. So plan a walk, a run, an aerobics class you can attend tomorrow, not the day after tomorrow, **now**.

Maybe it's a call to your parents, a friend or a grandparent. Choose something. Could it be to clean out your clothes closet and donate the clothes you have not worn, will not wear and should have given away several years ago? Now, if you are still harbouring your full-length fur and it's –27°C, I'd be pulling it out and risk being confronted by the naturalists.

So, we have our goal. **Now what?** As all of my subscribers know, I am a big believer in being accountable. Here's what I need you to do for me, but especially for you. Send me a quick e-mail with the one thing you will be doing, did do, plan to do that will get you moving and away from our winter blahs. Send your **'to-do'** to me at **info@lindaedgecombe.com**.

I'll let everyone know next month what we all did to beat the blahs and get us just one more month closer to spring, feeling upbeat and more inspired.

Move, Move, Move People…

Linda Edgecombe
www.lindaedgecombe.com

Footnote: If you have an awesome quote you'd love to share, please go to my site and enter it on my quotes page. There are prizes…

On the other foot: Check out some recent promotions on the national launch of the Guilt Free Accountability Program. http://www.kelownacapnews.com/archive/2005/01/19/stories/23338_full.html?latest_date=2005/01/19

Editor's note: You can hear Linda speak in person on Sunday, May 15, 2005, in sunny Kelowna at the NENA 2005 conference.

Outlook Tidbits & Trivia

By Jan Spivey, Ontario

- The kindness and caring of an emergency nurse is a language that the deaf can hear, the blind can see, and the hurting or suffering can feel.
- Nurses represent the world's hope for health and health care.
- Every great achievement in health care was once considered impossible.
- A strong code of medical and nursing ethics is as reliable as a compass.
- Even the simplest nursing task can be meaningful, if done in the right spirit.
- Nothing of value ever came without effort, our patients experience the value of our efforts.
- You can never be too good a listener when a patient is in need.
- Sometimes, all that a patient needs is a hand to hold and a heart to understand.

Pediatric oral rehydration... everybody's business

By Lori Vollmerhaus, RN, BScN, and
Shannon Wilson, RN, BN, Clinical Nurse Educators,
Alberta Children's Hospital Emergency Department

Vomiting and diarrhea represent two of the most common reasons for children to present to emergency departments. Gastroenteritis was the number one diagnosis at the Alberta Children's Hospital Emergency Department last year, with 3,433 registered visits. The children arrive in varying states of hydration requiring a multifaceted approach to assessment and treatment. Family members and care providers often arrive with high expectations of advanced treatment (especially intravenous therapy) when oral rehydration with teaching and close follow-up is often the best care for the child.

Table One:
Classifying degrees of dehydration

Assessment	Mild	Moderate	Severe
H.R.	Normal	Increased	Rapid, Weak
R.R.	Normal	Increased	Increased, Grunty
B.P.	Normal	Normal/ Decreased	Hypotensive (late sign)
Cap. Refill	Normal	2 - 3 seconds	> 3 seconds
Mental Status	Alert, restless	Irritable	Lethargy, Stupor
Skin turgor	Normal	Doughy	Tenting
Mucous Memb.	Slightly Sticky	Dry	Parched
Tears	Present	Decreased	None
Eyes	Normal	Darkened, Soft	Sunken
Fontanelle	Normal	Sunken	Concave
U/O	Decreased	Oliguria	Anuria

The evaluation of the child with symptoms of acute gastroenteritis begins with the assessment of dehydration. According to the Canadian Paediatric ED Triage and Acuity Scale (PaedCTAS) guidelines, vomiting and diarrhea in children may be assessed as low as CTAS #5 for vomiting and diarrhea with no dehydration, to CTAS #2 for abdominal pain with vomiting and diarrhea and abnormal vital signs. Risk of dehydration is related to age. Young infants are more prone to dehydration due to increased body surface to mass ratio, increased metabolism, increased insensible losses and comparatively smaller circulatory volume. Acute vomiting and diarrhea in a child greater than two years old is CTAS #4 whereas acute vomiting and diarrhea in a child less than two years old is CTAS #3.

Clinical criteria for the assessment of dehydration have been examined in various studies. Signs and symptoms such as increased heart rate, decreased urine output, lethargy, absence of tears, sunken eyes, and dry mucous membranes can help the nurse to evaluate the degree of dehydration (mild, moderate, severe). These conventionally used clinical criteria for evaluating dehydration have been codified by the American Academy of Pediatrics and by the World Health Organization. However, there are major inconsistencies between sources, the criteria have not been validated, and their usefulness has been called into question. One research study that looked at the validity and reliability of various clinical findings found that the following four findings were independently associated with dehydration: general ill appearance, prolonged capillary refill (>2 sec), dry mucous membranes and reduced tears. The combination of all four signs suggests severe dehydration.

In the assessment and reassessment of dehydration, the nurse must look for a combination of signs and symptoms. Table One is one example of a tool used to classify the degree of dehydration.

The majority of children with mild and moderate dehydration do not need laboratory studies. These studies are not accurate in determining the degree of dehydration and should only be used as an adjunctive tool with a comprehensive clinical evaluation in assessing moderate or severe dehydration. Electrolytes, BUN, creatinine, and glucose, including a chemstrip, should be obtained in any child with severe or moderate dehydration requiring intravenous (IV) rehydration. A chemstrip is always necessary for any seriously ill or injured child.

Oral rehydration solution (ORS) is the preferred treatment for children with mild to moderate dehydration with or without vomiting. Most of the children who have vomiting can be treated with ORS. Studies have demonstrated that small amounts of ORS can be tolerated by most children. To deliver 60 to 90 mL of ORS every hour, start with 15 mL every 10 to 15 minutes. If the child cannot tolerate 15 mL, then try 10 mL every 10 minutes or 5 mL every five minutes. If more than 60 to 90 mL per hour is required, ORS therapy can be initiated with 5 mL every one to two minutes. Although this technique is labour intensive, it can be done by a parent/caregiver and will deliver 100 to 150 mL/hour. The child and parent/caregiver can choose whether to take the solution with a spoon, small medicine cup, or syringe, whichever method works the best for them. With a positive attitude, good teaching and encouragement from the emergency department nurse, these parents can be successful and will have the tools to treat the next episode of diarrhea and/or vomiting. The ORS should be an electrolyte solution designed for rehydration. Some children do not like the salty taste of unflavoured electrolyte solution. Therefore, parents and clinicians have been adding juices to flavour the electrolyte solution. A recent study demonstrated that the electrolyte to juice ratio should be 4:1 in order to maintain an appropriate electrolyte balance. Frozen electrolyte ice pops are another option. Sport drinks are not recommended as they do not contain the appropriate proportions of electrolytes.

Children who require rehydration should be fed an age-appropriate diet as soon as they have been rehydrated. Children who have diarrhea and are not dehydrated should continue to be fed an age-appropriate diet. Breast feeding should be continued throughout the rehydration. It has been found that the intestine heals more quickly with the proper nutrients found in a well-balanced diet. Controlled clinical trials showed that certain foods, including complex carbohydrates (rice, potatoes, bread, and cereals), lean meat, yogurt, fruits and vegetables are better tolerated. Fatty foods or food high in simple sugars should be avoided (including tea, juices and soft drinks). The classic BRAT diet (Bananas, Rice, Applesauce, and Toast) can be tolerated, but is low in energy density, protein and fat.

The IV route should only be used to treat severe dehydration or any moderately dehydrated child who has persistent vomiting or who does not tolerate a committed attempt at oral rehydration. It may also be indicated for certain clinical conditions such as extreme fatigue, ileus or gastrointestinal distention. An IV bolus of warmed normal saline, 20 ml/kg, followed by two to four hours of maintenance fluids, and a re-attempt of ORS should be done. Few studies have been published on the outcome of children treated with this modality. In these studies, all patients demonstrated clinical improvement, and most of them tolerated oral therapy once the rapid rehydration was completed. It seems that rapid IV rehydration may "break" the vomiting cycle more quickly than oral rehydration, but more studies are needed to investigate the safety and effectiveness of this treatment versus oral rehydration.

When approaching rehydration in children, consider the number of IV attempts needed, the pain involved and the psychological impact of IV initiation versus oral rehydration. By establishing a routine of oral rehydration, we can teach parents/caregivers that a "quick fix" is not always the best answer. Nurses need to take this opportunity to teach by example. An order is not required to start oral rehydration therapy and, many times, the child can be well on the road to recovery prior to the physician assessing the patient. If we, as emergency department nurses, dedicate ourselves to teach and role model proper oral rehydration methods to parents/caregivers, many more children can be treated at home and help ease the overcrowding in our emergency departments today.

References

Adelman, R.D., & Solhaug, M.J. (2000). Pathophysiology of body fluids and fluid therapy. In R.E. Behrman, R.M. Kliegman, & H.B. Jenson (Eds.), **Nelson Textbook of Pediatrics** (16th ed., pp. 215-216). Philadelphia, PA: WB Saunders Co.

American Academy of Pediatrics. (1996). Practice parameter: The management of acute gastroenteritis in young children. **Pediatrics, 97,** 424-435.

Bhattacharya, S.K., Bhattacharya, M.K., Manna, B., et al. (1995). Risk factors for development of diarrhoea in young children: A case control study. **Acta Paediatrica, 84,** 160-164.

Burkhart, D.M. (1999). American Academy of Family Physicians. Management of acute gastroenteritis in children. **Am Fam Physician 60,** 2555-63.

Duggan, C., Santosham, M., & Glass, R.I. (1992). The management of acute diarrhea in children: Oral rehydration, maintenance, and nutritional therapy. **MMWR, 41**(RR-16), 1-20.

Table Two: Oral rehydration schedules

Note: wait for 15 to 30 minutes after the child vomits before starting the PO challenge

100 to 150 mL an hour schedule (use this schedule if the child is still vomiting)	1. The first 10 minutes – 5 mL (1 teaspoon) every one to two minutes 2. The next 20 minutes – 10 mL every five minutes 3. The next 30 minutes - 20 mL every 10 to 15 minutes
60 to 90 mL per hour schedule	15 mL every 10 to 15 minutes

Goepp, J.G., & Hirschhorn, B. (1991). Fluid therapy of diarrhoea. Industrialized countries. In W.A. Walker, P.R. Durie, J.R. Hamilton, J.A. Walker-Smith, & J.B. Watkins (Eds.), **Pediatric gastrointestinal disease: pathophysiology, diagnosis, management** (pp. 1567-1576). Philadelphia: Decker BC.

Gorelick, M.H., Shaw, K.N., & Baker, M.D. (1994). Performance of clinical signs in the diagnosis of dehydration in children [Abstract]. **Arch Pediatr Adolesc Med, 148,** 73.

Gorelick, M.H., Shaw, K.N., & Murphy, K.O. (1997). Validity and reliability of clinical signs in the diagnosis of dehydration in children. **Pediatrics, 99**(5), E6.

Jarvis, D., LeBlanc, L., & Warren, D. (2002). **Canadian Paediatric Triage and Acuity Scale: PaedCTAS.**

Liebelt, E.L. (1988). Clinical and laboratory evaluation and management of children with vomiting, diarrhea and dehydration. **Curr op Ped., 10,** 461-469.

Lulseged, S. (1992). Predictors of moderate to severe dehydration in acute diarrhoeal disease: A case control study. **Ethiopian Medical Journal, 30,** 69-78.

Mackenzie, A., Barnes, G., & Shann, F. (1989). Clinical signs of dehydration in children. **Lancet, 2,** 1529-1530.

Mahalanabis, D., & Snyder, J.D. (1996). Fluid and dietary therapy of diarrhoea. In W.A. Walker, P.R. Durie, J.R. Hamilton, J.A. Walker-Smith, & J.B. Watkins (Eds.), **Pediatric gastrointestinal disease; pathophysiology, diagnosis, management** (pp. 1843-1850). Philadelphia: Decker BC.

Meyer, A. (1994). Fluid and electrolyte therapy for children. **Current Opinion in Pediatrics, 6**, 303-309.

Moineau, G., & Newman, J. (1990). Rapid intravenous rehydration in the pediatric emergency department. **Ped Emerg Care, 6,** 186-188.

Murphy, M.S. (1998). Guidelines for managing acute gastroenteritis based on a systematic review of published research. **Arch Dis Child, 79,** 279-284.

Nijssen-Jordan, C. (1997). Can oral rehydration solution be safely flavored at home? **Pediatric Emergency Care, 13**(6), 374-375.

Nijssen-Jordan, C., Shavit, T., Miller, M., Ovendon, M., Wilson, S., Vollmerhaus, L., Leckie, L., & Milligan, I. (2002). **Comprehensive care plan vomiting & diarrhea in children: Guidelines for emergency department approach and management.**

Portnoy, B.L., DuPont, H.L., Pruitt, D., Abdo, J.A., & Rodriguez, J.T. (1976). Antidiarrhoeal agents in the treatment of acute diarrhoea in children. **JAMA, 236,** 844-846.

Rahman, O., Bennish, M.L., Alam, A.N., et al. (1988). Rapid intravenous rehydration by a means of a single polyelectrolyte solution with or without dextrose. **J Pediatr, 113,** 654-660.

Reid, S.R., & Bonado, W.A. (1996). Outpatient rapid intravenous rehydration to correct dehydration and resolve vomiting in children with acute gastroenteritis. **Ann Emerg Med, 28,** 318-323.

Scott, D.A., & Edelman, R. (1993). Treatment of gastrointestinal infections. **Ballieres Clinical Gastroenterology, 7**, 477-499.

Show, K.N. (2000). Dehydration. In G.R. Fleisher, & L.S. Ludwig (Eds.), **Textbook of Pediatric emergency Medicine** (4th ed., pp. 197-201). Philadelphia, PA: Lippincott Williams & Wilkins, A Walter Kluer Co.

Teach, S.J., Yates, E.W., & Feld, L.G. (1997). Laboratory predictors of fluid deficit in acutely dehydrated children. **Clin Pediatr, 36,** 395-400.

World Health Organization. (1995). **The Treatment of Diarrhea: A Manual for Physicians and Other Senior Health Workers,** WHO/CDD/SER/80.2 Rev. 3. Geneva, Switzerland: Author.

Outlook

Trauma corner

Head injury: The importance of trending and reporting assessments

By Carole Rush, RN, MEd, CEN, Calgary, Alberta

An all-too-familiar scenario presents to the emergency department (ED) at 0200 involving alcohol and trauma. This time, it is a 48-year-old male who sustained an unwitnessed fall down eight stairs. He was found by family members who promptly called EMS. At the scene, EMS found the patient lying with a pool of blood around his head. Their initial neurological assessment revealed a Glasgow Coma Score (GCS) of three with unequal and sluggish pupils (Rt pupil = 2, Lt pupil = 6). EMS performed a Rapid Sequence Intubation using Rocuronium and Fetanyl. Due to the patient's focal neurological findings, a 20-gram dose of Mannitol 20% solution was administered.

Emergency department care

On arrival to the ED, this patient's GCS remained at three. Initial physical assessment findings included bilateral hemotympanium. He was promptly taken for a CT of the head which showed a right subdural hematoma, a right basal skull fracture and a left depressed skull fracture. On return to the ED, sedation was wearing off and the patient was found to be spontaneously moving all extremities. Basic trauma care of an orogastric tube, urinary catheter and chest x-ray were completed. Plain extremity films revealed a fractured left radius. The plan of care included a return to the radiology department for CT scans of the neck, chest, abdomen and pelvis.

Assessment findings while awaiting a return to CT scan showed a trend of hypertension and bradycardia, which are classic findings in Cushing's response.

The patient's blood pressure increased from 122/76 to 146/86 and on to 154/90 over an hour. His corresponding low heart rate of 46/minute was cause for concern.

The patient was rushed back to radiology for a repeat CT of the head, which revealed a left epidural hematoma. Initial lab results included a hemoglobin of only 115 g/L (normal range

for adult males is 137 to 180 g/L). He was assessed by neurosurgery urgently and underwent a left craniotomy and removal of the epidural hematoma.

Post-operative course

A total of two weeks of intensive care was required for this patient as he developed a number of complications. The immediate post-operative period involved episodes of bradycardia that were treated with a pacemaker and spontaneously resolved. The patient returned to the OR for a tracheostomy 10 days post-injury due to his slow progression as well as a ventilator-acquired pneumonia. He began to improve neurologically as evidenced by spontaneous eye opening, localizing stimuli to three limbs, but was still quite confused. Other complications included hypertension and thrombocytosis. His stable fractured radius was casted and showed signs of healing well.

Rehabilitation

This patient was transferred to a neurosurgical ward with a tracheostomy, PICC line and gastric tube. Inpatient rehabilitation services were started one month post-injury and included intensive physiotherapy and occupational therapy. He required Posey restraints for continued agitation and confusion. Despite attempts by rehab staff to encourage the patient to progress, his motivation for learning remained low.

The family requested to take the patient home two months post-injury and Home Care services were arranged for three hours per day. This patient still required 24-hour supervision on discharge.

Table One:

Major predictors of poor outcome after closed head injury

(Bergsneier & Kelly, 2003)

Clinical Findings	CT Findings
Older Age	Mass lesions (subdural, intracerebral hematoma, multiple contusions)
Lower GCS	Compressed or absent mesencephalic cisterns
Abnormal motor response	Midline shift greater than 3 mm
Abnormal papillary response	Subarachnoid hemorrhage
Sustained ICP greater than 20 mm Hg	
Hypotension SBP less than 90 mm Hg	
Hypoxia Pa02 less than 60 mm Hg	
Systemic complications	

Section editor's teaching points

The emergency department assessment trending that contributed to the subsequent finding of an epidural hematoma is an important contribution to the outcome of this case. Since there are no characteristic neurologic findings that reliably distinguish epidural, subdural or intracerebral hematomas from one another, clinicians rely on the CT scan to define intracranial lesions and determine whether urgent neurosurgical intervention is required (Bergsneier & Kelly, 2003). The initial CT results did not mandate emergent interventions; the initial plan was supportive care and monitoring in the ICU. It was the nurses' reporting the trend of hypertension and bradycardia that prompted a second lifesaving CT scan and subsequent surgical intervention. We learn in the Trauma Nursing Core Course (TNCC) that Cushings response (increased systolic blood pressure, widening pulse pressure and decreased pulse rate) is a late sign of increased intracranial pressure (Pons, 1998), and to watch for these signs. The need for accurate documentation and prompt reporting of our findings is reinforced with this case.

A dilated pupil can also be an indication of an expanding intracranial hematoma, brain stem compression and elevated intracranial pressure (Bergsneier & Kelly, 2003). In most cases, the hematoma is on the same side as the dilated pupil. This patient had an enlarged (6 mm) and sluggish left pupil on initial assessment.

A second observation or teaching point with this case is the long recovery and rehabilitation that is often experienced with traumatic brain injury. Emergency nurses do not often have the opportunity to follow patients through this process or learn of the patient's outcome. We have the impression that if an epidural hematoma is promptly evacuated, the patient's neurological recovery will be good. In fact, there are a number of predictors of poor outcome after closed head injury. Refer to Table One for a summary of these factors. This patient's age, lower GCS, abnormal papillary response and systemic complications contributed to his less-than-optimum recovery two months post-injury. The brain does not heal the same way as other body tissues and it takes time to develop compensatory mechanisms for the injured brain areas. Brain injury survivors will make the greatest progress towards return of functioning in the first two years post-injury. It is also important to remember that, despite intensive intervention, long-term disability occurs in a large portion of survivors of severe head injury (Pons, 1998).

References

Bergsneier, M., & Kelly, D.F. (2003). Brain injury. In G.P. Naude, F.S. Bongard, & D. Demetriades (Eds.), **Trauma secrets** (2nd ed., pp. 51-59). Philadelphia: Hanley & Belfus, Inc.

Pons, P. (1998). Head trauma. In P. Rosen, R.M. Barkin, F.J. Baker, G.R. Braen, R.H. Dailey, & R.C. Levy (Eds.), **Emergency medicine: Concepts and clinical practice** (4th ed., pp. 338-354). St. Louis, MO: Mosby-Year Book.

Outlook

Research

Promoting evidence–based practice in emergency

By Joanne Collins, Provincial Director, NFLD

The term "evidence-based practice" has evolved over the past several years in scope and definition. In the early 1990s, when this term seems to have first appeared, it focused on the promotion of best evidence in medicine (termed evidence-based medicine). Since then, it has evolved from "expert opinion" for establishing guidelines to a more formal, quantitative and sophisticated research approach. Today, the term evidence-based practice is more widely used to incorporate a multidisciplinary approach in the provision of quality patient care.

Claiming to be "evidence-based" in today's world conveys a measure of credibility that is invaluable. Thus, it is important to be clear on what evidence-based practice really means. Fundamentally, it is important to realize that evidence-based practice begins and ends with the patient. It requires that decisions about health care are based on the best available current, valid and relevant evidence, and that these decisions are made by the patient, informed by those providing the care, within the context of available resources (Dawes et al., 2005). Ignoring research evidence risks benefit to the patient and may implicate potential harm.

"Evidence-based practice is a process of lifelong, problem-based learning which involves:

1. Converting information needs into a focused question.
2. Efficiently tracking down the best evidence with which to answer the question.
3. Critically appraising the evidence for validity and clinical usefulness.
4. Applying the results in clinical practice.
5. Evaluating performance of the evidence in clinical application". (Evidence Based Medicine Working Group: www.uic.edu)

With advancing information and technology, one would expect that through greater knowledge comes more effective patient care. This may not always be the case and, consequently, there may appear to be a gap between best evidence and practice. Providing care according to the principles of evidence-based practice is recognized as a vital skill for all health care professionals. In our current environment, we need to understand these principles and be able to recognize evidence-based practice in our clinical areas. Additionally, we must develop critical assessment and analysis of our own practice in relation to the evidence available to us. Without these skills, it will be extremely difficult for individuals and organizations to provide "best practice" (Dawes et al., 2005). Delivering evidence-based practice promotes individualization of patient care and assures quality health care now and in the future.

References available upon request.

Outlook

4N6RN

The application of the Standardized Field Sobriety Test in the emergency department

By Zoe Schuler, RN, Burnaby, BC

Forensic sciences has become one of the hotter topics lately, thanks, in part, to television shows like **CSI** or **Law & Order**, but also due to more high-profile court cases. The O.J. Simpson case is a good example. And while the scientific aspect of forensic health care has received a lot of attention lately, I learned this past week that there are many aspects of health care and law enforcement that use forensic principles routinely and have been using these principles for many years. Sadly, these do not receive the same amount of attention, but are just as valuable, nonetheless.

One such area in law enforcement that was of particular interest to me was the police use of the Standardized Field Sobriety Test (SPST) to assist in the detection of drug- or alcohol-impaired drivers. Having had no personal experience with the SFST, my only knowledge of it was for comic fodder in television shows, or hearing someone else recount various urban legends or myths on how to beat the SFST. My perspective on the SFST was drastically changed following a presentation by Wayne Jeffrey, and I began to believe that this aspect of law enforcement could have many implications for nursing. In particular, I believe the emergency department, especially emergency-trained doctors and nurses who are on the front line of patient care, could benefit greatly from this knowledge. It is our duty to identify symptoms and chief complaints from our patients, and quickly determine whether these symptoms are medical, psychiatric, or possibly drug-induced in nature. The ability to more accurately and quickly identify which symptoms are related to illicit drug use has many possible benefits, which will be discussed later.

A standardized program to train Drug Recognition Experts (DRE) and a standardized test was developed in Los Angeles by the Los Angeles Police Department in the early 1980s, and came to Canada in 1995 (Department of Justice [DOJ], Canada, 2004). A DRE is typically a police officer with additional specialized training as well as supervised practical experience geared towards identifying seven different classes of illicit

drugs: depressants (including alcohol), inhalants, PCP, cannabis, stimulants, hallucinogens, and narcotics (DOJ, Canada, 2004). DRE testing consists of 12 steps:

1. A breath test to rule out alcohol.
2. An interview of the arresting officer to determine what symptoms were identified at the roadside.
3. A preliminary exam of the subject.
4. An eye examination to look for horizontal or vertical gaze nystagmus, as well as convergence testing and hippos.
5. A series of divided attention tasks, such as listening to instructions while maintaining a stance; maintain a stance with eyes closed; walk a straight line, turn in a prescribed way, and walk back; stand on one foot; touch the tip of the nose with one finger as instructed.
6. Vital signs are taken.
7. Pupillary exam in a dark room
8. A check of the muscle tone.
9. An exam for injection sites (track marks) on the person's body.
10. The rendering of the opinion of the DRE.
11. An interview with the subject
12. The provision of bodily fluid samples.

The above list was taken from the Canadian Department of Justice website (2004). It is a standardized test and is cited in many resources, too numerous to list here.

A quick review of the literature on the accuracy of the SFST turned up numbers ranging from 80% effective (DOJ, 2004) to 91% effective (Stuster & Burns, 1998). The SFST has been in use since the early 1980s in the United States and since 1995 in Canada, resulting in about 20 years of practical use. In my opinion, if the accuracy of this test has not been disproved in that amount of time, then it has proven itself a worthy tool for law enforcement officials. This leads me to discuss why the SFST would be a valuable tool for nurses and health care workers.

Two of the primary focuses of nursing care involve the general concepts of health promotion and illness prevention. Health promotion activities help clients maintain their present level of health or enhance it in the future. Illness prevention activities protect a client from actual or potential threats to health (Potter & Perry, 1989, p. 43). These two overlapping ideas represent the fundamental core of nursing care, particularly community health nursing. Since 47% of all traffic incidents in 2002 involved impaired driving (Statistics Canada, 2003), then anything that would strive to reduce that number would fall under the health promotion/illness prevention umbrella. Much is written about the morbidity and mortality rates of impaired driving. Unfortunately, that is beyond the scope of this paper.

Nevertheless, I think the use of the SFST could have greater implications outside of law enforcement or community health nursing. Specifically, I think that it would have much greater use in the emergency department, as it is well documented that there is a correlation between illicit drug use and emergency department use as the primary source of health care (McGeary, 2000). I would like to clarify that a registered nurse using principles of the SFST in her practice would have a much different focus than a police officer using the SFST in the field. For police officers, the primary goal when using the SFST is to determine which drivers are too impaired to continue driving and are therefore a threat to public safety. The officer, after conducting the SFST and concluding the driver shows signs of impairment, can then pursue various legal options. On the other hand, the focus of a nurse conducting a similar exam would be more health-oriented, and not specifically about law-related issues.

In reading the 12-step process done by the DRE to assess a client, I found it interesting that much of it overlapped with an assessment done by most nurses. However, I don't think that most nurses do this assessment with a forensic eye, so to speak. Vital signs are done routinely, usually several times per day, or several times per visit to the emergency room. Pupils are often checked, particularly with a patient who has an altered level of consciousness. Balance, muscle tone, or gait is often subconsciously checked but, generally, no mention is made of these unless there is an observed problem or abnormality.

Given that so many of the patients who come to the emergency may be legally impaired by a substance, whether it is alcohol or illicit drugs, it would stand to reason that learning how to identify drug use would be a valuable tool for emergency nurses. I believe that some of the SFST used by DREs could be used to assist nurses to narrow a patient's drug use down to a specific category, thereby ensuring a more thorough assessment. For example, vital signs are always taken on every patient in emergency and, while applying a blood pressure cuff, the nurse could check for track marks. A pupillary exam that ordinarily includes the pupil size, shape and reactivity to light could easily be extended to include an assessment of horizontal or vertical gaze nystagmus, convergence, hippus or rebound dilatation. Assessment of grip strengths, a normal part of a neuro vital sign exam, could be extended to include appraisal of muscle tone. A general assessment of the patient's gait could be easily performed, and include mention of balance (i.e., staggering) or unusual gait pattern (i.e., moon walking in ecstasy use). Divided attention tasks could be easily accomplished in an ER setting. In my experience, patients who admit to being mildly intoxicated will need frequent redirection to perform simple tasks. For example, "Take this cup, follow the blue line to the bathroom, pee in it, bring the sample back to your bedside, and change into the gown" has required more that one reminder to accomplish both goals. This would be a beneficial observation to document in the nurse's notes. Finally, in my experience, asking a patient a specific question like, "How much alcohol/marijuana have you used today?" will elicit a much more truthful answer than a more open question like, "Have you ingested any illicit substances today?" Using the DRE tool will help the nurse to narrow a patient's drug use down to a certain class of drugs, thereby allowing for a more specific line of questioning and, hopefully, more truthful answers.

Being able to more quickly and accurately determine drug use has far-reaching implications for health care workers. By using a newly acquired set of skills such as the SFST, health care

personnel will be able to either confirm or rule out drug use more efficiently. In effect, the diagnostic process in its entirety can be sped up, and the patient will be able to obtain more appropriate treatment. An example that comes to mind is with psychiatric cases; it is frequently difficult to determine whether psychotic-like symptoms are a result of the disease, or of illicit drug ingestion. A proper physical exam with special attention to drug-related symptomology could be of great use, particularly if the patient is not forthcoming with information. Another example involves a young adolescent who demonstrates an altered level of consciousness. If witnesses are able to give a good history about the patient's behaviour prior to presenting to the hospital, emergency staff may be able to pinpoint illicit drug use.

If the patient has ingested a drug with known side effects, such as ecstasy, ER staff who note that the patient feels thirsty, has excessive water consumption and subsequent water intoxication, could narrow down possible drugs to ecstasy as the possible reason for the altered behaviour. Further procedures may be undertaken to confirm this supposition. In this way, the patient has received timely, appropriate medical treatment.

Lastly, I would like to briefly discuss the issue of medical documentation and illicit drug detection. In my personal experience, I have found that I lacked the proper terminology that would describe an impaired patient's behaviour in an objective fashion while under my care. These symptoms can be fleeting, meaning once the drug has worn off, the specific symptoms disappear. Standardized terminology that is used for specific behaviour, often directly related to certain types of drug use, is necessary for providing accurate and objective observation and charting. Many times, patients are brought into the ER by law enforcement officers. Terminology that is used by both ER staff and officers would reduce the incident of miscommunication and increase the speed of accurate assessment. In regard to my own charting of patients in the ED, I feel much more confident in my documentation skills after learning the SFST systematic way of assessing patients for illicit drug use and the standardized, descriptive terms used to document the associated symptoms. Should I be called upon to testify in court, I feel secure that my documentation is thorough and descriptive enough to rule out any ambiguity.

A systematic assessment model with standardized, objective descriptive terminology is an invaluable resource tool for health care professionals to assist in the care of illicit drug-using individuals. I find it interesting that such a tool has been used in law enforcement for many years, but has not yet made the leap for use in health care given how closely law enforcement officers and ER staff work together. Nurses can have a strong role in advocating the use of a modified SFST as we are often the first person to assess patients upon their arrival in the emergency department. We could greatly influence the timeliness and appropriateness of the care our patients receive, and advocate for a better outcome for all involved. I believe that the burgeoning field of forensic nursing will play a larger role in this issue as the specialty continues to evolve and grow in Canada.

References

Department of Justice, Canada. (2004). **Drug recognition expert testing.** Retrieved July 10, 2004, from http://canada.justice.gc.ca/en/news/fs/2004/doc_31166.html

McGeary, K.A. (2000). **Illicit Drug use and emergency room utilization.** Health Services Research. Retrieved July 10, 2004, http://findarticles.com/p/articles/mi_1_35/ai_62162631/print

Potter, P.A., & Perry, A.G. (1989). **Fundamentals of nursing: Concepts, process, and practice** (2nd ed.). The C.V. Mosby Company.

Royal Canadian Police. (2003, November 26). **Drug recognition expert course crucial to safer roads.** Retrieved July 10, 2004, from http://www.rcmp-grc.ca/news/2003/n_0349_e.htm

Statistics Canada. (2003, November 7). The Daily: **Impaired driving and other traffic offences.** Retrieved July 11, 2004, from http://statcan.ca/Daily/English/031107/d031107B.htm

Stuster, J., & Burns, M. (1998, August). **Validation of the Standardized Field Sobriety Test Battery at BACs below 0.10 percent.** Final report submitted to the U.S. Department of Transportation, National Highway Traffic Safety Administration. Retrieved July 10, 2004, from http://www.ndaa-apri.org/pdf/val_bac_new.pdf

When health care and law meet (It will probably first happen in the emergency department)

By Stephanie Carlson, RN, Regina, SK

When health care and law meet, it will probably first happen in the emergency department. The typical emergency department, in addition to being the site of care for the sick and injured, is frequently a place where medical and law enforcement interests intersect. Although physicians are present to give care and to manage patients, initial assessment and the hand- and foot-work of patient care usually falls to the nurses. Most doctors think in terms of medical practice, not in terms of nursing process or forensic science. It may be the astute observation by the nurse that first identifies a patient as one whose injuries predict that legal action will follow.

The Emergency Nurses Association (2003) reminds us that the "performance of forensic procedures is a component of emergency nursing practice". Hancock (n.d.) states that every emergency nurse "should possess some forensic training. The emergency department is one area that sees the results of interpersonal violence on a daily basis," and adds that emergency staff "need to think and act 'forensically' while providing the patient, whether perpetrator or victim, with medical care".

Are these statements a call for nurses to abdicate their traditional nursing role in favour of *playing detective*? No, they only remind us that emergency nurses are in a unique position to serve their patients by thoroughly assessing patients, by sensitively documenting histories and injuries, by carefully saving evidence, and by being prepared to competently testify in court. Assuming these duties do not negate the nurse's obligation to make care of the physical needs of the patient the highest priority, it is reasonable for nursing staff to assist "in the investigation of crime while providing health care to the victim" (Brown, 2004).

Statements by the patient or by observers, stains and scents, suspicious injuries, questionable circumstances, or the sense that a particular patient may have injuries related to criminal activity should prompt the nurse to perform his or her duties in an evidence-sparing manner. Nurses should be aware of this potential when patients arrive for emergency care of injuries due to, or coexistent with, "medicolegal issues; suspicious deaths; crime-related injuries; and accidents" (Lynch, n.d.). Specific circumstances which should prompt nurses to be particularly alert include injuries related to: "motor vehicle accidents; homicides or suicides; an infant or child; involvement of firearms or other mortal weapons; work-related accidents; all accidents (fire, falls, electrocution, etc.); involvement of damaged or improperly used equipment; an unidentified person; a prominent person; involvement of poisoning; illegal drugs or overdose; involvement of public health hazard; anyone in police custody regardless of circumstances; and death that is sudden or unexpected" (Carrigan, Collington, & Tyndall, 2000).

Curiosity and an instinct for things which seem *not-quite-right* are components of all forms of nursing. Nurses should attempt to develop the "suspiciousness factor" (Winfrey & Smith, 1999) – an intuition for possible legal overtones, in emergency patients. Overt and trace evidence may be lost when nurses are not alert to clues and fail to collect and protect materials properly.

Until recently, nursing education offered little specific training in what is now called *forensic nursing*, a subspecialty of nursing that applies the nursing process to legal concerns in health care or "the application of the forensic aspect of health care to the scientific investigation of trauma" (Lynch, 1995).

Many of us relate forensic nursing to nurses who work in correctional institutions. More recently, we have associated forensic nursing with sexual assault nurse examiners. In fact, the earliest SANE programs in the late 1970s were the first instances of formal recognition of registered nurses in the role of forensic examiners. The American Nurses Association recognized forensic nursing as a nursing speciality in 1995.

Emergency nurses know that sexual assault victims represent only a very small percentage of the number of patients we encounter whose care has medicolegal overtones. The science of forensic nursing is expanding to promote inclusion of nurses as forensic examiners who routinely perform examinations in all areas of interpersonal violence, domestic violence, child abuse, elder abuse, nurse coroner/death investigation, legal nurse consultation, and emergency trauma care.

There are several certificate and master's degree programs in forensic nursing in North America. However, it is unreasonable for all emergency nurses to receive formal forensic training. Resources, both personal and corporate, could not support advanced education for every emergency nurse. Nevertheless, hospitals may easily include some forensic training for their nurses, particularly those of us who work in emergency departments.

A few general guidelines could equip emergency nurses to competently and confidently identify, collect, and protect materials which might become useful evidence in court, and which could otherwise be damaged or mislaid and rendered useless to any pursuant legal investigation. Agencies can easily write policies that expand routine care to address the needs of their forensic emergency patients. Dan Sheridan, RN, a forensic clinical nurse specialist at Johns Hopkins Hospital and president of the International Association of Forensic Nurses, states, "It's easier to train a nurse in the principles of evidence collection and preservation and crime scene analysis than it is to train cops in health care principles" (Labrecque, 2004).

Emergency nurses should be comparing experiences with each other, requesting in-service training, talking to law enforcement personnel, and pursuing additional training in the collection and preservation of forensic evidence.

The emergency department is the inlet for most trauma patients into the health care system. Many of the injuries that appear at the emergency department have an obvious criminal or civil law potential. Care of emergency department patients must include consideration for both health and legal concerns because they often present themselves concurrently in a single patient. The possibility for an unlimited variety of patients with injuries requiring collection of material evidence may seem daunting to emergency nurses. Nonetheless, the principles of care are the same for all forensic patients: collect properly, preserve carefully, and document thoroughly. Persons with suspicious injuries, whether victims or perpetrators, are patients first and foremost; they deserve the best of nursing care. However, giving comprehensive care to patients requires that nurses be alert to signals that there may be a need to think and to act forensically, and are skilled to do whatever is required for each patient.

References

Brown, K. (2004). **Evidence collection and preservation in a healthcare setting.** Retrieved July 26, 2004, from http://nsweb.nursingspectrum.com/ce/ce296.htm

Carrigan, M., Collington, P., & Tyndall, J. (2000). **Forensic perioperative nursing: Advocates for justice.** Retrieved September 13, 2004, from http://www.ornac.ca/arcticles/dec00-3.htm

Emergency Nurses Association. (2003). **Position Statement: Forensic evidence collection.** Retrieved April 29, 2004, from http://www.ena.org/about/position/forensicevidence.asp.

Hancock, P. (n.d.). **Forensic nursing.** Retrieved May 28, 2004, from http://www.ufcw141nurses.org/forensic%20ns.htm

Labrecque, J. (2004). When injuries speak, who will listen? **Johns Hopkins Nursing, 1**(1). Retrieved May 14, 2004, from http://www.son.jhmi.edu/JHNmagazine/archive/spring2003/pages/fea_forensics.htm.

Lynch, V. (1995, September). Clinical forensic nursing: A new perspective in the management of crime victims from trauma to trial. **In Critical Care Nursing Clinics of North America, 7**(3), 489-507. Retrieved April 29, 2004 from http://members.aol.com/COCFCI/Vart.html.

Winfrey, M.E., & Smith, A.R. (1999). The suspiciousness factor: Critical care nursing and forensics. **Critical Care Nursing Quarterly, 22**(1), 1-7.

Awards of Excellence

Do you have an idol? Someone who helped you through that long day, evening, or night shift in ER? Well, NENA wants to hear about them! NENA is looking for nominations for Awards of Excellence in emergency nursing. There is no limit to the number of awards that are awarded in four categories: Emergency Nursing Practice, Emergency Nursing Research, Emergency Nursing Administration, and Emergency Nursing Education.

The NENA Research Committee -

Database of Nursing Research

The NENA research committee is in the process of starting a database of emergency nursing research across the country. It is our hope that such a tool will serve as a resource for nurses across the country, helping us to share information and learn from each other.

- If you know of some important research that has been done or is going on, drop us a line and let us know!
- If you have read any studies which apply to emergency nursing practice, let us know or write us a summary of the work that we can put in **Outlook** or on the website.
- If you or someone you know is currently engaged in a project, we would love to hear about the work, and would be happy to post an abstract!

Please send information to: Clay Gillrie – Chair, NENA research committee, **cgillrie@telus.net** or **clay_gillrie@bcit.ca**, 160 52A St., Tsawwassen, BC V4M-3P6, (604) 948-2981

Emergency nurses' research questionnaire

NENA Board of Directors is seeking your input regarding emergency nursing research and evidence–based practice in order to:

- gather information nationally to identify current emergency nursing research and commonalities in research and practice
- support the development of research/research strategies around those commonalities
- develop evidence-based recommendations, position statements and policies applicable to emergency nurses across the country.

Please take a few moments to answer the following questions and forward your response by May 31, 2005, to:

Clay Gillrie
160 52A Street
Tsawwassen, BC V4M 3P6

Province: _____

Number of years in emergency: ____

Type of ER nursing work:

Clinical _____

Research _____

Education _____

Management _____

Other _____

1. What do feel are the top five issues facing emergency nurses today?

_____

_____

_____

_____

_____

Comments: _____

_____

_____

2. Does your emergency department currently support and/or participate in any research projects?

Yes _____ No _____

If yes, briefly describe _____

_____

_____

_____

Thank you for your support.