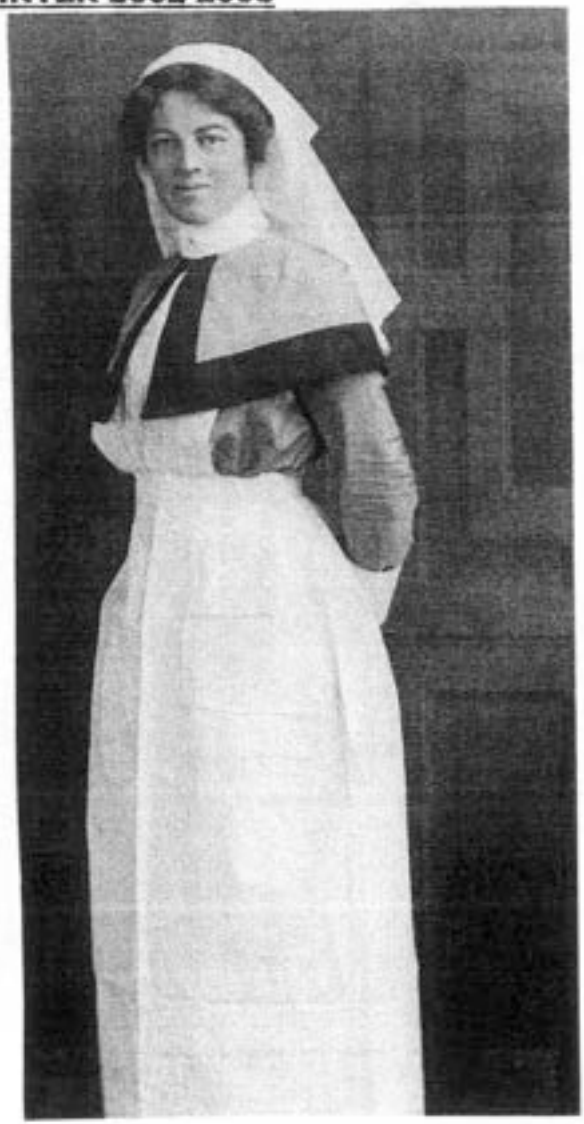
HISTORY OF NURSING NEWS

VOLUME 13 ISSUE 3 WINTER 2002-2003



Contents

This picture of Mrs. Murray was taken shortly after she joined the Royal Navy Nursing Service in 1914.

Submissions for the Spring Issue should be sent to Naomi Miller no later than February 15,2003

NAVY AND COMMUNITY NURSE
Carrie Murray 1881-1963

As told to Naomi Miller by Dave MacDonald and John Godfrey Murray

Carolyn ("Carrie") Mary Matilda Yeatmen was born in Holwell Manor, Dorset, England on February 8,1881. She graduated from the London School of Nursing in 1910. In 1912 she came to Canada to visit her brother J.D. Yeatman at South Slocan in the West Kootenay. She fell in love with the district - -and a young neighbour, John Murray. John and Carrie married in 1913 and sailed to England on a belated honeymoon in the summer of 1914. The moment war was declared they both joined up. Carrie enlisted in the Nursing Corps and was assigned to the ***S.S.Aquitania***, the luxury Cunard liner which became a hospital ship. This floating hospital was designated to take on wounded men after some of the major battles in WW I such as Gallipoli in Turkey and later in Mesopotamia .

Her hubby joined up as a private but was soon commissioned. No record exists to say whether they had any leave together during those four years. The Murrays were repatriated home to South Slocan after the war. The young couple settled back into civilian life with Mr. Murray managing their ranch and timberlots. There Mrs. Murray again put her nursing skills to use caring for those neighbours smitten by the flu which swept the world in 1918-19.

Their first child, Mollie was born in 1920 and John Godfrey in 1924. John G. remembers his energetic mother who loved hiking, hunting and fishing. She would take groups of youngsters on outings. David MacDonald says she would supervise 5 or 6 boys on a camping trip up one of the many nearby creeks, or lead Girl Guides up behind South

Slocan, along a ridge, then down to the road home at Slocan Park. She was a member of the Rod and Gun Club and frequently took her boat out on beautiful Slocan Pool. When fish was not proposed for a meal that day, Mrs. Murray practised Catch-and-Release fishing prior to any conservation or environmental rulings.

In the horse and buggy days a trip to Nelson took all day. A solitary phone served South Slocan for many years. That phone was in the store/post office/ home owned by her brother, J.D. Yeatman. Requests for first aid or nursing care were, therefore, delivered in person to the Murray home. If a person had been to town (Nelson) to see Dr. Auld they usually came back to South Slocan with instructions for Mrs. Murray. She would then change dressings, take out sutures, cut off a cast, or deliver a baby. This nurse's spartan regime included sleeping outdoors on a porch 365 days a year. Their home had two porches. John G. slept on one, his mother on the other, while Dad and Mollie stayed inside. John recalls rousing when someone would toss pebbles onto the porch to call his mother to some nighttime emergency. Usually the voice of the pebble thrower would declare,"The baby is coming!" so Mrs. Murray would dress, grab her case of nursing supplies and go off on foot or horseback with the caller.

Mrs. Murray was called upon to be innovative. Some neighbours prevailed on her to treat injured pets. She was known to have carefully splinted a broken leg on more than one dog - with successful outcome. A local lad developed a severe weeping rash on his arms and legs. Mrs.Murray put on her thinking cap then asked young David MacDonald for some gun powder (as she knew he participated in black powder shooting). This she carefully mixed with rendered grease (probably bear or goose grease). The sulphur in the mix has antibacterial and antifungal properties and the charcoal absorbs weeping from lesions of this sort. The lad's rash was soon healed.

The above picture shows the South Slocan and District Women's Institute at a gathering c. 1926. Names were provided by Dave MacDonald. Back Row: Mrs. Gray, Violet Greyson, G.N.Brown, Mrs. Boyer, ? , Mrs Yeatman, Mrs. Thelma McKim, Mrs. Passmore, Mrs. Harris, Mrs. Horner (Mrs. Motley's mother), Mrs Bob Bell, Mrs Rod MacDonald, Mrs. R.P Brown, Mrs G.N.Brown, Mrs. Russel MacDonald, Mrs. Creed Johnson, Mrs. Long.Front Row: Mrs. Long, Mrs. Motley, Mrs Wheildon, Mrs Kennedy, Mrs. Humphrey,. Mrs. Hardin, Mrs P.Bird and Barb,Mrs. Main, Hilda Lees, Mrs. Doug Davis & Doug, Mrs. Robinson,Mrs. Ivor JOnes, Mrs. Carrie Murray, Mrs Catchpole, June Baddley, Phyllis Brown and Daisy Harrison

Mrs. Murray was an all round good citizen. She worked for and in the Community Hall, school, and the Anglican Church. When the Anglican Sunday School van made its summer circuit, the ladies in the van used the Murray home as their headquarters. Another emergency faced by this lady was a forest fire. She joined a crew fighting fire downriver near Glade. She was delivered home in a fancy McLaughlin-Buick touring car, apologizing for her blackened face and sooty clothing. Mrs. Murray was one of the pioneer Girl Guide leaders and in the early part of WW II she became Area Commissioner for West Kootenay.

Col. Murray, her husband, reenlisted in the second World War. He served at the basic training camp in Vernon, B.C.. Murray's son, John G., joined the army as soon as he turned eighteen. . Her future daughter-in-law, Florence, was transported to England for WAAF duty in WW II on the same ***S.S. Aquitania.*** John G. was demobilized at age twenty and attended UBC where he graduated in Forestry in 1952.

Following WW II the road to Nelson was upgraded. Cars enabled residents of South Slocan to get into Nelson in less than an hour (thus having time for doctor's appointments, shopping and other errands and still return by daylight.) Col. Murray died in 1945. Mrs. Murray continued her good deeds in South Slocan until early 1963. Carrie spent her declining months in Shaughnessy Military Hosptal in Vancouver. Her body was returned to Nelson in June for services in the Church of the Redeemer under long time friend, Canon W.J. Silverwood. Carrie is buried Legion Cemetery where her husband had been interred earlier. The Last Post was sounded for a very much loved friend and nurse of a tiny community.

Helen (VanBraam) Faulkner - St Eugenes' s 1937

As told to Naomi Miller

This young lady grew up in Cranbrook and dreamed of a future as a university History instructor but, the year she finished high scool was the blackest year in the Great Depression. Her parents could not possibly fund the cost of university with transportation plus room and board as well as tuition fees. So Helen accepted the least expensive post secondary available... namely enrolling in nurses training in the old St. Eugene Hospital in Cranbrook.

She did very well academically and realized that her work with sick, infirm, obstetrical or indigent cases was appreciated. The probationers began by making beds in the "Ram Pasture". That thirty bed ward was full of unemployed loggers or miners, usually admitted at their own request to "dry out"(plus have a warm place to sleep during the winter). Most of these fellows were grateful for any little favour from the busy students or Sisters in charge.

Helen's first year sped by but her frequent sore throats worried staff physicians. Helen had her tonsils out and spent the rest of her time off recouping her ability to swallow. What a waste of vacation time !

During her training the Nurses Residence was being repainted. Many students were given holiday but Cranbrook residents were expected to continue their shifts while sleeping at their parent's home. Helen's Mother promptly declared that, "All hospital rules will be followed while you are here!" So, while there was comfort in sleeping in her own bed, the day was extended for she had to walk a mile to work and a mile home again at the end of her shift.

Her first employment as an RN was in the hospital in New Denver. There she worked with one or two other new graduates from various training schools. Her primary recollection is that the sole doctor in the community enjoyed fishing. Dr. Francis would go out in his little boat onto Slocan Lake and check periodically for a white signal flag on the hospital lawn. The nurse on duty might wave a towel, or perhaps drape a sheet over an ornamental bush. The physician generally made it back in time to deliver a baby.From New Denver to Creston where she did four months of night shift and struggled to sleep during hot summer days. She returned to St.Eugene and her parent's home. Family and staff continued to treat her as a junior student so she decided to move again

The next stop was Golden. There she and the Matron Betsy Shields were responsible for serving 24 hours seven days a week. If things became too busy one local RN came in for a few hours to spell off the resident nurses. Quite early on an emergency took Matron away at the same time as the relief nurse. Helen was responsible for eight days and nights without an extra penny for overtime (Her pay was $60 per month.) A very fat gentleman was admitted with a stroke during that week. When it came time to roll him over Helen quietly sought the Chinese cook for assistance. The Chinese fellow always said, "Glad to help Missy!" The old hospital was inhabited by a family of bats. Once the patients were settled for the night and lights dimmed bats fluttered rather menacingly at young Helen. She decided to chase the critters with a broom. one swing over her shoulder clunked a new doctor on the head. Dr had tiptoed in to check on a very ill patient. She thought she would be dismissed, but instead the gentleman apologized for not announcing his entry.

Life in Golden had its happy moments as well as challenges. A young man from Creston came to work on the Canadian Pacific Railway. George Faulkner courted Helen for three years. They were married in Golden in September 1940. Helen continued to work, learning among other things how to administer ether rather than chloroform. World War II changed the social and economic face of the country. George joined up in 1942 and was promptly sent to the east coast. It was decided that Helen should move to Cranbrook to share the home of George's parents, as Dad Faulkner was away much of the time. When George returned after the war he went to work for Cominco in Kimberley and they were able to buy the house.Helen still resides in that special house in Cranbrook.

Helen returned to work in St. Eugene's Hospital where she became Head Nurse on 3rd Floor caring for maternity and women needing medical or surgical care. The old hospital was near the railway tracks and when a physician was called he frequently was held up by a train across King Street. Faulkner remembers one day when she delivered three babies and Dr. F.W. Green managed to get there to cut the umbilical cord of two of them. Maternity was her favorite assignment during her long years of service.

Helen and George adopted sons in 1948 and1951. Helen stayed home for awhile with each baby then got back into harness. In 1958 she was in the case room when a distraught lady delivered a baby girl. Within hours word went out that the mother could not keep the child so Helen applied to adopt "the prettiest baby I have ever seen." After another stint as new Mom Helen went back to work. She stayed with St. Eugene's till it closed in 1968 then transferred to the new Cranbrook Hospital. There she worked on the Extended Care Ward almost exclusively on night shift. Things seemed to change the moment Cranbrook Hospital was staffed. At the old hospital everyone knew everyone else and lunch breaks were a friendly interlude. Suddenly the staff broke into cliques and those in Extended Care felt as if they were demeaned. After five years a supervisor decided she needed to work in daylight hours. Helen resigned in a huff. However she went back on call frequently till official retirement in 1981. Her husband retired, too and they enjoyed travel and friends for many years.

Helen Faulkner has been a key player in keeping the Alumni of St. Eugene's going. She gardens and enjoys her grandchildren at the age of 86. We thank this lady for giving us a look at nursing in the past.

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The shell of St. Eugene's Hospital still stands at the corner of King Street and Slater Road in Cranbrook. For many years it has served needy individuals as low cost housing in the Tudor House Apartment Hotel. The interior was gutted by fire in August 2003 leaving 42 residents homeless. The Salvation Army was able to rlocate them , and to replace clothing and furniture. Authorities are debating whether to allow rebuilding of one section of the building or to insist on demolition.

President's Message

As I began my six-month stint as president, I reflected over the past year and am amazed by our accomplishments. Our membership has grown, however most of the work is done by a small group of extremely dedicated members. Take the displays for example. We have historical nursing displays at UBC School of Nursing, RNABC Board Room, foyer and Helen Randall Library, not to mention the special ones put up by request during Nursing Week. Sheila Zerr takes her traveling historical doll collection to Schools of Nursing when presenting classes on the History of Nursing. One of our displays on the History of Tuberculosis Nursing, which was at UBC is now going to Pearson Hospital as part of the 50th Anniversary of its opening in 1952.

We continue to receive requests for speakers on History of Nursing. Sheila, Glennis and other members of the executive, are invited each year by Schools of Nursing. Members continue to conduct outstanding historical research and papers have been accepted for publication and presentation. New leads for oral history interviews have been received and will be pursued

One of our challenges is the pursuit of a permanent home for our growing archives and museum which is now at UBC thanks to HoN member, Dr. Sally Thorne, Director of the School. We appreciate the support we have received, such as an upgraded computer, telephone, office supplies and use of the photocopying machine.

One area that desperately needs attention is Publicity. At the moment it is carried out by the executive, but we need a publicity/event coordinator. If you could volunteer to help, it would be appreciated. The newsletter with guest editors is working out well. We now have several members who have the skill to put the newsletter together so the work can be shared. We are just beginning our experiment with six - month rotating presidents. This will be evaluated next year. So as 2002 winds down we should feel satisfied with our accomplishments. A special thanks to all of you who have given so much time to the preservation of nursing history in BC.

Best Wishes for a Safe and Happy Holiday Season.

Ethel Warbinek President – November 2002 –April 2003

NEWS AND NOTES

Howard Searle, a long-time HoN member, has been chosen President_elect of the Registered Nurses Association of B.C. as of September 2003. Howard is a staff nurse in neurology-neurosurgery at Lions Gate Hospital in North Vancouver. He has held several positions on the RNABC Board. He will take over as President in September 2003 from Bonnie Lantz (another HoN member).

The American association for the History of Nursing is calling for abstracts to be shared at the 20th annual conference to be held in Milwaukee, Wisconsin September 19-21,2003. However, any abstract has to be in in sextuplet, by January 15,2003. For details phone Glennis, or Naomi, and state a fax number to which we can send details of requirements.

PUBLISHED; Zilm, Glennis and Warbinek, Ethel (2002) "Profile of a Leader: Elizabeth Breeze" in *Canadian Journal of Nursing Leadership*, 15(3), 28-29.(Breeze was a founding member of the Rnabc and president from 1921 to 1925. She was also author of a health textbook used in Canada's secondary schools from 1838 until the 1950s.

Brummet, Lois (2002) "AIDS Care; Adhering to Retroviral Therapy" *Nursing BC* 34, 4, 24-25

Helmstadter, Carol (2003) "A Real Tone: Professionalizing Nursing in Nineteenth Century London" *Nursing History Review (Volume 11)*

Toman, Cynthia, (2003) "Trained Brains are Better than Trained Muscles" *Scientific Management and Canadian Nurses, 1910-1939*

Blais, Lois watch for her light-hearted "Senior Side" articles in the *Vancouver Courier*. One of her next topics is on the value of naps.

Sharon Richardson (Associate Member) says she has been very busy since taking over as President of the Alberta Association of Registered Nurses. When she is not too occupied with duties, Sharon is a prolific writer on history of nursing, especially in pioneer time in Alberta.

Jan Robertson was in England in July. While there she was able to do some research related to Queen Alexandra's Nursing Sisters who were prisoners of war in WW II. Jan is member-at -large in RNABC.

B.C. HISTORY OF NURSING
PROFESSIONAL PRACTICE GROUP

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MEMBERSHIP RENEWAL January-December 2003

December 2002

Dear History of Nursing Member

It's almost that time of year again – time to pay membership fees for January 1 to December 31 of 2003. Last year was a record year, with 122 members. We hope you are one of our "satisfied members" and will renew.

This year we decided to enclose the Renewal Form in the Newsletter as a cost-saving measure. You can pull out these four centre pages, and mail the form with your cheque. (The back of this letter page is an order form for History of Nursing Note Cards, in case you wish to order these at the same time.) If we have not heard from you by February, we will send a "reminder" letter at that time.

Fees remain same as last year, and for this you receive four *Newsletters* and a Membership List (mailed about June). We also hope you will be able to attend our Annual General Meeting (held in conjunction with the RNABC Annual Meeting so more out-of-town members might be able to attend) and any of the Executive meetings, which are usually held the first Thursday of each month at RNABC offices in Vancouver. As well, there are usually four special "programs" held in the Vancouver area each year; details about these are included in the *Newsletters*. If you have a computer, check our Web site (see address above).

If you would like further information, please get in touch with me. We do hope to hear from you.

Membership Chair: Glennis Zilm
Phone 604-535-3238 E-mail Glennis1@aol.com

NOTE CARD ORDER FORM – 2003

COST IS $10 FOR A PACKAGE OF 8 CARDS (includes taxes)
SHIPPING AND HANDLING IS EXTRA – $2.50 FOR I PACKAGE,
AND ADD $1 FOR EACH ADDITIONAL PACKAGE
FOR LARGER ORDERS, PLEASE INQUIRE ABOUT SPECIAL RATES
CARDS MAY ALSO BE PURCHASED AT THE RNABC LIBRARY
TO SAVE SHIPPING CHARGES

I would like to order the following:

	No. of Packages	Total
❑ Nursing Sister Memorial Stained Glass Window	_____	_____
❑ Christ Church Cathedral Stained Glass Window	_____	_____
❑ Lennie Marble Sculpture (Shaughnessy)	_____	_____
❑ Florence Nightingale Stained Glass Window	_____	_____
❑ Mixture: 2 of each of above cards	_____	_____
Shipping and Handling		_____

Total (Cheque enclosed) $ _____
(Make cheque payable to History of Nursing Group)

For larger orders, please enquire from **Treasurer at the address below.**

Send Cards to:

Name _____

Address _____

City / Province _____ Postal Code _____

Cards may be viewed on our Web site at **www.bcnursinghistory.ca**

(Office Use: Date Order Received: _____ Cards and Receipt Mailed: _____)

MEMBERSHIP RENEWAL January-December 2003

It's time to renew your membership in the B.C. History of Nursing Group for **2003**. Check the type of Membership that applies:

- ☐ **Full** (RNABC members who pay practicing or non-practicing fees) **$30.00**
- ☐ **Affiliate** (all other eligible nurses, individuals, or groups) **$30.00**
- ☐ **Student** **$ 5.00**

Please print your name as you wish it to appear on the mailing label. Also please indicate clearly **each** item of information that you wish, or do not wish, to have published in the Membership Directory, which is sent to our members about June. The B.C. Freedom of Information and Protection of Privacy Act, RSBC 1996, C165, s30 states that groups, such as ours, that maintain membership lists "must protect personal information by making reasonable security arrangements against such risks as unauthorized access, collection, use, disclosure or disposal."

	Publish in Directory	
	Yes	**No**
Name _____ (Your name will be published)		
Address _____	____	____
City / Province _____ (Your home city will be published)		
Postal Code _____	____	____
Phone (Indicate whether home or work) _____ (Only one telephone number will be published.)	____	____
E-mail _____	____	____

Make cheque payable to: History of Nursing Professional Practice Group

Forward by March 1, 2003 to:

B.C. History of Nursing Group (Attn: Lois Blais, Treasurer)
P.O. Box 72082, RPO Sasamat, Vancouver, B.C. V6R 4P2

INFORMATION ABOUT YOU (For use by Executive):

We would welcome information about History of Nursing Projects on which you are working, especially if you would like to be in touch with other Group members with similar interests. For example: Were/ Are you a member of Canada's Military Medical Corps? Are you a student working on a thesis or dissertation related to History of Nursing? Are you actively involved with a School of Nursing Alumnae Association (and which one)? Would you like to be involved in a project – and if so in which area? Can we publish this information in the *Newsletter*?

_____

_____

_____

I would be interested in serving on one or more of the following committees during 2003:

Archives	_____	Membership	_____
Biography	_____	Programs	_____
Memorial Portraits	_____	Nominations for Memorial Books	_____
Newsletter/ Editorial	_____	"Pages of History"	_____
Oral History	_____	Displays	_____

Please Remember: All members are welcome to attend Executive meetings, which are <u>usually</u> held on the first Thursday each month. However, to be sure of the meeting date, please telephone a member of the Executive to check date and time.

- - -

<u>Office Use</u>:
Received: _____ Receipt Sent: _____ Entered Member List: _____ Label Made: _____

Corrections for Mailing List.

Lynn Esson - her postal code should be V6Y 2K9

Peggy Edgar of Nanaimo has phone number : 250-758-7206

Linda Boon has moved to : 302-543 Rowcliffe Avenue
Kelowna, BC V1Y 5Y8
phone: 250-763-4735 E-mail unchanged

Jan Robertson's new address: 29-15550 - 89th Avenue
Surrey BC V3R 1N1
phone and E-mail unchanged

THEN AND NOW

Beth Fitzpatrick put forth a suggestion last year which we now reiterate as

A Request to Readers

Please share your memories and observations about the drastic changes in procedures and equipment used at the bedside, in clinics or hospitals. Your submissions may be just a few words sent to Beth or the next guest editor (in Spring 2003 it is Naomi Miller). Or , if you have done extensive research like our member Jacqueline Ratzlaff, send in those papers.

We invite you to read Jacqueline's "Needle Safety Technology". It will make oldtimers wonder about their era of reusable syringes, and be thankful that boiling or autoclaving sufficed. Further consideration shows the marvellous options now available--- but perhaps these are one factor in the rapidly escalating cost of health care.

REMEMBER TO SEND IN YOUR MEMBERSHIP RENEWAL

Forms enclosed in this mailing.

Maybe you will duplicate the registration and use the extra page to recruit another member.

Help is needed by HoN Committees. The Archives Committee, for example, has a fun meeting every other month, and could use extra hands. Phone Lois Blais at 604-224-5130 for details.

Assembling Nursing History: An Editorial

History has been my hobby for the last thirty years. Two years ago I decided to zero in on the history of
nurses and nursing in British Columbia. There are books and workshops giving helpful hints to would-be reasearchers and interviewers. My post script is :Do what is most comfortable for you, and of course, your subject.

The candidates who have kindly cooperated with me seem to have enjoyed recalling the various stages
in their career. Each has been informed of the goal ahead of the arranged meeting time. I have found that a telephone interview, followed by a face to face meeting brings out many details. Assembling the information in logical order produced a few questions in my mind. A follow up phone call frequently produced not only the sought for detail but also a flood of other memories and facts. The story was then carefully typed and mailed to the subject. Invariably the response was, "I liked it BUT--" Mercifully it is easy to make corrections on an item saved in the computer and/or floppy disk.

So- have fun documenting the life of one of your idols. If you tell yourself that you are too busy to work through the above routine then please obtain a copy of the 6 page "Biographical Information Profile" from Janet Gormick or another of the executive. The spaces to be filled in behind the lead questions pull forth neat responses. Better yet, fill in a form yourself and have your idol fill out a similiar form then send in those forms to Janet, or to editor/historian Naomi Miller

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Attention St. Paul's Grads

WHAT ? legacy of St. Paul's Hospital School of Nursing, Vancouver, B.C.
WHY ? To celebrate the 100th Anniversary of the School
WHEN ? 2007
WHO ? The graduates, doctors, administrators, founder's families, and others
HOW ? By establishing a Legacy Fund to be administered by St. Paul's Hospital Foundation

For further information please phone Don Ransom at 604-609-0693

Two ladies who had been roommates while in hospital for a knee replacement were comparing notes. "I can walk with no pain,"says the first. " Me,too. And I can get on my knees to wash the kitchen floor. There is only one thing that bothers me. I want to be cremated when I die and titanium doesn't burn. Who do I will my knees to ?"

Needle Safety Technology
By Jacqueline Ratzlaff RN, *BSN ICP*

Author's Note: Recently while going through an old shed on my family's homestead in the British Columbia Kootenays, I came upon an unused package of Ideal stainless hypodermic needles, complete with stylets, which would have been used for veterinary medice. My discovery prompted me to reflect on my experiences with reusable stainless steel needles. Such needles,although not so large as these 1 inch 14 guage needles, used to be commonplace before the advent of disposables but are no longer considered ideal, although they are being used in many parts of the world. As a student nurse in the 1960s , I remember checking for barbs on reusable hypodermic needles and sending the barbed ones to be sharpened. On a University of Victoria Health Professionals Tour to China in 1994, I witnessed acupuncture and moxibustion being done with reusable stainless steel needles. The acupuncturist brought needle into the room all loosely piled together in an open stainless steel Kidney basin: there was no indication that they had been sterilized.

The use of parenteral injections has undergone several periods of significant change during its evolution. Earliest historical accounts cite the use of syringes with blunt ended canulas for irrigation or evacuation, followed by the evolution in the middle 1800s of syringes with beveled needles (Kirkup,1998) The use of a syringe with a beveled hollow needle for injection was documented in 1855 by Alexander Wood of Edinburgh, Scotland, who administered a subcutaneous therapeutic injection of morphine. Wood is also credited with using acupuncture needles to treat neuralgia (Haller. 1981). The first documented account of a therapeutic injection in the United States was in 1856, before the American Civil war (Howard-Jones, 1947) In 1858, Charles Hunter of London, England, began to expand on the use of injections, discovering that, irrespective of the injection site, the injected substance was absorbed by the whole system. He coined the term hypodermic (Greek for "under the skin") replacing the Latin term subcutaneous (Herrmann,1994) Modern methods of parenteral injection without needles began when physicians observed the neat, almost blood free puncture wounds when mechanics were accidentally injected by oil and fuel injection lines in the 1930s (Austin,1998)

A Global Concern

Needle Safety is of global concern, as risks of infection due to contamination from needlestick injuries are substantial. The health care industry is facing new demands as it introduces technologies for mass vaccination, an aftermath of recent terrorist attacks, and an emerging regulatory environment. The World Health Organization (WHO) estimates that over 12 billion injections are administered annually worldwide (Hutin & Chen, 1999). It is also estimated that there are between 600,000 and 1.5 million needlestick injuries occurring annually and that about 1,000 of these injuries are to health care workers who subsequently contract serious infections (Eddins & Swanson, 2001). The U.S. Department of Labor Occupational Safety and Health Administration (OSHA) estimates that one of every seven health care workers is accidentally stuck with a needle each year (Druzak,2001).Great numbers of the world's population, particularly those in developing countries, are victims of accidental needlestick injury and unsafe syringe and needle practices. For example, 50% of vaccinations are administered with reused syringes and needles (Druzak, 2001). One third to half of needlestick injuries occur after device use (Eddins & Swanson, 2001). In developed countries, injection safety risks almost exclusively involve health care workers and injection drug users (Hutin and Chen,1999) Although as many as 20 pathogens are transmitted through percutaneous injuries, the main pathogens being transmitted are the hepatitis B virus(HBV), the hepatitis C virus (HCV), and the human immunodeficiency virus (HIV/AIDS) ; (Eddins and Swanson, 2001). The risk of being infected with one of these three main pathogens from a single contaminated needlestick or sharp injury is : HBV(6%-30%), HCV(0.4%-1.8%) and HIV (o.25% -0.4%); International Health-Care Worker Safety Center, 2001. As described by Druzak (2001), hepatitis viruses are transmitted ten times faster through unsafe injections than the HIV/AIDS virus, causing the heaviest burden of annual monetary cost. But, the cost in human suffering as the result of transmission of infection is insurmountable. Worldwide, it is estimated that 1.3 million people will die annually as a result of these infections, for a total of 26 milllion years of life lost (Hutin and Chen, 1999)

Innovations in Needle Safety Technology

Needle safety continues to evolve with recent medical technology innovations focusing on needlestick prevention devices (NPDs) to replace more conventional needle and syringe design. New NPDs, in the form of needle-free devices such as jet injection systems and needle-free connection devices, AND NON-REUSABLE NEEDLES AND SYRINGES (self-sheathing and automatically retracting needles) are available. Innovative designs are being made that more closely match patient and medication requirements, and promise greater safety, efficiency and user control. These NPDs have the potential to reduce and eliminated needlestick injuries and exposure to blood borne pathogens, thereby assisting in the prevention and transmission of infection and disease. Some of these new technologies will be discussed

Jet injection works by acceleration of a fine stream (0.004" to 0.012 " in diameter) of fluid to relatively high velocities and pressures so that the medication penetrates and deposits into the tissue without the use of a needle. A typical 0.5 ml shot lasts less than 1/3 of a second (Austin,1998). Current jet injectors are of two categories: 1) personal use prefilled devices for self-administration of insulin, Betaseron*, human growth hormone, and so forth, for intramuscular and subcutaneous drug delivery and 2) multiple use devices for mass immunizations (Doctor's Guide, 1996; Austin, 1998; Wiebe, 1998) An auto-disable (AD), single-use syringe with a fixed needle is a low cost, nonreusable device. When the syringe is filled to the preset 0.5ml level, the plunger stops and cannot be pulled back further. After the medication is injected, the plunger automatically locks so that the syringe and needle cannot be reused. (Programs for Appropriate Technology in Health, {PATH}, 2001). This type of AD syringe is used in some immunization programs worldwide

Challenges and Recommendations

Needle-free devices have advantages: reduced needle pain and anxiety, increased acceptance and compliance, reduced needlestick injuries, and eliminationof one source of hazardous waste, but they still pose challenges. Studies have confirmed that contamination from blood is possible on the fluid path and nozzles of some devices. "Because of transmission risks, the World Health Organization (WHO) has stopped recommending multiple use jet injectors for immunization programs, and the U.S.

Table 1. Resources for Information on Needle Safety Technology and Needlestick Prevention

Needle-free Injection Technology by the Centers for Disease Control and Prevention (2001) consists of online comprehensive information for health care professionals. It includes background information, bibliography of scientific literature, manufacturers' rosters, research and development funding sources, policies on needle-free injection and safety of injections in immunizations from the WHO, CDC, and DoD, and governmental and nongovernmental working groups and committees on needle-free devices and jet injectors for medical use, conferences, coverage in medical and lay press, needle-free devices, injection safety campaigns, and a news service. [online]. Available at www.cdc.gov/nip/dev/jetinject.htm

The *ANA Safe Needles Save Lives Kit* by the American Nurses Association (2001) contains the information and tools needed to educate nurses and to promote the use of safer needles. [online]. Available at www.NursingWorld.org/needlestick/safeneed.htm

The *Sharps Safety and Needlestick Prevention Guide* by the Emergency Care Research Institute (2001), a nonprofit health services research agency and a collaborating center of the WHO, provides guidelines for evaluating and selecting sharps-safety technologies. [online]. Available at www.ecri.org/documents/111501.asp

The *Safe Injection Global Network* (SIGN) toolbox, developed by the WHO and ICN (2001), has a useful selection of research and communication tools to assist nurses and health care professionals to promote and implement activities for the safe and appropriate use of injections. It is available in nine languages. [online]. Available at www.injectionsafety.org/rc/rc/php

Your Guide to Purchasing Needle-stick Prevention Devices by Springhouse Journals SpringNet (2001) provides nurses an evaluation tool based on critical factors such as basic requirements, flexibility, safety and effectiveness, support, economic impact, and environmental issues. It also includes sections on intravenous connectors, access devices, safety syringes, and sharps disposal containers. [online]. Available at www.springnet.com/content/nm/0010/nmtech01.htm

The Intravenous Nurses Society, *Position Statement on Use of Safety Devices, Infusion, Standards of Care* (2001). [online]. Available at www.INS1.org

The National Association of Vascular Access Network, *Position Statement on Use of Safety Devices* (2001). [online]. Available at www.NAVANNET.org

Department of Defense (DoD) has withdrawn them from use in the military"(Voelker, 1999). In an effort to address this, the PATH Health Tech Project is working with the WHO and the Global Fund for Children's Vaccine to investigate the feasibility of providing AD syringes for reconstitution, which will prevent bloodborne contamination (PATH,2001)

The joint policy statement by WHO, the United Nation's Children's Fund, the United Nations Population Fund, and the Red Cross on immunization services supports AD or nonreusable syringes, or syringes that are designed to be sterilized and for safe management of waste (WHO, 2001) OSHA does not support any one needle device. In

response to the Needlestick Safety and Prevention Act signed by President Clinton on April 18,2000, OSHA's Bloodborne Pathogens Standard stipulates that "no one medical device is considered appropriate or effective for all circumstances" and that "Non-managerial employees responsible for direct patient care must be involved in the selection and evaluation of appropriate medical devices " (OSHA,2001) Additionally, a nurse infected with HIV and hepatitis C from a contaminated needle advocates that hospitals and suppliers dispose of old inventory of unsafe needles (CBS News,2001)

Prevention and Best Practice

The WHO and the International Council of Nurses, through their safe Injection Global Network (SIGN) described "a safe injection as one that does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous to other people" (SIGN,2001) In order to safeguard the public and nursing workforce, all nurses must monitor and advocate for prevention and best practice in needle safety. The Centers for Disease Control and Prevention (2001) and American Nurses Association (2001), among others, acknowledge that needlestick injuries are preventable and recommend that all nurses and other health care professionals utilize resources for their clinical practice and teaching. Some of these resources are listed in Table 1.

Education and rigorous evaluation of new injection devices to assess whether or not these are satisfactory are some of the most important actions that nurses can take to curb the morbidity and mortality associated with unsafe injection devices. Strong needlestick prevention programs that provide effective training and education to all health care staff should include "interactive" training sessions with a qualified trainer in order to facilitate discussion and demonstrate understanding of all aspects of needle safety (OSHA, 1999).

Needle safety continues to evolve, but the health care community must embrace the utilization of new technologies and techniques. Austin (2001) projected that future developments in this field will include specialized devices dedicated to delivery of new drugs, prefilled unit packages, and safe autodestruct cartridges. Devices as small as a marking pen and devices that can inject dried powders will change the way we deliver parenteral drugs forever. Best practice and prevention is everyone's business.

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