CANNT JOURNAL
JOURNAL ACITN

Volume 18, Issue 3 July–September 2008

FORTIETH ANNIVERSARY ISSUE 1968–2008
1968–2008 ÉDITION DU QUARANTIÈME ANNIVERSAIRE

IN THIS ISSUE:

Renagel® Safety Information Renagel® (sevelamer hydrochloride) is indicated for the control of hyperphosphatemia in patients with ESRD (end stage renal disease) undergoing dialysis · Contraindicated in the following situations: hypophosphatemia, bowel obstruction or hypersensitivity to sevelamer hydrochloride or one of the other ingredients in the product · The most common adverse events reported in a parallel group study of Renagel® (N=99) and calcium acetate and calcium carbonate (N=101) were not dose related and included vomiting (22%), nausea (20%), diarrhea (19%) and dyspepsia (16%) · The adverse events reported for Renagel® were similar to those reported for Calcium • **In drug interaction studies, Renagel® had no effect on the bioavailability of digoxin, warfarin, enalapril, metoprolol and iron • Coadministering Renagel® with ciprofloxacin decreased the bioavailability of ciprofloxacin by approximately 50%. Consequently, Renagel® should not be taken with ciprofloxacin • When administering any other medication whre a reduction in the bioavailability of the medication would have a clinically significant effect on safety or efficacy, the physician should consider monitoring blood levels or dosing the medication at least 1 hour before or 3 hours after Renagel®.**

Please see brief summary of Product Monograph following this advertisement.

Renagel® Tablets
(sevelamer hydrochloride)
800 mg

Right from the start™

References: 1. Chertow GM, Burke SK, Raggi P. Sevelamer attenuates the progression of coronary and aortic calcification in hemodialysis patients. *Kidney Int.* 2002;**62**:245-252.
2. National Kidney Foundation. K/DOQI Clinical Practice Guidelines for Bone Metabolism and Disease in Chronic Kidney Disease. *Am J Kidney Dis.* 2003;**42**(Suppl 3):S1-S201.
3. Renagel® Product Monograph, Genzyme Canada; 2006.

For more information, call toll-free 1-877-220-8918 • www.genzyme.ca

JULY–SEPTEMBER 2008 ■ VOLUME EIGHTEEN ■ ISSUE THREE

CANNT JOURNAL
JOURNAL ACITN

CONTENTS

The CANNT Journal is printed on recycled paper.

The CANNT Journal
is the official publication of the Canadian Association of Nephrology Nurses and Technologists, 336 Yonge St., Ste. 322, Barrie, ON, L4N 4C8, telephone: (705) 720-2819, fax: (705) 720-1451, e-mail: cannt@cannt.ca. Published quarterly, the journal is received by all members of CANNT. Subscriptions are: Canada $50.00 (plus GST), US. $60.00, Outside N. America $85.00. Back issues, when available, are $7.50 (+GST) per issue and are available from the editor. Opinions expressed by writers in the CANNT Journal are not necessarily those held by the editor or CANNT. Contrasting views by our readership and membership are welcome. All letters, comments and articles are to be sent to the CANNT office, 336 Yonge St., Ste. 322, Barrie, ON L4N 4C8. Toll-free: 1-877-720-2819
Website: www.cannt.ca

• **Deadlines for submission to the CANNT Journal are:**
January–March – January 15, for publication March 15;
April–June – April 15, for publication June 15;
July–September – July 15, for publication September 15;
October–December – October 15, for publication December 15.
The CANNT Journal is indexed in the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the International Nursing Index (INI), MEDLINE, EBSCO, ProQuest and Thomson Gale.
ISSN 1498-5136

The CANNT Journal is produced by Pappin Communications, The Victoria Centre, 84 Isabella St., Pembroke, Ontario K8A 5S5.

Letter from the Editors: Gillian Brunier and Faye Clark

Forty years of memories

Faye Clark, as many of you are aware, over the last several years has been on the CANNT board as Atlantic VP, secretary/treasurer, and CANNT president. What you may not be aware of is that Faye has a collection of almost 40 years' worth of **CANNT Journals** and the former **CANNT/DIALTEC/CANSECT Newsletters**, plus minutes from previous CANNT board meetings from the past many years. It is Faye who encouraged us to celebrate 40 years of CANNT with a special edition of the **CANNT Journal**—to be pulled together in time for the 2008 CANNT conference in Quebec. I was delighted to have the opportunity to work with her on this project.

To start this task, Faye began to compile lists of all the former CANNT presidents, CANNT annual conference chairs/co-chairs, **CANNT Journal/ Newsletter** editors and CANNT award winners. As you can imagine, after 40 years there have been numerous presidents and conference chairs, most with records only on hard-to-track paper reports. Following many phone calls and e-mails to recent CANNT presidents, former board members, and conference chairs, the lists are now complete. We thank all of those who contributed to tracking down these easily lost contacts.

Six months ago, Faye and I decided to try to contact several of these early CANNT presidents, conference chairs, and editors to ask them to consider writing up some of their fondest memories and share with us all what it was like in those early days of CANNT. Intermingled with all these personal recollections, we have reprinted some of the early articles from the **CANNT Journal** and **CANNT/DIALTEC/CANSECT Newsletters** written by Canadian nephrology nurses, as well as dietitians, pharmacists and technologists. We are certain you will find these a fascinating read. In addition, we have reprinted some of the later articles from the **CANNT Journal** to recognize a small number of the many excellent recent contributions to CANNT from Canadian nephrology professionals living in different parts of the country.

Three months ago, we contacted earlier CANNT pioneers who had not responded to our first requests and, at the same time, put out general calls for photos from earlier time periods—understanding that a picture can speak a thousand words. Since digital cameras were certainly not available in the early days of CANNT, it meant asking contacts to look through shoeboxes and dialysis unit photo albums. The earliest times were the most difficult to pull together. We thank all those who helped with this endeavour.

Time was going by very fast. Faye and I were talking every Sunday afternoon on the phone to see whom we had heard from, whom we had not heard from, and making out "to do" lists for the next week. Templates for the content of this special anniversary issue were updated—again, and again, and again. Now we were into summer vacation time, which made it more difficult to follow through with people, but not impossible.

Finally, we had everything together, all sorted into decades ('60s, '70s, '80s, '90s and 2000s). All scanned and digitized photos were given correct citations, all articles from **CANNT Newsletters/Journals** and the former **DIALTEC** from issues pre-electronic files were typed into MS Word by another team of volunteers (many thanks to Debbie Maure from the CANNT Office, Colleen Wile, VP Atlantic, and Diane Watson, CANNT President 1991–92), all references were checked, credentials double-checked, and current job status triple-checked (you can see how many are now retired!). Messages from Alison Thomas—our current CANNT president, Fran Boutilier—our first CANNT president, and our own Letter from the Editors (plural) have been translated into French—and we are ready to go. Forty years of memories! Enjoy!

Quarante ans de souvenirs

Faye Clark, comme bon nombre d'entre vous le savez, siège au Conseil d'administration de l'ACITN depuis plusieurs années où elle a cumulé les postes de vice-présidente de l'Atlantique, secrétaire/trésorière et de présidente. Ce que vous ignorez sans doute c'est que Faye possède un répertoire de près de 40 ans de souvenirs qu'elle a puisés à même le **Journal de l'ACITN** et d'anciens bulletins d'information **CANNT/DIALTEC/CANSECT**, en plus d'une volumineuse compilation de procès-verbaux des réunions du Conseil d'administration depuis de nombreuses années. C'est Faye qui nous a encouragés à célébrer le 40e anniversaire de fondation de l'ACITN avec la parution d'un numéro spécial du Journal—préparé à temps pour le Congrès de l'ACITN de 2008 à Québec. J'étais enchantée d'avoir l'occasion de travailler avec elle à ce projet.

Pour entreprendre cette tâche, Faye a commencé par compiler des listes sur l'ACITN, à savoir une liste de tous les anciens présidents, une liste des présidents et coprésidents des congrès annuels une liste des rédacteurs en chef du Journal et des Bulletins d'information ainsi qu'une liste de tous les gagnants des différents prix décernés au fil des années. Comme vous pouvez l'imaginer, après 40 ans, il y a eu de nombreux présidents et présidents de congrès, dont la plupart ont été difficiles à joindre, car à l'époque il n'y avait que des dossiers papier. À la suite de nombreux appels téléphoniques et de courriels auprès de récents présidents, d'anciens membres du Conseil d'administration et de présidents de congrès, les listes sont maintenant complètes et à jour. Nous tenons à remercier ceux et celles qui ont contribué à retrouver les coordonnées de ces personnes.

Il y a six mois, Faye et moi avons décidé d'essayer d'entrer en communication avec plusieurs des premiers présidents, présidents de congrès et rédacteurs en chef pour leur demander de rédiger sous forme d'article leurs plus beaux souvenirs afin de nous tracer un portrait de ce qu'était l'association à ses balbutiements. Enchevêtrés dans tous ces souvenirs personnels, nous avons réimprimé certains des premiers articles du Journal et des Bulletins d'information **CANNT/DIALTEC/CANSECT** qui avaient été écrits par des infirmières en néphrologie, des diététistes, des pharmaciens ainsi que des technologues. Nous sommes persuadées que vous trouverez cette lecture des plus fascinantes ! En outre, nous avons repris certains articles récents du Journal afin de reconnaître un petit nombre de ces nombreuses et excellentes contributions récentes au succès de notre association grâce à l'engagement de professionnels canadiens de la néphrologie qui sont à pied d'œuvre dans différentes régions du pays.

Il y a trois mois, nous avons communiqué avec les pionniers de notre Association qui n'avaient pas répondu à notre premier appel et, au même moment, nous avons lancé un appel à tous pour recueillir des photos ayant immortalisé les beaux moments des tout premiers débuts—sachant qu'une photo vaut mille mots. Étant donné que les appareils photo numériques n'existaient pas à cette époque, il a fallu demander à nos membres de fouiller dans leurs vieilles boîtes à photos et dans les vieux albums photo des unités de dialyse. Les premiers moments de l'ACITN ont été les plus difficiles à retracer sur pellicule. Nous remercions toutes les personnes qui nous ont aidées dans cette démarche enrichissante.

Enfin, nous avons réussi à tout rassembler et à tout trier par décennie (années 1960, 1970, 1980, 1990 et 2000). Toutes les photos numérisées et numériques ont fait l'objet d'une légende appropriée. Tous les articles du Journal et des Bulletins d'information **ACITN/CANNT et DIALTEC** parus avant l'ère de l'informatique ont été retapés et mis en page en Microsoft Office Word par une équipe de bénévoles (mille mercis à Debbie Maure du bureau de la permanence, à Colleen Wile, vice-présidente de l'Atlantique, et à Diane Watson, présidente de 1991–1992). Toutes les références ont été vérifiées, tous les titres de compétences ont été vérifiés deux fois plutôt qu'une et tous les statuts d'emploi actuels ont été vérifiés trois fois plutôt qu'une (vous pourrez constater combien jouissent maintenant d'une retraite bien méritée !). Nous n'attendions plus que la traduction des mots d'Alison Thomas, présidente actuelle, de Frances Boutilier, toute première présidente, et des rédactrices en chef de ce numéro spécial pour

Le Journal ACITN
est la publication officielle de l'Association canadienne des infirmiers/infirmières et technologues en néphrologie, a/s 336 Yonge St., Ste. 322, Barrie, ON, L4N 4C8, téléphone : (705) 720-2819, télécopieur : (705) 720-1451, Courriel : cannt@cannt.ca. Publié quatre fois par année, ce journal est envoyé à tous les membres de l'Association. L'abonnement annuel est: Canada, 50 $ (+TPS), E.-U., 60 $, hors du Canada et E.-U., 85 $. Les publications antérieures, lorsque disponsibles, coûtent 7,50 $ (+TPS) chacune. Les opinions émises par les auteurs dans ce journal ne sont pas nécessairement partagées par l'Association ni par le rédacteur en chef. Nous invitons les lecteurs à nous faire part de leurs opinions. Toute correspondance devra être envoyée à l'ACITN, 336 Yonge St., Ste. 322, Barrie, ON L4N 4C8.
Site web : www.cannt.ca

• **Voici les échéanciers à rencontrer pour soumettre des articles/nouvelles au journal :**
Janvier–mars – le 15 janvier,
pour publication le 15 mars
Avril–juin – le 15 avril,
pour publication le 15 juin
Juillet–septembre – le 15 juillet,
pour publication le 15 septembre
Octobre–décembre – le 15 octobre,
pour publication le 15 décembre
Le journal CANNT est maintenant répertorié dans le "Cumulative Index to Nursing and Allied Health Literature (CINAHL)", "International Nursing Index" (INI), "MEDLINE", "EBSCO", "ProQuest", et "Thomson Gale".
ISSN 1498-5136

Le journal CANNT est préparé par Pappin Communications, The Victoria Centre, 84 rue Isabella, Pembroke, Ontario K8A 5S5.

The eternal flame

It is with great pride that I compose this president's message for the 40th anniversary celebration issue of the **CANNT Journal**. In the arena of marriage, the 40th anniversary has been named the ruby anniversary because "rubies are thought to possess an eternal inner flame, which is a symbol that the passion in a marriage is still very alive and strong after 40 years together" (www.marriage.about.com).

The same sentiment can be applied to CANNT as an organization. Without an eternal inner flame, CANNT would not have survived and thrived over the past 40 years. I would suggest that CANNT's eternal inner flame has been generated and maintained as a result of the commitment of our membership and in turn, their commitment to caring for patients with chronic kidney disease and end-stage renal disease.

Over the past 40 years, while CANNT has been growing and changing as an organization, consider the many improvements that have taken place in the specialty of nephrology. For example:

- The change in practice from lengthy hemodialysis treatments in 1968 (more than eight to 10 hours twice per week), to the advent of thrice weekly "short" treatments of three to four hours thrice weekly—and then back again in recent years to the lengthy treatment regimens now seen in nocturnal hemodialysis programs
- In the 1970s, the introduction of peritoneal dialysis as a viable treatment option that continues to provide independence and flexibility to patients who prefer a user-friendly home-based therapy
- In the 1980s, the use of erythropoietin—and the dramatic effect it had on patient quality of life and outcomes
- The interest and quantification of the notion of adequacy of dialysis "Kt/V" and its importance to patient outcomes in both peritoneal and hemodialysis therapies
- The improvements to technologies such as volumetric control (hemodialysis) and Y-type disconnect systems and portable cyclers (peritoneal dialysis)
- The advent of continuous dialysis therapies for the treatment of acute renal failure.

These advancements and more have required technologists and nurses to commit to lifelong learning and adaptability, as change has been a key component of our day-to-day work. I congratulate each of you for challenging the status quo through research and innovation and for continuing to embrace new challenges as the environment changes over time. It is that commitment to moving forward that has benefited our patients and improved their overall well-being and outcomes.

In this issue, you will hear perspectives from a number of sources and from varied foci in celebration of 40 years of CANNT. Take some time to read and enjoy the many stories and experiences shared here, and share this issue with your colleagues. Many thanks go to Gillian Brunier, Journal Editor, and Faye Clark for their tireless efforts in making this issue a reality—and to those of you who took the time to reflect upon your experiences and to contribute to this very special journal issue. This is, indeed, a tribute to the endless commitment of our membership over the years and the sense of collaboration and teamwork that defines this organization.

To all of you, as those who make CANNT the outstanding organization that it is—on behalf of the board of directors—Happy 40th Anniversary! We look forward to meeting you in Quebec City as together we celebrate our success.

Alison Thomas, RN, MN, CNeph(C),
CANNT President

La flamme éternelle

C'est avec la plus grande fierté que je rédige ces quelques lignes pour le numéro spécial du **Journal de l'ACITN** qui souligne le 40e anniversaire de notre Association. Après 40 ans de mariage, ne célèbre-t-on par des « noces de rubis » ? Cette pierre précieuse est réputée pour contenir une flamme éternelle qui symbolise la passion qui brûle toujours au sein du couple après 40 ans de vie commune.

C'est cette même passion qui anime l'ACITN. Sans la chaleur d'une flamme éternelle, l'ACITN n'aurait pu survivre, ni progresser dans la voie du succès depuis ces 40 dernières années. J'oserais même dire que cette flamme éternelle qui danse au cœur de l'ACITN a été avivée et maintenue grâce au dévouement de nos membres et à leur engagement dans la prestation de soins de qualité aux patients atteints de maladie rénale chronique et d'insuffisance rénale terminale.

Depuis 40 ans, soit depuis que l'ACITN est en pleine croissance et évolution, de nombreux progrès sont survenus dans ce domaine de spécialité qu'est la néphrologie, notamment :

- le passage dans la pratique de traitements de d'hémodialyse de longue durée d'au moins 8 à 10 heures deux fois par semaine en 1968 à l'avènement de traitements de courte durée de 3 à 4 heures trois fois par semaine—et le retour, ces dernières années, de schémas thérapeutiques de longue durée que l'on voit maintenant dans les programmes d'hémodialyse nocturne ;
- dans les années 1970, l'instauration de la dialyse péritonéale comme option de traitement viable qui continue d'offrir autonomie et souplesse aux patients qui préfèrent une thérapie conviviale à domicile ;
- dans les années 1980, l'utilisation de l'érythropoïétine—et l'effet incroyable que cela a eu sur la qualité de vie des patients et l'amélioration des résultats cliniques ;
- l'intérêt et la quantification de marqueurs de qualité de traitement soit le « Kt/V » et de son importance dans les résultats cliniques des patients à la fois dans les thérapies de dialyse péritonéale et d'hémodialyse ;
- les percées technologiques telles que les systèmes de contrôle volumétrique (hémodialyse) et de déconnexion en Y ainsi que les cycleurs portatifs (dialyse péritonéale) ;
- l'avènement des thérapies de dialyse en continu pour le traitement de l'insuffisance rénale aiguë.

Ces progrès et d'autres encore ont exigé l'engagement des technologues et des infirmières et infirmiers dans un processus continu d'apprentissage et d'adaptation, car le changement est l'élément moteur de notre travail au quotidien. Je profite de cette occasion pour féliciter chacun et chacune d'entre vous qui avez déjoué le statu quo par votre engagement dans la recherche et l'innovation et qui avez sans cesse relevé de nouveaux défis dans une spécialité en perpétuelle évolution. C'est précisément cet engagement d'aller de l'avant qui a été bénéfique à nos patients et qui a permis d'accroître leur bien-être et d'améliorer les résultats cliniques dans l'ensemble.

Dans ce numéro spécial consacré aux célébrations du 40e anniversaire de l'ACITN, les auteurs vous feront vivre ou revivre différents aspects de notre histoire et vous donneront leurs points de vue sur les perspectives d'avenir. Nous vous invitons à prendre le temps de lire et de savourer ces nombreuses histoires et expériences et à faire circuler ce numéro parmi vos collègues. Nous tenons à remercier nos deux rédactrices en chef, Gillian Brunier et Faye Clark, de leurs efforts inlassables pour faire de ce numéro une réalité ainsi que toutes les personnes qui ont pris le temps de rédiger et de soumettre leurs expériences en contribuant ainsi à ce numéro très spécial. Il s'agit d'un brillant hommage à l'engagement perpétuel de nos membres au fil des années ainsi qu'au fort esprit d'équipe et de collaboration qui caractérise cette organisation.

À vous tous et toutes qui contribuez à rendre exceptionnelle l'ACITN, je vous souhaite, au nom des membres du Conseil d'administration, un bon et joyeux 40e anniversaire !

Dans l'attente de vous rencontrer à Québec, qui célèbre tout comme nous son anniversaire—le 400e—je vous prie d'accepter mes plus cordiales salutations.

Alison Thomas, inf., M. Sc.inf., CNéph(C),
Présidente, ACITN

CANNT Representatives/Contacts

Représentants/ contacts ACITN

Journal Editor-in-Chief/Éditrice en chef :
Gillian Brunier
T: (416) 480-6100 ext. 3149
F: (416) 495-0513
e-mail/courriel :
gillianbrunier@sympatico.ca

Allied Health Council Committee of the Kidney Foundation of Canada (KFOC)/Représentant Comité Scientifique—Fondation du rein du Canada : Eleanor Ravenscroft
T: (604) 875-4220
e-mail/courriel : eleanor@vfs.com

CNA Liaison/Liaison AIIC :
Lori Harwood
T: (519) 685-8500 ext. 57241
F: (519) 685-8376
e-mail/courriel : lori.harwood@lhsc.on.ca

Kidney Foundation of Canada—MAC Representative/ Fondation du rein—Comité de médical consultatif : Alison Thomas
T: (416) 864-6060 ext. 6979
F: (416) 864-5001
e-mail/courriel :
thomasal@smh.toronto.on.ca

Bursary Committee/Comité de Bourse :
Alison Thomas
T: (416) 864-6060 ext. 6979
F: (416) 864-5001
e-mail/courriel :
thomasal@smh.toronto.on.ca

2008 Symposium—October 23–26 Quebec City, Quebec Conference Planner:
Heather Reid – Innovative Conferences and Communications
T: (519) 652-0364
F: (519) 652-5015
e-mail/courriel : hreid@innovcc.ca

Journal advertising contact/Publicité :
Heather Coughlin
Pappin Communications,
84 Isabella Street,
Pembroke, ON K8A 5S5
T: (613) 735-0952
F: (613) 735-7983
e-mail/courriel : heather@pappin.com
Rate card: www.pappin.com

CANNT Administration Office/ Bureau National Administrative Assistant/ Assistante administrative :
Debbie Maure
336 Yonge St., Ste. 322,
Barrie, ON L4N 4C8
T: (705) 720-2819
F: (705) 720-1451
e-mail/courriel : cannt@cannt.ca
website: www.cannt.ca

Recollections and reflections as a dialysis nurse and member of CANNT

By Frances Boutilier

As I peruse the brochure for this year's CANNT Symposium in Quebec City, I cannot help but think, "We've come a long way!"

My interest in dialysis began in 1965 when, as a new staff nurse on a medical ward, I prepared a patient to be airlifted to Montreal for acute hemodialysis. And later, I accompanied an acutely ill patient to the fledging "Artificial Kidney Unit." I definitely wanted to learn more! One day in February 1966, Dr. A.J. MacLeod, an internist who was responsible for this Artificial Kidney Unit, came to me on the ward and said, "My dear young woman, you will begin nursing in the Kidney Unit on Monday." And so began an adventure of 20-plus years!

From early days using the Kolff twin coil dialysis machine (just like a washing machine!) through to Travenol RSP machines, on to Drake Willock machines and water treatment systems, then to a central delivery system, and on to fourth- and fifth-generation equipment, the technology and nursing skills in dialysis evolved and developed. A major challenge was meeting the special dialysis needs of children and babies. Central to all of this were the patients and their families who became, in a way, our "extended families" with whom we laughed and cried, sharing their lives and marvelling at their determination and courage to live in spite of strict dialysis schedules.

In 1968, Halifax hosted the meeting of the Canadian Society of Extracorporeal Circulation Technicians (CANSECT). CANSECT membership included both dialysis nurses and technicians and heart-lung perfusionists. Our commonality was extracorporeal circulation. But, by 1973 the difference between the two treatments and disciplines was becoming apparent. Heart-lung being short-term, OR-based, and mainly technological, while dialysis was long-term, chronic care with a multicare team—nephrologists, nurses, technologists, pharmacist, social worker, and dietitian.

And so, in 1975 at the Toronto Symposium, the heart-lung perfusionists voted to join with the Canadian Cardiovascular Society. Those of us in dialysis decided to stay together, retain our Charter and the educational work already in progress. We became the Canadian Society of Perfusionists.

The 1976 symposium met in Halifax with an attendance of 60 people! We believed it was a very successful meeting! It was at this meeting I became president, with a group of committed persons to form our executive. Here we were—no money, no assets, small in membership, but with a Charter, the beginnings of an education program, and lots of enthusiasm and determination for success! And, as they say, the rest is history!

During my time as president and then chair, board of directors, I had the opportunity to meet and work with many committed and dedicated persons who believed in our association, who worked hard to make CANNT the success it is today. I also had the opportunity to attend many meetings and symposia in Canada, the United States and Europe. I believe that I was on the "cutting edge" of dialysis treatment modalities. As I look back on my career in dialysis and with CANNT, it was truly an adventure. An adventure that is filled with many wonderful memories of friendships made over the years, and of being part of the evolution of dialysis therapy for life-giving care.

I look forward to sharing CANNT's past, present and future with you at the symposium in Quebec City. As you move into the future, my hope is that the vision and dream will go on—that the adventure will continue!

About the author

One of the highlights of Fran's nephrology nursing career was the establishment of a summer dialysis unit in Cavendish, PEI, which, during its 10 years of operation provided vacation opportunities for many patients from their program, as well as for patients from Canada, United States and even Japan.

Fran Boutilier retired from health care in 1994, and began her studies at the Atlantic School of Theology, from which she graduated with her Master's of Divinity in 1997. That same year, she was ordained a deacon in the Anglican Church of Canada, and the next year ordained priest. She served in a rural parish in Prince Edward Island and then in team ministry with a colleague in Pictou County, Nova Scotia, serving six churches. She retired from full-time ministry in 2006, but continues to serve her church at the Diocesan level and in her parish church as needed with her primary focus on pastoral ministry.

Fran's professional volunteer activities related to nephrology included:
***CANNT**—Involved with CANSECT, CSDP and CANNT Board of Directors from 1968: President 1976–1981 and Chair, Board of Directors 1981–1984; chaired four CANNT symposia in Halifax; was recognized for her years of service by having a CANNT Bursary established in her name in 1984 and was made a Lifetime member of CANNT.*

***Kidney Foundation of Canada**—Founding member of the Nova Scotia Kidney Foundation; Lifetime Director.*

Souvenirs et réflexions en tant qu'infirmière de dialyse et membre de l'ACITN

Par Frances Boutilier

En prenant connaissance du contenu du programme du congrès de l'ACITN de 2008, qui se déroulera à Québec, je n'ai pas pu m'empêcher de penser à tout le chemin que nous avons parcouru !

J'ai commencé à m'intéresser à la dialyse en 1965, à mes tout premiers débuts dans la profession d'infirmière. À cette époque, on m'avait demandé de préparer un patient pour son transport par avion à Montréal afin qu'il y reçoive un traitement aigu d'hémodialyse. Plus tard, j'ai accompagné un patient gravement malade à l'unité du rein artificiel qui était en plein essor. Je voulais en apprendre plus ! Un jour de février 1966, le Dr A.J. MacLeod, interniste, qui était responsable de l'unité du rein artificiel, est venu me trouver à l'unité de soins et m'a dit : « Chère demoiselle, vous commencez à travailler à l'unité du rein artificiel dès lundi. » Et, c'est ainsi qu'a commencé une aventure qui a duré au-delà de 20 ans !

Depuis les débuts, avec le premier rein artificiel fonctionnel du Dr Kolff qui regroupait un ensemble de tuyaux (en tout point semblable à une machine à laver !) jusqu'aux appareils RSP de Travenol, en passant par les appareils de Drake Willock et les systèmes de traitement d'eau, puis des systèmes d'approvisionnement central à l'équipement de quatrième et de cinquième génération, la technologie et les compétences dans les soins infirmiers en dialyse ont évolué et n'ont cessé de progresser. L'un des défis majeurs consistait à répondre aux besoins particuliers de dialyse des enfants et des nourrissons. Au cœur de tout ceci, il y avait les patients et leur famille qui sont devenus au fil du temps notre « famille élargie » avec qui nous avons ri, pleuré et partagé le quotidien. J'ai sans cesse admiré leur détermination et leur courage de vivre en dépit des horaires stricts de dialyse.

En 1968, Halifax a été l'hôte du congrès de la Société canadienne des technologues en circulation extracorporelle (CANSECT, de l'anglais Canadian Society of Extracorporeal Circulation Technicians). L'effectif de CANSECT englobait à la fois des infirmières et infirmiers et technologues de néphrologie ainsi que des perfusionnistes cœur-poumon. Notre point commun était la circulation extracorporelle. Cependant, en 1973, les différences entre les deux modes de traitement et les deux groupes sont devenues apparentes. La thérapie cœur-poumon se fait à court terme en salle d'opération et relève principalement de la technologie, alors que la dialyse est un traitement à long terme qui requiert des soins médicaux chroniques avec une équipe interdisciplinaire—néphrologues, infirmières, technologues, pharmaciennes, travailleurs sociaux et diététistes.

Puis, en 1975, au cours d'un symposium à Toronto, les perfusionnistes cœur-poumon ont voté en faveur de se joindre à la Société canadienne de cardiologie. Ceux et celles d'entre nous qui œuvraient dans le secteur de la dialyse ont décidé de rester ensemble, de conserver la Charte et de poursuivre le travail d'éducation déjà entamé. Nous avons ainsi créé la Société canadienne des perfusionnistes, qui est devenue, en 1977, la Société canadienne des perfusionnistes en dialyse (SCPD).

En 1976, 60 congressistes se sont réunis à Halifax. Ce congrès fut qualifié de belle réussite ! Ce fut à cette occasion que je suis devenue présidente, assistée par des personnes motivées formant le Conseil d'administration. Peu nombreux, nous n'avions ni argent ni élément d'actif, mais possédions une Charte, l'ébauche d'un programme d'éducation, de l'enthousiasme et de la détermination à revendre afin de gravir les échelons de la réussite ! Et le reste est de l'histoire !

Au cours de mon mandat à titre de présidente et, par la suite en tant que présidente du Conseil d'administration, j'ai eu l'occasion de travailler avec bon nombre de personnes engagées et dévouées qui croyaient en notre Association et qui ont fait preuve de ténacité pour que nous puissions célébrer aujourd'hui le succès que nous lui connaissons. J'ai également eu la chance d'assister à de nombreux congrès et symposiums au Canada, aux États-Unis et en Europe. Je crois que j'ai été portée par la vague déferlante d'innovations en matière de modalités de traitement en dialyse. En constatant mon cheminement de carrière dans le domaine de la dialyse et au sein de l'ACITN, ce fut une véritable aventure ! Une aventure riche en merveilleux souvenirs et en nombreux liens d'amitié qui se sont tissés au fil des années et qui m'a permis de participer à l'évolution de la thérapie de dialyse, qui sert la pratique des soins de la vie.

C'est avec impatience que j'attends le moment de partager avec vous le passé, le présent et l'avenir de l'ACITN au Congrès de 2008 qui aura lieu à Québec. À mesure que nous progressons, je souhaite que le rêve et la vision se poursuivent—que l'aventure continue !

Notes des rédactrices en chef

Un des faits saillants de la carrière de Fran dans les soins infirmiers en néphrologie a été la mise sur pied d'une unité de dialyse pour la période estivale à Cavendish (Île-du-Prince-Édouard [Î.-P-É.]), qui au cours de ses dix années d'exploitation a offert des occasions de vacances pour de nombreux patients inscrits au programme et provenant également du reste du Canada, des États-Unis et même du Japon.

Fran Boutilier s'est retirée des soins de la santé en 1994 et a entrepris des études à l'Atlantic School of Theology, où elle a obtenu une maîtrise en théologie en 1997. La même année, elle a été ordonnée diacre de l'Église anglicane du Canada et l'année suivante, prêtre. Elle a œuvré dans une paroisse rurale de l'Î.-P-É. et, par la suite, en tandem avec un collègue dans Pictou County (Nouvelle-Écosse), desservant six églises. Elle s'est retirée des activités à temps plein de son ministère en 2006, mais continue de servir son église à l'échelle diocésaine et paroissiale, notamment en exerçant son ministère pastoral, au besoin.

Les activités professionnelles de bénévolat de Fran liées au domaine de la néphrologie incluent :

***Association canadienne des infirmières et infirmiers et technologues de néphrologie (ACITN)** a siégé dès 1968 aux conseils d'administration du CANSECT, de la SCPD et de l'ACITN ; présidente de 1976–1981 et présidente du Conseil d'administration de 1981 à 1984 ; présidente de quatre congrès de l'ACITNà Halifax ; une Bourse a été créée en 1984 en son honneur en reconnaissance de ses années de service et, depuis ce temps, elle est membre à vie de l'ACITN.*

***Fondation canadienne du rein :** membre fondateur de la succursale de la Nouvelle-*

1960s

The Burrow chronicles: Early dialysis/nephrology nursing and recollections of CANNT

By Margaret L. Burrows, RN, BN, MEd

The year was 1969 and I was embarking on a new career in dialysis nursing after ignoring the warnings of my operating room co-workers who felt that the risk of acquiring hepatitis in this new specialty was too great. The Winnipeg General Hospital Dialysis Unit was two years old, having moved from Deer Lodge Hospital where the "father of dialysis in Manitoba", Dr. A.E. Thomson had pioneered the treatment and technology of acute hemodialysis. My friend Diane was the Assistant Head Nurse and she had been encouraging me to join the nursing team for some time.

The dialysis unit was located on the seventh floor, between the operating room and the intensive care unit, which says something about the degree of specialty status dialysis was given. Dialysis had the aura of still being "experimental". What a different world it was, both physically and intellectually. You walked through the double doors into a different world. You had the "Kiil room & workshop", the patient care area, the back room and laboratory plus the offices.

In the Kiil room, the dialyzers were built by staff, and when nurses had spare time you fired up the Bunsen burners and molded Teflon cylinders into dialysis connectors for AV shunts and declotting trays. All the while formalin fumes circulated about, burning your nose and eyes. Formalin was used to sterilize the Kiil dialyzers and litres of the noxious liquid were rinsed out of the dialyzers as part of the pre-dialysis preparation. Did I mention that this room was also our coffee room?

You entered the unit patient care area proper and there were patient lockers, a nursing station and a six-bed unit. What was strikingly obvious was that everyone was young: the patients, the nurses and technicians, and the doctors. In the beginning, there were 10 to 12 patients on the program with the unit operating daily, Monday to Saturday.

The back room was where the central dialysate preparation took place and the domain of Bill and Lorne, the dialysis technicians. Claudia was the laboratory technician who processed all the blood chemistries on the dialysis patients. The nurses had to collect the specimens, centrifuge them, and pipette the serum off and refrigerate it.

Hemodialysis back then was not the slick technology that is today. It was crude, clumsy and physiologically assaulting to the patients. Patients had to be young and relatively healthy to survive the treatment. Until the advent of the Scribner AV shunt, chronic dialysis was not possible as vessels were sacrificed with treatment, thus limiting treatment to patients with acute renal failure. Patients with AV shunts wore 24-karat gold chains around their necks with clamps on them. The high-quality gold allowed the necklace to tear away easily so the clamps could be accessed and used in case of shunt disconnection and exsanguination avoided. Kiil dialyzers were heavy, three-layered envelopes. Dialysate was a single-recipe fluid-using concentrate and tap water, circulated from one central system to all stations. The centrally monitored dialysate system automatically mixed the dialysate, controlled temperature and conductivity and pumped it to the individual patient stations. Patients dialyzed for six to 10 hours, three times a week.

Patients usually tried to sleep their way through much of the treatment ordeal. Patients were bled into the dialysers and you watched the dialysate outflow line to be sure that the membranes would hold. You hoped the effluent dialysate line would stay clear, but many times they would turn pink to red, signifying a blood leak. Blood losses when this happened were 300 ml or more. Blood transfusions were a common occurrence as there was no erythropoietin therapy back then. Auxiliary equipment was hung from the dialyzer frame and the lightest one was about 20 pounds. Heparin pumps were mechanical devices with rods and clamps that had to be hammered in place with the ball of your hand to get them infusing. Blood pumps were mechanical monsters that you had to thread bloodlines through. Blood flow rates were checked by injecting an air bubble into the blood line and timing it with a stopwatch. Fluid removal was imprecise and regulated by applying negative pressure on the effluent dialyate hose. Again, you watched for membrane–blood tears as you increased the negative pressure to accomplish fluid removal.

Pat, the nutritionist, kept the patients on a tight restraint with regards to diet and fluid allowance. If patient BUNs and fluid weight gains were not too high they were allowed a "treat" meal from the central kitchen. Many patients considered a hamburger and fries to be the highlight of the treatment. One of the nurses used to cook salt-free ketchup from fresh tomatoes in the unit to add to their "treat" meal satisfaction. Nurses spent hours with patients counselling them on how to cope with end stage renal disease (ESRD) and letting patients determine what was best for them. Patients were taught about fluid balance, blood pressure monitoring, fluid management and medications.

Nurses and technicians were "on-call" for acute dialysis. For the most part,

acute dialysis was done in the intensive care unit (ICU). A mobile "green tank" was filled with about 150 litres of prepared dialysate and this weighty colossus was rolled on tiny, wobbly wheels to the ICU, along with the rest of the equipment, dialyzer and auxiliary equipment. Just getting the equipment to the patient was exhausting—was it any wonder most of the nurses were young?

Dialysis nursing and technology soon advanced and we saw the advent of the AV fistula and vessel graft materials being used with the phasing out of AV shunts. AV fistula and grafts with needle cannulation greatly widened the possibility of hemodialysis treatment to a larger patient population. Central dialysate systems were replaced by Drake Willock individual patient systems and Kiil dialyzers were replaced by flat plate, parallel flow dialyzers and then hollow fibre dialyzers. Water treatment technology was improved. The unit flirted with re-use during this time, as did many other units across North America. Our first self-care or home dialysis patient was taught by Elaine and Birgit using the coil dialyzer with "Travenol RSP", a single-pass recirculating hemodialysis machine.

Nurses who previously learned "on-the-job" now had a formal six-week orientation program to complete prior to working on the unit. The domain of renal nursing was being established. Dialysis technologies continued to advance and, after a hiatus, I returned to dialysis nursing. A new nursing requirement was that nurses had to write the Canadian Society of Dialysis Perfusionists (CSDP) national examination. When I returned in 1979, things had greatly changed. I believe we were using Gambro AK 10s, later followed by Cobe dialysis systems, and everything seemed to be very high-tech, sleek and smooth. I wrote the exam and won the Silver medal that year and, I guess, this brought me to the attention of the movers and shakers in CSDP.

I think that I attended a conference and, with little thought, I allowed myself to be convinced to let my name stand for vice-president, as vice-presidents didn't have to do anything, just show up. At my first board meeting, I found out that the non-profit organization was in debt and that for family reasons the president had to resign (I think that was it). Frances Boutillier and Pamela Letourneau convinced me to stay on as president even though my instinct was to cut and run. Pamela Letourneau promised that if I stayed on she and her colleagues at the Calgary Foothills Unit would go forward with the conference that had been earlier postponed by a postal strike. Calgary came through in March of 1982, followed by London in November of that same year. The two conferences allowed us to dig our way out of the debt that had crippled us. Time has destroyed my recollection of the names of the many people who were so helpful during this time, but there is no doubt in my mind that if it were not for people like Frances, Pamela and Phyllis Malek, who took a lead role in the publication of the **Dialtec Journal**, there would be no CANNT, as we know it. Nurses and technicians all pitched in with journal articles and conference presentations.

It was a busy, heady time. Money was so tight that many people paid their own way to board meetings and I remember a time when four, or was it five nurses were in one hotel room. There were five regions during this period: Maritimes, Quebec, Ontario, Prairies and British Columbia. I remember attending a local conference in Montreal as president, and I remember the spirit was strong to make sure the organization continued. Other board members tried to have a visible presence in the other regions. During this period, tools were developed to assist with the organizational structure of the organization. We found out that an annual report had to be submitted to the government to maintain our non-profit incorporation status and that this needed to be done, as well as the minute book maintained for legal purposes, as well as to keep track of our history. Policies were put into place for financial protocols, secretarial job descriptions, and nomination processes and a workbook was developed to assist chapters with planning symposiums. A committee was formed to develop workload tools for dialysis units. A committee was struck to begin working on nephrology nurses standards of care using the Canadian Nurses Association (CNA) model. I was on the board of directors when we effected a name change from Canadian Society of Dialysis Perfusionists (CSDP) to Canadian Association of Nephrology Nurses and Technicians (CANNT) to reflect more accurately who we were and what we did. In 1984, I was pleased to represent CANNT and present a paper at the American Nephrology Nurses Association (ANNA) Conference in Philadelphia. (Burrows, M.L.,1984. Canadian perspective on renal nursing education, **American Nephrology Nurses Association Journal, 11**(4), 32–35). The following year, I again was pleased to represent CANNT and present a paper at the European Dialysis and Transplant Nurses Association–European Renal Care Association (EDTNA–ERCA), (Burrows, M.L., 1985. Renal nursing standards in preparation and practice, **EDTNA-ERCA Journal**, Vol V).

On home ground in Winnipeg at the Health Sciences Centre, I was pleased to take our renal nursing program forward to the then Manitoba Association of Registered Nurses (now the College of Registered Nurses of Manitoba) for accreditation. This 12-week post-RN nursing education program received accreditation and, at the time, was the only accredited renal nursing program in Canada. Manitoba nurses completed this education program prior to working in a dialysis unit and, in addition, many chose to complete the CANNT certification process. When CANNT chose to join the CNA in the certification process, I was pleased to be among a select group of nephrology nurses who spent a week at CNA in 1991, working with a professional test question expert to develop the certification examination. That event was the final act in my nephrology nursing career and my association with CANNT.

My remembrances of nephrology nursing and CANNT are inseparable and still remain as one of the most fulfilling and happy periods in my career.

About the author

Margaret L. Burrows, RN, BN, MEd, recently retired from her position as Director of Educational Programs, Department of Obstetrics, Gynecology, and Reproductive Sciences, Faculty of Medicine, University of Manitoba, Winnipeg, MB.

Marg's Professional Volunteer Activities related to nephrology included:

***CANNT**—President, CANNT 1981—1984; Chair, Board of Directors, CANNT 1984–1985; Member, Board of Directors, CANNT 1985–1986.*

***Canadian Nurses Association (CNA)**—Item writer for the Nephrology Certification Exam 1991.*

***Kidney Foundation of Canada**—Member, Medical Advisory Committee Kidney Foundation Manitoba Branch 1988–1994.*

A brief history of dialysis in the Victoria Hospital

By Phyllis Malek, RN, BHScN, CNeph(C)

This article was first published in the ***Nephro News, 2006****: A newsletter for patients of the Adam Linton Hemodialysis Unit, London Health Sciences Centre.*

Chronic hemodialysis, as standard treatment for chronic renal failure, began in the mid-1960s. Actually, Victoria Hospital, London, Ontario (now part of London Health Sciences Centre), had the first chronic hemodialysis unit in North America and it started in 1965. The initial machines used here were huge tubs of chemicals into which the dialyzer (filter) was submerged. As blood passed through the tubes, impurities were filtered out. It was called a Twin Coil machine.

Then, the next machine was called the Travenol RSP. It looked like a ringer-style washing machine that had a large tank in the bottom of the machine that held 120 litres of water into which we added chemicals that made up the cleansing solution. Once it was prepared, we pumped 12 litres into the upper compartment into which we placed the dialyzer. Patients dialyzed twice a week for six to eight hours at a time. Almost all patients had nausea and vomiting, as well as cramps and low blood pressure, as we could only control fluid removal by placing a screw clamp on the venous line to build pressure inside the dialyzer forcing fluid out of the blood stream, thus taking weight (fluid) off the patient.

In the early 1970s, companies began to develop machines for dialysis. Many of these had safety features such as air and blood detectors. One such machine was called the Cobe Century System II or C2, which was half the size of the RSPs and continuously mixed water with the concentrated chemicals in small amounts. They even had safety features such as air and blood detectors! Even with these strides, patients frequently had nausea/vomiting, decreased blood pressure, cramps, etc., at least once a week, as we still had no control over fluid loss.

As well, during the mid-1970s, patients' treatment schedules changed from long twice-a-week sessions to shorter three-times-a-week treatments. In general, patients felt better because the accumulation of waste products did not become as high between treatments and then drop as much during a dialysis treatment.

The next major improvement in machine technology was the volumetric machine where the amount of fluid removed could be controlled by a series of measurements and valves within the machine. The advent of volumetric control meant a very large decrease in the number of patients who experienced low blood pressure on a routine basis.

While all the research and development was being done on the machines, similar work was being done on the artificial kidney, making it smaller, more compact, lighter in weight and requiring less blood to fill the system. This meant that instead of needing 500 ml of blood to fill the system, current dialyzers use only 120 to 150 ml (approximately one cup) of blood. This means less blood outside of the patient's body at one time, which, in turn, means the patient feels better.

Also, great strides in medications such as erythropoietin (EPO) have greatly improved the patients' sense of well-being and energy.

And, as some of you know, research continues to improve the quality of life for patients on dialysis by trying to improve clearances, thus decreasing time of treatment; make dialysis more comfortable by removing fluid in a more controlled manner, thus eliminating or minimizing cramps; and on and on.

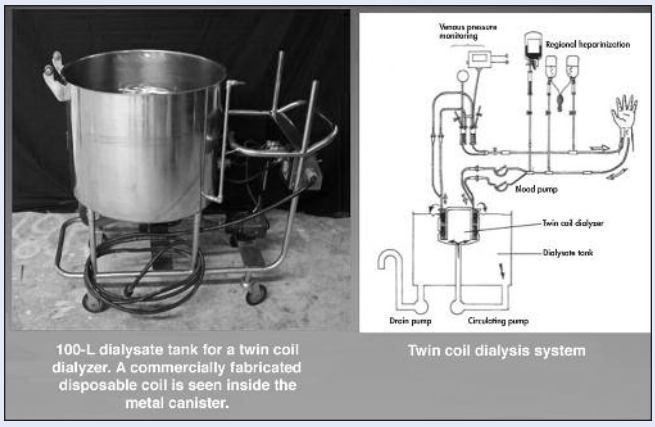
I hope this brief history lesson helps you understand how far dialysis has come in a short period of time and yet how far we have to go.

About the author

Phyllis Malek, RN, BHScN, CNeph(C), retired in 2007 and is currently working on a casual basis in the Adam Linton Unit, London Health Sciences Centre. Phyllis first learned hemodialysis and peritoneal dialysis at Victoria Hospital in the late 1960s. She then helped to set up the hemodialysis unit at University Hospital, London—now part of London Health Sciences Centre—in the early 1970s. She became the Nursing Education Instructor at the London Health Sciences Centre from 1986–1999.

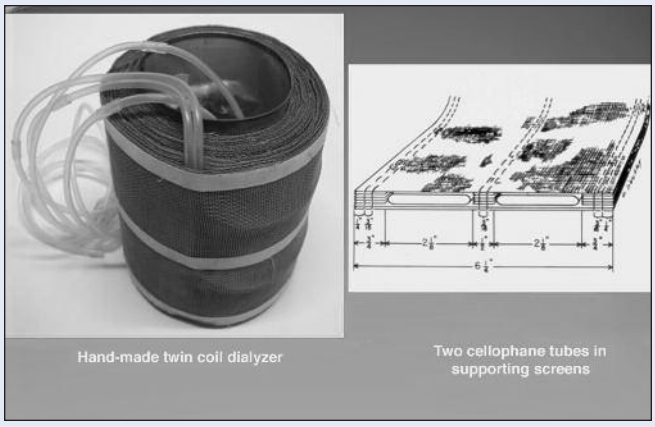
Phyllis's Professional Volunteer activities in nephrology have included:
CANNT*—Board of Directors: President 1988; Past President 1989; CANNT Newsletter Editor 1983–1986; Member and Co-chair of National Symposia London 1982, 1987, and 1998.*

Canadian Nurses Association (CNA)*—Item writer for the Nephrology Certification Exam 2001.*



100-L dialysate tank for a twin coil dialyzer. A commercially fabricated disposable coil is seen inside the metal canister.

Twin coil dialysis system



Hand-made twin coil dialyzer

Two cellophane tubes in supporting screens

Photos courtesy of Dr. R. Lindsay, London Health Sciences Centre, London, ON.

1960s

Improve Patient Outcomes

Tal Palindrome™
Symmetric tip chronic hemodialysis catheter

Covidien's symmetric tip catheter minimizes recirculation[1]
and reduces the likelihood of re-intervention.[2]

www.covidien.com

[1] Tal, MG. Comparison of Recirculation Percentage of the Palindrome™ Catheter and Standard Hemodialysis Catheters in a Swine Model. *J Vasc Interventional Rad* 16(9): 1237-1240, 2005.
[2] Kakkos, SK et al. Effectiveness of a New Tunneled Catheter in Preventing Catheter Malfunction: A Comparative Study. *J Vasc Interventional Rad* 19(7): 1018-1026, 2008.

Currently licensed under Tyco Healthcare with Health Canada.

COVIDIEN

7300 Trans-Canada
Pointe-Claire, QC
H9R 1C7

877-664-8926 [T]
800-567-1939 [F]

www.covidien.com

1970s

Excerpt from Message from the President posted in DIALTEC publication—1970s

1976–1981 Frances Boutilier

"An invitation to attend Gambro's Western Canada Symposium also resulted in a whirlwind tour of dialysis units in Montreal, Victoria, Calgary and Vancouver. I attended an executive meeting in Montreal and a visit to the Royal Victoria Unit. Then, on to Calgary to the Symposium where I gave a presentation on CSDP—'Our Objectives and Progress.' I met with nurses and technicians from Hamilton, Thunder Bay, Winnipeg, Saskatoon, Regina, Edmonton, Calgary, Vancouver and Victoria. Then, on to British Columbia to visit dialysis units at the Royal Jubilee in Victoria, Royal Columbian in New Westminster and St. Paul's and Vancouver General in Vancouver. I also met with Dr. John Price and Dr. E. Cameron in Vancouver. Both were strong supporters of CSDP. The response and enthusiasm that I received for CSDP have served to confirm the necessity and importance of the programs and services the society can provide to dialysis personnel." (1979 March–April, DIALTEC)

Figures One, Two, & Three, reprinted from ***Dialtec****, The official newsletter of the Canadian Society of Dialysis Perfusionists, (1979 Nov–Dec), pages 1–2. Newsletter courtesy of Fran Boutilier.*

Figure One. Head table at the annual general meeting of the CSDP Board held during Symposium '79 in Montreal. Seated from the left are Miriam Dattel—Symposium Chairman, Terry Rafter—Treasurer, Ian Forrest—Executive Director, Fran Boutilier—President, Alice Weir—Vice-President, Gerry Stevens—Member of Board of Directors, Louise Czech—Asst. Secretary, Franca Woods—Education Chairman.

Figure Three. Review of 4th Annual CSDP Symposium, Montreal.

4th Annual C.S.D.P. Symposium

Hotel Loews, La Cité, Montreal
September 14 & 15, 1979

168 people attended our recent symposium in Montreal, which was the largest attendance recorded in our history. Thank you all for your interest and participation. We felt it was a successful symposium, but your feedback confirmed it.

Figure Two.

Of course, Symposium '79 would have been impossible without the behind-the-scenes work of the Planning Committee, which was set up and organized by Miriam Dattel of the Royal Victoria Hospital in Montreal. As well, many thanks are due to the other helpers from various dialysis units in Montreal for their hard work.

Symposium '79 Program Committee:

Chairpersons:
Miriam Dattel, Royal Victoria Hospital
Beth Snyder, Centre Hospitalier Cote des Neiges

Advisor:
Alice Weir, St. Mary's Hospital

Program:
Betty McCloskey, Montreal General Hospital
Arlene Thompson, Montreal General Hospital

Accommodations:
Diane Major, Royal Victoria Hospital

Entertainment and Liason with French Sector:
Nicole Frezza, Centre Hospitalier Cote des Neiges
Denyse Robert, Sacre Coeur Hospital

Secretaries:
Cathy Derasp, Royal Victoria Hospital
Helen MacGregor, Royal Victoria Hospital

Publicity:
Jan Barrow, Jewish General Hospital
Viki Jackson, Jewish General Hospital

Finance:
Mary Williams, St. Mary's Hospital

Remembering the past: Peritoneal dialysis practices

By Betty Kelman, RN, MEd, CNeph(C)

The journey through life focuses on today until one is asked to stop and reflect on the past. Although my career in nephrology began in 1974, there was much achieved by that time, so I consulted with Sharron Izatt, our peritoneal dialysis (PD) nurse manager, to fill in some of my own memories, and my inherited memories. When I entered the field, the '70s brought exciting changes as the Peritoneal Dialysis Unit (PDU)/Home Peritoneal Dialysis Unit (HPDU) had just transferred to its new location. The unit boasted the innovative Lasker cycler machine, which decreased nursing workload and enhanced the therapy's option as a home treatment. These were the days prior to the advent of continuous ambulatory peritoneal dialysis (CAPD). Thus, all patients required what we now think of as intermittent peritoneal dialysis (IPD), or long treatments on a cycler.

Patients required an acute stylet catheter placed by the physician for each treatment. It was then removed and the nurse would insert a Deane's prosthesis, which resembled a plastic plug to maintain an open tract for re-introduction of the catheter on the next session. A Y-set manual tubing allowed hanging of two bags and an attached drainage bag was used to control the delivery of exchanges. Dialysate solution was infused much in the manner of an intravenous set-up. One patient actually travelled to Scotland on this system and, although the trip necessitated well-thought-out plans and supplies, the determination to normalize life on peritoneal dialysis paved the path for future patients.

The introduction of the Tenckhoff catheter provided a more permanent access, and it was originally inserted at the bedside by the nephrologists. An acute catheter would be inserted first to instill dialysate, and then a special trocar was used to insert the soft silastic catheter, which was left in place. Eventually, surgeons began to do this procedure in the operating room.

After placement of the catheter, patients would come to the PDU twice a week for 20-hour treatments. On Sundays, the unit was sealed and "fogged" or sprayed with disinfectant followed by wall washing. The duty nurse would then prepare the unit for Monday by making beds, restocking supplies and preparing equipment for sterilization. Sunday tasks expanded when the "PDS-RO", a reverse osmosis machine was introduced, which made its own dialysis solution from de-ionized/RO water and concentrate. The machine required weekly sterilization with formaldehyde and a rinse-out process prior to safety checks. The dialysis technologists expanded their role to assist with the more complex maintenance.

For a typical day shift in our PDU, nurses would set up the eight machines unless the census exceeded capacity (then, the nurses' desk was replaced with a bed). The machines were partially set up with two bags until the patients arrived. One bag would be the designated medication bag and have heparin added. For new patients or those with drainage problems, the manual system was still in use and a large incubator oven was

Deane's prosthesis.
Photo courtesy of Sharron Izatt, (Toronto Western Hospital, Ontario, archives)

stocked with a variety of solutions. When the patients arrived, driven by family members or friends, assessments, including weights and blood pressures would be carried out. The remainder of the bags would be selected as per individual requirements. At that time, only 2 L bags were available, and given that the prescription was either 1 L every 15 minutes or 2 L every 30 minutes, the bag set would last about four hours and have to be changed five times during the sessions. The advent of the 3 L bag was a welcome addition. The spent or used dialysate was collected in large 30 L containers, and I recall that one of our great advances was a trolley, which meant the nurses could roll the heavy tanks to the shower for emptying instead of dragging them! Later, a floor drain system was installed so that tank emptying (thankfully) became a thing of the past.

The protocols differed greatly from today. For example, two nurses were required to connect and disconnect a patient from the machine. The 20-minute procedure consisted of a scrub nurse who, after completing a three-minute surgical scrub, gowned and gloved and, with an assistant, proceeded to drape the patient with a pre-sterilized bed sheet. Patients were covered from head to toe with an opening left in the middle to access the peritoneal catheter. At the end of night shift, the nurses would start the disconnection procedure at about 5:30 a.m., assess patients, discharge them and prepare the unit for the next arrivals.

Patients who were motivated and considered suitable home candidates would "graduate" to HPDU where they learned how to connect and disconnect using a specially designed tray with drapes. With help and support from the PD nurses, patients learned how to manage the machines, connect and disconnect, trouble-shoot problems and complications, and order supplies. I empathized with patients who found sterile gloving one of the more difficult tasks to learn! The home treatments ran 10 hours overnight, four times per week, thus the impact on their lives was huge.

In a retrospective review, Karanicolas et al. (1977) described our unit's program. Ninety-one patients were trained in home PD with 11 patients on the original manual system, 73 on the cycler and seven on the PDS-RO between November 1972 and November 1975. The manual system required patients to perform an exchange every hour over the daytime and the authors further stated that the method was only suitable for "housewives and retired or unemployed men". The machines made the treatment more convenient by providing dialysis overnight, and the training time ranged from 11 to 15 days. Thirty-three episodes of peritonitis occurred in 23 of the patients during the study time with an incidence of 27.7%.

Peritonitis, of course, was a problem then as now, as were exit site infections. Peritonitis was managed by a five-day lavage with antibiotics. Patients had pain at the beginning of the treatment but, at the end, the pain had changed from an infectious etiology to the discomfort of continuous dialysis.

As this was a time pre-erythropoietin, we used to think that hemoglobins of 60 to 80 g/L were acceptable. Our options for anemia management were oral iron, transfusion if Hgb below 60, or decadurabolin (an anabolic steroid) weekly. Bone disease was managed with diet, non-active forms of vitamin D and Amphogel (aluminum hydroxide) either in the available liquid form or creatively disguised as Amphogel cookies and muffins. The development of phosphate binders in capsule and tablet form was considered a major achievement!

Life is a journey, a journey of privilege for those among us entrusted with the care of our patients and families. I appreciate greatly the advances that have been made both by the health professions and our colleagues in industry who have risen to the challenges of improving peritoneal dialysis over the decades. Mostly, however, I applaud our patients, who have partnered with us on this journey, and have contributed so significantly to the tremendous advancements that we have seen, and will no doubt be our guiding light into the future.

Reference

Karanicolas, S., Oreopoulos, D.G., Pylypchuk, G., Fenton, S.S.A., Cattran, D.C., Rapoport, A., & DeVeber, G.A. (1977). Home peritoneal dialysis: 3 years' experience in Toronto. **Canadian Medical Association Journal,** 5(116), 266–269.

About the author

Elizabeth (Betty) Kelman, RN, MEd, CNeph(C), is an Advanced Practice Nurse (APN) Nephrology at University Health Network, Toronto, ON.

Betty's professional volunteer activities related to nephrology include:

***CANNT**—Longtime member of CANNT; presentations at CANNT meetings in 1989, 1990, 1992, 1993, 2000 and 2002; represented CANNT at the World Foundation for Renal Care in June 2000 at the Turkish Association of Nephrology Nurses meeting; represented CANNT at the World Foundation for Renal Care from 2000 to 2003.*

***Lifetime Achievement Award** in Peritoneal Dialysis Nursing at the Annual Dialysis Conference, University of Missouri, 2008.*

***Canadian Nurses Association (CNA)**—Member of an Item Writing Workgroup for the Nephrology Nursing Certification Exam in 1991 and an item appraiser in 1994.*

***Humber College, ON**—Collaborated with Humber College in developing and teaching a program for nephrology nursing.*

***International Society of Peritoneal Dialysis (ISPD)**—Long-term member of the ISPD; member of the Nursing Liaison Committee from 1993 to 1998; chair from 1995 to 1998.*

***Renal Family**—From 1982 to 1983, acted as Co-Editor (Nursing) and from 1983 to 1993 as Editor (Nursing) for a non-refereed journal, **The Renal Family**. This journal was an idea conceived by a patient group at our hospital who began a newsletter, which, under the direction of Lorne Cooper went on to become a journal for patients, family, family members and health care professionals. Authored 22 articles and co-authored six articles on subjects pertinent to people living with renal disease and dialysis.*

Anemia in chronic renal failure

By Christine Frye, RN, CP, Dialysis Unit, Ottawa Civic Hospital

This article was first published in **The Canadian Society of Extracorporeal Circulation Technicians The/Le Journal** *(1973, March), 2(1), 17–18.*

Richard Bright, in 1836, commented on the characteristic pallor of patients with nephritis (Bright, 1836), and this symptom has become a hallmark of chronic renal failure. Our experience in chronic hemodialysis has demonstrated clearly that anemia is a very serious aspect of the uremic syndrome. Because its prevention is difficult, and its treatment is complicated by many hazards, it is an important symptom to consider. This paper represents a brief review of the causes, symptoms and methods of treatment of the anemia of chronic renal failure.

Etiology

Most authors describe three major causes of uremic anemia: blood loss, hemolysis and shortened red cell survival, and failure of the bone marrow to produce new red cells (Schreiner & Maher, 1961; Brest & Moyer, 1967; Adamson, Eschbach, & Finch, 1968).

The loss of red cell mass can occur in a variety of ways, chief among them being hemorrhage and complications of dialysis. Schreiner and Maher wrote in 1961 that abnormal bleeding was unquestionably a major complication of uremia. They reported the most frequent abnormalities to be centred around platelets, with thrombocytopenia and abnormal prothrombin consumption being well documented (Schreiner & Maher). However, a 1967 report by Hampers and Schupak states that chronic hemodialysis patients do not manifest a bleeding tendency, and, in fact, they found evidence exists that some patients may be in a 'hypercoagulable state' and require anti-coagulants to prevent shunt clotting (Hampers & Schupak, 1967).

There is no doubt about the dangers of blood loss through chronic hemodialysis. Retention of blood in the dialyzer at the end of the procedure, frequent sampling for laboratory tests, membrane leaks, and abnormal bleeding resulting from anticoagulation are all sources of blood loss. The systemic causes of anemia rarely result in iron deficiency, but chronic loss of blood, over a period of months or years of dialysis, may deplete iron stores as well.

The red blood cells in uremic patients are often deformed and, when the changes are pronounced, the cell's life span is shortened and hemolysis ensues. In the majority of patients, this shortened life span is related to the unfavourable environment of uremia, rather than to the fault in the cells themselves. Although the decrease in viability is usually quite moderate, in combination with defective bone marrow compensation, it may lead to a significant degree of anemia (Brest & Moyer). Hemolysis and lack of erythropoiesis play varying roles in their relation to the uremic blood picture.

As with the renin-angiotensin system, there is another renal factor that acts on a plasma substrate to produce an active end product. This erythropoietin apparently acts on the bone marrow by stimulating the conversion of primitive undifferentiated cells to erythroblasts. The anatomic location of erythropoietin-producing cells is not known. Evidence that the renal factor may be produced in the JG Apparatus is inconclusive. Erythropoietin is sensitive to slight changes in oxygen supply. It is normally present in urine, and the output changes in hematocrit levels. (Experimentally, erythropoietin appears to rise as hematocrit falls.) Lack of erythropoietin results in a lack of stimulation and proliferation of the erythroid marrow and subnormal red cell level.

In some patients, chronic urinary tract infection serves to further depress the erythropoietin mechanism. There is also evidence that the toxins produced by uremia depress the production of red cells in the bone marrow (March, Dr. A.C., Personal Communication).

The concept of erythropoietin failure in renal disease is complicated in that certain diseases its production is increased rather than decreased. This occurs when lesions produce renal ischemia without severely damaging the erythropoietin-generating apparatus, such as experimentally increasing intrarenal pressure by ureteral obstruction. Neoplastic lesions of the kidney may also cause an excess production of erythropoietin leading to an increase in red cell mass.

There is evidence to suggest some extra-renal production of erythropoietin. However, the important role of the kidney is demonstrated by the increased hematocrit of a renoprival patient following a successful transplant.

In summary, the kidney is the primary organ responsible for the regulation of erythropoiesis. Renal failure is often associated with a decreased erythropoietin output resulting in hypoproliferative anemia. In addition, a moderate degree of hemolysis and blood loss by various means plays an important role in decreasing red cell mass, which the bone marrow is unable to restore to normal.

Symptoms

Aside from the characteristic pallor, the primary symptom of uremic anemia is fatigue or loss of strength. Some patients are well able to tolerate hematocrit levels below 20% and remain relatively asymptomatic. Older patients and those who have significant myocardial hypertrophy, hypertension and hypertensive cardiovascular disease may require higher hematocrits to adequately oxygenate their tissues. Other symptoms that may be reported by anemic patients are palpitations, pounding in the ears, and vertigo.

Signs and symptoms vary with individual uremic patients, and some may undergo dialysis for several months without requiring blood transfusions. Others may arrive at

chronic hemodialysis severely anemic and require frequent transfusions just to maintain adequate hematocrits. Again, the presence or absence of kidney tissue may have an important role to play and it is generally accepted that anephric patients will have consistently low hematocrits.

Treatment

The prime objective in treating uremic anemia is the alleviation of anoxic symptoms, and this is best done through periodic transfusions of fresh blood cells. There are many dangers inherent in blood transfusions, however, and these must be weighed carefully when considering treatment.

Unit screening techniques are perfected and commonly employed, every unit of donor blood carries the risk of being contaminated with the hepatitis virus. The seriousness of serum hepatitis may be accentuated in a uremic patient whose general condition is poor and whose resistance to infection is low. On the other hand, there have been cases of essentially asymptomatic hepatitis, which produces the danger of unsuspected contamination of staff and other patients.

A second danger is the possibility of a reaction caused by carelessness in crossmatching or administering donor blood, or by impurities in the blood itself. Patients whose fluid balance is not well controlled run the risk of circulatory overload when 350 ml to 1,000 ml of donor blood are administered. Isosensitization to red and white cell antigens can produce circulating antibodies, which may cause acute or hyperacute rejection of a transplanted organ. Frequent transfusions carry a possible risk of overloading the recipient with iron.

Prevention of the need for transfusions is thus vital. Adequate nutrition may help in maintaining the hematocrit level, and sufficient protein, iron, and vitamins (especially B6, B12, and C) should be included in the diet. Because folic acid is water soluble and not bound to protein, substantial amounts may be lost during dialysis. Multivitamin supplements are frequently given to uremic patients. Excessive blood loss may be avoided by decreasing the frequency of lab tests and by care in handling the dialyzer and in returning the blood to the patient after dialysis. Properly occluded roller pumps and avoidance of turbulence in the extracorporeal circuit will minimize hemolysis. Prompt treatment of excessive or chronic bleeding, especially from the G.I. or G.U. tracts, is essential, and occasionally surgery is required; for example, hysterectomy, gastrectomy, removal of polycystic kidneys, etc.

Patients who have developed iron deficiency, manifested by microcytic, hypochromic red cells, decreased transferrin saturation, and absent bone marrow iron, usually respond to oral or parenteral iron administration (Richardson & Weinstein, 1970).

Androgenic hormones have been shown to stimulate production of erythropoietin. Some centres have recently been attempting to treat uremic anemia with frequent administration of large doses of testosterone preparations. Richardson and Weinstein of Miami reported erythropoietin stimulation in adequately dialyzed renal failure patients. This was demonstrated by a rise in arterial hematocrit, red cell volume, red cell volume per kilogram of body weight, shortened plasma iron clearance and, in some patients, increased iron turnover and utilization. Fifteen male patients were given courses of testosterone enanthate, 400 mg to 600 mg, IM weekly, for five to 44 weeks. On the basis of their experience and observations, the authors felt that when blood loss was minimized, transfusions for adequately dialyzed, well-nourished patients should rarely be required. The authors anticipated that their record of 46 transfusions for 264 patient months (0.17 transfusions per patient month) would be improved with further treatment.

Summary

Due to lack of renal erythropoietin production, the essentially normal bone marrow is incapable of undergoing a compensatory erythroid hyperplasia to counteract such hematologic side effects of uremia as excessive blood loss, hemolysis, and shortened red cell life span. The result is the characteristic anemia of renal failure. Symptoms develop gradually with the progression of the disease (presumably as more erythropoietin—producing cells are destroyed) and include weakness, fatigue, and pallor. The most obvious treatment is restoration of red cell volume by transfusions of fresh blood, but this carries with it such risks as serum hepatitis, transfusion reactions, antibody formation, and circulatory overload. Prevention of blood loss during dialysis or systemically, adequate nutrition, and prevention of red cell damage from dialysis equipment are all vital factors in diminishing anemia. Experiments have shown androgenic hormones to be effective in stimulating production of erythropoietin, possibly in extra-renal centres.

About the author

Christine Frye was an active member of CANSECT as early as 1969 and held different positions on the Board of Directors as well as writing articles for the journals.

References

Adamson, J.W., Eschbach, J., & Finch, C.A. (1968). The kidney and erthropoiesis. **Amer. Jour. Med.**, 725f.

Brest, A.N., & Moyer, J.H. (Ed.). (1967). **Renal Failure**. Toronto: J.B. Lippincott and Co.

Bright, R. (1836). Cases and observations illustrative of renal disease accompanied with the secretion of albuminous urine. **Guy's Hospital Report, 1**, 340.

Hampers, C.L., & Schupak, E. (1967). Long-term hemodialysis (p. 98). New York: Grune and Stratton.

Richardson, J.R., & Weinstein, M.B. (1970). Erthropoietin response of dialyzed patients to testosterone administration. **Ann. Int. Med., 73**, 403–407.

Schreiner, G.E., & Maher, J.F. (1961) **Uremia: Biochemistry, pathogenesis, and treatment**. Springfield, Il: C.C. Thomas.

Schreiner and Maher, op. cit.

Memories of a retired dialysis technologist (1974–2004)

By Terry Rafter

When starting in dialysis in the fall of 1974, I had no idea what an interesting and ever-changing career I was entering.

The unit consisted of eight beds, with a central delivery system capable of delivering only one level of sodium and using acetate concentrate. The water treatment consisted of a deionizer (DI) with water softener backup. Patients were scheduled for eight, 10 and 12 hours of treatment. No water treatment was used in the intensive care unit (ICU) hook-ups. We used a different concentrate to allow for the increase of sodium in the city water. Formalin was used as the disinfectant. Fluid removal was controlled by either a negative pressure pump or a venturi system. To compute the dialysate pressure, one had to actually do the math of venous pressure and negative pressure.

Blood pumps (if needed) and heparin pumps were add-ons to the control consoles located at each bed. The heparin pumps could be plugged into a wall outlet while the blood pump needed to be plugged into the console so it could react to alarms. The alarms were all manually set, meaning that the user could determine what the minimum and maximum settings would be.

Home dialysis patients used a fixed ratio proportion system and reused their dialysers three times a week. They were also trained to complete the preventative maintenance (PM) on their equipment. The water treatment was DI, with the patients in rural settings having a carbon filter to remove organics. At one time in 1975, the home patients out-numbered the in-centre patients. Preventative maintenance (PM) was carried out once a week on the central system and the DI was regenerated at this time.

The Canadian Society of Perfusionists inc

This is to certify that
Terrance
has passed successfully the Society's examination on homedialysis technology and has pledged to fulfill to the best of his her ability the aims of this paramedical specialty.

Ceci atteste que
Rafter
a réussi ses examens en techniques d'hémodialyse et s'engage à remplir au meilleur de ses connaissances les buts de cette spécialité paramédicale.

President Canadian Society of Nephrology
per .....

Chairman Board of Examiners
.....

President of the Society
.....

Terry's Certificate from the Canadian Society of Perfusionists, dated October 6, 1976, signed by Dr. Dufresne, Mary Sky, and Frances Boutilier (President of the Canadian Society of Perfusionists).

Then, the changes started. Single Patient Systems began to be integrated, new alarms were added to the machines (foam detectors). High-flux dialysers were introduced, which necessitated a whole new method of fluid removal and control. We were also mixing our own bicarbonate concentrate to be used in the new dual proportion system machines. (Ever hear of precipitation?)

New central systems allowed for the setting of various levels of sodium. We started to dialyze the patients in ICU with bicarbonate (now is available from vendors) and used water treatment. Treatment times were coming down to four to six hours. Reuse for the HD patients was discontinued. In the mid-1980s the unit converted to single patient systems that allowed us to provide both variable sodium and bicarbonate to all patients.

The latest machines allowed the unit to fully provide the patients with both sodium and ultrafiltration modelling. Electronic charting of the dialysis run was introduced at this time. This system had little flexibility in its configuration and was assessable only at the unit-based computers. Newer versions now allow access at the machine and any PC within the nephrology program network. This new version also allows the technologist to have a machine tracking option. PMs, repairs and life cycles can be available to all within the program. This is really a great tool for the technical groups with programs that have several units either within a hospital or, in our case, across three campuses and satellite units.

Certainly there have been further advances and modifications since I've left the field and there were many other alternatives to those chosen by our program, but all these changes have provided the patients with the best treatment and safety possible.

Throughout my career, the one thing that did remain constant was my involvement with the Canadian Association on Nephrology Nurses and Technologists (CANNT), as well as the Canadian Society of Extracorporeal Circulation Technicians (CANSECT), and the Canadian Society of Dialysis Perfusionists (CSDP). When I joined in 1975, the organization was separating from CANSECT and beginning a dialysis-based society. I always felt that our profession not only needed an association to set guidelines and standards that the technology team would follow, but also a venue to present/publish the important work being carried out by our group.

Certification was and still is one of the most important roles that CANNT provides to both the nurses and technologists. Back in the day, it was not regulated as it is now, but nonetheless it was a test of your knowledge in our field. Each year, the certification committee set the questions (yes! it was a CANNT committee) and sent out a study guide to those wishing to apply for certification. (Didn't charge as much in those days).

A written exam was provided to those applicants and their certified colleges monitored the writing of the exam. Once that task was completed and you passed with a certain percentage, the next part was an oral exam. This part was before a panel

made up of a nephrologist, a nurse, and a technologist. Each took a turn asking questions from their area of expertise. It was also a neat way of getting people to attend the national symposium where the oral exam took place. Once these steps were completed, a certificate was issued and you would use CDP after your name (see Figure One).

As a professional, it is important that one becomes involved in their professional association either at the local, provincial or national level. This involvement may be as an officer of the association, a member of a committee, or a contributor to the publication.

This provides you with a say in the evolution and direction of your profession. Looks good on the resume also.

About the author

Terry Rafter is now retired. He was Technical Manager, Nephrology Program 1974–2004, The Ottawa Hospital, Ottawa, ON.

*Terry's professional volunteer activities related to nephrology include: **CANNT**—Board of Directors: National Treasurer 1977–1978, 1983–1984; Secretary 1982–1983; Conference Co-Chair 1980 National Symposium, Ottawa; Conference Treasurer for 1996 and 2000 National Symposia, Ottawa.*

***Kidney Foundation of Canada**—Board Member Eastern*

Dietary management of renal disease

By Mrs. J. Somers, PDt, Renal Dietitian, Victoria General Hospital, Halifax, NS

This article was first published in The Dialtec *(1978), 1(3), pp. 2–4.*

Calories

In renal disease, it is vital that adequate amounts of calories are eaten each day. Adequate caloric intake is essential to prevent breakdown of protein for energy needs, resulting in weight loss. Generous use of allowed carbohydrates and fats is encouraged since the end products of their catabolism—carbon dioxide and water—do not impose a burden on the kidney.

Each patient's caloric needs are based on their height, weight, age, sex and activity. The prescribed diet should ensure an intake of 35 to 45 calories per kilogram of body weight.

Special calorie supplements may be needed to help increase the calorie content of the diet. The supplement most commonly used and acceptable to the patient is Gluconal. Gluconal is electrolyte free, colourless, tasteless and contains approximately 112 calories per ounce. It can be mixed with any beverage desired.

Other products that may be used to increase calories are Cal-Power and Hycal (both high-calorie beverages) and low-protein pasta and bread products. The low-protein bread and pastas are often difficult to obtain and are not too acceptable to the patient.

Some suggestions given to patients, to help increase the caloric content of their diets are as follows:

1. Use heavy cream (whipping) on cereal, in beverages, on fruit and desserts. It contains 96 calories per ounce.
2. Add extra sugar to fruit and fruit juices.
3. Use high-calorie desserts instead of always fruit.
4. Substitute suitable soft drinks or cranberry juice for coffee or tea.
5. Use cranberry sauce, apple jelly, mint jelly or red currant jelly as meat accompaniments.
6. Use as much salt-free butter as possible for vegetables, bread and cooking.
7. Use candies—hard clear types, jelly beans, gum drops, ju jubes, and marshmallows as snacks.
8. Use as much jam, jelly, and honey as possible on toast and bread.

Vitamins and minerals

The vitamin and mineral intake of patients on a restricted protein, potassium and sodium diet often does not meet the recommended daily allowances for certain vitamins and minerals. This is especially true for the water-soluble vitamins such as Vitamin C and the B vitamins, which are abundant in high-potassium foods such as fruits, vegetables, meat and milk. Also, there is a loss of water-soluble vitamins during dialysis treatments.

When the protein restriction is less than 50 grams per day, the diet tends to be low in folic acid, niacin, riboflavin, thiamine and vitamin B6.

Patients on long-term low-protein, low-sodium, low-potassium diets should receive a multivitamin capsule and folic acid daily to ensure adequate intake and to make up for losses that occur during the course of dialysis.

Interested in a new recipe for the summer?

Fruit Parfait
YIELD: 1 cup (1 serving)

SUBSTITUTE: 1 serving for 1 fruit exchange

INGREDIENTS:
- 4 large or 20 small marshmallows
- ¼ cup diced fruit (use only those fruits allowed on the diet)
- ¼ cup whipping cream
- 1 tablespoon white sugar

METHOD
1. Cut marshmallows into quarters or leave whole if using small marshmallows and combine with fruit. Chill in refrigerator for several hours.
2. Whip the cream. Fold in sugar.
3. Fold the sweetened whipped cream into fruit marshmallow mixture. Chill before serving.

CONTENT:
- 1 cup
- Calories: 399
- Protein: 2 grams
- Potassium: 2.2 mEq

Annette's story

By Annette Vigneux, RN(EC), MHSc, CNeph(C)

In 1974, a prerequisite to obtaining an interview to work in the hemodialysis unit at the Hospital for Sick Children, Toronto, was to spend a day observing in the unit. I had heard that the nephrology division was looking to hire a neonatal nurse, as they had just purchased equipment to hemodialyze newborns and infants. As a young and energetic grad of two years working in the neonatal intensive care unit (NICU), I eagerly signed up. At 7 a.m. one Monday morning, after three 12-hour night shifts in NICU, I was greeted by five very friendly nurses and a fantastic technologist. Soon, the children arrived in wheelchairs and plopped themselves into hospital beds. I watched a nurse thoroughly clean a young girl's arm and insert the biggest needle I had ever seen (remember, I was from the NICU) into her flailing arm. As the blood slowly left her body, my knees began to shake. I felt woozy, yet I was determined to stay cool, as I really wanted the opportunity to work in this highly specialized nursing area. As I became weaker, I perused the room for a seat, and slowly walked a few feet away to the closest chair. As I plunked myself down, there was a very loud thud and everyone turned to look at me. I was sitting on the weigh scale chair and the huge round dial behind my head revealed my weight to all. Flushed and embarrassed, I regained some composure to hoots of laughter.

One of the highlights of my nursing career was when I learned I was the successful candidate. I started on Thanksgiving Day, 1974, and every year on my anniversary I am so thankful for this opportunity.

I quickly learned how to wash instruments and meticulously wrap them to be sent for sterilization. When I mastered that task, I was sent to the 'bath.' I found that term very strange, but quickly learned to keep up; I needed to learn the exclusive jargon of dialysis units everywhere. In a small room at the back of our unit, I learned the importance of mixing, stirring and testing chemicals for the dialysate bath. In this same room, at the end of every shift, I joined the entire staff to make up the Kiil boards for the next day. Each dialyzer was individualized to meet the needs of the child (i.e., we calculated how many layers of membrane were needed according to each child's weight). Each morning we arrived at 7 a.m. to set up the cumbersome equipment. In thinking back, our tech must have been there for hours before us flushing the formalin out of each of these handmade dialyzers.

Annette Vigneux playing with a child on hemodialysis (note the shunt left upper arm), Hospital for Sick Children, Toronto, 1976.

It seemed like forever before I was allowed to be near the children. Our head nurse led my comprehensive orientation and ensured I knew everything I needed to know, including the renin-angiotensin system, the importance of the juxtaglomerular apparatus and the effects of cholecalciferol on parathyroid hormone levels before I was able to approach a child. When the day finally came, I knew I was in love with my chosen work.

In the early 1970s, with the equipment available, these children had to stay in bed for up to eight hours per session. They looked pale and weak in the pre-EPO days, requiring frequent blood transfusions, as their hemoglobins dropped quickly due to frequent blood leaks or clotting of the circuit. They were very small for their age, as we didn't realize the importance of nutrition and vitamin D therapy and, thus, at times they developed painful bone disease.

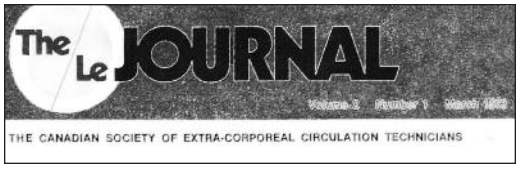
The children who could not achieve successful vascular access with an AV shunt or fistula, or a saphenous vein loop were relegated to peritoneal dialysis. This was before the availability of permanent peritoneal dialysis (PD) catheters. Children who required PD would arrive very early each morning and the nurse would assist a nephrology fellow to insert a stiff temporary PD catheter into the child's abdomen in order to perform 12 hours of intermittent peritoneal dialysis. At the end of the day, the temporary catheter was removed and a plastic nail called a 'button' was inserted into the tract to keep the hole patent for catheter insertion the next day.

I took so much pride in the knowledge and skills I learned in my first few years in nephrology. However, I am very sure that my most important learning came from the children and their families. We sang Raffi songs, played bingo, made every craft imaginable, played board games, did homework, read stories and planned outings. Through this time together, I learned how to develop trusting, therapeutic relationships, the importance of continuity of care, the value of effective teamwork and enjoying life one day at a time.

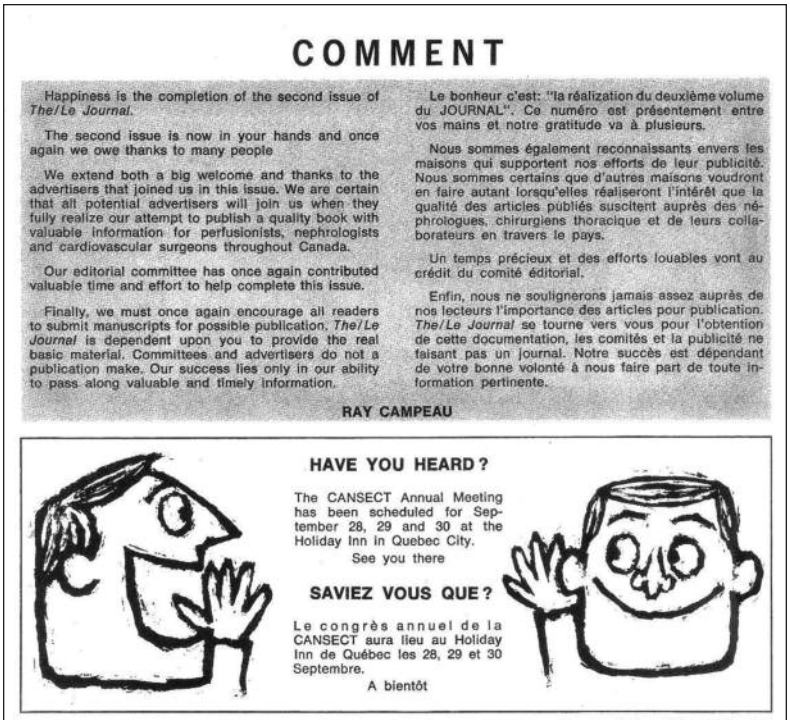
About the author

Annette Vigneux, RN(EC), MHSc, CNeph(C), is a Pediatric Nurse Practitioner, Hospital for Sick Children, Toronto, and McMaster Children's Hospital, Hamilton, ON. Annette has been a member of the former Canadian Dialysis Perfusionists and CANNT for 34 years in Nephrology.

Journal history: 1970s



The/Le Journal was the journal for Canadian Society of Extracorporeal Circulation Technicians (CANSECT) from 1973 until 1976. Ray Campeau was the editor in 1973 and commented about the March 1973 journal "Happiness is the completion of the second issue of ***The /Le Journal***. We extend both a big welcome and thanks to the advertisers that joined us in this issue. We are certain that all potential advertisers will join us when they fully realize our attempt to publish a quality book with valuable information for perfusionists, nephrologists and cardiovascular surgeons throughout Canada."



COMMENT

Happiness is the completion of the second issue of *The/Le Journal*.

The second issue is now in your hands and once again we owe thanks to many people

We extend both a big welcome and thanks to the advertisers that joined us in this issue. We are certain that all potential advertisers will join us when they fully realize our attempt to publish a quality book with valuable information for perfusionists, nephrologists and cardiovascular surgeons throughout Canada.

Our editorial committee has once again contributed valuable time and effort to help complete this issue.

Finally, we must once again encourage all readers to submit manuscripts for possible publication. *The/Le Journal* is dependent upon you to provide the real basic material. Committees and advertisers do not a publication make. Our success lies only in our ability to pass along valuable and timely information.

Le bonheur c'est: "la réalization du deuxième volume du JOURNAL". Ce numéro est présentement entre vos mains et notre gratitude va à plusieurs.

Nous sommes également reconnaissants envers les maisons qui supportent nos efforts de leur publicité. Nous sommes certains que d'autres maisons voudront en faire autant lorsqu'elles réaliseront l'intérêt que la qualité des articles publiés suscitent auprès des néphrologues, chirurgiens thoracique et de leurs collaborateurs en travers le pays.

Un temps précieux et des efforts louables vont au crédit du comité éditorial.

Enfin, nous ne soulignerons jamais assez auprès de nos lecteurs l'importance des articles pour publication. *The/Le Journal* se tourne vers vous pour l'obtention de cette documentation, les comités et la publicité ne faisant pas un journal. Notre succès est dépendant de votre bonne volonté à nous faire part de toute information pertinente.

RAY CAMPEAU

HAVE YOU HEARD?

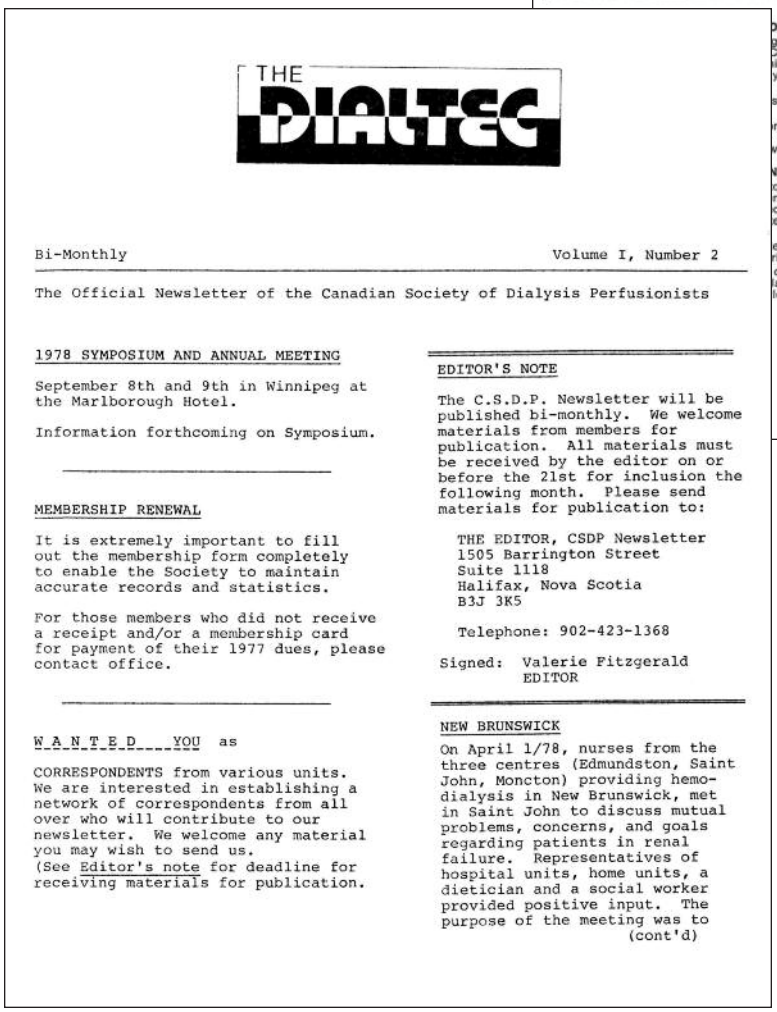
The CANSECT Annual Meeting has been scheduled for September 28, 29 and 30 at the Holiday Inn in Quebec City.

See you there

SAVIEZ VOUS QUE?

Le congrès annuel de la CANSECT aura lieu au Holiday Inn de Québec les 28, 29 et 30 Septembre.

A bientôt



THE DIALTEC

Bi-Monthly Volume I, Number 2

The Official Newsletter of the Canadian Society of Dialysis Perfusionists

1978 SYMPOSIUM AND ANNUAL MEETING

September 8th and 9th in Winnipeg at the Marlborough Hotel.

Information forthcoming on Symposium.

MEMBERSHIP RENEWAL

It is extremely important to fill out the membership form completely to enable the Society to maintain accurate records and statistics.

For those members who did not receive a receipt and/or a membership card for payment of their 1977 dues, please contact office.

W A N T E D YOU as

CORRESPONDENTS from various units. We are interested in establishing a network of correspondents from all over who will contribute to our newsletter. We welcome any material you may wish to send us. (See Editor's note for deadline for receiving materials for publication.

EDITOR'S NOTE

The C.S.D.P. Newsletter will be published bi-monthly. We welcome materials from members for publication. All materials must be received by the editor on or before the 21st for inclusion the following month. Please send materials for publication to:

THE EDITOR, CSDP Newsletter
1505 Barrington Street
Suite 1118
Halifax, Nova Scotia
B3J 3K5

Telephone: 902-423-1368

Signed: Valerie Fitzgerald
EDITOR

NEW BRUNSWICK

On April 1/78, nurses from the three centres (Edmundston, Saint John, Moncton) providing hemodialysis in New Brunswick, met in Saint John to discuss mutual problems, concerns, and goals regarding patients in renal failure. Representatives of hospital units, home units, a dietician and a social worker provided positive input. The purpose of the meeting was to (cont'd)

OF ADDRESS
ge to members of The Circulation Technicians, inistrators who are in- y in Canada. All other

st, please complete the

rrect address or if you below indicating your well.

NT D'ADRESSE
ous les membres de la n Circulation Extracor- chniciens et directeurs echnologie au Canada.

e postale, veuillez com- ription ci-jointe. dans votre adresse ou la carte à cet effet en le adresse ainsi que

SUBSCRIPTION CARD - CARTE DE SOUSCRIPTION
CHANGE OF ADDRESS - CHANGEMENT D'ADRESSE

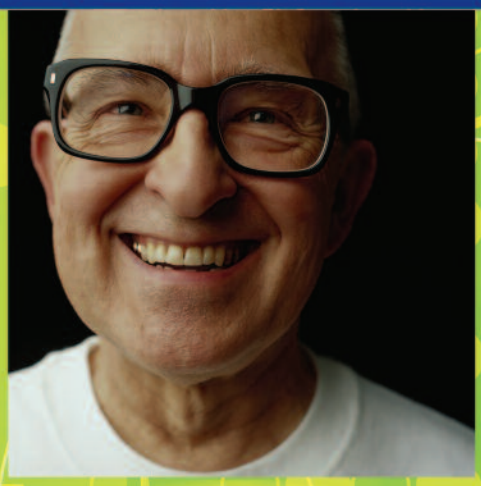
NAME/NOM
ADDRESS/ADRESSE
CITY/VILLE PROV.
HOSPITAL/HÔPITAL
Nurse/Infirmière Dialysis/Dialyse
Doctor/Médecin Oxygénation
Technologist/Technicien Other/Autre
Other/Autre
PREVIOUS ADDRESS
ADRESSE PRÉCÉDENTE

The/Le JOURNAL, Box 308, LaSalle, Québec

25

In 1976, the Canadian Society of Dialysis Perfusionists (CSDP) started producing a newsletter dedicated only to nephrology—the CSDP ***The DIALTEC*** newsletter.

Editors Valerie Fitzgerald (NS), Beth Snyder, Jan Barrows and Brian Mulhearn took turns preparing ***The DIALTEC*** newsletters.



We never stop looking for answers.

We focus on the research and development of medicines for central nervous system, gastrointestinal, renal and human genetic diseases.

We put people first, improving the quality of life for patients, their families and their caregivers. Through the commitment of our employees, we're making a difference in the health of Canadians and the communities in which they live.

Shire BioChem is proud to support the Canadian Association of Nephrology Nurses and Technologists.

Nous recherchons sans cesse de nouvelles solutions.

Nos efforts ciblent la recherche et le développement de traitements novateurs des maladies des systèmes nerveux central, gastro-intestinal et rénal ainsi que des maladies relatives à la génétique humaine.

Les gens étant au cœur de nos préoccupations, nous améliorons la qualité de vie des patients, de leur famille et des aidants. L'engagement de nos employés nous permet de faire la différence en matière de santé pour les Canadiens et leurs communautés.

Nous sommes fiers de nous associer à l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie.

Shire BioChem inc.
2250, boul. Alfred-Nobel
Bureau 500
Saint-Laurent (Québec) H4S 2C9

514 787-2300
www.shire.com

Shire

1980s

Excerpts from messages from presidents posted in the various CSDP and CANNT publications: 1980s

1976–1981
Frances Boutilier

"In preparing for our 1980 annual meeting, we tend to reflect on the year's events and accomplishments. We are pleased to see that it has been one of further growth and development for the Society. Our invitation to the members of the Canadian Society of Nephrology to become members of CSDP was met with great support and enthusiasm. Various regional seminars were well attended. For the first time, the certification examination will be written twice a year. The establishment of the Kidney Foundation's Para-medical Council composed of representatives from CSDP, the Association of Renal Dietitians and the Association of Nephrology Social Workers will greatly benefit nurses, technicians, dietitians and social workers requiring funding for research projects. CSDP further broadened its horizons by its continuing contacts with other dialysis societies. We are pleased to invite to our symposium the presidents of AANNT, EDTNA, Renal Care Society of South Africa, Dialysis Society of Australia, Japanese Nurses Association and Latin America Nurses Organization. The world indeed does seem small when we can all meet together." (**July–August–September 1980,** *CSDP Dialtec*)

1981–1984
Marg Burrows

"In various ways, we have been sharing the caring since 1968 when we were first formed as CANSECT. In 1977, we became CSDP—the only organization representing nurses and technicians concerned with advancing the standards of renal care. We have remained involved and committed at all levels and united in our belief that what we do is in the best interests of patient care. Over the years, we have had to acquire new and different skills and in-depth knowledge of our specialty area. We are now 233 members who can speak with a united voice on issues regarding the care of renal patients." (**November 1983,** *CSDP Dialtec*)

1984–1985
Nadine Peroff

"I'm pleased to be in the position of President of CANNT, as I believe that our association is growing at a tremendous pace. We have a thriving membership of 240; we have a yearly symposium, which has been educationally and financially rewarding; we see the development of regional meetings through our vice-presidents; and our Standards of Clinical Practice are at a point of completion. This next year we will be represented at ANNA and will be presenting at EDTNA." (**February 1985,** *CANNT Dialtec*)

1985–1986
Linda Mumtaz

"As professionals in the '80s, we are part of the many changes that are occurring in our many fields of practice, such as Quality Assurance. I think that we should be all looking at the quality of care we give to our patients. We have the opportunity to speak out, take part in changing health care in the future. We will help to decide what health care will be available for our children. I encourage you to get informed, take part in the changes going on around you." (**May 1986,** *CANNT Newsletter*)

1986–1987
Cheryl Keaney

"I am excited as I begin my year as president, recognizing the need to stay in tune with the growing and changing needs of nephrology nursing. We have come a long way from our beginnings in the 1960s and, like the dynamic health care arena we work in, we must continue to evolve if our organization is to survive. Two decades later, we see the specialty of nephrology having numerous subspecialties: hemodialysis, transplantation, peritoneal dialysis, and organ procurement." (**December 1986,** *CANNT Newsletter*)

1987–1988
Phyllis Malek

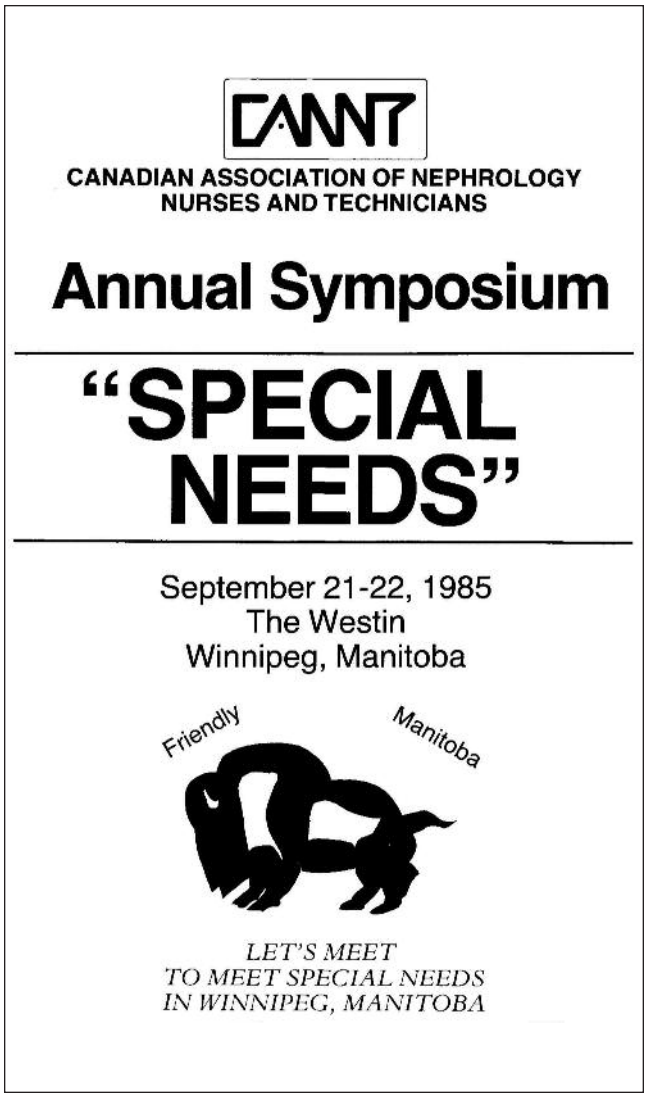
"As I start my year as president, I am impressed with the history of this organization and the great strides we are making into the future. From a small group of nurses and technicians who joined with two other small groups (heart and lung) to form one association of specialized staff, we have suffered through a split with that group to form our own group. Then came a period of apathy when we almost disappeared, but with determination and a name change, we have become a viable organization." (**Winter 1988,** ***CANNT Journal***)

1988–1989
Barb Baron

"There is a strong sense of unity and purpose displayed by all of us and I see a growing desire to control our own destiny. The time is right to forge ahead with our plans and for each individual nurse and technician to have input into designing our future. I have discussed the nursing progress being made within CANNT over the past 24 months with the CNA. I, also, must compliment the technicians who have been working so hard to establish technical standards. The continued progress has been a demonstration of something we all share—a strong commitment to quality care for the central player in nephrology—our patient." (**Summer 1988,** ***CANNT Journal***)

1989–1990
Heather Beanlands

"As nephrology practitioners in the 1980s, we are faced with many challenges: high-flux, high-efficiency dialysis, tidal volume peritoneal dialysis and previously unheard-of success in renal transplantation. While these developments provide many new and exciting opportunities, they should also serve to remind us why we are here: to provide quality care to individuals with end stage renal disease. Economic constraints, overloaded dialysis programs and the current nursing shortage make it difficult to attain this goal, but there is strength in numbers and through team work and unification, we can make quality care a reality." (**Fall 1988,** ***CANNT Journal***)



Hyperphosphatemia and its treatment

By MaryBeth Blokker, Pharmacist, Victoria Hospital, London, ON

This article was first published in the Canadian Society of Dialysis Perfusionists, Dialtec, 1983, *7(1), 14–15.*

Serum phosphate is ideally maintained between 0.8–1.45 mM/L or 3.5–5.5 mg/dl

How does hyperphosphatemia occur?

The most common cause of hyperphosphatemia is decreased phosphate excretion due to renal insufficiency. In addition to reduced phosphate excretion, a higher dietary intake of phosphate will also contribute to hyperphosphatemia.

In chronic renal failure, phosphate balance is maintained by an increase in phosphate excretion by the remaining nephrons. However, when the number of nephrons is greatly reduced, and if the intake of phosphate is not accordingly reduced, the phosphate excretion can no longer keep up to the phosphate load and hyperphosphatemia develops.

Significance

Hyperphosphatemia may significantly lower the concentration of serum calcium. This will, in turn, stimulate the release of parathyroid hormone (PTH). In addition, hyperphosphatemia decreases the activity of the enzyme responsible for converting inactive Vitamin D to active Vitamin D. This, in turn, will impair the absorption of calcium from the gastrointestinal tract and reduce mobilization of calcium and phosphorus from the bone (Figure One).

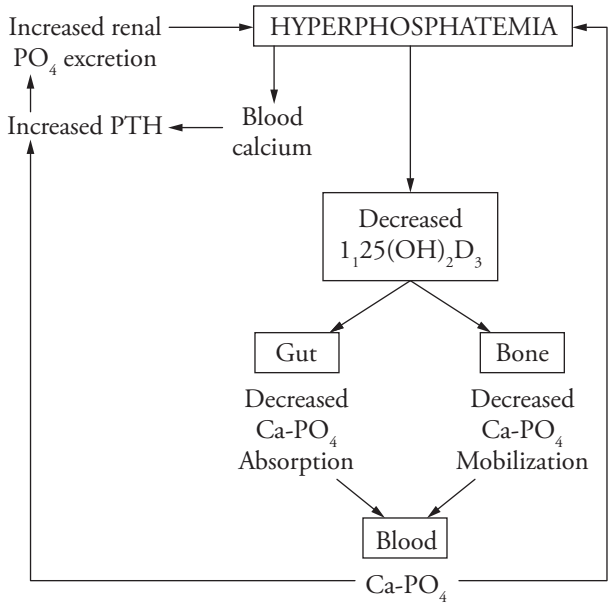


Figure One. Illustration of the adaptive mechanisms observed during hyperphosphatemia from: Massry & Glassock, 1983.

Severe hypocalcemia, tetany and ectopic calcification are the most serious results of hyperphosphatemia. Precipitation of calcium in the skin may, in part, be responsible for pruritis, although elevated PTH levels are more important in this condition. Some patients with severe hyperphosphatemia may develop ocular calcification and the "red eye" of uremia.

Hyperphosphatemia is also important in the development of secondary hyperparathyroidism. However, in patients with far advanced renal insufficiency, correction of hyperphosphatemia alone will not reverse this secondary hyperparathyroidism.

Thus, control of serum phosphate plays an important role in prevention of secondary hyperparathyroidism, metabolic bone disease, and soft tissue and vascular calcification.

Treatment

The treatment of hyperphosphatemia is (1) to decrease the dietary intake of phosphorus, and (2) to administer phosphate binders when necessary. The goal of therapy is to maintain serum phosphate levels at near normal (0.8–1.45 mM/L or 3.5–5.5 mg/dl) in dialysis patients.

Dietary intake of phosphate depends on the consumption of meat and dairy products. (The usual phosphate intake by normal adults is approximately 1.8 g/day.)

The intake should be lowered in proportion to the reduction of glomerular filtration in patients with mild renal insufficiency. It is possible to reduce phosphate intake to around 600 mg per 24 hours by restricting the ingestion of dairy products and by adhering to a low-protein diet. However, this low-phosphate diet tends to be unpalatable. As renal failure pro-

Table One. Selected phosphate binding products available in Canada

Aluminum Hydroxide Alu Tab (Riker) Amphogel (Wyeth)	 Tablets: 600 mg Tablets: 600 mg Liquid: 320 mg/5ml
Aluminum Hydroxide Sucrose Basalgel (Wyeth) (equivalent to 500 mg Aluminum Hydroxide)	Capsules: 667 mg
Calcium Carbonate Calcium Carbonate (Novopharm) Titralac (Riker)	 Capsules: 500 mg Tablets: 420 mg Liquid: 1 g /5 ml
Sucralfate (Basic Aluminum Salt of Sucrose Octasulphate) Sulcrate (Nordic)	 Tablets: 1 g

1980s

gresses, it becomes more difficult to adjust phosphate intake to maintain a low serum phosphate. Therefore, phosphate binders must be administered.

The two most commonly used phosphate binders are aluminum hydroxide and aluminum hydroxide sucrose gels. Two other phosphate binding agents have been tried: (1) Calcium carbonate has been found to be much less effective in binding phosphate than aluminum, and (2) Sucralfate (the basic aluminum salt of sucrose octasulfate) is also less effective than aluminum hydroxide or aluminum hydroxide sucrose in reducing serum phosphate levels.

Liquid gels are more effective than capsules or tablets in trapping phosphate in the gastrointestinal tract and preventing it from being absorbed. However, large amounts of gels for prolonged periods produce nausea and vomiting in most patients. Therefore, patient compliance is poor with gels. The general order of preference is capsules, then tablets, and then gels.

One of the side effects seen with aluminum-containing phosphate binders is constipation. This, too, leads to poor patient compliance. Often, stool softeners must be used to help correct the problem. There are phosphate binders (antacids) in which magnesium has been added to prevent constipation. However, these should be avoided because of the risk of hypermagnesemia.

While treating hyperphosphatemia it is also important to avoid reducing serum phosphate levels to subnormal to avoid phosphate depletion. Some uremic patients do **not** require phosphate binders and unmonitored use of binders in these patients may produce hyperphosphatemia and phosphate depletion.

It is generally assumed that aluminum hydroxide and aluminum hydroxide sucrose compounds are non-absorbable and safe. However, some studies have suggested that the aluminum may be absorbed in significant amounts and may lead to increased tissue and plasma aluminum levels. It is possible that dialysis dementia and renal osteodystrophy may be related to aluminum toxicity.

At present, there are no means available of controlling hyperphosphatemia in uremia other than dietary restriction and the use of aluminum-containing compounds. Therefore, weighing the known risk of hyperphosphatemia against the theoretical risk of aluminum toxicity, one is left with very little choice other than recommending the use of these products to control serum phosphate levels.

References

Bennett, W.M., et al. (1978). *Drugs and Renal Disease.* New York: Longnan Inc.

Brenner, B.M., & Rector, F.C. (Eds.). (1981). *The Kidney* (2nd ed.). Philadelphia: W.B. Saunders Co.

Massry, S.G., & Glassock, R.J. (Eds.). (1983). *Textbook of Nephrology* (Vol. 1). Baltimore, MD: Williams & Wilkins.

In Memoriam: Pamela Kathleen (Mellin) Letourneau (1947–1993)

By Daisy Perry, RN, BScN, CNeph(C)

Pam Letourneau made a significant contribution to nephrology, to the Foothills Hospital in Calgary, Alberta, and to her hometown of Saskatoon, Saskatchewan.

In 1968, Pam achieved a diploma of nursing from the General Hospital, Regina, Saskatchewan. At that time, her elementary school, Greystone Heights, Saskatoon, created the Pam Mellin Achievement Award to honour her determination. After her death, a geriatric/medical scholarship was established at the Foothills Hospital in recognition of her warmth, knowledge, sincerity, and general caring for patients, families, and hospital staff. Twelve scholarships were awarded to exemplary nursing degree students before the program was discontinued.

Pam's first work was in intensive and coronary care in the Regina General Hospital, Saskatchewan; then in nephrology at the Foothills Hospital, Calgary, Alberta. Over 18 years (1971–1989), Pam held leadership positions: team leader, head nurse, assistant director of nursing, renal nursing coordinator; and director of nursing renal program—Southern Alberta, orthopedics, urology, and cardiovascular.

During this time, Pam was very active in CANNT as board member (1981–1985), as chair of the CANNT conference in Calgary 1982, "Whose Life is it Anyway?", and committee member developing standards of dialysis for all renal patients (1981–1985).

I first met Pam at nephrology conferences from 1983 to 1988. Her presentations to British Columbia Days Conference, Vancouver, BC, were: Foothills Hospital Nephrology Program (1983), Staff Training Programs (1984), Past, Present and Future (1985), Trends for the Future (1985), and Valve Improvement Program presented to CANNT Halifax, Nova Scotia (1988). She wrote papers that were well prepared and reflected a high calibre of care given to renal patients. She presented innovative, caring and compassionate ideas for the care of patients and staff. We all remember her positive outlook.

Other presentations (1973–1988) were as follows: Social Implications of Medical Advances (hospital visitors' workshop), Nursing Care and Emotional Needs of the Renal Patient (to medical staff nurses Foothills), Nursing Care of the Renal Transplant Patient (to Canadian Society of Radiological Technicians), Renal Failure Program (to Alberta Certified Nursing Aide Association), Nursing Care of Patients With Septic Shock (to intensive care nurses Foothills Hospital), Trends in Care of Renal Patients (to Refresher Nursing Program, Foothills), Prescription for Dialysis—A Nurse's Viewpoint (to Alberta Regional Nephrology Meeting, Edmonton, Alberta), Renal Failure Program—A Success Story (to staff, Bethany Care Hospital, Calgary), Nephrology Nursing During Pregnancy (to University of Calgary Workshop, co-presentation with Dr. Brinker), Role of the Social Worker in Nephrology Programs and Team Building (to Social Work students). Quality Care Circles, The Foothills Hospital Experience presented (1987) to Ontario Nurses Association, Self-Care Practices Among Hospitalized Patients presented as a poster presentation, AARN Convention (1988).

Publications with other authors were: Cutting the Costs—The use of Dialysis Helpers, **Canadian Medical Journal** (1979), **Nephrology Nursing Practice Standards**, Pam was chair of the committee (1986), **Quality of Working Life and the Nurse, Benchmarks 2—A Source**

Pam Letourneau and staff: "our patients can teach us about living."

1984 from the Foothills Hospital, Calgary, monthly newsletter "*The Journal*": From left to right: Pam Letourneau, Brenda Pomerance, Sue Nevison and Linda Turnbull at a small inservice session.

Book for Canadian Nursing Management (1988), abstract 'Getting a Grip on ESRD' reviewing the cost effectiveness of renal treatment published in **CANNT Journal** (1988).

Pam provided consultation to the renal program (1984), travel clinic Vancouver General Hospital, BC (1987), and the renal program Ottawa Civic Hospital, Ottawa (1988). During this time, Pam was also studying for her degree in nursing.

Pam had a dream to be a nurse from a young age. Throughout her career, she exceeded her own personal goals, as she also overcame physical adversities. Her continuous efforts and achievements in quality patient care and professional development at a community and national level are well recognized. She is fondly remembered as a valued nursing colleague and friend.

Acknowledgement

Special thanks to Larry Letourneau for supplying information for this article.

About the author

Daisy Perry, RN, BScN, CNeph(C), is semi-retired after 38 continuous years in nephrology nursing (1970–2004). She was the Clinical Supervisor in the Home Peritoneal Dialysis Northern Alberta Renal Program, Capital Health, Edmonton, Alberta, and is currently a casual nurse in the Home Peritoneal Dialysis Unit.

Daisy's professional volunteer activities related to nephrology include:
***CANNT**—Member CANNT Journal Award Evaluation Committee 2004 to present.*

***Canadian Nurses Association (CNA)**—Nephrology Nursing Examination Committee Member 1994–1999.*

***Kidney Foundation of Canada**—Kidney Foundation of Canada, Northern Alberta and Territories Branch: Board member 1975–1984.*

40th anniversary musings from a long-time member

By Rosalie Starzomski, RN, PhD

For more than 25 years, as a member of CANNT, I have watched the organization grow into the current, vibrant professional group that we are all part of at this time. Throughout this period, I have seen the organization move through a number of name changes and, as a group dedicated to improving patient and family care, provide guidance and direction to enhance the role of nephrology nurses in the national and international health care arenas.

My journey as a CANNT member started in 1983 while studying for my master's in nursing degree at the University of Calgary. While completing a practicum at Foothills Hospital, I had the distinct fortune to work with Pam Letourneau, Director of the Renal Program, who was also one of the leaders in the Canadian Society of Dialysis Perfusionists (CSDP), a group that was the precursor of CANNT. Pam was a visionary leader and fostered in all the nurses who worked in the program at Foothills Hospital the desire to enhance their professional practice and optimize patient care. Pam passed away at a very young age, but one of her long-standing legacies was to instill in me the sense that we all have a responsibility to be part of our professional association and to make contributions to our nursing specialty. She was a role model "extraordinaire" and I was able to put many of her ideas into practice as I developed my position as the first Clinical Nurse Specialist in Nephrology at the Vancouver General Hospital in 1984. Pam's influence also enhanced my desire to make a contribution to CANNT, and I have had the pleasure of acting in a variety of roles in the organization that I have listed at the end of this overview. I will highlight a couple of these activities here.

In the mid-1980s, it was evident that CANNT nurse members required standards of practice in order to provide direction for best practices in patient care. Standards were being developed for other professional nursing organizations across the country, and I had the opportunity to work with a dynamic group of nephrology nurses as chairperson of the standards committee to develop a set of standards that would provide guidance for nephrology nursing practice. These were adopted by the organization and helpful in later years, as we went forward to develop the blueprint for the nephrology certification exam—one of the first specialty groups in the country to do so. Developing the first exam blueprint was a challenging exercise, but with the assistance of the then Canadian Nurses Association Testing Service, and a dedicated group of nephrology nurse volunteers, after many meetings in Ottawa, we were able to launch the first certification exam.

CANNT was a member of the Advisory Council of the World Council of Renal Care in the 1990s, and I was the representative for four years during which time I had the privilege of representing CANNT at meetings in Prague and Barcelona that also included representatives from Japan, many European countries, England, the United States and South Africa. During the meetings, several presentations focusing on the identification of transcultural issues in nephrology care were made by Advisory Council members. My presentations, on behalf of CANNT, focused on the ethnocultural and political influences related to providing nephrology care in Canada. The goal of the WCRC was the promotion of education in countries where resources were scarce, and where opportunities for individuals to access larger, international meetings were

limited. The WCRC offered materials and services specially tailored to meet the needs of each country's health care workers. The work being done by the WCRC was in conjunction with the International Society of Nephrology Commission on Global Advancement of Nephrology and is being carried on today albeit with different organizational titles.

Congratulations to CANNT members on this 40th anniversary! It has been a great pleasure to serve CANNT in the roles noted below, and I look forward to many future years of association with such a vibrant group.

About the author

Rosalie Starzomski, RN, PhD, Professor, School of Nursing, University of Victoria, Clinical Ethicist, Vancouver Coastal Health Authority.

Rosalie's professional volunteer activities related to nephrology include:
***CANNT**—1984–1990 Western Vice-President; 1985–1986 Chairperson, Board of Directors; 1986–1987 Chairperson, Nursing Practice Standards Committee; 1986–1993 Representative to the Allied Health Research Council, The Kidney Foundation of Canada; 1988–1990 Co-Chairperson; 1990 National Conference Symposium Committee, Vancouver, BC; 1989–1990 Chairperson, Board of Directors; 1989–1991 Chairperson, National Allied Health Research Council, Kidney Foundation of Canada; 1995–1999 Representative, World Council of Renal Care; Member—Journal Editorial Board 2000–present.*

***Canadian Nurses Association**—Member, Nephrology Certification Exam Committee, Canadian Nurses Association 1990–1992; Member, Clinical Practice Issues Committee, Canadian Nurses Association 1994–1996; Member, Canadian Medical Association/Canadian Nurses Association Committee on Collaborative Practice 1995–1996; Member at Large, Board of Directors, Canadian Nurses Association 1996; Member, Canadian Nurses Association Code of Ethics Review Group 1996.*

***Kidney Foundation of Canada**—numerous positions held with local chapters and national committees from 1984 to 2001.*

***Canadian Council for Organ and Tissue Donation**—numerous positions held with national committees including Appointed Member, Canadian Council for Organ and Tissue Donation, Edmonton, Alberta (appointed by Health Minister Allen Rock) 2001–2008. Co-chair, Organ Donation Collaborative Steering Committee, Canadian Council for Organ and Tissue Donation, 2005–2008*

***Canadian Organ Replacement Register, Canadian Institute for Health Information (CIHI)**—Member, Board of Directors, Canadian Organ Replacement Register, Ottawa, 2002–present; Member, Research Committee, Canadian Organ Replacement Register, Ottawa, Ontario, 2005–2008.*

Rosalie Starzomski with the CANNT Board of Directors 1989–1990 at the CANNT 1989 Conference in Toronto. From left to right, Ruth Burns, member at large technical; Jocelyn Larivière, member at large dialysis; Barb Baron, past president; Marsha Wood, vice-president Atlantic; Rosalie Starzomski, vice-president West; Joan Joyce, member at large transplant; Diane Watson, secretary; Heather Beanlands, president; Margaret Hanlon-Bell, treasurer; Laurie Tomiuk, vice-president Central; Ginette Brunelle, vice-president Eastern. Absent is Susan MacNeil, president-elect.

I remember…

By Gil Grenier, Technical Manager, Nephrology Program, The Ottawa Hospital

In the early 1980s, the equipment maintenance activities of the Biomedical Engineering Department at St. Mary's Hospital in Montreal relied on the support of one technologist only. Needless to say, the extensive maintenance workload for this university-affiliated community 300-bed hospital forced the management team to look for additional support from external service providers. During those years, equipment providers such as Hospal and Gambro were called in for emergency and corrective maintenance procedures. A routine preventive maintenance program did not cover the hemodialysis machines used in this 20-station dialysis unit. Three different hemodialysis machines were used in the same unit at the time: the Hospal Monitral Acetate only, the Gambro AK-10 and Drake Willock 4215. Bicarbonate modules were available on some machines, but far from all. In addition to caring for their patients with many getting sick during treatments due to the acetate treatment, the dialysis nurses also performed the first-line troubleshooting of equipment problems. Although service providers' hourly rates were much lower than today (around $60 per hour), someone needed to validate the seriousness of the problems before calling them in for support.

When I was hired as the second Biomedical Engineering Technologist with primary responsibilities to the dialysis unit, my mandate included the implementation of a routine preventive maintenance program, as well as reduction of expensive emergency repair calls through external services providers. During the first six months of my employment, I basically lived at the hospital. My wife and one-year-old son still lived two hours away while our home was for sale. I was able to get a room in the old nursing school building adjacent to the hospital and spent hours in the hemodialysis unit, sometimes sitting in an empty chair watching the hockey game and other times just chatting with the patients and nurses. It was during that time while undertaking extensive equipment maintenance training from the manufacturers, that I started noticing the implication of the nurses in the initial troubleshooting process for equipment problems. Coming from a maintenance management position in the Canadian Air Force, where all maintenance tasks were so structured and regulated, I could not stop thinking how different but, yet, beneficial this approach was to our daily workload. In fact, I remember one occasion within my first few weeks when I was called in at bedside for a conductivity problem on the old Drake Willock system. While trying to isolate the source of the problem, an experienced nurse walking by suddenly stopped to open the back panel of the machine and gently pushed on the bicarbonate module and looked at me with a smile and added: "This always happens every morning, it needs a little push to start the day." On a separate occasion, another nurse taught me how to resolve ultrafiltration problems on the AK-10 by varying the dialysate pressure in the system. Today's machines are sophisticated and we tend to forget how complicated and labour-intensive dialysis treatments were in those days and earlier. Nurses and technicians had to adjust the sensitivity of the blood leak detector on the Hospal Monitral machine.

I remember one occasion when the sensitivity had been adjusted too low and the ultrafiltration collection cylinder located on the front of the machine turned fully red before the alarm actually went off. On another day, we had to bypass the blood leak detector on a Drake Willock machine by taping the transmitter and receiver together to be able to finish the treatment. Who would actually do this today? Hemodialysis machines are way more sensitive and include so many sensors and controls that it has become more challenging for newer staff to understand the basics of hemodialysis.

At the end, within the first year of my employment, we were able to implement our scheduled preventive maintenance program (every 500 hours of operation) on all hemodialysis machines and the water treatment system. Our need for external maintenance support was reduced to a bare minimum; to a point where we missed the regular visits from the Hospal Regional Service Technician. The overall success of our venture was not only due to the work of the Biomedical Engineering Department, but very much so to the support we received from the dialysis nurses. I will always remember those times and the work we accomplished together. My son graduated from Ottawa University this year with a business degree in finance and we always talk about the importance of jumping on the teamwork bandwagon, as I know that teams can assemble members' skills and experience to achieve superior results compared to how well individuals produce working alone.

About the author

Gil Grenier is Technical Manager, Nephrology Program, The Ottawa Hospital, ON.

Gil's professional volunteer activities related to nephrology include:

***CANNT**—Published in the CANNT Journal: Grenier, G. (2005). Portable phones in hemodialysis units: Are we interfering? CANNT Journal, 15(2), 48–49.*

***Ontario Ministry of Health and Long-Term Care (MOHLTC)**—Member of the Ontario Health Plan for an Influenza Pandemic (OHPIP) Chronic Kidney Disease Working group.*

Chair of the Canadian Standards Association (C.S.A.) Technical Committee on Extracorporeal Circulation Technology.

Investigation of possible causes of massive hemolysis occurring at Toronto Western Hospital

By Franca Tantalo, Head Nurse, and Carol Holtzer, Clinical Teacher

This paper was presented at the Ninth Annual Symposium of CANNT held in Toronto in November 1984. It was first published in the CANNT Dialtec, *(1985, February), 8(2), 6–8.*

We have previously described four cases of massive intravascular hemolysis occurring in the hemodialysis unit at Toronto Western Hospital between December 1982 and April 1983.

Usually, when massive hemolysis occurs in a patient on dialysis, the cause is evident immediately as a gross error or failure in the system. The unusual feature about this epidemic is that the cause was not obvious and continued to defy investigation for a long time. The measures taken to try to discover the cause or causes are as follows:

1. Dialyzer re-use
   A reason for ruling out the re-use process as a cause of hemolysis is that three of the patients were on new dialyzers while two were on re-used ones. Also, the dialyzers were from different companies. It seems, therefore, that the episodes of hemolysis had nothing to do with the dialyzer itself.

2. Incorrect composition of dialysis fluid
   Severely hypotonic dialysis fluid can cause hemolysis, but two facts are adequate to exclude this as a cause in our cases. All the affected patients were receiving dialysate from the central delivery system. A gross error in composition would have affected all patients simultaneously. The dialysate was analyzed in three of the cases and was found to be correct.

3. Contamination of the dialysate with copper, chloramines, or nitrates
   Analysis of the dialysate showed no traces of copper, chloramines, or nitrates. Blood tests performed at the time of hemolysis also showed no signs of these substances. The fact that all other patients on the same dialysis sessions receiving the dialysate were unaffected is further evidence against these causes.

4. Possible contamination of the dialysate entering the single patient stations
   The function of this single patient station is to conduct the dialysate through the dialyzer and down the drain. The dialysate is not heated by the station, nor does the station add anything to the dialyzing fluid. It simply controls the flow rate and the pressure of the dialysis fluid. The machines were examined for the possibility that some copper part had been erroneously added to the machine that could have introduced copper into the dialysate and, hence, caused hemolysis. No such defect was discovered and, furthermore, analysis of dialysate samples and blood samples failed to reveal any traces of copper in the system.

5. Overheated dialysate
   Overheating would have affected all patients simultaneously, not just one at a time. Dialysate temperature was checked and found to be correct.

6. Malocclusion of blood pumps
   The five patients in the epidemic were being treated with four different machines at four different geographical locations within the dialysis unit. The blood pumps would be expected to damage the red cells of other patients dialyzed on the same machine. The pumps on all the machines were checked and no sign of malocclusion was found.

7. Damage of red cells from incorrect positioning of arterial fistula needles
   Hemolysis caused by trauma to red cells generated by high negative pressure of malpositioned fistula needles has been described. Mechanical trauma of this kind would not be expected to induce methemaglobinemia and could, therefore, not explain two of our cases. All pre-pump arterial monitoring has always been in use in our unit ensuring that poor flow arterial needles are adjusted.

8. Possible intoxication of the extracorporeal circuit by the heparin or saline infusions
   It was felt necessary to exclude the heparin and saline infusions as causes. Accordingly, in the last two cases, the whole extracorporeal circuit was preserved, including the remnants of the heparin and saline infusions. These were incubated against fresh red cells in test tubes in body temperature for a period of time. No hemolysis occurred. It seemed clear that neither one of these could be the cause.

9. Possible contamination of the dialysate by hypochlorite used for sanitation
   It was pointed out to us that hypochlorite passing through the rest of the system could diffuse in small quantities into the open ends of the cul-de-sacs or "dead legs", which had

been closed off distally. When rinsing was done with water, it would not necessarily remove all traces of hypochlorite that may have entered these dead legs if they remained shut off. Traces of hypochlorite might emerge from the dead legs into the dialysate pathway flowing to the patient station. In order to test this hypothesis, hypochlorite was mixed with dialysate to determine the minimum toxic concentrations of hypochlorite required to hemolyse red cells both for uremic and non-uremic patients. It turned out that the dead legs may contain a concentration of hypochlorite between 2 to 40 parts per million. When dialysate was run past these areas, it was not possible to detect hypochlorite in concentrations as low as one part per million. A further argument against the hypochlorite theory was the fact that two patients were being dialyzed on stations in the unit with a dialysate supply, which is not juxtaposed to any cul-de-sac.

10. Contaminated blood tubing sets
    One factor that was in common with the first four cases of hemolysis was the use of Extracorporeal brand blood tubing sets. The manner in which the hemolysis occurred in these patients suggests that a hemolytic substance with oxidative properties was delivered into the extracorporeal system gradually during the course of dialysis. This suggests a gradual infusion or leaching process of a hemolytic factor into the extracorporeal circuit.

Summarizing the results of Dr. Pierre Blais' investigations, it appears that the extracorporeal bloodlines were contaminated with a wide variety of extraneous impurities. Visible particulate matter was seen in the bloodlines and identified as chips of wood, pieces of blue paint, black particulates and a number of unidentified chemicals. Some of the bloodlines also contained undesirable amounts of plastic adhesive, cyclohexanone, which is used to join the plastic wherever joins are needed. Although we have not yet identified the actual substances that may have caused the hemolysis, it seemed very likely that hemolysis was caused by sporadic contamination of the bloodlines in these four cases. If these bloodlines contain a variety of miscellaneous substances that should not be present, then it is entirely possible that one in 1,000 sets of lines may be more heavily contaminated by some substance, as yet not identified.

The hemolytic case five, during dialysis using Cordis Dow bloodlines naturally throws doubt on this theory. Could it be that the bloodlines used in all the hemolytic episodes were derived from the same extruder, or is it possible that the adhesive used to join them all came from the same source? As yet, we regard the mystery still as unsolved. Plans are under discussion to further investigate unused Extracorporeal blood tubing sets from Toronto Western and from a hospital in Syracuse, New York.

Following the occurrences of hemolysis at Toronto Western, an inquest was held to determine the cause of death of the second case. The purpose of the coroner's inquest was not to find fault or to lay legal responsibility on any one party, but to find circumstances related to the death and make recommendations to prevent further episodes. We cannot possibly try to describe the details of the inquest, including all the evidence and discussions had in such a short period of time. Nor can we impart the effects of an inquest on the unit itself or even more so the individual nurse's reactions and feelings to being on the "stand'.

The jury's verdict and recommendations are the following:

1. We recommend that the Health Protection branch of Health and Welfare Canada continues investigation of PVC blood tubings as manufactured by the Extracorporeal Company, which is a division or subsidiary of Johnson and Johnson, in relation to hemolysis complications with respect to the incidences at the Toronto Western Hospital from September 1982 until April 1983. Funding for this project to be provided by the Government of Canada.

2. To avoid grossly inferior medical devices that have been imported by Critikon Canada Inc., we recommend that the Ministry of Health and Welfare set standards for plastic tubing and other plastic medical devices; such standards to be mandatory upon both domestic and imported product. Failure of any manufacturer or importer to meet said standards would be subject to punitive measures and/or penalties as established by the government authorities.

3. We recommend that a permanent government inspector be appointed with the responsibility to inspect both domestically and imported goods, thus ensuring the products meet the specifications that will be established, as in recommendation 2.

4. We recommend that hemodialysis departments inform blood laboratory departments of the vital importance to them of knowing if a patient's blood is hemolysed. Improved communication between the labs involved and the ward—as within four hours three tests indicated "grossly hemolysed" and "marked hemolysis" were used.

5. We recommend that when a death occurs in a hemodialysis unit where the cause of death cannot be positively established, an autopsy should be performed. If consent is not given by the family, a coroner should be informed immediately to secure his approval or direction for autopsy.

6. We recommend that hospital personnel involved with hemodialysis units should be instructed on visual recognition of manufacturing defects and/or particulate in disposable plastic medical devices.

7. We recommend the formation of a consumer/user/professional society or association be established by those involved with hemodialysis. Purpose: to protect buyer and user, plus lobby government bodies, as well as publish and print pamphlets, brochures and other information for new dialysis patients and their families.

   The quality of blood tubings, as seen during this inquest, is totally unacceptable, as well as being appalling.

   A handsome and generous donation from Johnson and Johnson towards the formation and charter of such an organization/society would indicate some measure of their good will.

8. We recommend that dialysis patients should have intensive examinations and assessment of blood and general condition more frequently than in the past.

9. We recommend that only new dialyzers be used in hemodialysis units.
10. We recommend that any and all cases of hemolysis diagnosed in a hemodialysis unit in Canada be reported immediately to Health and Welfare Canada, Health Protection branch.
11. We recommend that for each dialysis, a responsible person record brand and lot number of the tubing used in a patient's chart.
12. When the Ministry of Health and Welfare issues an "alert" on any product, we recommend that legislation be made prohibiting any person.
13. We recommend that any hospital in Canada with a dialysis unit with a dialysate delivery system with any "dead legs" should be flushed out during the regular sanitation process, or otherwise eliminate them.
14. We recommend guidelines on the storage of bloodlines. The temperature of the storage area/room should not exceed 30 to 40 degrees C. Nor should bloodlines be stored adjacent to odour-emanating materials. Cartons should clearly indicate storage warning and information.
15. We recommend that all records pertaining to any patient be retained for a full 12 months after the date of the last entry.

As a result of the recommendations and the exercise of the investigations and questions by numerous officials, we have initiated the following changes in nursing protocols and procedures:

1. Thorough recording of the supplier and lot number of the dialyzer and the bloodlines.
2. All the disposable packaging used for each dialysis is kept in a bag at the bedside until the dialysis is discontinued.
3. All treatments, checkouts, or medication given must be signed off by the nurse performing the task.
4. No advance preparation of the supplies is done. All disposables to be used are unpackaged at the bedside just before a patient is to be started on dialysis.

Along with these changes, we have learned of other practices of which to be aware. Packaging of blood tubing should be observed. The punch-through or window-type is the most primitive form of gas-compatible packaging for it allows the ingress of dirt or other contaminants. This type was used by Extracorporeal. The permeable punch-out covered by a porous patch is the state-of-the-art in packaging. This type allows no ingress of fluid or dirt. Cobe packaging is an example of this. The double-sided package incorporates plastic on one side and porous paper on the other. This type is frequently used and is a good gas-compatible package. Hospal and Drake Willock are good examples. Very few packages allow a noticeable reseal of the bag. The haessen seal was seen in the Extracorporeal tubing, as the packages were different lengths and widths.

Storing of disposables is quite critical. Bloodlines are like sponges and absorb chemicals or odours surrounding them. They should be stored away from industrial activity such as loading docks or trucks. Some samples of blood tubings were found to have high levels of diesel, as they were stored in a poorly vented loading area. With all of the above information, all staff at the Western are now instructed to visibly inspect all disposables. Any obvious defects and odour should be reported and the product not used.

Nurses are educated about hemolysis including the spinning of blood if it is suspected. We stressed that the lessons learned in the earlier days of hemodialysis cannot be forgotten or put aside. All nurses must be made aware of all potential dialysis complications and their treatments even if the complication is a rare one.

About the author

*Franca Tantalo worked in dialysis for more than 30 years and was a member of CANNT for most of her career. She worked on the Standards of Practice for Nephrology Nursing and has published many articles. She also worked for Fresenius Medical Care as a Clinical Applications Specialist and, in her honour, Fresenius supported a bursary for graduate study in nephrology in her name. Franca passed away in August 2004 after a long battle with cancer (**CANNT Journal, 14**(3), 52.)*

Initiation of hemodialysis on an infant with end stage renal disease— A nursing perspective

By Susan M. Pine, RN, BNSc, and Peter D. Rughi, RN, CDP, Dialysis Unit, The Hospital for Sick Children, Toronto, ON

This article was first published in the CANNT Newsletter (1986), 9*(1), 1–4.*

As the feasibility of transplantation in infants and children has now been clearly demonstrated, the indications for dialysis in infants have widely increased. Most centres feel that peritoneal dialysis is the first treatment of choice in infants, but the failure of peritoneal dialysis or the unsuitability of the patient for this mode of treatment indicates a need for another choice of treatment, namely hemodialysis. We, at The Hospital for Sick Children, have noticed a definite increase in the population of patients under 10 kg who, in fact, require hemodialysis. Just as the technology of hemodialysis in adults has rapidly evolved in the past two decades, so has been our experience in even just the last two years with dialysis on infants.

The indications for hemodialysis, again like adults, are numerous, particularly in the acute stage. For example, the need for dialysis of a patient who has developed renal difficulties following cardiovascular surgery. One indication for dialysis in the acute phase, which is specific to infants and children, is hemolytic uremic syndrome. Other conditions such as fluid overload, hyperkalemia and uremia are indications for hemodialysis in infants. These symptoms may arise as a result of conditions such as congenital nephrotic syndrome, dysplastic kidneys, and congenital urinary tract malformation, which are the most frequent underlying causes of chronic renal failure in children. Speaking from our perspective, we have found that the main indication for infant hemodialysis has been the patient in chronic renal failure awaiting transplantation, who failed peritoneal dialysis.

The uniqueness of hemodialysis of infants lies in the small blood volumes and, thus, the small extracorporeal circuits of the patients with whom we are dealing. In determining the extracorporeal circuit, we assume that it cannot exceed 10% of the blood volume of the child. If we assume that there are 80 ml of blood/kg of body weight, then a 10 kg child will have a blood volume of 800 ml and a maximum extracorporeal volume of 80 ml. Therefore, the volume of the dialyzer, including allowance for compliance, and the volume of the bloodlines must not exceed 80 ml. The system that we found most effective is a Gambro Iundia minor dialyzer, which has a volume of approximately 33 ml and Dravon (which is distributed by Cardiovision) neonatal arterial lines, which have a volume of 4 ml. The venous lines we had to modify slightly since we were finding the lumen of the neonatal lines was so small that it was causing difficulties with increased resistance and, therefore, we were unable to

obtain ideal blood flows. The modification that our technical staff came up with was to use neonatal venous lines from the dialyzer to the base of the venous chamber and then pediatric venous lines from this point to the patient. This gave us a venous line volume of 19.6 ml for a total extracorporeal circuit volume of 52.5 ml. This system could be used for patients with weights in the 7 kg to 12 kg range. If we have patients who are less than 7 kg, then the Gambro mini minor dialyzer with a volume of 20 ml and strictly neonatal lines with a volume of 15.6 ml are used.

The access for our infant patients has been exclusively the W-B catheter. Many of you may remember that our colleagues presented a paper last year on this access. We do not wish to go into great details in this presentation about the W-B catheter, so, very simply, it is a single access central line catheter. Because it is a single access, a Y-connector is first attached to the catheter before the actual bloodlines can be hooked up. Due to the fact that this is a single access system, we have chosen to use the Gambro SN10 single needle device. This is basically a time-time device, which operates by clamping and unclamping sequentially in the desired length of time in seconds. Again, it has been our experience that in order to increase stroke volume and decrease recirculation, the arterial time should be set significantly higher than the venous time. These values can be adjusted according to each individual patient's access, blood flow, etc.

The delivery system that we have chosen to use for our infants is the Cobe Centry 2000Rx. The reasons for selecting this system are: 1) Compatibility of this machine with the Gambro SN10, 2) The choice of either acetate or bicarbonate in the dialysate, 3) Adaptability of this system to handle the much smaller blood lines, 4) The option to program the ramping of sodium in the dialysate, 5) Portability for transport to other areas of the hospital, and 6) Controlled ultafiltration.

An essential consideration in dialyzing an infant is the need for thorough monitoring throughout the procedure. From our experience, the balance of homeostasis in the infant can be precarious, and these children have the ability to tip the scale very rapidly.

First, the infant's vital signs must be followed closely. We monitor our infant's blood pressure and heart rate every 15 minutes routinely and even more frequently if necessary. The problem we see most often in these infants is hypotension. Decreases in blood pressure can occur very rapidly and may be presented through such symptoms as increased irritability, yawning, and pallor or mottled appearance. These may be detected before a decrease in blood pressure or increase in heart rate is actually measured.

The use of accurate bed scales is another factor that is critical for continual monitoring of fluid removal. Careful attention must be paid to securing all bloodlines and equipment lines such as the Doppler, to the bedrails so as not to alter the weight through repositioning of the equipment. We cannot stress enough the importance of an accurate system for monitoring weight loss or gain during dialysis. Since many of these patients will weigh less than 10 kg, the scales should be capable of monitoring losses of even 10 gm.

Infants, as well as the critically ill patient, are prone to hypothermia and for this reason, we maintain the dialysate between 38° and 38.5° centigrade.

Blood flow rate, venous resistance, transmembrane pressure, and dialysate flow rate are also monitored throughout the procedure.

It has been our practice in dialyzing an infant for the first few times that caution is the best approach, and we start by running our patient's blood flow at a very slow clearance rate for two hours. If the patient remains stable at this clearance, then they are gradually increased according to a formula established by weights. They are then maintained at this level for a three-hour period, four to five times per week, or based on their individual needs.

Although in our centre hemodialysis is not the first treatment of choice for infants with either acute or chronic renal failure, the need for this therapy certainly exists and appears to be increasing. There are always situations arising where the need for correction of fluid and electrolyte imbalances and/or the removal of a toxin require a safe and rapid modality of treatment. We feel we have achieved the successful dialysis of infants but, as we gain further experience, modifications will no doubt influence the future of our hemodialysis treatments.

Case study

Pee Wee was born on July 16, 1984. He was well up until December of that year, when he was presented to the University Hospital in Saskatoon with seizures. He was subsequently diagnosed with chronic renal failure secondary to dysplastic kidneys and started on peritoneal dialysis. He was referred in March of 1985 to The Hospital for Sick Children, following two episodes of peritonitis. When he arrived, he was treated with CCPD. Unfortunately, the peritonitis recurred and he was found to be dialyzing poorly. Therefore, on April 4, 1985, a W-B catheter was surgically inserted and his Tenchkoff catheter was removed. Hemodialysis was initiated on April 11, and this was the mode of treatment utilized until his transplant on July 12.

Nutritionally, the dietitian wanted to maintain a good caloric intake. Like many infants with chronic renal failure, Pee Wee was a poor feeder, so a gastrostomy tube was inserted in order to facilitate feeding. Unlike older children and adults with chronic renal failure whose protein must be restricted, it is generally felt that in preparing an infant for surgery, as well as for promoting growth, the protein intake should not be restricted to any great extent. Consequently, Pee Wee's pre-dialysis urea levels tended to be in the high 30 to 40 range. Since we were trying to promote growth, his weight gains tended to be high, thus he required frequent dialysis both for clearance purposes and ultrafiltration. Therefore, he was dialyzed five to six times per week. Ultrafiltration was necessary with every dialysis. Like so many who require high ultrafiltration, Pee Wee's major problem during the treatment was hypotension. He was treated with albumin regularly to increase osmolality and enable us to remove fluid and keep Pee Wee in a more normotensive state.

The dietitian was a crucial member of a team approach to Pee Wee's care. She monitored regularly, his fluid and caloric intake and altered them according to his weight and growth pattern.

Pee Wee had been hospitalized for eight months prior to his transplant and, therefore, exhibited quite a developmental delay. For this reason, as well as the fact that he was on dialysis for three-hour intervals almost daily, the need for recreation to promote infant stimulation was required. Rather than keep him flat on his back, we could vary his position by sitting him up in an infant seat, which allowed him to watch all the activities in the unit, which he seemed to enjoy. The choice of toys included brightly coloured blocks, rattles and, of course, his favourite frog, all of which kept him smiling and perky. The dialysis transplant team includes a full-time recreationist and he was most helpful in assisting us with the selection of toys and stimulation techniques for Pee Wee.

Pee Wee was an inpatient on the nephrology ward during his entire stay at The Hospital for Sick Children. The nursing staff and physicians played a very integral part in the overall care and treatment of Pee Wee.

In the care of infants, a definite priority must be the parents and family. In this case, mom accompanied Pee Wee from Saskatoon and stayed in Toronto for his entire hospitalization. Having no family or friends in Toronto, arrangements were made for mom to stay in the HSC Hostel. This in itself was difficult for mom because of her very prolonged separation from her husband and home. Aware of her situation, the staff made every attempt to include mom in every aspect of Pee Wee's care, as well as be aware of the loneliness that she felt. Dad was able to visit three to four times before Pee Wee was transplanted, so he could be updated and involved in his son's care as well.

Our social worker often played a strategic role in organizing travel arrangements and accommodation, as well as lending a tremendous amount of emotional support to the family.

As you can see, many members of the dialysis transplant team become involved with the care of the infant and his family. A good team approach is an essential component in promoting the well-being of the infant and his family.

The Dialysis-Transplant Team at The Hospital for Sick Children is committed to Pee Wee's continued care and well being.

About the author

Peter Rughi has had a long-standing involvement with CANNT as a board member and presenter.

An open letter to the membership

By Ruth Burns, Technical Member-at-Large

This article was first published in the **CANNT Journal,** *(1989, Winter), 14–15.*

I would like to take this opportunity to introduce myself, particularly to the technical members who were not able to attend the conference in Halifax.

I had the opportunity at the technical standards presentation to say a few words to those present about who I am and why I ran for the position of member at large, technical. As you may know from the biography that was circulated with the ballots, I am the technical supervisor with the Vancouver General Hospital (VGH) renal program. I graduated from a three-year electronics program at Sheridan College, Ontario (Brampton campus). I spent seven years in the biomedical engineering department at VGH and have been technical supervisor with the renal program for three years. In this letter, I would like to discuss several issues:

1. Technical standards and certification
2. Feasibility of a distance-learning program
3. Liaison with our U.S. counterpart, the National Association of Nephrology Technologists (NANT)

Item 1: Technical standards and certification

A final version of the technical standards, as developed by the association sub-committee, was presented at the 1988 symposium. With Bev Calvin's resignation, I will be acting as the CANNT board's representative on this committee.

Helen McLellan presented the standards briefly to the board, but there was insufficient time available for their perusal and feedback at this meeting. I will, therefore, circulate the standards to the board in time for their feedback at the March 1989 meeting. Once accepted, the board will provide for formal printing and circulation of the technical standards to the membership.

The question at that point will be, are we ready to continue on to develop a certification exam? I personally feel that a lot of groundwork must still be done before taking this step. At the present time, CANNT nurses are utilizing the

Canadian Nursing Association (CNA) process, developed to assist specialty nursing groups in preparing a certification exam.

CANNT nurses are able to do this since the CNA changed its criteria for specialty group members applying for their assistance.

CNA now stipulates that 70% of nurses belonging to CANNT must be CNA members, rather than 70% of our total membership.

While this now makes it possible for nurses to pursue their certification through the CNA, it still leaves the technical group in a fairly fledgling position with regards to certification.

The development of standards is certainly a crucial step. However, nursing has an identified baseline qualification for anyone wishing to become certified. That is, each applicant must be an RN. The problem for the technical group is that there is still not an established and accepted baseline qualification for a dialysis technician. Once there is, it becomes a much simpler, although still time-consuming, process to establish a certification exam. I think it needs to be clarified that certification is a testing process for assuring competency in a given specialty.

The baseline qualifications, experience and working knowledge that constitute competency must be clearly established prior to the development of an exam.

This is the stage at which I believe we are now—a stage that gives rise to so much controversy and concern because of the diverse background and experience of dialysis technicians across the country. I think the following must be given consideration before we go any further:

1. The development of the nursing certification exam is expected to be very costly. Who would fund the development of a technical exam? Could we affiliate ourselves with a larger technical association (for example, in BC, the Applied Science Technologists and Technicians) for certification?
2. What should the knowledge base for dialysis technology encompass?
3. Once certified, how do we assure hospitals recognize this credential?
4. What can we learn from the American certification process that is already in place?
5. Is there an avenue for certification through BONENT (The Board of Nephrology Examiners, Nursing and Technology) in the U.S.?
6. Can we use the Respiratory Therapists and Cardiac Perfusionists as a model?

Item 2: Feasibility of a distance learning program

There has been some discussion of the possibility of establishing a distance learning program with one of the colleges in British Columbia. Caribou College has indicated an interest in discussing such a project. I think the specialty of dialysis is ready to come of age, just as respiratory technology and cardiac perfusion have done in recent years.

Along with many others, I have spent the past several years trying to work through the maze of concerns, options and power struggles inherent in the certification process in an effort to identify an "ideal" solution.

I know when I first heard about the struggle over role definition, there seemed to be concern that the dialysis technician might cease to be and that biomeds and nurses would split their clinical and technical responsibilities. Having been a biomed, and now having interacted directly with the renal program and nursing, I believe there is a role for a specialized dialysis technician who brings his/her expertise on an ongoing and daily basis to the technical and clinical aspects of dialysis. Biomed grads being hired as dialysis technicians are becoming more and more prevalent. However, it is still not the "ideal", which I feel would be a specialty program encompassing other specific topics of study such as water treatment and membrane technology.

With the ever-increasing emphasis on risk management within hospitals today, it is only a matter of time before they become more cognizant of the discrepancy between role descriptions and qualifications of personnel in many small departments. I encourage you to take the responsibility for recognizing that. However inconvenient it may seem, the world is becoming much more demanding in its formal education requirements. In an area such as nephrology, where technological change has such an impact, it is particularly important to keep abreast of new developments. I believe the best route would be to have a specialty program developed for dialysis technology, which could be taken in stages by those currently employed, but needing to upgrade. I am interested and willing to pursue the question of a specialty program. I will do so, but I would also like to hear from anyone who has comment or rebuttal regarding the issues I have discussed here. Hopefully, there will be a forum for discussion at the next CANNT meeting,

Item 3: Liaison with our U.S. counterpart, the National Association of Nephrology Technologists (NANT)

I attended the NANT meeting in Reno in May of 1988. It was an excellent meeting with speakers covering topics from aluminum toxicity to water treatment. I would encourage anyone who can get the funding to consider attending the next meeting in May 1989, to be held in Dallas. It is encouraging and interesting to see how their association has grown. The meeting is held in conjunction with the ANNA meeting. For information contact the NANT national office:

National Association of Nephrology Technologists NANT National Office,
PO Box 1882,
Bothell, Washington 98041.1882,
(206) 483-4549
National Symposium May 19–22,
Loews Anatole Hotel, Dallas, TX

CONTACT ADDRESS: Ruth Burns
Technical Supervisor
Vancouver General Hospital
Renal Technology Services HP A1
855 West 12th Avenue
Vancouver, BC V5Z 1M9

About the author

Ruth Burns has had a longstanding involvement with CANNT as board member, presenter and conference co-chair in Vancouver in 1990.

Another study: The patient's perspective

By M. Gatto, RN, H. Landry, RN, and D. Philibert, RN, Royal Victoria Hospital, Montreal, QC

This article was first published in the **CANNT Journal** *(1989, Fall), 23–24.*

Dialysis is a specialty that has made tremendous progress since its first days, Eighteen centuries before the first dialyzer was developed, the Romans used hot baths to remove urea from patients. The hot baths made patients sweat profusely and, with the skin acting as a membrane, toxins would diffuse into the bath water.

In the early 1900s, a devise that incorporated all the basic elements common to today's artificial kidney was developed.

This evolution has been achieved through trial and error and, most importantly, through research.

Research promotes the development and acceptance of new techniques. This has been evident throughout the history of dialysis. Dialysis patients, because of their chemical imbalances and physiological changes, have, for years, been a popular group for a variety of studies. Apart from the renal disease, dialysis patients are often a relatively stable population, who has to return to the hospital usually three times a week, over a long period of time. For the medical researcher, this captive audience is usually cooperative and reliable. Therefore, studies are a common occurrence in a dialysis unit—whether these studies are the testing of new dialyzers, doing recirculation studies or more formal and structured research such as trying out a new medication, as erythropoietin (EPO) or asking patients to participate in quality of life studies.

Our patient population at the Royal Victoria Hospital is no exception, as they are submitted to various studies.

During the course of these studies, we, as nurses, noted that the patients participating in these studies exhibited certain common reactions and behaviours.

The most recent study that recruited participants in our centre was the erythropoietin or EPO study. Again, among the participants, we observed some of the same reactions that have been seen before, which prompted us to write this clinical paper in order to share with you our observations and experiences.

We found our patients chose to participate in a study for various reasons. Some patients take pride in being first, to be able to take risks or try something new. Some want to benefit personally by using the latest in technology. Others basically found it difficult to refuse. Still others would only accept to be in a study after they were convinced that the first participants did not suffer any ill effects.

On the other hand, a few patients refused to participate in studies. They stated that: "I don't have enough time" or, "Why should I?" or, "I have enough worries". They felt that dialysis was enough of an intrusion in their lives and that being in a study would further intensify these feelings of intrusiveness. This is shown in a paper by Dr. Devins et al. (1983–84), entitled: "The Emotional Impact of ESRD", where it states "…intrusions threaten the individual security and enjoyment of life…".

One patient in our unit chose to participate in a study as a payback to show appreciation for what has been done to help him over the years. To quote him, "I have been under medical care since 1946, the least I can do is participate in the study."

Whatever their motive may be to participate in a study, it seems most patients exhibited certain common reactions and had similar feelings.

There were feelings of skepticism and fear of the unknown. Some of the statements that patients made were:

"*What will happen to me?"*
"Will my blood be 'okay', well cleaned with the new dialyzer?"
"Do they really know what they are doing?"
"Do they really know what complications are possible? Why me?"
"Was the patient next to me asked?"

These questions and concerns may stem from the fear of upsetting the status quo. All patients at one time or another have had some problems during the course of their dialysis. For example, problems of adjustment, access problems, or any variety of problems we all have encountered.

It was very difficult for some patients to overcome these problems and it took a lot of effort to become comfortable in their routines. They didn't want to threaten the safety and security that took so long to achieve by altering their routine if they agreed to participate in a study.

The situation created some anxiety in patients that was exhibited whereby they scrutinized themselves, watching every symptom or sign that could possibly be related to the research, whether a positive or negative symptom.

On the other hand, a minority of the patients expressed indifference. Participating in a study was not difficult or anxiety provoking for them providing their routine and treatment were not changed.

These findings have implications for the nurse involved with the care of these patients.

We, as nurses working with these patients, heard their complaints and, at times, their frustrations. We also had to become mediators between researchers and patients. We saw what was happening to our patients and felt that this part of their care was an essential part of their whole being.

However, to provide an optimum quality of care, we first had to get in touch with our own feelings about research. Research was also affecting our routine in the unit and, at times, increasing our workload. In addition, and perhaps most importantly, we had to deal with the patient's increasing anxiety. Our empathy with the patients was, at times, interfering with objectivity. We know that research, in most cases, promotes the quality of life immediately or at a future time (i.e., studying a new dialyzer may benefit the patient immediately through better clearances). We had to understand what research is and the importance of it. By discussing this with the staff and the people in charge of research, we were able to comprehend the reason for it, which, therefore, enabled us to project our own positive feelings about research to our patients.

Dealing with patients' behaviour during this time needed the establishment of realistic and mutually agreed upon goals to result in the achievement of a higher quality of nursing care for these patients. A nursing care plan was devised to provide this. This is the care plan we developed to respond to these special problems.

Looking at problem number 1 as our guide (Appendix l).

Whenever we talk about powerlessness, we should consider that this results from a loss of control or from lack of knowledge regarding the patient's own illness and life experiences. Also, sometimes being in a double blind study, the patient has no control over which group he will belong to and this will, therefore, increase the feeling of powerlessness. This was evident in some of our patients' behaviour. Our responsibilities as nurses included awareness of the potential causes and recognition of behaviours. This enabled us to prescribe an intervention to assist the patient in adapting new behaviours or modifying old ones to help them cope in the current life situation, thus achieving our goal of enhancing the patient's sense of power and control.

Note problem number 2 on our care plan (Appendix 1).

Self-esteem is the perception of evaluation of one's self. When a patient feels powerless and is unable to see alternatives in a given situation, the patient would then use a defence mechanism such as denial or intellectualization. Here, the nursing responsibility would include assessing patient's behaviour associated with the threat to his or her self-esteem.

Again, we would choose an intervention to facilitate their coping with the threat and provide a guide for coping with future threats.

Last we have problem number 3 in our care plan.

The cause of anxiety in our patients seemed to be mainly because of fear, specifically the fear of the unknown, or of upsetting the status quo.

Our nursing responsibilities here included assessing the level of anxiety and then using an intervention that focuses on reducing or eliminating the source of fear, at the same time enhancing the patient's control over other aspects of care.

As you can see in our nursing care plan, our nursing interventions are common to all three nursing diagnoses because they are all intertwined, all three are related, one leading to another.

In conclusion, it is evident that we live in a world of constant evolution of which research is an integral part. Because of new technology and constant research, our patients will be asked to participate in many more studies. Patients will once again be forced to make decisions that will evidently affect all aspects of their lives. Our nursing assessment showed that we couldn't eliminate all fears. We, as nurses, must attempt to minimize the patients' anxieties in order to help them cope.

We should be aware of these possible reactions and behaviours the patients can express during a study and be prepared to support our patients. On the other hand, if a patient chooses not to participate in a study, the person should not be made to feel as if he or she has done something wrong or feel ostracized.

It is of foremost importance that we fulfill our role as patients' advocates and support our patients with whatever decision they have made.

Acknowledgements

We would like to express our thanks to the Royal Victoria Kidney Fund for its support and special thanks to Fe Esguerra and Janice McCormick for their comments and assistance.

Appendix l. Care Plan

Nursing Diagnosis	Goals/Objectives/Expected Outcomes	Nursing Intervention
1. Powerlessness	Patient will: • express feelings/concerns about situation • try alternative behaviour to increase sense of power/control	• build a trusting relationship • listen to patient • assess patient's perceptions/knowledge of situation/make sure he understands
2. Threat to and/or decrease in self-esteem	Patient will: • explore our feeling/perception of self • explore strength/coping mechanism • problem solve for alternative options	• give patient clear/concise information/ explanation and ask patient to repeat in his words • provide opening for patient to express feelings • offer safe and supportive environment
3. Fear/anxiety	Patient will: • recognize factors/situations that cause him to be fearful and able to discuss his fears and accept them • use anxiety as a source of positive motivation	• give support and encouragement • include patient in care and research

References

Devins et al. (1983–84). The emotional impact of end stage renal disease: Importance of patients' perceptions of intrusiveness and control. **Int'l J. Psychiatry in Medicine**, 13(4), 238.

Neal, M.C., et al. (1981). **Nursing Care Plan Guides**. Pacific Palisades, CA: Nurseco Inc.

Trends in transplantation

By Joan Legge, Coordinator Transplant Program, Victoria General Hospital, Halifax, NS

This article was first published in the **CANNT Journal** *(1989, Winter), 21–22.*

Transplantation is now an acceptable treatment modality for many people with end stage renal disease. What trends have influenced and directed us to our present state and what is out there to affect our future? This presentation discusses trends in transplantation, specifically, those that have and will affect the program that operates in Atlantic Canada.

Transplantation began in this region as a renal program in 1969. In the first year, three transplants were performed—one was a living related and two were cadaver transplants. Between 1969 and 1984, renal transplants were the only transplants performed by our medical team at the Victoria General Hospital (VGH) and IWK. Cornea transplants were being performed, but were not an associated program to the renal one.

In 1985, in response to identified needs for other organs, the Multi-Organ Transplantation Program was established with Dr. P. Belitsky named as director. Staff of the program recognized that the donors being identified were frequently multi-organ donors and, yet, we were often only retrieving kidneys or giving extra renal organs away. Our ability to travel to other hospitals to retrieve organs also increased the donor pool and made other organ transplant programs viable.

Once the Multi-Organ Transplant Program was established, our intent centred on identifying existing programs, what organs/tissues were required and who had plans in place to initiate new programs. Our goals included:

1. Identifying multi-organ donors
2. Providing healthy organs for transplantation
3. Formalizing a coordinating service to facilitate (1) & (2) above.

In three years, we have moved from primarily a renal program to an organization that provides kidneys, livers and hearts for transplantations locally and, when we cannot use them, we share with other programs in Canada and the eastern American states. As well, we provide cornea, skin and bone for local use. We continue to maintain a large renal program for both adults and children, but our other extra organ programs are adult-only programs. Recently, we have been alerted that local surgeons are interested in establishing a lung program and discussions with them will begin this winter.

With such a program in place, whom do we serve?

We provide transplantation services to all persons in Atlantic Canada. Certainly they have the option to go elsewhere, but most take advantage of considered locally. It keeps them near family and friends.

The Multi-Organ Transplant Program has grown from one coordinator in each of Nova Scotia, New Brunswick and Newfoundland to a staff of eight in Nova Scotia (VGH), while New Brunswick and Newfoundland continue with one person. Although the transplants occur in Halifax, the recipients come from all four Atlantic Provinces, as do many of the donors. Thus, we in Halifax depend heavily on our colleagues in Newfoundland and New Brunswick to monitor patients on the wait list and to coordinate the donors in their provinces. How are we doing?

Numbers
Statistically speaking:

	1985	1986	1987	1988
Solid Organs				
Kidneys	81	109	59	69
Livers	3	5	6	5
Heart	–	–	–	2
Tissue				
Corneal	Not avail.	Not avail.	Not avail.	45
Skin				2 donors
Bone			1	1

Where did these people come from?

	1985	1986	1987	1988
NS		45	25	15
NB		36	16	11
Nfld		22	17	20
PEI		5	1	3

Where have the donors come from for the same period?

	1985	1986	1987	1988
NS		16	12	11
NB		21	8	9
Nfld		5	3	6
PEI		0	0	1

So, you can see everyone is busy between the two components of the process.

Future trends in transplantation

Let us look at the renal and global issues that affect all programs.

In the renal program, I see the following issues/trends.

1. Transplants across the blood barrier. To date we have performed two, one of them is 18 months post-transplant and the other failed. Needless to say, there are many considerations before such a decision is made.
2. Non-related live donors. This is very current both here in the Atlantic Provinces and across the country. We have not yet performed any, but several patients and/or friends have approached our physicians and coordinators. (Use of significant others).

3. Increasing numbers on wait list. As the population ages, medical care providers feel that the criteria for kidney transplants can expand, our numbers continue to increase. At present, our donor numbers are good, but cannot match the demand.
4. Increase in numbers of live related transplants. This, I feel, will happen, particularly as (2) and (3) impact on demand.
5. Use of computers. Modern technology has helped this program tremendously. We now have faster access to our patient database, maintain more data than ever and actually use a special program to assist in prioritizing patients when a donor is available. Although the physician makes the final decision, the coordinator is able to minimize the time required to make the final selection.

What is happening overall in transplantation?

1. The impact of AIDS
   Everyone is becoming aware of the issues of AIDS, AIDS testing (HIV) and the impact on transplantation. We test all recipients (with their consent) and all donors must be tested prior to retrieval.
2. Anencephalic donors
   This has become an urgent matter to discuss. There are two sides to every issue but this one probably has many sides.
   - Rights of anencephalic child
   - Right of anencephlic baby's mother
   - Need for pediatric recipients

   Our program has begun discussion and, to date has not used any such donors.
3. Fetal tissue use
   This has created much controversy locally. Our program has had one meeting with the local person interested in this matter, but feels it is far too soon to make definitive action.
4. Increasing use of human tissue for purpose other than transplantation. Plastic surgeons are using corneal endothelium tissue in rhinoplasty (not locally) and bone retrieval from procedures of replacement prosthesis is crushed and used during other surgery.
5. Improvement in preservation technique, which allows teams to travel farther for retrieval. This will, hopefully, reduce the need to bury organs offered, but not used.
6. Ethical issues other than above already noted:
   a) costs of transplantation versus available dollars
      - Will we see limits placed on numbers?
      - Will we see limits on who can receive?

   b) equitable distribution of organs/tissue
      - Repeat transplantation

   c) buy/sell organs—will it come?

I feel Dr. John Dossitor sums the topic up well in his article, "Ethics, Justice and Commerce" May 1988, Transplantation/Implantation Today—and I quote: "Transplantation flourishes as a form of medical treatment only as long as 'the transplant world' retains the trust of the public at large. Our activities must be open to the scrutiny and criticism not only of our professional colleagues, but also the public—the latter being thought of as the public press and the electronic media."

The evolution of conference planning at CANNT: Planner versus planner

By Karen Peters, RN

When Faye Clark first approached me about writing this article, the memories of all of the conference planning committee responsibilities came quickly back to me. Was it really 26 years ago when I was on the first of four London planning committees?

My involvement as one of the co-chairs of the 2006 CANNT planning committee was an exhausting, but exhilarating experience. Other than for the regular meetings and the Wednesday to Sunday commitment at the conference, it was like the committee was the orchestra and Heather Reid, as our Conference Planner, was the conductor. It was obvious from the very beginning that Heather was well-rehearsed for this position. She knew what note to be played and when, with organizational plans in place two years prior to the actual conference date. I don't recall exactly when the conference planning committees started meeting in 1982, 1987 and 1998, but doubt it was no more than one year in advance of the conference, if even that. The conference chair in 1982 was no more rehearsed than the planning committee and only the Canadian Society of Dialysis Perfusionists (CSDP) board (two years before the name change to CANNT) provided guidance. Otherwise, the conference planning committees did it all! As any well-organized group, we volunteered to take on the different tasks required.

Our conference chair for 1982 was Bev Demelo (wife of David Demelo, technologist at London Health Sciences Centre) who did all of the conference facility bookings and planning. After the committee determined who we would seek to bring in

Passing of the symposium banner, from Johanne Boilleau, Chair 1997 CANNT Symposium, Quebec City, to Phyllis Malek, Chair 1998 CANNT Symposium, London.

as keynote speakers, another group contacted the speaker, determined their stipend (I think the most expensive speaker was $600 in 1982 compared to $8,000 in 2006), transportation requirements, etc., etc. I led the registration and fundraising committee by contacting the dialysis vendors for donations. The largest donation I recall was around $1,500.00 in comparison to more than $10,000 that Heather obtained in 2006 from six different vendors. All conference registrations were sent directly to me and entered into a ledger book where I kept track of all registration information and receipts manually. Luckily, there were computers and Heather to organize all of that in 2006. In the other conferences London hosted, the planning committee had designated members responsible for the entertainment planning, booking, etc., whereas Heather provided the committee with a list of entertainers and ideas. The 2006 planning committee just had to agree on what and who we wanted and Heather orchestrated the rest.

The only conference task I can think of that changed very little over the years was the "stuffing of the bags." The only exception was that in 1982, when we recruited for the planning committee, we also recruited for additional people to help stuff the bags—often being our staff. In 2006, this was done primarily by the committee members, CANNT board members and only a few volunteers. However, the number of bags to be packed certainly changed from approximately 200 registrants in 1982 compared to more than 800 in 2006. The committee members in 1982 determined the number of bags, dealt directly with the printers, picked up and mailed out all of the conference material. Heather did this all in 2006.

In 1998, the CANNT board had just hired the first paid conference planner with the registrations, fees, etc. sent directly to her. Other than that, the conference planning remained the same. In planning the 2006 conference, all this changed with the presence of Heather Reid. Heather organized the planning meetings and the co-chairs who, in turn, established the committee members. Heather had already determined the best location and potential dates for the 2006 conference by our first meeting. As the expert conductor, she had all of the instruments ready and the planning committee members needed to choose the notes to be played. Heather had a repertoire of themes, speakers and entertainment. Together we put it all into one harmonious song. All of the task work (e.g., printing, designing, mailing, etc.) was Heather's responsibility.

Having had this conference planning experience with a conference planner, I don't think the conference planning committee could perform the duties without the expertise of a planner who conducts conferences as her work. As CANNT members, we are all dedicated professional staff performing very hectic and demanding positions in our renal programs. We are not experts at planning conferences of this magnitude, nor can we dedicate the required time to make the annual conferences as successful as they have been.

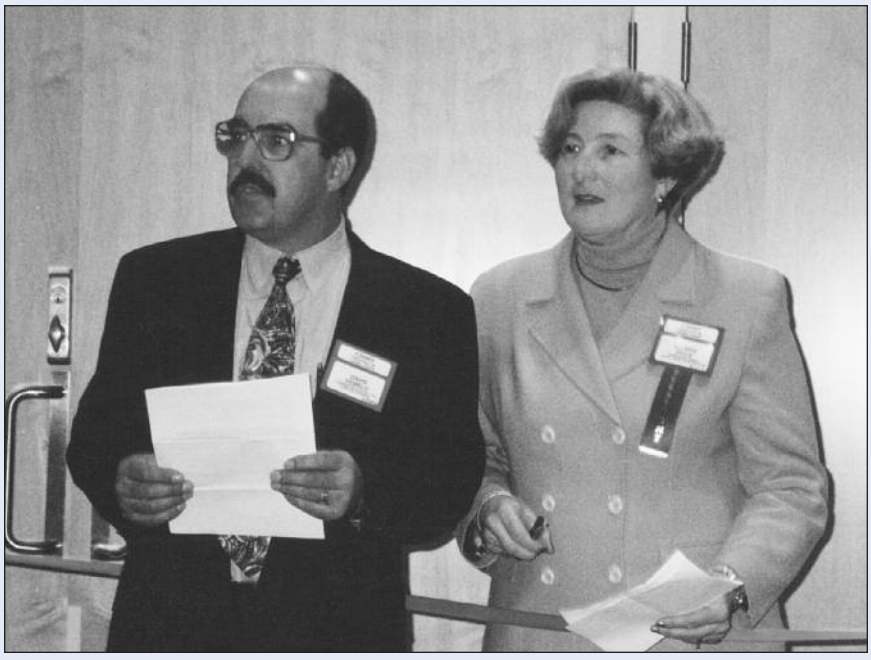
I am thankful that CANNT members saw the need to invest in the conference planner and, most of all, we were so fortunate to have found such an expert and most pleasant planner with whom to work. Here's to Heather Reid and the 2008 planning committee!

About the author

Karen Peters, RN, is Manager of the Regional and London Satellite Dialysis Units and the Home Hemodialysis Unit at the London Health Sciences Centre, London, ON. Karen has been the manager of these units for 30 years, and has led her staff through the opening of six regional satellite hemodialysis units, initiated the home peritoneal dialysis program at the then Victoria Hospital, and continues to lead her staff through the growth and numerous changes within the regional and home dialysis units.

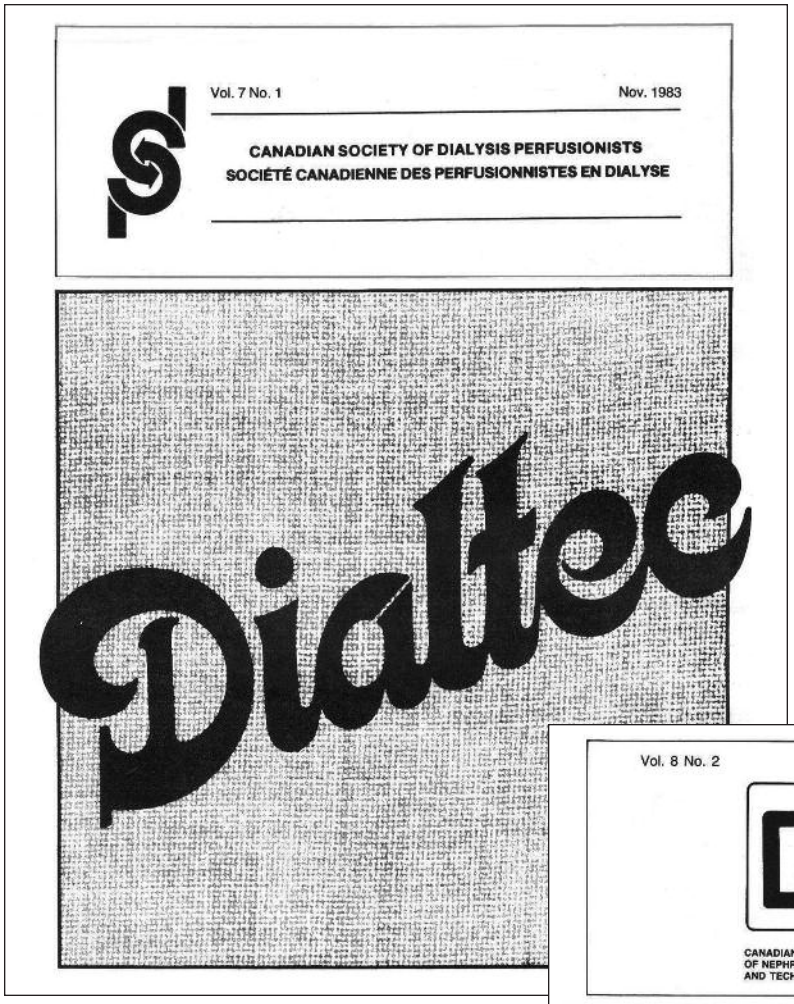
Karen's professional volunteer activities related to nephrology include:
***CANNT**—Active participation in the conference planning for the 1982, 1987 and 1998 CANNT conferences hosted in London, taking on various responsibilities to enable successful conferences. In 2006, Karen was one of the co-chairs for the London conference.*

She has presented several oral and poster presentations over the years at the various CANNT conferences and, in 1998, was co-recipient of the Corporate Award for Best Paper Administration award for "Integrated Dialysis Delivery Network." Karen and her PD staff were winners of the LHSC 2004 Bonnie Adamson Quality Award for their success in "Lowering prevalence of peritonitis through care delivery improvements." Karen presented this at the CANNT conference the following year.



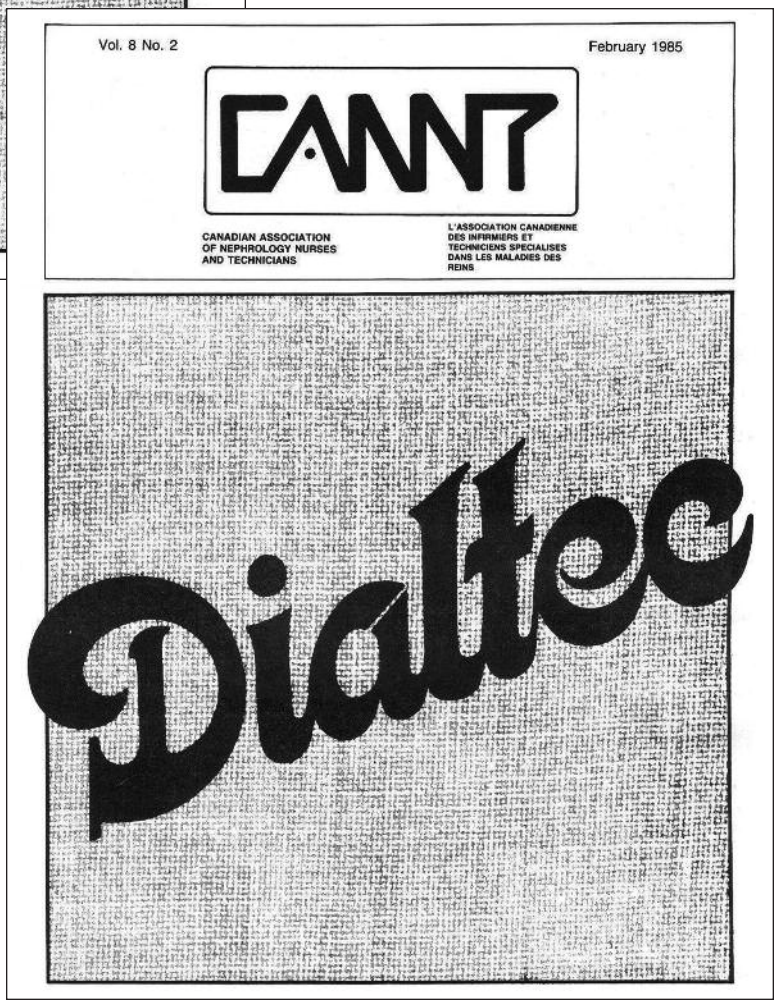
CANNT's 30th anniversary Symposium in London (1998). Symposium co-chair Dave Demelo with Valerie Price, CANNT Past-President.

Journal history: 1980s



Following are excerpts from messages from editors posted in the various CSDP and CANNT publications from the 1980s.

Editor: 1981–1983—Brian Mulhearn
The past year has shown a successful re-organization of CSDP. The society ended the year on a high note with the conclusion of an excellent national symposium held in London, Ontario. Many thanks and congratulations must go to Bev DeMello and all the people in London associated with the symposium. ***Dialtec*** will continue to publish on a regular basis giving members a chance to catch up on society news and to be informed about nephrology trends in the rest of the country. (January 1983, CSDP ***Dialtec***)



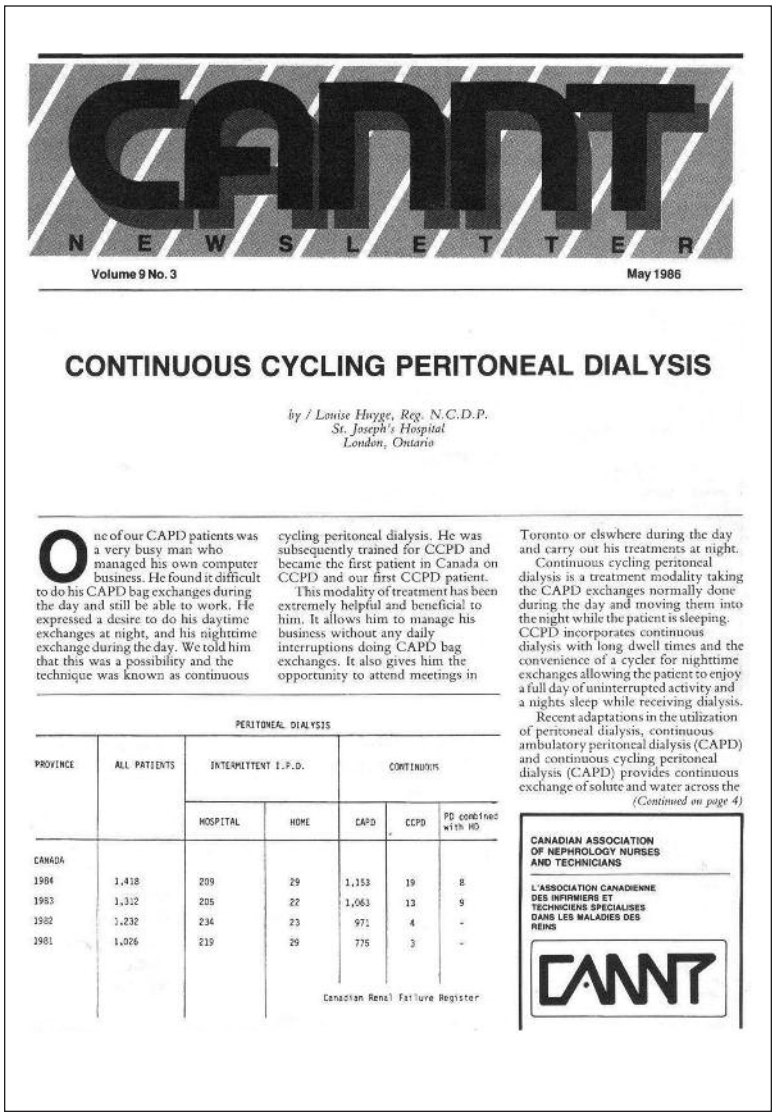
Editor: Fall 1983–Fall 1986—Phyllis Malek
As the new editor of ***Dialtec***, I would like to take the opportunity to express may thanks to Nadine Peroff and her committee on the well-organized and very informative symposium, "Sharing the caring", which was held in Toronto on September 16–18, 1983. My hope is that the new look of this publication will encourage members of our association to participate actively by submitting articles they would like to share with others. I would like the ***Dialtec*** to be informative and enjoyable to all who read it. (November 1983, CSDP ***Dialtec***).

Editor: Fall 1986–Fall 1989—Jocelyne Larivière

It is with pleasure and naturally some anticipation that I orient my own participation in CANNT, as editor of our newsletter. In the past years, we have found many interesting articles in the *"Dialtec"* presently "*CANNT Newsletter*", and I know this will continue with your participation. Another change starting with this issue is the translation into French of the editorial and news from the board; articles will be published in French or English as they are presented. (December 1986, *CANNT Newsletter*)

Editor: Fall 1989–Fall 1992—Rita Brownrigg

With the support and guidance of Jocelyn Larivière, I will assume the editorship of the *CANNT Journal*. At the recent CANNT symposium in Toronto, I felt absolutely inspired and renewed to see how eager nephrology nurses and technicians were to learn and to share with their colleagues. Unfortunately, our symposium is only an annual event and many of us have to stay at home. However, the most leisurely way to enhance your knowledge and to receive our association news is to read your *CANNT Journal*. This is our national journal for our specialty. Promote membership. As we get bigger, we get better. (Fall 1989, *CANNT Journal*)



CANNT NEWSLETTER

Volume 9 No. 3 May 1986

CONTINUOUS CYCLING PERITONEAL DIALYSIS

by / Louise Huyge, Reg. N.C.D.P.
St. Joseph's Hospital
London, Ontario

One of our CAPD patients was a very busy man who managed his own computer business. He found it difficult to do his CAPD bag exchanges during the day and still be able to work. He expressed a desire to do his daytime exchanges at night, and his nighttime exchange during the day. We told him that this was a possibility and the technique was known as continuous cycling peritoneal dialysis. He was subsequently trained for CCPD and became the first patient in Canada on CCPD and our first CCPD patient.

This modality of treatment has been extremely helpful and beneficial to him. It allows him to manage his business without any daily interruptions doing CAPD bag exchanges. It also gives him the opportunity to attend meetings in Toronto or elswhere during the day and carry out his treatments at night.

Continuous cycling peritoneal dialysis is a treatment modality taking the CAPD exchanges normally done during the day and moving them into the night while the patient is sleeping. CCPD incorporates continuous dialysis with long dwell times and the convenience of a cycler for nighttime exchanges allowing the patient to enjoy a full day of uninterrupted activity and a nights sleep while receiving dialysis.

Recent adaptations in the utilization of peritoneal dialysis, continuous ambulatory peritoneal dialysis (CAPD) and continuous cycling peritoneal dialysis (CAPD) provides continuous exchange of solute and water across the

(Continued on page 4)

PERITONEAL DIALYSIS

PROVINCE	ALL PATIENTS	INTERMITTENT I.P.D.		CONTINUOUS		
		HOSPITAL	HOME	CAPD	CCPD	PD combined with HD
CANADA						
1984	1,418	209	29	1,153	19	8
1983	1,312	205	22	1,063	13	9
1982	1,232	234	23	971	4	-
1981	1,026	219	29	775	3	-

Canadian Renal Failure Register

CANADIAN ASSOCIATION OF NEPHROLOGY NURSES AND TECHNICIANS

L'ASSOCIATION CANADIENNE DES INFIRMIERS ET TECHNICIENS SPECIALISES DANS LES MALADIES DES REINS

CANNT

CANNT President Joan Joyce presents a recognition plaque to Jocelyne Larivière.

La présidente de l'ACITN, Joan Joyce, remet une plaque à Jocelyne Larivière.

Congratulations!

Jocelyne Larivière was honoured at the 1993 annual general meeting of the Canadian Association of Nephrology Nurses and Technicians (CANNT). A special award was attributed in recognition for her many past and ongoing contributions to CANNT. Jocelyne has been the CANNT journal editor, national symposium co-chairperson, elected member at large for dialysis and is now the national secretary.

Above, CANNT President Joan Joyce presents a recognition plaque to Jocelyn Larivière at the CANNT 1993 Annual General Meeting. From *CANNT Journal* 1994, 4(1), 8.

1990s

Excerpts from messages from presidents posted in the various CANNT Journals—1990s

1990–1991
Susan MacNeil

"I am excited as I begin my year as president. As individuals we can make a difference if we make a commitment to become involved. As members of CANNT, we can strengthen our position in the health care arena, improve our abilities to better meet the needs of our patients and increase and improve communications throughout our nephrology community. Only through our professional association can a united voice be heard, and the larger the association the larger the voice. Together we can advance, together we can be heard." (**Winter 1991,** ***CANNT Journal***)

1991–1992
Diane Watson

"We're not getting older…we're getting better. It's hard to come back down to earth after the exhilaration of the CANNT annual symposium in Montreal, which was an unqualified success. CANNT continues to flourish with the input from its members and with the help of our management company. CANNT is only as strong as its members, but judging from the increase in membership and mushrooming success of the annual conferences, we are together on a crest that promises to continue upward. Keep up the great work, get involved and stay involved. It's worth it!" (**Fall 1991,** ***CANNT Journal***)

1992–1993
Joan Joyce

"The past year has been very productive for CANNT with many more exciting changes to come in 1993. Certification will become a reality January 1993. It will enhance nephrology nurses' power and demonstrate excellence in a specialized field of nursing practice. Nephrology nursing's scope of practice has changed over the past 20 years. Nephrology nurses must be familiar with conservative and surgical management, dialytic treatments such as peritoneal dialysis, hemodialysis and transplantation, as well as palliative care. The exam, therefore, is based on the holistic approach to the care of the nephrology patient. The technical standards are completed thanks to Ruth Burns and her committee." (**Fall 1992,** ***CANNT Journal***)

1993–1994
Rita Brownrigg

"Patients with end stage renal disease carry huge physical and psychosocial burdens. Any form of dialysis requires a significant time investment. Lifestyles must be modified and all family members must adapt to the chronic nature of the disease and the limitations it sets. Nephrology health care workers are frontline in identifying many of the stresses that impact on the patient's well-being. Stressors like the restrictive diet, fluid limitations, difficulty in attaining or maintaining full- or part-time employment, limited incomes and restricted social services are frequently the precipitant to a gamut of physical and psychological events." (**Winter 1994,** ***CANNT Journal***)

1994–1995
Jo-Anne Rogers

"Each and every one of us is probably wondering what changes this new year will bring forth. Will it bring about personal joys and sorrows, professional growth and development, or will things remain status quo? We, as a body of professional caregivers, must develop and plan innovative ideas to meet the needs of our patients. We must strive to optimize patient care and not allow ourselves to be compromised. CANNT, as an organization, is working diligently towards these goals. You can help, get involved!" (**Winter 1995,** ***CANNT Journal***)

1995–1996
Dawn Evans

"I assume the role as president at a very exciting time for nephrology health care professionals in Canada. In each province, we are being challenged to maintain excellent care for our renal patients, but with less federal and provincial funding. We are also required to defend the need for professional nurses and technicians. Those of us who care for renal patients are keenly aware of the education and skills required to safely teach and to dialyze the constantly aging population. As well, we all know of the increased complexity of care needed for the more complicated, sicker patients." (**Fall 1995, *CANNT Journal***)

1996–1997
Anita Amos

"The three Rs have become regionalization, restructuring and rationalization. What challenging and exciting times! As the health care dollars shrink, health care professionals are constantly being called upon to be more creative in their approach to providing high-quality health care. Through CANNT, we establish linkages and relationships that lay the foundation for a generation of collective knowledge. With increased exposure to the ideas and perspectives of others, we will be better able to confront the conflicts that are inherent in transition." (**Winter 1997, *CANNT Journal***)

1997–1998
Valerie Price

"I anticipate an eventful term as CANNT president with the goal of conducting the affairs of the association in the best interest of the CANNT members. I plan to encourage participation in CANNT. As our health care system continues to bring us many changes, we must be prepared to take a positive approach and continuously aid in the decision-making process. Our involvement may be in our local nephrology unit, on a provincial committee or at a national level. I challenge you to become involved on committees, serve on boards and work with your local provincial health departments. We can make a difference." (**Fall 1997, *CANNT Journal***)

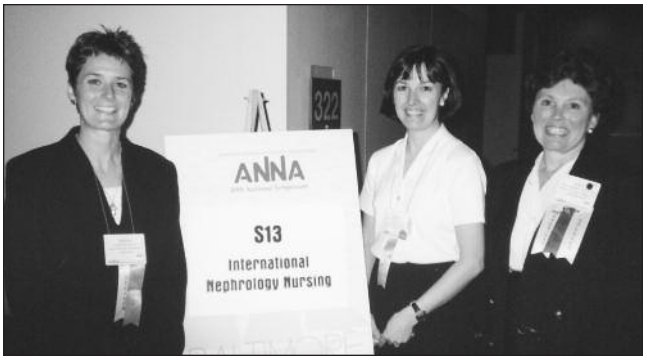
1998–1999
Denise Gaudet

"These are exciting times filled with opportunities that challenge us to be even more informed, creative and innovative as we move towards the new millennium. To this end, many CANNT members continue to meet the challenge of certification and recertification, confirming their belief in professional and self-development. Others opt to represent the CANNT organization on local, regional, national and international health care-related committees. These contributions will continue to make a significant difference in the quality of care that people with kidney disease and their families receive." (**Winter 1999, *CANNT Journal***)

Diane Watson, secretary, at the business lunch, CANNT 1990, Vancouver.

Jocelyn Larivière, CANNT Conference Co-chair, Diane Watson, CANNT President, with keynote speaker Jane Fulton at CANNT 1992 in Ottawa.

Valerie Price, right, CANNT President, presents an award to Joy Bevan at CANNT 1998 in London.



Denise Gaudet, centre, at the ANNA annual conference in Baltimore, Maryland, April 12, 1999. She is seen here with, left, Gemma Bircher, president-elect of the European Dialysis and Transplant Nurses Association/European Renal Care Association, and right, Gerri Briddle, president of the World Council for Renal Care.

CANNT in the early 1990s

By Heather Beanlands, RN, PhD, Past-President, and Diane Watson, RN, MScN, CNeph(C), Past-President

The years during our tenure were exciting, indeed, for CANNT. We were growing in leaps and bounds, and CANNT was moving from being ably managed by eager volunteers to recognizing that we needed professional assistance to manage such a complex association. One of the major forward steps taken was to hire an association management company to assist with the administration of CANNT. This was the first time that CANNT had a permanent office, staff, computerized membership and central phone number.

Other major projects took shape during those years as well, particularly the Canadian Nurses Association (CNA) Nephrology Certification exam. This was a very labour-intensive process, since we were only the second group to establish an examination, as the "kinks" were not worked out and the process was far from streamlined at the time. The submission to be considered a specialty of the CNA took on a life of its own, as it comprised what turned out to be a six-inch thick, two-volume tome. Our submission included many chapters, including results of a country-wide survey to establish the number and position of all nephrology nurses, details about the patient population cared for by nephrology nurses, the nephrology curricula being taught across the country, the education level of all members, revision of the CANNT Standards of Practice and much more. Once our submission was in and defended, then we were accepted as a specialty by CNA and took upon the task of writing the initial exam questions, to include all domains of practice, as well as inclusion of safety, critical thinking, professional practice, and therapy. This was truly a long, but rewarding process by the CANNT board of directors and membership, as it meant recognition and certification at a national level.

CANNT was also represented for the first time at the World Council of Renal Care, an international body focusing on a global view of nephrology and aimed at assisting to raise the level of nephrology care around the world. CANNT has continued to have its presence and contribution on the world stage. Following the thread of international recognition, CANNT hosted its first international renal symposium in Halifax (October 13–16, 1993) in conjunction with the annual CANNT symposium.

During this time, CANNT also formally recognized the tremendous contribution of our corporate colleagues and introduced a CANNT Corporate Sponsors' meeting at each annual symposium. This was an outstanding success, as the corporate representatives met together, not as adversaries in industry, but as friends and supporters of CANNT. Together, we developed initiatives such as the CANNT Abstract award and the CANNT Manuscript award.

As foreign as it may seem to CANNT members now, this was a time prior to everyone having a computer at home, and laptops/PDAs hadn't, as yet, been invented. A few of us had monstrously big IBM home computers that booted up from a 5 1/2 inch floppy disk, complete with orange font with a black background (Windows® hadn't been invented) and, with that, we were actually able to take the initial steps at "computerizing" CANNT. We can remember well how exciting it was to be able to actually print out mailing labels for all CANNT members—we remember Diane's whole family pitching in to stick them on envelopes. It was a world away from addressing each one by hand.

CANNT has come a very long way in 40 years, and we are more than proud to have been involved in some of the development of the tremendous World-class association that we have become.

At CANNT 1991 in Montreal: Keynote speaker, Dr. Anita Molzahn (left) with CANNT President Diane Watson.

About the authors

Heather Beanlands, RN, PhD, is Associate Professor, Daphne Cockwell School of Nursing, Ryerson University, Toronto, ON.

Heather's professional volunteer activities related to nephrology include:

1990s

***CANNT**—Past-President 1990–1991; President 1989–1990; President Elect 1988–1989; Member at Large, Board of Directors 1987–1989; Chair, CANNT Certification Committee 1988–1990.*

***Canadian Institutes of Health Research, Institute of Nutrition, Metabolism and Diabetes**—Advisory Board Member, February 2001–July 2004.*

At CANNT 1990 in Vancouver: Dr. Colleen Stainton, keynote speaker, discussed "Pathways to Excellence." On the right is Heather Beanlands, CANNT Past-President.

***Canadian Nurses Association** (CNA) 1982–present Member; Committee on Testing 1990–1996; Chairperson, Nephrology Certification Exam Development Committee 1990–1996.*

***Kidney Foundation of Canada**—Research Council Advisory Board 2000–2004; National Research Coalition 2001–2002; Kidney Scientist National Training Program (KRESCENT); Steering Committee 2004–2008.*

Diane Watson, RN, MScN, CNeph(C), is Advanced Practice Nurse, Nephrology, University Health Network—Toronto General Hospital, Toronto, ON.

Diane's professional volunteer activities related to nephrology include:

***CANNT**—National Secretary 1988–1990; President-Elect 1990–1991; President 1991–1992; Past-President 1992–1993; Member, World Council on Renal Care, 1993.*

***Member, Canadian Society of Nephrology Clinical Practice Guidelines Development Working Group**—1997.*
***Kidney Foundation of Canada**—Member, Allied Health Council, Kidney Foundation of Canada 1990–1998; Vice-Chair, Allied Health Council, Kidney Foundation of Canada 1993–1994; Chair, Allied Health Scientific Committee, Kidney Foundation of Canada 1994–1997; Past-Chair, Allied Health Scientific Committee, Kidney Foundation of Canada 1997–1998; Member, Ontario Medical Advisory Committee, Kidney Foundation of Canada 1992–1996.*

***Member, Canadian Standards Association Subcommittee on Hemodialysis**—1992–2002.*

L'ASSOCIATION CANADIENNE
DES INFIRMIÈRES/INFIRMIERS ET
TECHNICIENS EN NÉPHROLOGIE

CANNT

16e conférence nationale - du 25-28 septembre, 1991

Le discours inaugural sur "La Qualité de vie" sera présenté par Anita Molzahn, infirmière, PhD.
Le professeur Dennis Dailey, DSW, sexologue renommé au Canada et aux États Unis, et auteur de la revue "Renal Family", animera un atelier sur la sexualité et l'insuffisance rénale.
Fabie Duhamel, infirmière, PhD, professeur à la Faculté de Nursing de l'université de Montréal, parlera de la famille vivant avec la maladie chronique.
Il y aura deux "tables rondes":
1. L'approche multidisciplinaire face à la grossesse en hémodialyse.
2. Le patient et sa famille doivent-ils être impliqués dans la prise de décision face au traitement?

Le docteur D.N. Churchill examinera la rentabilité des coûts reliés à l'utilsation de l'érythropoïetine recomginante (EPO) pour les patients en dialyse.
Le docteur Robert Lawrence du Laboratoire de santé publique du Québec discutera avec les techniciens du traitement et de la qualité de l'eau pour l'hémodialyse.
Il y aura aussi présentation de résumés, d'affiches, des présentations de compagnies sur des projets de recherches et des expositions.
La conférence aura lieur au coeur de la ville, à l'Hôtel Château Champlain. Vous aurez accès au Montréal, et à tout le centre ville.
Laissez-vous charmer par la culture québécoise et l'aspect cosmopolite de Montréal.

Preparing for certification: Halifax nephrology nurses—In quest of excellence

By Marsha Wood, RN, BN, Unit Resource Nurse, Nephrology and Transplantation Unit, Victoria General Hospital, Halifax, NS, and Joan Joyce, RN, BN, Head Nurse, Nephrology and Transplantation Unit, Victoria General Hospital, Halifax, NS

This article was first published in the **CANNT Journal** (1992), 2*(3), 16–17.*

Certification in nephrology nursing will become a reality in January 1993.

Standards of clinical practice for nephrology nurses in Canada were developed by CANNT. Upon approval of our standards by the Canadian Nurses Association (CNA), nephrology nurses were eligible to begin the certification process. In the fall of 1990, the Nephrology Nursing Certification Examination Committee was struck by the CNA. The committee is composed of eight nephrology members from across Canada. Each of the four areas of nursing within the specialty is represented (administration, education, practice, and research). Their role is to resolve issues related to certification, develop test plans and situational objectives, approve the examination at various steps to ensure content validity and set the passing mark for the exam.

Many nurses ask what certification can do for them. It is a matter of promoting our specialty and empowering nephrology nurses as a **specialized** group of professionals. Certification demonstrates to other health professionals, patients and the public that there is a body of knowledge that is specific to nephrology nursing practice.

Nephrology nursing's scope of practice has changed over the past 20 years. Nephrology is no longer just an acute therapy, nor is there only one method of treatment. Patients often receive several treatment choices during their life. There is no way a nephrology nurse can care for just the hemodialysis patient. He/she must be familiar with conservative and surgical management, other dialytic treatments such as peritoneal dialysis and transplantation, as well as palliative care. It is no longer valid to have an exam for each separate treatment modality. The exam, therefore, is based on the holistic approach to care of the nephrology patient.

Knowledge and skills that are pertinent to the care given by nephrology nurse will be tested. The areas tested for competency include: anatomy and physiology, pathophysiology, treatment modalities, pharmacology, nutrition, teaching, communication, psychosocial, occupational hazards, and professional responsibilities. To maintain one's certification, documentation and approval will have to be demonstrated on an ongoing basis.

Certification enhances power and demonstrates **excellence** in a specialized field of nursing practice.

There is definitely something special about the certification process, as is evidenced by the 24 nephrology nurses from Halifax's VGH and IWK Hospital for Children, who formed a study group to prepare for the exams. Not everyone plans to write this year, but all have included it as part of their goals for the next couple of years. Upon asking individuals in the group why they feel this is an important achievement for their profession, you will hear comments such as, "It lends credibility to a body of knowledge that we know is unique,", "I want to be identified as somebody that really knows what they are doing", "I need this knowledge to keep up with other nephrology nurses I work with", "It is just a personal goal, I want to be the best I can be". All of these statements say that nephrology nurses are striving for **excellence**.

When the nephrology nurses from Halifax started out to form a study group, it was anticipated that there would be a core group of perhaps six or so interested people. A meeting was held to identify those interested in forming a study group, and nephrology nurses from all practice settings were invited to attend. There were 11 nurses at the first meeting and attendance quickly grew to 24. We were delighted to see such enthusiasm and commitment to the profession. It was obvious that the strategy we had planned to use for our initially anticipated smaller group would not work, so the first couple of meetings held in December 1991 and January 1992 were devoted to how to best accomplish our task.

The core body of knowledge developed by CANNT and submitted to CNA when entering the certification process served as a guide to get us on track. We had to decide what we felt were the priority topics to cover over our remaining months until the exam. The following are areas of specific focus: anatomy and physiology of the kidney, acute and chronic renal failure, conservative management, surgical intervention, hemodialysis, peritoneal dialysis, transplantation, palliative care, patient teaching, communication skills, psychological assessment including cultural background, professionalism, occupational hazards, major disease entities (glomerulonephritits, diabetes, polycystic kidney disease, hemolytic uremic syndrome, nephritic syndrome, etc.), and drug therapy used during all modalities of treatment. We had to take into account that the diseases and treatments had to span the life cycle.

It was decided that the nurses in the group would be responsible for collecting information on the topics and preparing presentations. We would enlist the support of the nephrologists, social workers, dietitians, etc., as the need arose but, if we were to truly learn, this had to be an independent learning experience that drew upon the group for support and expertise.

We decided to meet twice a month until exam time and divide up our identified topics within that timeframe. With such an ambitious agenda and such a large group of learners, there were two things we needed to do:

1. We needed to set up a schedule of sessions, including a list of topics and dates for the remainder of the year. This allows for people to plan to attend the sessions and also help identify people who would take responsibility for the topics to be presented.
2. We needed to develop some guidelines that would outline the expectations of the group, as well as individuals in the group. The guidelines are as follows:

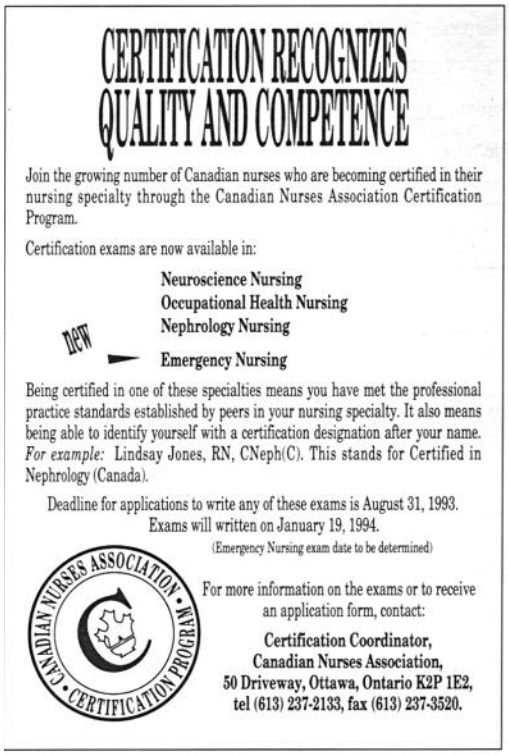
Guidelines for the certification study group

1. Studying for certification exams is an independent activity. The study group provides an avenue for those involved to share knowledge and expertise.
2. All people involved in the study group should be active participants. If not presenting a topic, you should be working in collaboration with those presenting, i.e., collecting information, articles, etc.
3. It is the responsibility of those presenting topics to find articles/print material pertinent to the topic. A copy of each article is to be sent to each unit for inclusion in the certification study manual. Due to the cost of copying, it will be left to the discretion of that unit supervisor, whether copies will be made for staff members of that unit, or individuals may wish to copy their own. Articles should be distributed to the unit prior the presentation allowing time for reading.
4. Since this is an independent study activity, the information in the articles should address the study objectives. Due to time constraints, it should not be the responsibility of the presenter to go into great detail. Prior reading and preparation of individual group members should allow you to address areas of particular difficulty or question things that are unclear.
5. Two study sessions a month have been scheduled. This should not limit the number of sessions we have and we can schedule more if the need arises.
6. Rooms have been reserved for the study group sessions. Those not studying for the exam are welcome to attend as space permits.

A breakdown of the group looks something like this:

Number of Nurses	Practice Setting
11	In-patient nephrology/transplantation
8	In-patient/out-patient hemodialysis (adult)
2	Home dialysis
2	In-patient/out-patient hemodialysis (pediatric)
1	Transplant coordinator

If we are successful in our pursuit of excellence, it is because of the enthusiasm, commitment, and cross-section of representation of the group. We hope and feel that we are headed in the right direction. Some obstacles we have encountered along the way were lack of appropriate nephrology nursing literature, which we are in the process of updating, and lack of a study guide or core curriculum similar to that of our counterparts in the United States. The lack of a study guide initially concerned us, but we felt that the topics we had identified grasped the essence of nephrology nursing. We also consulted with neuroscience nurses who had been studying for their exams and found out that their approach was similar. The four nurses who constituted their study group are now certified neuroscience nurses. "Kudos to you." We hope to be among those recognized for excellence in our profession in January 1993.



About the authors

Marsha Wood, RN, BN, is the Unit Resource Nurse, Nephrology and Transplantation Unit at Victoria General Hospital, Halifax, Nova Scotia.

Joan Joyce, RN, BN, is Head Nurse, Nephrology and Transplantation Unit at Victoria General Hospital, Halifax, Nova Scotia.

For further information, contact the authors at 8 North Victoria General Hospital, Halifax, Nova Scotia, B3H 2Y9.

ESRD—Finite or infinite treatment options

Marlene Besley, RN, BScN, and Diane Watson, RN, BScN, The Toronto Hospital, Western Division

This article was first published in the **CANNT Journal** *(1993), 3(1), 21–23.*

Abstract

There are several treatment options for end stage renal disease (ESRD)—renal transplantation, peritoneal dialysis, hemodialysis or no dialysis. The treatment of choice will vary from individual to individual and some of the treatments may not be suitable for, or available to each individual. This is a case presentation of Maria, who, over 18 years, has had all of the treatment options available for ESRD. Maria moved from peritoneal dialysis to transplant, and then following her second transplant failure, she commenced hemodialysis. While on hemodialysis, she exhausted all of her vascular access options, requiring an innovative permanent inferior vena cava catheter. Finally, she decided to withdraw from treatment. The nursing role throughout the treatment course is highlighted, with a focus on nursing interventions during the last two years, at which time Maria exercised her right to withdraw from treatment.

Currently, we know of several treatment options for ESRD—renal transplantation, peritoneal dialysis (PD), hemodialysis (HD) or no treatment. The treatment of choice will vary from individual to individual and some treatments may not be suitable for, or available to each individual at the time they desire or need it. This case presentation is about a patient, to be called "Maria" who, over a span of 18 years, had all of the treatment options available for ESRD.

Maria was born in Europe, the third of four children into a basically happy family. She did well in school and had a scholarship to study piano at college. She met her husband, a professional soccer player, and soon moved to Canada. The marriage was characterized by both verbal and physical abuse involving not only Maria, but also their three daughters.

About the time Maria moved to Canada, she reached ESRD as a result of chronic pyelonephritis, which resulted in bilateral nephrectomies. The initial treatment chosen was peritoneal dialysis—IPD (intermittent peritoneal dialysis), and then CAPD (continuous ambulatory peritoneal dialysis). Two years later, Maria received a cadaveric kidney transplant, which was rejected, and she returned to CAPD. A year later, she received a second kidney transplant, which lasted six years, during which time she had numerous admissions for other medical and surgical problems. These included a bilateral ureterectomy, hysterectomy, bilateral inguinal hernia repair, laparotomy for bowel obstruction, appendectomy, cholesystectomy for gallstones, chronic transplant rejection and infection, herpes zoster, herpes simplex in the left eye, which resulted in permanent impaired vision, and monilial oesophagitis. As well, Maria was raising three young children and dealing with an abusive husband. In the early years of her renal failure, Maria felt that she had the understanding and support of her husband and daughters, but by this stage, she felt supported only by the youngest daughter.

When the second transplant failed, PD was no longer an option due to adhesions from her multiple abdominal surgeries. The next treatment option, hemodialysis, brought with it another set of problems for Maria. The focus of many of these problems was vascular access. A left arterio-venous (AV) fistula was created and during the two-and-a-half years it was used, it developed a stenosis, which was successfully dilated by angioplasty, and it clotted twice, requiring angioplasty and thrombectomy before it irretrievably clotted. Despite poor veins, a right forearm PTFE graft was inserted, which also clotted on two occasions and was finally not able to be declotted. Temporary access was difficult because her subclavian veins could no longer be successfully cannulated and she had several accidental femoral artery punctures during femoral vein cannulation.

An aortic valve repair was done and the diagnosis of Takayasu's disease (Pulseless disease) was made. Takayasu's is an autoimmune disease that causes obliteration of the aortic arch. This was treated with large doses of immunosuppressants, Prednisone and Cyclophosphamide. Because a high-flow fistula was contributing to heart failure, Maria had a right internal jugular catheter inserted for use in hemodialysis.

Maria experienced several months of poor dialysis because of line insufficiency, hypotension and occasional chest pain. A superior venacavagram conducted during dialysis identified a stenosis at the junction of the right atrium, which increased during dialysis. This explained the difficulty with line insufficiency and, furthermore, meant that no further use of the upper body could be made for vascular access.

A permanent silastic catheter was tunnelled from the anterior aspect of the right thigh to the femoral vein. This catheter became infected and was removed. One month later, the same procedure was repeated on the left side. This catheter, unfortunately, also became infected and was removed.

Loss of femoral access created a dilemma about vascular access options. Peripheral access was impossible because her cardiac status would not tolerate a high-flow fistula or graft in her arms or legs, as well, her veins were found to be poor. Upper body central access was not possible because of the

superior vena cava (SVC) stenosis and her femoral sites were prone to infection and, if used, would preclude those sites for short-term emergency access.

An innovative silastic catheter was inserted into the inferior vena cava (IVC) using a translumbar approach. This 60-cm-long IVC catheter was tunnelled under the skin from her back around the side, to exit on the abdomen near the umbilicus. Although, due to its length, blood flows were only 200 ml/min, overall, the catheter functioned well.

During this period of time, there were many other events that affected her treatment and her outlook on life. Maria experienced severe hyperparathyroidism despite massive doses of Vitamin D and calcium supplementation and had chronic anemia, which was unresponsive to subcutaneous erythropoietin (EPO), necessitating intravenous EPO. Hypotension was a constant companion for Maria from the beginning of her years on HD. Her severe hypotension in spite of fluid overload made a "successful dialysis" a rare event.

Nursing played a very important role for Maria during each treatment modality. While she was on peritoneal dialysis, nurses were a prime source of support not only to Maria, but also to her entire family.

During her transplants, Maria continued to rely on nurses for education and moral support. After the last rejection and commencement of hemodialysis, her rocky road was a challenge to the nurses, but also provided the opportunity for intensive interaction, which helped create strong bonds. Because she was a young female, many nurses tended to identify with her. Maria was by no means an easy patient. Her psychological problems were a great challenge to the nurses. She often refused to come to dialysis and would end up in emergency in pulmonary edema. She frequently played "control games" such as coming in late or not showing up for dialysis, or casually commenting that she had taken an overdose of her prescription medications. Such control-seeking behaviour created an atmosphere in which the staff vacillated between being sympathetic to and supportive of Maria, and being angry with her and disbelieving of her actions. Despite her behaviour, she commented at the time that the nursing team was part of her family. The patience and persistence in her care is a tribute to, and a hallmark of nephrology nurses.

Her medical problems, as well, were the focus of many nursing meetings, resulting in care plans that included such things as tensor bandages from toe to thigh and consistent Trendelenberg during each dialysis to try to maintain a blood pressure. Vascular accesses were a great problem, compounded by her Takayasu's disease, which compromised virtually every access attempt. Fortunately, her doctor was Robert Uldall, whose tremendous contribution to nephrology is his work with vascular accesses. His innovative approach provided Maria with her unique IVC catheter. Although it was successful, Maria nevertheless had the sense that this was the last possible access for her.

Many of the elements of Maria's history and her difficulties in the various treatment options may be all too familiar to nephrology nurses. This is when one might be tempted to ask, as Maria did, "When have I had enough?" Her answer was "Now".

It was late in 1991 that Maria started to look at closure on her life. She identified what she felt was important, and what she wanted for her life. Maria had seen her children through school and into adulthood, an accomplishment she valued highly. She had protected her children from an abusive father by separating and having him removed from the household. While separation is a common North American phenomenon, culturally, she was brought up to believe that the husband had superior rights in the family, and is to be respected regardless. She broke the pattern of many generations, demonstrating to her daughters that they, too, had options if they were in a similar situation. It was a powerful gift to her daughters.

Maria looked at what she wanted in life and felt she had accomplished it, and looked at what she was experiencing and she felt she could no longer do it. She had felt that her husband and her illness had been in control of her life, but now decided that she would take control.

She spoke initially to her nephrologist about stopping treatment. He, not too surprisingly, identified her as "suicidally depressed" and treated her with an antidepressant. As luck would have it, the social worker assigned to her at that time was of her nationality and, consequently, they could converse with ease in her mother tongue and in the context of her own culture about the emotions she was feeling. They quickly developed a strong therapeutic relationship. He identified to her early on that the multidisciplinary team would challenge her continually in a therapeutic way to ensure that this, the most final decision she would ever make, was what she truly wanted, and was not based in clinical depression or attention-seeking behaviour.

She had a psychiatric consult, which confirmed what Maria told us all along, that she was neither depressed nor acting out. The psychiatrist was impressed by the clarity of her thoughts and plans, and noted that "while it is not a decision that any of the treatment professionals like" …there was no evidence that she had "any psychiatric syndrome that was interfering with her ability to make the decision."

Maria was ultimately in control of her plans, which were facilitated by the multidisciplinary team. These plans developed as a result of meetings with Maria, social workers, nurses, physicians, a psychiatrist, her family and her minister. Additionally, hospital administration and lawyers were aware of her decision and plans. She prepared herself and her family by engaging her lawyer to draw up her will and settling the housing situation for her daughter who was living at home. She sought counsel with her minister and received assurance that the decision to stop dialysis was not a sin. She wrote to her family in Europe to explain her decision, and planned the details of her funeral. She discussed all plans with her daughters, but did not, at the time, tell her estranged husband, asking that the team support her with that task at the appropriate time.

After she had made her decision, the hemodialysis nurses noted that she was more animated and gregarious, wore brighter clothes and possessed an aura of peace and confidence. She spoke meaningfully to many of the nurses, telling each how much she cared for them as a professional and a person, and what impact they had had on her life.

She offered to be a part of a clinical trial that was being carried out at the time on slow continuous hemodialysis (SCHD). This required her to stay on dialysis for eight hours rather than the usual four hours. She offered to be a subject for the trial to "give something back" to the nurses and to her nephrologist who was conducting the research.

Maria had planned the time to stop treatment to be after her daughter's final exams, so that it would not add additional stress to her daughter. As the time drew near, she never wavered in her resolve, and looked forward to the day. She was admitted into hospital on the appointed day. At that time, Maria told her husband of her decision, supported at the meeting by members of the team, and made peace with him over the next few days. She saw her two-year-old grandson every day and, at the suggestion of one of her nurses, wrote a letter for him to read when he was older. Nurses from the hemodialysis unit visited her, and she invited some of them to attend her last rites service. She had planned what she would eat during that last week. On the second day, she ate an orange, on the third day, some chocolates, and on the fourth day, she ate a banana, which was a symbol to her of no longer being a "renal patient". On the fifth evening, she died peacefully, surrounded by her family.

Some staff had given Maria small gifts during that last week, but one nurse noted that these were nothing compared to what Maria had given us. She had contributed to our science by consenting to be part of the SCHD trial. She knew that this might lead to a slow nocturnal hemodialysis treatment for use at home. She consented to an autopsy because she wanted us to learn more about Takayasu's disease, and the IVC catheter, so that "someone else might be helped". Her final gift to us was a tape she made for the nurses, in which she asked that we share with our colleagues her story and her happy ending.

During the time that she was making the decision, the nephrologist, perhaps clutching at straws, offered her other possible vascular accesses, or other forms of treatment such as nocturnal home dialysis, or long slow dialysis to make her treatments more tolerable. He was hoping that the treatment options were infinite but, from Maria's perspective, the perspective that really counted, she felt that for her, the options were finite. Although she felt she had little control in choosing the options of peritoneal dialysis, transplantation and hemodialysis, the choice of the final treatment option was, she felt, within her control.

This article is dedicated to the memory of Marlene Besley, RN, BScN, and Dr. Robert Uldall.

Marlene was a long-time hemodialysis nurse and member of CANNT who was completely dedicated to her patients and to nursing. For many years, she worked in hemodialysis at the Toronto Western Hospital and later at York Central Hospital. While at the Western, she worked closely with Dr. Uldall, Nephrologist, as his research nurse. Together, they refined the Uldall-Cooke tunnelled HD catheter, and developed a long version, which was used with a translumbar approach—with the first one being used in the patient in this article. They also carried out extensive research with long dialysis and, ultimately, pioneered nocturnal hemodialysis. Both Marlene and Rob Uldall contributed tremendously to nephrology, are highly respected and missed greatly by their colleagues and friends.

About the author

Diane Watson continues to be committed to CANNT in various roles, as a board member, presenter and author for the various ***CANNT Journal*** *articles.*

Reflecting on 14 years of nocturnal home hemodialysis in Canada

By Michaelene Ouwendyk, RN, BScN, CNeph(C) and Andreas Pierratos, MD, FRCPC

On April 19, 1994, the first of six patients participating in a demonstration project sponsored by the Ontario Ministry of Health was discharged to perform nocturnal home hemodialysis (NHHD) six nights per week. At the time, no one realized just how crucial a role this demonstration project would play in advancing renal therapy for dialysis patients in Canada and around the world. The late Dr. Robert Uldall, a nephrologist first at the Toronto Western Hospital and then at the Wellesley Hospital in Toronto, was the visionary behind what we now call nocturnal hemodialysis. He believed that if dialysis patients could receive more frequent hemodialysis over a longer period of time, their quality of life would be significantly enhanced and their disease burden reduced. Dr. Uldall sent these six patients home with a prescription for eight hours of dialysis six nights per week while they slept. They used the 2008H hemodialysis machine (Fresenius Medical Care, Waltham, Massachusetts, U.S.) and reprocessed F40 polysulfone high flux dialyzers (0.7 m^2) (Fresenius Medical Care, Waltham, MA) with blood flows of 300 ml/min and dialysate flows of 100 ml/min via the Uldall Cook catheter (Cook Group Incorporated, Bloomington, Indiana, U.S.). The acid concentrate prescribed was a 2.0 mmol/L of potassium and 1.25 mmol/L of calcium. Treatment parameters and alarm conditions were remotely monitored over telephone lines using FDS08 software (Fresenius Medical Care, Waltham, MA) from a central location in the training centre at the Wellesley Hospital.

How has the therapy evolved?

It is estimated that approximately 500 patients are now performing some type of NHHD in Canada. Patient numbers are limited due to the lack of provincial funding for this type of dialysis. British Columbia, Alberta and Saskatchewan are the only provinces that currently fund NHHD six nights per week and they have a total of about 220 patients currently benefiting from this therapy. There are also a small percentage of Canadian dialysis patients performing nocturnal hemodialysis in-centre, on average three times per week.

Over the past 14 years, there have been many changes in the treatment prescription. The frequency now ranges from three to seven nights per week, depending upon funding, typically for the duration of sleep. Regardless of the frequency of NHHD, each treatment delivers at least twice the therapy of conventional hemodialysis (CHD). The benefits of this therapy to patients are well known and are described below in more detail. Blood flows range from 150 to 500 ml/min and dialysate flows range from 100 to 800 ml/min with averages of 200 to 300 ml/min and 300 ml/min respectively.

Unlike patients on conventional hemodialysis, low phosphate and other electrolytes are a concern with some NHHD patients. As a result, this group of patients may be required to spike their dialysis concentrate with additives such as potassium, calcium and/or phosphate. The most common potassium prescription is 2.0 mmol/L. When spiking the concentrate with phosphate, the most commonly used phosphate spike is liquid sodium phosphate in the form of an enema (Pierratos et al., 1998).

David Brooks enjoys a sunset cruise on Lake Muskoka in Ontario's cottage country.

In 1994, the dialyzer selected for this demonstration group was pediatric-sized. This minimized the amount of blood outside of the body and reduced the need for anticoagulation. Dialyzer reuse was also very common. Today, high flux dialyzers with much larger surface areas are more commonly used and dialyzer reuse has now been almost entirely abandoned for home patients (Pierratos, Francoeur, & Ouwendyk, 2000).

David Brooks, the second patient to start NHHD (April 26, 1994) had his Uldall Cook catheter inserted by Dr. Uldall in February 1994, and still has the same catheter in place today. He has not had an infection and does not take anticoagulants other than those used during his hemodialysis treatment. He has performed 5,061 NHHD treatments since his discharge home, most likely making him the most dialyzed patient in such a time period.

In 1998, the SuperCath ClampCath teflon cannula (Medikit, Japan) was used for cannulating the peripheral access for NHHD, as it was thought this cannula would cause less trauma during sleep (Ouwendyk & Pierratos, 2000). The buttonhole technique with fistulas was also started at this time. Traditional sharp needles were later introduced with no ill effects to the access, as initially postulated. As buttonhole technique popularity increased, the sharp needles were replaced with a dull needle design (Medisystems Corporation, Elizabeth, Colorado, U.S.). All types of vascular access can be used for NHHD. Today, the nocturnal single needle approach is gaining popularity, as it is seen as safer than double needle and may extend access life.

Remote monitoring was initially established for data collection and to ensure patient safety and treatment compliance (Heidenheim, Leitch, Kortas, & Lindsay, 2003; Pierratos, et al., 1998). This service has been available for NHHD patients since the therapy's inception in Canada, although the need for remote monitoring continues to be debated. While many feel that remote monitoring will not prevent life-threatening situations, it does provide comfort and security to new patients dialyzing overnight (Morgan, Schlaeper, & Lockridge, 2004), making it a valuable patient recruitment tool (Hoy, 2001). Remote monitoring has also helped with compliance (Heidenheim, 2003; Pierratos, 1998; Pierratos & Ouwendyk, 1999) and can be utilized as a standard quality control tool, allowing professionals to track patient therapy practices at home. This monitoring service can be used in various ways: ongoing monitoring with every treatment for the entire period of time that patients dialyze at home, temporary service for the first few months to allow patients to adjust to NHHD and, lastly, for data collection, quality control and research.

What are the benefits?

Fourteen years ago, the benefits of NHHD six times per week were not fully understood. Since then, literature has repeatedly suggested that patients experience an improvement in phosphate and blood pressure control (Chan, Floras, Miller, Richardson, & Pierratos, 2002; Nesrallah, Suri, Moist, Kortas, & Lindsay, 2003, Pierratos, 1998). The significant reduction in medications, including blood pressure pills and phosphate binders was a welcome change for patients who transitioned from CHD to NHHD. It has been 14 years since David Brooks had to abide by the typical strict renal diet. "I can't tell you what I wasn't allowed to eat on conventional hemodialysis. I've forgotten all of that now. I just eat and drink what I want." NHHD addresses a long list of cardiovascular risk factors (Chan, 2004) and improves sleep apnea, a common problem in our ESRD population (Hanly & Pierratos, 2001). There is also hope that NHHD may be able to offer female dialysis patients in their childbearing years the ability to bring a pregnancy to full term (Barua et al., 2008).

Improvements in quality of life have also been noted by many (Heidenheim, Muirhead, Moist, & Lindsay, 2003; McFarlane, Bayoumi, Pierratos, & Redelmeier, 2003). It is this therapeutic benefit that strikes Mr. Brooks as the most significant. "The improvement in my quality of life is the main driver for me. I dialyze seven to eight hours per night, or between 49 and 56 hours per week and, over the course of a year, might take five to eight nights off. I don't spend my days thinking about my renal failure and only when I'm attending my bi-monthly hospital clinic visits does it become front of mind. Nocturnal hemodialysis has taken away the 'in your face' part of renal failure; the reminder of dialysis every time I felt thirsty, looked at a restaurant menu, wanted to go for a walk, but could not due to lack of energy and stamina. These are no longer issues for me. I couldn't be doing the things I do today and be the active person I am without nocturnal dialysis. I work full-time, put in many hours and still have energy to do other activities when I get home. Life is good. Since starting nocturnal hemodialysis, I have put myself on hold on the transplant list and gotten married. I feel I live a normal life."

It is rare to find a therapy that provides better outcomes than traditional methods with the added benefit of cost reduction. The literature demonstrates that NHHD performed six times per week is less expensive (if the cost of medications and hospitalization is included) than conventional dialysis in-centre, with improved patient outcomes (Kroeker et al., 2003; McFarlane, 2003; McFarlane, 2004). Therefore, NHHD is a **dominant** therapy/economic strategy when compared to in-centre conventional hemodialysis treatment, supporting the expansion of more frequent and longer dialysis treatments at home.

End stage renal disease (ESRD) care in Canada has come a long way since 1994. Thanks to ongoing nephrology research in Canada and visionaries such as the late Dr. Robert Uldall, people living with ESRD now have more options from which to choose. Individuals with ESRD can now dream of moving from being a patient living with kidney disease to being a productive member of society who happens to be on dialysis. All of this has occurred within the last decade and a half. It will be very interesting to see what the next decade will bring.

About the author

Michaelene Ouwendyk, RN, BScN, CNeph(C), is Home Hemodialysis Product Manager for Fresenius Medical Care, Richmond Hill, Ontario.

Andreas Pierratos, MD, FRCPC, is Nephrologist at Humber River Regional Hospital and Associate Professor at The University of Toronto, Ontario.

References

Barua, M., Hladunewich, M., Keunen, J., Pierratos, A., McFarlane, P., Sood, M., & Chan, C.T. (2008). Successful pregnancies on nocturnal home hemodialysis. **Clinical Journal of the American Society of Nephrology, 3**, 392–396.

Chan, C., Floras, J.S., Miller, J.A., Richardson, R.M., & Pierratos, A. (2002). Regression of left ventricular hypertrophy after conversion to nocturnal hemodialysis. **Kidney International, 61**, 2235–2239.

Chan, C. (2004). Cardiovascular effects of frequent intensive hemodialysis. **Seminars in Dialysis, 17**(2), 99–102.

Hanly, P.J., & Pierratos, A. (2001). Improvement in sleep apnea in patients with chronic renal failure who undergo nocturnal hemodialysis. **New England Journal of Medicine, 344**, 102–107.

Heidenheim, A.P., Muirhead, N., Moist, L., & Lindsay, R.M. (2003). Patient quality of life on hemodialysis. **American Journal of Kidney Disease, 42**(Suppl. 1), 36–41.

Heidenheim, A.P., Leitch, R., Kortas, C., & Lindsay, R.M. (2003). Patient monitoring in the London daily/nocturnal hemodialysis study. **American Journal of Kidney Disease, 42**(Suppl. 1), 61–65.

Hoy, C.D. (2001). Remote monitoring of daily nocturnal hemodialysis. **Hemodialysis International, 5**(8), 8–12.

Kroeker, A., Clark, W.F., Heidenheim, A.P., Kuenzig, L., Leitch, R., Meyette, M., et al. (2003). An operating cost comparison between conventional and home quotidian hemodialysis. **American Journal of Kidney Disease, 42**(Suppl. 1), 49–55.

McFarlane P.A., Bayoumi, A.M., Pierratos, A., & Redelmeier, D.A. (2003). The quality of life and cost utility of home nocturnal and conventional in-centre hemodialysis. **Kidney International, 64**, 1004–1011.

McFarlane, P.A. (2004). Reducing hemodialysis costs: Conventional and quotidian home hemodialysis in Canada. **Seminars in Dialysis, 17**(2), 118–124.

Morgan, D., Schlaeper, C., & Lockridge, R. (2004). Technical requirements of a home hemodialysis program. In R.M. Lindsay, U. Buoncristiani, R.S. Lockridge, A. Pierratos, & G.O. Ting (Eds.), **Daily and Nocturnal Hemodialysis**, pp. 21–28. New York: Karger.

Nesrallah, G., Suri, R., Moist, L., Kortas, C., & Lindsay, R.M. (2003). Volume control and blood pressure management in patients undergoing quotidian hemodialysis. **American Journal of Kidney Disease, 42**(Suppl. 1), 13–17.

Ouwendyk, M., & Pierratos, A. (2000, November). **Fistula and graft self-cannulation for nocturnal hemodialysis using a teflon cannula**. Paper presented at the Annual CANNT Conference, Ottawa, ON.

Pierratos, A., Ouwendyk, M., Francoeur, R., Vas, S., Raj, D.S.C., Eccelstone, A., et al. (1998). Nocturnal hemodialysis: Three-year experience. **Journal of the American Society of Nephrology, 9**(5), 859–868.

Pierratos, A., & Ouwendyk, M. (1999). Nocturnal hemodialysis: Five years later. **Seminars in dialysis, 12**(6), 419–423.

Pierratos, A., Francoeur, R., & Ouwendyk, M (2000). Delayed dialyzer reprocessing for home hemodialysis. **Hemodialysis International, 4**, 51–54.

Changes in our association

By Gilles Paul

This article was first published in the CANNT Journal (1998), 8*(3), 10–11.*

The CANNT association started in 1968 as CANSECT. The members were from two different medical functions, dialysis nurses and technicians, as well as open-heart surgery pump technicians. Board members were elected from both groups. Then, the pump technicians split from us and the association name changed to CSDP. The association had some good times, but also some real lows. The name was finally changed to the present name CANNT. Fran Boutilier is certainly one of the main founders of the association, and I credit Cheryl Keaney as the reviver of our association when it was in deep trouble.

Equipment evolution

When I started at the Ottawa General in 1966, we used a batching system consisting of two stainless steel tanks manufactured by Sweden Freezer, an ice cream equipment manufacturer. One of the tanks had a heater control and high-temp alarm. That same tank supplied three stainless steel bedside stations with venous pressure monitors, and they also controlled the dialysate flow to each Kiil dialyzer. The quality of the dialysate was measured with a chloride titration kit. There was no air detector or blood leak detector. The nurses had to monitor the venous drip chamber blood level, and blood leaks were noticed when the dialysate outflow from the Kiil dialyzer was pink or red with blood. The patients were dialyzed 12 to16 hours per treatment, twice or three times per week.

Then, we got a brand new unit of eight to 10 stations, with a central batching system. It consisted of two 150-gallon plastic tanks with heater control and high-temp alarm. A central pump supplied dialysate to the bedside stations that controlled the dialysate flow and monitored the venous pressure. The ultrafiltration was calculated and monitored by the nurses using TMP and KUF of the Kiil dialyzer. The TMP was controlled using hydrostatic pressure—the lower the drain, the more negative pressure was created on the dialysate side of the Kiil dialyzer, thus increasing the TMP and removing more water from the patient.

Then, we acquired the central system Drake Willock model 4009 with 10 bedside stations. Finally, our patients were dialyzed with some built-in monitoring and safety devices. Imagine, we had conductivity meters monitoring with high- and low-limit alarms. We also had blood level detectors (not air detectors) and blood leak detectors at each station. Each bedside station had a system to control, measure and display TMP with alarm limits. Drake Willock was the first hemodialysis equipment manufacturer to introduce a hemodialysis machine with a bicarb proportioner. This was a real technical breakthrough. It certainly minimized patients' headaches and vomiting during dialysis.

At the same time that this was going on in the main unit, we also started a home hemo program, with a batching system, moved to the Milton Roy BR model, then to the Drake Willock model 4011, 4015, 4215, 4216, etc. I am sure the majority of us can take it from there!

Unfortunately, as a technician I did not have the opportunity to experience the evolution of the Cobe C1, C2, C2Rx and the C3, or the Hospal Rhodial, the first closed loop UR equipment introduced in Canada. From there, all hemodialysis equipment manufacturers developed their own brand of UF controls and monitors. The other hemodialysis equipment I did not have the opportunity to experience the evolution of as a technician was the Extracorporeal central system with the bedside station or the SPS 350 now marketed by Baxter as SPS 450, SPS 550 and SPS 1550. The others are the Fresenius equipment models 2008E and 2008H.

We are now in the computer age and all hemodialysis equipment will be more and more sophisticated.

Dialyzer evolution

In 1966, there were two types of dialyzer. The Kiil dialyzer and the Coil dialyzer. The Kiil dialyzer consisted of three polypropylene grooved boards that had to be built with cuprophane membrane, tested and sterilized with formaldehyde before each treatment. The Coil dialyzer was manufactured by Baxter Travenol and later by Extracorporeal. The twin Coil dialyzer had to be primed with two litres of blood. The Kiil dialyzer used a dialysate negative pressure system and the Coil used a blood compartment positive pressure system to remove water from the patient. If the Coil blood pressure compartment was not monitored closely, the coil ruptured, sometimes painting the ceiling with blood.

Then came the Gambro flat plate dialyzer and the Hollow fibre from Cordis Dow. The Hollow fibre evolution is well known. It is now manufactured with a multitude of mem-

Frances Boutilier, Gilles Paul and Lynne Kennedy at the 1988 CANNT Symposium in Halifax.

branes. We can now adapt the dialyzer to the patient, whereas before the patient had to adapt to the dialyzer.

Blood access evolution

The blood access device used in1966 was a canula. The cardiovascular physician would insert two specially treated Teflon tips, one in an artery and one in a vein. This was done in either an arm or a leg of a patient. The access arterial pressure was used to push the blood through the Coil dialyzer.

Since silastic was not available, a special connection had to be molded by the technician out of rigid Teflon, to connect the two Teflon tips permanently inserted in the patient, so that blood would keep circulating between treatments to prevent it from clotting in the access. Then came the fistula.

About the author

Gilles Paul had his early start in dialysis with CANSECT, as a board member. He worked many years as a dialysis technologist and in industry, and is now retired.

Moving mountains… Positive pathways

Annual CANNT Symposium, Banff, Alberta, October 18–21, 1995

By symposium co-chairs Marilyn Visser, RN, BScN, MN, and Linda Turnbull, RN, BN

Linda and I had been involved within the nephrology committee for many years. I was CANNT western region vice-president in the early 1990s and had also been involved with the establishment of the Canadian Nurses Association Nephrology Certification Exam. Linda and I were very excited that Calgary was approved to host the CANNT 1995 annual symposium and what better place to hold it than in beautiful Banff, Alberta.

The symposium was a great success. With almost 500 registrants, it was one of the largest CANNT symposiums. It was a difficult time in health care as the Alberta provincial government was making a number of cuts to the health care system and we saw the establishment of regionalization, merging of hospitals, programs and many RNs being laid off. There was concern about privatization and a need to look at the Canada Health Act. The planning committee also was keen on highlighting the importance of teams and working together.

It was the second time that CANNT had used a conference organizing company to assist with the symposium planning and they suggested getting a well-known keynote speaker. After considering a number of potential speakers, Pamela Wallin was chosen as a well-known newscaster/reporter who had interviewed many related to health care issues. Pamela had recently been laid off from her position and, so, had first-hand experience of what it felt like to be without a job.

Somehow, communication was not clear and instead of speaking for 1.5 hours, as she had been requested to, Pamela was wrapping up her talk within 30 minutes. We had to think fast and turned the session into a "talk show" going around the room of 500 participants getting questions posed to Pamela. The simultaneous translators called Marilyn "Oprah" for the rest of the conference.

The opening session was not all lost, as we played video with Sir Edmund Hilary narrating the teamwork/building it took to climb Mount Everest. The video had stunning scenery and music and was very inspirational.

The academic program was excellent and we had many scholarly presentations and closed the symposium with a presentation on the importance of humour in the workplace. We were so grateful to the wonderful organizing committee of volunteers from the Calgary nephrology community who helped to make the event such a success.

About the authors

Marilyn Visser, RN, MN, CNeph(C), is Director, Interprofessional Education and Workforce Utilization Chief Nursing Portfolio, Calgary Health Region, Alberta Health Services, Calgary, Alberta.

Linda Turnbull, RN, BN, CNeph(C), is Clinical Consultant, Baxter Corporation.

Marilyn's professional volunteer activities related to nephrology include:

***CANNT**—Board of Directors, Western Region Vice-President 1990–1992. Co-chairperson, National Symposium, Banff 1995; Manuscript Reviewer **CANNT Journal** 1998, 1999.*

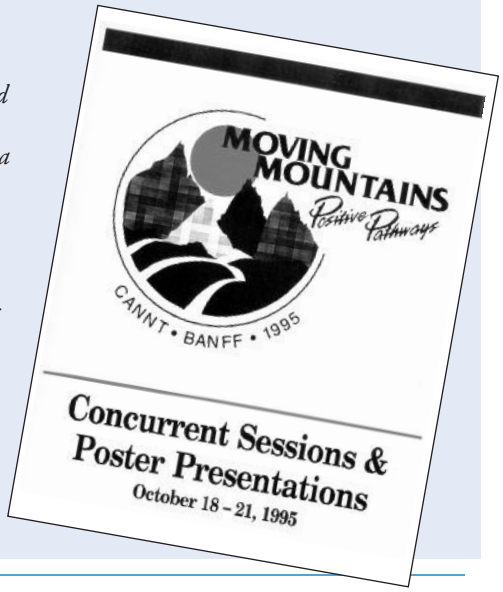
***Canadian Nurses Association (CNA)**—Nephrology Nurses Certification Examination Committee; Western Region Rep. 1992–1995.*

Kidney Foundation of Canada**—External Reviewer; Allied Health Research Committee, Kidney Foundation of Canada, 1997–1999. **Kidney Foundation of Canada, Calgary Chapter: Board of Directors 1989–1992; Peer Support Volunteer Program—Chairperson 1990–1992; Canvasser 1995–present.

***Provincial Government:** External Consultant, Kidney Dialysis Services, Government of British Columbia 1996.*

Linda's professional volunteer activities related to nephrology include:

***CANNT**—Board of Directors: Transplant Member at Large 1990–1992. Co-chairperson, National Symposium, Banff 1995.*



Reflections on the 1990s

*By Leanne Dekker, RN, MN, MBA, (Editor, **CANNT Journal** 1992–1997)*

What a pleasure to reflect back on my tenure as editor, CANNT Journal, in this issue celebrating the first 40 years of the organization. Congratulations to the membership and the current board of directors on this accomplishment. It is through the dedication of board members and the contributions of members that the organization has achieved so much in support of quality care for persons with chronic renal disease and their families.

This anniversary issue provides me with the opportunity to reflect on the journal accomplishments between 1992 and 1997, while serving as editor. There were physical changes: a new layout was implemented with the winter 1996 issue, the bold bright colours serving to differentiate this journal from others and entice readership, particularly in the clinical area. As well, 1997 marked the name change from the Canadian Association of Nephrology Nurses and Technicians to the **Canadian Association of Nephrology Nurses and Technologists,** an important achievement for our technical colleagues!

Content in the journal was also strengthened, I believe, during my tenure as editor. We introduced a manuscript review process, where two members of the board would review submissions, determining appropriateness for the journal and readership prior to publication. As a result, our publication was stronger, more clinically based, and contained, I believe, content that served to support professional development of CANNT members.

As well, in 1996, the CANNT Journal awards were introduced, which served to recognize publication achievements and, more importantly, to generate interest among the membership in submitting articles to their journal. I am so pleased to see that the journal awards continue today.

As editor, I appreciated the opportunity to remain connected to my nephrology nursing and technical colleagues, while not engaged in active clinical practice. The contributions of staff in the CANNT administrative office, particularly Simone Hambly and Elaine Courtec were invaluable, as they worked to maintain an accurate subscription list. As well, we relied heavily on Bruce and C.B. Pappin of Pappin Communications for format, editing, and publication. I recall peering over faxed documents trying to ensure that names, designations, and content were correct. Lastly, as an anglophone editor in a bilingual journal, the contributions of the volunteer translators, namely Jocelyn Larivière and Nicole Pagé, were invaluable. Imagine doing this work today supported by electronic communication tools.

Congratulations to the CANNT membership on this important anniversary. I recall an early CANNT meeting held in Calgary, where a handful of interested nurses and technologists had a vision for the future. That vision has now come to fruition. A well deserved achievement!

About the author

Leanne Dekker, RN, MN, MBA, is Director—Clinical Support Services, University of Alberta Hospital/Stollery Children's Hospital/Mazankowski Alberta Heart Institute, Alberta Health Services, Edmonton, Alberta.

New front cover of CANNT Journal 1996.

More reflections…

By Anita Amos, RN, BScN, CNeph(C), CANNT Past-President

Anita Amos

My first awareness of the Canadian Association of Nephrology Nurses and Technologists (CANNT) was not long after I began my career in nephrology nursing in the early 1980s. Like most, I thought of CANNT in terms of an annual conference, some regional conferences and little else. In those days, CANNT was still the Canadian Association of Nephrology Nurses and Technicians and the American Nephrology Nurses Association (ANNA) was still the American Association of Nephrology Nurses and Technicians (AANNT).

I think the turning point for me was in 1993 at the annual symposium in Halifax. That was the year I did my first poster presentation and was rewarded for my manuscript with the Upjohn/CANNT award for Excellence in Education. I clearly recall sitting at the annual general meeting and along with a colleague, Lynda Rumney, being highly impressed by the enthusiasm of the members of the board of directors. By the end of the meeting, we were volunteering to co-chair the 1996 annual symposium in Toronto. The adventure had begun!

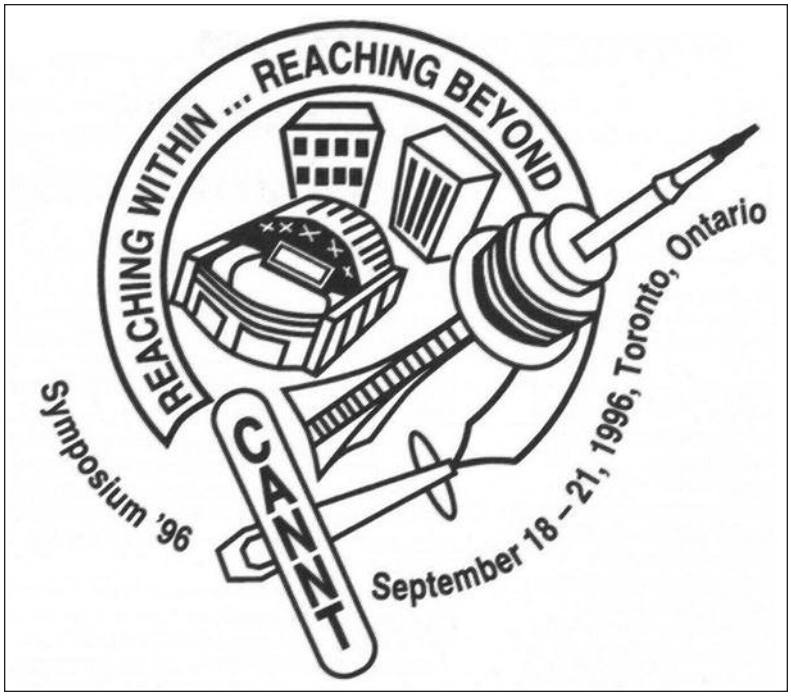
Work on the symposium began with minimal involvement from the management company of that time. As time went by and there was more contact with members of the board of directors, my desire to become more involved with the association grew. After mentioning this to a former Ontario vice-president, she suggested that I should run for a position on the board. It wasn't until after I won the election for president-elect in 1995, that she told me she had actually meant VP! Oh well! In for a penny, in for a pound!

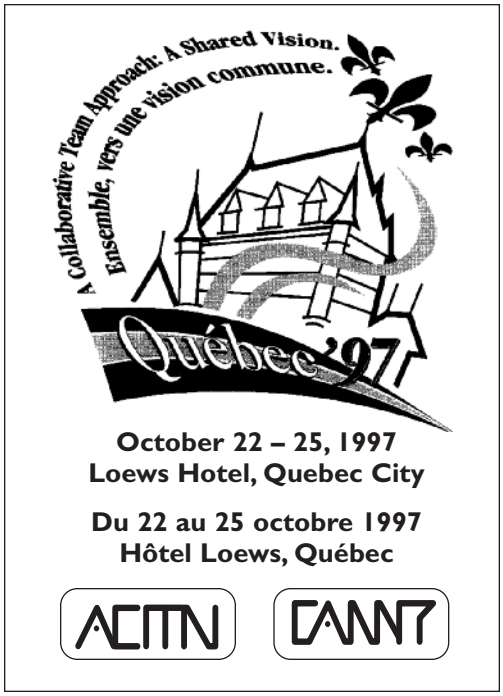
The next six years were full of many exciting and rewarding moments. I'll never forget arriving at my first board meeting in Banff, 1995. I had one of those "What have I gotten myself into?" moments, while listening to my colleagues discussing the business of the association. By the time I finally left the board in 2001, all of those original thoughts were long gone. I had become so comfortable at the table that I designed and presented the first BOD orientation in 2000, so those elected to the board would hopefully not be quite so overwhelmed.

When Leanne Dekker decided to resign as editor of the CANNT Journal in 1997, I remember thinking that finding her replacement was going to be extremely challenging. Not one, but two members offered their services. The board discussed the merits and strengths of both and I had the honour of offering Colleen Turpin and Gillian Brunier the position of co-editors. CANNT has never looked back!

One of my early initiatives was to focus on membership. I designed the "What's in it for me?" membership package—a series of fact sheets that were distributed at various workshops, conferences, etc., to attempt to grow CANNT's membership. As I read the messages from the presidents over the years, membership has frequently been addressed and I know the board is always trying to think of innovative ideas to encourage the organization's growth. From 1995 to 2001, CANNT membership grew from 325 to 773—granted the number of nephrology nurses also grew.

Twice, I had the distinct pleasure to represent CANNT at the ANNA conference and speak to their delegates about CANNT and Canadian nephrology nursing issues. During my first term, I





took that opportunity to examine their association in terms of infrastructure, opportunities, systems, etc. It was after this time that I drafted the original five-year strategic plan that was accepted by the membership in 1997, and formed the framework for the revised plan that was recently adopted.

The criteria for the Excellence in Practice Awards were drafted and submitted for board approval during those first years. There was no corporate support for this program in the early years and it has taken some time to encourage our members to give that pat on the back to their colleagues.

Special Interest Groups began in 1997, but were ahead of their time. Without the website, there was little or no communication between the group members throughout the year and to get momentum on projects was virtually impossible. I am very pleased to see the resurrection of this concept and believe this is an excellent opportunity for CANNT members to be involved.

Finally, developing a process for a certification exam for our now technologist, rather than technician members was an interesting challenge. The early groundwork, led by Jim McDougall, has yielded a certification program supported by Fresenius with at least 10 technologists being certified.

It was, indeed, an honour, pleasure and exceptional learning experience to have served on the CANNT board of directors. I don't think I will ever be able to hear, let alone say the word, "solicit" without a chuckle. (The board of directors was always trying to find ways to "solicit" corporate support for the many initiatives we wished to pursue, as well as more members.) Through my coordinating role for the Toronto Dinner Group of the late 1990s, early 2000, and my national involvement, I have come to know a good many colleagues and those relationships prevail today.

To summarize, my beliefs about involvement with CANNT are best summarized by Rod Stewart in *Faith of the Heart*, (replace I and my, with we and our):

"It's been a long road getting from there to here. It's been a long time, but our time is finally near, and we can feel a change in the wind right now. Nothing's in our way and they're not going to hold us down no more.

No, they're not going to hold us down. 'Cause we've got faith of the heart, we'll go where our hearts will take us. We've got faith to believe, we can do anything.

We've got strength of the soul and no one's going to break us.

We can reach any star. We've got faith, faith of the heart…."

About the author

Anita Amos, RN, BScN, CNeph(C), is Case Manager, Hemodialysis at St. Michael's Hospital, Toronto, ON.

Anita's professional volunteer activities related to nephrology include:

***CANNT**—CANNT Board of Directors: CANNT President 1996–1998 and 1999–2001. Co-chair CANNT Annual Symposia 1996 and 2002 in Toronto; Co-ordinated Toronto CANNT Dinner Groups, late 1990s–2000.*

***Canadian Nurses Association (CNA)**—Attended item-writing sessions for the Nephrology Certification exam; collaborated with the Canadian Nurses Association in the development of the Nephrology Certification Exam Preparation Guide, published in 1999.*

Representing CANNT at EDTNA/ERCA

By Valerie Price

First published in the **CANNT Journal** (1999), 9*(3), 13.*

As past-president of the Canadian Association of Nephrology Nurses and Technologists (CANNT), it was my pleasure to represent CANNT at the 28th annual conference of the European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA), held June 2–5, 1999, in Berlin, Germany. To be able to network with other associations concerned with the care of nephrology patients is certainly very important for CANNT.

At this conference in Berlin, where 3,000 nephrology nurses, technicians, social workers, transplantation co-ordinators and dietitians representing 50 countries met together for four days, there were ample opportunities to exchange ideas. The International Congress Centre in Berlin, where the conference was held, housed 80 meeting rooms, with the largest hall seating 5,000 people. All major sessions, including the annual general meeting of EDTNA/ERCA, were simultaneously translated into seven different languages—Dutch, English, French, German, Greek, Italian and Spanish. This makes bilingualism in Canada seem much less of a challenge!

I was invited by EDTNA/ERCA to make a formal presentation at this conference. The title of my presentation was "CANNT: Supporting the Canadian Nephrology Network". The highlights of my presentation included: (a) current data from the Canadian Organ Replacement Register (CORR) on the increasing numbers of patients in Canada on renal replacement therapy; (b) the great diversity of care required in the Canadian nephrology network; (c) the development of the CANNT "Standards for Nephrology Nursing Practice", which focus on the care of individuals with end stage renal disease (ESRD) through the course of their illness and treatment; and (d) the success of our Canadian nephrology nursing certification examination.

During the conference, I had the opportunity to meet the presidents and key members of other nephrology associations from various countries. It soon became evident that we all face similar problems, such as nephrology nursing shortages, ever-increasing health care cuts, the aging of our nephrology patients and, dare I add, the aging of our nephrology nursing workforces. Also, during the conference, I was able to meet with Jean-Pierre Van Waeleghen from Belgium, treasurer of the World Council for Renal Care (WCRC). Jean-Pierre, as a representative of WCRC, has spent time teaching renal care in underdeveloped countries. We would certainly welcome an article for the **CANNT Journal** from Jean-Pierre on his experiences.

CANNT will continue to maintain reciprocal agreements to attend the annual conferences of EDTNA/ERCA and the American Nephrology Nurses Association (ANNA).

About the author

Valerie Price, RN, CNeph(C), is the past-president of CANNT. She is the pre-dialysis coordinator, dialysis teaching unit, Atlantic Health Science Corporation, Saint John, N.B.

Top, Valerie Price, past-president of CANNT, left, at the 28th conference of EDTNA/ERCA, June 2–5, in Berlin, Germany. Above, Valerie Price with, centre, Carolyn Latham, past-president of ANNA, and Julie Hartley-Jones, immediate past-president of EDTNA/ERCA at the EDTNA/ERCA conference.

Journal history: 1990s

Front cover of CANNT Journal 1991

Co-editor: Summer 1997–January 2001—Gillian Brunier
The journal has not previously had two editors, but my associate, Colleen Turpin, and I believe that our styles will complement one another. Initially, I shall be responsible for the publishing of manuscripts and Colleen for all the other departments. While researching for the article in this issue on the editorial review process, I gained a great deal of insight into the roles of editor, reviewer and author. Aside from the need to increase both *CANNT Journal* readership and number of articles submitted, we also need reviewers who can help new authors. (Summer 1997, *CANNT Journal*)

Co-editor: Summer 1997–January 2001—Colleen Turpin
I am glad to be sharing the responsibility of the journal with my co-editor, Gillian Brunier. A personal goal for working with the *CANNT Journal* is to encourage that feeling of being "linked coast to coast". A general comment from those attending the CANNT national symposium last year was the benefit of meeting face-to-face and sharing ideas with the other dialysis and transplant centres. I think it would be great if the journal could provide that feeling of community all year long. (Summer 1997, *CANNT Journal*)

Editor: Fall 1989–Fall 1992—Rita Brownrigg
With the support and guidance of Jocelyne Larivière, I will assume the editorship of the *CANNT Journal*. At the recent CANNT symposium in Toronto, I felt absolutely inspired and renewed to see how eager nephrology nurses and technicians were to learn and to share with their colleagues. Unfortunately, our symposium is only an annual event and many of us have to stay at home. However, the most leisurely way to enhance your knowledge and to receive our association news is to read your *CANNT Journal*. This is our national journal for our specialty. Promote membership. As we get bigger, we get better. (Fall 1989, *CANNT Journal*)

Editor: Fall 1992–Spring 1997—Leanne Dekker
It is a pleasure and a privilege to assume the position of editor of our *CANNT Journal*. A pleasure, because the journal has grown through the capable hands of previous editors to become an important facet of communication between nephrology nurses and technicians throughout our country. A privilege, because it allows me to maintain my involvement in the world of nephrology nursing despite holding an administrative position unrelated to my area of clinical specialization. As editor, I would be pleased to discuss with you your ideas for possible articles. With all our efforts, the *CANNT Journal* will continue to improve. (Fall 1992, *CANNT Journal*)

Front cover of CANNT Journal 1998, 30th Anniversary issue

CLEAR SOLUTIONS for Infection Control

ALCAVIS HDC

Infection Control Solutions and Service

BHC Medical 866-443-8567

www.bhcmedical.ca

2000s

Excerpts from messages from presidents posted in the various CANNT Journals—2000–2007

1999–2000
Anita Amos

"From all corners of the country there is much activity and growth in the nephrology community. The spring Board of Directors' meeting last weekend further reinforced to me what an enthusiastic and forward moving group of volunteers comprise this board. I am truly honoured to work with them. Special interest groups are receiving significant attention and Jim McDougall and I have been actively pursuing avenues through which we can achieve certification for CANNT's technical members. The proposed process would include certification through provincial engineering associations." (**April–June 2000** *CANNT Journal*)

2000–2001
Josie Sather

"It will be with great honour and anticipation that I look forward to beginning my role as president and representing nephrology nurses and technologists from across Canada. CANNT will be facing both daunting challenges, as well as enormous opportunities on behalf of its members in the coming year. I believe increasing membership will be one way to impact on how effectively these challenges are met and opportunities used to your advantage." (**October–December 2000** *CANNT Journal*)

2001–2002
Cindy Boughen

"The CANNT organization is rich with human resources in so many areas: leadership, research, education, clinical practice, and technical personnel. If we can coordinate these resources, the possibilities are endless to enhance all of our practices, both individually and collectively. By doing this, we provide an enhanced quality of care to the patients and families, and that is our ultimate goal." (**October–December 2001** *CANNT Journal*)

2002–2003
Linda Ballantine

"Because CANNT has been in existence for so long, we are considered a mature organization by other volunteer organizations. We have enjoyed a measure of stability in the last four years, and are now in a position to look at our organization's effectiveness and future potential. This will involve an evaluation of the roles, functions, and accountabilities of the officers (board of directors), committees, and journal editors, and recommendations for revisions where indicated. The board of directors is committed to providing the leadership, but the decisions are for CANNT (that is you, the member) to make." (**January–March 2003** *CANNT Journal*)

2003–2004
Pady Dunn

"I am pleased and excited to be addressing you as president of CANNT. I am a passionate and enthusiastic believer in nursing, particularly nephrology nursing, as an autonomous practice that collaborates with other health care professionals to provide a comprehensive approach to optimum care for the patients and families with whom we work. With this as a foundation, my goal for the following year is to tap the enthusiasm and passion that exists in each unit, facility and member. I hope that, as a national body, we can work together." (**October–December 2003** *CANNT Journal*)

2004–2005
Chantal Saumure

"The survival of CANNT depends upon effective management by its board of directors, the recruitment and retention of its members, the partnerships with the members from the industry, and an image that reflects us as a Canadian reference in nephrology. With this intention in mind, the board of directors has developed a strategic plan that will ensure the development and the viability of the association while ensuring its mission. The broad outline of the plan is communication, service to its members and development of its professional practice." (**October–December 2004** *CANNT Journal*)

2005–2006
Faye Clark

"Nephrology is an ever-changing field in which to work. The opportunities are endless. While working with patients living with kidney disease, health care providers can try different jobs in nephrology. They can work in predialysis, hemodialysis, peritoneal dialysis or transplantation and, often, be involved with the same patients through their spectrum of care. As the number of patients with ESRD has grown, so have the units that manage them. The volume of health care providers treating patients with kidney disease has increased and it is important to ensure there are adequate resources available to them. CANNT can be that resource." (**January–March 2006** ***CANNT Journal***)

2006–2007
Lori Harwood

"In November, I had the opportunity to meet Fran Boutilier, the founder of CANNT. What a unique experience to meet the person who had a vision for the organization and get her ideas on celebrating the success of CANNT. Being on the CANNT board of directors is a very interesting and rewarding experience. If you enjoy networking with other nephrology professionals, travelling, sharing new ideas, planning and discussing issues related to nephrology nurses and technologists, then you should consider becoming involved with CANNT." (**January–March 2007** ***CANNT Journal***)

Linda Ballantine, CANNT Past President, and Mukesh Gajaria at the CANNT Booth at CANNT 2004 in Niagara Falls.

CANNT President Lori Harwood saying farewell to CANNT Past President Faye Clark at the CANNT 2007 Conference in Winnipeg.

CANNT - 2000 - ACITN

Standing on Guard

November 16 - 19, 2000
Congress Centre
Ottawa, Ontario

for **Quality**

for **Standards**

for **Improvement**

Keynote Speaker

Wendy Nicklin is a successful health care executive with an extensive and progressive background in clinical, academic and research applications of hospital administration. During these times of rapid and complex change, she is a respected professional and a collaborative advisor to boards, physicians and staff at all levels. She is currently a vice chair, surveyor and board member for the Canadian Council on Health Services Accreditation and president of the Academy of Canadian Executive Nurses.

Wendy Nicklin, RN, BN, MSc (A), CHE
COO, Civic Campus, Ottawa Hospital, and VP Nursing, Ottawa Hospital

Milestones

This Letter from the Editor was first published in CANNT Journal (2001), 11*(1), 6.*

Editors for the **CANNT Journal** have achieved a number of milestones over the last several years. In 1986, editor Jocelyn Larivière oversaw the change from the CANNT newsletter to the **CANNT Journal** with French translation. In 1990, editor Rita Brownrigg had the journal listed under the Cumulative Index for Nursing and Allied Health Literature (CINAHL) and started a more formal review system for manuscripts. In 1999, co-editors Colleen Turpin and I (Gillian Brunier) achieved more recognition for the **CANNT Journal** by instigating a **CANNT Journal** manuscript review panel and having the journal accepted for listing on the International Nursing Index (INI) and MEDLINE.

I am now the editor for the **CANNT Journal** and have great pleasure in announcing another milestone for the journal: the formation of a journal editorial board. My hope is that through working closely together, we will bring greater diversity to the journal, while at the same time constantly striving for advancement of the specialty of nephrology nursing and technology.

I would now like to give you some background history on the new editorial board members. They are:

Linda Ballantine, who is the nurse educator/practitioner in the York Region Dialysis Unit at York Central Hospital, Richmond Hill, Ontario. Linda is a published author. Her primary interest is education and she considers herself a life-long learner. Linda is going to start a regular column in the journal related to issues concerning staff education.

Mukesh Gajaria, who is the chief nephrology technologist at the Sick Children's Hospital in Toronto. Mukesh has extensive experience in dialysis both in India and Canada. He has published five papers in nephrology and has been very involved in CANNT over the years. Mukesh is going to start a regular column in the journal related to issues of interest to dialysis technologists.

Rob Huizinga, who is a nephrology nurse clinician and the clinical research coordinator in nephrology at the University of Alberta Hospitals in Edmonton. Rob is a published author, and is involved in clinical trials with pre-dialysis, dialysis, and transplant patients. Rob is also on the Kidney Foundation of Canada Allied Health Council, which reviews all allied health research grant proposals. Rob will continue his regular column on the internet.

Eleanor Ravenscroft, who is the clinical nurse specialist in the renal program at Vancouver Hospital and Health Sciences Centre, Vancouver. She has worked in nephrology nursing in both South Africa and Canada. She is actively involved in nephrology nursing education in British Columbia, The Kidney Foundation of Canada, and CANNT. Eleanor is going to start a regular column related to issues around clinical practice for nurses.

Rosalie Starzomski, who is the associate director of the University of Victoria School of Nursing, Lower Mainland Campus and an ethics consultant at the Vancouver Hospital and Health Sciences Centre. Rosalie has been actively involved in CANNT and the Kidney Foundation of Canada for many years. You saw her first column on ethics in the last issue of the journal. Rosalie will continue this column on a regular basis.

Colleen Turpin, who is a clinical applications specialist with Fresenius Medical Care Canada. She was co-editor of the **CANNT Journal** for the past four years and co-chair of the CANNT 2000 conference held last November in Ottawa. Colleen is bilingual and will continue in her new role of coordinator for the journal.

For the last issue, we had a new look on the outside of the **CANNT Journal**—we trust you noticed. For this issue, we are striving for a new look on the inside with the addition of new editorial features—we trust you notice this, too! All of the department editors are interested in having **CANNT Journal** readers contact them individually with ideas and suggestions. At the same time, we will certainly continue with our featured articles in the journal: research, clinical, continuing education, reviews, etc. I still invite both new and "seasoned" authors to submit articles related to research or clinical practice for publication in the journal.

Lettre de la rédactrice : Gillian Brunier

Événements marquants

Cette Lettre de la rédactrice a d'abord été imprimé dans **le Journal ACITN/CANNT (2001), 10*(4), 7.***

Les rédactrices de la revue de l'Association des infirmières et infirmiers et des techniciennes et techniciens en néphrologie (ACITN) ont accompli quelques coups d'éclat au cours des dernières années. En 1986, la rédactrice Jocelyn Larivière a dirigé la transformation du bulletin de ACITN en une revue, comportant une traduction en français. En 1990, la rédactrice Rita Brownrigg a fait inscrire la revue dans le Cumulative Index for Nursing and Allied Health Literature (CINAHL) et a lancé un système d'examen formel des textes soumis. En 1999, les rédactrices Colleen Turpin et moi-même (Gillian Brunier) avons fait mieux connaître la revue de l'Association en formant un comité d'examen des articles soumis et en faisant inscrire la revue sur la liste de l'International Nursing Index (INI) et dans MEDLINE.

Je suis maintenant rédactrice de la revue de l'Association et j'ai l'immense plaisir de vous annoncer notre dernière initiative: la formation d'un comité de rédaction. J'ai l'espoir qu'une collaboration collaboration étroite permettra de diversifier davantage la revue, tout en ne perdant pas notre but ultime et constant, le progrès de la spécialité des soins infirmiers et des techniques qui se rapportent à la néphrologie.

J'aimerais maintenant vous donner un aperçu des antécédents des membres du nouveau comité de rédaction.

Linda Ballantine est une infirmière chargée des pratiques et de la formation à l'unité de dialyse de la région de York rattachée à la York Central Hospital de Richmond Hill en Ontario. Linda a déjà publié. Son intérêt principal est sans contredit l'éducation et elle considère que sa vie est un apprentissage continu. Elle commencera à rédiger un article régulier dans la revue qui portera sur des questions concernant la formation du personnel.

Mukesh Gajaria est le technologue en chef chargé de la néphrologie à la Sick Children's Hospital de Toronto. Mukesh possède une expérience approfondie de la dialyse qu'il a acquis aux Indes et au Canada. Il a publié cinq articles sur la néphrologie et a consacré beaucoup de son temps à l'ACITN au fil des ans. Muskesh rédigera une chronique régulière dans la revue qui portera sur des questions d'intérêt pour les technologues de la dialyse.

Rob Huizinga est infirmier clinicien et coordonnateur de recherche clinique en néphrologie de l'University of Alberta Hospitals à Edmonton. Rob est un auteur et a fait des essais cliniques en pré-dialyse, en dialyse et auprès de patients ayant subi une greffe. Rob siège également sur l'Allied Health Council de la Fondation canadienne du rein, qui étudie chaque proposition de subvention de recherche de l'Allied Health. Rob poursuivra sa chronique habituelle sur l'internet.

Eleanor Ravenscroft est une infirmière spécialisée à la clinique du Programme du rein de la Vancouver Hospital et du Health Sciences Centre de Vancouver. Elle a travaillé en qualité d'infirmière en néphrologie en Afrique du Sud et au Canada. Elle se consacre activement à la formation en soins infirmiers se rapportant à la néphrologie en Colombie-Britannique, auprès de la Fondation canadienne du rein, et de l'ACITN. Eleanor a l'intention de rédiger une chronique régulière concernant les questions qui se rattachent à la pratique clinique à l'intention du personnel infirmier.

Rosalie Starzomski est directrice associée de la School of Nursing de l'University of Victoria, sur le Lower Mainland Campus et est conseillère en déontologie à la Vancouver Hospital et au Health Sciences Centre. Rosalie se dévoue depuis plusieurs années auprès de l'ACITN et de la Fondation canadienne du rein. Elle a fait paraître un article sur la déontologie de la profession dans le dernier numéro de la revue. Rosalie poursuivra la rédaction de cette chronique sur une base régulière.

Colleen Turpin est spécialiste des applications cliniques chez Fresenius Medical Care Canada. Elle a assumé le rôle de co-rédactrice de la revue de l'ACITN au cours des trois dernières années ainsi que celui de coprésidente lors du congrès 2000 de l'Association qui s'est déroulé en novembre à Ottawa. Colleen est bilingue et elle occupera la fonction de coordonnatrice de la revue.

À l'occasion de la dernière parution de la revue, nous nous sommes efforcés de donner une nouvelle image à la présentation extérieure de la revue de l'ACITN—vous l'avez sans doute remarqué. Cette fois-ci, nous essayons de donner une nouvelle envergure au contenu—vous le remarquerez sans doute aussi! Tous les rédacteurs des différentes rubriques sont intéressés à ce que les lecteurs de la revue de l'Association communiquent avec eux pour leur faire part d'idées et de suggestions. Malgré ces nouveautés, nous continuerons à faire paraître des articles de fond dans la revue sur des thèmes de recherche, de pratique clinique, d'éducation continue, d'études, etc. J'invite donc les nouveaux auteurs aussi bien que les auteurs « chevronnés » à soumettre, comme dans le passé, des articles à paraître dans la revue, qui touchent à la recherche ou à la pratique clinique.

Taking care of CANNT business

By Debbie Maure, BASc

On August 25, 1999, I was officially contracted with the Canadian Association of Nephrology Nurses and Technologists (CANNT) to be the CANNT Administrative Assistant. Having a background in human resources, customer service and various positions in administration and management, I was definitely not prepared to take on the task of administering this association. After accepting the position I was delivered approximately 30 boxes of files and, I must say, I felt overwhelmed. Thankfully, I had a wonderful CANNT board of directors that came along side me and assisted and mentored me during those difficult first few months, especially Faye Clark, Valerie Price, Denise Gaudet and Anita Amos, to mention only a few.

CANNT 2008 is my 10th CANNT/ACITN symposium and I have seen many changes in this time. Working with a volunteer board of directors has offered various challenges, but also very many rewards. Each board has offered new insights and goals but, ultimately, each individual is volunteering their time because they value the vision that CANNT offers and know that having a professional organization focused solely on the advancement of nephrology nurses and technologists is the best way to develop and maintain excellence across Canada. To each of the board members that I have met and had the opportunity to work with I would like to say "Thank You" for all of your efforts on behalf of the organization. Many of the board members have become wonderful friends and I am thankful that CANNT has brought you into my life.

In 1999, CANNT did not have an operating website or a membership database that was a useful tool. Thanks to Scott and Heather Reid, London, Ontario, we were able to move into 2000 with a database tool that was useful and a website that gave us an online voice. www.cannt.ca has grown and changed considerably since its conception. In 2008, we are in, yet again, another growth position with the unveiling of a brand new website and database management software at CANNT 2008.

The last few years, we have had an increased focus of keeping in contact with the CANNT members on a more consistent basis with the use of the internet and e-mail. As more and more members have e-mail access, we will continue to utilize this service to keep in touch and relay information in a more timely manner.

CANNT membership has grown from 350 members in 1999 to 1,000 members in 2008. I appreciate getting to know the members through our e-mail communication, via the phone, or at one of our national symposia. If there is any way that I can help you, please feel free to contact me at **cannt@cannt.ca** or toll-free at 877-720-2819.

About the author

Debbie Maure, BASc, is the Administrative Assistant in the CANNT National Office, Barrie, ON.

DID YOU KNOW...?

Now it's even easier for you to get hold of the CANNT/ACITN National Office

1) Call TOLL-FREE from anywhere in Canada/US: 1-877-720-2819 or local dial 705-720-2819
2) E-mail: **cannt@cannt.ca**
3) Fax: 705-720-1451
4) Mail: 336 Yonge Street, Suite 322, Barrie, ON L4N 4C8

STAY CONNECTED—WE'RE HERE TO HELP

2000s

Travels, tremors and teaching with the World Foundation for Renal Care

By Maria Mendez, RN, BScN, Toronto, Ontario

This article was first published in **CANNT Journal (2002), 12*(2), 22–23.***

In June 2001, I was invited by the World Foundation for Renal Care (WFRC) to participate in the Fifth Peruvian Course on Nephrology with a focus on peritoneal dialysis. This course was designed for doctors and nurses, with an expected attendance of 500 people. Despite working in the area of nephrology for 23 years, with the majority of that time in peritoneal dialysis, I was a bit unnerved about presenting to such a large audience of strangers. I did not know how much experience they had in the subject, and also was not aware of their expectations for the program.

Having worked in Chile in the renal area for an industry dedicated to dialysis products, I can appreciate the genuine need for the participation of professionals in this area who are interested in sharing their vast experience. It was also beneficial to have that dialogue in the language of the region.

Upon our arrival, the weather was grey and rainy, typical for winter in Lima, but the atmosphere among our hosts was warm and welcoming. A tour of Lima with some of the other guests, who were mostly from Spain, U.S.A., Canada, Argentina and Brazil, proved to be a good icebreaker as we became acquainted and learned about our host city.

Lima is the capital and the largest city of Peru in the west part of the country near the Pacific. In 1535, it was founded as Spain's New World Empire and remained so until the 19th century. On our tour, we saw several museums and churches, which display and preserve Peru's golden past, and the remarkable colonial buildings echo Peru's indigenous and Spanish heritage. We sadly learned that earthquakes have destroyed many colonial structures over the years. After enjoying the warm hospitality, exquisite cuisine and architectural wonders of the city, it was time to get to work.

The course took place in the Medical School of Peru. The attendance was astounding, despite the lengthy seminars that went from 9:00 a.m. to 7:00 p.m. The attendees numbered 569. There were 130 physicians, 282 nurses, 139 technicians and 18 others such as dietitians. The majority of the attendees had been in nephrology for approximately seven years. The seminars dealt with several themes including hemodialysis, peritoneal dialysis, transplant, anemia management, nutritional management, and the care and education of patients in the pre-dialysis phase. All the presentations were informative and well-documented. I had been invited to speak on three topics: "Peritoneal Dialysis Today", "Pre-dialysis Patient Management" and "The Future of Peritoneal Dialysis". The interest among the participants was made clear with their questions during the seminars and during informal conversation.

One of the most exciting moments of the course came when we witnessed a small earth tremor, which we later learned had been an earthquake in the city of Arequipa located in the southern region of the country. We also learned that the earthquake had caused interruptions on many roads, temporarily isolating the city. Nurses from that region were worried and took the opportunity to raise concerns and questions with the visiting group with respect to the impact on dialysis patients caused by natural disasters. Some of their questions included: "What happens to patients who are on peritoneal dialysis when there is a shortage of supplies?" "How does one handle power failure?" It is not surprising that many of the answers came from the same group of nurses through informal brainstorming sessions. They were obviously familiar with this type of catastrophe and willing to share that knowledge with colleagues.

A summative evaluation of the course revealed that the expectations for the majority of the presentations had been met and the academic level of the content was appropriate. The participants further concluded that the course had been a good opportunity to learn. They also made suggestions with regards to future courses. The evaluation also provided interesting insights into both the working life and approach to dialysis. For example, most of the hemodialysis units are open 24 hours per day, six days per week, with treatment times between three-and-a-half hours and four hours. Kt/V is used to measure the adequacy of both hemodialysis and peritoneal dialysis. Hemodialyzer membranes are reused and a manual method is used for the cleaning process.

Towards the end of the course, the WFRC representatives arranged a meeting with the nurses at the request of the nephrologists who had organized the event. The purpose of this meeting was to emphasize the importance of creating an association of nurses that would represent the profession as a unique entity within the health care system and pursue opportunities for professional development. At the end of this meeting, the nurses formed a committee whose role was to specify, plan and carry out a workshop exclusively for nurses during the next nephrology course, which takes place in September 2002.

This experience was very gratifying for me. Our day-to-day activities sometimes make us feel disconnected. Therefore it is beneficial to share knowledge with other health care providers with the same concerns and the same desire to give our patients the best possible treatment. Inevitably, I find that teaching others enhances my own learning, and this opportunity to represent Canada with the WFRC was fulfilling both professionally and personally. Despite the tremors during the session, I found that the reality of speaking on issues close to my heart can be both rewarding and revitalizing. I encourage other CANNT members to explore similar opportunities for professional development with colleagues through the work of the World Foundation for Renal Care.

About the author

Maria Mendez, RN, BScN, is Renal Coordinator with the Toronto General Hospital, University Health Network, Toronto, Ontario.

Acknowledgement

I would like to thank Betty Kelman, Nurse Practitioner Nephrology and CANNT representative for the World Foundation for Renal Care, for encouraging me to participate in this course in Peru. I was reluctant to stand in front of a crowd of nephrology professionals, however, Betty offered me her vast and resourceful library to prepare my presentations. Betty also shared with me her expertise and creativity in giving this article the finishing touches.

Calcimimetic agents for the treatment of secondary hyperparathyroidism

This article was first published in **CANNT Journal (2002), 12*(2), 27–29.***

Calcimimetic agents are currently being studied as a novel strategy for the management of secondary hyperparathyroidism in patients with renal insufficiency. Calcimimetic agents are activators of calcium-sensing receptors throughout the body including those located in the parathyroid glands. They imitate calcium and, therefore, they lower the threshold for the activation of extracellular calcium ions and decrease the secretion of parathyroid hormone (PTH) (Goodman, 2002). Preliminary short-term studies in humans have shown positive, reproducible results (Antonsen, Sherrard, & Andress, 1998; Goodman et al., 2000; Silverberg et al., 1997).

In normal circumstances, a feedback loop controls the level of calcium in the blood. As calcium levels fall, calcium receptors on the parathyroid cells detect the decrease in calcium and stimulate PTH secretion. PTH acts on the bone to cause release of calcium, on the kidney to increase calcium retention and stimulate synthesis of vitamin D3 in the kidney. Vitamin D3 increases calcium absorption from the gastrointestinal tract. As a result, calcium increases. As calcium levels in the blood rise, calcium receptors sense this and there is a decrease in the secretion of PTH. Calcimimetic agents imitate calcium and trick the parathyroid hormone into perceiving that serum calcium levels are higher than they are. Calcimimetic agents directly control PTH secretion without increasing serum calcium levels.

Calcimimetic agents produce rapid reductions in PTH levels within a few hours, as much as 50% to 70% of pretreatment levels (Goodman, 2002). However, levels increase towards pretreatment levels after 18 to 24 hours (Goodman, 2002). These effects are very different than current management with vitamin D analogs that have much smaller fluctuations over a longer period of time. Calcimimetics are still being studied in humans to see if the observed rapid suppression of PTH leads to an improvement in signs of renal osteodystrophy. Rapid variations in PTH compared to more continuous PTH levels, as in vitamin D3 treatment, could result in potentially unexpected metabolic bone activity. Potential adverse effects of this treatment have yet to be clearly defined, although the agents appear to be well-tolerated in small studies (Antonsen et al., 1998; Goodman et al., 2000; Silverberg et al., 1997).

By Jennifer Dykeman, BScPharm, Renal Pharmacist, Clinical Coordinator, Pharmacy Services, Atlantic Health Sciences Corporation, Saint John, NB

Long-acting anemia management

Erythropoietin is a glycoprotein hormone that regulates erythropoiesis, or the production of red blood cells. In normal circumstances, erythropoietin is synthesized in the kidney and secreted into the blood in response to a decrease in tissue oxygenation. The hormone binds to specific receptors on the surface of red blood cell precursors in the bone marrow, leading to the survival, proliferation, and differentiation of new red blood cells. The end result is an increase in hemoglobin and hematocrit.

In renal insufficiency, erythropoietin synthesis is inadequate to maintain a red blood cell supply. As a result, recombinant human erythropoietin has become the gold standard in treating anemia of chronic renal insufficiency. Recombinant human erythropoietin has been well established in its role in correcting anemia, improving patient well-being, enhancing physical, cognitive, and sexual function,

improving some cardiovascular indicators and decreasing the need for transfusions (Canaud et al., 1990; Eschbach et al., 1989; Eschbach, Aquiling, Haley, Fan, & Blagg, 1992; Eschbach, Egrie, Downing, Browne, & Adamson, 1987; Harnett, Kent, Foley, & Parfrey, 1995; Levin, Lazarus, & Nissenson, 1993; Lim, Kirchner, Fangman, Richmond, & DeGowin, 1989; Macdougall et al., 1990; Sundal & Kaeser, 1989; Temple, Langan, Deary, & Winney, 1992; Winearls, et al., 1986). Recombinant human erythropoietin (epoetin alpha or Eprex® in Canada) is normally dosed subcutaneously one to three times per week. Once-weekly dosing is effective at maintaining target hemoglobin in most patients, however may require a slightly higher weekly dose to do so when compared to three times weekly dosing (Canaud et al., 1995; Frifelt et al., 1996).

Anemia management may change somewhat in the near future, as a new erythropoietin analogue is introduced into the Canadian market. Darbepoetin alfa (novel erythropoiesis stimulating protein, NESP) is expected to receive its notice of compliance for the treatment of anemia in chronic renal insufficiency shortly. To create NESP, two extra N-linked carbohydrate addition sites were added to the current epoetin alfa structure (Egrie & Browne, 2001). The new product was designed to have a longer half-life than the current epoetin alfa product.

Based on the available data, the two agents appear to be comparable in terms of mean change in hemoglobin, percentage of patients who will achieve their target hemoglobin and the time required to reach the target hemoglobin (Graf, Lancombe, Braun, & Gomes da Costa, 2000; Locatelli, Olivares, Walker, & Wilkie, 2001; Nissenson et al., 2000; Vanrenterghem, Barany, & Mann, 1999). In terms of other endpoints such as improved well-being, physical, sexual, and cognitive improvements and cardiovascular indicators as discussed previously, we can only infer that the new product will show these same benefits. It is very likely that these benefits occur secondary to the correction of anemia alone, regardless of the product used. However, these benefits were demonstrated secondary to recombinant erythropoietin therapy and similar studies have not been conducted with the NESP product.

The greatest advantage of the new product is less-frequent administration. Although NESP is at this moment still investigational, it is expected that most patients will be managed on once-weekly dosing. For patients who are currently controlled on once-weekly epoetin alfa, they may be able to be managed with a dose of NESP every two weeks (Joy, 2001). Another advantage is that it appears that no dose adjustment is required when switching from IV to SC administration with NESP (personal communication with Amgen, Canada). This suggests that the two routes may be interchangeable, allowing for IV administration during hemodialysis.

It is important to note that the two products are expressed in different units, which could potentially lead to confusion. It has been defined that 200 U of epoetin alfa is equivalent to 1 ug of NESP on a peptide mass basis (Graf et al., 2000). Starting doses of NESP will likely be 0.45 ug/kg weekly, compared to 150 U/kg of epoetin alfa divided three times weekly (50 U/kg three times weekly) as currently recommended. This will increase the complexity of monitoring anemia indices. Recommendations for adjusting doses based on hemoglobin with the new product are similar to those current recommendations for adjusting epoetin alfa doses.

It will be interesting to see the role this new product will play in the management of anemia of chronic renal insufficiency. The agent's pricing is anxiously awaited.

References

Antonsen, J.E., Sherrard, D.J., & Andress, D.L. (1998). A calcimimetic agent acutely suppresses parathyroid hormone levels in patients with chronic renal failure. **Kidney International, 53**, 223–227.

Canaud, B., Bennhold, I., & Delons, S. (1995). What is the optimum frequency of administration of r-HuEPO for correcting anemia in hemodialysis patients? **Dialysis & Transplantation, 24**, 286–289.

Canaud, B., Polito-Bouloux, C., Garred, L.J., Rivory, J.D., Donnadieu, P., Taib, J., Florence, P., & Mion, C. (1990). Recombinant human erythropoietin: 18 months' experience in hemodialysis patients. **The American Journal of Kidney Diseases, 15**, 169–175.

Egrie, J.C., & Browne, J.K. (2001). Development and characterization of novel erythropoiesis stimulating protein (NESP). **Nephrology Dialysis, Transplantation, 16**(Suppl. 3), 3–13.

Eschbach, J.W., Egrie, J.C., Downing, M.R., Browne, J.K., & Adamson, J.W. (1987). Correction of the anemia of end-stage renal disease with recombinant human erythropoietin. **The New England Journal of Medicine, 316**, 73–78.

Eschbach, J.W., Abduladhi, M.H., Browne, J.K., Delano, B.G., Downing, M.R., Ergie, J.C., et al. (1989). Recombinant human erythropoietin in anemic patients with end-stage renal disease: Results of a phase III multicenter clinical trial. **The Annals of Internal Medicine, 111**, 992–1000.

Eschbach, J.W., Aquiling, T., Haley, N.R., Fan, M.H., & Blagg, C.R. (1992). The long-term effects of recombinant human erythropoietin on the cardiovascular system. **Clinical Nephrology, 38**(Suppl. 1), S98–S103.

Frifelt, J.J., Tvedagaard, E., Bruun, K., Steffensen, G., Cintin, C., Breddam, M., et al. (1996). Efficacy of recombinant human erythropoietin administered subcutaneously to CAPD patients once weekly. **Peritoneal Dialysis International, 16**, 594–598.

Goodman, W.G., Frazao, J.M., Goodkin, D.A, Turner, S.A., Liu, W., & Coburn, J.W. (2000). A calcimimetic agent lowers plasma parathyroid hormone levels in patients with secondary hyperparathyroidism. **Kidney International, 58**, 436–445.

Goodman, W. (2002). Calcimimetic agents and secondary hyperparathyroidism: treatment and prevention. **Nephrology Dialysis, Transplantation, 17**, 204–207.

Graf, H., Lancombe, J-L., Braun, J., Gomes da Costa, A.A., & the European/Australian NESP 980140/194 Study Group. (2000). Novel erythropoiesis stimulating protein (NESP) effectively maintains hemoglobin (Hgb) when administered at reduced dose frequency compared with recombinant human erythropoietin (r-HuEPO) in ESRD patients

(Abstract). **Journal of the American Society of Nephrology, 11**(Suppl.), 1317A.

Harnett, J.D., Kent, G.M., Foley, R.N., & Parfrey, P.S. (1995). Cardiac function and hematocrit level. **The American Journal of Kidney Diseases, 25**(Suppl. 1), S3–S7.

Joy, M.S. (2001). Novel erythropoiesis-stimulating protein: An erythropoietin analogue with an extended half-life and less frequent dosing. **Formulary 36**, 19–25.

Levin, N.W., Lazarus, J.M., & Nissenson, A.R. (1993). National Cooperative rHu Erythropoietin Study in patients with chronic renal failure: An interim report. The National Cooperative rHu Erythropoietin Study Group. **The American Journal of Kidney Diseases, 22**(Suppl. 1), 3–12.

Lim, V.S., Kirchner, P.T., Fangman, J., Richmond, J., & DeGowin, R.L. (1989). The safety and efficacy of maintenance therapy of recombinant human erythropoietin in patients with renal insufficiency. **American Journal of Kidney Diseases, 14**(6), 496–506.

Locatelli, F., Olivares, J., Walker, R., Wilkie, M., and the European/Australian NESP 980202 Study Group. (2001). Novel erythropoiesis stimulating protein (NESP) administered subcutaneously corrects anemia in subjects with chronic renal insufficiency (CRI) when administered at a reduced dose frequency compared with recombinant-human erythropoietin (r-HuEPO) (Abstract). **Journal of the American Society of Nephrology, 11**(Suppl.), 1486A.

Macdougall, I.C., Lewis, N.P., Saunders, M.J., Cochlin, D.L., Davies, M.E., & Hutton, R.D. (1990). Long-term cardiorespiratory effects of amelioration of renal anaemia by erythropoietin. **The Lancet, 335**, 489–493.

Nissenson, A.R., Swan, S.K., Lindberg, J.S., Soroka, S.D., McDermott-Vitak, A.D., & Wang, C. (2000). Novel erythropoiesis stimulating protein (NESP) safely maintains hemoglobin concentrations in hemodialysis patients as effectively as r-HuEPO when administered once weekly (Abstract). **Journal of the American Society of Nephrology, 11**(Suppl.), 1326A.

Silverberg, S.J., Bone, H.G. III, Marriott, T.B, Locker, F.G., Thys-Jacobs, S., Dziem, G., et al. (1997). Short-term inhibition of parathyroid hormone secretion by a calcium-receptor agonist in patients with primary hyperparathyroidism. **The New England Journal of Medicine, 337**, 1506–1510.

Sundal, E., & Kaeser, U. (1989). Correction of anemia of chronic renal failure with recombinant human erythropoietin: Safety and efficacy of one year's treatment in a European multicenter study of 150 heamodialysis-dependant patients. **Nephrology Dialysis, Transplantation, 4**, 979–987.

Temple, R.M., Langan, S.J., Deary, I.J., & Winney, R.J. (1992). Recombinant erythropoietin improves cognitive function in chronic hemodialysis patients. **Nephrology, Dialysis, Transplantation,** 7, 240–245.

Vanrenterghem, Y., Barany, P., & Mann J., on behalf of European/Australian NESP 970290 Study Group. (1999). Novel erythropoiesis stimulating protein (NESP) maintains hemoglobin (Hgb) in ESRD patients when administered once weekly or once every other week (Abstract). **Journal of the American Society of Nephrology, 10**(Suppl.), 1365A.

Winearls, C.G., Oliver, D.O., Pippard, M.J., Reid, C., Downing, M.R., & Cotes, P.M. (1986). Effect of human erythropoietin derived from recombinant DNA on the anemia of patients maintained by chronic hemodialysis. **The Lancet, 2**(8517), 1175–1178.

Update on national certification for dialysis technologists

By Patricia Loughren, BScN, MA(Ed)

This article was first published in **CANNT Journal (2003), 13*(2), 12–13.***

The national certification initiative is making tremendous strides to make the examination available for fall 2003, to coincide with the CANNT conference in Vancouver. Here is the summary detailing the process of certification:

Eligibility for Ontario and out-of-province candidates

The Ontario Association of Certified Engineering Technicians and Technologists (OACETT) has provided us with a tracking document to demonstrate how eligibility will be determined and how the candidate will progress through the process from initial provincial certification to nationally-recognized dialysis certification. This will be a helpful summary for our applicants, and will be included in our promotional brochure that will be developed and distributed to dialysis units and manufacturers across Canada by mid-June.

To be eligible to write the national certification examination for dialysis technology, the candidate needs to be a certified member of their provincial engineering technology association. The initial provincial application fee is $115. Once certified as a certified technician (CTech), certified engineering technologist (CET), or applied science technologist (AScT), the candidate can apply to OACETT to be considered for certification in dialysis as a technical sub-

specialty. Biomedical engineering technologists working in dialysis also qualify to write the certification examination and have the same eligibility criteria. The OACETT website has more information on the provincial certification process at: **www.oacett.org**. Technologists are asked to check with their provincial engineering association for similar details.

When out-of-province candidates are ready to pursue national certification, they can apply to OACETT as non-resident members. The non-resident annual membership fee is $55. Holding a non-resident membership is required because OACETT's bylaws do not permit them to assess, examine or credential candidates who are not their members. All applicants must fulfil the OACETT requirements regarding validation of years of work experience in dialysis technical services (two years required) and must provide two letters of professional reference from the facility where the applicant is employed.

Certification title

The title, certified nephrology technologist (CNephT), is currently being searched by the OACETT lawyer for trademarking for our exclusive use. Because of the similarity to the existing CNeph(C) designation used by nephrology nurses, the Canadian Nurses Association (CNA) was contacted for permission to pursue licensing of the CNephT title. CNA has no problems with the technical members using this designation. Additionally, OACETT will confer with its provincial counterparts to arrange a memorandum of understanding with each so that the designation can be licensed to these provinces.

Fees

The fee to write the examination is $135. This fee includes the study guide, available on CD and mailed to the applicant when eligibility is confirmed. A small fee will be applied to the pre-examination prep course that will be offered on-line through Georgian College.

Applying

Candidates can apply for the yearly writing of the certification exam by accessing the application form on the OACETT website or by contacting OACETT at: (416) 621-9621 or by fax: (416) 621-8694. All applications must be postmarked by September 10 in order to write at the end of October.

Study guide and prep course

The study guide is comprehensive in its coverage of study tips and exam preparation and contains an extensive bibliography of references along with sample questions. The pre-exam prep course will be conducted on-line in a self-study format through Georgian College. Information on how to register will be available in the upcoming brochure.

Location of examination centres

The certification examination will be offered twice each year, spring and fall, specific dates to be confirmed yearly. The fall sitting will coincide with the CANNT conference dates and will be written early in the conference proceedings. The number and location of exam sittings is determined yearly based on the number and location of the applicants.

Examination and pass mark

The exam-setting team will be meeting in late May or early June of each year to set the exam in final form. We anticipate 135 to 150 questions to be written in a three-hour period in multiple choice format. The pass mark will be determined on a yearly basis, based on the degree of difficulty of the examination set. Candidates will be advised of the pass mark prior to the writing date.

Communication of results

Results (a pass/fail grade) will be sent to candidates by OACETT. Successful candidates will receive an OACETT certificate with confirmation of the designation earned. Results are not subject to appeal.

Rewrite privileges

Candidates can rewrite the examination until they are successful. There is no limit to the number of re-writes allowed. Fees apply for each rewrite. Each year's examination will be substantially different but consistent with the core competencies and examination blueprint. At the candidate's request, a resource person can be assigned to assist the candidate with study strategies.

Protection of the public—complaints review

Once a member of OACETT, the member's technical practice falls under the code of ethics and rules of professional conduct of this organization. In the event of a complaint against the member, the process for disciplining the member follows the standard format used by OACETT. If a non-resident member, the code of ethics of that province will apply and be administered by that province.

Re-certification

Certification is valid for five years. During this time, the candidate must accrue 75 continuing education unit (CEU) hours in order to re-certify. CEU credits can be obtained through attendance at conference keynote or concurrent sessions, manufacturers' training days, in-house education seminars, or through completion of self-study units available in professional dialysis journals. Candidates keep a portfolio of their CEU credits for evaluation by the certification team.

Summary

Certification is an important step in the dialysis technologist's professional practice. We hope that candidates who are eligible will consider writing the national dialysis technology certification exam in order to validate the extensive and specialized body of knowledge required to practise.

About the author

Patricia Loughren is the coordinator of the dialysis technology program at Georgian College, Barrie, Ontario, and is a member of the steering committee on national certification for dialysis technologists. Questions can be e-mailed to Pat at ***ploughren@georgianc.on.ca*** *or to Mukesh Gajaria, the current technical member for CANNT, at* ***mukesh.gajaria@sickkids.on.ca****.*

Practice Corner

When to cannulate new peripheral vascular accesses

This article was first published in **CANNT Journal (2003), 13*(2), 56–67.***

Question

Across our sites, we seem to have differing accepted practices of needling new accesses. What is a vascular access nurse(s)' interpretation of the evidence, if there is any, or their expert opinion regarding the timing of needling new accesses?

Answer

The appropriate time to cannulate an arteriovenous fistula or graft is a question that is debated by nephrology nurses, nephrologists and surgeons throughout the world. I will endeavour to answer this question using my personal experience and information that I have obtained from recent literature. In reviewing the literature on cannulation of arteriovenous fistula and grafts, I have found it to be very limited. The **Canadian Society of Nephrology (CSN) Guidelines** (Churchill et al., 1999) used level four evidence to formulate their recommendations for the cannulation of arteriovenous fistulas, but expert opinion for their recommendations for the cannulation of arteriovenous grafts. **The National Kidney Dialysis Outcome Quality Indicators (NK DOQI) Guidelines** (NKF, 2002) also used expert opinion to develop their recommendation on cannulation of both arteriovenous fistulas and arteriovenous grafts. Both of these guidelines recommend that an arteriovenous fistula not be cannulated before four weeks and that arteriovenous grafts not be cannulated before 14 days.

I am the regional vascular access coordinator of a large multi-centre, tertiary care facility. Our vascular access team consists of one vascular access coordinator, six vascular surgeons, six interventional radiologists and a number of nephrologists. Our team is responsible for all of the vascular access procedures for approximately 850 patients on hemodialysis, as well as a large number of patients with progressive renal insufficiency who are not yet on hemodialysis, but have chosen hemodialysis as their treatment modality of choice.

Our centre's policy is to begin cannulating arteriovenous fistulas when they are at least four weeks old. Our group of vascular surgeons is of the opinion that it takes approximately four weeks to arterialize the vein that has been selected to create the arteriovenous fistula. They feel that this is a sufficient amount of time for the vein wall to become strong enough to sustain multiple cannulations and to have grown large enough to adequately accommodate the diameter of a hemodialysis needle. Although four weeks is an acceptable practice, in fact, the majority of patients in our centre require a six- to eight-week period of development before the hemodialysis nurses begin cannulating their fistulas. The decision about when to cannulate a fistula is made by the hemodialysis nurses.

The hemodialysis nurses are encouraged to notify the vascular access coordinator and the nephrologist(s) if they find that a fistula is not developing adequately by four weeks. If this is determined, the patient may be referred to the vascular access clinic for assessment by the vascular surgeon and vascular access coordinator, or a venogram may be ordered to rule out an area of stenosis, a small artery, or accessory vessels that are stealing flow from the fistula. This early evaluation is in effort to minimize the amount of time that a patient may require a central catheter. If the patient is not yet on hemodialysis, ultrasound technology may be used to evaluate the fistula. Venography is avoided in these patients because of the risk associated with contrast media to their existing renal function.

At our centre, arteriovenous grafts are cannulated a minimum of three weeks after insertion. Our vascular surgeons are of the opinion that this period of time allows for the incorporation of the graft material and allows for the resolution of any swelling or hematoma that may have developed as a result of the surgery.

By Janet Graham, RN, CNeph(C)

I have had an opportunity to speak with a number of surgeons and nephrologists from Europe and the United States, while attending nephrology and vascular access conferences, about their centres' needling practices. As you can imagine, the practices vary significantly from centre to centre. In a number of European centres, the surgeon or nephrologist is the person who first cannulates the fistula. Cannulation begins anywhere from two to eight weeks. Early needling (two weeks) is supported in many centres.

When reviewing the literature, I found a recent article from Kidney International that reviewed the Dialysis Outcomes and Practice Patterns Study (DOPPS) data on the cannulating of arteriovenous fistulas (Rayner et al., 2003). This study was a large prospective observational study of 309 facilities in France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States. As with our experience, the study found variations in needling practices among participating countries. It found no significant difference in arteriovenous fistula failure between fistulas that were cannulated between 15 and 28 days compared with those cannulated between 43 and 84 days. It did find that fistulas that were cannulated earlier than 14 days had a 2.1-fold increase in failure than those that were needled at more than 14 days. This study also identified an increased risk of fistula failure in patients who had a previous central catheter.

The DOPPS study is the most recent and largest study that can help us answer the question of when to needle an arteriovenous fistula, but each fistula must be evaluated individually. The literature clearly indicates that needling earlier than 14 days results in poor outcomes, but exactly when needling can begin must be based on the assessment of the fistula. The same principle must apply to arteriovenous grafts. Although the Canadian and American guidelines (Churchill et al., 1999; NKF, 2002) recommend a minimum of 14 days, the amount of swelling and bruising can vary from patient to patient. We must try to balance the risks of damaging an access from infiltration of a fragile or underdeveloped vessel, and the risks associated with a patient having a central catheter in place. Our ultimate goal must be the pre-emptive placement of arteriovenous fistulas with ongoing evaluation to ensure that they are adequately developed for use when hemodialysis is required.

About the author

Janet Graham, RN, CNeph(C), is Regional Vascular Access Coordinator at the Ottawa Hospital, Riverside Campus, Ottawa, ON.

References

Churchill, D.N., Blake, P.G., Goldstein, M.B., Jindal, K.K., & Toffelmire, E.B. (1999). Clinical Practice Guidelines of the Canadian Society of Nephrology for Treatment of Patients with Chronic Renal Failure. **Journal of the American Society of Nephrology, 10**(Suppl. 13), S298.

National Kidney Foundation (NKF) Kidney Disease Outcome Quality Initiative (K/DOQI) Advisory Board. (2002). K/DOQI clinical practice guidelines for chronic kidney disease: evaluation, classification, and stratification. Kidney Disease Outcome Quality Initiative. **American Journal of Kidney Diseases, 39**(2, Suppl. 2), S1–246.

Rayner, H.C., Pisoni, R.L., Gillespie, B.W., Goodkin, D.A., Akiba, T., Akizawa, T., et al. (2003). Creation, cannulation and survival of arteriovenous fistulae: Data from the Dialysis Outcomes and Practice Patterns Study. **Kidney International, 63**(1), 323.

The CANNT board experience: Why it is so essential!

By Ruth McArthur, RN, BN, CNeph(C), CANNT Website Coordinator/Treasurer 2003–2005

While doing some reflection prior to sitting down to write, I thought about some of the most rewarding experiences I have had since my graduation in 1989. Holding different positions in the acute care world both in clinical and management roles and now in community practice has really provided me with a full experience. Outside of the paid hours of work, I have belonged to many different professional associations and there is one experience I remember the most.

In the beginning of my nursing career, my experience of being involved in a professional association was by way of paper and having a membership number. How many times have you heard that one? We hear and think we know about the benefits of joining our professional associations, but when it truly comes down to it, becoming involved throws a whole new light on things. The level of holding a board position really gives it full meaning! After being a CANNT member for four years, I was fortunate enough to hold the board position of website coordinator and treasurer within CANNT for three years, and what a gift that was!

The CANNT board of directors was such a fulfilling experience for me. I never imagined that it would be so enriching and help me connect even more to the nephrology world. In addition, I realized how small our country can be and how joined we are as a specialty. Current and past board members are from across Canada and are one of the many foundations of our dynamic organization. The ability to network and share professional experiences, which are then applied to CANNT members, is essential to strengthening the voice of the nephrology specialty in our country. The association has come so far and continues to grow and strengthen!

Within my role as a board member, I was able to improve many skills related to formal meeting structures and process, develop inter-professional skills, communication skills, learn more within the dreaded Excel software to develop financial spreadsheets and reports, and build many new professional friendships across Canada. The role of treasurer gave me so much insight into the critical role of building our membership, giving back to the members and having the ability to be innovative with events and professional tools while being financially accountable at the same time.

I was fortunate to be very involved in the development of the new CANNT website. I must admit this really did intimidate me in the beginning. Once I got more involved, I realized the endless opportunities it could offer our members in terms of communication, education and professional links. Participation in this project allowed for interaction with key partners and stakeholders in our nephrology community. Once again, this allowed me to develop skills and relationships with people I never imagined! In today's era of the Worldwide Web, our organization stepped up to the next level to offer services to our members and developed a very successful site. What a powerful tool this is to connect with colleagues and specialty groups both nationally and internationally. I never imagined the full power of this! We must continue to build on this element within our organization as we grow.

The CANNT organization and its members have so much experience. The professional relationships I developed with others in my board role also allowed for many mentoring opportunities. Working with seasoned nephrology experts was a significant aspect to being a board of directors' member. The ability to share and learn from others was something that will carry me forward in the next half of my career regardless of specialty or area of work!

After working within acute and chronic illness programs for the first 19 years of my career as a nurse, I made the decision to take a new fork in the road. My focus is now on the upstream approach within the public health sector in the Chronic Disease Prevention Program at the Simcoe Muskoka District Health Unit, Ontario. The ability to make a difference in this area has true meaning for me. Creating awareness about chronic disease prevention and health promotion is so energizing and after seeing patients who suffer from chronic illnesses for years, I really can relate to the significance of the role in Public Health. It is back to the basics of messaging physical activity, healthy eating, healthy weights, early detection of cancer and sun safety, as strategies to reach our goals. Although public health and acute care may seem worlds apart, I believe we are essential partners that should be working together more often to meet the needs of the communities in which we live.

My experience within the CANNT organization was a valuable one and one I am thankful for! I encourage you to become involved in the future and can only hope you have a rewarding experience similar to mine.

About the author

Ruth McArthur, RN, BN, CNeph(C), is a Public Health Nurse, Healthy Lifestyle Program, Simcoe Muskoka District Health Unit, ON.

Ruth's professional volunteer activities related to nephrology include:
***CANNT**—CANNT Treasurer and Website coordinator, 2003–2005.*

At the CANNT Booth—CANNT 2005, Halifax. Rick Luscombe (then CANNT Western Region Vice-President) and Ruth McArthur, (then CANNT Treasurer and Website Coordinator).

Reflections of ANNA

By Chantal Saumure, RN, BSN, MBA, CANNT President-elect

This article was first published in **CANNT Journal (2004), 14*(2), 4.***

Our neighbours to the south, of the American Nephrology Nurses Association (ANNA), held their annual symposium recently in Washington, D.C. This symposium attracted more than 1,300 delegates and 75 members of the industry in the American capital.

The theme, Passion, Politics and Patients' Care, reflected in many regards the efforts made by the membership to improve the process of financing in the provision of services for end stage renal disease (ESRD) patients and this, at all legislative levels. Their national day of education in nephrology, held last August, offered a better appreciation of the situation of renal disease to the decision-makers (governors, senators, etc.). Being strong lobbyists by nature, our colleagues will repeat this activity this year. We wish them the best of luck.

Moreover, following the launch of a recruitment and retention program from Johnson & Johnson (www.discovernursing.com), the members of the council developed a similar approach intended to attract nurses in the field of nephrology (www.annanurse.org) under the heading: discover nephrology nursing. The nursing shortage is very real, just like in Canada. Instead of putting the focus on the shortage, they developed a more positive approach aiming at the multiple facets of the nursing profession. This campaign has shown positive effects. The members are encouraged to sell the benefits of their profession and to recognize that, in spite of the current situation in health care, the profession plays a vital role in each of our communities. I challenge you to make the effort to recruit a future nurse. Our survival depends on it!

The board of directors at ANNA is definitely turned towards the future and does not cease to extend its leadership to its members and future members without compromising patient care issues in nephrology. Our visions are common and we must take the future of nursing and our specialty in our hands. Be proud of your profession, talk about it as an exciting career choice to your family, and to your organization. Be pro-active as a member of the health care team!

Réflexions de ANNA

Par Chantal Saumure, RN, BSN, MBA, ACITN Présidente-élue

Nos voisins du sud de l'American Nephrology Nurses Association (ANNA) ont tenu récemment leur symposium annuel à Washington D.C. Ce symposium a attiré plus de 1300 congressistes et 75 industries dans la capital américaine.

Le thème : Passions, Politics and Patients reflétait à bien des égards les efforts déployés par le membership dans l'amélioration du processus de financement à la provision des services chez les insuffisants rénaux et ce, a tout les paliers de gouvernement. Leur journée nationale d'éducation en néphrologie tenu en août dernier à favoriser une meilleure appréciation de la situation de la part des preneurs de décision (Gouverneurs, Sénateurs, etc). Etant de forts lobbyistes de nature, nos collègues répèteront l'activité encore cette année et nous leur souhaitons un franc succès.

De plus, à la suite du lancement du programme de recrutement et de rétention en soins infirmiers de Johnson & Johnson (www.discovernursing.com), les membres du conseil ont développé un processus qui s'y rattache mais destiné à la néphrologie (www.annanurse.org) sous la rubrique discover nephrology nursing. Le fléau de la pénurie est très présent tout comme au Canada. Au lieu de mettre le focus sur la pénurie, une approche plus positive visant les multiples facettes de la profession infirmière ont marqués cette campagne qui porte fruits. Les membres sont aussi encouragés à vendre les bienfaits de leur profession et de reconnaître que malgré la situation actuelle des soins de santé, le profession a de plus en plus sa raison d'être dans chacune de nos communautés. Je vous lance le défi de faire l'effort de recruter de futur(e)s infirmiers(ères), notre survie en dépend!

Le conseil d'administration de ANNA est résolument tourné vers l'avenir et ne cesse d'étendre son leadership à ses membres et futurs membres tout en continuant de défendre les intérêts des patients souffrant d'insuffisance rénale. Nos visions sont communes et nous devons prendre en main notre épanouissement en tant que membre d'une association professionnelle spécialisée mais aussi comme infirmier(ère). Je vous invites à faire prévaloir votre profession au sein de vos organisations, de vos familles. Déployer votre savoir, comme membre à part entière des soins de santé.

CANNT 2004 in partnership with the Renal Pharmacy Network "On the Cutting Edge: Exploring Advances along the Continuum of Nephrology Care" November 18–21, 2004, Niagara Falls, Ontario

By Maria Scattolon, RN, MSN, CNeph(C), and Rick Badzioch, BA, CET—Conference Co-chairs

With more than 25 years of combined experience in nephrology, we thought we were more than prepared to plan and host CANNT 2004. What we learned was that success can only be achieved through hard work and teamwork. Thanks to the contributions of six of the most committed and talented individuals that we had the privilege to have on our committee, CANNT 2004 was one of the best-attended events in CANNT's history, with more than 650 delegates registered. With the experience and knowledge of conference planner Heather Reid, and the fantastic support and skills of Jane Alfarero, Sharon Fairclough, Roxie Gilmour, Elizabeth Jones, Roza Berkowitz and Emily Ko, the planning and implementation process was exciting and enjoyable.

Many factors influenced the great educational and financial success of the 2004 symposium:

- the varied backgrounds of the group members
- the relationship of St. Joseph's Healthcare, Hamilton, members with the nephrology community
- relationships with pharmaceutical and dialysis equipment suppliers
- renowned speakers from Canada and the United States
- the world-class location
- the phenomenal motivational speakers.

The highlights of the four-day event featured an opening ceremony that included a 17-flag procession; workshops exploring topics such as "turning ideas into action," "understanding human differences and teaching processes" that were well-received and usually filled to capacity; and evening hours that were abuzz with the opening of the burgeoning Exhibit Hall—42 booths—a record number!

And mixed in with the learning was also a little bit of fun. Delegates had the opportunity to enjoy the best wines the area has to offer, a spectacular nightly light show and, for those who were brave enough, a chance to be hypnotized by well-known hypnotist Mike Mandel.

All in all, CANNT 2004—in partnership with the Renal Pharmacy Network was a resounding success! Delegate feedback included comments such as "phenomenal… stimulating… excellent." It was truly our privilege to be a part of such a wonderful experience.

About the authors

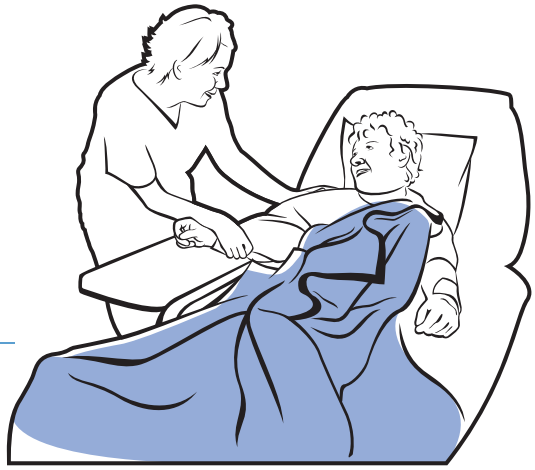
Maria Scattolon, RN, MSN, CNeph(C), is Wound Care Specialist, St. Joseph's Healthcare, Hamilton, ON.

Rick Badzioch, BA, CET, is Business and Technical Manager, Kidney Urinary and Perioperative Programs, St. Joseph's Healthcare, Hamilton, ON.

"CANNT 2004 Cutting the Ribbon" Left to Right: Rick Badzioch and Maria Scattolon (Conference Co-chairs), Pady Dunn (CANNT Past-President), and Chantal Saumaure (CANNT President).

Bedside Matters…

Can you dialyze without water?



This article was first published in **CANNT Journal (2006), 16*(4), 39–40.***

On Monday, July 3, 2006, Western Memorial Hospital in Corner Brook, Newfoundland, suffered a temporary loss of water at about 3 p.m. This temporary loss of water was to last until 2 p.m. on Thursday, July 6. Corner Brook is a small city of approximately 23,000 people located in the very scenic west coast of Newfoundland. Western Memorial Hospital is the regional centre for Western Health, a large geographical area containing approximately 90,000 people.

I am the patient care coordinator for the renal care program of Western Health and Monday was a holiday for me. I was shopping when my cell phone rang. The charge nurse in the hemodialysis unit was ready to drop a bombshell in my lap. The water was off, so were the patients, and she had made a plan that they were to return the next day to complete their treatments. Tuesday's patients had been called and rescheduled times had been planned. Extra staff was organized because the shift would be longer. She had done a great job.

However… The next morning when I awoke, the radio news announcer was saying that the water at the hospital was still off, but expected back on soon. So, I set off for the unit. When I arrived, we had **no water**. What we did have were 12 patients, nine staff (seven hemodialysis nurses and two pre-renal insufficiency [PRI] clinic nurses), a ward clerk and a housekeeper. No one in administration could tell me when the water would be back on and this scenario would continue for what seemed a lifetime.

What are we to do?

The hemodialysis nurses were re-assigned around the building to help out, the patients present were weighed, had blood pressure taken, instructed to control fluids and diet and then sent home. The rest of us sat down to brainstorm a plan.

We looked at what we did have:

1. A satellite unit in a small hospital in Stephenville, about an hour away, with four machines
2. Water in other parts of the city
3. Seventeen patients who had received some dialysis at Western and 12 who had received dialysis at the satellite up to Tuesday dinnertime.

There were still 35 patients left to dialyze. Normally we dialyze between 24 and 26 patients each day at the main centre and eight at the satellite. Our nephrologist, Dr. Stephen Murphy, determined that we should attempt to dialyze all patients for a minimum of three hours as quickly as possible. All the patients were coming off a weekend with, as always, lots of fluid on board.

Due to some quick thinking by our biomedical technician, Pete, some crafty plumbing, and the help of household movers, two portable reverse osmosis (RO) machines and two dialysis machines were set up at a medical clinic downtown. A third RO was shipped from central Newfoundland. A fifth dialysis machine was set up at the satellite and connected to the water outlet in the biomed room and we were set to go by 4 p.m. on Tuesday.

After many pieces of paper with proposed schedules for patients and staff were written and discarded and written again, all the patients and staff were re-routed somewhere so that by midnight on Wednesday all patients had received at least one treatment. The patients were questioned over the phone as to their general well-being, fluid status and length of time since their last treatment and scheduled appropriately. I had the task of assigning all of the patients and staff to the various locations and times appropriately. My manager (lucky for her) was on vacation outside of the province. There were patients and staff travelling between Corner Brook and Stephenville at all hours. To add a little more drama, a bull moose accompanied four of our elderly patients travelling by taxi on the highway at 4 a.m.

All of the patients were carefully monitored as to their fluid status and general health and they were never so careful about eating and drinking before. Our only incident was that one patient lost her access during this time and I forgot one lady who was so considerate about us being busy that she didn't call until Thursday dinnertime to ask when she would get another treatment.

Throughout this experience, all the staff and the patients maintained an enormous sense of humour and not one of them complained about where or when they had to travel. They just did as I requested. They treated it as a great adventure.

I suspect that the two clinic nurses and the ward clerk made no less than 200 phone calls each from Tuesday morning until Thursday evening. Our housekeeper took advantage of the situation and cleaned and buffed and polished everything she could find because there was no one in her way. I attended more emergency meetings than I have done in my almost 40-year career. The water finally came back at 2 p.m. on Thursday afternoon.

Who says you need water? I do.

But, with a little bit of ingenuity and a lot of help, you can dialyze 63 patients reasonably well without a supply of water in the "DIALYSIS UNIT".

By Christine M. Chadderton, RN, CNeph(C), Patient Care Coordinator, Renal Care Program, Western Health, Corner Brook, Newfoundland

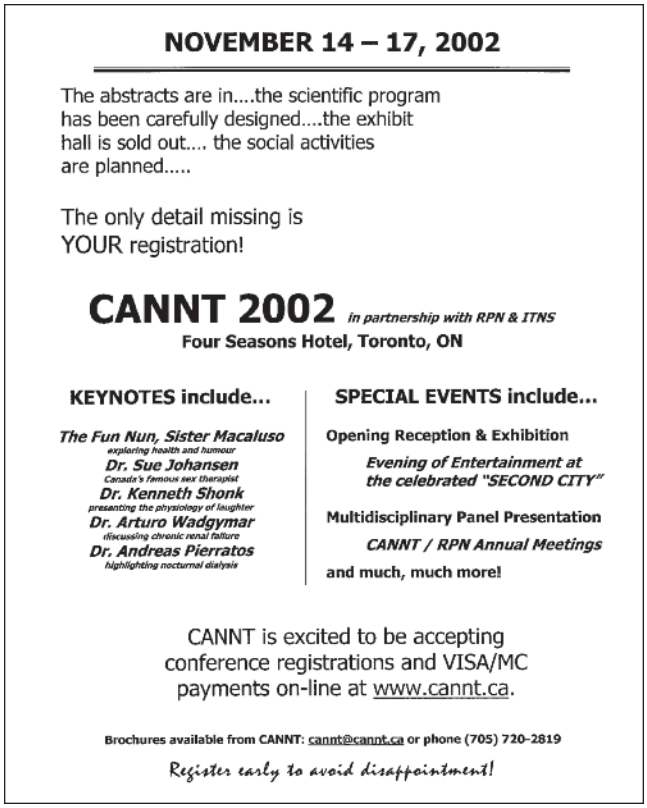
Department editor: Lee Beliveau, RN, CNeph(C), Surrey, British Columbia

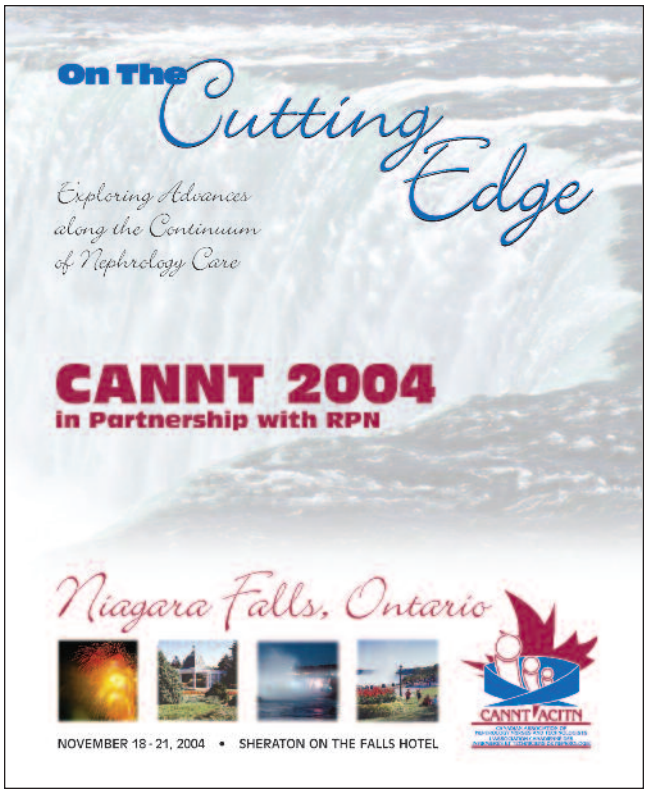
About the author

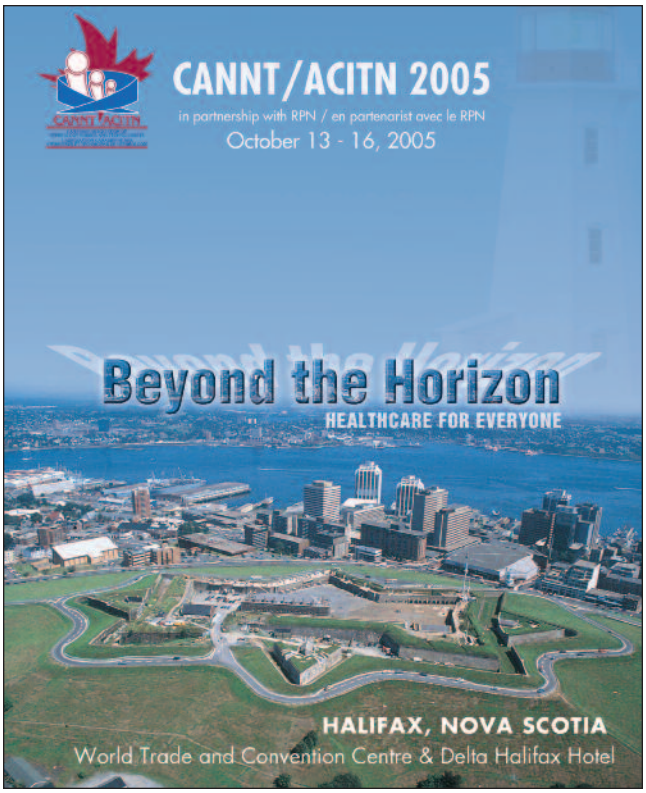
Christine Chadderton has been working in renal care since 1979. She has experience in hemodialysis, peritoneal dialysis, pre- and post-transplant and pre-renal insufficiency. She eventually decided to write her CNeph(C) in 2001.

A graduate of Oldham and District General Hospital in the North of England (1968), she emigrated to Canada in 1974 and completed her registration requirements for Ontario at St. Lawrence College in Cornwall. Moving to Newfoundland in 1976, she completed a course in coronary care in 1978 and then hemodialysis in 1979. From then, all else is history. She has been in her present position for the past seven years.

Her greatest accomplishment is that of grandmother to four very active grandchildren.

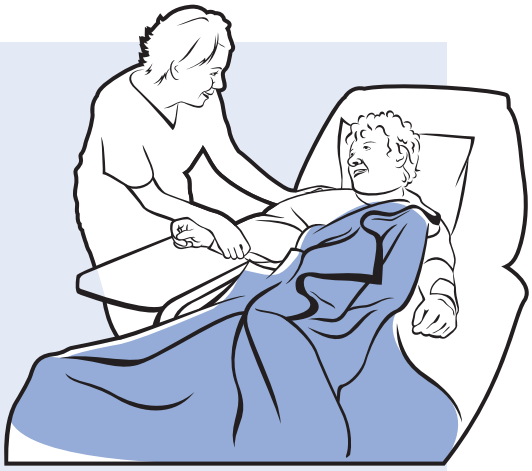






Bedside Matters…

She can make a dialyzer out of a dishwasher…



Viki is a mentor to all of the hemodialysis nurses she has worked with during her career in nephrology for more than 20 years. I have often introduced her with the title of this piece and people immediately understand that she is a long-time expert. This creates an instant trust for patients who are afraid and staff who are nervous. As the commercial says, this reassurance is "priceless."

Viki Sparrow was born in Corner Brook, Newfoundland, and although she entered Memorial University at the age of 16, she did not begin nursing training until 1980, after her second son started kindergarten. She had travelled wide and her broad experiences enhanced her contribution to nursing. In fact, they still do, as Viki and her family continue to explore the world around them.

With the exception of three years, Viki has specialized in nephrology. She has worked as an outpost nurse outside Yellowknife where there was no running water, but the quality of life often exceeded life anywhere in Canada. Elders are well cared for and families live together. Infants bundled tightly in caribou hammocks, one after the other on a living room clothesline, "like pearls on a necklace," are images that resonate tranquility to Viki whenever she remembers the scene. From the Arctic, she travelled to Saudi, learning how to dress in a black head-to-toe Habaya in 40 to 50 degree heat.

Viki says she learned from the best in Newfoundland, with doctors and nurses who had been in nephrology since its inception. Dr. Henry Gault, who was awarded Officer of the Order of Canada in 1991 for his work in nephrology, as well as the landmark formula in evaluating kidney function, was a major influence on Viki's professional achievements. She describes Dr. Gault as a dedicated, compassionate, humble, perpetual teacher.

"The first time I was ever on call, I was absolutely terrified to work with Dr. Gault because of my respect and admiration for him. I knew it was routine to be questioned, so for three hours before the run in the intensive care unit (ICU), I studied the chart and reviewed my nephrology. When Dr. Gault came, he looked at me and left the room. I was floored. What about orders? My machine was set properly. Why did he leave? He did return, with two cups of coffee, motioning to me to come outside the room and sit down. He proceeded to tell me that one of our chronic patients had just received notice of her transplant. I knew her and I expressed the concerns against her finding a successful match. Dr. Gault nodded and quietly agreed, saying, 'Yes, but there will always be exceptions to our rules and they are made to be broken. We can never close our minds to that.' Dr. Gault wrote the orders and left without asking me a single question.

Viki Sparrow, Vascular Access Coordinator, BC.

I like to think he wasn't just talking about this patient, but life in general, suggesting that we look at everything with an open mind and be willing to change it."

In the 1990s, Viki came to British Columbia and worked renal at Vancouver General Hospital and St. Paul's. When a new hemodialysis unit opened in Surrey in 1998, she became one of the founding members who mentored the first and several other rounds of new nephrology nurses. She proceeded to clinical resource nurse and then acting manager, where her broad knowledge base and hands-on skills enhanced policies and planning. In 2001, Viki was hired as Vascular Access Coordinator for the largest region in BC, covering five hemodialysis units.

Viki served a key leadership role for nursing practice, education, with development and implementation of initiatives to improve patient outcomes and reduce costs. She was instrumental in the founding of the BC Renal Agency Vascular Access Group, researched and wrote policies and felt privileged to play a part in attaining positive outcomes for patients and furthering the knowledge of her colleagues.

Surrey is very fortunate to have Viki back from her two-year experience in China. Her philosophy of life has developed not only from travelling, but also in being close to nature and the wilderness. She and her husband, Randy, spend lots of time enjoying wildlife, fishing, and canoeing. Her philosophy is to live simply and peacefully, in harmony with each other, never take life for granted, be aware of the world around you, learn from every experience and everyone, practise patience and be humble. She has learned to keep her mind open with a healthy dose of skepticism, make changes to things about which you are passionate, treat everyone respectfully, leaving judgments for the courts and the creator. People everywhere have taught her the importance of being able to laugh at herself and the importance of reflection, so she can see if she is living her beliefs.

Anyone who is privileged to know Viki can tell her she is!

Article revised by Lee Beliveau from a five-page story published about Viki Sparrow in a book edited by Duane Duff: I Have a Story to Tell, Too *(2008), published by Invista, Surrey, BC. Lee Beliveau, RN, CNeph(C), staff nurse, hemodialysis unit, at Surrey Hospital, Surrey, BC, has been a member of the CANNT Journal Editorial Board from 2001 to present.*

The Kidney Foundation of Canada Allied Health Scientific Committee Annual Report, 2007

By Eleanor Ravenscroft, RN, MSN, PhD(c), CNeph(C),
CANNT representative to the Kidney Foundation of Canada Allied Health Scientific Committee

This article was first published in **CANNT Journal (2007), 17*(4), 19.***

The Kidney Foundation of Canada (KFOC) plays a major role in supporting and advancing kidney-related research and scholarship through research grants, fellowships, and scholarships to Biomedical and Allied Health Professionals. The KFOC funds more than one-third of kidney-related research in Canada. The KFOC awarded approximately $3.0 million to support 64 research projects at 33 centres for the 2007–2008 competition year, July 1, 2007 to June 30, 2008.

The KFOC Allied Health Scientific Committee reviews funding applications for Allied Health Research Grants, Fellowships, and Scholarships and makes funding recommendations to the KFOC Research Council. The final funding decisions are made by the KFOC Research Council. The KFOC Allied Health Scientific Committee met on March 31, 2007, in Montreal to review funding applications and make recommendations to The Kidney Foundation of Canada Research Council. The results of the Allied Health 2007–2008 competition are:

Allied Health Research Grants

These grants are awarded for a research project relevant to clinical practice. The principal investigator must be an allied health professional (i.e., nurse, dialysis technician, dietitian, social worker, etc.).

BEANLANDS, Heather, Martha E. Horsburgh, Elizabeth A. McCay, Michelle A. Hladunewich, Souraya Sidani, Daniel C. Cattran
Ryerson University, Toronto
Can psychosocial variables and self-management behaviours help explain progression in chronic kidney disease?
Category: Quality of Life
2007–2008: $31,204
2008–2009: $18,454

HUTCHINSON, Tom, Dawn S. Allen, Antonia L. Anaert, Johana Eid, Paul Eugene Barré, Murray L. Vasilevsky, Mark L. Lipman, Steve Jordan
McGill University, Montreal
Living with end stage renal disease (ESRD): Multiple perspectives on patients' suffering and healing.
Category: Quality of Life
2006–2007: $46,532
2007–2008: $39,420

NICHOLAS, David, Michelle McClure, Kelly J. McCormick, Annette Vigneux, Gail L. Picone
The Hospital for Sick Children, Toronto
Evaluation of an online peer support network for parents of children with chronic kidney disease (CKD)
Category: Quality of Life
2007–2008: $49,973
2008–2009: $49,980

PATERSON, Barbara, Lee Ann Sock, Denis LeBlanc, Heather L. MacDonald
University of New Brunswick, Fredericton
Facilitating integrated and culturally relevant health care for rural Aboriginal people who undergo hemodialysis in an urban centre: An intervention development study
Category: Dialysis
2007–2008: $42,325
2008–2009: $43,225

SECKER, Donna
The Hospital for Sick Children, Toronto
Assessing nutritional status in children with chronic kidney disease: A comparison of currently used objective measures and the newly validated pediatric subjective global nutrition assessment.
Category: Renal Failure
2007–2008: $42,055

Allied Health Doctoral Fellowships

The Allied Health Doctoral Fellowships assist allied health professionals in academic and research preparation at the Doctoral level. Fellowship recipients may train in Canada or abroad.

BARNIEH, Lianne
Supervisor: Brenda Hemmelgarn
University of Calgary, Calgary
A patient-centred educational intervention to improve the choice of living kidney donation among renal transplant recipients: A randomized controlled trial
Category: Transplantation
2007–2008: $27,000
2008–2009: $27,000

KFOC Southern Alberta Branch Allied Health Doctoral Fellowship

MANTULAK, Andrew
Supervisors: Anne Westhues, Marshall Fine
Wilfrid Laurier University, Waterloo
The lived experience of parents caring for a child with end stage renal disease
Category: Quality of Life
2007–2008: $27,000
2008–2009: $27,000

Allied Health Scholarships

Allied Health Scholarships assist students with a demonstrated interest in nephrology or urology in pursuing their education at the Masters, Doctoral or Nurse Practitioner level.

DIONNE MERLIN, Marjolaine
Supervisor: Sylvie Robichaud-Ekstrand
Université de Moncton, Moncton
Category: Nursing
2007–2008: $5,000

Application deadlines

The Kidney Foundation of Canada invites applications for the 2007–2008 competitions. The application deadlines are:
Biomedical Research Grants, Fellowships and Scholarships: October 15, 2007
Allied Health Research Grants: October 15, 2007
Allied Health Fellowships and Scholarships: March 15, 2008

More information about these and other funding opportunities (e.g., the Krescent Research Program), application forms, and help in preparing your application is available on The Kidney Foundation of Canada website, www.kidney.ca, or contact:
Coordinator, Research Grants and Awards
The Kidney Foundation of Canada
300-5165 Sherbrooke St. West
Montreal, QC H4A 1T6
Telephone: 1 (800) 361-7494, ext. 232 or (514) 369-4806, ext. 232
E-mail: research@kidney.ca

Contact hour: 2.0 hrs

The evolution of CANNT: Updated 1968–2008

By Faye Clark, RN, BN, CNeph(C)

This article was first published in **CANNT Journal (2000), 10***(4), 23–37, and is now updated.*

Learning objectives

After reading the article, the reader will be able to:

1. Identify some of early issues for the evolution of CANNT.
2. Describe some of the main events for CANNT over the last four decades.
3. Consider some of the main issues for CANNT in this current decade.

Abstract

In 2000, plans for a new logo for the Canadian Association of Nephrology Nurses and Technologists (CANNT) took us into the millennium, and it seemed like the opportune time to reflect on the evolution of our organization. In 2008, celebrations for the 40th anniversary of CANNT give us another opportunity to update our history. As in 2000, most of this history has been gathered from CANNT presidents' and journal editors' letters. The loyalty and dedication of these individuals has been remarkable.

CANNT has grown from an organization that focused on hemodialysis in the 1970s to one that encompasses all the areas in nephrology: pre-dialysis, hemodialysis, peritoneal dialysis, transplantation and palliative care. Educational opportunities and partnerships with other professional organizations have helped CANNT become a professional organization itself, with outstanding opportunities for its membership.

Over the years, many medical, technological, social, and economic changes have guided our practice in nephrology. CANNT, too, has grown to reflect the current nephrology climate. Nevertheless, the goal of CANNT has not changed:

To facilitate the highest quality of care to individuals with renal disease through dissemination of information to health care providers.

In this article, CANNT activities from 1968 to the present will be discussed.

I have worked in nephrology for almost 30 years and have had the opportunity to witness CANNT's evolution. I recently had the opportunity to serve on CANNT's board of directors as secretary/treasurer for two years, followed by a term as CANNT president and realized what a privilege it was to be part of such a dedicated group. When we entered the new millennium, I took the opportunity to review CANNT's past and consider some challenges for the future (Clark, 2000). In 2008, with CANNT celebrating its 40th anniversary, I would again like to update CANNT's history.

Fortunately, I'm a bit of a packrat and was able to search through many old newsletters dating as far back as 1985 to obtain a lot of the information.

In the beginning there was the Canadian Society of Extracorporeal Circulation Technicians (CANSECT). In 1968, Fran Boutilier, a hemodialysis nurse from Halifax, Nova Scotia, became the first president of CANSECT. Since extracorporeal circulation was the focus with hemodialysis, dialysis practitioners joined with heart-lung perfusionists and formed this group (Beanlands, 1990).

1970s

Hemodialysis was the treatment of choice for patients with end stage renal disease (ESRD), and had been since around 1958. Practitioners were anxious to learn all they could about this technology.

- 1975—The heart-lung perfusionists and dialysis practitioners grew in their own fields and separated. Our group took a new name, the Canadian Society of Perfusionists (CSP). (Beanlands, 1990).
- 1977—The name changed to the Canadian Society of Dialysis Perfusionists (CSDP) to reflect the membership in the organization.

The focus of this decade remained on hemodialysis. Nephrology nurses and technicians continued to learn technical and practical skills related to this specialty. Kidney transplantation and peritoneal dialysis, however, were beginning to become acceptable treatment options for patients with ESRD.

Although kidney transplants were performed as early as 1954 between identical twins, it was not until the late 1960s that transplantation was considered an acceptable treatment for patients with ESRD. Preventing rejection with anti-rejection medication was then (and still is) a major challenge (Beanlands, 1990).

Peritoneal dialysis was performed as early as 1923 as an abdominal lavage. In 1959, the first catheter was placed in the abdomen and dialysis was performed. Around 1975, continuous ambulatory peritoneal dialysis (CAPD) was used mainly as a temporary treatment for patients waiting for hemodialysis or a transplant. In 1977, CAPD became a viable, efficient and cost-effective form of treatment because of improvements in technique (Beanlands, 1990).

1980s

Treatment options for ESRD were expanding and the roles of nephrology nurses were becoming diversified as they gained experience in peritoneal dialysis and kidney transplantation as well as hemodialysis.

- 1984—The association changed its name to the Canadian Association of Nephrology Nurses and Technicians (CANNT) to be more reflective of the evolving specialties. Pre-dialysis education programs were starting (Gill, 1995).
- 1985—Liaisons with nephrology groups in the United States and Europe (the American Nephrology Nurses Association—ANNA and the European Dialysis and Transplant Nurses Association—EDTNA) were developed and representatives from CANNT were sent to their symposia (Peroff, 1985). CANNT standards for clinical practice were completed and a study guide was developed (Peroff, 1985). Symposium guidelines were prepared (Peroff, 1985). **The Dialtec** (the **CANNT Journal** at the time) was circulated with **The Renal Family** magazine (Peroff, 1985). The Fran Boutilier Bursary was introduced (Peroff, 1985) for a nurse pursuing education at the bachelor level. CANNT's Goals and Objectives were developed.
- 1986—The CANNT newsletter was now a journal and French translation was provided in the journal (Larivière, 1986).
- 1987—Bruce Pappin became managing editor of the **CANNT Journal** (Larivière, 1987). A questionnaire was sent out to technicians at the time, around the changes in their scope of practice. The results indicated that the technicians preferred the name technologist to be more reflective of their practice (Calvin, 1987).
- 1988—The Canadian Nurses Association (CNA) started certification of specialty groups and CANNT became an associate member of CNA. Meetings with members of the corporations involved with nephrology began and a corporate relationship developed. CANNT has representation on the Allied Health Council of the Kidney Foundation of Canada (Larivière, 1988). The final version of the technical standards was developed (Burns, 1989).

The focus of this decade was on CANNT's activities to evolve as a professional organization. Partnerships and liaisons with other groups with similar interests gave the membership the opportunity to collaborate with others, to educate, update and share in common goals. CNA involvement to facilitate certification exam writing remained a high priority.

1990s

The technology of hemodialysis was expanding. High flux and high efficiency dialyzers, double blood pumps and liquid bicarbonate helped improve dialysis and urea kinetics helped determine dialysis treatment efficiency (Larivière, 1988). Patient numbers were increasing and resources were decreasing. Expensive therapies, such as erythropoetin had been developed for anemia control and improved quality of life. Practitioners were expected to do more for less (Beanlands, 1990).

The four presidents at CANNT's 30th Anniversary Symposium, London, Ontario, 1998. Valerie Price, then President of CANNT, Frances Boutilier, CANNT's first president, Patricia Weiskittel, then president-elect of ANNA, Julie Hartley-Jones, immediate past-president of EDTNA/ERCA.

- 1990—The journal was listed in the Cumulative Index to Nursing and Allied Health Literature (CINAHL) (Brownrigg, 1991).
- 1991—The first management company, Harold Taylor Enterprises, was hired to handle CANNT business, such as budget planning, negotiating rates for symposia, maintaining and encouraging memberships and providing the necessary stability for members by having the same phone number and address (Watson, 1991). A manuscript review panel was developed by the journal (MacNeil, 1991). A technical bursary was available (MacNeil, 1991). Awards were given for papers presented at national symposia for the first time (MacNeil, 1991).

- 1993—The Canadian Nurse's Association offered the first certification exam in nephrology nursing. Ninety-seven applicants wrote the exam and six received certification by exemption (Joyce, 1993). Exams in nephrology had not been offered since around 1985 when a voluntary oral and written exam was provided (MacNeil, 1991). The nephrology certification exam afforded nursing members the opportunity again to test their knowledge in their chosen field. The first international workshop was held in Halifax, Nova Scotia (Dekker, 1993). Government relations' activity by CANNT representatives was beginning in various parts of the country around health care issues (Joyce, 1993). One example was the Ontario Working Group on Renal Services.
- 1994—A representative from CANNT was involved with the World Council of Renal Care (WCRC) (Brownrigg, 1994).
- 1996—CANNT changed its name to Canadian Association of Nephrology Nurses and Technologists in keeping with the expanding roles of technicians and technologists in their scope of practice. Social workers and dietitians were encouraged to join the CANNT national conferences (Evans, 1996). Ortho Biotech agreed to devote five years to a national education program (Evans, 1996). Two journal awards were offered to encourage more members to publish manuscripts (Dekker, 1996).
- 1997—Special Interest Groups were in the early stages of development (Amos, 1997). The journal had two editors working together for the first time (Dekker, 1997). The journal was accepted by CNA to grant continuing education credits (Turpin, 1997). A CANNT strategic plan was developed (Price, 1998). Excellence in Practice awards were introduced (Price, 1998).
- 1998—WCRC encouraged CANNT involvement in international development projects (Starzomski, 1998).
- 1999—The journal was accepted by the International Nursing Index and was listed on MEDLINE (Brunier, 1999). The Nephrology Nursing Certification Exam Prep Guide, sponsored by Janssen-Ortho and developed by CNA with CANNT, was made available to assist nurses with the certification exam (Amos, 1999). Our current CANNT administrator, Debbie Maure, was hired with the national office now located in Barrie, Ontario (Clark, 1999).

The focus of the decade was on education. With certification now a reality, it has been an ongoing challenge for nurses to acquire the necessary continuing education credits to apply for re-certification. Journal continuing education articles, regional supper clubs and symposia were the most economical venues to acquire the necessary credits. National symposia are still of tremendous value to the membership.

2000

CANNT has continued to grow and prosper in this current decade, and I am proud to be a part of a professional organization that offers so much to its membership.

The focus of the decade has been on communication.

- 2000—Amos (2000) highlighted the upcoming CANNT activities. With CANNT members working for corporations, the potential for representation on the board by these members had become a reality. Concerns around conflict of interest were researched. The CANNT website became a reality with Scott Reid as our Webmaster (MacLeod, 2003). Special Interest Groups held round table forums at the annual symposium to give members a chance to meet and discuss issues common in their practices (Amos, 2000).
- 2001—Gillian Brunier changed her role from Co-editor of the **CANNT Journal** to Editor with an editorial board now appointed to assist her with the journal (Brunier, 2001).
- 2002—The International Society of Peritoneal Dialysis (ISPD) donated funds to CANNT to be used for education of CANNT members. It was decided that four bursaries would be awarded to members to fund the CNA Nephrology Certification Exam. The Nursing Standards were revised (Boughen, 2002).
- 2003—Technology members wrote the first Technical Certification Examination in Vancouver (Gajaria, 2003). Leadership training workshops were held at the 2003 conference (Dunn, 2004). The impact of SARS was felt by many nephrology nurses in Ontario hospitals (Ballantine, 2003).
- 2004—Unit liaisons were starting to be recruited to help promote CANNT and encourage membership. The goal was to try and have a liaison in every unit in Canada. The website was restructured with Guided Vision as the Webmaster. Ortho Biotech provided the funding for the upgrade. The **CANNT Journal** is now included in the EBSCO Publications Database. Fresenius Medical Care has committed regular funding to the CANNT Bursary and Awards Programs (Dunn, 2004). Heather Reid of Innovative Conferences & Communications received a three-year contract as the conference planner for the annual symposia (Saumure, 2006).
- 2005—Synopsis of the CANNT Strategic Plan was posted on the website so membership could be aware of the business of CANNT. The CANNT Boutique provided the members the opportunity to purchase merchandise online (Saumure, 2005). Debbie Maure from the CANNT office started sending out regular e-mails to members notifying them of CANNT activities and deadlines (Maure, 2006).
- 2006—First journal supplement, the Clinical Educator Network's Recommendation for the Management of Vascular Access in Hemodialysis Patients, was included with the regular mailing of the journal (Brunier, 2006). The CANNT website advertised the launching of the first World Kidney Day in March (Pritchard, 2006). Technical Standards were updated (Clark, 2006).
- 2007—Refined Clinical Practice Groups were established. The Renal Educators Network joined forces with CANNT to enhance its membership. The Canadian Hemodialysis Access Coordinators (CHAC) is an independent group, but is affiliated with CANNT. More partnerships are anticipated (Harwood, 2008). The first Nephrology Health Care Professionals Day was celebrated on September 19 (Harwood, 2007).

- 2008—Marsha Wood is coordinating the revision of the Nursing Standards of Practice. A Strategic Planning Process is in place and the new plan should be ready in the fall. A revised CNA Study Guide should be available to members later this year. CANNT will celebrate its 40-year anniversary in Quebec in October (Harwood, 2008).

In closing

Our membership has grown from 483 members in 2000 to more than 1,000 in 2008 (personal communication, Maure, July, 2008). Since 2003, there are usually 650 to 700 delegates at each of our annual Symposia. With the increasing numbers in membership and symposium attendees, communication is enhanced and the merits of CANNT can be shared with many more of our nephrology colleagues. As we approach the end of this decade and look forward to the next, let us continue to celebrate the success of CANNT and its members. Be part of the evolution!

About the author

Faye Clark, RN, BN, CNeph(C), is Nephrology Nurse Clinician, Dialysis Units, Saint John Regional Hospital, Saint John, NB. She is co-editor of this special anniversary issue of the ***CANNT Journal****.*

References

Amos, A. (1997). Message from the president. **CANNT Journal, 7**(3), 4.

Amos, A. (1999). Message from the president. **CANNT Journal, 9**(4), 4.

Amos, A. (2000). Message from the president. **CANNT Journal, 10**(2), 4.

Amos, A. (2000). Annual President's Report. **Annual Report 1999–2000.**

Ballantine, L. (2003). Message from the president. **CANNT Journal, 13**(3), 4.

Beanlands, H. (1990, Winter). President's message. **CANNT Journal,** 4.

Beanlands, H. (1990, Spring). President's message. **CANNT Journal,** 4.

Boughen, C. (2002). Message from the president. **CANNT Journal, 12**(3), 4.

Brownrigg, R. (1991). Editorial. **CANNT Journal, 1**(1), 4.

Brownrigg, R. (1994). Message from the president. **CANNT Journal**, **4**(2), 4.

Brunier, G. (1999). Letter from the co-editor: Gillian Brunier. **CANNT Journal, 9**(4), 4.

Brunier, G. (2001). Letter from the editor: Gillian Brunier. **CANNT Journal, 11**(1), 6.

Brunier, G. (2006). Journal Editor-In-Chief 2005–2006. **Annual Report 2005–2006.**

Burns, R. (1989, Winter). An open letter to the membership. **CANNT Journal,** 14.

Calvin, B. (1987, Summer). Progress report from the CANNT standards April 1987. **CANNT Journal,** 9.

Canadian Nurses Association. (2000, Spring/Summer). **Certification News: Certification—2000 Exam Results**. [Online]. Retrieved from http//www.cna-nurses.ca

Clark, F. (1999). Highlights from the annual general meeting. **CANNT Journal, 9**(4), 10.

Clark, F. (2000). The evolution of CANNT. **CANNT Journal, 10**(4), 22–26.

Clark, F. (2006). President's Report 2005–2006. **Annual Report 2005–2006.**

Dekker, L. (1993). Message from the editor. **CANNT Journal, 3**(2), 4.

Dekker, L. (1996). Editor's message. **CANNT Journal, 6**(1), 4.

Dekker, L. (1997). Editor's message—reflections of a retiring editor. **CANNT Journal,** 7(2), 6.

Dunn, P. (2003). Message from the president. **CANNT Journal, 13**(4), 4.

Dunn, P. (2004). 2003–2004 CANNT Annual Report. **Annual Report 2003–2004.**

Evans, D. (1996). Message from the president. **CANNT Journal, 6**(1), 4.

Gajaria, M. (2003). Technical Report for 2002–2003. **Annual Report 2002–2003.**

Gaudet, D. (1999). Message from the president. **CANNT Journal, 9**(2), 4.

Gill, R. (1995, Fall). Care and management of the pre-dialysis/pre-transplant population: A decade of change. **CANNT Journal, 5**(4), 18–20.

Harwood, L. (2007). Message from the president. **CANNT Journal, 17**(3), 6.

Harwood, L. (2008). Your Board in Action. **CANNT Journal, 18**(1), 20–21.

Joyce, J. (1993, Spring). Message from the president. **CANNT Journal,** 4.

Larivière, J. (1986). Editorial. **CANNT NEWSLETTER, 10(1),** 2.

Larivière, J. (1987, Summer). Editorial: About prevention. **CANNT Journal,** 4.

Larivière, J. (1988, Winter). Editorial. **CANNT Journal,** 4.

MacLeod, S. (2003). Results of the CANNT website survey—November 2002. C**ANNT Journal, 13**(1), 15.

MacNeil, S. (1991, Spring). President's Message. **CANNT Journal,** 4.

MacNeil, S. (1991, Fall). President's Report 1991. **CANNT Journal,** 4.

Maure, D. (2006). Membership Report 2005–2006. **Annual Report 2005–2006.**

Maure, D. (2007). Membership Report 2006–2007. **Annual Report 2006–2007, 30.**

Peroff, N. (1985). President's Message. **Dialtec, 8**(2), 2.

Peroff, N. (1985). President's Message. **Dialtec, 8**(3), 3.

Price, V. (1998). Message from the president. **CANNT Journal, 8**(1), 4.

Pritchard, L. (2006). Website Report 2005–2006. **Annual Report 1999–2000.**

Rogers, J. (1996). Membership Report. **CANNT Journal, 6**(4), 14.

Saumure, C. (2005). President's Report. 2004–2005. **Annual Report 2004–2005, 32.**

Saumure, C. (2006). Your Board in Action. **CANNT Journal, 16**(1), 14.

Starzomski, R. (1998). World Council for Renal Care—How can you be involved. **CANNT Journal, 8**(2), 10.

Turpin, C. (1997). Co-editor's message—Colleen Turpin. **CANNT Journal,** 7(4), 12.

Watson, D. (1991, Spring). Message from the president-elect. **CANNT Journal,** 6(2).

CONTINUING EDUCATION STUDY QUESTIONS

Contact hour: 2.0 hrs

The Evolution of CANNT: Updated 1968–2008

By Faye Clark, RN, BN, CNeph(C)

1. The Canadian Society of Extracorporeal Circulation Technicians (CANSECT) included dialysis practitioners and
(a) transplant coordinators
(b) heart-lung perfusionists
(c) nephrologists
(d) social workers

2. Fran Boutilier, a hemodialysis nurse, became the first president of CANSECT in
(a) 1968
(b) 1973
(c) 1978
(c) 1982

3. During the 1970s, the focus of renal replacement therapy for patients with end stage renal disease (ESRD) was:
(a) transplant
(b) peritoneal dialysis
(c) acute dialysis
(d) hemodialysis

4. Continuous ambulatory peritoneal dialysis (CAPD) first became a viable option for patients with ESRD in:
(a) 1968
(b) 1974
(c) 1977
(d) 1982

5. In 1984, the Canadian Society of Dialysis Perfusionists changed their name to the Canadian Association of Nephrology Nurses and Technicians (CANNT) to reflect how the role of Nephrology Nurses had become
(a) less diversified
(b) more diversified
(c) less standardized
(d) more standardized

6. The CANNT Newsletter became a Journal with French translation in
(a) 1980
(b) 1986
(c) 1990
(d) 1996

7. The author of this article believes that CANNT's focus during the 1980s was to evolve as
(a) a professional organization
(b) an organization for administrators
(c) a research organization
(d) an organization for physicians

8. The Canadian Nurses Association offered the first certification exam for nephrology nurses in
(a) 1987
(b) 1990
(c) 1993
(d) 1996

9. In 1999, the CANNT Journal was accepted by the International Nursing Index and listed for the first time on
(a) Psychological Abstracts
(b) Cumulative Index to Nursing and Allied Health Literature
(c) MEDLINE
(d) Abstract International

10. The author of this article believes that the focus of CANNT during the 1990s was
(a) education
(b) practice
(c) leadership
(d) research

11. If you are a nephrology nurse or a technologist, a member of CANNT, and continuing your education, you may be eligible for
(a) a CANNT award
(b) a CANNT bursary
(c) a CANNT exam
(d) a CANNT credit

12. Currently, one area that is being researched by the CANNT Board of Directors is
(a) amalgamating with CNA
(b) discouraging membership for CANNT
(c) adding articles in Spanish to the journal
(d) concerns around conflict of interest

CONTINUING EDUCATION STUDY ANSWER FORM

CE: 2.0 hrs continuing education

The Evolution of CANNT: Updated 1968–2008

Volume 18, Number 3

By Faye Clark, RN, BN, CNeph(C)

Post-test instructions:

- Select the best answer and circle the appropriate letter on the answer grid below.
- Complete the evaluation.
- Send only this answer form (or a photocopy) to:
  CANNT National Office,
  336 Yonge St., Ste. 322,
  Barrie, ON, L4N 4C8
  or submit online to www.cannt.ca
- Enclose a cheque or money order payable to CANNT.
- Post-tests must be postmarked by September 30, 2009.
- If you receive a passing score of 80% or better, a certificate for 2.0 contact hours will be awarded by CANNT.
- Please allow six to eight weeks for processing. You may submit multiple answer forms in one mailing, however, you may not receive all certificates at one time.

CANNT member – $12; Non-member – $15

Post-test answer grid

Please circle your answer choice:

1.	a	b	c	d
2.	a	b	c	d
3.	a	b	c	d
4.	a	b	c	d
5.	a	b	c	d
6.	a	b	c	d
7.	a	b	c	d
8.	a	b	c	d
9.	a	b	c	d
10.	a	b	c	d
11.	a	b	c	d
12.	a	b	c	d

Evaluation

	Strongly disagree				Strongly agree
1. The offering met the stated objectives.	1	2	3	4	5
2. The content was related to the objectives.	1	2	3	4	5
3. This study format was effective for the content.	1	2	3	4	5

4. Minutes required to read and complete:
   50 75 100 125 150

Comments: _____

_____

_____

_____

_____

Complete the following:

Name: _____

Address: _____

_____

CANNT member ❑ Yes ❑ No Expiration date of card _____

Durée de la séance : 2 h

L'évolution de l'ACITN/CANNT—de 1968 à aujourd'hui

By Faye Clark, inf., B.Sc.inf., CNéph(C)

Le présent article a d'abord été imprimé dans **le Journal ACITN/CANNT, (2000), 10***(4), 23–37, et voici sa mise à jour.*

Objectifs d'apprentissage

Après lecture de cet article, vous serez en mesure de :

1. déterminer les premiers jalons de l'évolution de l'ACITN/CANNT ;
2. décrire certains des principaux événements qui ont marqué les 40 dernières années d'existence de l'ACITN/CANNT ;
3. prendre en considération les principaux défis que l'ACITN/CANNT devra relever avant la fin de cette décennie.

Résumé

En 2000, l'idée d'un nouveau logo pour l'Association canadienne des infirmières et infirmiers et technologues de néphrologie (ACITN/CANNT) nous a propulsés dans le nouveau millénaire. Or, il nous a semblé opportun de poser un regard sur l'évolution de notre organisation. En 2008, nous saisissons les célébrations entourant le 40e anniversaire de l'ACITN/CANNT pour mettre à jour notre histoire. Comme en 2000, la majeure partie des jalons d'histoire ont été puisées à même les mots des présidents et des rédacteurs en chef de l'ACITN/CANNT. Nous désirons ici souligner la loyauté et le dévouement remarquables de ces personnes.

L'ACITN/CANNT est passée d'une organisation axée sur l'hémodialyse dans les années 1970 à une organisation qui englobe maintenant tous les secteurs de la néphrologie : prédialyse, hémodialyse, dialyse péritonéale, greffe et soins palliatifs. Des occasions d'éducation et des partenariats avec d'autres organismes professionnels ont contribué à faire de l'ACITN/CANNT une association professionnelle offrant de nombreux avantages extraordinaires à ses membres.

Au fil des années, de nombreux changements sur la scène médicale, technologique, sociale et économique ont guidé notre pratique de la néphrologie. Avec le temps, notre Association a également pris son essor pour refléter le climat actuel de la néphrologie. Quoi qu'il en soit, le but de l'ACITN/CANNT n'a pas changé : ***offrir des soins de qualité supérieure aux personnes atteintes de maladie du rein grâce à la diffusion d'information aux professionnels de la santé.***

Dans cet article, nous traçons un tableau chronologique des activités de l'ACITN/CANNT de 1968 à aujourd'hui.

Au cours de mes 30 années d'expérience dans le domaine de la néphrologie, j'ai été témoin de l'évolution de l'ACITN/CANNT. Dernièrement, j'ai eu le loisir de siéger au Conseil d'administration en qualité de secrétaire/trésorière pendant deux années ; par la suite, j'ai accepté un mandat à la présidence de l'ACITN/CANNT. J'ai pris conscience à cette époque du privilège de faire partie d'un groupe si dévoué. À l'aube du nouveau millénaire, j'ai passé en revue tout le chemin que nous avions parcouru et je me suis penchée sur certains défis que nous devions relever (Clarke, 2000). En 2008, alors que nous célébrons le 40e anniversaire de l'ACITN/CANNT, j'aimerais une fois de plus tirer profit de cette occasion pour faire le point sur les faits saillants qui ont marqué son histoire.

Par bonheur, je ramasse tout; ce qui m'a permis de revoir plusieurs anciens bulletins de nouvelles qui remontent aussi loin que 1985 et d'avoir ainsi accès à beaucoup d'information.

Au tout début, il y a eu la Canadian Society of Extracorporeal Circulation Technicians (CANSECT). En 1968, Fran Boutilier, une infirmière en hémodialyse d'Halifax en Nouvelle-Écosse, fut la première présidente de CANSECT. Puisque l'hémodialyse repose sur la circulation extra-corporelle, les spécialistes de la dialyse unirent leur force à celles des perfusionnistes coeur-poumon pour former le regroupement (Beanlands, 1990).

Les années 1970

L'hémodialyse était le traitement de prédilection des patients atteints d'insuffisance rénale au stade ultime (IRSU) et cela depuis environ 1958. Les spécialistes voulaient tous en apprendre le plus possible sur cette technologie.

- 1975—Les perfusionnistes coeur-poumon et les spécialistes de dialyse firent des progrès dans leur spécialité respective et se séparèrent. Notre groupe adopta un nouveau nom, la Canadian Society of Perfusionists (CSP) (Beanlands, 1990).
- 1977—Le nom de l'association devint la Canadian Society of Dialysis Perfusionists (CSDP) afin de mieux correspondre à l'occupation de ses membres.

La décennie est restée axée sur l'hémodialyse. Les infirmières et infirmiers et les technologues de néphrologie continuèrent à apprendre les aptitudes requises pour pratiquer cette spécialité. Toutefois, les greffes du rein et la dialyse péritonéale commencèrent progressivement à devenir des options possibles pour les patients atteints d'IRSU.

Bien qu'on ait pratiqué des greffes du rein sur des jumeaux identiques dès 1954, la greffe du rein n'est devenue un traitement acceptable que vers la fin des années 1960. La prévention du rejet à l'aide de médicaments anti-rejet était alors (et demeure) un obstacle non négligeable (Beanlands, 1990).

La dialyse péritonéale existe depuis 1923. À cette époque, ce traitement était pratiqué en tant que lavage abdominal. En 1959, on a placé le premier cathéter dans l'abdomen et on a pratiqué la première dialyse. En 1975 environ, on utilisait la dialyse péritonéale continue ambulatoire (DPCA) principalement en guise de traitement temporaire à l'intention de patients en attente de traitement d'hémodialyse ou de greffe. En 1977, la DPCA est devenue une forme de traitement réalisable, efficace et rentable par suite des améliorations apportées

à la technique (Beanlands, 1990).

Les années 1980

Les options de traitement d'IRSU prenaient de l'expansion et les rôles du personnel infirmier de néphrologie se diversifiaient au fur et à mesure de l'expérience acquise en dialyse péritonéale et en greffe du rein, ainsi qu'en hémodialyse.

- 1984—L'association adopta le nom de l'Association canadienne des infirmières et infirmiers et des techniciennes et techniciens de néphrologie (ACITN) pour mieux correspondre aux spécialités en évolution. Des programmes de formation pré dialyse s'amorçaient (Gill, 1995).
- 1985—L'Association élabora des liens avec des groupes rattachés à la néphrologie aux États-Unis et en Europe (l'American Nephrology Nurses Association—ANNA et l'European Dialysis and Transplant Nurses Association—EDTNA) et envoya des représentants à leurs symposiums (Peroff, 1985). On compléta les normes de pratique clinique de l'ACITN ainsi qu'un guide d'orientation d'études (Peroff, 1985). On prépara des lignes directrices de symposium (Peroff, 1985). La Dialtec (la revue de l'ACITN de l'époque) était diffusée en même temps que la revue The Renal Family (Peroff, 1985). La bourse Fran Boutilier (Peroff, 1985) qui avait pour but de favoriser les études au niveau du baccalauréat a vu le jour. On a aussi élaboré les buts et les objectifs de l'ACITN.
- 1986—Le bulletin de nouvelles de l'ACITN était devenu une revue et une version traduite en français devint disponible (Larivière,1986).
- 1987—Bruce Pappin devint directeur-rédacteur en chef de la revue de l'ACITN (Larivière, 1987). À l'époque, on envoya un questionnaire aux techniciennes et aux techniciens qui portait sur l'évolution de la portée de la pratique. Les résultats indiquaient que les répondants trouvaient que le titre technologue correspondait mieux à la pratique (Calvin, 1987).
- 1988—L'Association des infirmières et des infirmiers du Canada (AIIC) commença l'homologation des groupes spécialisés et l'ACITN devint membre associé de l'AIIC. Des rencontres commencèrent avec les membres des associations rattachées à la néphrologie et une relation intégrée commença à voir le jour. L'ACITN est représentée sur le conseil des professions paramédicales de la Fondation canadienne du rein (Larivière, 1988). On élabora la version définitive des normes techniques (Burns, 1989).

Les efforts de la décennie étaient axés sur les activités de l'ACITN visant à faire de celle-ci une organisation professionnelle. Des partenariats et des liens avec d'autres groupes comportant des intérêts similaires ont donné aux membres des occasions de collaborer avec d'autres afin de former, d'informer et de s'intéresser à des buts communs. La participation de l'AIIC dans le but d'instaurer des examens écrits d'homologation est demeurée l'une des grandes priorités.

Les années 1990

La technologie de l'hémodialyse était en expansion. Des dialyseurs à perméabilité et à efficacité élevées, des pompes à sang double et le bicarbonate liquide apportèrent des améliorations à la dialyse, et la cinétique uréique aida à déterminer l'efficacité du traitement de dialyse (Larivière, 1988). Le nombre des patients était à la hausse alors que les ressources étaient à la baisse. Des thérapies dispendieuses, telles l'erythropoietine, sont apparues dans le but de maîtriser l'anémie et d'améliorer la qualité de vie. On s'attendait à ce que les spécialistes obtiennent plus de résultats avec moins de ressources (Beanlands, 1990).

- 1990—La revue de l'Association se voyait inscrite dans le Cumulative Index to Nursing and Allied Health Literature (CINAHL) (Brownrigg, 1991).
- 1991—La première firme de gestion a été embauchée, Harold Taylor Enterprises, afin de s'occuper des affaires de l'ACITN, telles la planification d'un budget, la négociation de taux aux fins de symposiums, la promotion de l'adhésion et afin de fournir une adresse et un numéro de téléphone stable pour les membres. (Watson, 1991). La revue a formé un comité d'examen d'articles (MacNeil, 1991). Une bourse technique a fait son apparition (MacNeil, 1991). Pour la première fois, on a remis des prix aux documents présentés à l'occasion de symposiums nationaux (MacNeil, 1991).
- 1993—L'Association des infirmières et des infirmiers du Canada offrait son premier examen d'accréditation en soins infirmiers de néphrologie. Quatre-vingt dix-sept candidats passèrent l'examen et six furent reçu par exemption (Joyce, 1993) Depuis 1985 où un examen oral et écrit facultatif était offert, il n'y avait plus d'examens en néphrologie (MacNeil,1990). L'examen d'accréditation en néphrologie offrait aux membres des services infirmiers l'occasion d'évaluer leurs connaissances dans le domaine choisi. Le premier atelier international eut lieu à Halifax en Nouvelle-Écosse (Dekker, 1993). Les activités de relations gouvernementales des représentants de l'ACITN sur des questions de soins de santé se mettaient en place dans divers endroits au pays (Joyce, 1993). À tire d'exemple, citons l'Ontario Working Group on Renal Services.
- 1994—Un représentant de l'ACITN a pris part au World Council of Renal Care (WCRC) (Brownrigg, 1994).
- 1996—L'ACITN adopta le nom d'Association canadienne des infirmières et infirmiers et des technologues de néphrologie pour se conformer aux rôles croissants des techniciens et des technologues dans leur domaine de pratique. On a encouragé des travailleurs sociaux et des diététistes à participer aux conférences nationales de l'ACITN (Evans, 1996). Ortho Biotech a accepté de consacrer cinq ans à élaborer un programme national de formation (Evans, 1996). Deux prix de publication ont été offerts afin d'encourager les membres à publier des articles (Dekker, 1996).
- 1997—Des groupes d'intérêts spéciaux étaient en voie d'élaboration (Amos, 1997). La revue de l'Association comportait pour la première fois deux éditeurs (Dekker, 1997). L'AIIC acceptait la revue de l'ACITN dans le but d'octroyer des crédits pour études continues (Turpin, 1997). On a élaboré un plan stratégique pour desservir l'ACITN (Price, 1998). On a innové des prix d'excellence concernant la pratique de la profession (Price, 1998).
- 1998—Le World Council of Renal Care (WCRC) encourageait CANNT à participer à des projets de développement international (Starzomski, 1998).
- 1999—L'International Nursing Index a reconnu la revue qui a également été inscrite sur MEDLINE (Brunier, 1999). Le Nephrology Nursing Certification Exam Prep Guide, commandité par Janssen-Ortho et élaboré par l'AIIC en collaboration avec l'ACITN, a été préparé dans le but d'aider aux fins des examens d'accréditation (Amos, 1999). Notre administrateur actuel de l'ACITN, Debbie Maure, a été

embauchée pour travailler au bureau national de l'association qui est présentement situé à Barrie, en Ontario (Clark,1999).

La décennie était axée sur l'éducation. L'accréditation étant devenue une réalité, les infirmières eurent à surmonter le défi continu d'acquérir les crédits de formation continue nécessaires pour être admissibles au renouvellement de l'accréditation. Les articles sur la formation de la revue, les clubs de repas communautaires et les symposiums ont été les moyens les plus économiques utilisés pour acquérir les crédits nécessaires. La participation à des symposiums nationaux demeure d'une valeur inestimable pour les membres.

2000

L'ACITN/CANNT a fait preuve d'une croissance et d'une prospérité continues au cours de la dernière décennie. Je suis fière de faire partie de cet organisme professionnel qui a tant à offrir à ses membres.

Le point de mire de la dernière décennie a porté sur la communication.

- 2000—Amos (2000) a mis en lumière les activités à venir de l'ACITN/CANNT. Comme de plus en plus de membres de l'ACITN/CANNT travaillent pour de grandes corporations, le potentiel de représentation au Conseil d'administration par ces membres est devenu une réalité. Nous avons également abordé des questions portant sur les conflits d'intérêts. Le site Web de l'ACITN/CANNT a été mis sur pied avec la contribution de Scott Reid, notre webmestre (MacLeod, 2003). Des groupes d'intérêts particuliers ont tenu des tables rondes lors du congrès annuel pour permettre aux membres de se rencontrer et de discuter des enjeux communs associés à leurs pratiques (Amos, 2000).
- 2001—Gillian Brunier est passée d'un rôle de corédactrice à celui de rédactrice en chef du Journal de l'ACITN/CANNT ; un Comité de rédaction est maintenant nommé pour l'assister dans la préparation du Journal (Brunier, 2001).
- 2002—L'International Society of Peritoneal Dialysis (ISPD) a remis une subvention à l'éducation à l'intention des membres de l'ACITN/CANNT. Il a été convenu que quatre bourses d'études seraient remises aux membres pour appuyer le financement de l'examen d'agrément en néphrologie des infirmières auxiliaires autorisées (IAA). Les normes en matière de soins infirmiers ont fait l'objet d'une révision (Boughen, 2002).
- 2003—Les technologues ont conçu le premier examen d'agrément en technologie de la néphrologie à Vancouver (Gajaria, 2003). Des ateliers de formation sur le leadership ont eu lieu en marge du congrès de 2003 (Dunn, 2004). Le syndrome respiratoire aigu sévère (SRAS) a eu d'importantes répercussions chez bon nombre d'infirmières et infirmiers de néphrologie, notamment dans les centres hospitaliers de l'Ontario (Ballantine, 2003).
- 2004—Nous avons recruté des agents de liaison dans les unités de dialyse pour promouvoir l'ACITN/CANNT et encourager les infirmières, les infirmiers et les technologues à devenir membres. Nous nous sommes fixé comme objectif de recruter un agent de liaison dans chaque unité de dialyse au Canada. Le site Web a été restructuré avec une vision dirigée, mise de l'avant par notre webmestre. Ortho Biotech a procuré les capitaux nécessaires à cette mise à niveau. Le Journal ACITN/CANNT est maintenant inclus dans la base de données des publications EBSCO. Fresenius Medical Care a remis sur une base régulière des subventions afin d'appuyer les programmes de bourses et de prix de distinction de l'ACITN/CANNT (Dunn, 2004). Heather Reid d'Innovative Conferences & Communications a signé un contrat d'une durée de trois ans à titre de planificatrice d'événements pour la tenue des congrès annuels (Saumure, 2006).
- 2005—Le synopsis du plan stratégique de l'ACITN/CANNT a été affiché sur le site Web afin que l'ensemble des membres puisse être au courant de la direction de nos activités professionnelles. La Boutique de l'ACITN/CANNT a été créée afin de permettre aux membres de commander des articles en ligne (Saumure, 2005). Debbie Maure, du bureau de la permanence de l'ACITN/CANNT, a commencé à envoyer de façon périodique des courriels aux membres pour les informer sur la tenue d'activités et de leurs calendriers (Maure, 2006).
- 2006—Un premier supplément au Journal, portant sur les Recommandations du Réseau des éducateurs cliniques (Clinical Educators Network) pour la prise en charge de l'accès vasculaire chez les patients hémodialysés, a été inséré dans l'envoi postal du Journal ACITN/CANNT (Brunier, 2006). Le site Web de l'ACITN/CANNT a fait la promotion de l'inauguration de la première Journée mondiale du rein en mars (Pritchard, 2006). Les normes techniques ont

Quatre présidentes au 30e Congrès de l'ACITN à London (Ontario) en 1998 : Valerie Price, présidente de l'ACITN, Frances Boutilier, première présidente de l'ACITN, Patricia Weiskittel, présidente élue de l'ANNA et Julie Hartley-Jones, présidente sortante de l'EDTNA/ERCA.

fait l'objet d'une révision (Clark, 2006).

- 2007—Des groupes de pratiques cliniques spécialisés ont été formés. Le Réseau des éducateurs en néphrologie (Renal Educators Network) s'est joint à l'ACITN/CANNT pour accroître son effectif. Les coordonnateurs de l'accès à l'hémodialyse au Canada (Canadian Hemodialysis Access Coordinators [CHAC]) représentent un groupe indépendant qui est affilié à l'ACITN/CANNT. D'autres partenariats stratégiques sont prévus (Harwood, 2008). La première Journée des professionnels des soins de la santé en néphrologie a eu lieu le 19 septembre (Harwood, 2007).
- 2008—Marsha Wood coordonne la révision des normes de pratiques cliniques. Un processus de planification stratégique est mis en place et le nouveau plan d'affaires devrait être présenté à l'automne. Un Guide d'études révisé à l'intention des IAA sera offert aux membres un peu plus tard cette année. L'ACITN/CANNT célèbre son 40e anniversaire de fondation à Québec, en octobre (Harwood, 2008).

En conclusion

Notre effectif est passé de 483 membres en 2000 à plus de 1000 en 2008 (renseignements obtenus par Debbie Maure, juillet 2008). Depuis 2003, nous accueillons généralement de 650 à 700 participants à nos congrès annuels. Avec un effectif sans cesse croissant et une participation de plus en plus importante à nos congrès, la communication a pris beaucoup d'envergure et les prix de distinction de l'ACITN/CANNT sont maintenant partagés avec un nombre encore plus grand de collègues de la néphrologie. Comme nous approchons la fin de cette décennie et attendons avec impatience la prochaine, soyons fiers de célébrer le succès de l'ACITN/CANNT et de ses membres. Prenons part à l'évolution !

À propos de l'auteure

Faye Clark, inf., B.Sc.inf., CNéph(C) est infirmière clinicienne de néphrologie aux Unités de dialyse de l'Hôpital régional Saint

References

Amos, A. (1997). Message from the president. **CANNT Journal,** 7(3), 4.

Amos, A. (1999). Message from the president. **CANNT Journal, 9**(4), 4.

Amos, A. (2000). Message from the president. **CANNT Journal, 10**(2), 4.

Amos, A. (2000). Annual President's Report. **Annual Report 1999–2000.**

Ballantine, L. (2003). Message from the president. **CANNT Journal, 13**(3), 4.

Beanlands, H. (1990, Winter). President's message. **CANNT Journal,** 4.

Beanlands, H. (1990, Spring). President's message. **CANNT Journal,** 4.

Boughen, C. (2002). Message from the president. **CANNT Journal, 12**(3), 4.

Brownrigg, R. (1991). Editorial. **CANNT Journal, 1**(1), 4.

Brownrigg, R. (1994). Message from the president. **CANNT Journal**, **4**(2), 4.

Brunier, G. (1999). Letter from the co-editor: Gillian Brunier. **CANNT Journal, 9**(4), 4.

Brunier, G. (2001). Letter from the editor: Gillian Brunier. **CANNT Journal, 11**(1), 6.

Brunier, G. (2006). Journal Editor-In-Chief 2005–2006. **Annual Report 2005–2006.**

Burns, R. (1989, Winter). An open letter to the membership. **CANNT Journal,** 14.

Calvin, B. (1987, Summer). Progress report from the CANNT standards April 1987. **CANNT Journal,** 9.

Canadian Nurses Association. (2000, Spring/Summer). **Certification News: Certification—2000 Exam Results**. [Online]. Retrieved from http//www.cna-nurses.ca

Clark, F. (1999). Highlights from the annual general meeting. **CANNT Journal, 9**(4), 10.

Clark, F. (2000). The evolution of CANNT. **CANNT Journal, 10**(4), 22–26.

Clark, F. (2006). President's Report 2005–2006. **Annual Report 2005–2006.**

Dekker, L. (1993). Message from the editor. **CANNT Journal, 3**(2), 4.

Dekker, L. (1996). Editor's message. **CANNT Journal, 6**(1), 4.

Dekker, L. (1997). Editor's message—reflections of a retiring editor. **CANNT Journal,** 7(2), 6.

Dunn, P. (2003). Message from the president. **CANNT Journal, 13**(4), 4.

Dunn, P. (2004). 2003–2004 CANNT Annual Report. **Annual Report 2003–2004.**

Evans, D. (1996). Message from the president. **CANNT Journal, 6**(1), 4.

Gajaria, M. (2003). Technical Report for 2002–2003. **Annual Report 2002–2003**.

Gaudet, D. (1999). Message from the president. **CANNT Journal, 9**(2), 4.

Gill, R. (1995, Fall). Care and management of the pre-dialysis/pre-transplant population: A decade of change. **CANNT Journal, 5**(4), 18–20.

Harwood, L. (2007). Message from the president. **CANNT Journal, 17**(3), 6.

Harwood, L. (2008). Your Board in Action. **CANNT Journal, 18**(1), 20–21.

Joyce, J. (1993, Spring). Message from the president. **CANNT Journal,** 4.

Larivière, J. (1986). Editorial. **CANNT NEWSLETTER, 10(1),** 2.

Larivière, J. (1987, Summer). Editorial: About prevention. **CANNT Journal,** 4.

Larivière, J. (1988, Winter). Editorial. **CANNT Journal,** 4.

MacLeod, S. (2003). Results of the CANNT website survey—November 2002. C**ANNT Journal, 13**(1), 15.

MacNeil, S. (1991, Spring). President's Message. **CANNT Journal,** 4.

MacNeil, S. (1991, Fall). President's Report 1991. **CANNT Journal,** 4.

Maure, D. (2006). Membership Report 2005–2006. **Annual Report 2005–2006.**

Maure, D. (2007). Membership Report 2006–2007. **Annual Report 2006–2007, 30.**

Peroff, N. (1985). President's Message. **Dialtec, 8**(2), 2.

Peroff, N. (1985). President's Message. **Dialtec, 8**(3), 3.

Price, V. (1998). Message from the president. **CANNT Journal, 8**(1), 4.

Pritchard, L. (2006). Website Report 2005–2006. **Annual Report 1999–2000.**

Rogers, J. (1996). Membership Report. **CANNT Journal, 6**(4), 14.

Saumure, C. (2005). President's Report. 2004–2005. **Annual Report 2004–2005, 32.**

Saumure, C. (2006). Your Board in Action. **CANNT Journal, 16**(1), 14.

Starzomski, R. (1998). World Council for Renal Care—How can you be involved. **CANNT Journal, 8**(2), 10.

Turpin, C. (1997). Co-editor's message—Colleen Turpin. **CANNT Journal,** 7(4), 12.

Watson, D. (1991, Spring). Message from the president-elect. **CANNT Journal,** 6(2).

SÉRIE SUR LA FORMATION CONTINUE
QUÉSTIONNAIRE D'ÉVALUATION

Durée de la séance : 2 h

L'évolution de l'ACITN/CANNT— de 1968 à aujourd'hui

By Faye Clark, inf., B.Sc.inf., CNéph(C)

1. La Canadian Society of Extracorporeal Circulation Technicians (CANSECT) était formée de spécialistes de dialyse et de ...
(a) coordonnateurs chargés de greffe
(b) perfusionnistes coeur-poumon
(c) néphrologues
(d) travailleurs sociaux

2. Fran Boutilier, une infirmière en hémodialyse, est devenue la première présidente de CANSECT en
(a) 1968
(b) 1973
(c) 1978
(d) 1982

3. Au cours des années 1970, la thérapie de remplacement à l'intention des patients atteints d'insuffisance rénale au stade ultime (IRSU) était :
(a) la transplantation
(b) la dialyse péritonéale
(c) la dialyse intensive
(d) l'hémodialyse

4. La dialyse péritonéale continue ambulatoire (DPCA) est devenue une option réalisable pour les patients atteints d'IRSU en :
(a) 1968
(b) 1974
(c) 1977
(d) 1982

5. En 1984, la Canadian Society of Dialysis Perfusionists a changé son nom pour devenir l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACTIN) pour faire état de l'évolution du rôle des infirmières de néphrologie qui était devenu :
(a) moins diversifié
(b) plus diversifié
(c) moins normalisé
(d) plus normalisé

6. Le bulletin de nouvelles de CANNT est devenu une revue traduite en français en :
(a) 1980
(b) 1986
(c) 1990
(d) 1996

7. L'auteure du présent article est d'avis, qu'au cours des années 1980, la tendance de l'ACITN était de devenir :
(a) une organisation professionnelle
(b) une organisation d'administrateurs
(c) une organisation de recherche
(d) une organisation de chirurgiens

8. L'Association des infirmières et infirmiers du Canada a offert le premier examen d'accréditation dans le domaine de la néphrologie en :
(a) 1987
(b) 1990
(c) 1993
(d) 1996

9. En 1999, la revue de l'ACITN se voyait inscrite à l'International Nursing Index et apparaissait pour la première fois dans
(a) Psychological Abstracts
(b) Cumulative Index to Nursing and Allied Health Literature
(c) MEDLINE
(d) Abstract International

10. L'auteure du présent article est d'avis que l'intérêt de l'ACITN dans les années 1990 portait sur :
(a) l'éducation
(b) la pratique
(c) le leadership
(d) la recherche

11. Si vous êtes infirmière, infirmier ou technologue de néphrologie, membre de l'ACITN, et que vous perfectionnez votre formation, vous pouvez être admissible à :
(a) un prix de l'ACITN
(b) une bourse de l'ACITN
(c) un examen de l'ACITN
(d) des crédits de l'ACITN

12. À l'heure actuelle, le conseil d'administration fait des recherches sur le domaine de :
(a) la fusion avec l'AIIC
(b) la diminution du nombre de membres de l'ACITN
(c) l'ajout d'articles en espagnol dans sa revue
(d) ses préoccupations concernant les conflits d'intérêts

FORMULAIRE DE RÉPONSE À LA SÉRIE SUR LA FORMATION CONTINUE

É.C. : 2 h éducation continue

L'évolution de l'ACITN/CANNT—de 1968 à aujourd'hui

By Faye Clark, inf., B.Sc.inf., CNéph(C)

Volume 18, Numéro 3

Directives pour compléter le questionnaire :

- Choisir la meilleure réponse et encercler la lettre correspondante sur la grille de réponses ci-après
- Terminer l'évaluation
- Retourner ce formulaire seulement (ou une photocopie) à
  l'ACITN,
  336 Yonge St., Ste. 322,
  Barrie, ON L4N 4C8
- Joindre un chèque ou un mandat poste payable à l'ACITN
- Les tests doivent être envoyés avant le 30 septembre 2008, l'oblitération postale en fait foi.
- Si vous recevez une note de 80 % et plus, un certificat équivalent à 2 heures de formation sera émis par l'ACITN
- Veuillez prévoir de six à huit semaines pour le traitement. Vous pouvez soumettre plus d'un formulaire par enveloppe, mais vous ne recevrez pas nécessairement tous les certificats en même temps.

Membre de l'ACITN B 12 $; autre B 15 $

Grille de réponse

Veuillez encercler votre choix :

1.	a	b	c	d
2.	a	b	c	d
3.	a	b	c	d
4.	a	b	c	d
5.	a	b	c	d
6.	a	b	c	d
7.	a	b	c	d
8.	a	b	c	d
9.	a	b	c	d
10.	a	b	c	d
11.	a	b	c	d
12.	a	b	c	d

Évaluation

	Pas du tout d'accord				Entièrement d'accord
1. La présentation recontrait les objectifs visés.	1	2	3	4	5
2. Le contenu correspondait aux objectifs.	1	2	3	4	5
3. La présentation de l'étude convenait au contenu.	1	2	3	4	5

4. Temps requis en minutes pour lire et remplir le questionnaire :
   50 75 100 125 150

Commentaires: _____

_____

_____

_____

_____

_____

_____

Prière de donner les renseignements suivants :

Nom: _____

Adresse: _____

_____

Membre de l'ACITN ❑ Oui ❑ Non Date d'expiration de la carte _____

CANNT Nephrology Nursing Standards and Practice Recommendations—Revision project

By Marsha Wood, RN, BN, MN, CNeph(C)

In August 2007, I was privileged to accept the position of Project Coordinator for revising the CANNT Nursing Standards of Practice. On a number of occasions, I have been asked what helped to prepare me for this role, and why am I so passionate about the project.

Marsha Wood, CANNT Nursing Standards project leader.

Like many nephrology nurses in Canada, I have the great fortune of a lengthy and varied career in nephrology nursing, which began in 1982. The practice areas and opportunities in nephrology nursing are quite diverse, but very intricately connected to provide expert nursing care across a complex chronic illness continuum. Over my career, I have been afforded opportunities to practise in the areas of transplantation, peritoneal dialysis, hemodialysis, pre-dialysis and the in-patient nephrology service. I have also been fortunate to observe nephrology nursing practice through many lenses in the roles of staff nurse, resource nurse, acting manager, provincial educator and, currently, as a nurse practitioner.

My past experiences as a member of the Canadian Association of Nephrology Nurses and Technologists (CANNT) board of directors and with the Canadian Nurses Association (CNA) nephrology certification exam development fueled my ongoing passion for nephrology nursing. In this arena, I met many nursing role models, scholars and experts that emulate, for me, the high standard of practice we need to promote in order to provide the best care for the patients and families who trust us to do just that. I know and see firsthand the positive impact that nephrology nurses have on the lives of patients and families with whom they work.

Nephrology nursing is a specialized area of nursing practice focusing on the needs of patients with kidney disease and their families, across the lifespan and continuum of kidney disease care. This specialized care requires the nephrology nurse to promote competent, safe, ethical care, and demonstrate current specialty knowledge and practice. Standards help to ensure these values are upheld.

Standards demonstrate to the public, government and other stakeholders that a profession is dedicated to maintaining public trust and upholding the criteria of its professional practice (Canadian Nurses Association, 2007). CANNT, as a professional specialty association, has a societal mandate to establish, maintain, evaluate, and revise standards of practice.

The CANNT board of directors' vision for the standards was not only to incorporate the current standards in the new document, but also to broaden the depth and scope of the document to more clearly articulate the magnitude of nephrology nursing practice in Canada. To this end, the CANNT nursing standards have been developed to be congruent with national and provincial standards, are broad in scope, and allow for institutional and provincial interpretation and variation. They provide a framework for nephrology nursing practice that links professional practice accountabilities, competence, research, leadership and quality. To complement and further delineate the various practice areas in nephrology nursing, practice recommendations have been added. These recommendations address the areas of chronic illness management, conservative management, advance care planning, palliative care, patient education and self-management, blood pressure management, anemia, bone and mineral metabolism, nutrition and diet therapy, diabetes management, cardiovascular risk factor management, chronic kidney disease stages one to four, hemodialysis, peritoneal dialysis, self-managed dialysis, and transplantation.

There are a great number of expert nephrology nurses across Canada who have made substantial contributions to the revised CANNT Nephrology Nursing Standards and Practice Recommendations. It is both a humbling and exhilarating experience to work with the calibre of nurses who constituted the CANNT Standards of Practice Committee, reviewers and contributors. Please join me in thanking them all for their diligence, consistency, patience, and expert knowledge. I would also like to acknowledge the important work of previous working groups that have given of their time and experience to lay a foundation for us to continue to build upon.

I look forward to the launch of the revised CANNT Nephrology Nursing Standards and Practice Recommendations at this year's symposium. I consider the new revisions as a part of the journey of moving our practice forward. I hope they provide a foundation and a stimulus for us to challenge our practice. I am confident that the newly

revised CANNT Nephrology Nursing Standards and Practice Recommendations will continue to transform with each revision and reflect the professional growth of nephrology nursing in Canada.

References

Canadian Nurses Association. (2007). **Standards and best practices**. Retrieved September 14, 2007, from http://www.cna-aiic.ca/CNA/practice/standards/default_e.aspx

About the author

Marsha Wood, RN, BN, MN, CNeph(C), is a Specialty Nurse Practitioner-Nephrology, QEII Health Sciences Centre, Halifax, NS

Marsha's professional volunteer activities related to nephrology include:

***CANNT**—Board Member of CANNT: Member at Large Transplantation 1989–1991; Atlantic Region Vice-President September 1991–1993; Chairperson, Nominations Committee, 1989–1992; Manuscript Reviewer, CANNT Journal, 1999–present; Member Government Relations Committee for CANNT 1993; Chairperson, Program Committee, CANNT National Symposium, International Nephrology Workshop and Canadian Association of Nephrology Social Workers 1993; Chairperson, Conference Planning Committee, CANNT Regional Conference, 1995; Coordinator, CANNT Atlantic Regional Conferences 1989–1993; Chairperson, Program Committee, CANNT National Symposium 1988.*

***Canadian Nurses Association (CNA)**—Competency Assessment, Nephrology Certification Exam, October 2001; Item Writer for Nephrology Nursing Certification Examinations; Appraiser for Nephrology Nursing Certification Examinations; Member, Certification Examination Committee for Nephrology Nursing 1996–2000.*

***Kidney Foundation of Canada**—Chairperson, Nominations Committee Bedford/Sackville Chapter Kidney Foundation, 1995; Chairperson, Patient Liaison Committee, Kidney Foundation of Canada National Annual Business Meeting 1994; Vice-President, Kidney Foundation of Nova Scotia, Bedford/Sackville Chapter, 1991–1995.*

CANNT–CNA Collaboration

By Lori Harwood, RN, MSc, CNeph(C), CANNT Past-President

This year, the Canadian Nurses Association (CNA) is celebrating the accomplishment of their 100th year anniversary. The CNA biennium conference was held in Ottawa this June with the theme "Be The Change", and I attended on behalf of CANNT. An Associate, Affiliate and Emerging (AAE) group meeting was held prior to the biennium conference. Karen Neufeld, CNA President, recognizing CANNT's involvement with CNA during their 100th anniversary year, presented us with a certificate.

Many CANNT members may not be aware of the collaboration between CNA and CANNT. CANNT is an Associate group of CNA. A total of 40 AAE groups represent 40,000 of the total 133,700 nurse members of CNA. Examples of other associate groups include Canadian Association of Nursing Research and Canadian Association of Critical Care Nurses. An example of an Affiliate group is the Canadian Nursing Student Association. Examples of emerging groups include Canadian Family Practice Nurses Association and Forensic Nurses Society of Canada. To be an individual member of CNA, you must be a member of your provincial nursing association such as the Nurses Association of New Brunswick, College of Registered Nurses of British Columbia or the Registered Nurses Association of Ontario (RNAO). In order to be eligible for associate group status >50% of the CANNT members must also be CNA members and a small annual fee is involved. Thus, it is important if you are a member of CNA to indicate so on your CANNT membership form. In some provinces such as Ontario, the legislative body (College of Nurses of Ontario) and the professional body (RNAO) are separate and it is voluntary to be a member of RNAO. One of the benefits of belonging to RNAO is it entitles you to be a member of CNA. On average, 50% to 55% of CANNT members are CNA members.

Historically, it was the desire for nephrology certification that prompted CANNT to explore collaboration with CNA. In response to the CANNT membership in 1987, the board of directors designated nephrology certification a priority and pursued full special interest group status within CNA. At that time, special interest groups within CNA were also members of CNA Advisory Committee. The minutes of a September 1988 report of the certification committee state that the Advisory Council was rapidly becoming a strength with CNA and it is advantageous for special interest groups to have full voting privileges. It would enable CANNT to have lobbying power within CNA and the political backing of CNA for national issues. An Ad Hoc Certification committee consisting of Rosalie Starzomski, Susan MacNeil, Judy Cameron, Linda Panther, Heather Beanlands, Diane Watson and Marg Hanlon-Bell was given the mandate to work on this task. CNA had specific requirements for certification such as: established standards, a role description developed by practitioners, the human and financial resource to support certification, unique knowledge with nursing outcome, core knowledge of nursing practice, care for a defined population, addresses recurrent phenomena in practice and contains technology and/or techniques specific to practice.

CANNT submitted a proposal in April 1989, which addressed how CANNT met these criteria and requested that consideration be given for certification. CANNT joined CNA in 1987 and obtained certification status in 1993.

The collaboration with CNA is important for CANNT to facilitate involvement in issues affecting nursing and the health of Canadians. This relationship has evolved over the years. A large component of the collaboration remains to be in regards to supporting nephrology nursing certification. It is the role of the CANNT past-president to be the link between CNA activities, the CANNT board of directors and CANNT members.

Communication with CNA and the AAE group is active with weekly email updates and conference calls as needed. The AAEs are often asked for feedback on draft CNA position statements, policy and other documents. The AAE group continues to have voting representation within CNA, as the AAEs have two members on the CNA board of directors. These board members are elected from the AAEs representing the concerns and issues of the AAE group. Benefits to the AAE group include CNA certification programs, a network of other national nursing organizations and representation on the CNA board of directors.

There is tremendous potential for the future of this group. At the meeting in June, we articulated and agreed upon the need for a strategic plan, goals and objectives and increased involvement in CNA activities. As the AAE group becomes more active, there will be a need for improved and timely communication of this information to the CANNT members. There will be many future opportunities for CANNT to become more active in broad issues affecting nursing and health as the AAE group evolves and operationalizes the goals and objectives of the group.

About the author

Lori Harwood, RN, MSc, CNeph(C), is an Advanced Practice Nurse, Nephrology at London Health Sciences Centre, London, ON.

Lori's volunteer activities related to nephrology include:
***CANNT**—member since 1991; CANNT Board of Directors: Ontario Regional Vice-President 2002–2004, President Elect 2005–2006, President 2006–2007, Past-President 2007–2008; CANNT Annual symposium planning committee member 2006, London, Ontario; CANNT Annual symposium planning committee member 2008, Quebec City, Quebec; Manuscript Reviewer Ad hoc, CANNT Journal; 2005 CANNT Research Grant recipient; presented at CANNT National conferences; published in the CANNT Journal*

***Canadian Nurses Association (CNA)**—Certification in Nephrology Nursing Canada, CNeph(C) since 1997; Nephrology Certification Exam Item Writer, May 2005; Nephrology Nursing Certification Examination Committee 2007–2013.*

On the left, Lori Harwood, CANNT Past President, with Karen Neufeld, CNA President-Elect, at the CNA biennium conference, Ottawa, June 2008.

Interview with Robert Holota—Dialysis patient for the past 41 years

By Patty Quinan, RN, MN, CNeph(C)

Bob Holota started on dialysis in 1967 at the age of 19. This year (2008), Bob celebrated his 60th birthday in March and 41 years on dialysis in August. Bob has a left radiocephalic fistula created in 1972 and he has only had one intervention on the fistula in 36 years. He is on conventional hemodialysis (three-times per week).

What was dialysis like 40 years ago?

"Dialysis back then was like a family. You saw the doctors more and had more opportunity to talk with them and the nurses. I would say that dialysis has changed in two ways. It was more egalitarian, more democratic back then. For example, in the old days, they would not offer dialysis to a 90-year-old person. Dialysis is definitely more accessible now. Also, I feel that the medical system has not been strong enough to demand discipline from patients. The doctor would always stress how lucky you were to be on hemodialysis. For example, today patients are told that they can drink 1 litre of fluid a day. When I started on dialysis, fluid restrictions included only drinking 500 ml a day and I don't think that that was a mistake. Actually, I'm still back there."

"The other difference is changes in technology and biology. Dialysis is more efficient now, so that the treatments are shorter what with ultrafiltration, EPO and '*real norses*' (translation nurses)." *Real norses* is a term that Bob saves for his most favourite nurses.

"You don't realize the repercussions of dialysis on your health at first. With dialysis, people live longer and have a better quality of life. In the beginning, I would drink too much and I would feel it. I have learned my lesson. I found that when I drank more, I would become thirstier. When a patient is at his/her dry weight, they shouldn't feel thirsty. If I drank coke, I would become thirstier, so I would drink milk or water instead. Another piece of advice is not to skip your dialysis treatment. You need to have at least 40 years of dialysis experience before you can skip a treatment (*chuckle*). Seriously, you need to know what you are doing. In the beginning, I would eat canned fruit because of the calories and it fills you up. You need to have knowledge about what you are eating. Information is free. Actually, I am happy to still be around to bitch about it."

What was one of your best or funniest memories from the past?

"I would have to say it was the time when I arrived for dialysis at 11:30 p.m. instead of 5:00 p.m. I was at my graduation party for social services. I had a bit to drink and I was feeling no pain. In those days, I had a shunt and I usually put myself on the machine. On this particular day, the nurse (he still remembered her name) wisely decided to connect me to dialysis. As soon as she connected me to dialysis, I passed out. I remember saying 'Thank you. See you' to the nurse. I didn't receive any sympathy from her that day".

What was your saddest memory?

"When I found out that a young friend on dialysis passed away. He was only 16 years old and I was 20 years old. I was like a big brother to him, he looked up to me. It was then that I realized that this is very serious business. I would crack jokes and make light of things, but these are life-and-death situations."

Why do you think that your fistula has lasted so long?

"I always tell the nurses where to go. You need to keep an eye on your fistula and become engaged in your own care."

What qualities make a good nurse (norse)?

"The best nurses are those who are able to listen to the patient and to read between the lines. The nurse should not be afraid to accept that the patient knows as much about his/her care because the patient is a partner in the process."

Why have you outlived so many other patients?

"I guess it is because I have a purpose in life and I keep on living."

Bob is a truly amazing person. I feel honoured to have known Bob for the past 25 years and I consider him to be a very good friend. Over the years, Bob has deeply touched us all with his kindness and his selflessness. Bob has a timely wit and a remarkable ability to make people laugh. I marvel at how he is able to remember even the most trivial details about those he meets. Bob never complains about his plight but, instead, he gives thanks for all that he has. Bob's qualities of human kindness, humility, laughter, and love are qualities that we all should strive for.

About the author

Patty Quinan (a real norse), RN, MN, CNeph(C), is Clinical Nurse Specialist—Dialysis, Humber River Regional Hospital, Weston, ON.

Patty's professional volunteer activities related to nephrology include: ***CANNT****—Published two papers and one research review in the* ***CANNT Journal****; presented at CANNT Annual Symposia in 2005 and 2006; on the planning committee for the pre-conference workshop on vascular access for CANNT 2008 in Quebec City.*

Canadian Hemodialysis Access Coordinators Group (CHAC)*—Current co-chair for the CHAC.*

ESRD—From infant to adult

By Faye Clark, RN, BN, CNeph(C)

Marilee will be 32 years old in October and has spent her whole life living with kidney disease. Born in Saint John, New Brunswick, at two days old she was found to have a renal vein thrombosis, and by four days old she had had a left nephrectomy and a left ureterectomy. Unfortunately, she went into renal failure and was rushed to the IWK Children's Hospital in Halifax, Nova Scotia, to start dialysis. During a period of sepsis and fungal meningitis, she received multiple antibiotics and became severely hearing impaired.

The next 12 years were spent in and out of the IWK Hospital. She was on peritoneal dialysis at home for three years but, after a bout of peritonitis, she was switched to hemodialysis. Vascular access has always been a challenge and she has had many surgeries for fistulas, grafts in her right upper arm and left thigh and several subclavian and jugular central venous catheters.

Marilee received two kidney transplants, one cadaver and one from her mother, Rose. Unfortunately, neither kidney lasted very long.

New Brunswick didn't have a pediatric hemodialysis unit, so Marilee spent three years as an inpatient at the IWK Hospital from age 9 to 12. Since Halifax is four hours away, this meant life was tough for the whole family. Rose had two more children at home in Saint John, so spent her time trying to be a parent in both places while Marilee's father continued to work.

Although the staff at the IWK was Marilee's extended family, everyone realized that this was no life for a young girl. Therefore, staff from the Saint John Hemodialysis Unit spent time in Halifax learning all they could about Marilee and her dialysis so she could return home to Saint John to be with her family and receive her treatments in the adult unit.

To try and avoid the culture shock that a move like this would have on Marilee, the pediatric program in Saint John was consulted and a structured child life program was established. Marilee came to the unit three times a week to a private room with a child life worker assigned to be with her each day. Tutoring and play therapy were part of the routine and the success of this program allowed Marilee to transition from the IWK environment to an adult unit and be able to be home with her family. Marilee also had her own private dialysis nurse with her during each treatment and they often shared sour cream and onion chips together as her special treat.

That was 20 years ago, and Marilee still comes for dialysis three times a week. There have been many challenges along the way. She still lives with her mom, Rose, who brings her back and forth to dialysis and they spend a great deal of time together. Marilee struggled with the death of her father a couple of years ago and has had many medical issues to contend with, but she has a contagious smile and a little chuckle that warms the hearts of all who know her. Sometimes tea parties in the unit help to chase away the blues.

Marilee loves a good time and often attends various functions the Kidney Foundation holds. You can find her at their bowlathon, summer picnic or Christmas party and she likes to volunteer at the Kidney Foundation office when she can.

Life on dialysis…Not easy for sure, but Marilee and Rose continue to persevere and make the best of each day.

Marilee and Faye at the Saint John Chapter Kidney Foundation Bowlathon 2006.

About the author

Faye Clark, RN, BN, CNeph(C), is Nephrology Nurse Clinician, Saint John Regional Hospital, Saint John NB. Faye has worked in nephrology for 31 years.

Faye's professional volunteer activities related to nephrology include:

***CANNT**—CANNT board for seven years as Secretary/Treasurer, Atlantic VP and President.*

***Kidney Foundation of Canada**—Kidney Foundation of Canada board for many years, both locally at the Saint John Chapter and provincially on the New Brunswick Branch, and is currently Branch President.*

Guidelines for authors

The **CANNT Journal** invites letters to the editor and original manuscripts for publication in its quarterly journal. We are pleased to accept submissions in either official language—English or French.

Which topics are appropriate for letters to the editor?

We welcome letters to the editor concerning recently published manuscripts, association activities, or other matters you think may be of interest to the CANNT membership.

What types of manuscripts are suitable for publication?

We prefer manuscripts that present new clinical information or address issues of special interest to nephrology nurses and technologists. In particular, we are looking for:

- original research papers
- relevant clinical articles
- innovative quality improvement reports
- narratives that describe the nursing experience
- interdisciplinary practice questions and answers
- reviews of current articles, books and videotapes
- continuing education articles.

How should the manuscript be prepared?

Form: The manuscript should be typed, double-spaced, single-sided on 8.5 x 11 inch white paper. One-inch margins should be used throughout, and the pages should be numbered consecutively in the upper right-hand corner. More formal research or clinical articles should be between five and 15 pages. Less formal narratives, question and answer columns, or reviews should be fewer than five pages.

Style: The style of the manuscript should be based on the **Publication Manual of the American Psychological Association** (**APA**), Fifth Edition (2001), available from most college bookstores.

Title page: The title page should contain the manuscript title, each author's name (including full first name), professional qualifications [i.e. RN, BScN, CNeph(C)], position, place of employment, address, telephone and fax numbers, and e-mail address. The preferred address for correspondence should be indicated.

Abstract: On a separate page, formal research or clinical articles should have an abstract of 100 to 150 words. The abstract should summarize the main points in the manuscript.

Text: Abbreviations should be spelled out the first time they are used with the abbreviation following in brackets, for example, the Canadian Association of Nephrology Nurses and Technologists (CANNT). Generic drug names should be used. Measurements are to be in Standards International (SI) units. References should be cited in the text using APA format. A reference list containing the full citation of all references used in the manuscript must follow the text.

Tables/Figures: Manuscripts should only include those tables or figures that serve to clarify details. Authors using previously published tables and figures must include written permission from the original publisher. Such permission must be attached to the submitted manuscript.

How should the manuscript be submitted?

Please forward three copies of your manuscript to: The Editor, CANNT National Office, 336 Yonge St., Ste. 322, Barrie, ON, L4N 4C8. You should retain a personal copy of the manuscript.

How are manuscripts selected for the CANNT Journal?

Each manuscript will be acknowledged following receipt. Research and clinical articles are sent out to two members of the **CANNT Journal** review panel to be reviewed in a double-blind review process. All manuscripts may be returned for revision and resubmission. Those manuscripts accepted for publication are subject to copy editing; however, the author will have an opportunity to approve editorial changes to the manuscript. The criteria for acceptance for all articles include originality of ideas, timeliness of the topic, quality of the material, and appeal to the readership.

Authors should note that manuscripts will be considered for publication on the condition that they are submitted solely to the **CANNT Journal**. Upon acceptance of submitted material, the author(s) transfer copyright ownership to the **CANNT Journal**. Material may not be reproduced without written permission of the **CANNT Journal**. Statements and opinions contained within the work remain the responsibility of the author(s). The editor reserves the right to accept or reject manuscripts.

Checklist for authors

√ Cover letter

√ Three copies of the manuscript

- Title page to include the following:
  - title of article
  - each author's name (including full first name)
  - professional qualifications
  - position
  - place of employment
  - author to whom correspondence is to be sent, including address, phone and fax number, and e-mail address
- Text of article, with abstract if applicable, **double-spaced, pages numbered**
- References (on a separate sheet)
- Tables (one per page)
- Illustrations (one per page)
- Letters of permission to reproduce previously published material.

Please send all submissions, questions or comments to:

Gillian Brunier, Editor, CANNT Journal
Fax: (416) 495-0513

e-mail: gillianbrunier@sympatico.ca

Pr Renagel® Tablets

(sevelamer hydrochloride)

800 mg tablets

INDICATIONS AND CLINICAL USE

RENAGEL (sevelamer hydrochloride) is indicated for: the control of hyperphosphatemia in patients with end-stage renal disease (ESRD) undergoing dialysis.

CONTRAINDICATIONS

RENAGEL (sevelamer hydrochloride) is contraindicated in the following situations:

- patients with hypophosphatemia
- patients with bowel obstruction
- patients hypersensitive to sevelamer hydrochloride or one of the other ingredients in the product (colloidal silicon dioxide, stearic acid).

WARNINGS AND PRECAUTIONS

General

RENAGEL (sevelamer hydrochloride) tablets should be swallowed intact and should not be crushed, chewed, or broken into pieces.

Patients with renal insufficiency may develop hypocalcemia. As RENAGEL does not contain calcium, serum calcium levels should be monitored and elemental calcium should be supplemented whenever considered necessary. In cases of hypocalcemia, patients should be given an evening calcium supplement. Approximately 1000 mg elemental calcium is recommended.

Caution should be exercised to avoid hypophosphatemia, a serum phosphorus of < 0.8 mmol/L (see DOSAGE AND ADMINISTRATION).

The safety and efficacy of RENAGEL in patients with renal disease who are not undergoing dialysis has not been studied.

Gastrointestinal

The safety and efficacy of RENAGEL in patients with dysphagia, swallowing disorders, severe gastrointestinal (GI) motility disorders, or major GI tract surgery have not been established. Caution should be exercised when RENAGEL is used in patients with these GI disorders.

Special Populations

Pregnant Women: The safety of RENAGEL has not been established in pregnant women. In preclinical studies, there was no evidence that RENAGEL induced embryolethality, fetotoxicity or teratogenicity at the doses tested (up to 1 g/kg/day in rabbits; up to 4.5 g/kg/day in rats). RENAGEL should only be given to pregnant women if the benefits outweigh the risks.

Nursing Women: There have been no adequate, well-controlled studies in lactating, or nursing women.

Pediatrics: The safety and efficacy of RENAGEL has not been established in pediatric patients. The minimum age of patients treated with RENAGEL in clinical trials was 18 years old.

Geriatrics: No special considerations are needed for elderly patients.

Monitoring and Laboratory Tests

Serum phosphorus and serum calcium should be monitored every 1 to 3 weeks until the target phosphorus level is reached. The dose of RENAGEL should be adjusted based on serum phosphorus concentration and titrated
to a target serum phosphorus of ≤ 1.8 mmol/L.

RENAGEL does not contain calcium or alkali supplementation; serum calcium, bicarbonate, and chloride levels should be monitored.

ADVERSE REACTIONS

Clinical Trial Adverse Drug Reactions

Because clinical trials are conducted under very specific conditions the adverse reaction rates observed in the clinical trials may not reflect the rates observed in practice and should not be compared to the rates in the clinical trials of another drug. Adverse drug reaction information from clinical trials is useful for identifying drug-related adverse events and for approximating rates.

In a combined safety database comprised of 483 patients with end-stage renal disease undergoing hemodialysis, adverse events reported at an incidence ≥10% are provided in Table 1. From this database, adverse events are also presented separately from a single long-term randomized clinical study for RENAGEL and calcium. The adverse events presented in the table below are not necessarily attributed to RENAGEL treatment. The incidence of these events was not dose related.

Table 1: Adverse Events in Patients with End-Stage Renal Disease undergoing Hemodialysis

	Total AEs reported.	52 weeks Study of RENAGEL vs. calcium (calcium acetate and calcium carbonate)	
System Organ Class Event	**RENAGEL** **N = 483** %	**RENAGEL** **N = 99** %	**calcium** **N = 101** %
Gastrointestinal Disorders			
Vomiting	24.4	22.2	21.8
Nausea	25.3	20.2	19.8
Diarrhea	21.1	19.2	22.8
Dyspepsia	15.7	16.2	6.9
Constipation	13.3	8.1	11.9
Infections and Infestations			
Nasopharyngitis	13.9	14.1	7.9
Bronchitis	5.4	11.1	12.9
Upper Respiratory Tract Infection	7.0	5.1	10.9
Musculoskeletal, Connective Tissue and Bone Disorders			
Pain in Limb	13.7	13.1	14.9
Arthralgia	11.4	12.1	17.8
Back Pain	6.0	4.0	17.8
Skin Disorders			
Pruritus	10.4	13.1	9.9
Respiratory, Thoracic and Mediastinal Disorders			
Dyspnea	15.7	10.1	16.8
Cough	11.6	7.1	12.9
Vascular Disorders			
Hypertension	9.3	10.1	5.9
Nervous System Disorders			
Headache	18.4	9.1	15.8
General Disorders and Site Administration Disorders			
Dialysis Access Complication	4.3	6.1	10.9
Pyrexia	8.7	5.1	10.9

In one hundred and forty three patients with end-stage renal disease undergoing peritoneal dialysis with treatment duration of 12 weeks, adverse events reported at an incidence ≥10% are provided in Table 2 below. The adverse events presented in the table below are not necessarily attributed to RENAGEL treatment. The incidence of these events was not dose related.

Table 2: Adverse Events in Patients with End-Stage Renal Disease Undergoing Peritoneal Dialysis

System Organ Class Event	**RENAGEL** **(N=97)** %	**calcium** **(N=46)** %
Gastrointestinal disorders		
Dyspepsia	17.5	8.7
Vomiting	11.3	4.3
Peritonitis	11.3	4.3

The most frequently occurring serious adverse event with RENAGEL use was peritonitis at 8.2%, compared to 4.3 % with calcium. Patients receiving dialysis are subject to certain risks for infection specific to the dialysis modality. Peritonitis is a known complication in patients receiving peritoneal dialysis (PD). Therefore, patients on PD should be closely monitored to ensure the reliable use of appropriate aseptic technique with the prompt recognition and management of any signs and symptoms associated with peritonitis.

Less common clinical trial adverse events

The following adverse events have been observed with RENAGEL use with an incidence of <10%, but greater than calcium and without attribution to causality, including: abdominal distension, constipation, diarrhea, nausea, chest pain, fatigue, pyrexia, catheter site infection, anorexia, headache, cough and pruritis.

Some patients experienced adverse events related to hypercalcemia in the calcium group but not in the RENAGEL group.

Post-Market Adverse Drug Reactions

During post-marketing experience with RENAGEL, the following have been reported without attribution to causality: pruritis, rash, and abdominal pain.

OVERDOSAGE

Since RENAGEL (sevelamer hydrochloride) is not absorbed, the risk of systemic toxicity is minimal. RENAGEL has been given to healthy volunteers at doses up to 14 grams per day for 8 days with no adverse effects. The maximum average daily dose of RENAGEL that has been given to hemodialysis patients is 13 grams.

DOSAGE AND ADMINISTRATION

Dosing Considerations

- The tablets should not be bitten, chewed or broken apart prior to dosing.
- RENAGEL (sevelamer hydrochloride) should be taken immediately prior to or with meals, since its action is to bind ingested phosphate (see ACTION AND CLINICAL PHARMACOLOGY, Mechanism of Action)
- When administering any other medication where a reduction in the bioavailability of that medication would have a clinically significant effect on safety or efficacy, the physician should consider monitoring blood levels or dosing that medicine apart from RENAGEL to prevent GI binding (at least one hour before or three hours after RENAGEL).

Recommended Dose and Dosage Adjustment

The recommended dosing to be used when initiating RENAGEL in patients not using another phosphate binder are outlined below:

When switching from calcium-based phosphate binders to RENAGEL,

Starting Dose	
Initial Serum Phosphorus	**RENAGEL Tablets 800mg**
> 1.8 and < 2.4 mmol/L	3 tablets per day (2.4 grams)
≥ 2.4 mmol/L	6 tablets per day (4.8 grams)

an equivalent starting dose on a mg/weight basis of RENAGEL should be prescribed. Dosage adjustments, when necessary should be recommended every 1 to 3 weeks by increasing one tablet per meal (3 per day) until the target serum phosphorus levels are met.

The total daily dose should be divided according to meal portions during the day.

Average Maintenance Dose: Dosage should be adjusted based upon the target serum phosphorus levels. The dose may be increased or decreased by one tablet per meal at two week intervals as necessary. The average final dose in the chronic phase of a 52 week Phase 3 clinical trial designed to lower serum phosphorous to 1.6 mmol/L or less was approximately 7.1 grams, (approximately nine 800 mg tablets per day equivalent to three 800 mg tablets per meal). The maximum average daily RENAGEL dose studied was 13 grams.

Missed Dose

- If a dose is forgotten, it should be skipped. Double dosing is not advisable.

DOSAGE FORMS, COMPOSITION AND PACKAGING

RENAGEL (sevelamer hydrochloride) tablets are film-coated compressed tablets containing 800 mg of sevelamer hydrochloride. RENAGEL contains the following excipients: colloidal silicon dioxide and stearic acid. The RENAGEL tablet coating contains hypromellose and diacetylated monoglyceride. The printing ink contains iron oxide black (E172), propylene glycol, isopropyl alcohol and hypromellose (hydroxypropyl methylcellulose).

RENAGEL 800 mg Tablets are supplied as oval, film-coated tablets, imprinted with "RENAGEL 800," on the crown, single side.

RENAGEL 800 mg Tablets are available in bottles of 180 tablets.

STORAGE AND STABILITY

Store at controlled room temperature 15°C to 30°C. Protect from moisture.

Product monograph available on request.

genzyme CANADA INC

Genzyme Canada Inc.
800 – 2700 Matheson Blvd. East
West Tower
Mississauga, Ontario L4W 4V9 CANADA
www.genzyme.ca
Tel. 1-877-220-8918

Venofer® Iron Sucrose Injection, USP
20 mg elemental iron/mL

DIN 02243716

Prescribing Summary

Patient Selection Criteria

THERAPEUTIC CLASSIFICATION: Hematinic

INDICATIONS AND CLINICAL USE

VENOFER (Iron Sucrose Injection, USP) is indicated in the treatment of iron deficiency anemia in the following patients:

- non-dialysis dependent-chronic kidney disease (NDD-CKD) patients receiving an erythropoietin
- non-dialysis dependent-chronic kidney disease (NDD-CKD) patients not receiving an erythropoietin
- hemodialysis dependent-chronic kidney disease (HDD-CKD) patients receiving an erythropoietin
- peritoneal dialysis dependent-chronic kidney disease (PDD-CKD) patients receiving an erythropoietin.

Special Populations

Pregnant Women: Teratology studies performed in rats at IV doses up 13 mg iron/kg/day (more than 9 times the maximum recommended human dose for a 70 kg person) and rabbits at IV doses up to 13 mg/iron/kg on alternate days (approximately 9 times the maximum recommended human dose for a 70 kg person) have not revealed definite evidence of impaired fertility. Fetal growth effects at these doses appeared related to low maternal food consumption and low body weight gain. There are, however, no adequate and well controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, VENOFER should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

When iron sucrose was administered at deliberate overdoses to rabbit dams (up to 215 mg/kg/day) marked fetal/placental iron overload was noted. It is unlikely that significant fetal iron overload would occur in iron deficient pregnant women receiving therapeutic doses of VENOFER to correct iron deficiency (see General).

Nursing Women: VENOFER is excreted in the milk of rats. It is not known whether VENOFER is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when VENOFER is administered to nursing women.

Pediatrics: The safety and effectiveness of VENOFER in pediatric patients has not been established. In a country where VENOFER is available for use in children, at a single site, five premature infants (weight less than 1,250 g) developed necrotizing enterocolitis and two of the five expired during or following a period when they received VENOFER, several other medications and erythropoietin. Necrotizing enterocolitis may be a complication of prematurity in very low birth weight infants. No causal relationship to VENOFER or any other drugs could be established.

Geriatrics (> 65 years of age): Clinical studies with VENOFER have not identified differences in unintended responses between elderly and younger patients. Nevertheless, dose selection for an elderly patient should be cautious, usually starting with lower doses, reflecting the greater frequency of decreased hepatic, renal or cardiac function, and of concomitant disease or other drug therapy.

CONTRAINDICATIONS

The use of VENOFER (Iron Sucrose Injection, USP) is contraindicated in patients with evidence of iron overload, patients with known hypersensitivity to VENOFER, and patients with anemia not caused by iron deficiency.

Safety Information

WARNINGS AND PRECAUTIONS

General

Because body iron excretion is limited and excess tissue iron can be hazardous, caution should be exercised in the administration of parenteral iron formulations, and treatment should be withheld when there is evidence of tissue iron overload. Patients receiving VENOFER (Iron Sucrose Injection, USP) require periodic monitoring of hematologic parameters, including hemoglobin, hematocrit, serum ferritin and transferrin saturation. Generally accepted guidelines recommend withholding administration of intravenous iron formulations from patients demonstrating a transferrin saturation > 50% or a serum ferritin > 800 ng/mL (see **DOSAGE AND ADMINISTRATION** and **OVERDOSAGE**). Transferrin saturation values increase rapidly after IV administration of iron sucrose; thus, serum iron values may be reliably obtained 48 hours after IV dosing.

Local Reactions

Care must be taken to avoid paravenous infiltration. If this occurs, the infusion of VENOFER should be discontinued immediately. Ice may be applied to cause local vasoconstriction and decrease fluid absorption. Massage of the area should be avoided.

Carcinogenesis and Mutagenesis

No long-term studies in animals have been performed to evaluate the carcinogenic potential of VENOFER.

The Ames test, with or without metabolic activation, *in vitro* mouse lymphoma forward mutation test, mouse micronucleus test, and *in vitro* human lymphocyte chromosome aberration test were conducted with iron sucrose. No mutagenicity or genotoxicity was demonstrated.

Cardiovascular

Hypotension has been reported frequently in hemodialysis dependent chronic kidney disease patients receiving intravenous iron. Hypotension also has been reported in non-dialysis dependent (NDD-CK) and peritoneal dialysis dependent (PDD-CK) chronic disease kidney patients receiving intravenous iron. Hypotension following administration of VENOFER may be related to the rate of administration and total dose administered. Caution should be taken to administer VENOFER according to recommended guidelines (see **DOSAGE AND ADMINISTRATION**).

Sensitivity/Resistance

Serious hypersensitivity reactions have been rarely reported in patients receiving VENOFER. No life-threatening hypersensitivity reactions were observed in pivotal studies, although there were several cases of mild to moderate hypersensitivity reactions characterized by wheezing, dyspnea, hypotension, rash and/or pruritis in these studies. Anaphylactoid reactions have been reported in worldwide spontaneous post-marketing reports (see **ADVERSE REACTIONS**).

Sexual Function/Reproduction

VENOFER at IV doses up to 15 mg iron/kg/dose [about 10 times the maximum recommended human dose for a 70 kg person] given three times a week was found to have no effect on fertility and reproductive performance of male and female rats.

ADVERSE REACTIONS

Adverse Events observed in all treated populations

The frequency of adverse events associated with the use of VENOFER has been documented in six randomized clinical trials involving 231 hemodialysis dependent, 139 non-dialysis dependent, and 75 peritoneal dialysis dependent patients; and in two post-marketing safety studies involving 1051 hemodialysis dependent patients for a total of 1496 patients. In addition, over 2000 patients treated with VENOFER have been reported in the medical literature.

Adverse Events Observed in Hemodialysis Dependent Chronic Kidney Disease (HDD-CKD) Patients

Adverse reactions, whether or not related to VENOFER administration, reported by >5% of treated patients from a total of 231 patients in HDD-CKD studies were as follows: hypotension (39.4%), muscle cramps (29.4%), nausea (14.7%), headache (12.6%), graft complications (9.5%), vomiting (9.1%), dizziness (6.5%), hypertension (6.5%), chest pain (6.1%), and diarrhea (5.2%).

Adverse Events Observed in Non-Dialysis Dependent Chronic Kidney Disease (NDD-CKD) Patients

Among the 182 treated NDD-CKD patients, 91 were exposed to VENOFER. Adverse events, whether or not related to VENOFER, reported by ≥5% of the VENOFER exposed patients were as follows: dysgeusia (7.7%), peripheral edema (7.7%), diarrhea (5.5%), constipation (5.5%), nausea (5.5%), dizziness (5.5%), and hypertension (5.5%). One serious related adverse reaction was reported (hypotension and shortness of breath not requiring hospitalization in a VENOFER patient). Two patients experienced possible hypersensitivity/allergic reactions (local edema/hypotension) during the study. Of the 5 patients who prematurely discontinued the treatment phase of the study due to adverse events (2 oral iron group and 3 VENOFER group), three VENOFER patients had events that were considered drug-related (hypotension, dyspnea and nausea).

In an additional study of VENOFER with varying erythropoietin doses in 96 treated NDD-CKD patients, adverse events, whether or not related to VENOFER reported by ≥5% of VENOFER exposed patients are as follows: diarrhea (16.5%), edema (16.5%), nausea (13.2%), vomiting (12.1%), arthralgia (7.7%), back pain (7.7%), headache (7.7%), hypertension (7.7%), dysgeusia (7.7%), dizziness (6.6%), extremity pain (5.5%), and injection site burning (5.5%). No patient experienced a hypersensitivity/allergic reaction during the study. Of the patients who prematurely discontinued the treatment phase of the study due to adverse events (2.1% oral iron group and 12.5% VENOFER group), only one patient (VENOFER group) had events that were considered drug-related (anxiety, headache, and nausea). Ninety-one (91) patients in this study were exposed to VENOFER either during the treatment or extended follow-up phase.

Adverse Events Observed in Peritoneal Dialysis Dependent Chronic Kidney Disease (PDD-CKD) Patients

Among the 121 treated PDD-CKD patients, 75 were exposed to VENOFER. Adverse events, whether or not related to VENOFER, reported by ≥5% of these patients were as follows: vomiting (8.0%), diarrhea (8.0%), hypertension (8.0%), peritoneal infection (8.0%), pharyngitis (6.7%), nausea (5.3%) and peripheral edema (5.3%). The only drug related adverse reaction to VENOFER administration reported by ≥2% of patients was diarrhea (2.7%). No serious drug related adverse reactions were reported during the treatment phase of study. Two VENOFER patients experienced a moderate hypersensitivity / allergic reaction (rash or swelling/itching) during the study. Three patients in the VENOFER study group discontinued study treatment due to adverse events (cardiopulmonary arrest, peritonitis, myocardial infarction, hypertension) which were considered to be not drug-related.

Post-Market Adverse Drug Reactions:

Hypersensitivity Reactions: See WARNINGS AND PRECAUTIONS.

From the post-marketing spontaneous reporting system, there were 108 reports of anaphylactoid reactions including patients who experienced serious or life-threatening reactions (anaphylactic shock, loss of consciousness or collapse, bronchospasm with dyspnea, or convulsion) associated with VENOFER administration between 1992 and August, 2005 based on estimated use in more than 4.6 million patients.

Among the 517,736 patients (estimated on the basis of 10,354,715 ampoules sold) who received VENOFER between September 1, 2005 and February 28, 2006 through market exposure, 61 patients were reported to have experienced 104 adverse reactions considered at least "possibly related" to VENOFER. A review of all the symptoms concluded that 90 symptoms are listed, 38 serious and 52 non-serious; 14 symptoms are unlisted, 5 serious and 9 non-serious.

Considering the number of patients exposed to VENOFER, the number of adverse events at least possibly related to the product has been very limited. There was a moderate decrease in the frequency of unlisted symptoms and no changes in the nature of the listed ones. During this period no overdose of misuse have been reported.

Regarding the **serious and listed** cases: no particular change or trend in severity, outcome or involved populations could be observed. A total of 38 adverse reactions were reported in 18 patients. No reaction was considered to be life threatening. The symptoms observed were: dysponea (5), hypotension (4), pyrexia (2), injection site reaction (2), erythema (2), rash (2), arthralgia (2), chills (1), circulatory collapse (1), nausea (1), vomiting (1), tachycardia (1), myalgia (1), malaise (1), abdominal pain (1), exanthema (1), oedema peripheral (1), urticaria (1), loss of consciousness (1), dizziness (1), back pain (1), headache (1).

There was no particular evolution regarding the **non-serious and listed** events. A total of 51 adverse symptoms were reported in 37 different patients. The symptoms observed were: urticaria (5), headache (5), dizziness (4), injection site extravasation (4), exanthem (3), tachycardia (3), chills (3), dyspnoea (3), rash (2), flushing (2), pruritus (2), pyrexia (2), paraesthesia (2), malaise (2), hypotension (1), vomiting (1), injection site pain (1), injection site reaction (1), oedema peripheral (1), arthralgia (1), myalgia (1), asthenia (1), skin discolouration (1), erythema (1).

In total, eight non-serious and anaphylactoid reactions have been reported during 6-month period out of the literature. Cumulatively 116 anaphylactoid reactions have been reported out of the exposure of 5,123,048 patient years/ patient to VENOFER which results in a relative prevalence of 0.0023 %.

There were 5 **serious and unlisted** adverse symptoms, involving 4 different patients. The symptoms observed were: asthma, pulmonary test decreased; abortion; respiratory failure; arthritis.

In addition, 7 patients experienced 10 **non-serious and unlisted** adverse symptoms brought to the attention of the manufacturer during the period between September 1, 2005 and February 28, 2006: oedema (2), burning sensation (2), throat tightness (1), blood iron abnormal (1), arthritis (1), bone pain (1), feeling hot (1), influenza like illness (1).

DRUG INTERACTIONS

Interactions with other drugs, food, herbal products and laboratory tests have not been established.

Oral iron should not be administered concomitantly with parenteral iron preparations. Like other parenteral iron preparations VENOFER may be expected to reduce the absorption of concomitantly administered oral iron preparations.

Administration

DOSAGE AND ADMINISTRATION

The dosage of VENOFER (Iron Sucrose Injection, USP) is expressed in terms of mg of elemental iron. Each 5 mL vial contains 100 mg of elemental iron (20 mg/mL).

Administration: VENOFER must only be administered intravenously by slow injection or infusion.

Dose (mg Fe)	Nominal Concentration per mL	Volume of Venofer® to be Added to Diluent	Volume of Diluent
Hemodialysis Dependent Chronic Kidney Disease Patients (HDD-CKD):			
100 mg	1 mg/mL (when the maximum of 100 mL 0.9% NaCl is used).	5 mL	Maximum 100 mL 0.9% NaCl
Non-Dialysis Dependent Chronic Kidney Disease Patients (NDD-CKD):			
500 mg	2 mg/mL (when the maximum of 250 mL 0.9% NaCl is used).	25 mL	Maximum 250 mL 0.9% NaCl
Peritoneal Dialysis Dependent Chronic Kidney Disease Patients (PDD-CKD):			
300 mg	1.2 mg/mL (when the maximum of 250 mL 0.9% NaCl is used).	15 mL	Maximum 250 mL 0.9% NaCl
400 mg	1.6 mg/mL (when the maximum of 250 mL 0.9% NaCl is used).	20 mL	Maximum 250 mL 0.9% NaCl

When prepared as an infusion, use immediately. Do not store. Infusion rate as outlined in **DOSAGE AND ADMINISTRATION.**

NOTE: Do not mix VENOFER with other medications or add to parenteral nutrient solutions for intravenous infusion. As with all parenteral drug products, intravenous admixtures should be inspected visually for clarity, particulate matter, precipitate, discolouration and leakage prior to administration, whenever solution and container permit. Solutions showing haziness, particulate matter, precipitate, discolouration or leakage should not be used. Discard unused portion.

OVERDOSAGE

Dosages of VENOFER (Iron Sucrose Injection, USP) in excess of iron needs may lead to the accumulation of iron in storage sites, resulting in hemosiderosis. Periodic monitoring of iron parameters such as serum ferritin and transferrin saturation may assist in recognizing iron accumulation. VENOFER should not be administered to patients with iron overload and should be discontinued when serum ferritin levels exceed usual norms (see **WARNING AND PRECAUTIONS – General**). Particular caution should be exercised to avoid iron overload where anemia unresponsive to treatment has been incorrectly diagnosed as iron deficiency anemia.

Symptoms associated with overdosage or infusing VENOFER too rapidly include hypotension, headache, vomiting, nausea, dizziness, joint aches, paresthesia, abdominal and muscle pain, edema, and cardiovascular collapse. Most symptoms have been successfully treated with IV fluids, corticosteroids and/or antihistamines.

STORAGE AND STABILITY

Store at 15-25° C. Do not freeze. Discard unused portion.

DOSAGE FORMS, COMPOSITION AND PACKAGING

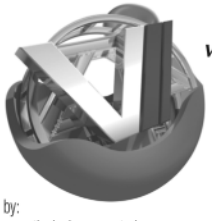
VENOFER (Iron Sucrose Injection, USP) is a brown, viscous, sterile, nonpyrogenic, aqueous solution containing 20 mg elemental iron per mL in the form of an iron(III)-hydroxide sucrose complex as the active ingredient, and water for injection. NaOH may be used to adjust the pH to 10.5 – 11.1. The sterile solution has an osmolarity of 1250 mOsmol/L. The product does not contain preservatives or dextran polysaccharides.

VENOFER (Iron Sucrose Injection, USP) is available in 5 mL single dose vials, sold in boxes of 10. Each 5 mL contains 100 mg (20 mg/mL) of elemental iron as an iron(III)-hydroxide sucrose complex in water for injection.

Study References

REFERENCES

Product monograph available upon request.



VERSATILE IV IRON
Venofer®
iron sucrose injection, USP

Manufactured by:
Luitpold Pharmaceuticals, Incorporated
One Luitpold Drive, P.O Box 9001
Shirley, New York 11967

Distributed by:
Genpharm Inc.
85 Advance Road
Toronto, ON
Canada M8Z 2S6

BS2340C
Rev. 11/06C

Venofer® is manufactured under license from Vifor (International) Inc., Switzerland

PAAB

CANNT Corporate Sponsors October 2007 to September 2008

Platinum

Amgen Canada

Baxter Corporation

BHC Medical

Fresenius Medical Care

Gambro Inc.

Hoffmann-La Roche Limited

Ortho Biotech

Shire BioChem Inc.

Gold

Leo Pharma Inc.

Bronze

AV-CANADA

Siemens Water Technologies

For Effective IV Iron Therapy

Get VERSATILE

Demonstrated Efficacy in Various Patient Types

A versatile IV iron for patients with chronic kidney disease (CKD), Venofer® is indicated in the treatment of iron deficiency anemia for[1]:

- Non-dialysis dependent (NDD) patients receiving or not receiving an erythropoietin
- Hemodialysis dependent (HDD) patients receiving an erythropoietin
- Peritoneal dialysis dependent (PDD) patients receiving an erythropoietin

...With Excellent Convenience

- Flexible dosing regimens (minimum total cumulative dose 1000 mg)
  - —100 to 400 mg dosing as per indication*
  - —slow IV push or infusion
- Available in vials, for expedient administration
- Over 50 years of worldwide clinical experience[2,3]

IMPORTANT SAFETY INFORMATION

Venofer® is contraindicated in patients with evidence of iron overload, patients with know hypersensitivity to Venofer, and patients with anemia not caused by iron deficiency. No life-threatening hypersensitivity reactions were observed in pivotal studies, although there were several cases of mild to moderate hypersensitivity reactions characterized by wheezing, dsypnea, hypotension, rash and/or pruritus in these studies. Anaphylactoid reactions have been reported in worldwide spontaneous post-marketing reports (see ADVERSE REACTIONS).

The most frequent adverse events (≥ 5%) whether or not related to Venofer administration, reported by: *hemodialysis dependent-CKD patients*, hypotension, muscle cramps, nausea, headache, graft complications, vomiting, dizziness, hypertension, chest pain, and diarrhea; *non-dialysis dependent-CKD patients*, dysgeusia, peripheral edema, diarrhea, constipation, nausea, dizziness, and hypertension; *peritoneal dialysis dependent-CKD patients*, vomiting, diarrhea, hypertension, peritoneal infection, pharyngitis, nausea, and peripheral edema. Hypotension has been reported frequently in hemodialysis dependent-CKD patients receiving IV iron, and has also been reported in non-dialysis dependent and peritoneal dialysis dependent-CKD patients receiving IV iron. Hypotension following administration of Venofer may be related to the rate of administration and total dose delivered.

VERSATILE IV IRON

Venofer®

iron sucrose injection, USP

*There is limited experience with administration of an infusion of 500 mg of Venofer® over 3.5–4 hours; hypotension occurred in 2 of 30 patients treated. See product monograph for complete dosing administration recommendations.
†Venofer® is not dialyzable through CA210 (Baxter) High Efficiency or Fresenius F80A High Flux dialysis membranes.

References: 1. Venofer® product monograph, revised November 20, 2006. **2.** Van Wyck DB, Cavallo G, Spinowitz BS, Adhikarla R, Gagnon S, Charytan C, et al. Safety and efficacy of iron sucrose in patients sensitive to iron dextran: North American clinical trial. *Am J Kidney Dis.* 2000;36:88-97. **3.** Charytan C, Levin N, Al-Saloum M, Hafeez T, Gagnon S, Van Wyck DB. Efficacy and safety of iron sucrose for iron deficiency in patients with dialysis-associated anemia: North American Clinical Trial. *Am J Kidney Dis.*. 2001;37:300-7.

DISTRIBUTED BY

GENPHARM People Matter

AMERICAN REGENT

Venofer® is manufactured under license from Vifor (International) Inc., Switzerland.

PAAB

See prescribing summary on adjacent page.

formula® 2000 plus

The fruit of exploration: Dialysis monitoring evolves

BHC MEDICAL
Renal Care

2855 Argentia Road, Unit 2
Mississauga, ON L5N 8G2
Tel: 1-866-443-8567 Fax: 1-866-444-9567

SORIN GROUP
AT THE HEART OF MEDICAL TECHNOLOGY

Head Office
Bellco S.p.A.
41037 Mirandola (Mo) Italy
Via Camurana, 1
Ph. +39 0535 29111
Fax +39 0535 25501
www.bellcospa.it

bellco

CE 0123

CANNT Membership

First Name _____

Last Name _____

Home Address _____

City _____

Province _____ Postal Code _____

Telephone (H) (_____) _____ - _____

(W) (_____) _____ - _____

Fax (_____) _____ - _____

E-mail _____

Employer _____

Employer Address _____

City _____

Province _____ Postal Code _____

Mailing Address Preferred ❑ Home ❑ Work

Do you consent to the use of your name and address on mailing lists that CANNT has considered pertinent and appropriate? ❑ Yes ❑ No

❑ New Member or ❑ Renewal

CANNT # (if renewal) _____

Person who recommended joining CANNT: _____

Membership Fee (GST #100759869)

Membership fee is tax deductible.

❑ One Year: $65.00 + 3.25 GST = $68.25

❑ Two Years: $120.00 + 6.00 GST = $126.00

❑ Student Rate: $32.50 + 1.63 GST = $34.13*

**Proof of full-time enrolment must accompany application.*

I enclose $ _____
made payable to Canadian Association of Nephrology Nurses and Technologists.

Method of payment:

❑ Cheque ❑ Money order ❑ Visa ❑ Mastercard

Cardholder Name: _____

Visa Number: _____

Expiry Date: _____

Signature: _____

❑ I have attained CNeph(C)/cdt designation
Year of designation _____

Professional registration # _____

Date last renewed: _____

❑ I am a member of CNA

Ontario applicants only
Do you belong to RNAO?
❑ Yes ❑ No

Professional Status

❑ Registered Nurse
❑ Registered Practical Nurse/Registered Nursing Assistant/ Licensed Practical Nurse
❑ Technician
❑ Technologist
❑ Other (Specify) _____

Number of Years in Nephrology _____

Area of Responsibility

❑ Direct Patient Care
❑ Administration
❑ Technical
❑ Teaching
❑ Research
❑ Other (Specify)

Work Environment

❑ Acute Care
❑ Self-Care Unit
❑ Independent Health Care
❑ Private Sector

What is Your Highest Level of Education?

Nursing	*Non-Nursing*
❑ Diploma	❑ Diploma
❑ Baccalaureate	❑ Baccalaureate
❑ Master's	❑ Master's
❑ Doctorate	❑ Doctorate

I am At Present Studying Toward:

Nursing	*Non-Nursing*
❑ Specialty Certificate	❑ Specialty Certificate
❑ Baccalaureate	❑ Baccalaureate
❑ Master's	❑ Master's
❑ Doctorate	❑ Doctorate

Primary Area of Practice

❑ Progressive renal insufficiency (pre-dialysis)
❑ Transplantation
❑ Hemodialysis
❑ Peritoneal
❑ Pediatrics
❑ Other (Specify) _____

Return to **CANNT**
Mailing Address:

Debbie Maure, CANNT,
Suite #322, 336 Yonge St., Barrie, Ontario, L4N 4C8
Telephone (705) 720-2819 Fax (705) 720-1451

Demande d'adhésion

Prénom _____

Nom de famille _____

Adresse à domicile _____

Ville _____

Province _____ Code postal _____

Téléphone (D) (_____) _____ - _____

(T) (_____) _____ - _____

Télécopieur (_____) _____ - _____

Courrier électronique _____

Employeur _____

Adresse de l'employeur _____

Ville _____

Province _____ Code postal _____

Adresse de correspondance ❑ domicile ❑ travail

Acceptez-vous que l'ACITN ajoute votre nom et votre adresse sur des listes d'envois qu'elle juge pertinentes et appropriées? ❑ Oui ❑ Non

❑ Nouveau membre ou ❑ Renouvellement

Numéro de l'ACITN # (si renouvellement) _____

Nom de la personne qui vous a recommandé de joindre l'ACITN: _____

Frais d'adhésion (TPS #100759869)
Les frais d'adhesion sont deductibles d'impots.

❑ Un an: 65,00 $ + 3,25 TPS = 68,25 $
❑ Deux ans: 120,00 $ + 6,00 TPS = 126,00 $
❑ Tarif étudiant: 32,50 $ + 1,63 TPS = 34,13 $*
**La demande doit inclure une preuve d'inscription à plein temps*

Je joins $ _____

payable à l'ACITN.
Mode de paiement:
❑ Chèque ❑ Mandat de poste ou chèque visé

❑ Visa ❑ Mastercard

Nom du titulaire de la carte: _____

Numéro de la carte: _____

Date d'expiration: _____

Signature: _____

❑ J'ai obtenu la désignation CNeph(C)/cdt
Année de désignation _____

Numéro d'enregistrement professionel _____

Date du dernier renouvellement : _____

❑ Je suis membre de l'ACI

Demandeurs de l'Ontario seulement
Faites vous partie de l'AOIA?
❑ Oui ❑ Non

Statut professionnel

❑ Infirmière(ier) autorisée(sé)
❑ Infirmière(ier) auxilaire autorisée(sé) / infirmière(ier) auxilaire
❑ Technicienne / technicien
❑ Technologue
❑ Autre (spécifier) _____

Années d'éxperience en néphrologie _____

Domaine de responsabilité

❑ Soins directs ❑ Enseignement
❑ Administration ❑ Recherche
❑ Technologie ❑ Autre (spécifier)

Milieu de travail

❑ Soins actifs ❑ Services de santé indépendants
❑ Unité d'autosoins ❑ Secteur privé

Plus haut niveau d'instruction?

Infirmière(ier)	*Autres*
❑ Diplôme	❑ Diplôme
❑ Baccalauréat	❑ Baccalauréat
❑ Maîtrise	❑ Maîtrise
❑ Doctorat	❑ Doctorat

Je poursuis présentement des études:

Domaine Infirmière(ier)	*Autre domaine*
❑ Certificat	❑ Certificat
❑ Baccalauréat	❑ Baccalauréat
❑ Maîtrise	❑ Maîtrise
❑ Doctorat	❑ Doctorat

Secteur de pratique spécialisé

❑ Insuffisance rénale progressive (pré-dialyse)
❑ Transplantation
❑ Hémodialyse
❑ Péritonéale
❑ Pédiatrie
❑ Autre (spécifier) _____

Poster à **ACITN**
Adresse postale :

Debbie Maure, ACITN,
336 Yonge St., pièce 322, Barrie (Ontario) L4N 4C8
Téléphone (705) 720-2819 Télécopieur (705) 720-1451