



CANNT JOURNAL JOURNAL ACITN

Volume 23, Issue 1 January–March 2013

IN THIS ISSUE:

- 8** **Environments of Excellence • CANNT 2012**
October 25–27, Ottawa Convention Centre

- 11** **Moving beyond the “perpetual novice”:**
Understanding the experiences of novice
hemodialysis nurses and cannulation
of the arteriovenous fistula
By Barbara Wilson, Lori Harwood and Abe Oudshoorn

- 19** **CONTINUING EDUCATION SERIES**
Understanding pruritis
in dialysis patients
By Joy Makari, Karen Cameron and Marisa Battistella

- 26** **PROFILING...**
Meet the 2012 CANNT bursary,
award and research grant winners



It's more than a career... It's a lifestyle

Renal Career Opportunities in BC

Exceptional nephrology leaders wanted! Is it in your blood?

Bring your nursing and leadership experience and apply to join an amazing team in the beautiful southern interior of BC. Exciting opportunities are available for Full Time Managers and Patient Care Coordinators in our Renal Programs located in Trail, Penticton, and Kelowna.



For more information contact:

jennifer.hiebert@interiorhealth.ca
Patient Care Coordinator / Nursing Recruiter

monika.astofooroff@interiorhealth.ca
Non-Contract / Management Recruiter



Apply online today at
www.interiorhealth.ca/careers

CANNT JOURNAL JOURNAL ACITN



CONTENTS

8 Environments of Excellence • CANNT 2012
October 25–27, Ottawa Convention Centre

11 Moving beyond the “perpetual novice”:
Understanding the experiences of novice
hemodialysis nurses and cannulation
of the arteriovenous fistula
By Barbara Wilson, Lori Harwood and Abe Oudshoorn

19 CONTINUING EDUCATION SERIES
**Understanding pruritis
in dialysis patients**
By Joy Makari, Karen Cameron and Marisa Battistella

26 PROFILING...
**Meet the 2012 CANNT bursary,
award and research grant winners**

IN EACH ISSUE:

- 4** Letter from the Editors: Janet Baker & Alison Thomas
- 5** Mot des corédactrices en chef: Janet Baker et Alison Thomas
- 6** Message from the President
- 7** CANNT Representatives/Contacts; Représentants/contacts ACITN
- 7** Mot de la présidente
- 10** Notice board
- 31** CANNT Nominations
- 32** Élection à l'ACITN
- 33** Guidelines for authors
- 34** Lignes directrices à l'intention des auteurs
- 35** CANNT Membership



The CANNT Journal is
printed on recycled paper.

The CANNT Journal

is the official publication of the Canadian Association of Nephrology Nurses and Technologists, P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0, telephone: (519) 652-6767, fax: (519) 652-5015, email: cannt@cannt.ca. Published quarterly, the journal is received by all members of CANNT. Subscriptions are: Canada \$50.00 (plus HST), US. \$60.00, Outside N. America \$85.00. Back issues, when available, are \$7.50 (+HST) 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, P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0. 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.

Co-Editors

Janet Baker, RN, BN, CNeph(C)
 Toronto, Ontario
 Alison Thomas, RN(EC), MN, CNeph(C)
 Toronto, Ontario

Editorial Board

Marisa Battistella, BScPhm, PharmD, ACPR
 Toronto, Ontario
 Rejean Quesnelle, ASCT
 Oakville, Ontario
 Eleanor Ravenscroft, RN, PhD, CNeph(C)
 Calgary, Alberta
 Rosalie Starzomski, RN, PhD
 Vancouver, British Columbia
 Colleen Wile, RN, CNeph(C)
 Halifax, Nova Scotia

Managing Editor

Heather Coughlin, Pembroke, Ontario

Layout and Design

Sherri Keller, Pembroke, Ontario

Advertising Sales

Heather Coughlin,
 Pappin Communications,
 84 Isabella Street,
 Pembroke, ON K8A 5S5
 T: (613) 735-0952; F: (613) 735-7983
 email: heather@pappin.com
 rate card: www.pappin.com

A New Year—A new approach



Janet Baker



Alison Thomas

Change is an interesting concept. For some, it prompts intrigue, even excitement. For those, change is good. For others, change is hard. In fact, many of us would avoid change and prefer to remain status quo with the known, “low-risk” scenario. We could all go through the same change and experience it in a different way. It’s one of those qualities of human makeup that makes us unique. Are you the type of person who is always looking for the next big thrill, or are you the kind of person who likes knowing what’s around the next corner?

The *CANNT Journal* is always evolving, as we continue to try to maintain the quality of the publication while at the same time keeping it relevant and current. This year, the *CANNT Journal* is going to go through a big change—one that we hope will enable its future success with minimal impact to the membership. This year, we are going to enter the world of electronic journals. We are making this historic leap for a number of reasons. One of the main objectives of CANNT has been to maintain affordability while at the same time continuing to be a viable organization. This has also been, in recent years, a real challenge to the Board of Directors. Moving to an e-journal format will assist the board in achieving this goal. Additionally,

many libraries are now supporting e-journal formats due to challenges with storage space, cost of print journal storage, and also to meet the needs of subscribers who often want to access an article remotely via the internet. We want to support these strategies. Finally, this change is more responsible to the environment, as we move away from print copies—conserving use of paper and ink.

Therefore, *the issue you hold in your hand will be your last print issue*. Your journal will continue to be provided to you as part of your membership, but how you access the journal will change. It will be available on the CANNT website. You will need your CANNT username and password to access the journal. The log on can be found on the homepage of CANNT in the upper right-hand corner. On the CANNT homepage under the photo banner is a line of headers and “CANNT Journal” is one of them. Click on this and you will be able to select the journal issue that you would like to see. They will be uploaded in PDF format, so you will still be able to browse the whole journal cover to cover, just in a new format.

It’s a big change, but we feel it’s the right change at the right time. We sincerely hope that you—the membership—will support this move and will embrace the change with us. We are open to any suggestions or feedback that you may have and welcome all comments to either or both of us via email at the following addresses: Janet Baker: jbaker@haltonhealthcare.on.ca, and/or Alison Thomas: thomasal@smh.ca

All the best to our CANNT members, sponsors, advertisers and friends for a happy and healthy 2013!

PLEASE SEND ALL SUBMISSIONS, QUESTIONS OR COMMENTS TO:

Alison Thomas and Janet Baker, Co-Editors, CANNT Journal, email:
 Janet Baker: jbaker@haltonhealthcare.on.ca
 Alison Thomas: athomas6@cogeco.ca

Une nouvelle année— une nouvelle approche



Janet Baker



Alison Thomas

Le changement est un concept intéressant. Chez certains, il suscite la curiosité, voire l'excitation. Pour eux, le changement est salutaire. Pour d'autres, il est brutal. En fait, la majorité d'entre nous préfèrent éviter le changement et s'en tenir au statu quo avec un scénario connu à «faible risque». Nous pourrions tous traverser la même période de changement et vivre cette expérience de façon différente. C'est l'un des traits de caractère de l'être humain qui le rend unique. Êtes-vous le genre de personne qui cherche constamment à se procurer des sensations fortes ou êtes-vous plutôt du genre qui aime savoir ce qui l'attend au prochain tournant?

Le *Journal ACITN* est en constante évolution. Nous œuvrons sans cesse à préserver la qualité de notre publication, tout en maintenant son contenu pertinent et actuel. Cette année, le *Journal ACITN* prend un grand virage, l'un de ceux qui, nous l'espérons, témoigneront de son succès futur avec un impact minimal sur l'ensemble de nos membres. Cette année, nous faisons notre entrée dans le monde de l'édition électronique. Maintes raisons motivent notre décision à franchir ce pas de géant. Parmi ses objectifs principaux, l'ACITN s'est engagée à conserver sa capacité financière, tout en maintenant sa viabilité. Au cours des dernières années, ceci s'est révélé un réel défi pour le Conseil d'administration (CA). Ainsi donc, le fait de passer à un format électronique aidera le CA à atteindre cet objectif. De plus, de nombreuses bibliothèques supportent désormais les journaux ou publications

électroniques pour répondre aux défis associés à la surface et au coût d'entreposage des documents imprimés. Elles veulent également répondre aux besoins de leurs abonnés qui souvent veulent avoir accès à un article par Internet. Or, nous voulons faire partie intégrante de ces stratégies. Enfin, ce changement est écoresponsable, car il nous permet d'abandonner le format imprimé et de réduire notre consommation de papier et d'encre.

Par conséquent, *vous tenez entre les mains le dernier numéro imprimé*. À titre de membre, vous continuerez de recevoir votre Journal, mais la façon dont vous l'obtiendrez sera différente. Le Journal ACITN sera accessible en ligne sur notre site Web. Pour y accéder, vous devrez entrer votre nom d'utilisateur et votre mot de passe dans le coin supérieur droit de la page d'accueil du site de l'ACITN. Sous la photo, vous trouverez une ligne d'onglets sur laquelle apparaît «Journal ACITN». En cliquant sur cet onglet, vous pourrez sélectionner le numéro du Journal que vous désirez lire. Tous les numéros seront hébergés en format PDF, ce qui vous permettra de parcourir le Journal dans son ensemble, de la première page à la dernière, et ce, dans un tout nouveau format.

Nous reconnaissons qu'il s'agit là d'un profond changement, mais nous sommes convaincues d'entreprendre le bon changement, au bon moment. Nous espérons sincèrement que vous—nos membres—nous appuierez dans notre démarche et que, comme nous, vous ferez place au changement. N'hésitez surtout pas à nous transmettre vos suggestions ou commentaires constructifs par courriel à: Janet Baker: jbaker@haltonhealth-care.on.ca et (ou) Alison Thomas: thomasal@smh.ca

À tous les membres de l'ACITN et à nos commanditaires, annonceurs et amis, nous offrons tous nos vœux de bonheur et de santé pour 2013!

Le Journal ACITN

est la publication officielle de l'Association canadienne des infirmiers/infirmières et technologues en néphrologie, a/s P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0, téléphone: (519) 652-6767, télécopieur: (519) 652-5015, 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 \$ (+TVH), E.-U., 60 \$, hors du Canada et E.-U., 85 \$. Les publications antérieures, lorsque disponibles, coûtent 7,50 \$ (+TVH) 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, P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0. 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.

Rédactrices en chef

Janet Baker, RN, BN, CNeph(C)
Toronto, Ontario

Alison Thomas, RN(EC), MN, CNeph(C)
Toronto, Ontario

Conseil de rédaction

Marisa Battistella, BScPhm, PharmD, ACPR
Toronto, Ontario

Rejean Quesnelle, ASCT

Oakville, Ontario

Eleanor Ravenscroft, RN, PhD, CNeph(C)
Calgary, Alberta

Rosalie Starzomski, RN, PhD

Vancouver, British Columbia

Colleen Wile, RN, CNeph(C)

Halifax, Nova Scotia

Éditeur

Heather Coughlin, Pembroke, Ontario

Conception et design

Sherri Keller, Pembroke, Ontario

Publicité

Heather Coughlin,
Pappin Communications,
84 Isabella Street, Pembroke, ON K8A 5S5
T: (613) 735-0952; F: (613) 735-7983
email: heather@pappin.com
rate card: www.pappin.com

**2012–2013 CANNT
BOARD OF DIRECTORS/
CONSEIL D'ADMINISTRATION
DE L'ACITN 2012–2013**

President/Président:

Colleen Wile, RN, BScN, CNeph(C)
T: 902-473-5868
F: 902-473-4168
email/courriel:
colleend.wile@cdha.nshealth.ca

President-Elect/Présidente-Élue:

Roberta Prettie, RN, CNeph(C)
T: 204-482-9482
email/courriel: rmprettie@mymts.net

Past President/Présidente sortante:

Marilyn Muir RN, CNeph(C)
T: 204-787-3611
F: 204-787-7038
email/courriel: mrmuir@hsc.mb.ca

**Website Coordinator, Treasurer/
Trésorière coordonnatrice du site
internet:**

Florence Holder, RN
email/courriel: fmholder@hotmail.ca

**Vice-President of Technologists/
Vice-Président des Technologues:**

Reg Quesnelle, ASCT
T: 905-845-2571 x6857
email/courriel: regq101@gmail.com

**Atlantic Region Vice-President/
Vice-Présidente de l'Atlantique:**

Carolyn Bartol, RN, BScN, CNeph(C)
T: 902-473-4944
F: 902-473-4168
email/courriel:
carolyn.bartol@cdha.nshealth.ca

**Quebec Vice-President/
Vice-Présidente du Québec:**

Roch Beauchemin, RN, BSS, MSN, NNP
T: 514-934-1934 x35039
F: 514-843-2860
email/courriel:
rochbeauchemin@hotmail.com

**Ontario Region Vice-President/
Vice-Présidente de l'Ontario:**

Krista Lovering
T: 705-454-3893
email/courriel:
kelovering@osmh.on.ca

**Western Region Vice-President/
Vice-Présidente de l'Ouest:**

Heather Dean, RN, CNeph(C)
T: 403-943-9400
email/courriel: heather.dean@albertahealthservices.ca

**Journal Editors/
Les rédactrices en chef:**

Janet Baker, RN, BN, CNeph(C)
T: 905-845-2571 x6483
email/courriel:
jbaker@haltonhealthcare.on.ca

Alison Thomas, RN(EC), MN, CNeph(C)
T: 416-864-6060 x6979; F: 416-864-5608
email/courriel: thomasal@smh.ca

MESSAGE FROM THE PRESIDENT



It is hard to believe that another year has passed and we are now into 2013. The past year has seen a few changes for our association and more is yet to come.

In October we said a fond farewell to Debbie Maure, CANNT's administrative assistant for the last 13 years. On a personal note and on behalf of the organization, I would like to thank Debbie for all her years of dedication to CANNT and its members. The day-to-day operation of our organization has transitioned to our new office run by Innovative Conferences and Communications. CANNT continues with the same email address cannt@cannt.ca and toll-free phone number 1-877-720-2819.

2013 will be another busy year for our association. We will continue to work with our technical members to complete the revision of the technical standards, which we hope to be able to post/publish to the CANNT website in early 2013. The Standards of Nursing Practice are also due for review this year. If any member is interested in assisting with the review of the Nursing Standards of Practice, please let me know.

In order to comply with governmental regulations, a dedicated team composed of Patty Quinan, Linda Ballantine and Marsha Wood are working diligently on our behalf preparing all the documents required for the new *Not for Profit Act*. These documents will be presented to the membership at the Annual General Meeting in October 2013. The association must be in compliance with the government's new *Not for Profit Act* by October 2014.

Preparations are also well underway for the national conference being

held in St. John's, Newfoundland and Labrador, from October 6–8, 2013. It is through the hard work and dedication of valuable volunteers that CANNT is able to host such a high-calibre conference. Join us to share your knowledge and practices with your colleagues from across Canada, as we gather on the Rock in October.

One of the more visible changes that CANNT will be making this year is the transition from a printed journal to an online e-journal. In order for our organization to become more fiscally viable, the Board of Directors felt it was necessary to make this change at this time.

Besides our national conference, membership provides us with another source of revenue. Membership has seen a slow decline over the last few years and we need your help. We need you (all of us) to get out there and encourage our colleagues to become members. There are many benefits to becoming CANNT members: the opportunity and ability to network with colleagues from across Canada and beyond through conferences (for which CANNT members receive a discount), the website, being involved with the refined clinical practice groups; the opportunity to apply and receive bursaries, grants or awards of excellence (which are only available to CANNT members); opportunity to seek positions on the board of directors or act as a liaison to the VP in your region and having access to the CANNT e-journal just to name a few.

CANNT is only as strong as its membership and that is you. Together we can make a difference in providing leadership and promoting the best nephrology care and practice through education, research and communication... please join today at www.cannt.ca.

Colleen Wile

J'ai peine à croire qu'une autre année vient de passer et que nous sommes déjà en 2013. L'année dernière, nous avons été témoins d'un certain nombre de changements au sein de notre Association, et nous en verrons bien d'autres en 2013. En octobre dernier, nous avons souligné de façon élogieuse le départ de Debbie Maure, assistante administrative à l'ACITN pendant 13 années. En mon nom personnel et au nom de l'Association, j'aimerais remercier Debbie pour toutes ses années de dévouement envers l'ACITN et ses membres. Nous venons de terminer la transition des activités administratives quotidiennes vers notre nouveau bureau dont la gestion a été confiée à *Innovative Conferences and Communications*. L'ACITN demeure accessible à la même adresse électronique, cannt@cannt.ca, et au même numéro de téléphone sans frais, 1-877-720-2819.

Deux mille treize sera une autre année fort occupée pour notre Association. Nous continuerons à travailler conjointement avec les technologues afin de terminer la révision des Normes techniques que nous comptons publier et héberger sur le site Web de l'ACITN au début de 2013. Les Normes de la pratique infirmière doivent également être révisées cette année. Si vous souhaitez prendre part à la révision des Normes de la pratique infirmière, n'hésitez pas à communiquer avec nous.

Afin de nous conformer aux normes gouvernementales, nous avons mandaté une équipe formée de Patty Quinn, de Linda Ballantine et de Marsha Wood. Ces personnes travaillent avec diligence à préparer tous les documents requis afin de satisfaire aux exigences de la nouvelle Loi sur les organismes à but non lucratif. Ces documents seront présentés à l'ensemble de nos membres à l'Assemblée générale annuelle qui aura lieu en octobre 2013. L'Association doit se conformer à cette nouvelle loi d'ici octobre 2014.

Les préparatifs vont bon train pour le Congrès annuel qui aura lieu à St. John's, à Terre-Neuve-Labrador, du 6 au 8 octobre 2013. C'est grâce au travail acharné et au dévouement de

nos précieux et précieuses bénévoles que l'ACITN est en mesure de tenir un congrès de calibre aussi élevé. Nous vous invitons à partager vos connaissances et votre pratique avec vos collègues d'un bout à l'autre du Canada, lorsque nous nous réunirons sur « le Roc » en octobre prochain.

L'un des changements les plus notoires qu'entreprendra l'ACITN cette année est sans contredit la transition d'un journal imprimé vers un journal électronique. Afin d'assurer la viabilité financière de notre organisation, le Conseil d'administration a estimé qu'il était maintenant temps d'opérer ce changement.

Outre les inscriptions au Congrès annuel, les cotisations d'adhésion sont une autre source importante de revenus pour l'ACITN. Comme le nombre d'adhésions est en baisse depuis les quelques dernières années, nous avons besoin de votre aide. En tant que membre, nous devons tous faire la promotion de notre Association auprès de nos collègues et les encourager à devenir membres. Il y a de nombreux avantages à adhérer à l'ACITN, entre autres : réseauter avec des collègues de partout au Canada et d'ailleurs en participant à différents séminaires ou congrès (pour lesquels les membres de l'ACITN ont un tarif privilégié), accéder au site extranet réservé aux membres, participer aux groupes de discussion sur la pratique clinique; poser sa candidature ou celle de collègues pour l'obtention de bourses, de subventions ou de prix d'excellence (réservés aux seuls membres de l'ACITN); convoiter un poste au sein du CA ou agir comme agent ou agente de liaison auprès du vice-président ou de la vice-présidente de votre région et consulter en ligne le Journal ACITN.

L'ACITN n'est forte et dynamique que dans la mesure où son nombre d'adhérents est grandissant. Nous faisons donc appel à vous, nos membres. Ensemble, nous pouvons faire une différence en faisant preuve de leadership et en favorisant l'adoption de meilleurs soins et de meilleures pratiques en néphrologie grâce à l'éducation, à la recherche et à la communication... Joignez-vous à nous: www.cannt.ca.

Colleen Wile

CANNT REPRESENTATIVES/ CONTACTS; REPRÉSENTANTS/ CONTACTS ACITN

CNA Liaison/Liaison pour AIIC:
Marilyn Muir RN, CNeph(C)
T: 204-787-3611; F: 204-787-7038
email/courriel: mrmuir@hsc.mb.ca

Kidney Foundation of Canada, MAC Representative/Fondation du rein—Comité de médical consultatif:
Colleen Wile, RN, BScN, CNeph(C)
T: 902-473-5868; F: 902-473-4168
email/courriel: colleend.wile@cdha.nshealth.ca

Bursary Committee/Comité des Bourses:
Colleen Wile, RN, BScN, CNeph(C)
T: 902-473-5868; F: 902-473-4168
email/courriel: colleend.wile@cdha.nshealth.ca

**CANNT Administrative Office/
Bureau National de l'ACITN**
PO Box 10, 59 Millmanor Place
Delaware, ON N0L 1E0
New phone: 519-652-6767
Same Toll Free: 877-720-2819
New fax: 519-652-5015
General email: cannt@cannt.ca

Contacts:
Sharon Lapointe,
Manager, Member Services
sharon@cannt.ca

Susan Mason
Manager, Website and Social Media
susan@cannt.ca

Heather Reid
National Administrator/Board
heather@cannt.ca

2013 Symposium: October 6–8 2013
Congrès 2013: 6–8 Octobre 2013
St. John's, Newfoundland
Heather E. Reid, ARCT, MSc
Principal Planner & Owner
Innovative Conferences & Communications
PO Box 319, 59 Millmanor Place
Delaware, ON N0L 1E0
T: 519-652-0364
F: 519-652-5015
Email: hreid@innovcc.ca
Website: www.innovcc.ca

**Journal advertising contact/
Personne contact pour la publicité
du Journal:**
Heather Coughlin
Pappin Communications,
84 Isabella Street, Pembroke, ON
K8A 5S5
T: 613-735-0952; F: 613-735-7983
email/courriel: heather@pappin.com
rate card: www.pappin.com

Environments of Excellence • CANNT 2012 October 25–27, Ottawa Convention Centre

From October 25–27, the CANNT Board of Directors, the planning committee, and approximately 600 participants celebrated and learned at CANNT 2012 held in the beautiful and new Ottawa Convention Centre, Ottawa, Ontario.

The goal of the planning committee was to build a program that reflected all of the areas of excellence in nephrology nursing and technology. Abstracts and keynote sessions reflected this theme, offering both evidence-based and experiential knowledge to conference attendees for both adult and pediatric settings. Six workshops, six plenary sessions, 54 concurrent sessions, 30 poster presentations, three satellite symposiums and 28 exhibiting companies assisted us in achieving our goals.

Opening with an “out of this world” plenary presentation by Dr. Dave Williams—Canada’s very own astronaut and aquanaut, as well as emergency physician—and closing with the unbarred humour of Meg Soper, RN, the conference was three full days of learning, laughing and networking! The highly successful Evening of Entertainment featured Marilyn Monroe and Elvis impersonators, a fun-filled casino and dancing until the wee hours!

Continued commitment on behalf of the corporate sponsors played a large part in the success of the conference and we are always grateful for their generous support, as outlined below:

PLATINUM (\$10,000+)

Amgen
Baxter
BHC Medical
Fresenius
Roche
Takeda

GOLD (\$7,500–\$9,999)

Gambro

SILVER (\$5,000–\$7,499)

Janssen
JMS North America

BRONZE (\$2,500–\$4,999)

Astellas Pharma



THURSDAY, OCTOBER 25, 2012

As alluded to, CANNT 2012’s opening plenary speaker, Dr. Dave Williams, spoke on “Motivation and Peak Performance: Reaching for the Stars”. Six two-hour workshops followed: two RN certification exam preparation sessions, one in each of the official languages, “The Basics of Peritoneal Dialysis”, “Nephrology Blitzes with members of the CNNP Group”, “National Pediatric Network Collaboration Workshop”, and “Dialysis Water Treatment and Relevant Sampling Requirements”. Following lunch, Michael Villeneuve, formerly of CNA, spoke on “The Health of Our Nation, The Future of Our Health System: A Nursing Call to Action”. Delegates then broke off into two different sets of concurrent sessions focused on renal technology, vascular access, hemodialysis, PD, transplant, and more. Day one wrapped up with the opening reception in the exhibit hall. Delegates and exhibitors interacted while enjoying food and drink, and the antics of a fabulous magician.



FRIDAY, OCTOBER 26, 2012

Beginning our second day together there were two options: the technologists met for “Coffee in the Capital” while the nursing delegates were treated to a plenary session by Tilda Shalof, herself a long-time RN, addressing the patient perspective as she recounted her life experiences in “Opening My Heart: True Stories from the ICU”. The plenary session was followed by the AGM complete with award presentations. Congratulations to all award recipients. The afternoon was filled with concurrent sessions. The educational day finished up with the opportunity to meet the authors of the 30+ poster presentations, followed by four different one-hour corporate symposiums by Roche, Fresenius Medical Care, Baxter and Gambro. The Evening of Entertainment was held in the stunning Trillium Ballroom at the Ottawa Convention Centre where attendees enjoyed the view from above the city and enjoyed gambling, dancing and socializing!



SATURDAY, OCTOBER 27, 2012

Our third and final day started off with a repeat performance by Valerie Cade—a speaker featured in Calgary for CANNT 2011—and brought back to share her content again. Valerie spoke on “Bully Free at Work: Designed Especially for Nephrology Professionals”. After the plenary session, three groups of concurrent sessions took place, again covering topics of pediatric, nursing and technologist interests. Delegates reconvened in the plenary hall for the CANNT 2012 prizes and awards: manuscript and poster awards, and prize draw for exhibit hall passport. Congratulations to all award winners. The conference wrapped up with a final plenary presentation entitled, “Wit, Fit and Balance—Strategies for Success” by Meg Soper. On this energetic note, the end of the CANNT 2012 was declared and the banner was passed to the co-chairs of the CANNT 2013 Planning Committee from St. John’s, NL. Hope to see you there October 6–8, 2013.



NEW Beginning with April/June edition

CANNT Journal

IS GOING ON-LINE

Printed journals will no longer be produced, but CANNT members can access their NEW online journal through the "members only" section on the website.



www.cannt.ca

Visit for further details

NOTICE BOARD

- Ottawa Supper Clubs—Contact Janet Graham, Nephrology Unit, Ottawa Hospital, jgraham@ottawahospital.on.ca
- **April 2–6, 2013.** National Kidney Foundation (NKF) 2013 Spring Clinical Meetings. Walt Disney World Swan and Dolphin, Orlando, FL. Toll-free phone number: 1-800-622-9010. www.kidney.org
- **April 20, 2013.** Exam date for CNeph(C) certification exam. Contact Canadian Nurses Association Certification Program, e-mail: certification@cna-aiic.ca. Website: www.cna-aiic.ca. Toll-free phone number: 1-800-361-8404
- **April 21–24, 2013.** The American Nephrology Nurses Association (ANNA) National Symposium. Las Vegas, Nevada. Website: www.annanurse.org
- **September 18, 2013.** Nephrology Health Care Professionals Day.
- **October 6–8, 2013.** CANNT 46th National Symposium. St. John's, NL. Conference Planner: Heather Reid: e-mail: hreid@innovcc.ca. Website: www.cannt.ca

THANKS TO OUR 2012 SPONSORS

PLATINUM

AMGEN®



Baxter



Fresenius Medical Care

GOLD



SILVER

JMS
Harmony®
Buttonhole Needle

janssen
PHARMACEUTICAL COMPANIES
of Johnson & Johnson

BRONZE



"Stay in the Know" at www.cannt.ca

VISIT YOUR CANNT WEBSITE FOR:

- "What's New" at a glance
- nephrology job postings
- educational resources: awards/bursaries/grant applications
- PDF articles of previous CANNT Journal issues
- online continuing education articles that earn you CEU credits
- links to educational and professional affiliate websites
- CANNT merchandise available in our online store
- regional report updates and our annual CANNT/ACITN report
- CANNT Nursing and Technical Practice Standards, revised 2008
- national nephrology certification information and exam preparation support
- regional, national and international educational events information
- National Nephrology Professionals' Day information—discover how colleagues from across Canada celebrate the day
- CANNT National Symposium 2013 details and updates

Join or renew your CANNT membership online today at www.cannt.ca!

Moving beyond the “perpetual novice”: Understanding the experiences of novice hemodialysis nurses and cannulation of the arteriovenous fistula

By Barbara Wilson, Lori Harwood and Abe Oudshoorn

Copyright © 2013 Canadian Association of Nephrology Nurses and Technologists

ABSTRACT

Cannulation of the arteriovenous fistula (AVF) is an essential skill for hemodialysis (HD) nurses. With declining rates of AVFs, opportunities to develop expert cannulation skills have become limited. This study explored the concept of perpetual novice and AVF cannulation from the perspective of the novice cannulator. Nine hemodialysis nurses were interviewed using ethnographic methodology. The study identified the interplay between personal and environmental/contextual factors that hindered skill acquisition. Personal attributes identified by participants included HD nurses' approach to learning and previous experience, emotional reaction to stress, and interpersonal relationships with colleagues. Environmental/contextual factors identified as impediments to cannulation skill development included limited learning opportunities, attitudes and demands from patients, unit flow and time pressures, and limitations imposed by the current model of nursing care. This study will be helpful in directing future educational, operational, and supportive interventions for novice HD nurses around cannulation skill development.

Key words: arteriovenous fistula, vascular access, cannulation, perpetual novice, skill acquisition

Barbara Wilson, RN(EC), MScN, CNeph(C), Nurse Practitioner, Hemodialysis, Victoria Hospital, London Health Sciences Centre, London, ON

Lori Harwood, RN(EC), PhD(c), CNeph(C), Nurse Practitioner, Hemodialysis, Victoria Hospital, London Health Sciences Centre, London, ON

Abe Oudshoorn, RN, PhD, Assistant Professor, Year 4 Coordinator, Arthur Labatt Family School of Nursing, Western University, London, ON

Address correspondence to: Barbara Wilson, RN (EC), MScN, CNeph(C), London Health Sciences Centre, Victoria Hospital, Rm A2-335, 800 Commissioner's Road East, London, ON N6A 5W9. Email: barb.wilson@lhsc.on.ca

Submitted for publication: May 15, 2012.

Accepted for publication in revised form: October 17, 2012.

INTRODUCTION

The arteriovenous fistula (AVF) is widely accepted as the access of choice for individuals on hemodialysis and is associated with lower rates of morbidity and mortality, as compared to individuals dialyzing with a central venous catheter (CVC) (Jindal et al., 1999). Despite this, in Canada a formal review of data from the Canadian Organ Replacement Register from 2001–2004 identified a 3% decrease in incident and 5.2% decrease in prevalent AVF use with a corresponding increase in CVC use during the same time period (Moist, Trpeski, Na, & Lok, 2008). In this review, incident catheter use was associated with six times increased risk of death compared to AVF or graft use combined (Moist et al., 2008).

From a clinical standpoint, the disparity between patients at our centre with CVCs and those with AV accesses has resulted in fewer opportunities for HD nurses to develop and maintain their expertise in cannulation of the AVF. A recent qualitative study at our centre explored the everyday experiences of HD nurses and identified a number of themes related to cannulation of the AVF including the lack of AVFs, the fistula as a hard sell to patients, the skill of cannulation, and assembly-line dialysis (Wilson, Harwood, Oudshoorn & Thompson, 2010). We also described the overarching theme of *perpetual novice*, acknowledging the failure of some HD nurses to transition from novice to expert cannulator resulting in variation in skill levels between nurses. This concept is based on Benner's (2001) theory of skill acquisition in nursing and provides a model by which to examine the skill of cannulation along a five-stage continuum of proficiency.

Cannulation is an essential skill for HD nurses and failure to perform the skill successfully on a repeated basis can result in serious complications for patients. Lee et al., 2006 examined risk factors and complications of major fistula infiltration during five-year follow-up of 47 patients on HD with an AVF. In this study, three clinical scenarios were considered a major infiltration: 1) an AVF used for initial HD and infiltration necessitated CVC insertion; 2) a CVC already in place, but AVF infiltration prolonged CVC use; and 3) a CVC removed due to successful AVF use, but reinsertion of the CVC required after subsequent infiltration. Overall, there was a 5.2% annual rate of major AVF infiltration. On average, each major infiltration resulted in

the need for additional diagnostic testing, surgical appointments, or interventions required on the AVF. Fistula thrombosis occurred in 26% of subjects and CVC dependence was prolonged. A similar finding was reported by van Loon, Kessel, van der Sande and Tordoir (2009) such that hematoma formation as the result of unsuccessful cannulation of the AVF was a significant predictor of the need for CVC insertion.

Thus, efforts to improve the cannulation skills of HD nurses and assist them to develop from novice to expert in this skill is an important goal and may contribute positively to AVF use in the long term. This study explores the concept of *perpetual novice* in an effort to understand cannulation of the AVF from the perspective of the novice cannulator.

LITERATURE REVIEW

Benner's (2001) theory of skill acquisition in nursing was used as a framework to understand the development of clinical expertise in AVF cannulation, as described previously by Wilson et al. (2010). In this study, 10 HD nurses were interviewed using an ethnographic qualitative design to understand factors influencing the development of cannulation expertise among HD nurses. Ethnography is used in qualitative research as a means of studying the culture of a group of individuals (Streubert Speziale & Carpenter, 2003), in this case, the examination of cannulation as a skill that occurs within the culture of a HD unit. While a number of themes were generated, one overarching theme of *perpetual novice* was apparent, acknowledging the failure of some HD nurses to transition from novice to expert cannulator despite working in HD for a number of years. Benner's (2001) work suggests that the process of transition from novice to expert moves through five stages determined by experiential learning gained over time. Other themes that emerged from Wilson et al.'s (2010) study included the lack of fistulas to cannulate, the fistula as a "hard sell" to patients, the skill of cannulation, and the "assembly line" approach to care. As a result, participants acknowledged there were increasingly fewer opportunities to develop their skill in cannulation, resulting in wide variation in skill levels between HD nurses. The culture of the hemodialysis unit itself was also deemed a contributing factor. A major limitation of this study was that all nurses who participated were experienced (average 13.3 years nephrology nursing) and all liked cannulating. Thus, the attitudes and experiences of novice cannulators were not explored.

Another study that explored skill acquisition and nephrology nursing expertise, conducted by Bonner and Greenwood (2006), used grounded theory methodology to interview six non-expert and 11 expert nephrology nurses in Australia. In contrast to Benner's (2001) five-stage model of skill acquisition, the investigators proposed a three-stage process in nephrology nursing skill acquisition: 1) non-expert; 2) experienced non-expert; and 3) expert. The authors suggested that four characteristics helped to define each stage: the individual's knowledge, experience, skill, and focus. At one end of the spectrum,

Bonner and Greenwood (2006) described the non-expert nephrology nurse as one with limited nephrology nursing knowledge who relied more on general nursing knowledge to support their practice. This group tended to be focused on learning the routines and general practices while the types of activities undertaken tended to be more ordinary and routine. The authors noted that the non-expert was less focused on the patient and more focused on the required nursing tasks themselves. At the other end of the spectrum, the expert nephrology nurse was entirely focused on providing quality patient care, and was highly self-directed and patient-focused in their nephrology nursing practice. According to the authors, their three-stage model of skill acquisition (versus Benner's five-stage model) reflected the breadth of nursing knowledge participants had prior to starting their career in nephrology nursing from which to draw upon. In contrast, the novice nurses in Benner's (2001) work had no prior experience in nursing (Bonner & Greenwood, 2006).

To date, there is no research available that examines the *perpetual novice* phenomenon in nephrology nursing or otherwise. Further investigation of the concept from the perspective of the novice cannulator is essential to understanding the factors that would appear to hinder skill acquisition for cannulation of the AVF.

PURPOSE

The purpose of this study was to explore the concept of the *perpetual novice* within the culture of a HD unit and identify factors impeding advancement of AVF skill acquisition. In this study, *perpetual novice* is a state in which nephrology nurses are unable to progress toward expert in the skill of AVF cannulation.

METHODOLOGY

An ethnographic research methodology with qualitative data collection methods was used. Ethnography examines the study of groups and individuals with the goal of understanding culture (Burns & Grove, 1995). Culture is, "common/shared beliefs or values at a variety of scales; cultures give meaning to ways of life and act as a lens through which we look at the world that both affects and represents our behaviour; and cultures produce (and are reproduced through) material and symbolic forms" (Poland, Lehoux, Holmes, & Andrews, 2005, p.172). Culture was a centralizing concept for this study, as one's ability to move beyond being a novice is greatly influenced by the work environment.

SETTING

Subjects were recruited from one in-centre HD unit in an academic teaching facility in Canada. The location where the study took place cares for approximately 185 patients receiving chronic HD, and provides acute HD for inpatients within the same hospital, as well as back-up services for a regional satellite HD program. At the time of the study, there were approximately 85 HD nurses working a combination of full-time, part-time and casual hours.

SAMPLE AND METHODS

Inclusion criteria consisted of those HD nurses who identified themselves as novice cannulators of the AVF and who volunteered to participate. Purposeful sampling selects individuals for study participation based on their knowledge and experience on the subject being investigated (Streubert Speziale & Carpenter, 2003). There was an initial problem with recruiting enough nurses to participate, which necessitated a change in the inclusion criteria to include any HD nurse who self-identified as anything but an expert cannulator. A second strategy used in the recruitment of subjects was “snowball” sampling whereby nurses who were interviewed were asked to mention the study to their colleagues whom they thought would be able to share their experiences (Richards & Morse, 2007). As with snowball sampling, the details of the actual conversations between potential participant contacts are unknown. However, in getting informed consent, the research assistant clarified the purpose of the study and any potential misconceptions. A hypothetical sample size of 10 to 12 nurses was proposed at the outset based on results of our prior study (Wilson et al., 2010). However, after nine participants were interviewed, data collection was stopped, as no new themes were evolving.

Ethical approval was received from the local research ethics board. All HD nurses within the dialysis unit were informed about the study by the primary investigator and a letter of information was provided inviting nurses to participate. HD nurses who believed they fit the inclusion criteria (i.e., novice cannulator) and were interested in participating in the study were instructed to contact the research assistant directly to arrange a time to be interviewed. Informed consent was obtained by the research assistant to participate in one 45 to 60-minute interview.

An eight-item semi-structured interview tool was used by the research assistant to guide each session. Each interview took place in a private area away from the HD unit or outside the hospital setting, as mutually agreed upon by the participant and the research assistant. Throughout the interviews, subjects were asked for clarification regarding their comments. This reduces misinterpretation and contributes to the study's credibility (Lincoln & Guba, 1985). All interviews were audiotaped and transcribed verbatim. Following completion of interviews and verbatim transcription, key themes were identified by the investigators, initially independently, and then discussed as a group.

RESULTS

The nine participants in this study had an average of 17 years nursing experience (range 6 to 23 years) prior to coming to work in HD, and their backgrounds were varied. At the time of the interviews, participants had worked in HD an average of 3.3 years (range six months to nine years) and all worked either part-time or casual hours (i.e., none were full-time).

Overall, results revealed the interplay between personal and environmental or contextual factors as contributing to the *perpetual novice* cannulator of the AVF. Personal factors

can help to motivate the individual to want to improve cannulation skills or be a stimulus to avoid cannulation altogether, thus preventing further skill development. A number of environmental/contextual factors were also identified by nurses interviewed as potential elements of the workplace environment itself that can support or hinder learning.

Personal factors

Individual differences in participants' personal approach to learning were evident during the interviews. Participants talked about actively looking for opportunities to learn within the work setting and liked the challenge of cannulating. These individuals were more likely to ask for a change in patient assignment to allow them the opportunity to “give it (cannulation) a try.” In contrast, it was evident from others that avoidance of cannulation does occur. This is evidenced by subtle behaviours such as asking someone else to cannulate or failing to come forward to ask for a change in patient assignment to allow more opportunity to gain more experience with cannulation.

Nurses also varied in their emotional reaction to cannulation. For some, the cannulation experience made them nervous. Others talked about the emotional reactions they experienced in response to some of the patients they had dealt with and how this made them feel. These reactions, for some, led to avoidance of cannulation. As one nurse summarized:

“At the beginning I avoided it (cannulation). I dreaded having a fistula patient. If I could put on five permcaths, you know, I would be happy if my partner just put on one fistula. I would put on everyone else, I didn't care. That's how I felt at the beginning. Now, you know, not so much. I am willing to try.”

As stated by another participant:

“I think some people avoid certain patients that might be difficult—difficult not only in their fistula, but in their personality. I think I do see that happening... I may have done that at one point, but I don't think I do that anymore because, you know, you've gotta do it. And if you don't try that difficult patient, then you will never be good at that sort of fistula.”

Interpersonal relationships between nurses working in the HD unit were also identified as a contributing factor to avoidance. Participants identified two instances when one needed assistance from a colleague with cannulation: 1) when the patient requests someone else to cannulate, and 2) when the nurse needs help with a difficult AVF. Nurses appeared varied in their comfort level in asking for help and some nurses reported they would seek out some and avoid others for assistance, even going to an adjacent room to get the right person to assist them.

“I always looked for a back-up nurse, just to mention to my partner or somebody else in the room that I am going to do that patient. I've never done him before, so if I have problems will you help me? I still do it, because sometimes I know it is a difficult fistula or the patient is nervous because I am casual, so I'm not a familiar face to the patients.”

All of the HD nurses interviewed had come to dialysis from other clinical areas. The participants suggested that those coming to HD with extensive prior work experience might feel additional pressure to perform without assistance than those with little or no prior work experience. Regardless of the reason(s) behind the avoidance of cannulation, if done habitually, this has the potential to spiral where it is harder to face one's lack of proficiency and avoidance becomes sustained.

Environmental/contextual factors

Limited learning opportunities. Participants identified a number of factors within their work environment that would appear to hinder skill development around cannulation. Consistent with our earlier study (Wilson et al., 2010), all participants acknowledged there were limited learning opportunities available to them for AV access cannulation. The nurses interviewed pointed to their orientation to dialysis, acknowledging a large focus on the machine at first and feeling a bit sheltered during that time period. As described by one nurse:

"It was all about the machines at first. The patient did not exist at that point. Only towards the very end did we start to acknowledge there was somebody connected to this machine. And really only when we started practising did we start to put it together."

With respect to hemodialysis orientation, another nurse commented:

"We did get a bit of practice with fistulas. Obviously, she picked the easiest ones, the obvious ones and the easiest patients...the ones that wouldn't complain or speak up too much about us needling them."

Cannulation opportunities were limited in number, and even after orientation was completed, nurses were limited to cannulating only the easiest AVFs, making it difficult to improve their skills beyond the novice level. There were some instances described by participants whereby nurses were unlikely to be assigned to someone with an AVF if that individual was known to avoid or dislike cannulating. In these instances, it would appear that the protective nature of the work environment might, in fact, be a contributing factor to limiting learning opportunities available.

Patients invested in their AVF. Nurses described patients wanting things done a certain way. This need for directing their care included identifying sites for needle placement, as well as dictating which nurses would be permitted to cannulate their AV access. Nurses recognized the need for some patients to control how their dialysis session was initiated, possibly due to patients' desires to protect their AVF from potential harm. The outcome of such nurse-patient interactions has the potential to create tension, as well as limit cannulation opportunities available. As summarized by one nurse:

"You have, you know, the very anxious patient who only wants, you know, a little team of nurses that have done that patient repeatedly. They don't want new nurses

coming and messing with the fistula. Some of them have had such bad experiences or their fistula just isn't working so well that they only want the best, you know, the more experienced nurses touching them... then you meet the very, kind of over-bearing, where you almost want to say, 'fine, you needle yourself then'. They are kind of telling you exactly where to go, exactly what to do, you know, if you are going too deep, too shallow, and that kind of throws you off too, when the patient is right in your face".

Unit flow and time pressures. Consistent with the previous study (Wilson et al., 2010), participants identified the time pressures associated with getting patients on/off their HD treatment and these pressures come from a variety of sources including the HD nurses themselves and nurse colleagues, as well as patients. HD nurses also described the role that transportation providers play in patients' rush to get their treatment started and/or stopped. In this case, the driving force relates to patients' fears of missing their ride. Patients were more likely to become upset when delays occurred, thus contributing to the environmental pressures within the HD unit.

"...people always want out of here earlier because of their ride. I mean, we are open until 11:00, but usually if there is a four-hour run they will usually say, 'Well, I can only do three and a half or three today because my ride is coming at such a time'. And they want out of here. So, they are not going to want to wait an extra five or 10 minutes if it means waiting for somebody new to come and stick their needles in".

Continuity/plan of care. Issues inherent to the present model of nursing care delivered in the HD unit would appear to have a negative impact on the continuity of care provided. Nurses described difficulties getting to know patients due to the size of the unit and the configuration of dialysis stations. This combined with a lack of consistency in patient assignment made it hard to get to know patients and particular approaches to cannulating their AVF. Nurses appeared unsure of the plan of care for a number of patients and voiced concerns about not knowing patients' long-term issues. From an education standpoint, participants seemed unsure of their role in educating patients about an AVF. As one nurse commented:

"Well, I certainly haven't tried to convince anybody, or I haven't really thought to bring it (AVF) up. And maybe I could, but I just, sort of, thought it started with the advanced practice nurse. Because I don't know if the staff nurses, as a rule, bring that up. I don't really know".

These factors related to the model of care and the unit structure, combined with inconsistent documentation of AVF issues and plans of care, were identified by nurses as contributing to their inability to increase their level of skill around cannulation. As a result, nurses may be less likely to take ownership and follow up on cannulation-related issues and education about AVFs.

DISCUSSION

This qualitative study provides further insight into cannulation of the AVF from the perspective of the novice cannulator and highlights the interplay between personal and environmental/contextual factors that appear to be contributing to the *perpetual novice* phenomenon. Personal factors would appear to play a role in determining whether an individual nurse seeks out opportunities to receive additional practice at cannulation, or contributes to behaviours that promote avoidance. At the same time, it would appear that a number of factors within the work environment are playing a key role in hindering skill development (see Figure 1).

As members of a self-regulating profession, individual nurses are accountable for maintaining clinical competence and ensuring their competences are relevant to the patient populations in which they serve (CNA, 2004). Cannulation is an essential skill for HD nurses. With limited AVFs to cannulate, maintaining this skill competence may become an even bigger challenge in the future, in particular for those nurses more inclined to avoid new learning opportunities. While avoidance of cannulation may appear to reflect positively on the HD nurses' self-assessment of ability around cannulation, it is not in the best interest of the nurse or patient care in the long term. One example provided by HD nurses previously (Wilson et al., 2010) is the issue of evening on-call where the HD nurse is alone and cannot avoid cannulation. Given the complications to the patient arising from miscannulation of the AVF (Lee et al., 2006; van Loon et al., 2009), the failure of skill development that is maintained through avoidance needs to be identified and strategies to reduce avoidance implemented.

Apart from avoidance of the skill of cannulation, HD nurses we interviewed acknowledged their tendency to ask certain HD nurses for help with cannulation while avoiding others, even if it meant going to an adjacent room to get the individual they wanted to help them. For some participants, this appeared to reflect difficulties in

interpersonal relationships between the nurse needing help and the particular staff available to provide assistance. At the unit level, there are opportunities to explore this further and utilize expertise of staff development specialists within the hospital to create learning opportunities that focus on interpersonal skills development.

Consistent with Bonner and Greenwood's (2006) work on the acquisition of nephrology nursing expertise, the participants in this study functioned as non-expert nephrology nurses in their cannulation skills. Nurses verbalized being focused on the task of cannulation, and some acknowledged that even once the needles were placed successfully and the patient's treatment underway, they lacked sufficient knowledge to independently troubleshoot needle-related problems (i.e., needle position, blood flow issues) when difficulties occurred. Bonner and Greenwood (2006) suggested that the acquisition of nephrology nursing expertise occurs systematically and is influenced by a number of factors including nurses' breadth and depth of knowledge, the number and frequency of learning encounters, as well as a number of personal attributes including recognition by experts as having an aptitude for nephrology nursing. The authors suggested that the aptitude for nephrology nursing resulted in recognition of the person's potential to become an expert and this, in turn, facilitates exposure to the learning opportunities required to become skilled over time. If this assertion is true, avoidance identified by participants in this study may lead to limited learning opportunities and lack of recognition among expert HD nurses of the novice's potential. This may also explain why individuals known to dislike cannulating are not assigned to patients with an AVF. Perhaps, over time, this lack of recognition of "aptitude" creates even fewer opportunities to cannulate and the downward spiral is maintained.

From a learning perspective, many of the nurses interviewed found the orientation to HD and cannulation a very stressful time with a large focus on learning the ins and outs of the HD machine, the procedures, and

THE PERPETUAL NOVICE

Personal Factors

- Approach to learning
- Emotional reaction to cannulation
- Interpersonal relationships between HD nurses

Environmental/Contextual Factors

- Limited learning opportunities
- Patients invested in their AVF
- Unit flow and time pressures
- Continuity/plan of care issues

Figure 1: Factors associated with the perpetual novice phenomenon

unit-specific routines and practices required to function in the role. Cannulation appeared to play a secondary role in orientation and all commented on the limited opportunities available to them. Furthermore, all had come from other clinical settings and, as such, came to the HD unit with a predefined set of acquired nursing skills. While much is known about the orientation needs of new nurses, there is little research to date on the orientation needs of experienced nurses. Only one study by Dellasega, Gabbay, Durdock, and Martinez-King (2009) explored this concept in detail using qualitative methods to study the experiences of three seasoned nurses over a six-month timeframe. Consistent with our findings, nurses experienced anxiety about their ability to perform in their new roles. The authors described the seasoned nurse as transitioning into a new job, as opposed to the formal orientation process one would anticipate for the new graduate nurse. More specifically, the authors suggested that experienced nurses are able to draw on past job experiences and this allows them to make realistic appraisals of their situation and be more flexible, as they learn new skills. In addition, they are better able to obtain confidence from past successes while using peers as a support system. The authors described nurses in their study as placing higher expectations on themselves which, in turn, created additional stress and made returning to the novice role difficult. In our study, the return of our participants to the novice role may have contributed to the anxieties nurses reported during their orientation to dialysis and the cannulation procedure. Dellasega et al. (2009) suggest that experienced nurses transitioning to a new role are likely to benefit from discussing their expectations and anxieties during the orientation phase, and that opportunities for peer support be created and encouraged, as a means to alleviate these anxieties early on.

From the patient's perspective, the ultimate goal is a successful cannulation of the AV access. When patients instruct their HD nurse to cannulate a certain way and/or restrict certain nurses from completing their assessment and deciding where to cannulate the access, it would appear that patients are invested in maintaining a functional AVF. Similar findings have been reported by Richard and Engebretson (2010) who interviewed 14 patients to examine how individuals with end stage renal disease negotiate living with an AVF. An overarching theme of vulnerability leading to mistrust of health care technology and providers likely contributed to the increased vigilance and assertiveness demonstrated by patients to protect their vascular access from harm. This may, in part, explain the patient behaviours described by HD nurses reflecting the patient's desire to control the cannulation procedure and/or limit who can cannulate in an effort for it to be successful.

Successful cannulation is also essential if patient attitudes towards having an AVF are to change. Two recent studies have explored patients' decisions towards refusal to get an AVF placement. The first, by Xi et al. (2011) explored the attitudes, beliefs, preferences, and values of

13 HD patients who were deemed eligible for an AVF by their nephrologist, but refused surgical creation or cannulation. The patients in this study described a number of negative experiences associated with having an AVF including failure to mature, cannulation difficulties and pain, bleeding after needle withdrawal, and the negative appearance of the AVF. Patients verbalized concern with the lack of experience nurses had with cannulation and while no patients refused cannulation on a permanent basis, these concerns were cited as potential reasons against consenting to AVF cannulation. In a more recent study, Axley and Rosenblum (2012) surveyed patients from 364 U.S. dialysis facilities to determine the reasons patients with CVCs refused to get an AVF created. Once again, concerns and/or fears specific to cannulation and/or pain were identified as a major deterrent to getting an AVF. Understanding the barriers to AVF creation is essential if HD programs plan to maintain or improve current AVF rates. In the long term having more AV accesses would provide sufficient opportunities to practice AVF cannulation and maintain skill competency.

Issues inherent in the organization and structure of day-to-day practices within the HD unit are contributing to the failure of HD nurses to become expert cannulators. First, the pressured pace of the unit during on/off procedure times was identified in this study and this was consistent with previous findings (Wilson et al., 2010). These pressures come from a variety of sources including the individual nurse and other HD nurses, as well as from the patients themselves. Transportation providers would appear to play an added role in the pace pressures for those patients worried about missing their ride home. These patients, in turn, may create additional stress for HD nurses in terms of wanting on/off their treatment as quickly as possible and this may contribute to the "assembly line" approach described previously (Wilson et al., 2010).

Second, issues inherent in the model of nursing care provided in the HD unit would appear to be a major factor on a number of levels. It is important to note that in years past, the HD unit where the study took place provided care to patients using a primary nursing model whereby HD nurses were accountable for "knowing" the issues of their primary patients. With major administrative changes at the organizational level, the primary nursing model of care was removed and development of a new patient delivery model was in its infancy. To some extent, this absence of a clearly defined nursing care delivery model contributed to the lack of continuity described by participants, as there were no clear principles by which to guide decisions in patient care assignment. Furthermore, the large physical size of the HD and the sizeable numbers of HD nurses available to cannulate made avoidance of cannulation relatively easy. The workplace environment would appear to support the avoider by not assigning an AVF patient to that individual, therefore contributing to the spiral of lack of exposure to cannulation and the subsequent failure of skill development.

From a patient education standpoint, the model of care delivery would appear to have a negative impact, as well. Many nurses we interviewed were unclear of their role in educating patients around the AVF and this, for some, may be reflective of their “novice” role within the HD unit. It may also reflect the lack of clear delineation of the HD nurse’s role in patient education. Add to this the lack of continuity in patient care assignment and inconsistent documentation described previously (Wilson et al., 2010) and it becomes very difficult for the HD nurse to take ownership of patient education and follow-up over the long term.

IMPLICATIONS FOR PRACTICE

The results of this study provide insight into the attitudes and experiences surrounding cannulation of the AVF from the perspective of the novice HD nurse. There are a number of issues identified by novice cannulators. From a clinical standpoint, the overall goal is to ensure that all HD nurses are confident and proficient cannulators and, at the same time, are able to maintain these skills over the long term. From a nursing practice perspective, there would appear to be a number of factors hindering cannulation that are amenable to change.

First and foremost, the concept and concerns of having perpetual novices need to be named and explored publicly with staff. By presenting these issues openly, there will be an opportunity to change a culture of shame related to lack of practice proficiency to understanding the structural limitations. Increased team cohesion to support cannulation will only come when there is a shift in thinking from nurses viewing their colleagues as incompetent to seeing a culture in which expertise in cannulation is very difficult to obtain. Although nurses quite clearly know who the novice and expert cannulators are on their unit, it is still within the realm of conjecture as to who is trying to improve upon their skills.

Secondly, once the challenge of the *perpetual novice* is made public, leaders in HD management need to work with staff at identifying strategies that promote opportunities to practise cannulation both during and after the orientation period. This may include finding alternate locations where there are more AVFs to cannulate, or cohorting existing patients with AVFs into one room and pairing novice(s) with an expert for education and support. One participant we interviewed suggested all nurses hired to dialysis have an observational experience in the operating room to watch and learn about AVF construction firsthand. A strategy being considered at the unit in this study is an annual recertification process for cannulation, as a means to objectively measure skill acquisition over time. On the negative side, development and maintenance of this type of program would entail a great deal of work, but on a positive note would keep cannulation at the forefront of learning and would encourage routine self-assessment by all HD nurses, whether novice or not. It would be important to frame this annual learning not as a punitive measure, but as a means of providing opportunity to progress towards expertise.

It is interesting to note that all of the staff who participated in this study were employed either part-time or casual hours. This further emphasizes that opportunity is essential for improving cannulation skills. HD nurses who are employed in part-time positions may have different educational needs than their full-time counterparts in regards to cannulation. This needs to be taken into consideration when designing education programs and determining patient care assignments in the HD unit.

Apart from strategies to enhance skill acquisition, it may be beneficial to include strategies in orientation specific to communication skills and conflict resolution for nurses starting in HD. Nurses need to feel safe asking for help when they encounter challenges during cannulation, regardless of their years of nursing experience. These added skills would enable nurses to address tensions that may arise between themselves and their patients, as well. Dellasega et al. (2009) suggest that orientation programs for experienced nurses should include ongoing dialogue about expectations and anxieties about their new role and provide opportunities to draw on past experiences, as they learn new skills. They also suggested that orientation is a time to address nurses’ emotional needs, as they transition to a new role and identifying strategies to enhance support are crucial to success. These strategies would seem appropriate during orientation given comments brought forth by nurses we interviewed specific to the emotions and stressors they identified. From a team standpoint, there should be some consideration given to team building sessions for all HD nurses. This, too, will promote a culture in the HD unit of cooperation and support whereby nurses feel comfortable asking for help among all their peers.

Opportunities to look at strategies that enhance continuity of care in the present work environment are essential given the barriers nurses identified. At the unit level, there may be opportunities to look at RN/patient assignment in terms of who does the cannulation, alone or with a mentor present, as well as strategies that promote RN/patient continuity beyond the episode of care. At the same time, enhancing current documentation systems currently in use would be important. On a broader level, there is a need for discussions with nurses and administrative personnel regarding the model of care most desirable for patients on chronic HD that facilitates continuity of care over the long term.

From a patient perspective, the first step to improving prevalent AVF rates in an HD unit is to ensure all patients are knowledgeable about the AVF so they can make an informed decision about whether to have one or not. A simple strategy, such as ensuring patient education materials are readily available in the HD unit and waiting room, would be easy to accomplish. In addition, it would be important to reinforce among HD nurses that education of patients about AVFs is within their nursing scope of practice and identify their learning needs on the effective utilization of available teaching tools.

IMPLICATIONS FOR RESEARCH

Results of the present study have a number of implications for future research in the area. First, further research specific to the *perpetual novice* phenomenon would be beneficial with particular attention to whether this concept has broader applicability beyond nephrology nursing practice. It is easy to imagine that in a practice profession, all areas would have particular tasks that are not performed with enough regularity to move along the continuum of expertise. Second, there are opportunities for evaluation studies examining outcomes of intervention strategies specific to improving cannulation skills to determine which strategies are most effective in skill development. Finally, it would be helpful to determine whether efforts aimed at improving nursing work environments through the building of interpersonal relationships among HD nurses results in positive outcomes for HD patients.

LIMITATIONS

This study provides a first look at cannulation of AVFs from the perspective of the novice HD nurse. Results reflected the views and opinions of a small sample (n=9) of nurses working in one HD centre and, therefore, are not necessarily generalizable to other nephrology units. The nurses who participated were ones who self-identified as novice cannulators, as opposed to using an objective measure of cannulation skill. It is unknown whether nurses interviewed were, in fact, novice cannulators recognizing that some HD nurses may underestimate their ability at cannulation. The concept of the *perpetual novice* is not unit

dependent, and will likely be found in hemodialysis units with a similar cultural context. A number of administrative changes, both at the greater organizational level and within the HD unit, were underway at the time of the interviews. This may have had an impact on how participants answered the questions being asked.

CONCLUSION

In summary, this study provides a beginning look at the attitudes and experiences of the *perpetual novice* cannulator of the AVF within the culture of a HD unit. The *perpetual novice* is a state in which HD nurses are unable to progress towards expert in the skill of AVF cannulation. Factors hindering the transition of some HD nurses from novice to expert cannulator were identified. Some barriers to skill advancement arose from within the individual such as willingness to seek opportunities to cannulate. There was a significant environmental/contextual component, as well, which included limited learning opportunities for cannulation, patients directing their preference for where to cannulate, and pace pressures of the HD unit. The results of this study will be helpful in directing future educational, operational, and supportive interventions for novice HD nurses around cannulation competence.

ACKNOWLEDGEMENT

This study was funded by the Canadian Association of Nephrology Nurses and Technologists (CANNT) 2010 Research Grant.

REFERENCES

- Axley, B., & Rosenblum, A. (2012). Learning why patients with central venous catheters resist permanent access placement. *Nephrology Nursing Journal*, 39(2), 99–103.
- Benner, P. (2001). *From novice to expert: Excellence and power in clinical nursing practice*. New Jersey: Prentice Hall Health.
- Bonner, A., & Greenwood, J. (2006). The acquisition and exercise of nephrology nursing expertise: A grounded theory study. *Journal of Clinical Nursing*, 4, 480–489.
- Burns, N., & Grove, S.K. (1995). *Understanding nursing research*. Philadelphia: W.B. Saunders Company.
- Canadian Nurses Association. (2004). *Joint position statement: Promoting continuing competence for registered nurses*. Retrieved from http://www2.cna-aiic.ca/CNA/documents/pdf/publications/PS77_promoting_competence_e.pdf
- Dellasega, C., Gabbay, R., Durdock, K., & Martinez-King, N. (2009). An exploratory study of the orientation needs of experienced nurses. *The Journal of Continuing Education in Nursing*, 40(7), 311–316.
- Jindal, K., Ethier, D., Lindsay, R.M., Barre, P., Kappell, J.E., Carlisle, et al. (1999). Clinical practice guidelines for vascular access. *Journal of the American Society of Nephrology*, 10(Suppl.), S287–S305.
- Lee, T., Barker, J., & Allon, M. (2006). Needle infiltration of arteriovenous fistulae in hemodialysis: Risk factors and consequences. *American Journal of Kidney Diseases*, 48, 1020–1026.
- Lincoln, Y.S., & Guba, E.G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Moist, L.M., Trpeski, L., Na, Y., & Lok, C.E. (2008). Increased hemodialysis catheter use in Canada and associated mortality risk: Data from the Canadian Organ Replacement Registry 2001–2004. *Clinical Journal of the American Society of Nephrology*, 3, 1726–1732.
- Poland, B., Lehoux, P., Holmes, D., & Andrews, G. (2005). How place matters: Unpacking technology and power in health and social care. *Health and Social Care in the Community*, 13(2), 170–180.
- Richard, C., & Engebretson, J. (2010). Negotiating living with an arteriovenous fistula for hemodialysis. *Nephrology Nursing Journal*, 37(4), 363–374.
- Richards, L., & Morse, J.M. (2007). *Users guide to qualitative methods* (2nd ed.). Thousand Oaks CA: Sage Publications.
- Streubert Speziale, H.J., & Carpenter, D.R. (2003). *Qualitative research in nursing* (3rd ed.). Philadelphia: Lippincott Williams & Wilkins.
- van Loon, M.M., Kessel, A.G., van der Sande, F.M., & Tordoir, J.H. (2009). Cannulation practice patterns in hemodialysis vascular access: Predictors for unsuccessful cannulation. *Journal of Renal Care*, 35(2), 82–89.
- Wilson, B., Harwood, L., Oudshoorn, A., & Thompson, B. (2010). The culture of vascular access cannulation among nurses in a chronic hemodialysis unit. *The CANNT Journal*, 20(3), 35–42.
- Xi, W., Harwood, L., Diamant, M.J., Brown, J.B., Gallo, K., Sontrop, J.M., et al. (2011). Patient attitudes towards the arteriovenous fistula: A qualitative study on vascular access decision making. *Nephrology Dialysis Transplantation*, 26(10), 3302–3308.

Understanding pruritis in dialysis patients

By Joy Makari, Karen Cameron and Marisa Battistella

Copyright © 2013 Canadian Association of Nephrology Nurses and Technologists

LEARNING OBJECTIVES

1. Describe the epidemiology, diagnostic challenges and clinical presentation of pruritus in dialysis patients.
2. Explain possible pathophysiological mechanisms for pruritus in dialysis patients.
3. Evaluate the literature supporting current treatment alternatives for dialysis-related pruritus.

INTRODUCTION

Pruritus in chronic dialysis patients is a common, distressing symptom that is often under-appreciated and overlooked in clinical practice (Patel, Freedman, & Yosipovitch, 2007). It is particularly frustrating for both patients and health care providers since there is limited and conflicting evidence for effectiveness of various treatment options (Wikström, 2007). The pathophysiology of pruritus in end stage renal disease (ESRD) is largely unknown, which significantly limits the ability to target therapies. Despite the inadequacies of current literature,

observational studies demonstrate that itchy skin in dialysis patients is associated with poor sleep, depression, and a reduced quality of life (Wikström, 2007). Furthermore, sleep disturbance secondary to pruritus in hemodialysis patients has been implicated with a greater risk for mortality (Patel et al., 2007). For these reasons, pruritus in ESRD is a symptom that requires greater clinical attention.

EPIDEMIOLOGY

During the 1970s, the prevalence of pruritis in dialysis patients was reported to be as high as 85% (Patel et al., 2007). However, with higher efficiency dialysis, the prevalence appears to have decreased substantially (Patel et al., 2007). Data from the Dialysis Outcomes and Practice Pattern Study (DOPPS I) demonstrated that 46% of hemodialysis patients presented with moderate to severe itch (Wikström, 2007). In addition, there appears to be no difference in the prevalence of pruritus among peritoneal dialysis patients and hemodialysis patients (Mettang & Weisshaar, 2010). These relatively high percentages suggest the importance of recognizing and treating pruritus in patients on dialysis.

DIAGNOSTIC CHALLENGES

Chronic kidney disease (CKD)-associated pruritus can be defined as a generalized or localized itch occurring in ESRD patients, where alternate diagnostic causes of pruritus have been ruled out (Murphy & Carmichael, 2000). Pruritus secondary to ESRD is perhaps under-recognized due to the large variety of competing causes of this non-specific symptom, including primary skin diseases such as scabies and psychological dysfunction (Murphy & Carmichael, 2000). Other causes of pruritus include liver disease, iron deficiency anemia, inflammation, hypercalcemia, hyperphosphatemia, and hyperparathyroidism (Wikström, 2007).

Joy Makari, PharmD student, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, Ontario

Karen Cameron, BSc Phm, ACPR, CGP, Education Coordinator, University Health Network, Toronto, ON

Marisa Battistella, BSc Phm, PharmD, ACPR, Clinician Scientist, Assistant Professor, Leslie Dan Faculty of Pharmacy, University of Toronto, Clinical Pharmacist—Nephrology, University Health Network

Address correspondence to: Marisa Battistella, BSc Phm, PharmD, ACPR, Clinical Pharmacist- Nephrology, University Health Network, 200 Elizabeth Street, EB 214, Toronto, ON, M5G 2C4

Email: marisa.battistella@uhn.ca

CLINICAL PRESENTATION

Patient presentation is highly variable and pruritus can manifest at all severities. In clinical studies, the severity of pruritus is quantified using the Visual Analogue Scale (VAS) score, a 10-point scale, with 0' indicating no pruritus and "10" indicating very severe pruritus (Reich et al., 2012). In addition, pruritus can be of short duration, lasting only a few minutes, or it can persist during an entire day. In many cases, it is more severe at night (Patel et al., 2007). The skin can appear normal or show evidence of skin damage due to scratching such as nodular scabs, scars, and excoriations (Narita, Iguchi, Omori, & Gejyo, 2008). The site of itching is highly variable from patient to patient (Mathur et al., 2010) and commonly includes the back, arms, head, and abdomen (Patel et al., 2007). Environmental factors have also been found to exacerbate pruritus and include inactivity, dry skin, heat, and sweat (Zucker et al., 2003). Factors found to provide symptomatic relief include an active lifestyle, sleep, cold temperatures, and both hot and cold showers (Zucker et al., 2003).

PROPOSED PATHOPHYSIOLOGY

There are several proposed mechanisms explaining the pathogenesis of pruritus in patients with ESRD. However, the evidence supporting them is not definitive. The five prevailing theories in current renal literature are discussed below.

Xerosis (dry skin)

Although xerosis is not consistently correlated with pruritus in scientific literature (Manenti, Tansinda, & Vaglio, 2009), there is evidence that roughly 50% of dialysis patients with pruritus report dry skin and perceive it to be exacerbating the itchy sensation (Zucker et al., 2003).

Pruritogenic substances

The accumulation of substances not adequately removed by dialysis that can induce pruritus, called pruritogenic substances, has been implicated as another potential mechanism. Some of these substances include vitamin A, histamine, and divalent ions such as calcium, phosphorus, and magnesium (Narita et al., 2008). These substances can act locally on receptors that mediate the sensation of itch, or centrally by modulating pathways that cause itch perception (Narita et al., 2008).

Regarding bi-valent ions, some studies have shown that these ions precipitate and deposit in the epidermal layer of the skin producing a sensitizing effect to pruritus (Manenti, Tansinda, & Vaglio, 2009). It also is important to note that serum histamine levels have been found to be elevated in most patients with pruritus, however, are not correlated with the level of severity, a finding that may explain non-response to antihistamines in some patients (Manenti, Tansinda, & Vaglio, 2009). In addition, elevated parathyroid hormone has been correlated

to the symptom of pruritus. However, it does not seem to be pruritogenic itself, as it does not induce pruritus when injected into the skin (Manenti, Tansinda, & Vaglio, 2009). Of interest, correction of any of these values does not appear to alleviate the pruritus—perhaps indicating another cause.

Neuropathic etiology

A third potential mechanism for CKD-associated pruritus is that abnormal proliferation of sensory nerve fibres results in the sensation of itch (Narita et al., 2008). In other words, pruritus is a sign of underlying neuropathy. This hypothesis is supported by the finding that gabapentin, an agent used for neuropathic pain, has been effective in treating CKD-associated pruritus (Patel et al., 2007).

Opioid peptide imbalances

Several opioid receptors are involved in pruritus pathways, as confirmed by the observation that morphine, a μ -opioid agonist, can induce itch (Manenti, Tansinda, & Vaglio, 2009). In contrast, agents that stimulate the κ -opioid receptor can reduce itch (Patel et al., 2007). In CKD-associated pruritus, it is believed that there exists an imbalance between the endogenous opioid peptides that stimulate and inhibit pruritus pathways (Patel et al., 2007).

Pro-inflammatory state

Lastly, it is thought that CKD results in immune system abnormalities that lead to a pro-inflammatory state, manifesting as pruritus (Patel et al., 2007). This is supported by studies demonstrating decreased pruritus in response to immunosuppressant therapies including ultraviolet B (UVB) light, tacrolimus, and thalidomide (Patel et al., 2007).

GENERAL APPROACH TO TREATMENT

The evidence supporting therapies for CKD-associated pruritus has many limitations and, thus, there is no definitive treatment algorithm to guide therapy decisions. Therefore, the general approach to treatment is to choose agents with the most favourable side effect profile. More specifically, patients should be offered a trial of topical agents initially in addition to non-pharmacological measures. If symptoms persist or worsen, a trial of systemic therapies may be explored. Overall, topical agents have demonstrated benefit in the setting of mild, localized pruritus (Berger & Steinhoff, 2011). More severe, generalized pruritus will likely require trials of systemic therapy. A summary of systemic medications, doses, and adverse effects of common agents used in clinical practice is provided in Table 1.

NON-PHARMACOLOGICAL THERAPY

Based on epidemiological studies that have proposed alleviating factors, patients can be advised to wear light clothing to help keep body temperature cool and use

humidifiers to ward off dry environments. Patients who report scratching should be advised to trim and file nails to avoid excoriation of the skin (Manenti, Tansinda, & Vaglio, 2009). It should be noted that these recommendations are not evidence-based.

There are several other non-pharmacological strategies that have been found to reduce pruritis. UVB therapy has well documented efficacy for CKD-associated pruritus and is thought to exert its effect by reducing pro-inflammatory cytokines and inducing mast-cell apoptosis (Patel et al., 2007). However, risks associated with UVB irradiation include potential skin malignancy and long-term immune suppression (Mettang & Weisshaar, 2010). In addition, acupuncture may also be of benefit, as there are some studies reporting efficacy (Manenti et al., 2009).

TOPICAL AGENTS

Emollients have been historically used as the first-line agents, despite limited evidence of benefit. (Lugon, 2005). Several studies have demonstrated that products containing urea, propylene glycol, fatty acids, mineral oil, and paraffin improve dry skin in hemodialysis patients (Balaskas et al., 2011; Chen Chiu & Wu, 2006; Okada & Matsumoto, 2004; Morton et al., 1996). However, the term “emollient” has been loosely used in the literature. By definition, emollients are substances that fill

the spaces between cells in the stratum corneum to make skin feel smoother and softer (Kleiman, 2010). Examples of emollients include fatty acids, cocoa butter, and mineral oil (Kleiman, 2010). Urea and propylene glycol are humectants that act by drawing water from lower skin layers and from the environment into the stratum corneum while paraffin is an occlusive agent that physically blocks water loss (Kleiman, 2010). The net effect of any of these agents is retaining water in the skin and alleviating xerosis with minimal to no adverse effects.

Capsaicin, a natural substance extracted from the common pepper plant, is found in many topical analgesics and works by depleting neurons of substance P (Lugon, 2005). Some studies have demonstrated that topical capsaicin 0.025% applied three to four times daily may decrease severity of pruritus in dialysis patients compared to placebo (Makhlough et al., 2010; Tarng, Cho, Liu, & Huang, 1996), while others have failed to show benefit (Weisshaar et al., 2003). One deterrent from using topical capsaicin is that the majority of patients will experience an initial irritation that feels like burning or tingling, although this does decrease over several days of use (Grindrod & Marra, 2010). Cost may be an additional deterrent, as ESRD patients typically will require large quantities if pruritus is generalized and the product requires application several times per day (Lugon, 2005).

Table 1: Summary of systemic therapeutic alternatives in clinical practice

Medication	Dose in dialysis	Common adverse effects
Oral antihistamines		
Hydroxyzine	10–25 mg po OD–TID	Drowsiness, dizziness, dry mouth, weight gain in the long-term
Diphenhydramine	25 mg po BID–TID	
Dimenhydrinate	25–50 mg po BID–TID	
Loratadine	10 mg po every other day	
Desloratadine	5 mg po every other day	
Cetirizine	5 mg po once daily	
Anti-epileptic		
Gabapentin	100 mg po post HD Max: 300mg/day	Drowsiness, dizziness, fatigue, loss of balance, tremor
Pregabalin	25–75 mg po daily	
Antidepressant Doxepin	10 mg po BID	Sedation, dry mouth, urinary retention, constipation, blurred vision, orthostatic hypotension, sexual dysfunction, weight gain

Tacrolimus, an immunosuppressing agent, has demonstrated inconsistent efficacy when patients applied either 0.1% or 0.3% ointment twice daily for a total of two to six weeks (Mettang & Weisshaar, 2010). Although it appears safe in the short term, the ointment formulation is quite costly, making this less favourable.

SYSTEMIC AGENTS

Oral antihistamines

In practice, first or second generation antihistamines are often chosen as first-line drug therapy for patients who have not adequately responded to topical interventions, despite a lack of evidence. Some examples include hydroxyzine, diphenhydramine, dimenhydrinate, loratadine, desloratadine, and cetirizine. It is believed that the benefit seen with antihistamines may be attributable to their sedating side effect (Manenti, Tansinda, & Vaglio, 2009). Overall, little clinical benefit has been achieved with antihistamines. However, due to their relatively low cost and safety they are still considered first-line treatment options (Manenti, Tansinda, & Vaglio, 2009; Berger & Steinhoff, 2011; Murphy & Carmichael, 2000; Lugon, 2005). The lack of clinical effectiveness supports the pathophysiological theory that high histamine levels are not the only component to CKD-associated pruritus.

Gabapentin

Gabapentin is an anticonvulsant that is also used for treatment of neuropathic pain. The off-label use of gabapentin in refractory pruritus in dialysis patients is supported by several small studies of 25 subjects or fewer. In one randomized, double-blind, placebo-controlled, cross-over trial 25 dialysis patients with pruritus refractory to antihistamines and topical therapies lasting eight weeks or longer were randomized to receive gabapentin 300 mg or placebo three times weekly post dialysis for a total of four weeks (Gunal et al., 2004). The primary outcome of the study, a reduction in VAS score by 50% or greater, was statistically significant, indicating efficacy for gabapentin (Gunal et al., 2004). Although the authors did not provide the specific number of patients who reached at least a 50% reduction in VAS score, it was stated that only one patient's symptoms did not improve significantly (Generali & Cada, 2007). Other available evidence consists of reported case series, where six patients who were refractory to topical therapies or antihistamines for at least two weeks were treated with gabapentin 100 mg three times weekly post dialysis sessions for up to 10 months (Manenti et al., 2005). All six patients reported anecdotal improvement in symptoms, while five had significantly reduced VAS scores (Manenti et al., 2005).

Based on these studies, gabapentin can be considered an option for dialysis patients with pruritus refractory to topical agents and antihistamines. However, there are several safety concerns. Gabapentin is primarily

eliminated through the kidney and has a significantly prolonged half-life in hemodialysis patients (Manenti, Tansinda, & Vaglio, 2009). Caution should be exercised and the lowest possible dose should be initiated. Adverse effects commonly reported in controlled trials include drowsiness, dizziness, and fatigue (Generali & Cada, 2007).

OTHER SYSTEMIC THERAPIES IN THE LITERATURE

Pregabalin

Pregabalin, another agent indicated for neuropathic pain, has also been studied for the treatment of pruritus in dialysis patients. Although its mechanism of action is not fully understood, two small studies in dialysis patients suggest that the use of pregabalin in patients who are refractory to topical agents and oral antihistamines may significantly reduce the severity of pruritus (Aperis et al., 2010; Solak et al., 2012). Specifically, pregabalin may be beneficial for dialysis patients with pruritus and neuropathic pain (Solak et al., 2012). However, further studies are required to confirm these results. In addition, pregabalin has similar safety concerns to gabapentin, as it is solely eliminated by urinary excretion, necessitating once-daily dosing at low doses, and it produces similar adverse effects including drowsiness, dizziness, and fatigue (Solak et al., 2012).

Doxepin

Doxepin is a tricyclic antidepressant with prominent antihistamine activity, but also targets many other receptors in the brain (Canadian Pharmacists Association, 2012). There is only one study to support its use in dialysis-related pruritus refractory to treatment with topical agents, antihistamines, and gabapentin (Pour-Reza-Gholi et al., 2007). Although this was a randomized controlled trial showing potential benefit, several limitations to this study include the small patient population ($n=24$) and that the outcome was not measured using a validated tool such as the VAS score (Pour-Reza-Gholi et al., 2007). In addition to its prominent sedating effect, doxepin may potentially cause several other adverse effects including weight gain, tachycardia, increased blood pressure, blurred vision, urinary retention, constipation, and dry mouth due to its actions on many receptors.

Naloxone and naltrexone

Several studies have investigated the effects of drugs that act via the opioid pathways. The μ -opioid receptor antagonists, naloxone and naltrexone, have both been studied in the treatment of pruritus, but randomized clinical trials have produced mixed results (Manenti, Tansinda, & Vaglio, 2009). In addition to causing significant nausea, these agents are undesirable in that they may induce opioid withdrawal for patients already taking opioids for pain relief and, thus, worsen pain control.

CONCLUSIONS

Pruritus in dialysis patients occurs frequently and is often under-diagnosed. Treating pruritus is challenging in that a clear pathophysiology has not been fully elucidated. Despite the lack of evidence, patients presenting with mild pruritus may benefit from topical agents. If inadequate response is achieved, oral antihistamines may relieve some

symptoms—perhaps indirectly—through their sedating properties. In refractory pruritus, there is evidence for gabapentin therapy. However, low doses should be initiated and patients should be closely monitored. Given the epidemiological association with pruritus and poor sleep, depression, reduced quality of life, and mortality, greater clinical attention is required to patients burdened by this symptom.

REFERENCES

- Aperis, G., Paliouras, C., Zervos, A., Arvantis, A. & Alivanas, P. (2010) The use of pregabalin in the treatment of uraemic pruritus in haemodialysis patients. *J Ren Care*, 36(4), 180–185.
- Balaskas, E., Szepietowski, J.C., Bessis, D., Ioannides, D., Ponticelli, C., Ghienne, C., ... Dupuy, P. (2011) Randomized, double-blind study with glycerol and paraffin in uremic xerosis. *Clin J Am Soc Nephrol*, 6(4), 748–752.
- Berger, T.G., & Steinhoff, M. (2011). Pruritus and renal failure. *Semin Cutan Med Surg.*, 30, 99–100.
- Canadian Pharmacists Association. (2012). Pregabalin (Lyrica) drug monograph. *Electronic Compendium of Pharmaceuticals and Specialties*. Retrieved from <https://www.e-therapeutics.ca>
- Canadian Pharmacists Association. (2012). Cyclic antidepressants: Doxepin drug monograph. *Electronic Compendium of Pharmaceuticals and Specialties*. Retrieved from <https://www.e-therapeutics.ca>
- Chen, Y.C., Chiu, W.T., & Wu, M.S. (2006). Therapeutic effect of topical gamma-linolenic acid on refractory uremic pruritus. *Am J Kidney Dis*, 48(1), 69–76.
- Generali, J., & Cada, D.J. (2007). Off-label drug uses: Gabapentin: Uremic pruritus. *Hospital Pharmacy*, 42(6), 520–531.
- Grindrod, K., & Marra, C. (2010). Chapter 48: Osteoarthritis: Table 3, topical analgesics: Capsaicin. *Patient Self Care, 2nd Edition*, 462.
- Gunat, A.I., Ozalp, G., Yoldas, T.K., Gunat, S.Y., Kirciman, E., & Celiker, H. (2004). Gabapentin therapy for pruritus in hemodialysis patients: A randomized, placebo-controlled, double-blind trial. *Nephrol Dial Transplant*, 19, 3137–3139.
- Kleiman, N. (2010). Chapter 63: Dermatologic conditions. *Patient Self Care, 2nd Edition*, 614–617.
- Lugon, J.R. (2005). Uremic pruritus: A review. *Hemodialysis International*, 9, 180–188.
- Makhlough, A., Ala, S., Haj-Heydari, Z., Kashi, Z., & Bari, A. (2010). Topical capsaicin therapy for uremic pruritus in patients on hemodialysis. *Iran J Kidney Dis*, 4(2), 137–140.
- Manenti, L., Vaglio, A., Constantino, E., Danisi, D., Oliva, B., Pini, S., ... Testori, A. (2005). Gabapentin in the treatment of uremic itch: An index case and a pilot evaluation. *J Nephrol*, 18, 86–91.
- Manenti, L., Tansinda, P., & Vaglio, A. (2009). Uremic pruritus: Clinical characteristics, pathophysiology and treatment. *Drugs*, 69(3), 251–263.
- Mathur, V.S., Lindberg, J., Germain, M., Block, G., Tumlin, J., Smith, M., ... McGuire, D. (2010). A longitudinal study of uremic pruritus in hemodialysis patients. *Clin J Am Soc Nephrol*, 5, 1410–1419.
- Mettang, T., & Weisshaar, E. (2010). Pruritus: Control of itch in patients undergoing dialysis. *Skin Therapy Letter*, 15(2), 1–5.
- Morton, C.A., Lafferty, M., Hau, C., Henderson, I., Jones, M., & Lowe, J.G. (1996). Pruritus and skin hydration during dialysis. *Nephrol Dial Transplant*, 11(10), 2031–2036.
- Murphy, M. & Carmichael, A.J. Renal itch. (2000). *Clinical and Experimental Dermatology*, 25, 103–106.
- Narita, I., Iguchi, S., Omori, K., & Gejyo, F. (2008). Uremic pruritus in chronic hemodialysis patients. *J Nephrol*, 21, 161–165.
- Okada, K., & Matsumoto, K. (2004). Effect of skin care with an emollient containing a high water content on mild uremic pruritus. *Ther Apher Dial.*, 8(5), 419–422.
- Patel, T.S., Freedman, B.I., & Yosipovitch, G.I. (2007). An update on pruritus associated with CKD. *Am J Kidney Dis*, 50, 11–20.
- Pour-Reza-Gholi, F., Nasrollahi, A., Firouzan, A., Esafahani, E.N., & Farrokhi, F. (2007). Low-dose doxepin for treatment of pruritus in patients on hemodialysis. *Iranian Journal of Kidney Disease*, 1(1), 34–37.
- Reich, A., Heisig, M., Phan, N.Q., Taneda, K., Takamori, K., Takeuchi, S., ... Szepietowski, J.C. (2012). Visual analogue scale: Evaluation of the instrument for the assessment of pruritus. *Acta Derm Venereol*, 92(5), 497–501.
- Solak, Y., Biyik, Z., Atalay, H., Abduzhappar, G., Guney, F., Turk, S., ... Kanbay, M. (2012). Pregabalin versus gabapentin in the treatment of neuropathic pruritus in maintenance haemodialysis patients: A prospective, crossover study. *Nephrology*, 17, 710–717.
- Tarng, D.C., Cho, Y.L., Liu, H.N., & Huang, T.P. (1996). Hemodialysis-related pruritus: a double-blind, placebo-controlled, crossover study of capsaicin 0.025% cream. *Nephron*, 72(4), 617–22.
- Weisshaar, E., Dunker, N., & Gollnick, H. (2003). Topical capsaicin therapy in humans with hemodialysis-related pruritus. *Neurosci Lett*, 345(3), 192–194.
- Weisshaar, E., Kucenic, M.J., & Fleischer, A.B., Jr. (2003). Pruritus: A review. *Acta Derm Venereol Suppl (Stockh)*, 213, 5–32.
- Wikström, B. (2007). Itchy skin—A clinical problem for hemodialysis patients. *Nephrol Dial Transplant*, 22(Suppl. 5), v3–v7.
- Zucker, I., Yosipovitch, G., David, M., Gafter, U., & Boner, G. (2003). Prevalence and characterization of uremic pruritus in patients undergoing hemodialysis: Uremic pruritus is still a major problem for patients with end stage renal disease. *J Am Acad Dermatol*, 49, 842–846.

Understanding pruritus in dialysis patients

By Joy Makari, Karen Cameron and Marisa Battistella

Copyright © 2013 Canadian Association of Nephrology Nurses and Technologists

- Pruritus occurs in approximately what percentage of dialysis patients?
 - 10%
 - 25%
 - 50%
 - 85%
- Although pruritus in dialysis patients is often overlooked, it is an important symptom that requires attention for which of the following reasons:
 - pruritus has been linked with poor sleep and depression
 - pruritus directly increases the risk for mortality
 - pruritus can significantly reduce quality of life
 - a) and c) are correct
- Diagnosing dialysis-related pruritus is found to be very challenging in clinical practice due to its non-specific presentation and many other potential causes of pruritus. Which of the following is NOT a competing cause of pruritus?
 - hypercalcemia
 - hyperthyroidism
 - hyperphosphatemia
 - hyperparathyroidism
- All of the following are environmental factors that may help relieve pruritus in dialysis patients EXCEPT:
 - sweat
 - hot showers
 - cold showers
 - sleep
- All of the following have been proposed as potential pathophysiological mechanisms of pruritus in dialysis EXCEPT:
 - high serum calcium, magnesium, and phosphate
 - UVB radiation
 - dry skin
 - opioid-peptide imbalances
- It's a hot summer day in the dialysis unit when your patient J.D., a 55-year-old male patient on dialysis for approximately one year, mentions to you that he is experiencing this annoying itch that he describes as mild. He's wondering if you can recommend something inexpensive he can try. Which of the following is an appropriate recommendation to make?
 - advise J.D. that the itch is most likely due to being on dialysis and that there is not much you can do to help him
 - suggest that J.D. try to wear light clothing and keep his body temperature cool. If he feels the need to scratch, counsel him on the importance of keeping short nails
 - advise him that sun tanning by the beach may help his itch due to UVB rays
 - advise him to wait it out, as mild pruritus does not require attention. If it gets worse, then he should talk to his doctor
- Which of the following is TRUE regarding topical agents for the treatment of CKD-associated pruritus?
 - topical agents are the first group of agents to try since there is very solid evidence for their efficacy
 - one major drawback of topical capsaicin is the side effect of burning at the site of application, while long-term immune suppression is a potential concern with tacrolimus
 - although they may not be highly efficacious, topical agents are considered first line due to their relative safety and low cost
 - b) and c) are true

Questions 8 and 9 refer to the following scenario:

J.D., a 55-year-old male on dialysis for approximately one year, tells you that for the last three months, he has tried several different non-drug measures and topical agents to help control his mild pruritus.

He is still having trouble sleeping, is constantly scratching at night, and is wondering if there are any other options to help his pruritus. He now describes it as severe and frustrating.

- Which of the following would be the most appropriate next agent to try?
 - oral antihistamine
 - doxepin
 - gabapentin
 - pregabalin
- Several months later, J.D.'s nephrologist has prescribed him with gabapentin 100 mg po post HD. Which of the following regarding gabapentin is TRUE?
 - gabapentin is safe in dialysis patients since it is 50% renally excreted and 50% hepatically excreted
 - gabapentin is an anticonvulsant used for seizure control and should not be used in anyone who does not have a seizure disorder
 - gabapentin is primarily renally excreted and, therefore, may cause extreme drowsiness and loss of balance that may increase the risk of falls in dialysis patients
 - pregabalin has been demonstrated to be more effective than gabapentin for dialysis-related pruritus
- Which the following is NOT a side effect of doxepin therapy?
 - drowsiness
 - constipation
 - excessive salivation
 - orthostatic hypotension

CONTINUING EDUCATION STUDY
ANSWER FORMCE: 2.0 HRS CONTINUING
EDUCATION

Understanding pruritus in dialysis patients

By Joy Makari, Karen Cameron and Marisa Battistella

Volume 23, Number 1

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,
P.O. Box 10, 59 Millmanor Place,
Delaware, ON N0L 1E0
or submit online to www.cannt.ca
- Enclose a cheque or money order payable to CANNT.
- Post-tests must be postmarked by March 31, 2015.
- 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 + HST (\$13.56); Non-member – \$15 + HST (\$16.95)

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
9. a b c d
10. 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 _____

Meet the 2012 CANNT bursary, award and research grant winners

Copyright © 2013 Canadian Association of Nephrology Nurses and Technologists

SPONSORED BY FRESenius MEDICAL CARE

KAREN MACDONALD, RECIPIENT OF THE FRANCES BOUTILIER BURSARY (BACCALAUREATE LEVEL)

By Karen MacDonald, RN, CNeph(C), Sydney, NS



I am writing to express my sincere appreciation as the recipient of the Frances Boutilier Bursary. I am currently studying toward my baccalaureate degree in pursuit of my professional goals. I have worked in various aspects of nephrology nursing (in-patient nephrology, transplantation, peritoneal dialysis, hemodialysis and the clinic setting) for more than 25 years and have been a certified nephrology nurse (CNeph(C)) for almost 20 years. I have been a CANNT member for most of my nursing career. I have been involved in various committees for both Atlantic and National CANNT conferences, and presented a poster at CANNT 2008 in Quebec. CANNT provides an avenue for learning and continued education with our professional peers and colleagues. I had the pleasure of meeting Frances Boutilier early in my career at the Victoria General Hospital in Halifax. Her consistent demonstration of professionalism and compassion made her an excellent role model. I am extremely grateful for the honour of receiving this bursary in her name and extend my appreciation to the selection committee.

MATHEW PHILLIPS, RECIPIENT OF THE FRANCA TANTALO BURSARY (GRADUATE LEVEL)

By Mathew Phillips, RN, BScN, Dartmouth, NS



I graduated from the University of Saskatchewan, College of Nursing in 2001 with a BScN. For five summers during university and as a new grad I worked at Camp Easter Seal in Watrous, SK, with children and adults with physical and mental disabilities. My first hospital-based nursing job was at St. Paul's Hospital in Saskatoon, SK, where I worked on a general surgery unit for two years. In 2003, after working long enough to pay off my student loans and save a bit of money, I travelled for 18 months through New Zealand, India, and Egypt. On my return to Saskatchewan, I was recruited to the hemodialysis unit at St. Paul's Hospital by a colleague. I immediately

loved the mix of the technical skills and the therapeutic relationships developed with the chronic population, as well as the collaborative multidisciplinary team. I married a wonderful Australian woman and we started a family. After two years in hemodialysis in Saskatoon, we moved to the east coast of Canada with our girls who were two years old and six weeks old. I continued working in hemodialysis in the Capital Health Renal program in Halifax. After two years working as a staff RN, I took on the role of charge nurse in-centre. At the same time I started the Master of Health Studies program through Athabasca University. As well, we had our third child (a boy). I have attended a CANNT conference in Halifax, and co-authored a poster that was presented at the Environment of Excellence Conference in Ottawa this year. I am currently enrolled in my sixth course in the Master's program at Athabasca with an expected graduation date of December 2014. I would like to formally thank CANNT for the Franca Tantalo Bursary. I would also like to acknowledge the excellent resources available on the webpage and in the CANNT Journal, and the organization's ongoing dedication to promoting and advancing nephrology practice in Canada.

MARISA BATTISTELLA, RECIPIENT OF THE CANNT 2012 RESEARCH GRANT

By Marisa Battistella, BScPhm, PharmD, ACPR, Toronto, ON



I graduated from the Faculty of Pharmacy at the University of Toronto in 1998 and completed my pharmacy residency at Sunnybrook and Women's Health Sciences Centre in 1999. I have worked at the University Health Network since 1999 in various positions, including cardiology and internal medicine. In 2002, I completed a PharmD through Idaho State University. I have worked as a Clinical Pharmacist Specialist in the hemodialysis unit at the University Health Network since 2002. In the past eight years I have published several papers and given many presentations on drug therapy in the area of nephrology. I also maintain an active teaching involvement, with the University of Toronto, Leslie Dan Faculty of Pharmacy. Recently, I accepted the position of Clinician Scientist jointly between the University Health Network and the Leslie Dan Faculty of Pharmacy where I will focus much

of my time on clinical research in the area of nephrology. I was also the chair and education coordinator to the Renal Pharmacists Network (RPN), a national organization for renal pharmacists, and I am currently the external liaison coordinator for the RPN.

Editors' note: Marisa is also a valued member of the CANNT Journal editorial committee and provides regular CE articles related to pharmacology and nephrology.

LORIN HOMPOTH, RECIPIENT OF THE AWARD OF EXCELLENCE, TECHNICAL

By Lorin Hompoth, Calgary, AB

I first joined CANNT in 2010 and then volunteered to be the technical representative for the 2011 CANNT Conference Organizing Committee. This was a much bigger task than I had imagined, but I found it very rewarding. I worked with a great group of people and enjoyed being part of the organizing committee. I have spent the last 18 years working in dialysis and the last nine years working in the Southern Alberta Renal Program for Alberta Health Services. It was a surprise and honour to be nominated for the Excellence in Technical award and to be selected as the recipient of this award. I enjoy the challenges of working in dialysis. I first started in dialysis as a Biomedical Engineering Technologist in Regina, Saskatchewan. The challenge of moving into the dialysis area was great, yet the move has been very rewarding for me. The dialysis community is full of wonderful people who enjoy sharing their knowledge and helping others. I enjoy working within this multidisciplinary team and helping the staff get the most from the equipment that we use every day.



JANICE MACKAY, RECIPIENT OF THE AWARD OF EXCELLENCE, ADMINISTRATION/LEADERSHIP

By Janice MacKay, RN, CNeph(C), CCRP, Calgary, AB

I would like to express my sincere appreciation, as this year's recipient of the "Excellence in Leadership" award. I have been very fortunate to spend the majority of my nursing career practising in the area of nephrology within the Southern Alberta Renal Program in Calgary, Alberta. I received my CNA certification in nephrology in 2006 and take satisfaction in being one of 1,168 nurses in Canada with this designation. Over the past nine years, I have held the position of Clinical Research Coordinator. Being involved in the coordination of nephrology-based research leading to evidence-based practice to improve the lives of the patients in our care has been both exciting and an ongoing learning experience. In 2009, I obtained my designation as a Certified Clinical Research Professional (CCRP) and I am also currently enrolled in university and continuing to work towards my undergraduate degree. In supporting patients and families affected by



kidney disease I am proud to say that I have participated in the 2010, 2011 and 2012 Kidney March, organized by the Southern Alberta Branch of the Kidney Foundation. I cannot begin to describe the personal satisfaction I have experienced being a part of the Kidney March family, and I am proud to say that our team raised the most funds to support the Kidney Foundation of Canada. I have been a member of CANNT for many years and have always been impressed with its mission to provide leadership and promote the best nephrology care and practice through education, research, and communication. It is with much gratitude that I accept this award.

LISA KAYE-LILLEBUEN, RECIPIENT OF THE AWARD OF EXCELLENCE, EDUCATION

By Lisa Kaye-Lillebuen, RN, Edmonton, AB

I have been a nephrology nurse for the Northern Alberta Renal Program since graduating from the University of Alberta in 2006. I began working on an inpatient unit and then moved into hemodialysis in 2008. I worked on a busy in-centre hemodialysis unit caring for a wide variety of patients. In 2010 I accepted a position as a Clinical Nurse Educator and have been able to share my knowledge and love of nephrology with others, including facilitating a study group for nurses who are writing the Canadian certification exam in nephrology. I currently work as the CNE for home therapies, which encompasses both home hemodialysis and peritoneal dialysis. I am grateful to work with such a dedicated and inspiring group of staff. When I am not teaching, you can find me playing soccer, reading a good mystery novel, or just spending time with friends and family.



SHARON GULEWICH, RECIPIENT OF THE AWARD OF EXCELLENCE, RESEARCH

Biography not available



JODI STULTZ, RECIPIENT OF THE AWARD OF EXCELLENCE, NOVICE

By Jodi Stultz, RN, BScN, Saint John, NB

I am originally from Riverview, NB, and I received my BScN at UBC in 2006. I worked in Public Health my first two years of practice (Child and Youth Team) until I decided to return to the Maritimes in 2008 after living out west for 10 years. I accepted a position with the Saint John Regional Hospital in the nephrology and hypertension unit and have worked there for four years. I hope to continue my practice there for some time to come.



SPONSORED BY CANNT

RICK LUSCOMBE, RECIPIENT OF THE CERTIFICATION/RE-CERTIFICATION BURSARY, WESTERN REGION

By Rick Luscombe, RN, BN, CNeph(C), Vancouver, BC

I am the Vascular Access Clinical Nurse Leader (CNL) at Providence Health Care and, together with the health care team, am responsible for ensuring optimal vascular access outcomes in renal patients. I have worked for 27 years in nephrology nursing with 25 of those years working in hemodialysis and the most recent 10 as Vascular Access CNL. I co-founded the Vascular Educators Group of BC and was the president of the Canadian Association of Nephrology Nurses and Technologists in 2010 and the Western VP for CANNT prior to that. I obtained my Registered Nurse diploma in 1985 from George Brown College in Toronto, and my Bachelor of Science in nursing degree in 2002 from the University of Victoria.



GILLIAN WHAMOND, RECIPIENT OF THE CERTIFICATION/RE-CERTIFICATION BURSARY, ONTARIO REGION

Biography not available



BEV WATSON, RECIPIENT OF THE CERTIFICATION/RE-CERTIFICATION BURSARY, ONTARIO REGION

Biography/photo not available

MARI SARIAN, DIANE BRAULT, AND NATHALIE PERRAULT, RECIPIENTS OF THE CANNT 2012 JOURNAL AWARD

By Mari Sarian, BScN, DESS, MScN, CNeph(C), Clinical Nurse Specialist in Dialysis, Jewish General Hospital, Montreal, QC

Working in one of the nursing specialties allows the nurse to dig deep into her chosen field of knowledge—to understand complicated medical or technical issues, and to fully grasp the toll a specific ailment takes on the patient and his/her family. The aim, however, is always the same: to provide the best possible care. My nursing career started on the ward of internal medicine where one looks after patients presenting with varied and complex pathologies. Soon after starting my postgraduate studies, I moved to the department of nephrology and learned the ropes of dialysis. When I was offered the position of educator, I did not hesitate to say yes, fully aware of the challenges that lay ahead. As I was about to complete my



Mari Sarian

Master's program, my studies and my work environment intersected when one of my courses required the design and implementation of a project. The starting point was an interview with Nathalie Perreault, the enthusiastic clinical nurse of our peritoneal dialysis clinic. The aim of this initial talk was to pinpoint a particular problem in dire need of an "intervention". On site, my supervisor was Diane Brault. Diane has a Master's Degree in Education and is the Head Nurse of Cardiac Surgery and Neurosurgery. As a result of our collaboration, and with the help and advice of many patients and professionals alike, a patient teaching tool was created. Initially, this tool was the subject of a CANNT 2011 poster presentation where it won the third place award. This prompted the writing of a journal article that shed more light on our intervention. The article was published in the July–September 2012 issue of the *CANNT Journal*. It is with great pleasure that we accept the best article award and thank the nephrology community for this recognition.

Editors' note: Mari and her co-authors published their article "Self management support for peritoneal dialysis patients" in the July–September 2012 issue of the CANNT Journal.

BARBARA WILSON, LORI HARWOOD, AND ABE OUDSHOORN, RECIPIENTS OF THE CANNT 2012 MANUSCRIPT AWARD

By Barbara Wilson, Nurse Practitioner, Dialysis, London Health Sciences Centre



Lori Harwood and Barbara Wilson

It is an honour to receive the 2012 Manuscript Award for our study entitled, "Moving Beyond the 'Perpetual Novice': Understanding the Experiences of Novice Hemodialysis Nurses and Cannulation of the Arteriovenous Fistula". This is the second of two studies examining cannulation of the arteriovenous fistula (AVF) from the perspective of the hemodialysis (HD) nurse. While cannulation is an essential skill, as part of the HD treatment, declining rates of AVFs have significantly reduced the opportunities available for HD nurses to become expert in this skill. In fact, our interviews with nurses have identified a number of factors that hinder HD nurses' from becoming expert cannulators. The term *perpetual novice* was coined to acknowledge the inability of some HD nurses to transition from novice to expert despite working in HD for a number of years. This second study provides further exploration of the concept of *perpetual novice* in an effort to describe the

attitudes and culture surrounding cannulation of the AVF from the perspective of the novice cannulator. We have made a number of practice changes as a result of our findings, and plans are underway to examine vascular access and cannulation from a nephrology program perspective.

We are most grateful to CANNT for its continued support of nephrology nursing research and dissemination of results through the *CANNT Journal*. Without support from CANNT, nursing studies such as ours would not be possible. Our award money will be used to fund future project(s) specific to nephrology nursing and HD.

Editors' note: The manuscript that Barbara and her co-authors submitted "Moving beyond the perpetual novice: Understanding the experiences of novice hemodialysis nurses and cannulation of the arteriovenous fistula" is published in this issue of the CANNT Journal.

**ANN CHRÉTIEN, MAUREEN JONES,
AND CATHY WALKER, RECIPIENTS
OF THE CANNT 2012 POSTER AWARD
(1ST PLACE)**

Biography not available

**MONIQUE MOORE AND KATHALEEN
BIJMAN, RECIPIENTS OF THE CANNT
2012 POSTER AWARD (2ND PLACE)**

By Monique Moore, RN, CNeph(C),
Cornwall, ON



**Monique
Moore**

My nursing career started in 1997 juggling three positions in nursing—in community care with the VON part-time, on a medical-surgical unit at the Riverside Hospital in Ottawa part-time, and casual at the Children's Hospital of Eastern Ontario (CHEO) on the surgical floor. As the VON and Riverside Hospital closed, I started to work on the step-down and surgical floors at the Ottawa Heart Institute. I was with Canadian Blood Services in a full-time position in 1999, where I worked the blood donor clinics and was a charge nurse for six years. I started my dialysis career at the Cornwall Dialysis Clinic and the Ottawa Carleton Dialysis Clinic in 2005 and haven't looked back. I presented at the 2006 and 2010 CANNT conferences and this year I took on a new challenge with the submission of a poster presentation.

**LISA KAYE-LILLEBUEN, DONNA HACKMAN,
MARGARET DYMOND, AND FRANCES REINTJES,
RECIPIENTS OF THE CANNT 2012 POSTER AWARD
(3RD PLACE)**

Lisa Kaye-Lillebuen's biography is on page 27

SPONSORED BY AMGEN CANADA

**MANON DESHAIES, RECIPIENT DE
NEPHROLOGY PRECEPTORSHIP/
MENTORSHIP GRANT: OUTREACH**

Par Manon Deshaies, Trois-Rivières, QC

Je suis très heureuse d'avoir eu le privilège de remporter la bourse de "Preceptorship Mentorship grant" offert par Amgen Canada. Cette belle opportunité me permettra de pouvoir maintenir mes connaissances dans le domaine de la dialyse à domicile. Je travaille au sein du Centre Hospitalier Régional de Trois-Rivières depuis déjà 3 ans au département de néphrologie. Depuis environ un an, je suis affectée au programme de la dialyse à domicile qui permet aux insuffisants rénaux de prendre en charge leur traitement tout en se dialysant chez soi. Concurrément à mon travail, je poursuis une maîtrise en sciences infirmières dans l'éventualité de travailler en pratique avancée.



**RICK LUSCOMBE, RECIPIENT OF THE
NEPHROLOGY PRECEPTORSHIP/MENTORSHIP
GRANT: VASCULAR ACCESS**

Biography is on page 28

**ISABELLE FONTAINE, RECIPIENT
OF THE NEPHROLOGY
PRECEPTORSHIP/MENTORSHIP GRANT**

By Isabelle Fontaine, Moncton, NB

I am a Registered Nurse both in France and Canada. I have worked primarily in specialized emergency and ICU settings, including intensive care organ transplants. It was this experience that led me to become passionate about nephrology. I have been a nurse in dialysis from 2004 to 2009, and I am currently a hemodialysis Nurse Manager in Moncton (NB). I obtained my certification in nephrology in 2009.

**RAJNEET ATKAR, RECIPIENT OF THE
NEPHROLOGY RESEARCH GRANT
(EXPERIENCED)**

By Rajneet Atkar, RN, BN, CNeph(C),
Calgary, AB



I would like to thank the CANNT Board of Directors for selecting me to receive this prestigious award. I have worked as Clinical Nurse Educator in the

Southern Alberta Renal Program (SARP) for the past 14 years. Although research was prominent with the nephrologists in the SARP program, there was lack of nursing research. I believe that in order to advance hemodialysis nursing knowledge, research is critical. Therefore, I enrolled in the thesis-based Master's of nursing program at the University of Calgary in 2011. At the University of Calgary I was able to initially learn the fundamentals of research. Thereafter, by choosing the thesis-based MN route, I was able to go through every step of the research process from developing the research question, to writing a research proposal, to conducting the study and, now, finally writing my thesis. I have found the last years to be my steepest learning curve. I would like to acknowledge my thesis committee members, Dr. Theresa Green, Dr. Jennifer MacRae and Dr. Eleanor Ravenscroft, for their support and encouragement. I am currently completing the last semester for my degree. The topic for my thesis was "Intradialytic Heparin Reduction & Validation of HD Extracorporeal Circuit Subjective Clotting Score Study" in chronic hemodialysis patients. Heparin is an integral part of a successful hemodialysis treatment. There is no research evidence currently available related to testing and validation of heparin dosage adjustment algorithms used for hemodialysis therapy, and my research will help to fill that gap. This study is a sub-study from randomized controlled trials comparing Citrasate (CD) to Acetate based (AD) dialysate. This sub-study was used to reduce the patients' heparin dose prior to randomization in CD or AD. The purpose of this exploratory observational study was: 1) to determine the efficacy of an aggressive heparin-reduction protocol, 2) to validate the visual clotting

scale currently used in the SARP through correlation with an ultrasound-based measurement of Fibre Bundle Volume (FBV), and 3) to assess the validity of the visual dialyzer clotting scale used in the parent RCT.

**FIONA HARRINGTON, RECIPIENT
OF THE NEPHROLOGY RESEARCH
GRANT (NOVICE)**

Biography not available



**SEGUN FAMURE, RECIPIENT
OF THE ALLIED HEALTH
PROFESSIONALS GRANT**

By Segun Famure, Toronto, ON

I am a Research Associate in the Multi-Organ Transplant Program—Division of Nephrology at the Toronto General Hospital, University Health Network. I also hold the position of Director of the Multi-Organ Transplant Student Research Training Program (MOTS RTP) at the same institution. In addition to the advanced degrees I have obtained in both the field of public health and education, I hold a Certified Health Executive (CHE) designation from the Canadian College of Health Service Executives. I am also a past recipient of the Health Services and Policy Research Training Award from Ontario Training Centre. My research interests lie in areas of health curriculum development, chronic care delivery modelling, health program evaluations and quality-of-life assessments.



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 519-652-6767
- 2) email: cannt@cannt.ca
- 3) Fax: 519-652-5015
- 4) Mail: P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0



STAY CONNECTED... WE'RE HERE TO HELP

CANNT Nominations

CALL FOR NOMINATIONS

The nominations committee is calling for nominations for the position of:

President-Elect
Website Coordinator/Treasurer
Vice-President Quebec
Vice-President Atlantic Region

Eligibility for office: Member in good standing.

GENERAL REQUIREMENTS:

Each candidate must:

- ✓ Understand the responsibilities of each position.
- ✓ Must be willing to commit the required amount of time to fulfil the duties of office.
- ✓ Must be willing to work within parliamentary procedure, which is used to ensure an efficient and fair voting procedure by self-governing organizations.
- ✓ Will submit a National Officer Candidate Information Form available online at www.cannt.ca or from the National Office (see address below).

POSITION DESCRIPTIONS:

1. **President-Elect:** Elected by membership for a period of one year after which he/she will become President, then Past-President. Assists the President in the overall administration of the Association while becoming familiar with the operation of CANNT in preparation to assume the presidency. The total commitment would be for a three-year period.
2. **Website Coordinator/Treasurer:** Elected by membership for a period of two years. Monitors and controls the financial affairs of the Association. In conjunction with the President, provides financial reports to the Executive, Board Members and for the Annual General Meeting. Ensures the CANNT website is responsive to the needs of the membership.
3. **Regional Vice-President:** Elected by membership for a two-year period. Promotes and facilitates the goals and objectives of the Association throughout the region. The Vice-President represents his or her region's concerns and acts as a liaison between the Board of Directors and the membership.

Deadline for nominations is May 15, 2013. Information on candidates will be available online after May 20, 2013 and voting will take place online.

Please submit nominations online at www.cannt.ca or to:

CANNT
PO Box 10, 59 Millmanor Place
Delaware, ON, N0L 1E0
Telephone: (519) 652-6767
Toll Free: (877) 720-2819
Fax: (519) 652-5015
Email: cannt@cannt.ca



NOMINATING FORM

Position:

Name of Candidate:

Membership Number:

Nominated by*:

1. Name:

2. Membership Number:

**Nominations can only be made by current members.*

***I agree to let my name stand for office and if elected, I agree to serve my term of office.*

Signature of candidate**

Date: _____



DEMANDE DE MISE EN CANDIDATURE

Poste :

Nom du/de la candidat(e) :

Numéro de membre :

Proposé par* :

1. Nom :

2. Numéro de membre :

**Les mises en nomination ne peuvent être faites que par les membres en règle.*

***J'accepte la nomination du poste mentionné ci-haut. Si je suis élu(e), j'accepte d'assumer les responsabilités du poste dans son intégralité.*

Signature du candidat
ou de la candidate**

Date : _____

Élection à l'ACITN

APPEL DE MISES EN CANDIDATURE

Le Comité des candidatures lance un appel de mises en candidature pour les postes suivants :

Président(e) élu(e)

Coordonnateur(rice) du site Web/Trésorier(ière)

Vice-président(e) du Québec

Vice-président(e) Région de l'Atlantique

Critère d'admissibilité : Être membre en règle.

EXIGENCES GÉNÉRALES :

Chaque candidat(e) doit :

- ✓ Comprendre les responsabilités associées au poste.
- ✓ S'engager à consacrer le temps nécessaire afin de s'acquitter des tâches inhérentes au poste.
- ✓ Suivre les règles et procédures parlementaires qui sont utilisées par les organismes indépendants afin d'assurer un processus de votation efficace et équitable.
- ✓ Remplir et soumettre un Formulaire de mise en candidature qui est accessible en ligne à www.cannt.ca ou envoyer le Formulaire dûment rempli au Bureau national à l'adresse ci-dessous.

DESCRIPTIONS DES POSTES :

1. **Président(e) élu(e) :** Élu(e) par les membres pour une période d'un an après quoi il/elle devient Président(e), puis Président(e) sortant(e). Aide le/la Président(e) dans l'administration générale de l'Association, tout en se familiarisant avec le déroulement des activités de l'ACITN dans le but d'assumer le rôle présidentiel.
2. **Coordonnateur(rice) du site Web/Trésorier(ière) :** Élu(e) par les membres pour une période de deux ans. Accepte la responsabilité du contrôle financier de l'Association. En collaboration avec le/la Président(e), prépare et transmet les états financiers aux membres du Conseil d'administration et en fait la présentation lors de l'assemblée générale annuelle des membres. S'assure que le site Web répond aux besoins et aux attentes des membres.
3. **Vice-président(e) des Technologues :** Élu(e) par les membres pour une période de deux ans. Fait la promotion et facilite l'atteinte des buts et des objectifs de l'Association dans sa région respective. Représente les intérêts de la région et agit à titre de liaison entre le Conseil d'administration et les membres.

La date limite pour déposer les mises en candidature est le 15 mai 2013. Les informations concernant chaque candidat(e) seront accessibles en ligne après le 20 mai 2013 et le vote aura lieu en ligne.

Veuillez faire parvenir votre mise en candidature à www.cannt.ca ou :

CANNT

PO Box 10, 59 Millmanor Place
Delaware, ON, N0L 1E0

Telephone: (519) 652-6767; Toll Free: (877) 720-2819

Fax: (519) 652-5015; Email: cannt@cannt.ca

Guidelines for authors

The Canadian Association of Nephrology Nurses and Technologists (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, 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)**, Sixth Edition (2009), 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 [e.g., RN, BScN, CNeph(C)], position, place of employment, address, telephone, fax numbers and email 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: Proper names 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?

Email your manuscript to: athomas6@cogeco.ca

Include a covering letter with contact information for the primary author and a one-sentence biographical sketch (credentials, current job title and location) for each author.

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** manuscript 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 CANNT. Material may not be reproduced without written permission of CANNT. 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
- ✓ Article
 - 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, fax number, and email 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.

Lignes directrices à l'intention des auteurs

Le Journal de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN) vous invite à faire parvenir articles, textes et manuscrits originaux pour publication dans son journal trimestriel. Nous sommes heureux d'accepter vos documents soumis dans l'une ou l'autre des langues officielles, anglais ou français.

Quels sont les sujets d'article appropriés ?

Nous acceptons les articles portant sur des manuscrits récemment publiés, des activités de l'Association ou tout sujet d'intérêt pour les membres de l'ACITN.

Quels types de manuscrits conviennent à la publication ?

Nous préférons des manuscrits qui présentent de nouveaux renseignements cliniques ou qui traitent des enjeux propres aux champs d'intérêt des infirmières et infirmiers et des technologues en néphrologie. Nous recherchons plus particulièrement :

- Exposés de recherche originaux
- Articles cliniques pertinents
- Rapports sur des approches innovatrices en matière d'amélioration de la qualité
- Textes narratifs relatant une expérience de pratique infirmière ou technologique
- Textes sous forme de questions et de réponses sur la pratique interdisciplinaire
- Revues d'articles courants, de livres et films
- Articles en éducation continue.

Comment les manuscrits doivent-ils être présentés ?

Forme : Le manuscrit doit être présenté à double interligne avec une marge de 1 po et une numérotation consécutive des pages dans le coin supérieur droit de la page. Les articles plus formels de recherche ou d'études cliniques doivent compter de 5 à 15 pages. Les articles moins formels, tels que textes narratifs, questions-réponses ou revues, doivent compter moins de 5 pages.

Style : Le style du manuscrit doit être conforme au manuel de publication de l'Association américaine de psychologie (AAP), 6^e édition (2009), offert dans la plupart des librairies universitaires.

Page titre : La page titre doit inclure le titre du manuscrit ainsi que les renseignements suivants : nom de chacun des auteurs (incluant prénoms au complet), titres professionnels (c.-à-d., inf., B.Sc. Inf., CNéph[C]), titre du poste occupé, nom de l'employeur, adresse, numéros de téléphone et de télécopieur et adresse courriel. L'adresse privilégiée de correspondance doit aussi être indiquée.

Résumé : Sur une page distincte, les articles formels de recherche ou d'études cliniques doivent être accompagnés d'un résumé de 100 à 150 mots, reprenant brièvement les principaux points du manuscrit.

Texte : Les sigles, abréviations ou acronymes doivent être écrits au long la première fois qu'ils apparaissent dans le texte, suivis de l'abréviation entre parenthèses; p. ex., Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN). Les noms génériques des médicaments doivent être employés. Les unités de mesure doivent être indiquées selon le Système international d'unités (SI). Les références doivent être citées dans le texte en utilisant le format de l'AAP. Une liste de références comprenant la bibliographie complète de toutes les références utilisées doit suivre le texte.

Tableaux/Figures : Les manuscrits ne doivent inclure que les tableaux et figures (incluant schémas, illustrations, croquis, etc.) visant à clarifier certains détails. Les auteurs qui utilisent des tableaux et des figures qui ont déjà fait l'objet d'une publication doivent fournir l'autorisation écrite de l'éditeur d'origine et la joindre au manuscrit soumis.

De quelle manière doit-on soumettre les manuscrits ?

Veuillez envoyer par courriel votre manuscrit à :

athomas6@cogeco.ca

Veuillez inclure une lettre de présentation en précisant les coordonnées de l'auteur principal ainsi qu'une notice biographique d'une phrase (incluant titres de compétences, titre du poste actuel et lieu de travail) pour chaque auteur.

Quel est le processus de sélection des manuscrits pour publication dans le Journal de l'ACITN ?

À la réception de chaque manuscrit, un accusé de réception est envoyé. Les articles de recherche et d'études cliniques sont envoyés à deux membres du comité de révision du **Journal de l'ACITN** afin d'être révisés suivant un processus à double insu. Tous les articles peuvent être retournés aux auteurs pour révision et nouvelle soumission par la suite. Les manuscrits acceptés pour publication peuvent subir des changements éditoriaux; toutefois, les auteurs pourront approuver ces changements. Les critères d'acceptation pour tous les manuscrits comprennent l'originalité des idées, l'actualité du sujet, la qualité du matériel et l'attrait des lecteurs.

Les auteurs doivent prendre note que les manuscrits seront considérés pour publication à la condition qu'ils ne soient soumis qu'au **Journal de l'ACITN**. Sur acceptation du matériel soumis, les auteurs transfèrent leur droit d'auteur à l'ACITN. Aucune reproduction n'est permise sans l'autorisation écrite du **Journal de l'ACITN**. Les déclarations et opinions émises par les auteurs dans leurs articles, textes ou manuscrits demeurent leur responsabilité. La rédactrice en chef se réserve le droit d'accepter ou de refuser tout manuscrit.

Aide-mémoire à l'intention des auteurs

- ✓ Lettre de présentation
- ✓ Article
 - Page titre incluant les renseignements suivants:
 - Titre de l'article
 - Nom de chaque auteur (incluant prénoms au complet)
 - Titres de compétences
 - Titre du poste actuel
 - Nom et adresse de l'employeur
 - Nom de l'auteur à qui la correspondance doit être envoyée (incluant adresse, numéros de téléphone et de télécopieur et adresse courriel)
 - Texte de l'article avec résumé, s'il y a lieu à **double interligne et pages numérotées**
 - Références (sur une feuille distincte)
 - Tableaux (un par page)
 - Figures (une par page)
 - Lettre d'autorisation pour tout matériel ayant déjà fait l'objet d'une publication

CANNT Membership



First Name _____

Last Name _____

Home Address _____

City _____

Province _____ Postal Code _____

Telephone (H) (____) ____ - _____

(W) (____) ____ - _____

Fax (____) ____ - _____

Email _____

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: \$70.00 + HST/GST

☐ Two Years: \$130.00 + HST/GST

☐ Student Rate: \$35.00 + HST/GST*

**Proof of full-time enrolment must accompany application*

BC: 12% HST; AB/SK/MB/PE/NT/NU/QC/YT: 5% GST;

ON/NL: 13% HST; NS: 15% HST

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

Highest level of education

Nursing

☐ Diploma

☐ Baccalaureate

☐ Master's

☐ Doctorate

Non-Nursing

☐ Diploma

☐ Baccalaureate

☐ Master's

☐ Doctorate

I am at present studying toward

Nursing

☐ Specialty Certificate

☐ Baccalaureate

☐ Master's

☐ Doctorate

Non-Nursing

☐ Specialty Certificate

☐ Baccalaureate

☐ Master's

☐ Doctorate

Primary area of practice

☐ Progressive renal insufficiency (pre-dialysis)

☐ Transplantation

☐ Hemodialysis

☐ Peritoneal

☐ Pediatrics

☐ Other (Specify) _____

Return to **CANNT**

Mailing Address:

Heather Reid, CANNT,

P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0

Telephone (519) 652-6767 Fax (519) 652-5015



^{Pr} ***cathflo***[®]
(alteplase) 2 mg

^{Pr}CATHFLO[®] (alteplase, recombinant) is indicated for the restoration of function to central venous access devices.
Product monograph available at www.rochecanada.com

 Registered Trade-Mark of Hoffmann-La Roche Limited

CATHFLO[®] Registered Trade-Mark of Genentech, Inc., used under licence

Hoffmann-La Roche Limited
Mississauga, ON L5N 6L7

