CANNT|ACITN
Canadian Association of Nephrology Nurses and Technologists
l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie

CANNT JOURNAL
JOURNAL ACITN

Volume 29, Issue 4 October–December 2019

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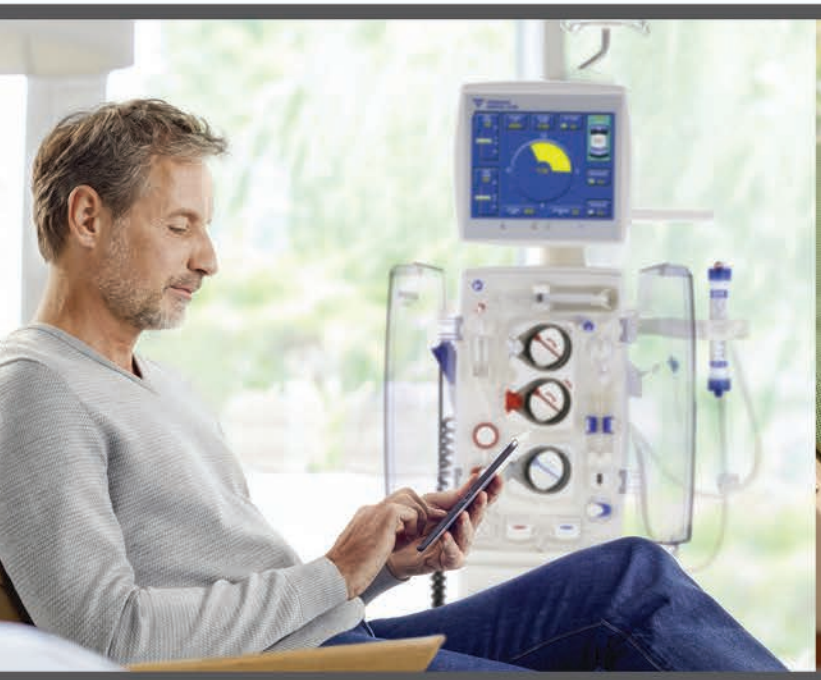

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OCTOBER–DECEMBER 2019 • VOLUME TWENTY-NINE • ISSUE FOUR

CANNT JOURNAL
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CONTENTS

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JOVINA BACHYNSKI & ROSA MARTICORENA

Letter from the Editors

In this last issue of the *CANNT Journal* 2019, our president Janice McKay invites us to reflect on multiple changes affecting nephrology programs, our positions as nephrology professionals, and our work environments. We look forward to you sharing your experiences through our journal.

At the *CANNT Journal*, we place great value in collaborating with others in the common pursuit of disseminating information that has significant impact on clinical practice. Our lead article (*Peritoneal dialysis access management: More than skin deep*) is an example of this. Originally published in the *Nephrology Nursing Journal*, we have partnered with American Nephrology Nurses Association (ANNA) to bring to you this great review of the management of peritoneal dialysis (PD) access by Susan Bridger. The article provides relevant information on the types and placement of PD catheters, pre-placement and post-placement education and care, how to assess PD catheter exit site healing, and initial use of the PD catheter. Just as important in scope is the continuing education (CE) article by Lee and Battistella (*Health disparities and outcomes in Canadian Indigenous patients with end-stage kidney disease*) that highlights the impact of the determinants of health on the overall well-being of the patients in our care.

To all our research grant winners, congratulations!! We wish you all the success in the conduction of your respective research studies and look forward to publishing your findings in our *CANNT Journal* in the near future.

Preparations for the 2020 CANNT Conference that will take place in Hamilton, Ontario are under way! We will take into consideration the suggestions for topics received during the successful conference in Edmonton (*Sharing our stories down by the river*) this past October. We invite you to send your ideas for topics of interest, in all areas of nephrology that you consider important to improve your practice, to this year's planning committee. We pride ourselves on being inclusive of our members' interests in order to prepare something of interest for everyone.

We encourage our members to submit manuscripts for publication. Manuscripts can be observational studies, clinical trials, case reports of interesting cases, solutions to clinical problems at the bedside, and quality improvement projects that you may have conducted. We recognize that preparing a manuscript is not an easy task. If you require assistance with the process of submission, do not hesitate to contact us. We are committed to guide you from the process of submission to the successful publication of your manuscript.

We would like to take this opportunity to thank the individuals who help solidify the position of the *CANNT Journal* as an internationally acclaimed peer-reviewed journal. The support of the CANNT Board of Directors, Events and Management Plus, Inc. (association management team), Pappin Communications (journal publisher), and Lemieux Bédard (official translator) has been invaluable. The journal would not be possible without the talented authors and passionate team of peer reviewers. Last but not least, our loyal readers, for whom each and every issue is dedicated to, serve as our motivation to constantly pursue quality publication.

We wish you a wonderful holiday season in 2019. We look forward to another banner year of excellence in nephrology nursing and technological writing 2020.

Sincerely,

Jovina Bachynski, MN, RN(EC), CNeph(C)

Rosa M. Marticorena, PhD, RN, CNeph(C)

Co-editors, *CANNT Journal*

Lettre des rédactrices

Dans le dernier numéro de la *Revue de l'ACITN* de 2019, notre présidente, Janice McKay, nous invite à réfléchir à plusieurs changements qui touchent les programmes de néphrologie, à nos positions à titre de professionnels en néphrologie et à nos milieux de travail. Nous sommes impatients de raconter nos expériences dans notre revue.

L'équipe de la Revue de l'ACITN accorde une grande valeur à la collaboration dans sa quête commune de diffusion de l'information qui a une incidence importante sur la pratique clinique. Notre article principal (*Peritoneal dialysis access management: More than skin deep*) en est un exemple, d'abord publié dans le Nephrology Nursing Journal. Nous avons travaillé en partenariat avec l'American Nephrology Nurses Association (ANNA) pour vous présenter cet excellent examen de la gestion de l'accès à la dialyse péritonéale réalisé par Susan Bridger. L'article fournit des renseignements pertinents sur les types et la mise en place des cathéters pour la dialyse péritonéale, de l'information concernant la préparation et le suivi de la mise en place, les soins, la façon d'évaluer la guérison au point d'émergence du cathéter et l'utilisation initiale du cathéter. La portée de l'article de formation continue rédigé par Lee et Battistella (*Health disparities and outcomes in Canadian Indigenous patients with end-stage kidney disease*) est tout aussi importante. Il souligne les répercussions des facteurs déterminants de la santé sur le bien-être global des patients que nous soignons.

Félicitations à tous nos gagnants de subvention de recherche! Nous vous souhaitons une belle réussite dans vos études de recherche respectives et nous attendons avec impatience la publication prochaine de vos conclusions dans notre *Revue de l'ACITN*.

Les préparatifs pour la conférence de l'ACITN de 2020, qui aura lieu à Hamilton (Ontario), vont bon train! Nous tiendrons compte des suggestions de sujets reçues lors de la conférence fructueuse tenue à Edmonton (*Sharing our Stories Down by the River*), en octobre dernier. Nous vous invitons à nous faire parvenir vos idées de sujet d'intérêt dans tous les domaines de la néphrologie que vous jugez importants pour améliorer votre pratique, au présent comité de planification. Nous sommes fiers d'inclure les intérêts de nos membres en vue de préparer un événement intéressant aux yeux de tous.

Nous invitons nos membres à soumettre leurs manuscrits pour publication. Les manuscrits peuvent être des études par observation, des essais cliniques, des rapports d'études de cas intéressants, des solutions aux problèmes cliniques au chevet du patient et des projets d'amélioration de la qualité que vous pourriez avoir menés. Nous reconnaissons que la préparation d'un manuscrit n'est pas une tâche facile. Si vous avez besoin d'aide dans le processus de présentation, n'hésitez pas à communiquer avec nous. Nous sommes résolus à vous orienter dans ce processus en vue d'une publication bien accueillie de votre manuscrit.

Nous aimerions saisir cette occasion pour remercier les personnes qui ont contribué à solidifier la position de la *Revue de l'ACITN* à titre de revue révisée par des pairs de renommée internationale. Le soutien du conseil d'administration de l'ACITN, d'Events and Management Plus, Inc. (équipe de gestion des associations), de Pappin Communications (éditeur de revues) et de Lemieux Bédard (cabinet officiel de traduction) a été précieux. La revue ne pourrait pas exister sans les auteurs talentueux et l'équipe passionnée de pairs examinateurs. Enfin, mais non moins importants, nos fidèles lecteurs auxquels chacun des numéros est consacré et qui nous motivent à constamment réaliser des publications de qualité.

Nous vous souhaitons un merveilleux temps des Fêtes 2019. Nous sommes impatients d'entrer dans une nouvelle année phare d'excellence en soins infirmiers et en rédaction technique dans le domaine de la néphrologie en 2020.

Cordialement,

Jovina Bachynski, M. Nurs., Inf. aut. (FC), CNéph(C)

Rosa M. Marticorena, Ph. D., Inf. aut., CNéph(C)
Corédactrices en chef,
Revue de l'ACITN

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JANICE MACKAY

Message from the President

Dear CANNT members,

Welcome to the year-end edition of the *CANNT Journal* 2019. As we approach 2020, I am constantly inspired by our members and excited about the possibilities that the new year brings with new members, new collaborations, and the welcome of our new Board of Directors' members.

With the continued erosion of healthcare funding and the diminishing allied health support (such as social workers, dietitians and pharmacists and the now nearly extinct spiritual care professionals), nephrology nurses and technicians are being asked to do more. We need to realize that our ability to absorb these added responsibilities accumulates on top of the heavy psychological burden of supporting kidney patients through the progressive decline in their health and the very high mortality rates that we experience. These are often patients whom we see for years and years, sometimes more than many of their family members. We need to acknowledge this toll on our health and its effects on us, and our families. But most of all we need to support each other.

I was inspired by the topic of caring for each other when a friend shared a post that had gone viral. It was a picture of an emotional nurse after working 53 hours over four days. It provoked some thought about how we manage to provide support to our fellow renal professionals.

The theme of our CANNT 2019 annual conference held in October was "Sharing our Stories."

Stories can communicate emotional events and help us gain perspective, relieve emotional tension, make meaning out of our experiences, and build connections with each other. Through sharing our narratives, we may find that our experiences are similar. I also know that sharing those difficult and emotional moments eases my stress, which then occupies less of my mind. So, in these times when our professional practice presents moments that create stress and anxiety and causes us emotional detachment and fatigue, remember to share your story, and be the thread that weaves us together in our care of those living with kidney disease. Be mindful of your healthcare team members and your patients, be present in your practice, share your thoughts, feelings, sensations, and listen with interest and kindness.

The Canadian Association of Nephrology Nurses and Technologists is a conduit that can bring us together—whether it is at our annual CANNT conference, through social media, through our website, or our newsletter. I encourage your involvement, engagement, and participation in CANNT. Together we can strengthen our association and continue to advance our profession, advocate for the interests of our membership, and provide value to our community of renal professionals.

I was very honoured to usher in CANNT/ACITN 2019 in my home province of Alberta! The organizing committee along with co-chairs Heather Dean and Tracy Schwartz worked tirelessly and utterly creatively to bring you a program that provided a wealth of learning, connecting, and enjoyment. I want to thank them for their outstanding efforts and commitment to our association. Sincere congratulations to all of the recipients of awards and bursaries, and my warmest thanks to all of our sponsors for enabling the CANNT conference to happen through their generous financial support and presence.

With respect,
Janice MacKay
CANNT President
2018–2020

ERRATUM

Erratum: CANNT Journal, 29(2), Apr–Jun 2019, Perceptions of kidney transplant recipients regarding their post-transplant primary care, corrected spelling of author's name is Lesley Adcock.

Le mot de la présidente

Chers membres de l'ACITN,

Bienvenue à notre édition de fin d'année 2019 de la Revue de l'ACITN. Je suis sans cesse inspirée par nos membres, et j'entrevois avec enthousiasme les possibilités qu'apporte l'année 2020 : nouveaux membres, nouvelles collaborations et nouvelle composition de notre conseil d'administration.

Avec l'érosion continue du financement des soins de santé et la diminution du soutien d'autres professionnels de la santé (comme les travailleurs sociaux, les diététistes, les pharmaciens et les professionnels du soutien spirituel maintenant pratiquement disparus), on en demande plus aux infirmières et infirmiers et aux technologues de néphrologie. Il faut prendre conscience que les responsabilités supplémentaires que nous devons assumer s'ajoutent au lourd fardeau psychologique associé au soutien des patients en néphrologie dans le déclin progressif de leur santé, et aux taux de mortalité très élevés que nous connaissons. Il s'agit souvent de patients que nous voyons pendant des années, parfois plus souvent que de nombreux membres de leur famille. Nous devons reconnaître les répercussions sur notre santé et leurs effets sur nous et nos familles. Mais avant tout, nous devons nous soutenir entre nous.

J'ai été inspirée par ce sujet en lisant le message d'un ami qui est devenu viral. C'était la photo d'une infirmière émotive après avoir travaillé 53 heures en 4 jours. Elle m'a fait réfléchir à la façon dont nous gérons le soutien que nous offrons à nos collègues professionnels en néphrologie.

Le thème de la conférence annuelle 2019 de l'ACITN, qui a eu lieu en octobre était « *Sharing our Stories Down by the River* ». Les histoires peuvent communiquer des événements émotionnels et nous aider à forger notre point de vue, à soulager la tension émotionnelle, à trouver un sens à nos expériences et à créer des liens entre nous. En partageant nos récits, nous pourrions constater que nous avons vécu des expériences similaires. Je sais également que raconter ces moments émotionnels et difficiles peut soulager mon stress et me libérer un peu l'esprit. Donc, lorsqu'il y a des moments dans notre pratique professionnelle qui sont source de stress et d'anxiété et nous font vivre une fatigue et un détachement émotionnels, pensez à raconter votre histoire et soyez le tissu qui nous unit dans les soins que nous prodiguons à ceux qui vivent avec une néphropathie. Portez une attention particulière aux membres de votre équipe de soins et à vos patients, soyez présents dans votre pratique, partagez vos idées, vos sentiments, vos émotions et écoutez avec bienveillance et intérêt.

L'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN) est un intermédiaire qui a pour but de rassembler tous les membres de la communauté, que ce soit lors du Congrès annuel, sur les médias sociaux, par notre site Web ou par notre bulletin d'information. Je vous encourage à participer de manière engagée aux activités de l'ACITN. Ensemble, nous pouvons renforcer notre association et continuer de faire évoluer notre profession, de défendre les intérêts de nos membres et d'ajouter de la valeur à notre communauté de professionnels de la santé en néphrologie.

J'ai été très honorée d'accueillir la conférence 2019 de la CANNT-ACITN en Alberta, ma province d'attache. Le comité organisateur et les coprésidentes, Heather Dean et Tracy Schwartz, ont travaillé sans relâche et de façon très créative pour vous présenter un programme qui offre une foule de possibilités d'apprentissage, de réseautage et du plaisir. Je veux les remercier de leur travail exceptionnel et de leur engagement envers notre association. Je félicite sincèrement tous les récipiendaires de prix et de bourses et je remercie chaleureusement tous nos commanditaires d'avoir permis la tenue de la conférence de l'ACITN grâce à leur présence et à leur généreux soutien financier.

Recevez mes salutations distinguées,
Janice MacKay
Présidente de l'ACITN (2018-2020)

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Your Board in Action

Hello, CANNT members!

As we close out 2019 and usher in the new year, I hope you are having a wonderful holiday season with the special people in your lives. I always get a jolt of energy when a new year begins. I also take the time to reflect on the past year. 2019 was a great time of growth for me, both personally and professionally. The National CANNT Conference in Enoch, Alberta, was definitely one I will not forget. I had the pleasure of meeting many of you there, and I hope to work with and meet many more of you in the year to come. It has truly been a pleasure serving as your President Elect/Treasurer in 2019. I have worked with a very dedicated Board of Directors. I have learned a great deal from each and every one of them. It was hard to say goodbye to some of our past Board members, each of them having put so much of themselves into CANNT over their many years on the Board. I cannot express my thanks enough for their time, work, and commitment. It is also very exciting having new members join our Board, getting new perspectives and continuing to move our work forward into 2020 and beyond.

MEMBERSHIP

The Board of Directors continuously evolves to provide enduring benefits to all our members. I am seeking input from our valued membership, and I want to hear from you on ways to increase our association membership. Please share your thoughts with us by contacting the CANNT National Office team at **cannt@cannt.ca** or at 613-507-6053.

Membership is vital to CANNT as it is an association run by membership. There are many advantages to becoming a member of CANNT:

- Member access to the online *CANNT Journal*
- Access to **www.cannt.ca** "Members Only" section
- Reduced rates at the annual nephrology conference
- Access to *CANNT Nephrology Nursing Standards and Practice Recommendations* and the *CANNT Standards of Nephrology Technical Practice*
- Promotion of and support for the specialty certification in nephrology (CNeph[C])
- Continuing education opportunities—through the journal, online webinars, and continuing education units (CEU)
- Opportunities to recognize excellence in practice with yearly awards
- Access to educational bursaries and research grants
- Promotion of evidence-based practice
- Collaboration within the nephrology community.

Maintaining your yearly membership in CANNT assists with the long-term viability of our association.

JOURNAL

Guidelines for journal article submission can be found under the "CANNT Journal" section of the CANNT website. E-mail your manuscript to Rosa Marticorena and Jovina Bachynski at: **CANNT.journal1@gmail.com**. Details of the submission guidelines for authors can be found at: **https://cannt-acitn.ca/cannt-journal/**

The CANNT Journal is published four times per year in electronic version. Scientific articles are peer-reviewed. Manuscripts that present new clinical information or address clinical practice issues of special interest to nephrology nurses and technologists are accepted. Corporate sponsored education and advertising opportunities are also available.

COMMUNICATIONS

We continue to develop new strategies for engaging our members and communicating timely and relevant information to our membership. Your *CANNT Connection* is our bi-monthly email that provides strategic, targeted, personalized, and properly segmented information to our members. Additionally, we try to keep the content simple, direct, to the point, and useful with a goal to engage members on a continuous basis. If you have a question, idea or event to promote, please speak to our Director of Communications, Ethan Holtzer.

CANNT website (**www.CANNT.ca**)

Twitter CANNT (**@CANNT1**)

FINANCES

As a "Not for Profit" professional association, our objective is to provide value to our members that aligns with our mission and vision. We continue to explore development, collaborative, and lucrative opportunities to assist in maintaining the viability of the association (**http://www.cannt.ca/en/about/index.html**).

Krista Smith
CANNT President-Elect/Treasurer (2018–2020)

Votre conseil en action

Bonjour à tous les membres de l'ACITN!

Nous voilà au début d'une nouvelle année, et j'espère que vous avez tous passé un merveilleux temps des Fêtes avec les personnes qui vous sont chères afin de terminer 2019 en beauté. La nouvelle année me donne toujours un regain d'énergie. Je prends également le temps de réfléchir à l'année écoulée. L'année 2019 a été une excellente période de croissance pour moi, sur les plans personnel et professionnel. Je n'oublierai certainement pas la conférence nationale de l'ACITN à Enoch, en Alberta : j'ai eu le plaisir d'y rencontrer beaucoup d'entre vous. Cette année, j'espère vous rencontrer en encore plus grand nombre et travailler avec vous. Il a été un réel plaisir de vous servir à titre de présidente élue et trésorière en 2019. J'ai travaillé avec un conseil d'administration très dévoué. J'ai appris beaucoup de chacun de ses membres. Il a été difficile de dire au revoir à quelques-uns de nos anciens membres, qui ont donné le meilleur d'eux-mêmes à l'ACITN au fil de leurs nombreuses années au conseil. Je ne pourrai jamais leur exprimer assez ma gratitude pour leur temps, leur travail et leur engagement. Il est également très stimulant d'accueillir de nouveaux membres au conseil, d'obtenir de nouveaux points de vue et de continuer à progresser dans notre travail en 2020 et au-delà.

ADHÉSION

Le conseil d'administration évolue continuellement pour offrir des avantages durables à tous nos membres. Je sollicite les commentaires de nos précieux membres sur les façons d'accroître le nombre d'adhésions à notre association. Veuillez nous faire part de vos idées en communiquant avec l'équipe administrative nationale de l'ACITN, par courriel à l'adresse **cannt@cannt.ca** ou au 613-507-6053.

Les membres sont la force vive de l'ACITN, puisque ce sont eux qui administrent l'Association. Il y a une foule d'avantages à devenir membre de l'ACITN :

- Accès au *Journal électronique de l'ACITN*;
- Accès à la section réservée aux membres du site **www.cannt.ca**;
- Tarifs réduits au symposium annuel de néphrologie;
- Accès aux publications *Nephrology Nursing Standards and Practice Recommendations* et *Standards of Nephrology Technical Practice de l'ACITN*;
- Promotion et soutien en vue de l'obtention du certificat de spécialisation en néphrologie (CNéph[C]);
- Possibilités de formation continue (par l'intermédiaire de la revue, de webinaires en ligne et d'unités de formation continue);
- Occasions de saluer l'excellence professionnelle par la remise de prix annuels;
- Accès à des bourses d'études et à des subventions de recherche;
- Promotion de la pratique fondée sur des données probantes;
- Collaboration au sein de la communauté de la néphrologie.

Le renouvellement de votre adhésion annuelle à l'ACITN contribue à la viabilité de notre association à long terme.

REVUE

Vous trouverez la marche à suivre pour soumettre un article pour publication dans notre revue sous la section réservée à cette fin du site Web de l'ACITN. Envoyez votre article par courriel à Rosa Marticorena et à Jovina Concepcion-Bachynski à l'adresse : **CANNT.journal1@gmail.com**. Vous trouverez la marche à suivre pour soumettre un article pour publication sur le site Web de l'ACITN à l'adresse : **https://cannt-acitn.ca/cannt-journal/**.

La *Revue de l'ACITN* est publiée quatre fois par année sous forme électronique. Les articles scientifiques sont évalués par des pairs. Les articles qui portent sur de nouvelles données cliniques ou qui traitent de sujets présentant un intérêt particulier pour les infirmières et infirmiers et les technologues en néphrologie sont acceptés. Des possibilités de formation parrainées par des entreprises et des occasions de publicités sont également offertes.

COMMUNICATIONS

Nous continuons d'élaborer de nouvelles stratégies pour mobiliser nos membres et leur transmettre des renseignements pertinents en temps opportun. *CANNT Connection* est un bulletin d'information bimensuel transmis par courrier électronique (en anglais) qui fournit à nos membres des renseignements ciblés, personnalisés et correctement segmentés. Nous tâchons en outre de faire en sorte que le contenu soit simple, direct, concis et utile de façon à fidéliser les lecteurs. Si vous avez une question, une idée ou un événement à promouvoir, veuillez écrire à Ethan Holtzer, notre directeur des communications.

Site Web de l'ACITN (**www.CANNT.ca**)

Twitter CANNT (**@CANNT1**)

FINANCES

En tant qu'association professionnelle sans but lucratif, notre objectif est d'offrir à nos membres une valeur ajoutée qui s'harmonise à notre mission et à notre vision. Nous continuons d'explorer des occasions de développement, de collaboration et de financement pour maintenir la viabilité de notre association. (**http://www.cannt.ca/en/about/index.html**).

Krista Smith
Présidente-Élue/
Trésorier de l'ACITN
(2018–2020)

NOTICE BOARD

Canadian Nurses Association (CNA) Exam Timeline.
https://www.nurseone.ca/certification/renewing-your-certification#sthash.IDBqg5i7.dpuf

	Spring 2020	Fall 2020
Initial exam or renewal by exam application window	**Jan. 9–March 2, 2020**	**June 1–Sept. 10, 2020**
Certification exam window	**May 1–15, 2020**	**Nov. 1–15, 2020**
Renewal by continuous learning application window	**Jan. 9–Nov. 1, 2020**	

N.B. CNA will provide 20% discount for initial exam writers, renewal exam writers, and renewals by continuous learning in 2020 to active members of CANNT. Contact cannt@cannt.ca for the voucher code in 2020.

- **February 18–20, 2020.** Annual Dialysis Conference (ADC) 2020 – 40th Anniversary, Kansas City Convention Center, Kansas City, MO. **www.annualdialysisconference.org**
- **March 12, 2020.** World Kidney Day – *Kidney Health for Everyone Everywhere – from* ***Prevention to Detection*** *and Equitable Access to Care*
- **April 19–22, 2020.** American Nephrology Nurses' Association (ANNA) National Symposium, Caribe Royale, Orlando, FL. **www.annanurse.org**
- **May 2–5, 2020.** ISPD-EuroPD Joint Congress, Scottish Event Campus (SEC), Glasgow, Scotland. **www.ispd-europd2020.com**
- **June 22, 2020.** Canadian Nurses Association (CNA) Annual General Meeting, Shaw Centre, Ottawa, ON. **www.cna-aiic.ca**
- **June 6–9, 2020.** European Renal Association – European Dialysis and Transplant Association (ERA-EDTA) 57th Annual Congress, Milan, Italy. **www.era-edta.org**
- **June 25–27, 2020.** Renal Society of Australasia Annual Conference: *Unite and ignite renal care: The next decade,* Melbourne Convention and Exhibition Centre, Melbourne, Australia. **https://www.renalsociety.org/education/2020-annual-conference/**
- **September 12–15, 2020.** The 49th Annual European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA) International Conference: *Knowledge, skills and commitment – core elements to manage care,* Cankar Centre, Ljubljana, Slovenia. **www.edtna-erca.com**
- **September 16, 2020.** Nephrology Health Care Professionals' Day (celebrated every third Wednesday of September annually)
- **October 20–25, 2020.** The American Society of Nephrology (ASN) 2020 Kidney Week, Colorado Convention Center, Denver, CO. **https://www.asn-online.org/education/kidneyweek/**
- **October 24–26, 2020.** Canadian Association Nephrology Nurses and Technologists (CANNT) 52nd Annual Conference 2020: *Guiding our way to the future,* Hamilton Convention Centre, Hamilton, ON. **www.cannt.ca**

Nephrology Certification Registration Status Report 2019

Initial and Renewal by Exam to Renew in 2019	Renewal by Continuous Learning (CL) Hours	Total of Initials and Renewals	Due
60	125	185	272

Peritoneal dialysis access management: More than skin deep

By Susan Bridger

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ABSTRACT

Providing care and education for a patient on peritoneal dialysis (PD) requires that the nephrology nurse have knowledge and expertise in the PD access. This article provides information on types and placement of PD catheters, pre-placement and post-placement education and care, how to assess PD catheter exit site healing, and initial use of the PD catheter for access.

INTRODUCTION

The lifeline of patients on peritoneal dialysis (PD) is the PD catheter. Understanding its function and how to care for it is the number one goal for optimum and successful PD therapy.

PD CATHETER TYPES

There are many types of PD catheters (see Figure 1). Research is not conclusive on which type is the best. Tenckoff is a name often applied to all PD catheters, just like the name Kleenex® is applied to tissues. Dr. Henry Tenckoff first developed indwelling PD catheters in 1968 (Lambertson, Gorenhoff, Ales, & Todd, 2015). PD catheters are usually made of sterile silicone rubber. The tubing comes in several shapes and sizes depending on the manufacturer. Catheters can be straight or coiled, with portions of the tubing having a permanent bend in it. PD catheters may have one or two Dacron® cuffs made of petroleum-based polyethylene fibers for anchoring the tubing into the muscle and subcutaneous tissue. The proximal or subcutaneous cuff holds the catheter in place. The distal cuff acts as a barrier to infection. The catheter tubing is made with small holes down the sides and at the very end of the catheter. The holes allow for easy inflow of the PD dialysate solution and outflow of the effluent (Gokal et al., 1998).

A straight PD catheter is straight inside the body containing one or two Dacron cuffs or a disc to maintain proper tubing placement. A swan neck catheter is tubing that has a 180˚ bend in the tubing between the inner and outer cuff. The downward bend of the catheter helps keep it in the proper downward direction. The straight and swan neck catheters can be placed in the upper or lower abdomen as well as pre-sternal placement. A Missouri PD catheter is a type of catheter that can be placed in the abdomen or pre-sternal. The bead and flange are anchored in the abdominal wall by suturing into the rectus muscle (Payton & Kennedy, 2017).

The internal part of the PD catheter goes into the deep pelvis of the peritoneal cavity (Payton & Kennedy, 2017). The catheter is measured to fit each individual patient for best inflow, outflow, and minimal drain flow pain. The external connection of the PD catheter can be a plastic Luer-Lock® connection called a beta cap adapter. There is also a Luer-Lock adapter called a titanium adapter. The titanium adapter is a two-piece combination compression-fit/barbed-catheter connector. The construction of the plastic beta cap adapter can cause holes in the catheter if bent in the wrong place repeatedly. Research is needed to provide evidence of the most effective catheter connection and best demonstrated practice. The shorter segment of the PD catheter exits the body for the transfer set to be attached. The length of the external segment can be a patient preference. The transfer sets that are attached also come in several styles and lengths.

The PD catheter tubing is made with small holes down the sides of the catheter as well as at the very end. All PD catheters have a radiopaque line down the side. The line runs the full length of the catheter for visualizing under fluoroscopy. X-rays (i.e., kidney, ureter, bladder) are needed to check for catheter placement when there is malfunction of the catheter. If the external part of the PD catheter has a twisted radiopaque line, this could indicate catheter damage or potential malfunction (Lambertson et al., 2015).

SURGICAL PROCEDURES FOR PD CATHETERS

There are several surgical techniques for PD catheter placement (Bargman, 2007). All patients receive some form of sedation. Depending on co-morbidities, the procedure can generally be done on an outpatient basis. The PD catheter should be placed by well-trained medical personnel. The timing of surgery can vary. To achieve minimal complications, the PD catheter should be placed more than two weeks before it is planned to be used (Payton & Kennedy, 2017). Records of all surgery successes and complications should be reviewed in an ongoing quality monitoring program.

AUTHOR NOTE

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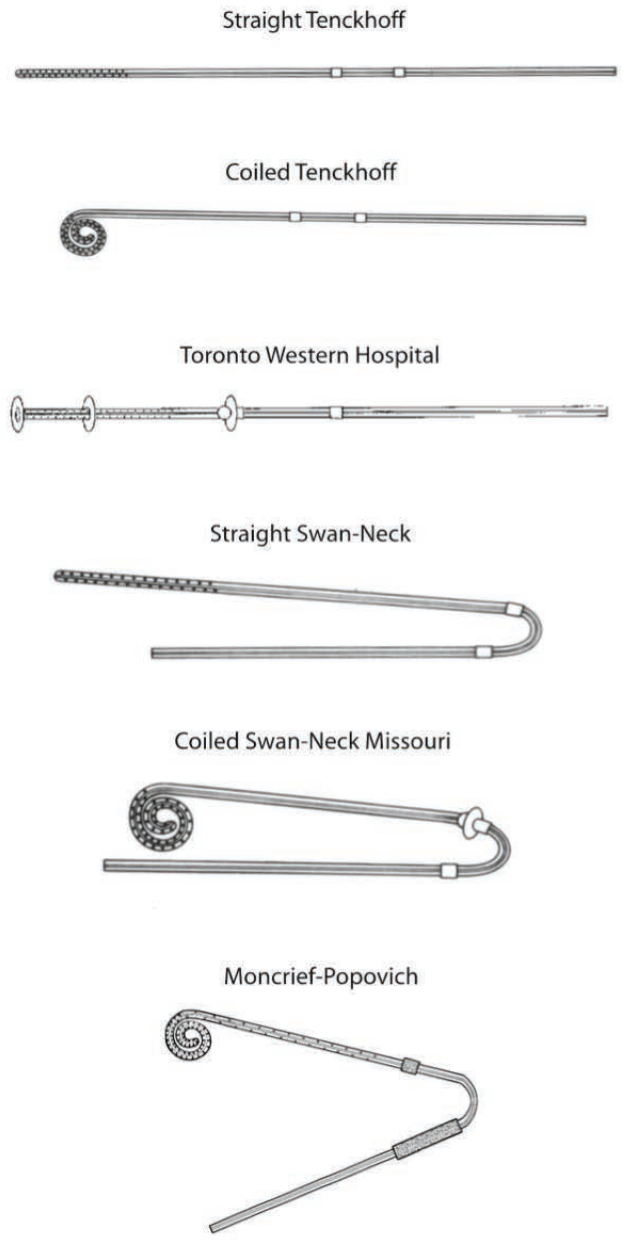

Figure 1. Chronic Peritoneal Dialysis Catheters

Open Method

In the open method, the surgeon has direct vision of the peritoneal cavity, and the implantation of the catheter and closing of each layer of the abdominal wall (Payton & Kennedy, 2017). The advantages of the open surgical technique are easy visualization and repair of hernia, lysing of any scars, and manipulation, removal, or tacking down of the omentum (Payton & Kennedy, 2017). The omentum is a fibrous mesh of fatty tissue that lines the peritoneum, and it is connected to the stomach at the top and the colon at the bottom. The omentum functions to protect the internal abdominal organs.

Peritoneoscopic Placement

Peritoneoscopic placement surgery uses a stylet for tunneling of the peritoneal catheter. A scope is used to visualize the peritoneal cavity. This technique can be done at the bedside by an interventional nephrologist or radiologist. Advantages of this procedure are that there is less cutting of the muscle and skin, and the procedure is less costly. Disadvantages include the inability to remove adhesions, the need for specialized training and equipment, and possible risk of vascular or bowel injury (Haggerty et al., 2017).

Fluoroscopically Guided Percutaneous PD Catheter Insertion

Fluoroscopically guided percutaneous PD catheter insertion uses ultrasound-guided fluoroscopy. Guide wires and dilators guide placement of the catheter, which is done laparoscopically. A small stab wound is made for exiting the PD catheter. Advantages and disadvantages are the same as for the peritoneoscopic procedure (Haggerty et al., 2017).

Basic Laparoscopic Technique

The basic laparoscopic technique uses pneumoperitoneum and visualization of the peritoneal cavity (Haggerty et al., 2017). Advanced laparoscopic technique allows for lysis of adhesions and suture fixation of the PD catheter. Laparoscopic technique also allows for easier rectus sheath tunneling, which helps maintain proper orientation of the catheter in the pelvis and prevents catheter migration (Haggerty et al., 2017).

Buried Catheter Surgical Technique

Buried catheter surgical technique pertains to just the external portion of the PD catheter. This surgical procedure is called Moncrief-Popovich Technique (Payton & Kennedy, 2017). The internal segment is placed per surgeon preference. The eternal segment remains buried subcutaneously until needed for dialysis. Ideally, burying the catheter allows for tissue ingrowth of the one or two Dacron cuffs (Payton & Kennedy, 2017). Advantages include decreased possible exit site infection from early bacterial inoculations and decreased leaks. If dialysis starts after maximum healing, then the tubing can be simply pulled to the outside of the body and fuller volumes started for dialysis therapy. More research is needed for best demonstrated practices of ideal time for buried catheters to be externalized.

Nursing Care

Nursing consideration for knowing the access type and surgery are mainly for nursing and patient education. Some patients may need more guidance on what to expect with each step of the surgical process and the importance of not missing any scheduled appointments. During the surgical consult appointment, the patient needs to honestly report all allergies, previous surgeries, and preferences for the PD catheter exit site. The surgical report needs to be reviewed as soon as possible and permanently placed in the active healthcare record. The dictated surgical report or surgical rounding report is necessary to know the type of catheter used, how many cuffs are on the catheter, and any other procedures performed, such as adhesion removal or hernia

repair. If a hernia repair was done, a four- to six-week healing time is necessary before starting PD (Gokal et al., 1998). Specific PD therapy and training require orders from the surgeon and nephrologist. During pre-surgery education and modality education, nurses need to be able to explain to the patient what to expect pre-, during, and post-surgery, as well as provide a description of an actual PD catheter for patient visualization.

PLACEMENT OF THE EXIT SITE

The PD catheter can be located in several areas of the body. Most peritoneal catheters are located on either side of the body in the upper or lower abdomen. Other PD catheter locations are the upper chest, called the pre-sternal area, and the back (Penner & Crabtree, 2012). The following are some general guidelines for PD catheter placement (Payton & Kennedy, 2017):

- Place in an area that does not interfere with undergarments.
- Avoid using the pre-sternal area if expecting open-heart surgery.
- Determine activity level of patient.
- Assess for incontinence issues.
- Identify location of ostomies.
- Avoid scars and folds in skin, belt line, how they wear their pants.
- Evaluate patient preference, if possible.
- Consider patient's desire for tub baths.
- Evaluate patient's dexterity issues and ability to see the catheter for daily care.
- Identify typical daily habits, working habits, exercise habits.

Pre-sternal catheters are placed in the upper chest. Advantages include being able to take tub baths and easily visualization for patients with a large abdomen. Decreased risk of contamination would make the pre-sternal catheter ideal for patients with ostomies and incontinence, and for infants. Disadvantages for pre-sternal catheters are longer flow time of effluent and dialysate due to the length of the catheter. Surgical time for placement of the pre-sternal catheter is more involved, as is any surgical repair in case of malfunction. It is not ideal for open-heart surgery candidates to consider a pre-sternal catheter (Twardowski, 2002).

Upper abdomen PD catheters are ideal for patients with a large abdomen. Based on placement site, patients could soak in a small amount of water in tubs without submerging the PD catheter. The upper abdominal PD catheter allows for easier visualization of the catheter by the patient, less obstruction, or less rubbing by the belt line and other garments. The upper abdomen is less confined by clothing and congregating of skin bacteria from skin folds.

Lower abdomen PD catheter sites are ideal for patients who are insecure of their body image, fearing visualization of the PD catheter through clothing. Women can use tighter undergarments, slips, and tucked in shirts for securing and padding the catheter from outside visualization. Disadvantages include increased chance of bending the catheter during prolonged and frequent sitting or certain exercises. The lower abdomen is noted for holding more moisture, increasing the chance of more bacteria, and possible exit site infection (Payton & Kennedy, 2017). Daily inspection of the exit site and connecting the transfer set by the patient may require assistance of a care partner or mirror. The clinic team may require the patient with a very low PD catheter to lay supine and remove more clothing creating an uneasy situation for the patient. The lower PD catheter can easily become irritated if the patient bumps or leans against a counter or desk for lengthy computer work, household chores like dishwashing or meal preparation, or assembly line factory work.

Very little documentation exists for back PD catheter. These catheters have been tried for patients who need an exit site that is harder for the patient to reach due to mental issues, which may cause damage to the tubing, like scratching of the exit site or accidental tubing disconnection (Penner & Crabtree, 2012).

The selection of the exit site is a group effort by the entire medical team – physician, surgeon, nurse practitioner, PD unit nurse, and the patient. The nurse again needs to be able to explain the advantages and disadvantages of all catheter exit types. A thorough physical assessment of the patient's physical habitus and desired preferences, as well as habits of daily living, communicated to the surgeon will aid in PD catheter success. Education begins before surgery and in modality or specific PD education classes.

Marking the PD Catheter Exit Site

A coordinated and well-communicated medical team is required in marking the PD catheter. Each manufacturer of PD catheters has its own directions, as well as a peritoneal catheter marking template. If the nurse does not mark the planned exit site, then written communications should be sent with the patient or directly to the surgeon for the first pre-surgery consult visit. A comprehensive report sent to the surgeon should include:

- Nephrologist order for PD catheter placement.
- History and physical with medication list, including allergies.
- Preferred PD catheter exit site – right or left side, upper abdomen, lower abdomen, back, pre-sternal.
- Justification of preferred exit site, including:
  - Patient's body shape.
  - Patient dexterity issues and ability to see the exit site.
  - Skin folds, scars hernias.
  - Previous history of surgeries, pregnancies.
  - Abdominal ostomies.
  - Patient preference.
  - Mental issues requiring exit site not to be accessible to the patient.

PD catheter success, patient trust, and confidence are the ideal outcome goals when the medical team develops a closer relationship with the surgeon and the team. Usually surgeons only communicate with the nephrologist. Nurses can establish a relationship by meeting with the office staff and even the surgeon's nurse. Providing the surgeon's office with contact information, best demonstrated practice articles, journals, and videos of PD catheter placement

surgeries are some of the suggested items to include in the meeting. Sending a thank you letter and report of a successful surgery to the surgeon is another communication activity in forging relationships. Reviewing surgery outcomes in quality meetings with the interdisciplinary team is also crucial. Things that are not best demonstrated practices should be addressed with the help of the nephrologist. Irrigation of the catheter in surgery, as well as pre-op broad spectrum antibiotics, titanium adapters, and transfer set placement, are all good steps in a successful surgical experience and PD catheter outcomes (Haggerty et al., 2017). Things that impede healing include large exit site holes, sutures at the exit site, no pre-antibiotics, dressings that prevent access to the tubing without disturbing the exit site, and conflicting post-surgical directions (i.e., when a patient can shower) (Payton & Kennedy, 2017). Involve the patient to make sure the surgery date is communicated to the PD unit/PD clinic nurse as soon as possible after the surgical consult visit. A system needs to be in place to make sure surgery dates, reports, and necessary communication are accomplished in a timely matter. A good relationship with the surgeons can lead to possible visualization of a PD catheter surgery, which can help the nurse have a more in-depth understanding of the surgery (Gokal et al., 1998).

PRE-SURGERY PD CATHETER NURSING IMPLICATIONS

All patients and their caregivers should be provided with pre- and post-surgery verbal and written instructions. The pre-surgery education is to promote optimal healing of the exit site without infection. Another goal of education is to encourage the Dacron cuffs to grow into the tissue with the least amount of stress. Proper functioning of the PD catheter is one of the most important goals post-surgery. A call to the patient the day before surgery can help re-emphasize vital education and precautions for patients, as well as remind them of the post-surgery clinic visit.

The discussion should start with a description and example of a PD catheter and how the surgical dressing will look like after surgery. The dressing over the exit site should not be removed for at least the first 7 to 10 days to prevent any early colonization of the site and unnecessary manipulation of the PDC (Haggerty et al., 2017). The dressing should be non-occlusive and cover the exit site only (Gokal et al., 1998). The PD catheters should be anchored separately to prevent any movement of the catheter and disturbance of the fragile exit site.

The patient should be instructed to call the nurse about the dressing any time the dressing has excessive soiling or bleeding, falls off, or has a foul odor. Remind the patient to never peek under the dressing; scratch around the dressing; or apply any lotions, perfumes, or powders around the dressing. If the patient cannot get to the clinic in a timely manner to fix the dressing, the patient should be instructed to reinforce the dressing that is loose or soiled. The patient can be given a kit of sterile gauze and tape for reinforcement only upon approval of the physician and clinic protocols. Preventing the exit site from getting wet is one of the most important instructions when taking a sponge bath, and showers or tub baths should not be allowed until instructed by the nurse. Showering will be delayed until the PD catheter is considered healed by the nurse or physician, which could take three to six weeks. Providing pictures of what an exit site looks like or having a mannequin abdominal model can be helpful to eliminate fears. With patient consent, have the prospective patient see an established patient who is on PD and who is the same sex, race, and age as the prospective patient for PD catheter visualization and possible discussion of any other issues or fears the potential patient may have.

The surgeon may or may not give details for allowed activity levels after surgery. The goal is to promote healing of the Dacron cuffs. To assist with healing, the patient should not do anything that increases intra-abdominal pressure. Lifting objects greater than a small grocery sack during the first six weeks of healing is suggested but not researched. Intra-abdominal pressure may also occur with coughing, sitting then standing, lying down, and constipation with straining. Activities that need to be limited include strenuous exercise, stair climbing, bending, lifting, and swimming. Deep or excessive coughing can also cause increased intra-abdominal pressure. Teach the patient how to splint the incision. If coughing does not subside, have the patient call for medications to control the cough or to see the primary care physician for a thorough assessment of a more serious underlying infection like a cold or the flu. A temperature greater than 100° Fahrenheit should be reported to the surgeon immediately after surgery. If the surgeon does not give any direction, consult the nephrologist for discharge instructions for when the patient should call about elevated oral temperatures.

The surgeon is responsible for ordering the proper pain medication after surgery. Explaining to the patient about pain that might be experienced and how to address it properly with timely medication is essential. Anesthesia from surgery, pain medication, and lack of activity can be cause for constipation issues after PD catheter surgery. Patients with end stage renal disease (ESRD) may have more issues with constipation due to diabetes, uremia, limited fluid consumption, decreased activity, and prescribed constipating drugs (i.e., phosphate binders, resins for hyperkalemia). No studies were found for any bowel preparation before surgery; however, the PD catheter is placed around the intestines, and a full colon leaves less room for correct PD catheter placement during surgery and possible tip migration, which could prevent the catheter from working. After surgery, the risk for catheter tip migration can still occur, so proactively preventing and treating constipation is vital. The nurse needs to investigate the patient's pre-surgery bowel habits. Some patients have a hard time describing their feces appearance and habits.

The Bristol Stool Chart is a great visual educational tool for proper bowel health education (Lee, 2011). Based on the individual patient's physical and mental health, activity level, diet restrictions, and co-morbidities (i.e., diabetes) will determine how to educate the patient on constipation prevention

and treatment. Soliciting the help of the renal dietician will help guide the patient on the appropriate foods to include in the diet for more fiber and natural bowel stimulation. Patients with more complicated constipation may require consulting a gastroenterologist. Regardless of the degree of constipation, the discussion of preventing and immediately treating constipation will help in the success of the PD catheter functioning, healing of the Dacron cuffs, and prevention of peritonitis.

A written guideline for constipation treatment and prevention should be developed and approved by the clinic and physicians and given to patients during the pre-surgery discussion. Natural fiber helps improve peristalsis and is a first step toward good bowel health without the side effects of laxatives (Lee, 2011). Some fiber-bulking preparations require a lot of water to work properly, as well as increased bowel fullness. Bulking in the intestines is counterproductive for PD catheter functioning due to possible tip migration and inability of the PD fluid to fill or drain. No research has been significantly reported or studied in patients on PD for prescribing medications for constipation.

Senna and docusate sodium are stool softeners. They require fluid to work, and docusate contains sodium. Both should be taken after physician approval, and mineral oil should never be taken with docusate. Senna is an herb supplied as a pill or in tea form; it can lead to lowering potassium levels (Lee, 2011). Senna interacts with the natural production of vitamin K, therefore interacting with blood thinners (Lee, 2011). Polyethylene glycol has gained more use, especially because it is obtained over the counter and is less expensive because it is a generic brand. Polyethylene glycol is not a stimulant laxative, and it works with your body to soften the stool and unblock your system (Lee, 2011). For immediate relief of constipation, polyethylene glycol would not be the first choice because this tasteless powder is combined in any liquid and may require several days to work. Physicians may order stimulant laxatives when PD catheter malfunctions and results are needed quicker. Over-the-counter laxatives, including bisacodyl, sennosides, magnesium hydroxide, or magnesium citrate, may be ordered. Caution is advised with the frequent use of magnesium-containing medication due to the inability of the kidneys to remove magnesium normally, and magnesium levels are more likely to be higher in patients with ESRD. Magnesium levels are usually included in the monthly chemistry lab panels for monitoring (Lee, 2011).

POST-OPERATIVE PD CATHETER CARE

The PD unit nurse can schedule the first catheter flushing and patient examination within a day or so after surgery. Early examination of the PD catheter functioning can help in addressing possible problems early after surgery. No documented research or standardized guidelines were found for post-operative flushing of the PD catheter. Catheter flushing should use small amounts of fluid (500 mL to 1,000 mL) to prevent any intra-abdominal pressure or stress on hernia repairs (Su, 2013). Patients can be sitting up or lying down on one side or the other to get a good flow for flushing. There should be a minimum of two exchanges and at least enough exchanges until the fluid clears of blood. Per physician order, 500 to 1,000 units of heparin may be added to prevent further coagulation of blood and fibrin (Twardowski & Prowant, 1996).

The first dressing change should be scheduled 7 to 14 days after surgery (Su, 2013). This wait time is crucial to promote healing and prevent introduction of bacteria. Preventing manipulation of the PD catheter is important during the first weeks of healing for tissue in-growth of the cuffs. If the dressing is missing, loose, or soiled, it will have to be addressed at the first post-operative visit. All dressing changes should be done using strict aseptic technique. Sterile gloves and gauze should be used, as well as masking for both the patient, nurse, and anyone else in the room. The dressing should be a non-occlusive sterile gauze (Su, 2013). The dressing protects the exit site from trauma, keeps the exit site clean, and wicks away any drainage. The sterile dressing should be changed by the PD unit nurse weekly until the exit site is healed as determined by the experienced PD unit nurse or physician. Clinic policy should be consulted since researched best demonstrated practice on this topic is still lacking.

Cleansing agents for a new exit site should be mild and non-irritating (Payton & Kennedy, 2017). Examples of non-irritating agents used for cleaning include antibacterial liquid soap and sterile normal saline. When cleaning the exit site, the gauze soaked with the cleaning agent should begin cleansing at the very edge of the exit site and go around the exit site in concentric circles, moving away from the exit site for a distance of 2 inches. The cleansing solution should not be allowed to drain into the sinus. The skin should be patted dry with minimal movement of the PD catheter. The PD unit nurse should use each immediate post-operative visit to review pre-surgery instructions as noted above. Assessment of the patient knowledge on not showering or bathing, and preventing constipation is a must for long-term success with peritoneal dialysis. More directions should be reviewed on proposed training dates, times, and what to expect.

HEALED EXIT SITE CARE

A healed exit site may take up to six weeks. Once the exit site is healed, the patient should do exit site care daily, which includes cleansing the exit site, applying the dressing, and proper taping of the catheter. Proper anchoring of the catheter should be maintained at all times. The tape should hold the gauze in place without totally occluding the exit site gauze dressing. No evidence is available on proper anchoring technique. The PD catheter is laid on the skin in the natural direction in which it comes out of the body. The catheter may have a lateral or downward direction upon exiting the body. The first piece of tape needs to hug the PD catheter two finger widths from the center of the exit site. This anchoring technique prevents excessive adhesive at the exit site and no loops of tubing in which the PD catheter can get hung up on. The rest of the tubing and transfer set can be taped to the abdomen, or put in a PD catheter belt or a special PD catheter undergarment. The tubing should

never have any strain placed on it. The catheter should never be allowed to hang free due to pulling on the exit site, causing irritation to the skin and possible chance for infection (Burkart, Golpher, & Sheridan, 2017).

Anchoring the PD catheter by the tape helps the tubing adhere to the skin. Excessive taping and adhesive can be an attraction for skin bacteria. The adhesive can be very difficult to remove from the skin and tubing. Vigorous rubbing to remove adhesive can cause skin irritation and trauma to the tubing and exit site. Some PD supply vendors and clinics provide special adhesive remover pads to aid in adhesive removal. Patients should only use approved products to remove adhesive to prevent damage to the PD catheter. To prevent cross contamination, small rolls of individual tape should be used. To prevent excessive taping, use gauze to cover the tubing before taping to the skin. PD catheter belts and undergarments have been designed to secure the PD catheter and use less tape.

A recent study of patients who did not use a dressing on a well-healed exit site had similar rates of exit site infections as compared to those patients that wore a dressing daily (Taheri et al., 2017). No documented research was found on when to start applying antibiotic cream to the skin around the exit site. Several choices have been studied, including Neosporin®, 0.1% gentamycin cream, and mupirocin. Gentamicin is effective against gram negative bacteria, such as Pseudomonas (Pirano et al., 2005). Mupirocin is effective against gram positive bacteria, such as Staphylococcus aureus (Pirano et al., 2005). Minimal evidence exists for gentamycin-resistance, and more tracking and research are needed (Nessim, & Jassal, 2010; Piraino, 2010).

The amount of cream needed daily is minimal. Using a sterile end of a cotton swab is all that is necessary to paint the skin around the exit site. Staph aureus and Pseudomonas aeruginosa are the main bacteria that cause exit site infections (Pirano et al., 2005). Specific antibiotics for exit site care should match the sensitivity of the organism cultured. Some experts cited improvement with exit site infections by treating staph in the nares twice a day for seven days out of every month, as well as daily antibiotic cream to the exit site for patients with positive nasal cultures (van Diepen, Tomlinson, & Jassal, 2012).

EXIT SITE HEALING

Immediately following surgery, the exit site may have some bleeding. The skin around the tubing will be raw. The ideal surgical exit site should fit snugly around the catheter without any gaps, tears, or sutures. The skin around the exit site should be free of purulent or clear drainage. Scabs after surgery at the exit site are due to bleeding and should never be forcibly removed. The scab can be soaked off with the cleansing agent used. Scabs will diminish over the next three to four weeks with a well-healed exit site. The exit site at six weeks may be described as pink or pale pink. As healing progresses, the natural color and texture of the skin will grow around the exit site and down into the sinus. A completely healed exit site is dry without signs of inflammation, scabs, debris, or drainage. Sometimes the skin close to the exit site is darker than the patient's normal skin tone. If healing is not complete at six weeks, culturing of the drainage may be necessary.

The Perfect Exit Site

A perfect exit site has a grade of 0, and consists of the following criteria (Payton & Kennedy, 2017):

- Skin is natural to their coloring, pale pink, or darker.
- No external drainage.
- Crust is minimal to absent.
- Epithelium covering the entire visible sinus.
- No pain or swelling.
- Sinus drainage clear.

A perfect exit site may be seen as early as three to four weeks post-surgery. Some patient may need six months for a perfect site (Eriguchi et al., 2011).

Equivocal Exit Site

A new PD catheter is equivocal because it is new, not perfect, or infected (Twardowski & Prowant, 1996). Mild redness may be present. The sinus will appear raw, and regression of epithelium or granulation tissue will be present. During this stage, crust may develop frequently but can be easily removed. An equivocal exit site needs weekly assessment and further culturing if healing does not progress.

Acutely Infected Exit Site

The acute infection of an exit site has more redness, inflammation, pain, and tenderness at the exit site, and may be over the tunnel. The area of redness should measure greater than 13 mm (Twardowski & Prowant, 1996). The sinus may be raw with regressing epithelium. Scabs are usually present with daily crust. Acute infections can be caused by poor hygiene, poor technique, and trauma to the exit site. The trauma may cause bleeding and drainage that is purulent, thick white, yellow, or green. All purulent drainage must be cultured. The acute infection is documented as occurring for less than four weeks. According to the research, a chart score of four or more indicates an acute infection (Eriguchi et al., 2011). There are five parameters: swelling, crust, redness, pain, and drainage. Directions indicate that infection should be assumed if there are four of the five parameters present. However, there could be an infection with less than four, so good clinical judgement is crucial (Eriguchi et al., 2011).

Chronic Exit Site Infection

A chronic infection presents just like an acute infection. The difference between chronic and acute is that the chronic infection has lasted greater than four weeks. A chronic infection according to the chart has a score of greater than or equal to four.

Tunnel Infection

A tunnel infection can be associated with or the result of an exit site infection (Szeto et al., 2017). Tunnel infections can lead to peritonitis. Confirmation of a tunnel infection can be done by culturing the expressed drainage or by ultrasound. The skin over the tubing in the tunnel area will be tender, inflamed, red, and painful.

Exuberant Tissue

Exuberant flesh is also called raw or proud flesh. The cause of raw flesh can be due to trauma to the exit site area, ineffective daily cleaning, infection, or tugging on the PD catheter. The raw skin needs to heal quickly to prevent infection and possible peritonitis. One treatment for raw flesh is to cauterize the raw area with silver nitrate sticks (Gokal et al., 1998). Do not wet the sticks. Touch the tip of the silver end of the stick only on the raw flesh area without touching the healthy skin. Prevent drainage of silver nitrate from running down over healed skin and tubing by using sterile gauze to protect the area. Position the patient to expose the exit site and prevent damage from the silver nitrate. Explain the procedure to the patient. The procedure should not hurt if only applied to the affected raw area. The area will first look silvery grey then turn black. A sterile gauze and routine cleaning should resume. The patient should come to the clinic weekly for follow-up.

Another treatment for mildly raw and slow healing exit site is 3% normal saline soak (Crabtree, Firanek, Piraino, Abu-Alfa, & Guest, 2012). The solution can be supplied by the clinic or made at home. A piece of gauze is soaked with the saline solution and then applied to the raw area for 15 minutes, removed, and then allowed to air dry. The saline soaks should be done two times daily for one to two weeks. A dressing should always be worn with exuberant tissue.

ASSESSMENT OF THE EXIT SITE

There is familiar terminology with exit site assessment, but no universal documentation system. The PD unit nurse should evaluate the exit site weekly until completely healed. Well-healed exit sites should be fully examined monthly at the clinic visit or any time there is a complaint or evidence of pain, tenderness, leaking, or drainage. All exit site assessments should occur with the door closed, PD unit nurse gloved, and masks for everyone in the room. Evidence of a consensus for proper cleansing ranges from daily to two or three times a week. According to several researchers (Lambertson et al, 2015; Pirano et al., 2005; Twardowski & Prowant, 1996), the PD unit nurse should ask several probing questions about the care of the exit site by the patient to prevent future infections and re-emphasize best demonstrated practices, including:

- What is the frequency of exit site care and dressing change?
- Will the patient be exercising and sweating with yard work, etc.? Any antibiotic cream use? If yes, what is the amount and frequency of application?
- Who does the exit site care?
- Has the patient demonstrated proper hand washing and masking, and aseptic technique?
- Tub baths or catheter submersions, how often the shower head is cleaned?
- Any swimming and post-swimming care?

Tools for Exit Site Assessment

Tools for the assessment of the exit site include:

- Magnifying glass with or without a light.
- Good lighting without shadows.
- Measuring stick or ruler for documenting amount of inflammation and redness.
- A digital camera to share photos with the medical team to communicate the infection and healing process.

Proper documentation should be by nurses for exact amount of redness by measuring across the width of the exit site and all associated redness or inflammation, noting drainage as clear bloody or purulent, any scab formation, and raw areas of skin labeled as "proud flesh." Use the face of a clock to note its location (e.g., six o'clock will be at the bottom of the exit site hole under the catheter). Written follow-up directions for exit site care cleansing, anchoring, return appointments, when to call the nurse for infection, what to look for, and how to prevent further complications should be given to the patient.

Assessment Documentation

Documentation should include answers to the assessment questions and documentation of the following assessment items:

- Strain on the PD catheter; bends in the tubing, especially at the beta cap connector.
- Amount and proper placement of taping/anchoring.
- No dressing or anchoring seen.
- Use of PD catheter belt, netting, or other apparatus.
- Extrusion of the external cuff.
- Drainage color, amount, and location; make sure to lift the PD catheter up and look into the sinus area.
- Redness and inflammation by using a dedicated ruler in millimeters, measuring from one side of the redness across the exit site and tubing to the other edge of the redness.
- Amount, size, location of crust, and if it is easily removed.
- Amount, size, and location of scabs.
- Tubing integrity, cracks, leaks, tight connection, cleanliness, or expansions.
- Note how clothing may be irritating the tubing or lying directly over the exit site.
- Assess for any closely associated rashes from the tape or antibiotic cream; consider changing types of tape or antibiotic used, cleansing agent, and frequency.
- Assess for any closely associated scratches, boils, or breaks in the integrity of the skin.
- Assessment of the tunnel is done by palpating the tubing from the exit site back over the skin. Apply mild pressure to see if any drainage is expelled.

NURSING IMPLICATION FOR THE INFECTED EXIT SITE

Patients need to present to the clinic as soon as possible upon complaints of exit site infection, bleeding, pain, or evidence of leaking (Gokal et al., 1998).

- The exit site should be assessed by the PD unit nurse weekly until healed.

- The exit site should be assessed before and after cleaning.
- Instructions for the patient may include increasing cleaning frequency.
- Use a non-cytotoxic cleansing agent (Shur-Clens®, chlorhexidine gluconate 2%, sterile saline, antibacterial liquid soap, sterile sodium hypochlorite) (Twardowski & Prowant, 1996).
- Culture exit site drainage as soon as possible.
- Call the physician with assessment for antibiotic orders.
- Apply antibiotic cream to exit site daily as ordered by the physician.
- Observe the patient for proper technique in exit site care, handwashing, and masking.
- Examine the integrity and length of the fingernails.
- Make a home visit with attention to area where exit site care is done, how clean the shower head is, how frequently cleansing is done, and if it is according to protocol.

USING THE PD CATHETER

The exit site should be examined weekly for healing post-surgery. If time allows, most catheters can be used with low volumes after two weeks of healing without any associated leaks or history of hernia repair during surgery. Proper care of the exit site and tubing, preventing constipation, and a well-nourished diet high in protein is essential in timely starting of PD. However, some patients cannot wait for proper healing time of the PD catheter.

URGENT-START PD

Urgent-start PD is the latest term for using the PD catheter before two weeks' post-surgery (Burkart et al., 2017; Ghaffari, Kumar, & Guest, 2013). Urgent-start PD is done in the clinic immediately after PD catheter placement. It is for patients without advanced uremia or acute concurrent medical issues. PD treatments can be done manually or with a cycler only when the patient is supine. PD orders for each patient can follow best demonstrated practice or be customized to meet specific patient needs. The patient can dialyze three to five times/week or more if in the hospital. The hours on the cycler may range from 5 to 7 hours. The fill volume is increased weekly as long as tolerated by the patient and there is no evidence of a fluid leak (Crabtree et al., 2012).

Advantages and Disadvantages of Urgent-Start PD

Advantages of urgent-start PD include:

- Can start dialysis without prior hemodialysis access.
- Can use manual or cycler exchanges.
- Can check catheter function early.
- Can develop respectful relationship with patient, family, or caregiver due to the amount of time involved.
- Can get the patient out of the hospital sooner.
- Gentle way of removing fluid and uremic toxins.
- Less stressful on the heart.

Disadvantages include:

- Potential early leaking of the PD catheter.
- Lengthy time spent at the clinic – five to eight hours daily for two weeks before the two-week training starts.
- More time involved by the PD Unit nurse.
- More space needed for patient to lay supine, as well as special supplies for daily treatments. Need a minimum of two training rooms to support urgent-start PD.
- Any time the patient must sit up or go to the bathroom, the peritoneal cavity must be drained (Ghaffari et al., 2013).

CONCLUSION

PD unit nurses and all of the PD clinical staff are involved in the access care of the patient on PD. Nurses need a wealth of knowledge that is more than just skin deep. The PD unit nurse is more like a case manager – requiring varied and current PD education, technical, training, and management skills; and educational knowledge and dissemination. The long list of competencies of a PD unit nurse will provide confidence, patient satisfaction, and success in PD.

Education of the patient and nurse begins before the PD catheter is placed. Understanding surgical implantation techniques, catheter types, and their advantages and disadvantages is just the beginning of a continued relation of education and training of the nurse and patient. The nurse needs to be prepared for the patient during modality and kidney education classes to give the patient a complete and thorough understanding of the benefits of PD and care of the access.

Education will continue throughout the year, and at a minimum, exit site care should be reviewed bi-annually. The more exit sites and catheters the nurse visualizes, the more expertise and confidence in patient care is gained. Thorough and efficient assessment is vital in a busy clinic. Reviewing research, attending lectures, and viewing visual aids will help nurses build their knowledge base. More research is needed on the very simple parts of access care, such as flushing, care and success of the buried catheters, antibiotic creams, and treatments for infections. As with all clinical practices, there are standard protocols and best demonstrated practices. Patients on PD can always present new challenges, require individualized care, and newer therapies. Cohesive documentation with understandable terminology still needs improvement and research. Goals for patients undergoing PD include appropriate monitoring and guidance of the patient, preventing infections, and building respect and confidence with the patient. The PD unit nurse should be the best proactive advocate to find what works best for the patient concerning all aspects of the PD access known as their lifeline for dialysis (Dembros et al., 2005).

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CONTACT HOUR: 2.0 HRS

Health disparities and outcomes in Canadian Indigenous patients with end-stage kidney disease

By Veronica Lee and Marisa Battistella

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LEARNING OBJECTIVES

1. Identify the clinical, socioeconomic, geographic, and other factors that influence treatment and health outcomes of Indigenous patients with end-stage kidney disease (ESKD).
2. Discuss health disparities between Indigenous and non-Indigenous patients with ESKD.
3. Discuss barriers to optimal care and treatment of ESKD among Indigenous peoples.

ABSTRACT

The Indigenous peoples in Canada include the First Nations people, Métis, and Inuit. They are one of the fastest-growing ethnic groups in Canada (Yeates & Tonelli, 2010). Since 2006, the Indigenous population has grown by 42.5%, to 1.6 million people in 2016. They represent 4.8% of Canada's total population (Statistics Canada, 2017). Chronic kidney disease (CKD) and end-stage kidney disease (ESKD) are significant health burdens among the Indigenous peoples. Compared to the non-Indigenous population, the prevalence of severe chronic kidney disease (eGFR < 30 mL/min) in the Indigenous population is almost twice as great (5.9 versus 3.8 per 1000 population, p<0.0001) (Gao et al., 2008). Indigenous peoples with CKD also have a 77% increased mortality risk, after adjusting for age, gender, diabetes, and baseline glomerular filtration rate (GFR) (Gao et al., 2007). Influenced by high rates of diabetes and obesity, Indigenous peoples are more likely to develop ESKD than those in the non-Indigenous population (Canadian Institute for Health Information [CIHI], 2013). Over 60% of kidney failure cases in Indigenous peoples are a result of diabetes (Gao et al., 2007).

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INTRODUCTION

The two main treatment options for ESKD are dialysis and kidney transplantation. Kidney transplantation is considered the optimal treatment for most non-elderly patients with ESKD as it significantly improves survival and quality of life over dialysis (Yeates et al., 2009). However, compared to non-Indigenous patients, Indigenous patients have lower rates of renal transplantation (CIHI, 2013; Yeates et al., 2009). There are many barriers that may prevent Indigenous patients from receiving transplantation, including history of health problems, compliance with treatment, patient preference and beliefs, remote geographic residence, socioeconomic status, and education (CIHI, 2013; Yeates & Tonelli, 2010). This article will discuss the factors influencing the development of ESKD in Indigenous peoples, health disparities, barriers to treatment, and patient outcomes.

CLINICAL FACTORS INFLUENCING ESKD TREATMENT AND OUTCOMES

Both diabetes and obesity are conditions that can increase the risk of developing CKD and ESKD. Indigenous patients with ESKD are younger, and have higher rates of diabetes and obesity than non-Indigenous patients with a median age of 54 years versus 62 years in the non-Indigenous cohort (CIHI, 2013). Indigenous patients with ESKD were almost twice as likely to be diagnosed with diabetes as non-Indigenous patients (49% versus 27%, respectively, $p \leq 0.01$) and were more likely to be obese (40% versus 27%, respectively, $p \leq 0.01$) at the time they began treatment (CIHI, 2013). Furthermore, other factors such as younger age at onset of diabetes, poor glycemic and blood pressure control, and proteinuria cause faster loss of kidney function and an increased risk of developing ESKD among Indigenous peoples (Gao et al., 2007). Diabetes also affects patient suitability for kidney transplantation, particularly

live kidney donations. Diagnosis or a family history of diabetes can increase the risk of post-operative complications for both the donor and the recipient (CIHI, 2013).

SOCIOECONOMIC AND GEOGRAPHIC FACTORS INFLUENCING ESKD TREATMENT AND OUTCOMES

Compared to non-Indigenous patients with ESKD, Indigenous patients are more likely to live in socioeconomically disadvantaged and remote areas. According to the CIHI (2013), 56% of Indigenous patients with ESKD lived in the least affluent neighbourhoods, compared with 24% of non-Indigenous patients. Indigenous patients living in these areas may lack the appropriate educational resources, which affect their understanding of treatment protocols and ability to engage with healthcare professionals (CIHI, 2013).

Forty percent of Indigenous patients with ESKD lived in remote areas compared with 6% of non-Indigenous patients. One in five Indigenous patients with ESKD travelled more than 250 kilometers to a healthcare facility to receive treatment, compared with less than 5% of non-Indigenous patients (CIHI, 2013). Peritoneal dialysis (PD) would be a suitable treatment for patients who live in rural or remote locations where there are no hemodialysis centres. However, it was found that the use of PD is significantly lower in Indigenous patients compared to non-Indigenous patients (Yeates & Tonelli, 2010).

The limited access and greater distances from healthcare facilities places several barriers on Indigenous patients receiving dialysis treatment. Indigenous patients may not be able to receive early diagnoses of problems associated with treatment, such as access site infections or bacteremia. Greater distances travelled can also be a financial burden, and affect employment and access to family and social support (CIHI, 2013).

SURVIVAL AMONG INDIGENOUS PATIENTS WITH ESKD

Indigenous patients had lower survival rates for all five years after initial dialysis treatment compared to non-Indigenous patients. Survival rates in the first year were 81.6% versus 84%, and by the fifth year, 39.6% versus 45.5% for Indigenous and non-Indigenous patients, respectively (CIHI, 2013). However, following kidney transplantation, graft survival rates were similar among Indigenous and non-Indigenous patients. Age, sex and diabetes-adjusted graft survival rates for Indigenous and non-Indigenous patients were 94.2% versus 94.6% for the first year, and by the fifth year, 83.6% versus 84.4%, respectively (CIHI, 2013).

RENAL TRANSPLANTATION IN INDIGENOUS PATIENTS WITH ESKD

Organ donation and transplantation rates are low for Indigenous peoples in Canada despite a high demand. Indigenous patients are less likely to receive kidney transplants compared to their non-Indigenous counterparts (27% versus 42%, respectively) even after controlling for age, sex, and diabetes (CIHI, 2013). Indigenous patients also have significantly longer median waiting times for kidney transplant compared to non-Indigenous patients. For deceased donor transplants, the median waiting time was 2.5 years versus 1.9 years ($p < 0.01$) for Indigenous and non-Indigenous patients, respectively (Yeates et al., 2009). For living donor transplants, the median waiting time was 1.6 years versus 0.8 years ($p < 0.01$) for Indigenous and non-Indigenous patients, respectively (Yeates et al., 2009).

Davison and Jhangri (2014) conducted a study to determine the knowledge and attitudes of First Nations people towards organ transplantation and donation. They surveyed 198 First Nations people living in Alberta and found that, although 83% of participants were in favour of transplantation, only 38% were willing to donate their organs after death, 44% had not thought about organ donation, and 14% did not believe organ donation was important. Reasons not to donate included "the dead must be left in peace" (32.8%) and one "must enter the spirit world intact" (10.7%) (Davison & Jhangri, 2014). These results are associated with traditional Indigenous culture. Some Indigenous peoples believe that only the Creator knows how long one has to live, and one should not interfere with this. Furthermore, if a person's body is not intact at death and is missing parts, the Creator will send this person on a search for them (Canadian Council for Donation and Transplantation, 2005).

Davison and Jhangri (2014) also found that there are deficits in First Nations peoples' knowledge and awareness of organ donation and transplantation. For instance, only 31.8% of participants were aware that they could sign the back of their health card to indicate willingness to donate their organs. Participants also held false beliefs such as: the wealthy undergo transplantation first (63.1%), health workers would not work as hard to preserve the life of a potential donor (14.1%), and organs can be removed after death without personal or family consent (11.6%) (Davison & Jhangri, 2014). The findings from this study indicate a need for more educational resources on organ donation and transplantation for Indigenous peoples to increase awareness and prevent misinformation.

ACCESS TO HEALTHCARE AMONG INDIGENOUS PATIENTS WITH ESKD

A study by Gao et al. (2008) found that Indigenous patients with CKD were almost twice as likely to be admitted to a hospital for an ambulatory-care sensitive condition – a condition that, if effectively managed in an outpatient setting, would not require a hospital admission. Indigenous peoples also had decreased access to specialized medical care. Those with severe CKD (eGFR <30 mL/min) were 43% less likely than to visit a nephrologist compared to their non-Indigenous counterparts (Gao et al, 2008). Studies have shown that there is increased mortality among patients with severe CKD who are referred late to a nephrologist (Avorn et al., 2002; Waqar, Obrador, Khan, Pereira & Kausz, 2004). Patients who did not see a nephrologist

until 90 days or less before initiation of dialysis had a 37% higher likelihood of death compared with patients who had earlier referrals (Avorn et al., 2002). Another study found that patients with late referrals – those who had their first nephrology visit less than four months prior to the initiation of dialysis – had a 44% higher risk of death at one year after initiation of dialysis (Waqar et al., 2004). These findings suggest that Indigenous patients with ESKD who do not have timely access to a nephrologist will have a higher mortality risk. There is a need to eliminate the healthcare disparities among Indigenous patients with ESKD to ensure that they are receiving optimal care as do their non-Indigenous counterparts.

SUMMARY

There is an increasing burden of ESKD among the Indigenous peoples in Canada, which can be attributed to high rates of diabetes and obesity. Indigenous patients who undergo dialysis treatment for ESKD have lower survival rates compared to non-Indigenous patients. Indigenous patients also have lower kidney transplantation rates. There are a multitude of factors that contribute to these disparities, including history of chronic disease, and poor glycemic and blood pressure control. Many Indigenous patients live in remote or rural areas and must travel hundreds of kilometers to treatment facilities for dialysis; this is also a potential barrier to optimal care and patient outcomes. Furthermore, Indigenous patients who are socioeconomically disadvantaged may lack the proper educational resources and support that is required for effective treatment and communication with healthcare providers. The health disparities among Indigenous patients indicate the need for better access to care and improved management of ESKD, and its risk factors in this population.

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CONTINUING EDUCATION STUDY QUESTIONS

CONTACT HOUR: 2.0 HRS

Health disparities and outcomes in Canadian Indigenous end-stage kidney disease patients

By Veronica Lee and Marisa Battistella

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1. Which two chronic health conditions are the main contributors to the development of ESKD in Indigenous peoples?
   a) Dyslipidemia and obesity
   b) Diabetes and obesity
   c) Heart failure and diabetes
   d) Dyslipidemia and hypertension

2. Over ___ of kidney failure cases in Indigenous peoples are a result of diabetes.
   a) 50%
   b) 85%
   c) 60%
   d) 45%

3. Which of the following is NOT a risk factor for developing ESKD among Indigenous peoples?
   a) Younger age at onset of diabetes
   b) Poor glycemic control
   c) Poor blood pressure control
   d) Alcohol use

4. Which statement is false regarding Indigenous ESKD patients?
   a) Most Indigenous ESKD patients undergo peritoneal dialysis instead of hemodialysis
   b) Most Indigenous ESKD patients live in remote areas
   c) Indigenous ESKD patients are a younger median age compared to non-Indigenous ESKD patients
   d) Indigenous ESKD patients have lower rates of kidney transplantation compared to non-Indigenous ESKD patients

5. Which statement accurately describes a difference between Indigenous and non-Indigenous ESKD patients?
   a) Non-Indigenous ESKD patients are more likely to live in socioeconomically disadvantaged areas
   b) Indigenous ESKD patients have higher survival rates after initiating dialysis
   c) Indigenous ESKD patients are more likely to receive kidney transplants
   d) Indigenous ESKD patients are more likely to travel greater distances to a healthcare facility for dialysis treatment

6. What are some barriers to optimal treatment that Indigenous ESKD patients face?
   a) Lack of educational resources
   b) Remote geographic residence
   c) Living in a socioeconomically disadvantaged neighbourhood
   d) All of the above

7. Which statement is false regarding kidney transplantation?
   a) Indigenous patients have shorter median waiting times for kidney transplant compared to non-Indigenous patients
   b) Diabetes can increase the risk of post-transplant complications
   c) Kidney graft survival rates are similar for both Indigenous and non-Indigenous patients
   d) Indigenous patients are less likely to receive kidney transplants compared to non-Indigenous patients

8. What is a consequence associated with late referral to a nephrologist among ESKD patients?
   a) Increased risk of stroke
   b) Increased risk of infection
   c) Increased mortality risk
   d) There are no consequences associated with late referral

9. In the 2014 study by Davison and Jhangri to explore First Nations peoples' attitudes towards organ donation and transplantation, only ___ of First Nations people surveyed were willing to donate their organs after death.
   a) 50%
   b) 38%
   c) 65%
   d) 25%

10. In the same study, what was a reason for some First Nations peoples to be opposed to organ donation and transplantation?
    a) They believe the body must be intact at death
    b) They feared that as an organ donor, organs could be removed without personal or family consent
    c) They feared that healthcare workers would not work to preserve the life of an organ donor
    d) All of the above

CONTINUING EDUCATION STUDY ANSWER FORM

CE: 2.0 HRS CONTINUING EDUCATION

Health disparities and outcomes in Canadian Indigenous end-stage kidney disease patients

Volume 29, Number 4

By Veronica Lee and Marisa Battistella

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:
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  Kingston, ON K7K 1Z7
  or submit online to www.cannt.ca
- Enclose a cheque or money order payable to CANNT.
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- 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.

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POST-TEST ANSWER GRID

Please circle your answer choice:

1.	a	b	c	d
2.	a	b	c	d
3.	a	b	c	d
4.	a	b	c	d
5.	a	b	c	d
6.	a	b	c	d
7.	a	b	c	d
8.	a	b	c	d
9.	a	b	c	d
10.	a	b	c	d

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: _____

_____

_____

_____

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Name: _____

Address: _____

_____

CANNT member? ❑ Yes ❑ No Expiration date of card _____

PROFILING ...

New CANNT Board Members

JERRICA MCKINNON, BSCN, RN
VICE-PRESIDENT QUEBEC
2019–2022

I am a nurse educator at the McGill University Health Centre in Montreal. I have six years of experience in the nephrology realm, and previously worked in the cardiac intensive care unit. I began my renal journey as a nurse in a hemodialysis unit then transitioned to a nurse clinician in home therapy to empower patients to be active in their treatments by performing their hemodialysis sessions in the comfort on their own home. After two years, I transitioned to assistant nurse manager in a hemodialysis unit, which combined my two passions, empowering nurses to provide excellent care and being directly involved in patient care. In nephrology, the hemodialysis patients are like family, and what I love about this aspect is that the nurses know their patients and can tell from seeing a patient down the hallway that "something is not right today", and then the critical thinking kicks in. Being an assistant head nurse made me realize that the way to inspire patient-centred care and give the nurses tools to empower their practice is through education. Through teaching, I strive to promote the best care possible though education, keeping up with the latest research, and open communication with the team. I am truly excited to start my journey as the vice-president (Quebec) because CANNT's mission aligns with goals I want to achieve not only for my nephrology department, but for all nephrology nurses and technologists in the province of Quebec.

PATTY QUINAN, MN, RN, CNEPH(C)
VICE-PRESIDENT ONTARIO
2019–2022

I was born in Toronto, Ontario, and I am the proud parent of three beautiful children, two daughters and a son, now all grown up. My nursing career began in 1977 when I completed the Registered Nurses Assistant course and enrolled in the Registered Nursing program at Humber College in 1979, and graduated in 1981. I started my career in nephrology in 1983, and in 1998, when my son was five years old, I wrote my Canadian Nursing Association (CNA) exam and became a CANNT member. I was fortunate to be able to work part-time, which allowed me to return to university and obtain a degree in nursing from Ryerson and later a Master's of Nursing from the University of Toronto. My interests include travel, card games (especially rummy and euchre), badminton, and spending time with family and friends.

DEIDRA GOODACRE, BSN, RN, CNEPH(C)
VICE-PRESIDENT WESTERN REGION 2019–2022

Deidra Goodacre is the regional dialysis access coordinator for BC's Northern Health region. She is the chair of the BC Provincial Vascular Access Educators Group, which helps develop vascular access clinical guidelines for the BC Renal Agency. She is married with two busy and energetic boys, both in French Immersion. Her interests include travelling, skiing, and spending time with her family. She graduated from University of Northern British Columbia with a degree in nursing in 2004. Hemodialysis sparked her interest in renal nursing in 2006, and she went on to work in both the CKD clinic and cardiac care where she attained her certification in nephrology nursing. In 2015, she began her position in dialysis access, which combines two of her greatest passions, teaching and providing excellence in patient care. She will work diligently to represent Western Canada in her role as vice-president.

MARC HÉROUX, C.TECH
VICE-PRESIDENT TECHNOLOGISTS 2019–2022

Wow... 2020 will make 23 years that I will have been in nephrology. I started in 1996, as a dialysis technologist at the General Hospital pre-amalgamation (Ottawa Hospital). I then helped open one of two independent health facilities in the Ottawa area under Fresenius Medical Care. I have been back at the hospital for 17 years. As I write this intro, I have just accepted a new role as a biomedical technologist II at The Ottawa Hospital with links to nephrology.

I have been part of CANNT since 1996, as well. I have helped move the technologist from technical member-at-large role to a full VP position. I held both positions when I held the VP position from 2002-2006. Within those years, with technologists from across Canada, we created the first ever home dialysis standards. Years later, based on our original work, the CSA would create national home standards for home dialysis.

I have been an educator, technical mentor, and technical trainer through the years, and hope that I can use this collective experience to help the next generation. As a professor at La Cité collégiale, I help explain rules and regulations to the next generation of technologist as to why we need to strive to do our best. When I started my career as a dialysis technologist in 1996, my son was one. Today, my three boys keep me busy and my daughter, while playing with the angels, reminds me of why I strive to be the best technologist for our patients. I wear many hats (dialysis technologist, teacher, father, husband), but the best part of my career is that I am able to call nephrology care providers my friends. I cannot wait to meet and serve you over the next year.

Meet the 2019 CANNT bursary, award, and research grant winners

SPONSORED BY AMGEN

Nursing Research Project Grant – Novice Researcher: Carol Wright, BScN, RN

Carol Wright has been a practicing nurse for over 30 years. She works as a kidney post-transplant assessment coordinator at the Multi-Organ Transplant Program at the Toronto General Hospital. Carol completed her nursing diploma at George Brown College and her Bachelor of Science in Nursing at Ryerson University, Toronto. She is a member of numerous professional organizations, and has been a collaborator on many published projects in kidney transplantation.

SPONSORED BY CardioMED

Research Grant: Olusegun Famure, MPH, MEd, CHE

Segun Famure is the manager for new knowledge and innovation in the kidney transplant program, University Health Network, Toronto, Ontario. He is also the co-director of the Multi-Organ Transplant Student Research Training Program (MOTSRTP) at the same institution. In addition to the advanced degrees he obtained in the fields of public health and education, he holds a Certified Health Executive (CHE) designation from the Canadian College of Health Services Executives. He is also a past recipient of the Health Services and Policy Research Training Award from Ontario Training Centre. His research interests lie in areas of health curriculum development, chronic care delivery modeling, health program evaluations, and quality of life assessments.

SPONSORED BY FRESENIUS MEDICAL CARE

Franca Tantalo Bursary Award (Graduate Level): L. Dawn Power, BN, RN, CNeph(C)

Dawn grew up in the beautiful province of Newfoundland and Labrador, and graduated from the General Hospital School of Nursing in 1992. She began her nursing career in a busy medicine unit at the Health Sciences Centre in St. John's, which sparked her passion for nephrology nursing. She moved to Edmonton, Alberta in 1998 and started work on the inpatient nephrology unit at the University of Alberta Hospital. In 2001, she became the clinical supervisor of the unit, which then evolved into the unit manager position. In 2012, she transitioned into the role of a renal transplant coordinator. In this role, Dawn cares for and monitors the health of more than 250 patients who have received the life changing gift of a kidney transplant. Throughout this time, Dawn has maintained her CANNT membership, her CNeph(C) certification, and work with the Canadian Nurses Association as a member of the Nephrology Certification Exam Development Committee. After completing her Bachelor of Nursing degree via distance education through Memorial University of Newfoundland in 2013, Dawn felt her educational journey was not over. Currently, she is enrolled in the Master of Nursing program at the University of Lethbridge. Furthermore, Dawn is the proud mother of a 16-year-old son, Griffin, and the maidservant for two cats. Dawn would like to graciously thank CANNT President Janice MacKay and the selection committee for awarding her the Franca Tantalo Bursary and Fresenius for supporting the bursary. She would also like to remind everyone to sign their organ donor card, but more importantly, to tell their loved ones of their wishes.

SUPPORTED BY CANNT

CANNT Award of Excellence (Administrative): Manuela Felsberg, RN

I had never considered nursing as a career choice until a colleague told me that I would "make a good nurse". So at the age of 27, I entered the three-year nursing program at the Misericordia School of Nursing in Edmonton, AB. I was one of a small handful of mature students in a class of 88 students. I surpassed the goal I set for myself by finishing in the top 10, achieving the highest academic marks in all three years, receiving three bursaries and a scholarship. I graduated in May 1988 and was offered three jobs, two at the Misericordia Hospital and one in a rural hospital. I had done a practicum at St. Therese Hospital in St. Paul, AB and, due to my strong desire to "live in the country", I chose the rural option. In 1990, I accepted a position at Our

Lady's Hospital in Vilna, AB. Being a small rural hospital, I was exposed to pediatrics, geriatrics, ER, obstetrics and everything in between. In 1999, when the hospital was closed, I had the opportunity to join the two LPNs who ran the dialysis unit in St. Paul, AB. I had found my calling in nephrology nursing. I had an excellent mentor and role model in Tracy Delorme, my unit manager. In 2003, I received my certification in nephrology.

While on a road trip in BC, Tracy texted me to say she had accepted the patient care manager position and wanted me to apply for the unit manager position. I had told Tracy numerous times that "she couldn't pay me enough to do her job" as I knew how hard she worked and I just was not interested in management. Needless to say, in October 2016, I started my new position as unit manager of five, then nine, and now seven rural dialysis units. When I accepted the unit manager position, I thought about the type of manager and leader I wanted to be.

1. I would listen to my staff and be supportive of them.
2. I would focus on my staff's individual strengths and build on those strengths knowing their lesser traits would also grow stronger.
3. I would encourage my staff to be the best they can be by giving them the support and opportunities they needed to succeed.
4. I would hold them accountable for their behaviour by encouraging them to strive for insight and personal growth.
5. I would lead by example and be a positive mentor and leader. My goal was and still is that, by treating my staff with kindness, respect and encouragement, my staff will be happy and fulfilled in their work, and will therefore give the best patient care they are capable of giving. Patient care is at the root of all we do. The first RN I hired as a new unit manager is now a new manager in our renal program, and I have the privilege and honour of being her mentor. This is a wonderful opportunity for me as I am nearing the end of my nursing career.

SUPPORTED BY CANNT

CANNT Journal Award:

Transhepatic central venous hemodialysis catheter insertion: A creative approach for managing challenging vascular accesses

by Patricia A. Quinan, MN, RN, CNeph(C) (primary author), Abdurrahman Eddeb, MD, FRCPC, and Harold Borenstein, MD, FRCPC

I graduated in 1981 from the Humber College Registered Nursing diploma program in Toronto and in 1983, I started working as a staff nurse in the hemodialysis unit at a large downtown teaching hospital. In 1998, after 15 years of nephrology experience, I wrote the Canadian Nursing Association (CNA) exam in nephrology and became a CANNT member, which began my interest in and recognition of the importance and value of specializing in nephrology. I have continued to maintain my CANNT membership, and find that being a member of professional organizations provides me with opportunities to network with other experts in the field, and the confidence to pursue further educational opportunities and leadership roles.

Obtaining professional certification prompted me to return to university in 2002 where I obtained a Bachelor of Science in Nursing, and a Masters in Nursing in 2006 with a focus on chronic illness. Over my 36-year nephrology career, I have been very fortunate to meet and work with many experts in the field and have the privilege to care for patients living with kidney disease. Returning to university helped me to achieve both professional and personal growth, and the ability to incorporate theoretical knowledge into my clinical practice. I believe that I am a better nurse and advocate for my patients as a result of my experiences.

I am currently working as a clinical nurse specialist in a large nephrology program in Toronto where I provide comprehensive vascular access care in collaboration with a multidisciplinary team. In collaboration with the interventional radiologist, nephrologist, and vascular surgeon, an exotic vascular access was achieved for our patient who had exhausted more conventional vascular accesses. A tunneled transhepatic central venous catheter was inserted and functioned as a bridge to placement of an arteriovenous leg graft. Due to the documented risks of bleeding, dislodgement, and catheter migration associated with transhepatic catheter placement, our patient was hospitalized and closely monitored.

Nephrology nurses on the inpatient and hemodialysis units played a vital role to ensure that the transhepatic catheter remained in situ, that associated risks with this procedure were mitigated, and that successful cannulation was achieved, thereby allowing for removal of the transhepatic catheter. Our single patient experience proved to be highly successful, and may be considered for patients who have exhausted conventional vascular access options. I would like to personally thank CANNT for selecting our article for the CANNT 2019 manuscript award. We are truly honoured.

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CANNT Poster Awards

Adopting palliative care in the dialysis unit

Terri McAuslan, RN, Terri Pask, BScN, RN, Bluewater Health, Sarnia, ON

Terri McAuslan

Terri McAuslan is a registered nurse with the Renal Network Initiative, working in the dialysis unit at Bluewater Health in Sarnia, Ontario.

Terri Pask
Photo not available

Terri Pask is a palliative nurse working at Bluewater Health in Sarnia, Ontario

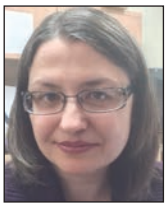
Journey of the peritoneal dialysis (PD) catheter – From creation to termination

Mina Kashani, BHScN, RN, CNeph(C), Niki Dacouris, BSc
Department of Nephrology, St. Michael's Hospital, Toronto, ON

Mina Kashani

Mina Kashani is a nurse navigator in nephrology at St. Michael's Hospital. She completed her nursing education primarily in Toronto, and holds a Bachelor of Health Science (Nursing) degree. Mina's interests include patient education in home dialysis and peritoneal dialysis access outcomes. She has been working in the same areas of interest for over 20 years. She is also co-chair of the Home Dialysis Interest Group.

Niki Dacouris



Niki Dacouris is a research coordinator in nephrology at St. Michael's Hospital. She completed her education at the University of Guelph, and holds a Bachelor of Science degree with Honours in Biochemistry and a minor in Biomedical Sciences. Niki's interests include relational database design and automation in data collection. She has been working in research at St. Michael's Hospital since 2000, and also provides database support to some of the nephrology speciality clinics including the Kidney Transplant Program.

Supportive care pilot program

Nancy Hemrica, BScN, RN, Debbie Filmore, RN, CNeph(C), Brooke Cowell, BScN, RN
Kidney Urinary Program, St. Joseph's Healthcare, Hamilton, ON

Nancy Hemrica

I was an ICU nurse at the Hamilton General for over 20 years. In 2003, I became the Trillium Gift of Life Organ and Tissue Donation coordinator for the Hamilton region. In this position I supported grieving families through the option of donation and worked alongside the staff to honour these wishes. In 2012, I left Trillium Gift of Life to work at McMaster Children's Hospital developing a pediatric palliative care program. I am now the manager at the Brantford satellite dialysis unit and involved with Ontario Renal Network (ORN) initiatives working to support the implementation of a palliative approach to care along the renal journey.

Working together with the nephrology program at St. Joseph's healthcare Hamilton as well as the ORN to draw attention to the unique symptoms and challenges patients with ESRD have is a wonderful opportunity for me to do work that has great meaning, and fuels my professional passion for practising person-centered, exemplary palliative, and end-of-life care, and to help support others as we learn together.

Debbie Fillmore

Debbie is the modality educator for the kidney/urinary program at St. Joseph's Healthcare Hamilton, where she educates patients and family members about ESRD options, including pre-emptive transplant, hemodialysis, peritoneal dialysis, and conservative care. She started her nursing career working in a pediatric medical/surgical unit, and was also involved in educating pediatric patients and family members in diabetes and asthma programs. She spent the next 14 years of her career working with adult hemodialysis patients in the in-centre and in the self-care units, and was a member of the hemodialysis access resource team. She then transitioned to the home hemodialysis unit for the next five years, during which time she also gained experience in the peritoneal dialysis unit as well as in assisting during non-surgical PD catheter insertions. She is excited to be a part of this novel approach of incorporating psychology into the modality model.

Brooke Cowell

Brooke Cowell is the Clinical Director of the St. Joseph's Healthcare Kidney & Urinary and Patient Flow Programs with a passion for improving patient care throughout the patient experience. As a compassionate, results-orientated, and perceptive healthcare professional with over 16 years of experience in diverse clinical and cross-functional positions across a large continuum of care, Brooke is committed to building relationships that will benefit patients and their families. She is a strong advocate for patient-led co-design processes and a sponsor of innovative models for comprehensive conservative care to support patients to meet their goals in their community.

CALL FOR ABSTRACTS

CANNT-ACITN invites you to join us in Hamilton in 2020!

Abstracts are currently being accepted for ORAL and POSTER presentations for CANNT-ACITN 2020 – "Guiding Our Way to the Future". The annual national meeting of the Canadian Association of Nephrology Nurses and Technologists will be held October 22–24, 2020 in Hamilton, Ontario.

Abstract submissions should incorporate the theme—guiding our way to the future —appropriate for the novice through to the advanced practice professional. Topics of interest may include: clinical research, quality improvement, innovation and technology, ethics, leadership in nephrology, case presentations, and clinical reviews. All abstract submissions must be evidence-based.

Consistent with our theme, all poster and oral presenters will be encouraged to consider how their presentation can help guide us into the next decade.

ABSTRACT SUBMISSION GUIDELINES:

Deadline: February 15, 2020

All abstracts must be submitted online (**www.cannt.ca**) through the online submission form.

Submissions must include the following:

Abstract Title
- must accurately reflect the content of the presentation

Abstract Text
- should be no longer than 250 words
- include all author names and affiliations
- should be as informative as possible
- define **all abbreviations** the first time they appear in the abstract
- use only the generic names of drugs
- **do not identify companies and/or products in the body or title of the abstract**

If research-based, must include:
- purpose of study
- methods
- results
- conclusions
- implications for nephrology care

If practice/education-based, must include:
- purpose of the project
- description
- evaluation/outcomes
- implications for nephrology practice/education

PRESENTATION INFORMATION:

- identify preferred format of presentation (ORAL or POSTER)
- full names and credentials of authors
- biography (250 words max.) and headshot of first author
- contact information for first author must include: full name, e-mail address, fax number, mailing address with postal code, home and work telephone numbers

LEADING-EDGE TOPICS IN:

- Patient empowerment
- CKD comorbidities (mental health, diabetes, & COPD)
- Future directions of CKD technology and treatment
- Pregnancy with CKD
- Transplant
- Pediatric & elderly care
- Medical assistance in dying
- The impact of social determinants of health
- Home therapies
- Data analytics

IMPORTANT NOTES:

Only COMPLETE submissions received by FEBRUARY 15, 2020 will be considered.
- All correspondence will be with the first author only.
- Acceptance of abstract does not waive attendance fees (registration, transportation, accommodations).
- Notification regarding selection decisions will be provided by April 1, 2020.
- Should the abstract be selected for presentation, the author(s) authorize(s) the publication of the abstract submitted for publication in the CANNT-ACITN Journal.
- The presentation shall not make comparison to companies or products for any purposes of product marketing, nor will topics or materials be used to discredit companies or products.
- The abstract, and associated authors, should make full disclosure of corporate employment and/or funding sources.
- Abstracts not in the required format will be returned to the author for revision. Please review the sample abstract on the website as a guideline.

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❏ 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	*Non-Nursing*
❏ Diploma	❏ Diploma
❏ Baccalaureate	❏ Baccalaureate
❏ Master's	❏ Master's
❏ Doctorate	❏ Doctorate

I am at present studying toward

Nursing	*Non-Nursing*
❏ Specialty Certificate	❏ Specialty Certificate
❏ Baccalaureate	❏ Baccalaureate
❏ Master's	❏ Master's
❏ Doctorate	❏ Doctorate

Primary area of practice
Choose one
❏ Adults
❏ Combined Adult/Pediatrics
❏ Pediatrics
❏ Other

Select all that apply
❏ Full-Care Hemo
❏ Self-Care Hemo
❏ Home/Independent Hemo
❏ In-Patient Nephrology
❏ In-Patient Peritoneal Dialysis
❏ In-Patient Transplantation
❏ Home/Independent PD
❏ Out-Patient Transplantation
❏ Clinical Educator
❏ Academic Educator
❏ Corporate Education
❏ Vascular/Body Access
❏ Nurse Navigator
❏ Research
❏ Administration
❏ Corporate Sales

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/Reference List: 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. Table/figure formatting should comply with APA style.

How should the manuscript be submitted?
Email your manuscript to: **cannt.journal1@gmail.com**. 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 editor reserves the right to accept or reject manuscripts. The criteria for acceptance for all articles include originality of ideas, timeliness of the topic, quality of the material, and appeal to the readership. Manuscripts that do not comply with APA formatting and style will be returned to the author(s).

What are the implications for copyright ownership?
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(s) copyright ownership to CANNT. Statements and opinions contained within the work remain the responsibility of the author(s). Authors retain the right to include their respective published work in a thesis or dissertation provided that it is not published commercially. Although no permission is required in this instance, it is expected that you reference *CANNT Journal* as the original source. All other material may not be reproduced without the written permission of CANNT.

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

Revised March 2018

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 des :

- 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 de films;
- Articles en formation 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), 6e 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 (y compris les 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 adresses 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/Liste de références : 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. La mise en forme des tableaux et des figures doit être conforme au style de l'AAP.

De quelle manière doit-on soumettre les manuscrits?
Veuillez envoyer par courriel votre manuscrit à : **cannt.journal1@gmail.com**.

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 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 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. La rédactrice en chef se réserve le droit d'accepter ou de refuser tout manuscrit. 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 manuscrits qui ne sont pas conformes à la mise en forme et au style de l'AAP seront renvoyés à l'auteur ou aux auteurs.

Quelles sont les conséquences du transfert des droits d'auteur?
Les auteurs doivent prendre note que les manuscrits seront considérés pour publication à la condition qu'ils ne soient soumis qu'au *Journal ACITN*. Sur acceptation du matériel soumis, les auteurs transfèrent leur droit d'auteur à l'ACITN. Les déclarations et opinions émises par les auteurs dans leurs articles, textes ou manuscrits demeurent leur responsabilité. Les auteurs conservent le droit d'insérer leurs travaux publiés respectifs dans une thèse ou un mémoire, pour autant que ces derniers ne soient pas publiés à des fins commerciales. Bien qu'aucune permission ne soit requise en pareil cas, il est attendu que les auteurs indiquent en référence le *Journal ACITN* comme source originale. Tous les autres documents ne peuvent être reproduits sans l'autorisation écrite de l'ACITN.

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 compétence
  - Titre du poste actuel
  - Nom et adresse de l'employeur
  - Nom de l'auteur à qui la correspondance doit être envoyée (y compris 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

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