

Volume 25, Issue 2

April–June 2015

IN THIS ISSUE:

- Reaching New Heights
 CANNT 2015 October 22-24
 Vancouver, B.C.
- **36** When medical devices fail: Lessons learned in a hemodialysis unit By J. Matthew Phillips, Paula Mossop, Carolyn Bartol, and Barbara Hodgson
- 4.0 CONTINUING EDUCATION SERIES Delusional parasitosis in patients on dialysis By Jacqui Herbert, Karen Cameron, and Marisa Battistella

ISSUE TWO

.

CANNT JOURNAL JOURNAL ACITN



CONTENTS

- 8 Reaching New Heights CANNT 2015 • October 22-24 Vancouver, B.C.
- **36** When medical devices fail: Lessons learned in a hemodialysis unit By J. Matthew Phillips, Paula Mossop, Carolyn Bartol, and Barbara Hodgson

40 CONTINUING EDUCATION SERIES Delusional parasitosis in patients on dialysis By Jacqui Herbert, Karen Cameron, and Marisa Battistella

IN EACH ISSUE:

- 4 LETTER FROM THE EDITORS: Jovina Bachynski & Matt Phillips
- 5 MOT DES CORÉDACTRICES EN CHEF : Jovina Bachynski et Matt Phillips
- 6 MESSAGE FROM THE PRESIDENT: ANNE MOULTON
- 7 CANNT Representatives/Contacts; Représentants/contacts ACITN
- 7 LE MOT DE LA PRESIDENTE : ANNE MOULTON
- **35** Notice board
- 35 Connect with CANNT!
- **46** CANNT Membership
- **47** Guidelines for authors
- 48 Lignes directrices à l'intention des auteurs



The CANNT Journal is printed on recycled paper.

The CANNT Journal is the official publication of the Canadian Association of Nephrology Nurses and Technologists, P.O. Box 10, 59 Millmanor Place, Delaware, ON NOL 1EO, telephone: (519) 652-6767, fax: (519) 652-5015, email: cannt@cannt.ca. Published quarterly, the journal is received by all members of CANNT. Subscriptions are: Canada \$80.00 (plus HST), US. \$90.00, Outside N. America \$115.00. Back issues, when available, are \$7.50 (+HST) per issue and are available from the editors. Opinions expressed by writers in the CANNT Journal are not necessarily those held by the editors or CANNT. Contrasting views by our readership and membership are welcome. All letters, comments and articles are to be sent to the CANNT office, P.O. Box 10, 59 Millmanor Place, Delaware, ON NOL 1E0.

1-877-720-2819 Website: www.cannt.ca

The CANNT Journal accepts articles (manuscripts) on an ongoing basis.

The CANNT Journal is indexed in the Cumulative Index to Nursing and Allied Health Literature (CINAHL), the International Nursing Index (INI), MEDLINE, EBSCO, ProQuest and Thomson Gale.

ISSN 2291-644X (Online) ISSN 1498-5136 (Print)

The CANNT Journal is produced by Pappin Communications, The Victoria Centre, 84 Isabella St., Unit 2, Pembroke, Ontario K8A 5S5

Co-Editors

Jovina Bachynski, RN(EC), MN-NP Adult, CNeph(C), (416) 340- 4800 ext 8501 cannt.journal1@gmail.com

Matt Phillips, RN, BScN, MHS Work: (902) 473-3518 cannt.journal2@gmail.com

Editorial Board

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

Managing Editor Heather Coughlin, Pembroke, Ontario

Layout and Design Sherri Keller, Pembroke, Ontario

Advertising Sales

Heather Coughlin, Pappin Communications 84 Isabella St., Unit 2, Pembroke, ON K8A5S5 T: (613) 735-0952; F: (613) 735-7983 email: heather@pappin.com rate card: www.pappin.com

Hello!

We would like to start off by thanking all of the members for welcoming us with open arms into this new role. We have had great support and encouragement from the Board of Directors, and would like to particularly thank Janet Baker and Alison Thomas for the time and energy they have spent orientating us, and guiding us through the process of the development of each issue. We have benefitted from their incredible mentorship, and are excited and honoured to continue in the legacy of producing a scholarly journal that advances the specialties of nephrology nursing and nephrology technologists.

We have reviewed feedback that you, the members, provided about the journal during the 2014 CANNT National Conference in Niagara Falls. We are happy to share that the regular column of 'Psychonephrology: The 5th Modality', will be returning to the journal in the fall edition, and that topics of interest identified from the survey have been shared with the authors. We are excited to continue this relationship with Drs. Marta Novak and Gavril Hercz, and are grateful for their ongoing contributions and support.

Additionally, we are excited to announce a series of articles starting in the fall journal related to advanced care planning, end-of-life care, and conservative management. The first of these articles will lay the foundation for the subsequent articles. We are grateful to Betty Anne Wasylynuk and Dr. Sara Davison for agreeing to share some of their expertise, perspectives, and insights related to this broad and important topic. More information about these two expert nephrology health care professionals will be shared in the next journal.

Finally, we would like to invite any letters to the editor about articles appearing in the journal, as well as any comments or questions. We are always welcoming manuscripts from both budding and seasoned authors, and encourage submissions throughout the year. We look forward to a journey of working, growing, and learning with you.

PLEASE SEND ALL SUBMISSIONS, QUESTIONS OR COMMENTS TO:

Jovina Bachynski and Matt Phillips, Co-Editors, CANNT Journal, email: Jovina Bachynski: **CANNT.journal1@gmail.com** Matt Phillips: **CANNT.journal2@gmail.com**

Bonjour!

Tout d'abord, nous voulons remercier tous les membres de nous avoir accueillis à bras ouverts dans notre nouveau rôle. Nous avons reçu beaucoup d'appui et d'encouragement de la part du conseil administratif, et nous aimerions remercier plus spécifiquement Janet Baker et Alison Thomas pour le temps et l'énergie qu'elles ont consacrés à nous orienter et à nous diriger à travers le processus de création de chaque numéro. Nous avons tiré profit de leurs capacités exceptionnelles en mentorat, et nous sommes fiers et fébriles à l'idée de prendre le flambeau et de produire un journal scientifique qui fait progresser la spécialisation des infirmières et infirmiers et des technologues en néphrologie.

Nous avons passé en revue les commentaires que vous, membres de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN), avez apportés sur le journal lors du congrès annuel de l'ACITN de 2014, à Niagara Falls. Nous sommes heureux de vous annoncer que la chronique régulière intitulée « Le 5^e élément : la psychonéphrologie » (The 5th Modality: Psychonephrology) sera de retour dans l'édition automnale du journal. De plus, les sujets d'intérêt tirés des sondages ont été transmis aux auteurs. Nous sommes excités de continuer notre collaboration avec les docteurs Marta Novak et Gavril Hercz.

et sommes reconnaissants de leur contribution continue et de leur soutien constant.

En outre, nous sommes heureux de vous annoncer une nouvelle série d'articles sur la planification préalable des soins, les soins palliatifs et la prise en charge classique, qui seront présentés pour la première fois dans l'édition de cet automne; le premier article permettra d'introduire le sujet aux lecteurs en vue des rubriques suivantes. Nous désirons aussi remercier Betty Anne Wasylynuk et la docteure Sara Davison d'avoir accepté de nous transmettre un peu de leur savoir, de même que certains points de vue et commentaires en lien avec ce sujet aussi vaste qu'important. Nous vous donnerons de plus amples renseignements sur ces deux professionnelles de la santé expertes en néphrologie dans le prochain numéro.

Pour conclure, nous aimerions vous inviter à écrire à l'équipe de rédaction pour communiquer vos pensées sur les articles parus, ainsi que tout commentaire ou toute question. Nous sommes toujours heureux de recevoir des textes, tant de jeunes auteurs que d'auteurs expérimentés, et nous vous encourageons à envoyer vos écrits tout au long de l'année. Au plaisir de travailler, de grandir et d'apprendre avec vous! Le Journal ACITN est la publication officielle de l'Association canadienne des infirmiers/ infirmières et technologues en néphrologie, a/s P.O. Box 10, 59 Millmanor Place, Delaware, ON NOL 1EO, téléphone : (519) 652-6767, télécopieur : (519) 652-5015, Courriel : cannt@cannt.ca. Publié quatre fois par année, ce journal est envoyé à tous les membres de l'Association. L'abonnement annuel est: Canada, 80\$ (+TVH), E.-U., 90\$, hors du Canada et E.-U., 115 \$. Les publications antérieures, lorsque disponsibles, coûtent 7,50 \$ (+TVH) chacune. Les opinions émises par les auteurs dans ce journal ne sont pas nécessairement partagées par l'Association ni par le corédactrices en chef. Nous invitons les lecteurs à nous faire part de leurs opinions. Toute correspondance devra être envoyée à l'ACITN, P.O. Box 10, 59 Millmanor Place, Delaware, ON NOL 1EO.

1-877-720-2819; Site web: www.cannt.ca

Le Journal ACITN accepte des articles (manuscrits) de façon continue.

Le journal ACITN est maintenant répertorié dans le « Cumulative Index to Nursing and Allied Health Literature (CINAHL)», « International Nursing Index » (INI), « MEDLINE», « EBSCO », « ProQuest » et « Thomson Gale ».

ISSN 2291-644X (En ligne) ISSN 1498-5136 (Dans la presse)

Le journal ACITN est préparé par Pappin Communications The Victoria Centre, 84 rue Isabella, suite 2, Pembroke, Ontario K8A 5S5.

Rédacteurs en chef

Jovina Bachynski, RN(EC), MN-NP Adult, CNeph(C), (416) 340- 4800 ext 8501 cannt.journal1@gmail.com

Matt Phillips, RN, BScN, MHS Work: (902) 473-3518 CANNT.journal2@gmail.com

Conseil de rédaction

Marisa Battistella, BScPhm, PharmD, ACPR Toronto, Ontario

Rejean Quesnelle, AScT, Oakville, Ontario Eleanor Ravenscroft, RN, PhD, CNeph(C) Calgary, Alberta

Rosalie Starzomski, RN, PhD Vancouver, British Columbia Colleen Wile, RN, CNeph(C), Halifax, Nova Scotia

Éditeur

Heather Coughlin, Pembroke, Ontario Conception et design

Sherri Keller, Pembroke, Ontario

Publicité

Heather Coughlin, Pappin Communications 84 Isabella St., Unit 2, Pembroke, ON K8A 5S5 T: (613) 735-0952; F: (613) 735-7983 email: heather@pappin.com rate card: www.pappin.com

2014–2015 CANNT BOARD OF DIRECTORS/ CONSEIL D'ADMINISTRATION DE L'ACITN 2014–2015

President/Président: Anne Moulton, RN, BScN, MN, CNeph(C) T: 905-522-1155 x33916 amoulton@stjosham.on.ca

President-Elect/Présidente-Élue : Anita Amos, RN, BScN, CNeph(C) T: (647) 622-5041 email/courriel : anita.amos@sunnybrook.ca

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

Website Coordinator, Treasurer/ Trésorière coordonatrice du site internet: Melanie Wiggins, RN, CNeph(C) T: 705-325-0568 email/courriel: dmhdwiggins@rogers.com

Vice-President of Technologists/ Vice-Président des Technologues : José Lloyd T: 705.325.2201 ext. 3288/6288 email: mjlloyd@osmh.on.ca

Atlantic Region Vice-President/ Vice-Présidente de l'Atlantique : Karen MacDonald, RN, CNeph(C) T: 902-567-8067 email/courriel : macdonaldkar@cdha.nshealth.ca

Quebec Vice-President/ Vice-Présidente du Québec : Nancy Filteau, RN, CNeph(C), BScN, MSc(A) T: 514-934-1934 x35098 email/courriel : nancy.filteau@gmail.com

Ontario Region Vice-President/ Vice-Présidente de l'Ontario : Billie Hilborn RN, CNeph(C), BScN, MHSc T: 416-480-6100 ext. 7960 Billie.Hilborn@sunnybrook.ca

Western Region Vice-President/ Vice-Présidente de l'Ouest : Janice MacKay, RN, CNeph(C), CCRP T: (403) 955-6387 e-mail:

janice.mackay@albertahealthservices.ca

Journal Editors/ Les rédacteurs en chef: Jovina Bachynski, RN(EC), MN-NP Adult, CNeph(C), (416) 340- 4800 ext 8501 cannt.journal1@gmail.com

Matt Phillips, RN, BScN, MHS (P) Work: (902) 473-3518 CANNT.journal2@gmail.com

It really is wonderful to enjoy some warmer weather after such a harsh Canadian winter! Although springtime tends to be a busier time of year for the CANNT Board of Directors, we embrace this time period for many reasons. First and foremost, congratulations to all of you who wrote the Nephrology exam on April 18! Writing our certification exam through the Canadian Nurses Association (CNA) demonstrates that your specialized professional knowledge and skills are current and comprehensive. Additionally, your certification indicates to your patients, employers, the public and professional-licensing bodies that you are committed to this area of expertise, which distinguishes you as a registered nurse who Cares to Be the Best (CNA, n.d.)!

Hopefully, many of you had an opportunity to apply for one of the many bursaries, grants and awards of excellence available to CANNT members. Each year, CANNT awards up to \$2,000.00 to three gualified nephrology practitioners for continuing education related to their professional development, and a Research Grant of up to \$3,000 for an original research study in the area of nephrology nursing or technology. Additionally, CANNT awards several bursaries to our members to cover the cost of successful Certification or Recertification. Applications to these awards were due by May 1. If you missed the deadline, continue to check our website at www. cannt.ca to learn how you can be eligible for an award or bursary next year or how you can nominate a fellow CANNT member for their outstanding work in nephrology.

Nominations for president-elect, treasurer/website coordinator, VP Atlantic, and VP Quebec were also held in May. These elected positions will commence in October 2015 in Vancouver, BC. If you are interested in a board position, please visit the CANNT website for the position descriptions. We are always thrilled to welcome new board members. Holding an elected position is an exciting opportunity that is sure to enrich your professional career!

Before closing, I also want to mention that April 16 was National Advance Care Planning (ACP) Day. A 2013 Harris/Decima poll revealed that although Canadians overwhelmingly want their health care provider to give them information about ACP, few people are receiving this information. Visit the National ACP website at www.advancecareplanning.ca to learn about this important initiative. Personally, I am extremely interested in exploring nurses' understanding of their responsibilities in having ACP discussions with patients with renal disease. Through my doctoral research study, my goal is to better understand this phenomenon, and I will definitely share my findings upon completion of my studies! Until next time, enjoy your summer, stay safe and hopefully many of you will start planning your trip to Vancouver for CANNT 2015!

Comme il est agréable de pouvoir profiter du temps doux après notre dur hiver canadien! Bien que le printemps ait tendance à être une période plus occupée pour le conseil d'administration de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN), nous célébrons cette saison pour plusieurs raisons. Tout d'abord, je tiens à féliciter tous ceux qui ont passé l'examen de néphrologie le 18 avril dernier. L'obtention d'une certification auprès de l'Association des infirmières et infirmiers du Canada (AIIC) démontre que vos connaissances professionnelles et vos compétences spécialisées sont actuelles et complètes. De plus, la certification indique aux patients, aux employeurs, à la population générale et aux organismes de réglementation professionnelle que vous avez à cœur ce domaine d'expertise, ce qui permet de vous distinguer en tant qu'infirmière autorisée ou infirmier autorisé qui a l'excellence à cœur (AIIC, sans date)!

J'espère que plusieurs d'entre vous ont eu l'occasion de soumettre une demande pour l'une de nos nombreuses bourses et subventions ou l'un de nos prix d'excellence offerts uniquement aux membres de l'ACITN. En effet, l'ACITN remet chaque année jusqu'à 2000 \$ à trois praticiens qualifiés en néphrologie qui poursuivent une formation continue en lien avec leur perfectionnement professionnel, et une subvention de recherche allant jusqu'à 3000 \$ pour une étude originale dans le domaine des soins infirmiers et des technologies en néphrologie. De plus, l'ACITN octroie plusieurs bourses à ses membres pour couvrir leurs frais de certification. La date limite pour poser votre candidature à l'un de ces prix était le 1^{er} mai. Si la date limite est passée, continuez de visiter notre site Web au **www.cannt.ca/fr** pour en apprendre plus sur l'admissibilité aux prix et aux bourses de l'an prochain et sur la manière de proposer

un collègue comme candidat à un prix pour son travail remarquable en néphrologie.

Les nominations pour les postes de président élu, de coordonnateur du site Web et trésorier, de vice-président de l'Atlantique et de vice-président du Québec ont aussi eu lieu en mai. Les candidats élus entreront en fonction en octobre 2015 à Vancouver. en Colombie-Britannique. Si vous souhaitez faire partie du conseil, veuillez visiter le site Web de l'ACITN pour obtenir la description des postes; nous sommes toujours heureux d'accueillir de nouveaux membres au sein du conseil d'administration. N'oubliez pas : détenir un poste élu est une occasion extraordinaire d'enrichir votre parcours professionnel!

J'aimerais terminer en mentionnant que le 16 avril dernier était la Journée nationale de la planification préalable des soins (PPS). Un sondage de 2013 mené par Harris/Décima a révélé que bien que la majorité des Canadiens désirent ardemment que leur fournisseur de soins de santé leur procure de l'information concernant la PPS, peu d'entre eux reçoivent les renseignements appropriés. Pour en apprendre davantage sur cette initiative importante, visitez le site Web de la Journée nationale de la PPS au www.planificationprealable.ca/ accrueil.aspx. En ce qui me concerne, j'aimerais en apprendre davantage sur la compréhension qu'a le personnel infirmier envers sa responsabilité à tenir des discussions sur la PPS avec les patients atteints d'une maladie rénale. Je souhaite mieux comprendre ce phénomène dans le cadre de mon projet de doctorat, et je présenterai assurément le résultat de mes recherches lorsque j'aurai terminé mes études. Sur ce, profitez de votre été, soyez prudents, et j'espère que plusieurs d'entre vous commenceront à planifier leur voyage à Vancouver pour le congrès annuel de l'ACITN de 2015!

CANNT REPRESENTATIVES/ CONTACTS; REPRÉSENTANTS/ CONTACTS ACITN

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

Kidney Foundation of Canada, MAC Representative/Fondation du rein—Comité de médical consultatif: Anne Moulton, RN, BScN, MN, CNeph(C) T: 905-522-1155 x33916 amoulton@stjosham.on.ca

Bursary Committee/ Comité des Bourses : Anne Moulton, RN, BScN, MN, CNeph(C) T: 905-522-1155 x33916 amoulton@stjosham.on.ca

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

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

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

Heather Reid National Administrator/Board heather@cannt.ca

2015 Symposium: October 22–24, 2015. Vancouver, British Columbia Heather E. Reid, ARCT, MSc Principal Planner & Owner Innovative Conferences & Communications PO Box 319, 59 Millmanor Place Delaware, ON NOL 1E0 T: 519-652-0364 F: 519-652-5015 Email: hreid@innovcc.ca Website: www.innovcc.ca

Journal advertising contact/Personne contact pour la publicité du Journal : Heather Coughlin Pappin Communications, 84 Isabella Street, Pembroke, ON K8A5S5 T: 613-735-0952; F: 613-735-7983 email/courriel : heather@pappin.com rate card: www.pappin.com



CANNT 2015 · OCTOBER 22-24 VANCOUVER, BRITISH COLUMBIA

MAN

www.cannt.ca

1

CANNT 2015 • OCTOBER 22-24 VANCOUVER, BRITISH COLUMBIA

Reaching New Heigh

Reaching New Heights through Innovation and Excellence in Nephrology.

CANNT invites you to join us in Vancouver in 2015!



Get all the details at ...

www.cannt.ca



This year's conference promises nephrology professionals... nurses, technologists, administrators, researchers, pharmacists and more... many opportunities to learn, share, network, discuss and socialize together.

Experience all that CANNT 2015 has to offer:

- Share in the plenary addresses: be inspired towards peak performance, re-affirm your call to your profession and incorporate leading-edge science into your everyday work!
- New this year: a two-day agenda filled with highly relevant discussions about transplantation
- Returning: a one-day agenda filled with highly relevant discussions about pediatric care
- Choose from more than 50 concurrent sessions and workshops suited to all interests... with topics ranging from mental health, pregnancy, geriatric nephrology, innovations in practice, technology, research and much, much more
- Learn from more than 50 poster presentations with contributing authors from across Canada!
- Engage with our corporate partners as they showcase their latest products and services. Come prepared with questions and issues—our exhibitors want to hear from you!

Immerse yourself in this year's conference theme, recognizing the untapped capabilities of both your patients and yourselves. Explore innovative strategies for "REACHING NEW HEIGHTS"!

Hosted at the beautiful Hyatt Regency Hotel in Vancouver, BC, this conference will re-energize, motivate and engage you!

Register today! CANNT 2015 information is available as follows:

- Printed brochure available by contacting Innovative Conferences & Communications: Susan Mason: susanm@innovcc. ca, 519-652-0364 (phone)
- 2. Downloadable brochure online at www.cannt.ca
- 3. Program, abstracts, online registration and secure payment online at www.cannt.ca

We are excited to welcome Canadian nephrology professionals to Vancouver, BC! Come and join us at CANNT 2015!

ABSTRACTS

Some of the key strategic goals of CANNT are to disseminate educational materials to CANNT members; profile scientific research; and to provide opportunities for nephrology colleagues to network.

CANNT's national conference, CANNT 2015, provides an excellent venue for accomplishing these goals of CANNT. However, only a portion of CANNT members are able to attend the national conference annually. Cognizant of this, CANNT is pleased to be printing the abstracts to be presented in both oral and poster format at this year's annual conference as a supplement to this issue of the CANNT Journal.

The following abstracts celebrate the diversity of nephrology topics being investigated and discussed across Canada. It is our hope that CANNT members interested in pursuing a profiled topic will contact our national office at 519-652-6767 or 1-877-720-2819 or **cannt@cannt.ca** to receive information regarding how to contact the author about the work.

We hope you will carefully review these abstracts!

Jovina Bachynski and Matt Phillips Co-Editors, CANNT Journal

ORAL ABSTRACTS

Converging and Integration of Information to Manage Vascular Access

Paula Catros, RN, BScN, Lynda Wallace, RN, BScN, MTS, Ethan Holtzer, BA, MHSC(pending), Carol Holtzer, RN, CNeph(C), Pickering & Markham, ON

Vascular access has been called the "lifeline" as well as the "Achilles' Heel" of hemodialysis treatments. The importance of monitoring and maintaining these accesses is not in dispute. Guidelines have been published, time and money spent, and it continues to be a priority in all organizations.

As a community-based facility staffed by nurses, the nurses play a key role in monitoring of the access, performing tests and gathering data to assess and analyze the need for referral to vascular services.

The objective of the program to be presented is twofold:

- To improve vascular access management through the use of enabling technologies linked to our Electronic Medical Record (EHR).
- To effectively communicate via a computer-generated report, all of the relevant data to vascular services to enable them to proactively review the vascular access.

The goal of the report is to provide a consistent format to incorporate the knowledge, skills and judgment of the nurses along with real-time and historical data to better predict and manage the vascular accesses.

The presentation will include an overview and examples of the "alerts" generated by real-time data, which use an algorithm to predict patients at risk for a thrombotic event and the report that is generated to communicate with our partners to prevent and improve outcomes for vascular access.

Kidney Health In-Clinic Education Resource

Julie Strong, RN, BN, Angela Chotka, MA, Tom Blydt-Hansen, MD, FRCPC, Diane McKenty, RN, CNeph(C), Winnipeg, MB

Purpose: To create patient-centred pediatric kidney health education resources at three developmental stages to support families living well with kidney disease.

Description: Working with children, families and health care providers, the section of pediatric nephrology and consultant Angela Chotka developed an innovative in-clinic pediatric chronic kidney disease education resource. Using the resource opens doors to conversations, learning and relationship-building with children, youth and families by presenting simple, age-appropriate designs and medically and clinically accurate information and concepts. Designs were based on findings from interviews, observation and literature scan.

This innovative resource includes:

- 1. 15 modules at three developmental levels to use in clinic
- 2. Parent and caregiver resource: specific to each module, information and instruction; credible resources and graphic glossary

- 3. Activity sheets to consolidate learning through vocabulary /concept reinforcement
- 4. Facilitator resource: facilitating learning, global and developmental learning objectives, key messages, clinical targets and supports to deliver materials.

Evaluation/outcomes: The final product was completed December 2014. Evaluation plans are in place to re-interview families and children included in the product's design regarding effectiveness of the resource.

Implications for nephrology practice/education: Education is linked to improved clinical outcomes. With no cure for chronic kidney disease, focus of care is on delaying progression and effectively managing daily care requirements such as adherence, competency with self-care, success in accessing the health care system, and informed decision making. To be successful, education must be attuned to cultural context and be developmentally appropriate education.

Peritoneal Dialysis Unit Patient Experience Project

Susan Scott, MSW, RSW, Jarrin Slattery, RN, BSN, CNeph CDE, London, ON

Background: Ontario Renal Network provides leadership and strategic direction for delivery of renal services. One primary goal is to increase patients selecting independent dialysis as their modality. The Peritoneal Dialysis unit has experienced a 30% growth over the past year. With this growth the unit has seen an increasing number of patients exiting the program for various reasons including peritonitis and difficulty coping. For the unit to maintain this growth there must be a full understanding of the patient experience and what and how their experiences have impacted their outcome.

Goal: To sustain growth within the program, reduce preventable attrition and improve the patient experience by redesigning processes based on the guiding principles from the Institute for Patient and Family Centred Care.

Approach: Experience-based design surveys were developed and distributed to patients at different stages of their care journey and all staff within the program. Qualitative interviews were conducted with patients who exited





the program. There has been active patient involvement throughout all aspects of the project. Statistical analysis has been performed with regards to underlying reasons for attrition.

Outcomes: 1. Increase in care provider satisfaction. 2. Improvement in patient experience. 3. Active and consistent participation with direct and indirect stakeholders in the project. 4. 2% annual PD patient growth. Peritonitis rates of fewer than one infection in 30 patient months. 5 1% reduction in attrition rate.

Application in clinical practice: New processes will inform program initiatives and development.

Matchmaking for Dialysis Access: Lessons Learned and Next Steps

Mirita Zerr, RN, CNeph(C), Surrey, BC

It has been recognized in the hemodialysis (HD) community that (1) fistulas and grafts vary in the ease with which they can be cannulated; and (2) there is a range of cannulation skills among HD nurses.

In British Columbia in 2006, the Provincial Hemodialysis Committee developed a provincial guideline for cannulation of arteriovenous (AV) fistulas and grafts. The guideline recommended that accesses be matched to the skill level of cannulators. This recommendation is consistent with best practices in the literature and in national and international vascular access guidelines.

Formalized processes were developed to put this recommendation into practice. This was a more difficult task than expected and the outcome was also different than expected. On a positive note, our efforts resulted in an increased focus on the importance of cannulation skills and improvements in the care of hemodialysis patients.

This session discusses the outcome of our efforts to match accesses and the skill levels of cannulators and provides examples of local innovations that arose from our actions. The presentation will also discuss next steps and planned future strategies.

Using Bioelectrical Impedance Analysis to Supplement Fluid Balance and Nutrition Assessments

Jennifer Chow, RN, BSN, CNeph(C), Anja Ninkovic, RD, BSc, Vancouver, BC

Managing fluid balance and nutritional requirements of peritoneal dialysis (PD) patients can be difficult for health care providers (HCPs). The most common complications associated with PD are overhydration, volume depletion, and malnutrition. These complications can lead to hypertension, loss of residual renal function, and a decrease in PD patient survival rates. Traditional methods of using blood pressure, weight, edema, and anthropometry may be inadequate to accurately assess the fluid and nutritional status of PD patients. Current literature indicates that the use of Bioelectrical Impedance Analysis (BIA) is a more accurate indicator of fluid and nutritional status, which are fundamental to determining PD prescriptions and optimizing fluid balance. The BIA is a non-invasive, objective measurement tool that passes safe high- and low-frequency currents throughout the body. The BIA quantifies fluid status (overhydration and total body water) and assesses body composition (lean tissue mass and adipose tissue mass). The use of BIA on PD patients at regular intervals to supplement the assessment of fluid and nutritional status has significantly contributed to the decision-making of HCPs in the St. Paul's Hospital PD Clinic. The BIA has helped avoid excess fluid removal while rationalizing the need for nutritional supplementation. Incorporating the BIA into practice has the potential to reduce errors in choosing dialysate strength, determining goal weight, and adjusting PD prescriptions. Our poster presentation will highlight how the use of innovative technology such as the BIA measurement tool improved the fluid and nutritional management of PD patients while facilitating advancement of current nephrology practice.

Increasing the Capacity of In-centre Hemodialysis Nurses to Provide Modality Education

Carolyn Ingram, RN, BSc, CNeph(C), London, ON

Providing people with end stage renal disease (ESRD) with consistent and accurate information regarding dialysis treatment options is a key component in supporting these patients to choose a treatment option that best aligns with their goals and values. These treatment options include in-centre dialysis (ICHD), home hemodialysis (HHD), peritoneal dialysis (PD) and transplant.

This modality education needs to be ongoing, even after the person has started dialysis. Frontline ICHD RNs have frequent ongoing contact with these patients during their thrice weekly HD treatments and are the patient's best resource for this education.

In June 2013, a small survey of one ICHD unit demonstrated that 57% of nurses felt that they did not have enough knowledge of home hemodialysis and peritoneal dialysis to provide this education. Anecdotal evidence is also suggestive that patients may be receiving inaccurate information, with some patients indicating rented dwelling and age as barriers to PD or HHD and transplant, respectively.

Our presentation will outline ongoing education strategies to increase the knowledge and skill of HD RNs to provide patients with comprehensive and accurate modality education.

After the launch of our e-learning module we will survey approximately 200 HD RNs with an expectation (goal) that 80% will report they have enough knowledge, skills and tools to provide education to patients and families regarding treatment options.

PDOPPS Canada: Towards A Better Understanding of Peritoneal Dialysis Technique Survival

Andrea Rathe, MSc, CCRP, Jeffrey Perl, MD, Matthew Oliver, MD, David Mendelssohn, MD, Vanita Jassal, MD, Toronto, ON, Sharon Nessim, MD, Montreal, QC, Manish Sood, MD, Brenden McCormick, MD, Ottawa, ON, Rob Quinn, MD, Calgary, AB, Arsh Jain MD, London, ON, Ronald Pisoni, MD, Bruce Robinson, MD, Ann Arbor, MI

Designed to address areas of substantial practice uncertainty and research needs in peritoneal dialysis (PD) care, the Peritoneal Dialysis and Practice Patterns Study (PDOPPS) is a prospective observational study being conducted in the United States, Canada, Japan, the United Kingdom, and Australia. The study's overarching objective is to collect international data related to key practices—as well as practice variations in PD facilities—with the aim of assessing their impact on patient outcomes, including survival and transfer to hemodialysis. The study's main research hypothesis and data collection instruments were developed in collaboration with the International Society of Peritoneal Dialysis (ISPD), and are centred around the development of a framework towards a better understanding of the causes of PD technique failure. To that end, PDOPPS is collecting key demographic, comorbidity and treatment-related variables, including patient self-reported outcomes, in a random sample of 5,000 incident and prevalent patients across a representative sample of facilities (20 of which are located in Canada). A baseline cohort of 799 patients (including 350 from Canada) has already been established. The mean age of the Canadian cohort is 61.0 years (42% female) and has been on PD for 2.0 years [inter-quartile range 1.1, 3.2]. The primary cause of end stage renal disease in the cohort is diabetes (34%). Enrolled patients will be followed for three years or until death, kidney transplantation, or a permanent transfer to hemodialysis has occurred. Data collected is expected to provide evidence to inform guidelines and best practices in PD care.

Nephrology Nursing Competency Review

Andrea Brown, RN, BScN, CNeph(C), Lindsay, ON, Jane Kirkwood, RN, BScN, MN, CNeph(C), Lori Mehew, RN, BScN(c), CNeph(C), Debbie Mathew, RN, CNeph(C), Krista Morgan, RN, BScN, CNeph(C), Peterborough, ON

In 2013, the Peterborough and Lakeridge Renal Programs identified the need for renal nurses to strive for increasing their nephrology competencies. Both programs spend much of their education efforts orientating new nurses to the program and, in particular, hemodialysis. Following orientation there was little in the way of organized continuing education other than random in-services for nurses. In busy dialysis units nurses find it hard to attend in-services due to patient care demands and short breaks.

The educators and managers from the programs collaborated to develop a competency document that includes both core nursing and nephrology competencies. The document outlines the competencies, learning resources and a self-evaluation tool based on Benner's Novice to Expert.

Nephrology nurses are exposed to the tool during their orientation. The competency tool is completed during the orientation period. At the end of orientation the nurse develops a learning plan based on the learning opportunities identified by completing the competency tool.

In 2014, the Peterborough program initiated four hour nephrology nursing competency review sessions. Staff and management identified the session topics to be covered. The topics of home dialysis, improving arteriovenous fistula assessment, hypotension and cardiac arrest were covered through lectures and demonstrations. Each nurse's knowledge was evaluated by observational and written testing.

Future plans include making the education sessions an annual event for not only hemodialysis nurses, but also the home dialysis and kidney care clinic nurses as well.





VANCOUVER, BRITISH COLUMBIA

An Autoethnography of Kidney Donation within a First Nations Context

Mary Smith, MScN, Tiny, ON

This was a research-based endeavour with the purpose of further understanding of the lived experience of kidney donation within a First Nations context. The researcher, Mary Smith, is a PhD student at the University of Victoria and has been engaged in writing an autoethnography of her experience of kidney disease and donation within her family, as members of a First Nation community. Autoethnography, as a qualitative research method, is a form of personal narrative that incorporates the cultural experience and links with the broader social determinants of health. The autoethnography of kidney donation in relation to the First Nations cultural experience may further illuminate the particular barriers and needs towards ethical health care that fosters cultural safety. Accessibility to specialist nephrology care during the transplant workup and overcoming complicated financial and geographic barriers to further support for transportation and accommodation are considered. Mary Smith has previously presented her kidney story at the Aboriginal Nurse Association of Canada Conference in 2013 and is also active as a nurse practitioner in mental health care and an Adjunct Professor at Queen's University. Additionally, she has been a volunteer and a past Director at Large-Ontario Branch for the Kidney Foundation of Canada.

No Place Like eHOME

Zita Abreu, RN, BScN, CNeph(C), Jovina Bachynski, RN(EC), MN-NP, CNeph(C), Cyndi Bhola, RN, MN, CNeph(C), Anna Gozdzik, RN, MN, CNeph(C), Toronto, ON

Background: Informed patient choice should play an important role in the selection of definitive renal replacement therapy (RRT) in ESRD (Mehrotra, Marsh, Vonesh, Peters, & Nissenson, 2005). Patients requiring urgent initiation of dialysis will likely do so with in-centre hemodialysis (IC-HD) via a catheter, without fully appreciating that there are viable alternatives to IC-HD, particularly home dialysis therapies. Home dialysis should be the ideal for most of the ESRD patients, as it affords the greatest independence and facilitates a better quality of life. At the University Health Network (UHN) in Toronto, Ontario, we believe strongly

that the process of selecting the definitive RRT should be jointly shared by the patient and the health care team in order to assist patients in playing an active role in making such decisions concerning their health (Gravel, Legare, & Graham, 2006). The eHOME initiative (Enable Home Optimization, Management, and Education) is a multidisciplinary approach to incident and prevalent patients on dialysis that is premised on health equality and an unbiased assessment and education of dialysis options (including renal transplantation and non-dialytic care) until the patient can make a comfortable and informed choice.

Methods: Since its inception in January 2013, algorithms have been developed for assessing incident and prevalent patients for modality selection and appropriate access. We have a dedicated nurse navigator to facilitate this transition process. Weekly meetings are held and attended by representatives from across the nephrology division, including the kidney transplant team. In order to ensure the appropriate definitive dialysis access, we have introduced the following new programs to our division: bedside peritoneal dialysis (PD) catheter insertion, early cannulation graft (eGraft) insertion, tunneled femoral catheter insertion as a temporary bridge to arteriovenous fistula/graft creation, and the Dialysis Start Unit (DSU) as a transitional unit.

Outcomes: As of 2014, 51% of our DSU patients have chosen a home modality (36.5% on PD and 14.5% on home hemodialysis [HHD]). Furthermore, 33% and 10% of all patients who have been followed by the nurse navigator and have made a modality decision have chosen PD and HHD, respectively. As a program, 42% of our dialysis patients are on a home modality; this improves to 57% if we include self-care hemodialysis patients.

Implications: The eHOME initiative was borne out of a vision to address an inefficient process to the initiation of RRT. This formalized process has flourished under dedicated leadership at all levels and has become embedded in our culture.

Malnutrition—The Silent Killer. Are We Missing the Clues?

Patricia Forster, BHSc, RD, Lezlie Lambert-Burd, BAdEd, BScN, RN, CNeph(C), St. Catharines, ON

Purpose of the project: To provide an education session that explains the significance of nutritional markers, lab data, clinical assessment and adequacy of dialysis in identifying signs of malnutrition.

Description: It is estimated that between 40–70% of endstage renal disease patients suffer from malnutrition and this complication is associated with increased risk of morbidity and mortality (Wolfson, 2014). There are nutritional markers, which are measured on a routine basis for dialysis patients. This presentation would use case studies in an interactive session to enable learners to better understand the significance of lab data and dialysis adequacy in identifying signs of malnutrition. **Evaluation/outcomes:** Participants would complete a brief pre- and post-test, allowing for reflection on one's understanding of this important nutritional issue in nephrology. This increased knowledge will benefit patient outcomes by the health team member applying the learning in their care management and facilitate increased referrals to the renal dietitian for nutritional intervention for patients at risk of malnutrition.

Implications: It is essential for health care providers to make the link that nutritional factors affect the interpretation of dialysis adequacy as it relates to blood work, and should not be overlooked, as this has a fundamental impact on patients' quality of life and outcomes.

How to Use Teach-back Skills in Everyday Practice to Ensure Patient Understanding

Linda Mills, RN, CNeph(C), Hamilton, ON

George Bernard Shaw famously stated, "The problem with communication is the illusion that it has occurred". Teach-back is a method that has been shown to be successful in confirming that a patient can use health information or education, regardless of a patient's health literacy abilities, and as a means to improve outcomes of understanding (Weiss, 2007).

Teach-back is a/an:

- Simple way to ask patients to explain in their own words
- Efficient way to check understanding
- Assessment of what needs to be readdressed
- Way to assess new information (not a test)
- Assessment of the need to learn in a different way.

The Registered Nurses Association of Ontario's Best Practice Guideline, Facilitating Client Centred Learning, is the framework in which evidence-based practice is used in learning the skill of teach-back and creating the environment for learning. Education is required for teach-back to ensure a good patient encounter. Most importantly, practice, practice and more practice are needed to become skilled in its use.

The teach-back techniques can be used in:

- Explaining discharge instructions
- Notification of medication changes
- New self care techniques
- Procedure preparation
- Health education
- Care planning/goal setting.

Literature has shown that this skill does not require any more time than the usual methods of teaching patients. Furthermore, it improves patient recall. As a coach of teach-back in my practice setting, I have experienced the value of this skill and am excited to share it with my nursing colleagues.

Implementing Patient Decision Support Tools and Processes: The Shared End-Stage Renal Patients Decision Making (SHERPA-DM) Project

Mary Ann Murray, RN, MScN, PHD, CON(C), GNC(C), CHPCN(C), Brenda Taylor-Kluke, RN, CNeph(C), Nicole Page, RN, CNeph(C), Ottawa, ON

Objectives: To evaluate the feasibility of implementing a shared decision support intervention with pre-dialysis adult patients facing decisions related to end-stage renal disease treatment options.

Methods: A pilot study within an inter-professional pre-renal insufficiency clinic was undertaken. Using a participative action approach two tools were developed:

- 1. An end-stage renal disease treatment options grid that lays out potential options available to patients with answers to frequently asked questions; and
- 2. The SHERPA-DM© Patient Decision Aid used to guide patients through the decision making process.

The tools were implemented following interactive decision coaching skills building workshops for providers. Evaluation by patients and providers included acceptability, usability, and feasibility of integrating into existing care models.

Results: More than 95% of participants recommended the options grid and 100% recommended the patient decision aid for use by other patients or health care providers. Patients and providers felt more prepared to identify a treatment option t (36) = -0.60, p = 0.55 after using the options grid and 100% of participants agreed that the explanations of the options were clear and relevant. Patients (100%) reported that the decision aid was relevant and helpful in preparing them to make a decision and plans for next steps. Most providers (89.5%) found the tool helped patients to better participate in decision-making.

Conclusions: Numerous determinants influence patients' decision making about end-stage renal disease treatment options. Providers confirm it is important to engage and support patients in decision making. An interactive educational program for providers complemented with practical





decision support tools can augment decision support practice, is acceptable to patients and providers, and is deemed helpful in engaging patients in a difficult decision making process. Broad implementation of the intervention may improve end stage renal care planning.

Vascular Access Mentorship Program

Michele Trask, RN, BSN, MIPH, Neal Bautista, RN, CNeph(C), Jenny Yew, RN, CNeph(C), Max Tolentino, RN, Rick Luscombe, RN, BSN, CNeph(C), Vancouver, BC

Hemodialysis (HD) is a life-sustaining treatment for chronic renal disease. In order to administer HD, a functional vascular access, which can be a fistula, graft or central venous catheter (CVC), is essential. St. Paul's Hospital's In Centre Hemodialysis program comprises 46 stations where a staff of more than 100 registered nurses (RNs) administer treatment to more than 250 patients.

RNs are typically provided with an intensive sixweek course to train them for the specialty area of HD. Unfortunately, the time spent on vascular access (VA) is quite limited. Most knowledge of vascular access including cannulation and complications is gained from hands-on experience. Nurses often struggle with difficult cases, understanding the complexities, interventions and management of fistulae and grafts. Poor assessment and cannulation can damage an access, putting the patient at risk of pain, infection and potential loss of a lifeline.

The challenge in HD is supporting RNs to acquire the needed skills. Our solution involved developing both tools and competencies for our nurses to support and mentor their peers by building confidence through practice and constructive analysis.

To this end, a one-week, 10-module, vascular access mentorship course was created. Various indicators and measurement tools were created to determine the effectiveness of the course. Other challenges were identified and the course adapted to meet the needs on a daily basis. Benefits encompass not only the advantages to our patients and staff participants, but also to other RNs as they gained through mentoring from the course graduates.

The Experience of Patients Transitioning from In-Centre Dialysis to Home Dialysis After Suboptimal Start

Caroline Sauve, RN, Ottawa, ON

Background: Home dialysis has been associated with lower expenditure to the health care system, greater quality of life and the ability of individuals to maintain a higher functional status than in-centre hemodialysis. Despite these advantages, home dialysis remains underused in most countries. An explanation for this is that individuals who begin dialysis in a "suboptimal" manner, that is without a permanent dialysis access, while admitted in the hospital, or with an undesired dialysis modality, are prone to remain on in-centre hemodialysis, as opposed to home dialysis.

Objective: This qualitative descriptive study aims to explore how people with end stage renal disease experience the transition to home dialysis after a suboptimal start.

Method: A qualitative interview-based design will be used to engage with patients who have undergone a suboptimal initiation of dialysis in the Champlain Local Health Integration Network. Participants will be recruited from the Ottawa Hospital. Participant eligibility will be determined by using the criteria of having undergone a suboptimal initiation of dialysis and currently being on home dialysis. After obtaining written consent, the participants will be interviewed using a semi-structured interview guide on their experience transitioning from in-centre dialysis to home dialysis. Interviews will be audiotaped and transcribed verbatim. The data will be analyzed using the thematic analysis method described by Graneheim and Lundman. In order to ensure the trustworthiness of the findings, Lincoln and Guba's criteria will be employed. In order to ensure the dependability of the research findings, two participants will be interviewed a second time.

Optimizing Performance to Reduce Sub-optimal Starts

Clint Gunn, MScN, CNeph(C), Susan Chan, RN, BScN, CNeph(C), CDE, GNC(C), Jocelyn Faigal, RN, BScN, CNeph(C), CDE, Carline Smith, RN, BScN, CNeph(C), Veronica Javier, MSW RSW, Scarborough, ON

Starting dialysis in a 'sub-optimal' manner is a frequent situation in dialysis programs, even for patients with a regular nephrology follow-up. Usually sub-optimal dialysis starts have a negative impact on patient outcomes and on their ability to start on their preferred modality. In addition, sub-optimal starts increase the cost of patient care. Two years ago our program embarked on a journey towards patient self-management. The patient educational curriculum was reviewed and revised to further meet the ideology of patient self-management. However, despite the continued use of these self-management tools, there is still a cohort of patients who frequently start dialysis urgently.

In February/March, a renal optimization assessment report was undertaken to assess the areas of foci for development within CKD. The survey results indicated that opportunities existed to improve our sub-optimal start care. In October 2014, a sub-optimal steering committee was established to determine the root cause/s of sub-optimal and crash starts to the program. A quality improvement initiative was implemented that engaged staff from across the program, so that different insights and perspectives could be gained. Monthly meetings were organized with structured educational and quality improvement activities. The quality improvement program focused on topics related to patient flow analysis, mapping, and decision support needed to evaluate and optimize the transition of eligible patients to a home-based therapy. A survey of patients who started sub-optimally was undertaken to better understand the reasons for their late decision making and the information gathered was used to further refine/define the education curriculum.

Definitions

Sub-optimal dialysis starts-patients who have been 12 or more months in pre-dialysis care, but whose dialysis is initiated as an in-patient and/or via temporary access

Crash starts–patients who require dialysis before they have ever seen a nephrologist

Utilizing a Nurse Navigator—Mapping the Patient Journey to Improve Outcomes

Debra Appleton, RN, MN, CNeph(C), Toronto, ON

It is the mandate of the Ontario Renal Network (ORN), a government agency overseeing nephrology in Ontario, that 40% of all new dialysis patients will be on an independent dialysis option within six months of initiating dialysis. The literature supports promoting the increase of an independent modality of dialysis. This presentation will detail the evolving role of a nurse navigator, demonstrating how the provision of a dedicated individual for patient education and decision support facilitates choosing home dialysis as a modality of choice. Since the inception of the nurse navigator role, at a large downtown hospital, the percentage of independent dialysis patients has increased from 13% to 75%. More importantly, the support to navigate a patient's journey using a navigator-led team approach results in improved outcomes for the patient. Improved patient outcomes can be demonstrated in terms of quality of life and measured clinical indicators. The evolution will be described from the perspective of past-present-future. Key behaviours inform the role and successes are illustrated from the patient's perspective.

Improving Patient Care: Innovative Nurse Practitioner-Led Outreach Clinics on First Nation Reserves, Targeting an Underserved Population at Risk of Developing Kidney Disease Ellen M. Novak, MN, FNP, Calgary, AB

Purpose of project: The purpose of this project is to prevent kidney disease in high-risk, First Nation patients, with increased awareness and empowerment of individuals to enhance self-management at the community level.

Description: Patients at high risk of developing kidney disease are identified and referred by primary care professionals (family physicians, nurses). No individual is declined, nor do they require a formal referral. Target patients include those living with hypertension, diabetes and/or those with persistent albuminuria. Weekly clinics are held on two First Nation Reserves in Southern Alberta, (Siksika, Stand Off) and two urban clinics (Calgary Urban Project Society, Elbow River Healing Lodge). Nurse practitioners lead clinics in consultation with nephrologists. The focus of the prevention clinic is on management of diabetes, high blood pressure, and dyslipidemia.

Evaluation/outcomes: Baseline evaluation includes assessment of standard blood pressure and evaluation of hemoglobin A1C, eGFR and albuminuria. Outcome measures include quantitative albuminuria, renal disease progression, and need for dialysis. Future measures include patient and referring practitioner satisfaction.

Implication for nephrology practice/education: This novel NP-led initiative delivers high-quality care at the level of the community, using local clinic resources. More frequent and intense follow-up and monitoring occurs with less resource intensity, thus enhancing early intervention and prevention of kidney disease progression. In addition, nurse-based care models emphasize patient education and empowerment, with a focus on patient self-efficacy and self-management. This innovative outreach program is delivered on reserve, with awareness and consideration of traditional culture and practice.





Effectiveness of an Online Portal for Delivery of Care to Home Dialysis Patients: A Pilot Prospective Study

Colleen Wile, RN, BScN, CNeph(C), Cynthia Stockman, RN, BScN, MN, Rachael Blair, RN, BScN, CNeph(C), Matt Phillips, RN, BScN, MHS, Usman Khan, MD, Karthik Tennankore, MD, SM, FRCPC, Halifax, NS

Introduction: Online patient-to-clinician communication portals have proven valuable as a means of enhancing the care experience for chronic disease patients. Thus far, effectiveness of online communication has not been rigorously tested on a home dialysis (peritoneal and hemodialysis) cohort.

Purpose: To see if an online portal improves patient experience, quality of life and care efficiency for home dialysis patients.

Methods: We are conducting a prospective study of prevalent home dialysis patients at Capital Health in Halifax, NS. RelayHealth, a web-based electronic messaging portal, will be offered to consecutive patients over four months. The system allows secure, password-protected online messages to be sent between the health care team and patient (including proposed changes to medication, instructions after a clinic visit, dates/times of new appointments, investigations or questions about care). Messages are electronically stored within the portal and printed and placed in the patient hospital chart. In addition, electronic documents (including appointments, imaging results from the health care team, and dialysis logbook data) can be directly uploaded to the portal. Patient experience/quality of life will be evaluated using validated questionnaires at six and 12 months after enrolment. A patient focus group will follow completion of the one-year study to determine patient and staff perspectives on the portal.

Preliminary results: Over a three-month period, 41 patients have been enrolled, of whom 27 (66%) are actively using the electronic portal.

Conclusion: Online communication with home dialysis patients is feasible. This study will evaluate how electronic communication modifies home dialysis patient experience.

POSTER ABSTRACTS

PREP (Participation, Resources, Engagement, Planning)—An Innovative Clinic for Patients Transitioning from the General Nephrology Clinic to the Chronic Kidney Disease Clinic Gail Barbour, RN, CNeph(C), London, ON

Clients diagnosed with renal disease are referred to the general nephrology clinic where they are assessed during their early stages of renal disease. As the renal disease progresses, clients' transition to the chronic kidney disease (CKD) clinic where they are assessed, and their plan of care is developed, implemented, and then evaluated at each clinic visit. These 20-minute clinic visits did not provide enough time for the allied health team to fully assess a client's care requirements and establish a comprehensive plan of care, as these clients progressed into late renal disease stage.

To better meet the needs of our clients, the program made changes to the CKD clinic. We created a one-time, stand-alone clinic targeting clients who are transitioning from the general nephrology clinic to the CKD clinic. This PREP (Participation, Resources, Engagement, Planning) clinic promotes a positive client experience by allowing clients to meet the multidisciplinary providers individually and provide an opportunity for individual assessment and development of a care plan.

Because of the 1:1 ratio of clients to staff, wait times for clients to see the health care team have been eliminated and time spent at the PREP clinic is valuable time spent discussing individual needs. Formal evaluation reflected positive patient experience. Informal evaluations from the health care team reflect increased satisfaction in having the ability to provide quality time with clients.

The learning objectives of this presentation are to present how an innovative approach to the transition of patients into the CKD clinic can improve client engagement and provide an environment for improved collaboration amongst the health care team.

Across the Bridge: Building a Seamless Transition for Pediatric Kidney Transplant Recipients to Adult Care

Clare Bannon, RN, BScN, Ben Cesar, MSW, Rhonda Federici, RN, Janelle Gehring, RN, Clay Gillrie, MSN, Anne Marie Kaan, MSN (mentor), Jane Kerr, RN, Sally Kwan, RN, Nancy Szeto, RN, Linnea Young, RN, Vancouver, BC

The renal post transplant clinic multidisciplinary team recognizes that youth in transition have unique learning and educational needs. We recognize that they do not have the capacity to behave like adults. Our goal was to explore what it meant for individual youth and their adult caregivers when they went through their transition. Our team recognized that a change is necessary in our practice to help these individuals through future transitions, and we wanted to determine what were barriers and successes from the patients' and family's perspective. The conclusion of this very interesting study revealed that young adults are still maturing and that the adult health care team should refrain from treating them like adults. These recipients are not used to assuming responsibility for their own care and have relied on their families and caregivers in the pediatric centre. The most important ideas that were delivered through this article were that the recipients felt that an orientation to the adult care centre a few months before they transitioned would be beneficial. Another important theme that was uncovered was that mentoring or peer involvement would be beneficial. The final theme was that the young adults require detailed descriptions and information about procedures and new information such as new medication side effects. Adult and pediatric health care teams need to provide this information consistently to help alleviate uncertainty and help to empower them, and may result in better long-term outcomes.

Recurrent Peritonitis Infection and Improvement in Membrane Function

Robynne Lavoie, RN, with the support of Baxter, North Bay, ON

This case study examined the impact of peritonitis on membrane transport characteristics. Peritonitis is a well known serious complication of Peritoneal Dialysis (PD), which results in scarring of the peritoneal membrane and a change in the membrane function. Can multiple incidences of peritonitis improve dialysis clearance in established low/low average transporters? A patient with less than 12 months on automated peritoneal dialysis (APD) therapy acquired three peritonitis infections within seven months. Peritoneal equilibration test (P.E.T) six weeks after initiation of PD showed a low average membrane. The KT/V was 1.49. After effective intraperitoneal (IP) antibiotic treatment of all three peritonitis events, P.E.T revealed a high average membrane, resulting in KT/V of 2.08. In this case, multiple peritoneal infections positively changed the membrane transport characteristics, as evidenced by optimized solute clearance and patient reported improved quality of life.

Technologists and RN Collaboration: Developing a Computerized Patient Bed Assignment and Communication System

Andrew Goodwin, RN, BSN, Ricky Lin, BSc, Meganne Sholdice, BA, Vancouver, BC

This project aims to create a central computer-based system to improve scheduling and communication for the hemodialysis team. Historically patient bed assignments have been determined using a manually updated magnetic scheduling board. This process created challenges in efficiency, communication, and confidentiality. To address these challenges we created a macro-based computer program that links a Microsoft Excel interface to a patient database. The program is located on a central server, which can be accessed by nursing staff and technicians. The patient information and scheduling assistant creates a paperless scheduling tool for more than 300 patients that communicates important clinical information, improving efficiency, communication, and confidentiality. We believe this program is a breakthrough in integrating technology and informatics to improve patient scheduling, assignment, and flow of care in the hemodialysis unit.

The program also monitors issues with scheduling, chair/ bed assignment, vascular access, prior discharges and transfers. This information is useful for evaluating the quality of care provided and identifying areas for improvement. As nursing professionals, we are always striving to enhance patient care, and this program will enable our team to focus efforts on patient care and safety issues in real time.

While the program is still in the developmental implementation phase, the system has already improved efficiency and communication for hemodialysis nursing staff and technicians. Evaluation of the program by technical support staff and members of the health care team has been positive to date. Further evaluation will include soliciting feedback from all staff using the program with web-based surveys.

Changing of the Guard: Transitioning After Hours Telepractice to the Inpatient Nephrology Program Arden Gibson, RN, Lisa Hildebrand, BScN(C), RN, Lezlie Lambert-Burd, BAdEd, BScN, RN, CNeph(C), St. Catharines, ON

Purpose of the project: Illustrate the steps taken to prepare staff for implementation of afterhours on call for peritoneal dialysis.

Description: A team of three nurses in the outpatient peritoneal dialysis program has been fielding after hours on call and call back for patient care issues in the outpatient program for 20-plus years. Decisions were made to transition peritoneal dialysis call back to the inpatient portion of the kidney care program. Much preparation is required to undertake a transition this large. About two-thirds of the staff has been developing their skills in peritoneal dialysis while many had not formally participated in issues of telepractice related to direct patient care during their career. Education to strengthen nurses' proficiency in peritoneal





dialysis abilities and self-efficacy was required to effectively implement this strategy. In addition, measures were implemented ensuring institutional processes were in place to support both the successful transition and launch of independent telepractice in the inpatient nephrology program, while nurses continued to provide quality patient care to the patients already under their care in the department.

Evaluation/outcomes: Telepractice as an element of nursing care poses obstacles by the nature of the transaction. The primary obstacles are lack of hands-on assessment and limitations to both verbal and non-verbal communication (CNO, 2009). In order to prepare nurses to effectively perform this activity, staff required support to ensure a sense of self-efficacy in peritoneal dialysis care through implementation of skills review sessions and assessments, along with the development of order sets, telephone logs, access to electronic patient records and telepractice education in the inpatient environment.

Implications for nephrology practices: Telepractice is a type of nursing that involves the use of electronic technologies to provide nursing care over distances (CNO, 2009). In order to provide quality care for the clients we serve, it is imperative that a program undertakes and implements the findings of a needs assessment that are determined by both the management team and nursing staff to ensure the successful transition of the initiative.

Living Kidney Donor Process

Nikki Saran, BSN, RN, Amy Robin, BSN, RN, Vancouver, BC

The purpose of our poster is to educate health care professionals about the living kidney donor process. We will highlight the steps of the donor process from registration to post donation. Key philosophies for working with living donors, such as confidentiality, informed consent and donation as a personal choice will be highlighted. The implication of our project will be to improve the general knowledge of nephrology nurses and technologists, allowing them to accurately share information and support their patients as they consider transplantation as a treatment option. By opening up the dialogue with their patients, the potential kidney transplant recipients may be more willing to consider living donation.

Teaching Dependent In-centre Nocturnal Patients: To Be or Not to Be?

Maria Crisa Cardente, RN, Dave Morrison, RN, CNeph(C), Michele Trask, RN, BSN, MIPH, Leilani Ocampo, RN, BSN, CNeph(C), Vancouver, BC

Because of the positive outcomes of patient teaching in our involved care dialysis, the renal program decided to extend promoting autonomy, self-care management and involvement of patient care to in-centre dependent nocturnal hemodialysis. Patients in nocturnal dialysis are dependent on nursing staff for many aspects of care. Sleep is also promoted during their treatment. Due to this, we ask: can training be possible? To be or not to be. The Bridge Curriculum© provides the foundation for a progressive learning for our patients in performing dialysis care activities. Nocturnal nurses faced challenges in implementing patient teaching that includes, but is not limited to learning the hemodialysis machine and knowing how to do self-cannulation. Initially, three nocturnal patients were selected to undergo the training. To overcome the barriers, our program dedicated a temporary patient educator to initially develop and implement the teaching and training of selected nocturnal patients. Ongoing support to staff was provided by a clinical nurse leader and clinical nurse educator. At the end of training period, patients' learning and practice are sustained both by patient educator and the team of nocturnal nurses. Currently, the performance of the learned tasks by 50 per cent of the nocturnal patient population attests to the value of patient involvement. The end result motivates us to commit to continuing the unique nurse-patient partnership, thus increasing the level of care among nocturnal patients in encouraging self-care and shared responsibility.

The Use of Home Hemodialysis Machines as a Portable System in the Hospital Clinical Setting Erica Kang, RN, BScN, Scarborough, ON

The purpose of this project is to integrate home hemodialysis machines into the hospital clinical setting.

Currently, hospitals use conventional hemodialysis machines with a portable reverse osmosis (RO) system in order to perform dialysis to patients unable to be treated within a hemodialysis in-centre unit.

At a peripheral community hospital, the use of a home hemodialysis machine as a mobile portable system to treat acute and critical care inpatients has been implemented. The aim is to integrate these machines when water pressures cannot keep up with the conventional machines, and to use them in critical care settings when patients are more susceptible to being hemodynamically unstable.

This poster presentation will provide insight on the challenges and benefits of this experience. Evaluations will include doing pre and post blood work on the patients to compare clearance of electrolytes, urea and creatinine over the course of the treatments. Staff members are encouraged to provide feedback on both positive experiences and areas of improvements. This presentation will also provide guidance for use of such systems to treat patients in acute and critical care settings.

Home Away from Home

Peggi Garner, RN, Sonia Thomas, RN, Niagara Falls, ON

Purpose: Despite a desire or willingness to independently dialyze (ID) at home, barriers that are difficult to overcome can exclude some patients from home therapy. In many cases, these barriers are related to environmental factors. The Home Away From Home room is an option that empowers patients and supports independence and self-care.

Description: Some renal patients are interested in being independent but unable to dialyze at home due to: unreliable septic or cistern system, apartment living (renters who were not granted permission from landlord), patient preference—separate dialysis (work) from family (home life). Providing an opportunity to support what matters most to the patient and their family is paramount to our program and vision.

The Niagara Health System (NHS) Kidney Care Program was able to design a room (separate from in centre dialysis) with all approved electrical and plumbing, equipment and supplies for ID. Patients who utilize this space are treated as though they are ID and any problems or needs are directed to the ID nurse by use of telephone support.

Evaluation: Home Away From Home room has provided a sense of independence and control for the patients who have and continue to dialyze there. It has had a turnover of users and at present a waiting list of those interested.

Implications: The creation of this room supports the patient client-centred care philosophy of the Kidney Care Program, with the goal of expansion to other KCP sites.

Creating a Hemodialysis Short Stay Unit

Michele Trask, RN, BSN, MIPH, Steve Silva, RN, BSN, CNeph(C), Valerie Wai, RN, Rick Luscombe, RN, BSN, CNeph(C), Vancouver, BC

Historically, the hemodialysis (HD) department would attend to patients in hallways for non-scheduled post-procedural care; or staff would be required to go into areas of the hospital that were under-equipped to deal with HD care needs. In the year prior to the inception of the Hemodialysis Short Stay Unit (HDSS), approximately 300 procedures were performed in suboptimal conditions in the hallway. In addition, there were many treatments that our patients could not benefit from because there was no location where all the expertise of care required could be delivered.

Another example of the benefits to patients are those commencing HD for the first time. Historically, new patients would start as part of the general population in an assignment with two others assigned to one nurse. Patients described this experience to us as unfamiliar, fearful, and confusing. Now, with the HDSS, the first three dialysis treatments for new patients whose starts are planned, are provided in a quiet environment. Education and orientation to hemodialysis is provided and other members of the health care team can meet the patient and family.

In creating the HDSS, we provided a safe and seamless patient-centred care experience for all patients on HD by addressing dialysis-related episodic care needs within the existing physical and financial infrastructure of the HD unit. Our HD unit has been able to utilize the physical space and nursing hours to evolve many other care initiatives such as staff and patient teaching, orientation and research.

Increasing Vascular Access, Home Modalities and Patient Satisfaction through the Implementation of a Dialysis Transition Unit

Krista Morgan, RN, BScN, CNeph(C), Tammy McComb, RN, CNeph(C), Peterborough, ON

The transition unit offers a four- to six-week program in a secure environment where patients and their families work collaboratively with the Transition Unit Nurse. It is a patient-focused program that assists the individual with training and education, so that they can be an active participant in their ongoing dialysis care and self-management needs. In addition, it allows patients the opportunity and the ability to choose the modality and access that fits best with their lifestyle and values, while providing peer support opportunities to the patient and their family.

Our renal program historically had between 20 to 25% of all patients start hemodialysis without a modality or access plan in place, either because they started dialysis acutely prior to seeing a nephrologist, or had been followed but not yet made a documented choice of care.

Now these patients are assessed to enter the transition unit program and, in doing so, receive their dialysis treatments in conjunction with one-on-one nursing education, support and counselling to assist with making an informed plan of care.

The transition unit has been in operation for one year. Initial results show an increased uptake to independent dialysis and AVF use in patients starting without a previous plan of care, and excellent patient and family satisfaction. Our poster presentation will outline the development of our transition unit and the successes it has had in relation to patient care.





VANCOUVER, BATTISH COLUMBIA

"Perfection is the Enemy of Good"—The Implementation of Ultrasound in Cannulation Assessments

Kristen Daniw, RN, BScN, North Bay, ON

Given the dynamic environment of a hemodialysis unit, the objective of this presentation is to highlight the successes and challenges with the implementation of ultrasound in our cannulation assessments and the strategies to move this practice forward.

Current literature supports the need to initiate strategies on improving the lifespan of arterio-venous fistulas (AVF) in the hemodialysis population. Given the need for fiscal responsibility in health care today, there is a need to utilize our already available resources to increase efficiency in care. Our small dialysis unit implemented the use of our ultrasound to assist with cannulation assessments and support access preservation.

Using the LEAN principles of Plan, Do, Act, Study, Adjust, to guide our process, the nursing staff, using an ultrasound we already had, were trained on how to measure the fistula for diameter, depth, and direction of the vessel. These findings were recorded on a flow sheet. Consents were obtained and a picture was taken and placed in the patient's chart to provide the staff a visual orientation of the vessel's measurements.

Moving forward, we continue to perform audits at 30, 60, and 90 days to assess the sustainability of our practice. Although the implementation consists of ongoing challenges, we believe that this change in practice will benefit our patients by improving their quality of care.

Using Results from the Worklife Pulse and Culture of Patient Safety Surveys to Stimulate Actionable Improvements

Matt Phillips, RN, BScN, MHS, Carolyn Bartol, RN, BScN, CNeph(C), Colleen Wile, RN, BScN, CNeph(C), Sohani Welcher, RN-NP, MN, GNC(C), Cynthia Stockman, RN, BScN, MN, CCNP, Steven Soroka, BMus, MD, MSc, FRCPC, EXTRA Fellow CHE, Norma Jean Martel, RN, BScN, CNeph(C), Cindy Kelly, RN, BN, Rachael Blair, RN, BScN, CNeph(C), Halifax, NS

Purpose: The Nephrology Quality and Patient Safety (Q+PS) Team reviewed results from the Accreditation Canada Worklife Pulse (WLP) and Culture of Patient Safety (CPS) Surveys that were completed by staff and physicians. The surveys identified communication with program leadership (WLP) and reporting and follow-up of incidents (CPS) as areas for improvement. The purpose of this initiative was to use the data obtained to develop action plans of improvement.

Description: The Q+PS Team developed four action plans: two for each survey. The WLP action plans included the development and distribution of a quarterly program newsletter and implementation of open forum program safety rounds. The CPS action plans included an education session on creating and working in a culture of safety, and the creation and dissemination of a quarterly program incident report. Each action plan identified its purpose and goal, the person(s) responsible for implementation, and target date of completion.

Outcomes: All four action plans have been developed and implemented. There has been an increase in reporting observed, specifically related to medical equipment device malfunctions. There has been one program safety round that has stimulated several action plans. A second program safety round is scheduled. The Q+PS team will evaluate the effectiveness of these rounds by utilizing feedback from participants and program leadership.

Implications for nephrology practice: Feedback from stakeholders, attendance at open forum safety rounds, and a significant increase in event reporting indicate the positive impact of the action plans implemented.

Building an Online Community for Dialysis Patients *Cindy Bryson, RN, BScN, CNeph(C), Anna Cobian, St. Catharines, ON*

Purpose: Niagara Health System (NHS) desired more meaningful engagement with its hemodialysis patient population in order to better understand the care experience, co-design improvements in service delivery and improve the sense of community among patients.

Methodology: Survey and focus group sessions were held indicating that 50% of respondents would join an online discussion group. Subsequently, the NHS Communications and Kidney Care Program leadership initiated a pilot project

"The Kidney Care Online Community" in September 2014 using a Google Plus platform.

Results: In addition to connecting with each other and program leadership at any time on the platform, patients can participate in monthly live chats featuring members of the interdisciplinary team. Quantitative and qualitative data collected over one year of the pilot will be presented. Factors influencing patient participation, frontline staff engagement and patients' perceived sense of community will be examined. We will share tips for building online communities.

Implications for nephrology practice: Patients receiving hemodialysis face multiple lifestyle changes and must make many decisions about their health care. The potential for improved outcomes for patients could be enhanced by providing more ongoing support and education via interactions in the online community and participation in live chats.

Reaching New Heights: PD Training Goes to the Hometowns of Visiting Nurses

Michele Ivanouski, RN, CNeph(C), London, ON

The Peritoneal Dialysis Unit (PDU) at London Health Science Centre (LHSC) supports home dialysis patients in a large geographical area. Of the 150 patients, a large percentage requires home care assistance either short term or long term. Home care nurses are trained for two days. With the huge work load in home care and the increasing numbers of clients dialyzing in their homes, there were times when a visit by a visiting nurse was difficult to arrange.

LHSC-PDU started offering training in the nurses' communities. Dates were offered and numbers of interested nurses would be confirmed one month prior. A suitable venue would be found. Arrangements for delivery of dianeal and cyclers were made. Ancillary supplies, training manuals and training video were available during training. Each student evaluated training at the end of day two.

The convenience helped nurses organize their work schedules around the dates. The PDU is now able to arrange for home support more easily when needed. Successful home dialysis decreases the financial burden on our health care system. Most important is the maintenance of quality of life for PD patient and families at home.

Training visiting nurses in their own communities has resulted in full classes and requests for more opportunities. Since implementation, every PD patient from LHSC has been able to get home care assistance when requested.

Clients Helping Clients: Utilizing Experience Base Design to Improve the Client Experience during Cannulation of the Arteriovenous Fistula (AVF)

Sherry Wood, RPN, Christina Vailliancourt, MHSc, RD, Oshawa, ON

Arteriovenous fistulas (AVF) are the gold standard for hemodialysis access. However, dialysis clients are often fearful or resistant to the use of their newly matured AVF. Utilizing the theory of Experienced Base Design (EBD), patients' experiences and emotions related to their choosing to use their AVFs will be captured. The three inclusion criteria are: clients with AVFs surgically created within our program; initial cannulations of AVFs were completed within our program; and the AVF has been fully functioning for a minimum of one month to a maximum of one year. Review of current case-load identified 13 eligible clients.

Data will be collected using a paper-based survey focused on a number of emotions the hemodialysis client might experience at specific points in the care pathway (from waiting in the waiting room, to cannulation, to having needles removed and going home). The survey will be anonymous. However, it also contains an area in which clients will be able to ask the researcher to meet with them to discuss their experiences in more depth. The goal of the survey is to capture the experiences and emotions of clients before, during and after cannulation in hopes of highlighting the enablers and barriers related to clients choosing to use or not use their AVFs.

The data compiled will be shared with the management team with goals of identifying opportunities for process improvements and enhancing the experience of hemodialysis clients utilizing their AVFs, which will, in turn, improve their overall health and wellness.

Substituting Unfractionated Heparin (UFH) to Low Molecular Weight Heparin (LMWH) for use in Chronic Hemodialysis

Carol Holtzer, RN, CNeph(C), Ethan Holtzer, BA, MHSc (pending), Markham, ON

Unfractionated heparin (UFH) was discovered in 1916–17 and, by the late 1940s, a method was developed to cheaply produce large quantities of the drug. This drug became the foundation that allowed hemodialysis to become a chronic treatment for patients with end stage renal disease. Over the years, the use of UFH has become routine in dialysis units and many of the standard practices developed for routine monitoring, such as Activated Clotting Time (ACT), are rarely performed. In the late 1970s and early 1980s, low molecular weight heparin (LMWH) was discovered by chance and was being studied in Europe for dialysis patients in the late 1980s and early nineties.





During our review of routine practices in our facilities with our quality advisors, we identified the need for analysis of our anticoagulant options for hemodialysis. We undertook a risk/benefit analysis for patients and staff for the use of both UFH and LMWH. From this, we proceeded to develop medical directives and nursing guidelines for dosing, administration and documentation of LMWH.

The presentation will describe the process followed and share the directives and guidelines developed, as well as the results to date.

Integrating Simulation Technology into Hemodialysis Nursing Orientation Program at London Health Sciences Centre

Kathryn Walton, RN, BScN, Paula Gaspar, RN, MSN, Janet Vogel, RN, BScN, CNeph(C), London, ON

Orientation for new dialysis nurses is very stressful both for them and their patients as all are aware of the potential for dire consequences if procedures are performed incorrectly. Initial orientation at our hospital is an intense sixweek program combining theory and practice in the dialysis unit. An orientation refresher day is provided in three to six months. Traditionally, this has occurred in a classroom environment with a number of speakers addressing a variety of topics. While this format provides great opportunities for discussion, it does not address practical, hands-on issues.

Our hospital has access to a state-of-the-art simulation laboratory. Simulations are valuable teaching strategies for skills acquisition and the renal educators know this will be of great benefit to our nurses.

The renal educators have decided to capitalize on the availability of this facility to revise our orientation refresher day. The novice nurses will spend the day in the simulation lab where innovative technology can closely mimic the real patient experience. This will provide novice dialysis nurses with the ability to build on their current knowledge and acquire new skills in a safe and non-threatening environment.

Evaluations from the refresher day can be compared to previous evaluations to determine the effectiveness of this new approach. We will then assess if this type of learning strategy would be of value in the initial orientation phase.

Crash Starts In Hemodialysis: Can They be Prevented?

Virginia Ball, RN, Renee Veldman, RN, Nicole Murphy, RN, Mark Murphy, RPN, Eduard Iliescu, MD, Inverary, ON

Purpose: Patients with crash start (CS) in hemodialysis (HD) have inferior outcomes, but it is not known if they can be predicted or prevented. This study aims to examine the causes and outcomes of CSs and estimate the proportion that may be prevented.

Methods: This is a retrospective study of patients with CS, defined as starting HD as in-patients over a 30 day period, in the region of South-Eastern Ontario. The variables were cause of CS, prior nephrology follow-up, and renal and patient outcomes at three months.

Results: There were 25 patients with CS, nine (36%) previously followed by nephrologists. In 21 patients (84%), CS was caused by unforeseen medical or surgical critical acute illness, with or without known prior renal disease. Only four (16%) started HD due to progressive uremic symptoms and all had advanced renal disease with serum creatinine $350-479 \mu mol/L$ at the time of the nephrology referral. The outcomes at three months were renal recovery in eight (32%), chronic HD in 10 (40%), and death in seven (28%).

Conclusions: The results suggest that CSs are caused by unforeseen acute illness and may not be predicted or prevented. A small proportion may be prevented by earlier referral to nephrology. The results confirm poor renal and patient outcomes in CS.

Implications: Since acute illness and CSs cannot be predicted, optimization of renal protective practices in hospital are essential. Ongoing education regarding the benefits of early nephrology referral may modestly reduce the number of CS cases.

Modality Coaching: Redesigning Modality Education to Provide Objective Information and Longitudinal Support

Susan Flanagan, BMus, RN, CNeph(C), CCRC, Matthew Oliver, MD, MHS, FRCPC, Susan McMurray, RN, BN, CNeph(C), Toronto, ON

In 2012, the Ontario Renal Network (ORN) set targets for the delivery of modality education and use of home dialysis. To address these targets in our predialysis clinic and urgent start population, we redesigned modality education and introduced Modality Education Coaches.

The goal of this initiative is to improve the decision-making process for patients and families, provide informed consent and maintain satisfactory home dialysis use. These goals are consistent with Sunnybrook Health Science Centre's Person-Centred Care values-based strategy: caring, compassion, listening, autonomy, information-sharing, shared decision-making, dignity, respect and trust, and the Ontario Renal Network's focus on patient-centred care. Seven registered nurses from within our nephrology program were selected to assume the role of Modality Education Coach.

Coaches participated in the development of modality education content and attended sessions on the principles of adult learning, self-management and decision support.

This poster will describe the program development process, challenges the team has successfully addressed during its implementation, and preliminary outcomes data.

From Nursing Care Plans to Plans of Care!

Carolyn Mack, RN, CNeph(C), Michelle Masson, RN, CNeph(C), Jane Ridley, RN(EC), MScN, CNeph(C), London, ON

Over the past few years the demographic of our hemodialysis unit has changed. Where we once had stable longterm patients cared for by experienced nurses, we now have complex patients and an influx of novice dialysis nurses.

When a patient presents care challenges (physical, social and/or psychological) specific plans of care (POC) are generated. We have found these to be valuable in gaining a better understanding of the patient/family and their needs, generating strategies to address issues, and improving communication and continuity of care among staff.

Our program has been embracing patient and family-centred care. We are striving to work with patients/ families to identify their goals of care and become active participants in their care. Generating POCs promotes discussion among families, patients and staff to ensure we are all on the same page, as we work together to manage and deliver care.

A recent audit of 84 charts revealed that only 11 contained POCs. An evaluation of the existing POCs revealed improvement in outcomes (issue improvement or resolution, patient condition, patient satisfaction, and continuity of care). We are embarking on a CQI project to create POCs for all of our dialysis patients. Reintroduction of a primary care nursing model will assist with this process. Our strategy is to schedule multidisciplinary meetings to discuss and promote identification of issues for POC creation. Chart audits and qualitative reviews of POCs will be done every three months.

Vascular Access: Are We as

Bad as Our Data Suggest?

Paula Mossop, RN, CNeph(C), Matt Phillips, RN, BScN, MHS, Christine Dipchand, MD, MSc, FRCPC, Niall Sheehy, Halifax, NS

Purpose: The renal program in Halifax has seen the rate of arterio-venous fistula (AVF) as prevalent vascular access decrease from 63% to 37% (2005 to 2014), while at the same time having an increasing rate of tunneled central venous catheter (CVC) from 30% to 62%.

Description: Data were retrieved from the program's database to determine for patients who dialyzed with a CVC if: they ever attended a consult appointment for an AVF; they

ever had a surgical encounter for an AVF; they entered into the program with a pre-existing AVF; or, they ever had an AVF as their prevalent dialysis vascular access. Patients were divided into two groups: those with no exposure to AVF and those with at least a consult for an AVF. Patients were further divided by dialysis modality treatment location (in-centre, satellite, or home).

Outcomes: Sixty-eight of the 240 patients in the program who dialyze using a CVC have never had a consult or attempted AVF. Of these patients, 73.5% dialyze in an in-centre unit, 23.5% dialyze in satellite units, and 3% dialyze at home.

Implications for nursing practice: Implications of rising prevalent CVC rates include higher patient safety risks (higher rates of bacteremia and higher prevalence of central vein stenosis) and increased thrombolytic medication usage (e.g., Alteplase). Additionally, a decrease of AVF prevalence presents challenges to nursing staff attempting to become expert cannulators. Finally, the systematic review of data can help identify a subset target population to attempt transition from CVC to AVF.

Bioelectric Impedance Spectroscopy in the Home Hemodialysis Population: A Multidisciplinary Approach to Optimizing Independence

June Martin, BASc, RD, CDE, Nancy Evans, BScN, RN, CNeph(C), Kitchener, ON

Home hemodialysis patients have the added challenge of assessing and managing fluid status. Edema, blood-pressure and weight gain can all be affected by more than simply fluid status and this can leave patients unsure of how to assess ideal body weight. Unlike in-centre patients who have access to blood volume monitoring, home hemodialysis patients must use clinical judgement when determining tissue or fluid changes. Use of bioelectrical impedance spectroscopy (BIS) at Grand River Hospital has given patients and clinicians an objective measure of body composition assessments done by the dietitian and at the discretion of the multidisciplinary team. This tool has enabled our team to identify and treat weight loss, weight gain and fluid imbalance following surgery, admissions, and based





on patient symptoms. Furthermore, we have used this tool as a novel and effective education opportunity to demonstrate to patients their fluid status when they may be reluctant to remove fluids. We will present cases in which use of BIS has averted hospital admissions and need for in-centre dialysis.

Dialysis Garbage is Reaching New Heights in the Northern Alberta Renal Program

Betty Ann Wasylynuk, RN, BScN, Edmonton, AB

The disposal practice of dialysis waste (lines/dialyzers/ intravenous bags) varies within the Northern Alberta Renal Program (NARP). Some dialysis units in NARP are disposing their dialysis waste into the regular waste stream while the majority of the units continue to dispose their dialysis waste into the biomedical waste stream. The biomedical waste stream cost is more than 10 times the cost of the regular waste stream (\$1.34/kg versus \$0.10/kg respectively). NARP management was looking to standardize waste disposal practices throughout the program and throughout the province.

After reviewing guidelines, the Canadian Standards Association standards, and allying with Alberta Health Services (AHS) Environmental Services and AHS Infection Prevention and Control consultants, waste management practice changes were developed. This presentation will review the process changes including document development and implementation process.

Switching from biomedical waste stream to general waste stream not only equates to financial sustainability for NARP (with a predicted cost savings of up to \$600,000 annually), but also to new heights in terms of providing a disposal practice that is environmentally much more sustainable and friendly.

Ambulatory Medication Reconciliation

Carolyn Bartol, RN, BScN, CNeph(C), Matt Phillips, RN, BScN, MHS, Marsha Wood, BN, RN, MN, CNeph(C), Penelope Poyah, MD FRCPC, Colleen Wile, RN, BScN, CNeph(C), Norma Jean Martel, RN, BScN, CNeph(C), Cynthia Stockman, RN, MN, CCNP, Cindy Kelly, RN, BN, Gina Harding, RN, Cindy Everett, RN, Jo-Anne Wilson, BscPharm, ACPR PharmD, Halifax, NS

The renal program was selected as the pilot site for ambulatory medication reconciliation (AmbMR) at Capital District Health Authority (CDHA), in Halifax, Nova Scotia.

AmbMR was first implemented in the renal clinic. A target population based on chronic kidney disease patients with an $eGFR \leq 11 \text{ mL/min/1.73m}^2$ was selected, as patients meeting these criteria were determined to be at highest risk for adverse outcomes due to medication errors. The number of patients in this group was also felt to be a manageable size in the early phases of AmbMR implementation. A multidisciplinary team including nursing, pharmacy, prescribers and managers was formed to engage frontline staff that would be involved in conducting AmbMR. Staged implementation took place, building on successes and challenges that arose during the pilot.

Specific challenges included: the development of an applicable documentation form, working without benefit of electronic documentation, education of frontline nursing and prescribers, and timing of rollout to multiple areas. Select renal clinic patients derived from our initial target population would eventually transition to the in-centre, satellite and home dialysis programs, in which target population for AmbMR was all-inclusive and program-wide.

The CDHA medication reconciliation committee subsequently took recommendations from the experience in the renal program to apply implementation of AmbMR to other ambulatory areas at CDHA.

Implementation of AmbMR in a large program, at multiple sites, with varying patient populations required time, the use of change management methods, collaboration and a broad-based commitment from the entire team.

The Impact of Reporting When Medical Devices Fail

Matt Phillips, RN, BScN, MHS, Carolyn Bartol, RN, BScN, CNeph(C), Cynthia Stockman, RN, BScN, MN, CCNP, Paula Mossop, RN, CNeph(C), Barb Hodgson, RN, Norma Jean Martel, RN, BScN, CNeph(C), Halifax, NS

Problem statement: The renal program in Halifax experienced two separate incidents involving the malfunction of medical equipment and devices. Over an 18-month period, seven central venous catheters (CVCs) migrated out of patients without the cuff adhered to the catheter (the cuff remained adhered inside the patient, but had become separated from the CVC). In all of the cases, patients required insertion of a new CVC. All patients were potentially at risk for air embolism, bleeding, and/or infection.

A second medical device issue involved clotting in the venous chamber due to improperly manufactured dialysis lines. This resulted in more than 100 clotted circuits throughout the in-centre and satellite dialysis units. **Description:** In both situations, we tracked and reviewed data, reported incidents when medical equipment malfunctioned and, with biomedical engineering, evaluated devices that malfunctioned. Communication was initiated with the organizational risk management department, the vendors of the products, and Health Canada.

Outcomes: Reporting of these events internally and subsequently to the 'Canadian Medical Devices Sentinel Network' has resulted in patient safety improvements. These included removal of products from hospital stock based on feedback from the vendor, and process manufacturing improvements. The renal program also received recognition from Health Canada for improving safety through reporting.

Implications for nursing practice: Increased reporting allows opportunities to learn and improve, and an increase in reporting is an indication of a culture of safety.

Double-Double: Growing Our Home Dialysis Program *Shaniel Des Vignes, RN, BScN, CNeph(C), Mina Kashani, RN,*

BHScN, CNeph(C), Toronto, ON

Over a two-year period, we have successfully grown our home dialysis program with a doubling of our peritoneal dialysis (PD) numbers and an increase in our home hemodialysis (HD) numbers. Our success is a result of multiple interventions, including the introduction of a Nurse Navigator (NN)/PD Access Nurse, the recruitment of a dedicated surgeon for PD insertions to augment our interventional radiology PD catheter services, the introduction of regular team meetings to facilitate open communication between the kidney care centre (KCC) and home dialysis, and the provision of HD on a temporary basis in the home dialysis unit to foster the independent dialysis option for patients who start HD with no prior plan for mode of therapy, or whose PD catheter is malfunctioning or not yet ready for use. The impact has been two-fold: double the PD patients and, therefore, double the benefit to those patients functioning independently in the home. This presentation will provide a more detailed description of these strategies and their respective impact on our population.

Body Access and Independent Dialysis: An Option for Everyone

Dennis Smith, RN(EC), MN, Deborah Bezaire, BScN, Lori Harwood, RN(EC), PhD, CNeph(C), Carolyn Ingram, RN, BSc, CNeph(C), London, ON

People with end stage renal disease (ESRD) are required to make dialysis treatment decisions that are stressful and significantly affect their lives. Education enables informed decision making, which is key for patients to make these personal decisions regarding dialysis modality or body access. Aligning with the Ontario Renal Plan (Ontario Renal Network, 2015) the London Health Sciences Centre, Renal Program has established a standardized referral process for unplanned or suboptimal hemodialysis patients. This consistent process will encompass an extensive education process on vascular access and independent dialysis modalities (peritoneal and home hemodialysis). Establishing referrals to the vascular surgeon, peritoneal and home hemodialysis within 30 days of starting dialysis may provide more opportunities for education and support for patients and their family to make decisions consistent with their values, beliefs and lifestyle. Each suboptimal or urgent hemodialysis patient will have their dates of referral documented, as well as their experience through a standardized patient interview. This project aims to evaluate our practice with referrals and educational processes to guide health care provider's interventions ensuring support for optimal patient decision making. This poster presentation will evaluate the referral process, the impact on patient and family decision-making and the support required for these new dialysis patients.

Creating a Closed System to Improve Patient Safety

Carole Losier, RN, Carole Basque, RN, Sylvette Sonier, RN, Tracadie, NB

Introduction: Our satellite unit of hemodialysis (HD) is situated in Tracadie Hospital, in the Northeast Coast of New Brunswick, opened in 2006, operating 12 hours/day, six days/week. Since then, we have increased from five to nine chairs. We take care of 36 patients weekly, of which 78% receive HD through a central venous catheter (CVC).

Background: Our major concerns with CVC are bloodstream infections and safety. Catheter-related bacteremia impacts patient safety, and is also costly to manage related to antibiotic use and line changes.

Implementation: In August 2009, our unit converted all catheter patients using end caps to the needle-free dialysis connector (closed system) Tego[™]. Nurses were educated on the proper use.

Objectives:

- Provide a closed system for accessing CVC.
- Decrease risk of infection.
- Cost effectiveness.
- Increase patient safety.
- Nursing time efficiency.





Methods:

- Change Tego[™] every seven days.
- Attach Tego[™] to patient catheter.
- Swab Tego[™] before each access with alcohol swab.
- Access Tego[™] with a syringe or blood lines.
- Flush Tego[™] with normal saline.

*Silicone seal remains closed when not activated, closing the fluid path and eliminating blood exposure.

Results: With the implementation of TegoTM, there has been a 20% reduction of CVC infection and 100% satisfaction from the nurses (i.e., secure connection, less catheter hub manipulation).

Adequate Dialysis: It's All in the Assessment!

Lezlie Lambert-Burd, BAdEd, BScN, RN, CNeph(C), Patricia Forster, BHSc RD, Denise Sneath, RN, CNeph(C), St. Catharines, ON

Purpose of the project: To provide an educational poster that assists the health care practitioner in appreciating how dialysis adequacy impinges on interpretation of a triad of markers, primarily nutrition, body access and dialysis prescription.

Description: Utilizing the dialysis process, health care practitioners provide lifesaving treatments every day! Quality of life is impacted by adequacy of dialysis and the patient's capacity to meet nutritional requirements, optimal body access, and effective dialysis prescription. Interpreting the triad of markers in isolation of one another can lead health care practitioners to miss important assessments, leading to inappropriate treatment recommendations, planning and health teaching impacting on dialysis adequacy.

This poster will explore dialysis adequacy to assist the interdisciplinary team to assess markers, which affect patient outcomes, care provided, and health teaching.

Evaluation/outcomes: Reflecting on one's understanding of this important issue in nephrology will benefit patient outcomes for quality of life.

Implications for nephrology: It is essential for health care providers to link how dialysis adequacy is impacted by the dialysis prescription, nutrition, and body access, as well as other factors, and each should not be looked at in isolation.

Transitioning from In-Centre to Home Hemodialysis

Wendy Esson, BA, BSW, BScN, CDE, CNeph(C), London, ON

The number of patients requiring renal replacement therapy is continuously increasing. Despite various treatment modalities offered, most patients are continuing to have their hemodialysis treatment at in-centre or satellite facilities. Despite positive testimonies from home hemodialysis patients regarding the benefits and increased quality of life experienced, studies indicate this option of treatment is on the decline in Canada (Visaya, 2010).

A question therefore arises—why are the patients not opting for home hemodialysis? Literature identifies the importance of chronic kidney disease patient education. However, only few studies focus on how to provide such education (Finelstein et al., 2008).

Within the London Health Science Centre, a small sample group of in-centre hemodiaysis unit patients who are considered good candidates for home hemodialysis will be interviewed/surveyed. The objective of this small study will be to identify the obstacles, self-care abilities and reasons that are preventing them from pursuing the option of home hemodialysis. We believe providing additional education on issues such as glycemic control, weight management, fluid control, and setting goals for positive health changes based on Social Learning Theory will further enhance self-management skills, health literacy and confidence of the patients. Monitoring of blood work, glycosylated hemoglobin (A1c), fluid gains, and weight management will be tracked to identify positive behavioural changes.

These findings could lead to improved self-care management and a successful transition to home hemodialysis training.

Implementation of New Anemia Management Protocol: Lessons Learned

Karen Devries, RN, CNeph(C), Julie Nhan, RN(EC), MN-NP, CNeph(C), Beryl Starke, RN, CNeph(C), Edmonton, AB

Nurse-led anemia management is not a new concept for the Northern Alberta Renal Program (NARP), as this was adopted more than 10 years ago. Since its infancy, there had been ongoing challenges and areas of ambiguity that often resulted in misinterpretation and additional consultations with the most responsible health care provider. With revised recommendations from Canadian Society of Nephrology (CSN), based on evidence-based practice and clinical trials, the Canadian Kidney Knowledge Translation and Generation Network (CANN-NET), in collaboration with CSN and Kidney Foundation of Canada, developed a nurse-led Anemia Management Protocol to improve anemia management in hemodialysis patients. This initiative aligns with NARP's work in reviewing and updating our existing protocol.

This presentation will review factors that led to this change, our implementation process, audit reviews and outcome measurements pre and post protocol, including cost-analysis, indices such as hemoglobin, iron levels and dosages of erythropoietin stimulating agents and iron used. Our hope is that the lessons learned in this process will benefit programs considering implementing a nurse-led anemia management protocol, or for programs considering updating their existing protocol.

Planning and Implementing Patient- and Family-Centred Team Rounds

Angela Andrews, RN, BSCN, Dennis Smith, RN(EC), MN, London, ON

The principles of patient- and family-centred care (PFCC) focus on treating patients and their families with dignity and respect, communicating and sharing information, and empowering patients and families. The London Health Sciences Centre Regional Renal Program has embraced the philosophy of PFCC in an effort to improve the patient experience. We have altered the delivery of health care by including the patient and family perspective throughout the program.

The purpose of this project is to create PFCC team rounds in a hemodialysis unit. Our objective is to collaborate with patients and families by inviting them to become team members in the decision-making processes regarding their care. By including the patient and family perspective, our aim is to foster empowerment and improve the overall experience within the renal program. With PFCC, patients and families can expect to experience more involvement and satisfaction with their care, more opportunities for education, and to be more knowledgeable about their care. Patients feel better supported because they can build quality relationships with the health care team, which may encourage them to select a home dialysis modality, to choose a fistula instead of a central venous device, or improve their ability to live with fluid and dietary restrictions.

The objective of the poster presentation is to outline the process of creating PFCC team rounds, and to identify the logistics involved. We will obtain qualitative data through patient experience and feedback on our process. This feedback will implement further changes to enhance the patient experience.

Attaining a New Height in Patient

Education with the Use of Standardization

Monique Moore, RN, CNeph(C), Kim Watkins, BScN, CNeph(C), Alana Carkner, RN, CNeph(C), Kathaleen Bijman, BScN, CNeph(C), Donna Vivarais, CNeph(C), Cornwall, ON

The goal of patient education is to improve patients' health behaviours and health status. In the chronic dialysis context, nurses have the challenge of presenting complex topics in understandable formats within short timeframes. Our nurses at the Ottawa Dialysis and Eastern Ontario Dialysis Clinics have always provided ongoing education to our patient population, but with inconsistencies in timing, formats and information. These dilemmas were due to the use of multiple information pamphlets, which could overwhelm the patient, variable teaching approaches, and inconsistencies in where the charting was done in our computer documentation system. Thus, our manager, clinical educator and team leaders assessed each issue and implemented a corrective action to each. First, we organized and standardized the education material using colourful pamphlets with current data and appropriate information for the patient. The information topics were separated into monthly themes to be presented on an established schedule using a rotating calendar. To standardize the consistency of the nurses' knowledge of the theme to be presented that month, our clinical educator submitted the upcoming education content via a computer program called Mindflash. Our educator also added screen shots into Mindflash of how and where to document the patient education session outcomes in our computer charting system. This poster presentation will depict the streamlined and unified format of our standardized education for the patient and the nurse, the systematic charting formats, and how we have made our clinical education "Reach New Heights".

Central Venous Catheter Dressing Change: Are there Implications?

Kylie Reinhardt, RN, BScN, Julie Nhan, RN(EC), MN-NP, CNeph(C), Edmonton, AB

For dialysis patients, their accesses are often referred to as their life lines. This is especially apparent in patients with hemodialysis central venous catheters (CVC), as these are often associated with increased risks of infections. Current practice in the Northern Alberta Renal Program (NARP) involves utilizing sterile technique for CVC dressing changes. However, recent evidence suggests this practice is no longer necessary, as it has not demonstrated decreased infectious complications. Based on an extensive literature review and alignment with other renal programs across Canada, NARP will be changing its practice from sterile to aseptic "non-touch" technique for CVC dressing changes.

This presentation will share the results of this practice change by discussing the implementation process and its associated learning/challenges. Outcome measurements such as cost analysis and CVC infection rates three months





prior and three months post implementation will also be analyzed. With health care constantly changing and increasing workload in a budget constraint environment, NARP is taking an innovative approach to maximize workflow efficiency, while having the benefits in economic savings. NARP wants to provide the highest quality of care for the hemodialysis patient in assuring the most effective and economically efficient procedures are being practised, without compromising safe, quality care.

Urgent Start Peritoneal Dialysis at London Health Sciences Centre

Carolyn Ingram, RN, BSc, CNeph(C), Michele Ivanouski, RN, CNeph(C), London, ON

At London Health Sciences Centre (LHSC), between 30–50% of patients start dialysis urgently or "sub-optimally" where they have started dialysis without any previous renal care, or have suffered an acute insult that has caused an underlying renal dysfunction to progress rapidly. Historically, 100% of these patients started hemodialysis (HD) with a central venous catheter (CVC), and are at risk for all the complications of CVC usage. Patients who start HD urgently may never consider treatment with peritoneal dialysis (PD).

LHSC has developed processes that facilitate people who start dialysis urgently the option of starting peritoneal dialysis without ever needing a central venous catheter.

For an urgent peritoneal dialysis start, many members of the team are involved in successful initiation from the urgent indication to start dialysis, the patient and family modality education, placement of the peritoneal dialysis catheter to successful PD treatments at home.

Urgent PD starts have risks of peri-catheter leaking, higher risk of peritonitis, and exit site infection. LHSC has had great success, with 50 patients having started PD urgently. We will describe the course of three patients' journeys, as well as outline the prevalence of leak and infections.

Optimizing Renal Care of the Frail Elderly in a Satellite Dialysis Unit

Kathleen Gerrior, RN, GNC(c), CNeph(C), Liza Pickles, BA, RN, CNeph(C), Nicole Florent, RN, BA, MPA, LLM, CNeph(C), Belleville, ON

One of the major objectives of the Ontario Renal Network (ORN) "Accountability to Patients" statement is to provide more local care for a greater proportion of patients. In this regard, patients in the Belleville catchment can be better served by relocating from the main renal unit (RU) at Kingston General Hospital (KGH) to the satellite Belleville Dialysis Unit (BLDU). Currently, patients begin hemodialysis treatments three times a week in the RU until they are completely assessed and stabilized. On an average weekly basis, this entails travelling 440 km, for 18 to 24 hours and six meals away from home. This is a substantial burden in terms of financial, physical and emotional commitments.

These challenges are even more significant for the elderly and frail patients. Either they experience these challenges through an acute condition or more slowly via the progression of their renal pathology. The purpose of this study is to evaluate these challenges and to initiate a dialogue on resolving these issues. Some factors considered in this study are: management and/or modification of dialysis parameters, safety issues, quality of life, financial resources, anxiety and depression. As a result of this study, recommendations are made with regards to potential improvements in the dialysis care of the elderly and frail patients.

Emergency Preparedness Pamphlet Guidelines for Dialysis Patients

Tracy Chambers, LPN, Berwick, NS, Colleen Wile, RN, BScN, CNeph(C), Carolyn Bartol, RN, BScN, CNeph(C), Rachael Blair, RN, BScN, CNeph(C), Halifax, NS

Purpose: Design and distribute an emergency pamphlet for patients receiving hemodialysis in hospital, satellite or home setting and for patients receiving peritoneal dialysis at home. Pamphlet contains critical information about what to do during severe weather, extended power outages, and other natural disasters. The purpose of this pamphlet is to enable patients to make informed decisions about managing their condition when this type of emergency prevents them from having their dialysis treatment.

Description: Emergency pamphlet containing description of emergencies, contact information, importance of keeping up-to-date contact information with clinic, precautions to take (adherence to diet/fluid restrictions, keeping prescriptions such as sodium polystyrene sulfonate filled), equipment information for home hemodialysis and peritoneal dialysis. The pamphlet also contains a frequently asked questions section. Nursing staff review the pamphlet with the dialysis patient and family when distributing, to assess for understanding and to receive feedback.

Evaluation/outcomes: The evaluation will be ongoing, as pamphlets are distributed to and reviewed with patients. Feedback from patients and staff will be reviewed post emergencies to evaluate effectiveness. To date, content from the pamphlet has been helpful for staff during snowstorm emergencies. Full evaluation of the emergency pamphlet will be completed in early spring 2015.

Implications for nephrology practice: Patients will be empowered to make informed decisions about managing their health care when emergencies prevent them from having dialysis treatment, fewer complications from missed treatments, such as hyperkalemia and fluid overload, increased safety for patients and decreased chances of damage to home dialysis equipment.

Dialysis Water Purification Performance and Maintenance with an Organic Scavenger Application *Donna Broley, BSc, DT, Jose Lloyd, EET DT, Orillia, ON*

The combined effects of high chlorine/chloramine levels and naturally occurring total organic carbon (TOC) levels found in municipal feed water has been found to decrease the life of carbon media used in the application of water purification for the sole use of water for dialysis. Employing the use of organic scavenger resin within a softener has been shown to increase the lifespan of the carbon media resulting in longer periods between exchanges, thus resulting in lower service costs.

The last two years have been spent validating the efficacy of the scavenger technology for the application of water purification in the dialysis setting for the in-centre setting, as well as its possible use in the home dialysis setting. To date, the areas of organic matter removal from the feed water have been monitored and validated. Additionally, it was determined that this technology actually removed chlorine and chloramines from the feed water thru weekly monitoring of chlorine levels pre and post scavenger tanks.

The next phase of validation of this relatively new technology in the dialysis field will focus on microbiological effects of a prolonged lifespan of the traditional carbon tanks, as well as membranes' performance of the reverse osmosis units.

The assessment of utilizing organic scavenger technology for dialysis has had a positive impact. As the evaluation is refined, it becomes evident that this application will serve to improve the delivery of pretreatment quality that will result in operational cost savings in both the hospital and home settings.

An Advanced Clinical Practice Fellowship: A Career Changing Opportunity

Linda Mills, RN, CNeph(C), Hamilton, ON

As a successful candidate of an Advanced Clinical Practice Fellowship (ACPF) through the Registered Nurses Association of Ontario (RNAO), I had the privilege of participating in a career-changing opportunity. This experience supported my acquisition of the knowledge and skills required to become an expert on the Best Practice Guideline: Facilitating Client Centred Learning. My goal was to become a leader and resource for nursing staff on the use of teach-back techniques in everyday patient care in the independent home dialysis program.

Using the knowledge and skills I acquired during my fellowship, and with the assistance of my mentoring team, I developed and presented three education sessions. The knowledge disseminated to the nursing team included an overview of the RNAO and the ACPF process. Subsequent presentations described the key elements of a successful patient-nurse encounter, relationship development, and the use of teach-back in the training and education of patients. The skill of teach-back ensures that health information is understood and is of value to the patient.

My accomplishments included:

- Patient and staff surveys
- Developing a tool to assess learning styles
- Creation of a "wordle" depicting words that describe a training nurse
- Completing a gap analysis
- Developing education material for both home programs (peritoneal and hemodialysis)
- Establishing supportive documentation for teach-back.

As an experienced nurse, this opportunity has re-energized my nursing practice. The involvement in the ACPF program has enhanced my leadership skills, which affords me the expertise to guide and coach staff on these same abilities. The development of documentation tools to support teach-back will ensure sustainability for the program.





New Patient Communication Tool

Michelle Masson, RN, CNeph(C), Carolyn Mack, RN, CNeph(C), London, ON

Our hemodialysis unit, which is located in London Health Sciences Centre, has experienced a significant amount of new starts; patients transitioning from chronic kidney disease to dialysis dependent in recent years. With this consistent influx of new patients we developed a "new patient communication tool". This checklist is currently being used in our unit and is in need of revision. This document promotes consistency of care and provides the episodic nurse direction to complete the necessary tasks. Our communication tool has proven to enhance patient experience and make the transition to dialysis easier. Our goal is to further improve this document by incorporating more home modality information and support to make informed decisions. Our unit is a starting point for many hemodialysis patients and, for some, there is a sense of reluctance to progress to a satellite unit. We are hoping to alleviate that stress with adequate information and preparation, which will be part of our new patient document. With a patient- and family-centred care focus, we plan to have initial discussions with patients and their significant others to determine their goals of care and expectations. We will have a follow-up meeting six to eight weeks after the start of dialysis to rate patient experience—have goals and expectations been realized, what can we improve on? This discussion will be a team approach with primary nurse, social worker, nurse practitioner, patient and family.

Providing Home Hemodialysis within a Regional Program's Diverse Patient Population

Donna Broley, BSc, DT, Sandra Hislop, RN, BScN, CNeph(C), Bill Moore, DT, Orillia, ON

Our home hemodialysis regional program for the Simcoe Muskoka area began in 2010 with our first patient successfully being sent home with a traditional water treatment and the 2008K@Home Fresenius dialysis machine.

As our program started to grow, it became evident that we had challenges and, in some cases, barriers that we could not overcome to help meet the infrastructure in homes and financial needs of patients wishing to be trained for home hemodialysis.

In the spring of 2014, we embarked on a trial with the NxStage System One and the accompanying PureFlow. This system has allowed us an alternative to traditional dialysis systems, which has made it possible for our regional program to reach out and provide home hemodialysis for patients who otherwise, for financial or infrastructure barriers, would only be able to have dialysis at our main site or in a satellite.

This poster explains our approach to decision-making with a multidisciplinary team to fit our patient's individual circumstances with the most optimum treatment options, and equipment selection. From the initial education of modality choice to training the patient with the best selected equipment, this approach has allowed our program to successfully provide home hemodialysis to a diverse patient population.

Documenting, Tracking and Auditing Hepatitis B Vaccinations in a Large In-Center Dialysis Unit *Mari Sarian, BScN, DESS, MScN, Montréal, QC*

Infection prevention and control measures in the dialysis setting include administering vaccines against hepatitis B, influenza and pneumococcal pneumonia. The hepatitis B vaccine is administered to susceptible patients according to a specific timeframe. The immunologic response needs to be monitored, and booster doses administered, as required.

Problems encountered in a 225-patient in-centre dialysis unit range from delayed or inappropriate vaccination, to not offering boosters.

These problems were worked on two levels: (1) improving the paper records that were kept in individual patient charts, and (2) implementing a centralized electronic data collection.

The hospital infectious diseases specialist was consulted to update our existing Hepatitis B Prevention and Surveillance Algorithm. Although this algorithm looks complex to the untrained eye, it provides on a single page, a record of the initial immune status, of the entire vaccination series, and the nature of the serologic response. The surveillance section allows to follow the patient for five consecutive years according to his/her new immune status. In-services were provided to all nurses. The centralized electronic data collection is used to request the specific follow-up serology tests. It allows statistical analysis such as determining the percentage of patients per type of immune status, or the efficacy of the vaccine. Most importantly, it allows the conduct of audits and to carry on quality improvement initiatives.

The successful application of this system is based on the close collaboration with our pharmacist, and the training of our nurses.

This system is also applied to the influenza and pneumococcal pneumonia vaccinations. Our algorithm and experience can be shared with nurses from other centres.

Clinical Improvements to Reduce Inpatient Nephrology Lengths of Stay

Jennifer Watson, BSc, BN, CNeph(C), Calgary, AB

In 2013, our inpatient nephrology/transplant unit began work to identify issues or factors that were resulting in greater than anticipated length of stay (LOS) and unplanned readmission rates. With the assistance of the Department of Medicine, the SISDoM project was created, its team members consisting of inpatient physicians, nursing, allied health and quality improvement coordinators. This team met and, after analysis of the entire patient encounter process, identified four selected areas of improvement that were considered barriers to prompt discharge: multidisciplinary round consistency, late discharge activities, delayed therapy activation, and documentation workload. The focus of this clinical improvement team (CIT) was to optimize patient flow and reduce inpatient occupancy to national target levels.

Over the past two years, the unit CIT has developed multiple strategies to address these issues. The primary focus was on the creation of multidisciplinary rounds hoping that successful implementation would have a waterfall effect and directly impact the other selected areas. Crucial to this success was physician engagement in order to focus rounds on anticipated date of discharge, barriers to discharge, and current care plans. Further plans have emphasized the relay of information to the bedside nurse, resident orientation, and patient discharge whiteboards. Due to the chronic nature of the renal population, it has been difficult to measure our success in LOS data analysis. Anecdotal reports from both nursing and physicians show a significant increase in satisfaction for discharge planning and communication/team functioning. Identification of Alternate Level of Care (ALC) patient status has also been noted to likely reduce LOS data. The unit CIT continues to meet quarterly to discuss LOS challenges, as well as unit improvement projects (i.e., medication reconciliation, VTE prophylaxis, etc.).

Comparative Study of Alteplase Cost and Usage Before and After Implementation of our New Alteplase Policy and Algorithm

Heidi Ziegler, RN, BScN, CNeph(C), Maria Diemert, RN, CNeph(C), Kitchener, ON

Our proposal is to study cost, number of line exchanges and overall usage based on the new criteria (including a new algorithm) that we will be implementing. We are going to full strength (2mg/2ml), implementing overfill of the lumen by 0.3mls and introducing a short and a long dwell.

We are starting in one of our satellite units (six beds) and keeping the study group smaller with tighter controls. The unit we will be studying is currently one of highest users and highest cost (per ratio) in our program. It will involve significant nursing education regarding the practice change and the change in documentation.

Our hope is with new nursing practice and the new algorithm we will start to see a decrease in our cost of Alteplase, as well as better CVC line outcomes for our patients.

Home Blood Pressure Assessment

Kim Watkins, RN, BScN, CNeph(C), Debra Potter, RN, CNeph(C), Alana Carkner, RN, CNeph(C), Pam Quirk, RN, Ottawa, ON

At our hemodialysis units, we do monthly continuous quality improvement rounds with our nephrologists. One of the items we look at is pre and post treatment blood pressures. If a patient shows up as an outlier for hypertension on this report, we initiate our Home Blood Pressure Assessment Protocol. The protocol was developed to assess if the hypertension is fluid related or if a change of hypertension medication is required.

The home blood pressure assessment protocol starts with an assessment of the patient's dry weight. This is done by means of a physical assessment by the nurse, as well as by using a bioimpedence device. If the assessment indicates the patient is "overhydrated" the patient's dry weight is decreased gradually over the next two weeks of treatment. If the assessment does not indicate "overhydration", the dry weight is maintained.





The patient is sent home with a home blood pressure monitor and a blood pressure record. The patient's interdialytic blood pressure is monitored for two weeks. They are to do their BP four times a day—breakfast, lunch, dinner and bedtime—for one week. At the end of the two weeks another assessment of the patient's dry weight is done by physical assessment and by the bioimpedence device. The information from the protocol is documented in a template. The nephrologist is flagged to read the note and will address the hypertension by further decreasing the patient's dry weight or by changing the patient's medication.

Dialysate Fluid Filters: Do They Really Work?

Sal Treesh, BMET, Andy Gottfried, CET, cdt, Maciek Michalski, BMET, Luke Zordrager, BMET, London, ON

Background: The qualities of dialysis fluid were classified by the International Organization for Standardization (ISO) into three levels: standard, ultrapure, and online prepared substitution fluid. Dialysate fluid filters, utilizing the process of controlled ultrafiltration, can be utilized to take standard dialysate fluid and filter it to produce the ultrapure and online prepared substitution fluid.

Dialysate fluid filters are designed to be capable of producing ultrapure dialysate fluid that can be validated to have logarithmic reduction ability for bacteria of at least 7 magnitudes and for endotoxin of 4 magnitudes. The integrity of the dialysate filter membrane also must be guaranteed through pressure testing during the installation and set-up of the hemodialysis systems before each dialysis treatment. **Objectives:** The aim of our study was to ensure that the fluids produced by dialysate filters meet the ISO standards. We also hoped to achieve a better understanding of each of the system's roles in the reduction of the microbiological contaminants in the final dialysate fluid and how to maintain this critical process to continuously increase the removal of microbiological contaminants and endotoxins from dialysate fluid.

Method: Samples of ultrapure dialysate fluid and substitute fluid were collected and colonized. Multiple samples were collected, taking in to consideration a multitude of variables, three dialysis units, and seven different water treatment systems, 110 hemodialysis machines and four central acid and bicarbonate mixing systems. A standard protocol was developed to collect samples before and after treatment was performed.

Results: An average of 80 dialysate samples was collected from HD machines each month for six months. Our experiences showed:

- Our results demonstrated that low levels of bacteria and endotoxin were exclusively linked to the use of the dialysate filters.
- Rapid availability of testing results of the fluid quality enables medical/technical staff to react quickly.
- Our dialysis centres became more aware of the fluid quality and its effects on dialysis outcome.
- Comprehensive testing and adhering to disinfection protocols offer the staff patient's confidence.
- Optimization of available technology to deliver better health outcome.

In accordance with our earlier study, our present results verified that if water treatment systems, central delivery systems were maintained to the ISO standards, the dialysate filters were capable of delivering and maintaining ultrapure dialysate.

Conclusion/application to practice: As a result of the validation process, the introduction of online priming at our program was successful, as we had clear objectives, the right support and "buy-in" from all concerned, combined with sound patient and staff education program.

NOTICE BOARD

- Ottawa Supper Clubs—contact Janet Graham, Nephrology Unit, Ottawa Hospital, Ottawa, jgraham@ottawahospital.on.ca
- September 16, 2015. Nephrology Health Care Professionals Day.
- September 26–29, 2015. EDTNA/ERCA: 44th Annual International Conference, Dresden, Germany. queries@edtnaerca. org
- October 22–24, 2015. CANNT 48th National Symposium, Reaching New Heights, Vancouver, British Columbia. Website: www.cannt.ca



Connect with CANNT!

Toll-free 1-877-720-2819 or local 519-652-6767



CANNT National Office, PO Box 10, 59 Millmanor Place, Delaware, ON NOL 1E0

519-652-5015



SHARON LAPOINTE Membership Coordinator sharon@cannt.ca



SUSAN MASON Website and Social Media susan@cannt.ca



Canadian-Association-Of-Nephrology-Nurses-And-Technologists





HEATHER REID National Administrator heather@cannt.ca

When medical devices fail: Lessons learned in a hemodialysis unit

By J. Matthew Phillips, Paula Mossop, Carolyn Bartol, and Barbara Hodgson

Copyright © 2015 Canadian Association of Nephrology Nurses and Technologists

ABSTRACT

Technology and medical equipment devices have become integrated in the delivery of health care. These technologies and devices can introduce new risks, either through user error or malfunction. When these incidents occur, it is important they are reported so that learning and improvements are possible. A just culture encourages reporting of incidents by not blaming individuals, but rather by seeking to understand incidents in relation to how they occurred because of the systems in place. These concepts are explored through a case study in a dialysis unit where a malfunction of a medical equipment device (central venous catheter) was identified. The process for addressing the issue is defined and includes reviewing applicable data, reporting incidents, and evaluating devices that malfunctioned. Finally, the role of the frontline health care professional is identified as an important stakeholder in identifying issues with technology and medical devices, reporting these incidents, and participating in the process that resolves the issues.

Key words: medical devices; incident reporting; patient safety

TECHNOLOGY AND HEALTH CARE

Technology in health care has evolved significantly over the past several hundred years with many innovations including the development of implantable devices, prosthetic limbs, advanced diagnostic tools, electronic health records, new surgical tools and techniques, remote care by telemedicine, and the use of mobile electronic devices for a number of purposes. As a result of these innovations, life expectancy has increased (Strulik & Vollmer, 2013) and many chronic conditions are now treatable. All of these technological advances have been designed to improve

ABOUT THE AUTHORS

J. Matthew Phillips, RN, BScN, MHS, Nephrology Quality Leader, Renal Program, Capital District Health Authority, Halifax, NS

Paula Mossop, RN, CNephC, Vascular Access Nurse, Renal Program, Capital District Health Authority, Halifax, NS

Carolyn Bartol, RN, BScN, CNephC, Clinical Nurse Educator, Renal Program, Capital District Health Authority, Halifax, NS

Barbara Hodgson, RN, Diagnostic Imaging/Interventional Radiology, Capital District Health Authority, Halifax, NS

Submitted for publication: December 22, 2014

Accepted for publication in revised form: February 12, 2015

patient safety, streamline work processes, and improve the quality and outcomes of health care delivery (Thimbleby, 2013). The health care practitioner is immersed in an environment where technology plays a significant role in the assessment and treatment of conditions and disease processes (O'Connor et al., 2012). The purpose of this case study is to review a scenario where medical equipment malfunctioned with potential patient safety implications and describe the role of frontline staff in identifying and reporting incidents to promote patient safety.

Medical equipment and dialysis

Since the first dialysis treatment in 1945 (Jonsen, 2007), there have been significant technological advancements in regard to vascular access, particularly central venous catheters (CVC), dialysis machines, and the artificial kidney (Bednar & Latham, 2014; Ding, 2014; Parker, Hakim, Nissenson, Steinman, & Glassock, 2010; Thomas-Hawkins, 2014). Hemodialysis (HD) machines now have advanced software, networking capabilities, and several alarm and safety features (Parker, 2000). Water systems are used to de-ionize water and ultraviolet lights are used to treat water for the HD treatments (Layman-Amato, Curtis, & Payne, 2013).

Ultimately, the overall effectiveness and safety of technology in health care depends on human users and the technology performing appropriately. Any technology can potentially have a negative impact on quality and patient safety if it is designed or used improperly (Amoore, 2003; McGonigle & Mastrian, 2012). These negative impacts need to be identified and reported so that they can be resolved.

REPORTING AND PATIENT SAFETY

Historically, individuals have been held accountable for incidents involving patient safety (Barnsteiner & Disch, 2012). This individualistic focus resulted in blame and punishment and, not surprisingly, incidents have been under-reported (Frank-Cooper, 2014), or only reported when they could not be concealed (Barnsteiner & Disch, 2012). Other reasons cited for not reporting incidents included a lack of organizational support, belief in a lack of usefulness, and the perception that reporting takes too much time and effort (Barnsteiner & Disch, 2012; Kousgaard, Joensen & Thorsen, 2012; Wu, Boyle, Wallace, & Mazor, 2013). Brady et al. (2009) found that the rate of incidents that occur in hospitalized patients ranges from 3.2% to 16.6% and that almost all incidents are related to a number of contributory system factors. A shift in health care culture has occurred, as organizations are beginning

to acknowledge that incidents result from multiple system factors, therefore, offering opportunities for learning and improvement (Boakes, 2009).

Just culture

While organizational system factors need to be evaluated when incidents occur, human factors usually influence incidents. Human behaviour related to incidents is separated into three categories: human error; at-risk behaviour; and reckless behaviour (Barnsteiner & Disch, 2012; Frank-Cooper, 2014; McGonigle & Mastrian, 2012). Incidents involving human error are unintentional and unpredictable. Incidents involving high-risk behaviours relate to unsafe habits, possibly negligence, or carelessness. Reckless behaviour includes a conscious decision to disregard a known risk, with the knowledge that the action or lack of action will result in an adverse outcome (Barnsteiner & Disch, 2012; Frank-Cooper, 2014; McGonigle & Mastrian, 2012). Brady et al. (2009) indicates that incidents are rarely the result of carelessness or reckless actions.

Organizations have learned that a completely blameless culture of incident reporting and reviewing does not address reckless behaviour (McGonigle & Mastrian, 2012). On the contrary, in a just culture, there is a balance between learning from mistakes and the need for disciplinary action when reckless behaviour is evident (Frank-Cooper, 2014; McGonigle & Mastrian, 2012). When at-risk behaviour is identified as a contributing factor for incidents, reviews focus on finding and addressing systems that have led people to participate in unsafe actions (Miranda & Olexa, 2013).

Learning from incidents

Goozner (2014) suggests that organizations with higher levels of reporting could end up with the highest error rates, whereas less-vigilant organizations could have thousands of unreported preventable deaths. Reporting incidents is important, but reporting on its own will not increase safety. Health care professionals and organizations must learn from mistakes and correct systems and patterns of behaviour (Amoore, 2003; Miranda & Olexa, 2013). Nurses and other frontline staff are in a unique position to identify, report, and review incidents because of their proximity to the delivery of care. Often, by the time potential incidents are about to occur, all of the systems in place have failed, and the frontline staff are the 'last line of defence' before the incident occurs (Boakes, 2009).

MEDICAL DEVICE MALFUNCTION IN THE HEMODIALYSIS UNIT

While not the preferred type of vascular access for HD, the central venous catheter (CVC) is a common type of vascular access for HD treatments. There are two basic types of CVC used for HD: tunneled and non-tunneled. Nontunneled CVCs are often used for acute HD and are not meant for long-term access. Tunneled CVCs can be used for long-term HD and have a synthetic 'cuff' that is bonded to the CVC (see Figure 1). The subcutaneous tissue fibroses to this cuff, and acts as an anchor to keep the CVC in place, as well as a barrier that prevents infection.



Figure 1: 'Normal' CVC with the cuff adhered to the CVC, and fibrosed to the subcutaneous tissue

Over an 18-month period, a regional hemodialysis unit identified seven central venous catheters (CVCs) that migrated out of patients without the cuff adhered to the catheter (i.e., remained adhered inside the patient, but unattached from the catheter). In two of the instances identified, the CVC fell out of the patient while the patient was not in the dialysis unit. While line migration can be a common reason to exchange CVCs, it usually occurs because the subcutaneous tissue has failed to adhere to the cuff (See Figure 2). In every instance, the patient was required to undergo a CVC exchange in Interventional Radiology (IR) to replace the migrating CVC. In addition to requiring the additional IR procedure, these patients were at higher risk to experience adverse outcomes including air embolism, bleeding, and infection.



Figure 2: CVC migration due to non-adherence of subcutaneous tissue to cuff

Addressing the problem

Due to the time elapsed between incidents, it was not initially evident that there was an issue with the CVC product. Additionally, this was not an issue that was experienced with every CVC. When the incident was identified as a recurring incident, the renal program initiated a quality review. The quality review included data collection to determine the type of CVC involved, the radiologist who inserted the CVC, length of time in situ, and the lot number of the CVC. This initial review did not reveal any commonalities. It was discovered, however, that not all incidents had been reported through the organization's patient safety reporting system. In these cases, incidents were entered retroactively.

The patient safety reporting system used in this setting is electronic and anonymous, is linked to the hospital's patient information database, and requires identification of event category, event type and impact classification.

These reported incidents stimulated follow-up discussions with the organization's risk management department. Risk management subsequently initiated reporting of the problematic CVCs to Health Canada's Sentinel Device Reporting Program. Additionally, the renal program initiated dialogue with the vendor of the CVC to raise awareness of the issue. At the request of the vendor, product complaint forms were completed.

Key relationships

Relationships between the various stakeholders were integral to understanding these incidents. Having pre-existing relationships between the renal program and IR facilitated communication when incidents occurred. This communication also included dialogue between leadership in both areas about whether the current supply of CVCs was safe to insert into patients and what action, if any, needed to be taken. It was decided and agreed upon by IR and the renal leadership that more information was required, so biomedical engineering (biomed) was asked to examine a problematic CVC.

Biomedical evaluation

When another similar incident occurred, the CVC was saved for evaluation by the organization's biomed department. This required significant coordination between the renal program and IR, as any exchanged CVCs were routinely discarded. The biomed evaluation discovered a complete separation of the cuff from the CVC (see Figure 3). The CVC was then sent to the vendor for their own internal quality assurance evaluation along with findings from the biomed evaluation. The vendor responded and confirmed that there was separation of the cuff from the CVC.

Key learnings: Reporting improves safety

From the quality review and communications with the vendor, Health Canada, and the organization's risk management department, the renal program learned that the vendor had been aware of the problem with the medical device, and the CVC product had gone under process manufacturing improvements. The vendor provided the date



Figure 3: The discoloured area of the CVC where the cuff should be

these improvements were implemented. Using this date, the renal program and IR were able to identify and remove 17 CVCs from stock that had been manufactured prior to the manufacturing improvement. The vendor agreed to exchange these CVCs with CVCs manufactured after the process redesign.

As there are patients who still use CVCs that were inserted prior to this manufacturing improvement, the dialysis program is still experiencing some CVCs that migrate out without the cuff adhered to the catheter. All incidents continue to be reported. The dialysis program is quickly able to check the date the CVC was manufactured to determine if this is the same or different problem. At a national level, there was no recall of the product because the amount of submitted reports to both Health Canada and the vendor were within an acceptable level of device failure. Of the 10 reports to Health Canada, six of them were received from the renal program being discussed. While there are many renal programs in the country, the authors speculate that this medical equipment device issue was grossly under-reported.

ROLE OF THE FRONTLINE HEALTH CARE PROFESSIONAL IN REPORTING

Health care professionals are humans and humans make errors (Amoore, 2003; Barnsteiner & Disch, 2012; Frank-Cooper, 2014). Because of their proximity to the delivery of care, nurses and other health care professionals are in a position to identify and stop incidents from occurring, or to recognize when incidents occurred (Boakes, 2009; Brady et al., 2009). In a just culture, individuals are encouraged and acknowledged for providing safety-related information so that learning can occur and lead to system improvements that subsequently reduce the risk of incidents (Barnsteiner & Disch, 2012; Thomas-Hawkins, 2014). In addition, in a just culture, the system acknowledges that most errors are not the fault of individual people, but of deficiencies in the system. Because of their intricate knowledge and understanding of the delivery of care at the bedside, frontline nurses and other frontline health care professionals can provide insight into what these deficiencies are, as well as

how to address them (Barnsteiner & Disch, 2012; Boakes, 2009; Frank-Cooper, 2014).

In regards to medical equipment devices, nurses and other frontline health care professionals need to be proficient with the technology and the medical devices used in the provision of care. They need to recognize and report when these technologies or devices do not perform as designed. They also need to understand that user error does not warrant blame, and that reporting incidents can lead to systems-level learning and change. Finally, it is important to recognize that improvements will not occur by simply labelling incidents as either device malfunction or user error. Frontline health care professionals need to be a part of the incident review that identifies all factors related to the incident and offer practical solutions to the identified barriers to patient safety.

CONCLUSION

This case study has described the current technologically complex health care environment where devices can both improve health care delivery and introduce new risks. In

REFERENCES

- Amoore, J. (2003). Learning from adverse events involving medical devices. Nursing Standard, 17(20), 41–46.
- Barnsteiner, J., & Disch, J. (2012). A just culture for nurses and nursing students. *The Nursing Clinics of North America*, 47(3), 407–416.
- Bednar, B., & Latham, C. (2014). The changing landscape of the nephrology nursing care environment in the United States over the last 45 years. *Nephrology Nursing Journal*, 41(2), 183–190, 199.
- Boakes, E. (2009). Using foresight in safe nursing care. *Journal of* Nursing Management, 17, 212–217.
- Brady, A., Redmond, R., Curtis, E., Fleming, S., Keenan, P., Malone, A., & Sheerin, F. (2009). Adverse events in healthcare: A literature review. *Journal of Nursing Management*, 17(2), 155–164.
- Ding, D. (2014). Changes in dialysis in the past 30 years: The experience of a nephrology nurse and patient. *Nephrology Nursing Journal*, 41(2), 209–214.
- Frank-Cooper, M. (2014). The justice behind a just culture. *Nephrology Nursing Journal*, 41(1), 87–88.
- Goozner, M. (2014). Better reporting: The next step in reducing patient harm. *Modern Healthcare*, 44(24), 28.
- Jonsen, A. (2007). The god squad and the origins of transplantation and ethics policy. *Journal of Law, Medicine, & Ethics,* 35(2), 238–240.
- Kousgaard, M., Joensen, A., & Thorsen, T. (2012). Reasons for not reporting patient safety incidents in general practice: A qualitative study. *Scandinavian Journal of Primary Health Care*, 30, 199–205.
- Layman-Amato, R., Curtis, J., & Payne, G. (2013). Water treatment for hemodialysis: An update. *Nephrology Nursing Journal*, 40(5), 383–405.

relation to medical equipment device issues, malfunctions can be either the result of user error or as a result of the technology not performing as it was designed. In either case, reporting these incidents identifies that there is an issue that needs to be addressed. In a just culture, the goal of reviewing incidents is to learn from them, so that systems can be identified and addressed to improve patient safety. In cases where the cause of the incidents is a blatant disregard for following established safety processes, individuals are held accountable for their reckless behaviour.

Hemodialysis units are prime examples of areas in health care where complex medical technology is integrated with the delivery of care. Frontline health care professionals, because of their exposure to and use of technology and medical equipment, are required to identify incidents where medical devices or equipment are not functioning as designed, or when system issues may lead to user error. By reporting these incidents and following up in the review of incidents, frontline health care professionals are contributing to an environment that promotes patient safety.

- McGonigle, D., & Mastrian, K. (2012). Nursing informatics and the foundation of knowledge (2nd ed.). Burlington, MA: Jones & Bartlett Learning.
- Miranda, S., & Olexa, G. (2013). Creating a just culture: Recalibrating our culture of patient safety. *Pennsylvania Nurse*, 4–9.
- O'Connor, M., O'Brien, A., Bloomer, M., Morphett, J., Peters, L., Hall, H., Parry, A., ... Munro, I. (2012). The environment of inpatient healthcare delivery and its influence on the outcome of care. *Health Environments Research & Design, Journal* 6(1), 104–116.
- Parker, T., Hakim, R., Nissenson, A., Steinman, T., & Glassock, R. (2010). Dialysis at crossroads: 50 years later. *Clinical Journal* of the American Society of Nephrologists, 6(2), 457–461.
- Parker, T. (2000). Technical advances in hemodialysis therapy. Seminars in Dialysis, 13(6), 372–377.
- Strulik, H., & Vollmer, S. (2013). Long-run trends of human aging and longevity. *Journal of Population Economics*, 26(4), 1030–1323.
- Thimbleby, H. (2013). Technology and the future of healthcare. Journal of Public Health Research, 2(28), 160–167.
- Thomas-Hawkins, C. (2014). Culture of patient safety in dialysis care. *Renal Society of Australasia*, *10*(2), 89–90.
- Wu, A., Boyle, D., Wallace, G., & Mazor, K. (2013). Disclosure of adverse events in the United States and Canada: An update and a proposed framework for improvement. *Journal of Public Health Research*, 2(32), 186–192.

Delusional parasitosis in patients on dialysis

By Jacqui Herbert, Karen Cameron, and Marisa Battistella

Copyright © 2015 Canadian Association of Nephrology Nurses and Technologists

OBJECTIVES

After reading this article, the reader will be able to:

- 1. Define delusional parasitosis (DP), its pathophysiology, presentation, diagnosis, and epidemiology.
- 2. Describe DP in the dialysis population.
- 3. Discuss the treatment approach to DP including pharmacological interventions.

INTRODUCTION

Delusional parasitosis (DP), also known as Ekbom's Syndrome, is a psychiatric disorder in which patients maintain a fixed false belief that they are infested with parasites, other organisms, or materials. It may be primary, meaning that the delusion of parasitic infection occurs independently of any medical condition; or it may be secondary, wherein the delusion of parasitosis occurs secondary to another psychiatric disorder or medical illness, i.e. it is a symptom rather than disorder (Heller et al., 2013). Secondary causes of DP include schizophrenia, substance-related psychosis, vitamin B12 deficiency, diabetes, depression, and others (Freudenmann & Lepping, 2009; Levin & Gieler, 2013). Using this definition, DP in the dialysis population can be categorized as secondary to a general medical condition causing pruritus, i.e., renal failure (Freudenmann & Lepping, 2009; Hinkle, 2010).

This article aims to provide a brief overview of DP, specifically in the dialysis population. Treatment approach and pharmacologic alternatives are discussed.

ABOUT THE AUTHORS

Jacqui Herbert, BSc Phm, Pharmacy Resident, University Health Network, Toronto, ON

Karen Cameron, BSc Phm, ACPR, CGP, Education Coordinator, Pharmacy Department, University Health Network, Assistant Professor, Leslie Dan Faculty of Pharmacy, University of Toronto, Toronto, ON

Marisa Battistella, BSc Phm, Pharm D, ACPR, Pharmacy Clinician Scientist, Assistant Professor, Leslie Dan Faculty of Pharmacy, University of Toronto, Clinical Pharmacist-Nephrology, University Health Network, Toronto, ON

Email: marisa.battistella@uhn.ca

PRESENTATION AND DIAGNOSIS

Presentation may vary between patients, but a commonality among all patients is the belief that they are infested with pathogens. Despite the name "parasitosis", patients may believe they are infested with any number of pathogens, including animate objects, such as parasites, insects or worms, or inanimate objects, such as fibres or hairs (Heller et al., 2013). Published literature describes patients with abnormal cutaneous symptoms, such as perceived parasites crawling across their skin (a sensation known as formication), burrowing underneath their skin, stinging or biting sensations, and marked pruritus (Heller et al., 2013; Levin & Gieler, 2013).

According to a comprehensive review published by Freudenmann and Lepping (2009), these two complementary criteria must be met for the diagnosis DP: the conviction of infestation without any medical evidence of a true infestation, and, abnormal cutaneous symptoms.

As a result of their delusions, patients often exhibit self-destructive behaviours such as using their fingernails, tweezers, or exfoliants on "infested" body areas in an attempt to remove the pathogens. Commonly, this will lead to excoriations, ulcerations, erosions, hair loss, dermatitis and, in some cases, serious secondary infections. Patients will often attempt to get rid of the pathogen using antiparasitic agents or disinfectants, hiring exterminators or, in some extreme cases, moving to a different home (Heller et al., 2013).

Interestingly, anywhere between 25 and 75 per cent of patients will present to their dermatologist or care provider with "evidence" of the perceived infection by bringing in "samples" as a way to corroborate their delusion. This is known as the "Specimen Sign" (previously known as the "Matchbox Sign"). These samples may contain hair, garment fibres, pieces of skin, or insects stored in small bags or containers (Heller et al., 2013).

Prevalence

DP is a rare disorder. According to a meta-analysis, the prevalence was found to be 5.58 cases per one million persons in the hospital and 83.23 cases per million in the private practice setting (Trabert, 1995). As patients are primarily seen by dermatologists, its prevalence may be underestimated in the psychiatric literature (Freudenmann & Lepping, 2009). The prevalence of DP in the dialysis patient population is not known.

Population

Across the general population, it has been reported that females are two times more likely to experience the disorder than males across their life span (Levin & Gieler, 2013). Age is also an important factor. Prior to age 50, female-to-male incidence is identical, and beyond age 50, females are 2.5 times more likely to be affected by DP (Heller et al., 2013). There is a bimodal age distribution, with peak prevalence in patients 20-30 years old and in patients older than 50 years old (Wenning, Leigh, Catalano, & Catalano, 2003). Furthermore, 8-12 per cent of patients with DP have a close contact that shares their symptoms (Heller et al., 2013). DP is not specific to any race or culture, but is more prevalent in patients of lower socioeconomic status (Wenning et al., 2003).

Pathogenesis

There are two major theories for the pathogenesis of DP, as described by Levin and Gieler (2013). The first is that the patient's pruritus (or perception of pruritus) leads to a fixed false belief about the origin of the pruritus, i.e. that it is an infestation. The second theory is that the patient is primarily delusional, which causes the patient to perceive feelings associated with the delusion such as pruritus, biting, and stinging.

Pathogenesis in dialysis patients

It is known that pruritus is a common symptom in patients undergoing dialysis, and has been reported to occur in more than 40 per cent of patients (Mettang & Kremer, 2015). The pathogenesis of uremic pruritus, however, is poorly understood. Many potential mechanisms have been discussed and studied, however, a causal relationship between these proposed mechanisms and pruritus has never been established (Mettang & Kremer, 2015).

In rare instances, patients who experience pruritus in the dialysis population will have their symptoms manifest as DP. It remains unknown the degree to which uremic pruritus contributes to the pathogenesis of DP in the dialysis patient population, and why certain patients with pruritus develop DP while the vast majority do not. It should also be noted that DP is not limited to the dialysis population.

TREATMENT

Treatment for patients with DP is highly challenging. Patients will often seek the medical advice of dermatologists, where the dermatologist will review the case and ensure that no parasites, in fact, exist. Once this determination has been made, it is more appropriate for the patient to seek medical attention from a psychiatrist. Patients, however, can be quite resistant to psychiatric referrals (Boggild et al., 2010; Freudenmann & Lepping, 2009; Hinkle, 2010). It remains an area of controversy as to whether dermatologists should prescribe medications for a primarily psychiatric disorder.

The general treatment approach to patients with DP, as described by Levin and Gieler (2013), is a three-step process involving the establishment of a therapeutic alliance; performance of a thorough history and physical exam; and initiation and maintenance of pharmacologic therapy.

Establish therapeutic alliance

This first step is paramount when managing patients with DP. Clinicians should be non-judgmental in their approach in an effort to establish rapport with patients. Clinicians should acknowledge that the patient's symptoms are real, but it is important to neither confirm the patient's delusion nor antagonize the patient by confronting their delusion as a psychotic disorder (Levin & Gieler, 2013). It is important to remember that patients have often been to numerous physicians, tried numerous treatments unsuccessfully, and have been given varying opinions from medical professionals. These numerous negative experiences can result in patients being skeptical of medical professionals, so building an alliance with the patient requires patience (Levin & Gieler, 2013; Schairer, Schairer, & Friedman, 2012). Some clinicians find it most beneficial to establish a common goal with their patients, i.e. resolution of the patient's symptoms.

History and physical exam

Patient complaints should be taken seriously and a physical exam is an important step in the treatment of these patients to rule out a true infestation (Harima et al., 1991). Furthermore, patients with DP often present with a component of contact dermatitis, skin excoriations or ulcerations, or secondary infections (Levin & Gieler, 2013). Because of these symptoms, performance of a full body skin examination is prudent. Additionally, certain laboratory tests may be performed to rule out secondary causes of DP. These may include, but are not limited to: CBC with differential, serum electrolytes, thyroid function tests, serum calcium, blood glucose, vitamin B12, and urinalysis (Levin & Gieler, 2013).

A best possible medication history (BPMH) should be reviewed by a pharmacist to determine if there is a possibility of medication-induced psychotic symptoms. Medications that may contribute to these symptoms include, but are not limited to: dopaminergic agents such as levodopa or ropinirole, amphetamines, corticosteroids, interferon, and certain substances of abuse such as illicit amphetamines or cocaine (Freudenmann & Lepping, 2009; Levin & Gieler, 2013).

Pharmacologic therapy

Freudenmann and Lepping (2009) recommend treatment of the underlying disease, as well as antipsychotic treatment in cases of DP secondary to a medical condition. The following review will focus on treatment of DP with antipsychotics. There are no randomized control trials in publication to guide antipsychotic treatment. A systematic review of case reports and observational trials found that both typical and atypical antipsychotics were effective in the majority of patients, and that remission rates did not differ significantly between typical and atypical antipsychotics (Lepping, Russell, & Freudenmann, 2007). Patients with DP may respond to antipsychotics at lower doses than patients with other psychotic disorders, so it is generally recommended to initiate at a low dose and gradually increase to arrive at the lowest effective daily dose (Freudenmann & Lepping, 2009).

Considering the dialysis population specifically, it is known that antipsychotics are lipophilic compounds and, thus, not dialyzable (Rothschild, 2010). In general, most antipsychotics can be used safely in dialysis patients without any dose adjustments. However, studies in this population are limited.

Antipsychotics can be broken down into two classes: the first generation (typicals), and the second generation (atypicals), which differ in their receptor activity. First-generation antipsychotics, such as haloperidol, are more likely to induce extrapyramidal symptoms (EPS) such as rigidity, bradykinesia, tremor, and dyskinesia. Second-generation antipsychotics, such as quetiapine and risperidone, have a lower risk of EPS but an increased risk of metabolic adverse effects such as weight gain, diabetes, and hyperlipidemia. Aripiprazole is a second-generation antipsychotic with a unique mechanism of action and, therefore, has a distinct side effect profile including akathisia (restlessness), headache, asthenia (weakness), and agitation (Heller et al., 2013).

Because there is a paucity of evidence comparing the efficacy of different antipsychotics for DP, therapy can be

chosen based on side-effect profile and what is most suitable for the particular patient. It should also be noted that in some case reports, patients failed on one antipsychotic but were successful with another.

Cases of DP have been reported in the dialysis population, though it has not been well-characterized. Table 1 displays a compilation of published case reports found via a literature search to identify cases of DP in dialysis and its treatment.

Five out of six patients in these cases were treated successfully with atypical antipsychotics, and one was treated successfully with a typical antipsychotic, haloperidol. However, there is almost certainly publication bias, i.e. clinicians are more likely to publish cases wherein treatment of DP was successful, which makes coming to any firm conclusions about treatment in dialysis patients difficult. It is also challenging to identify effective treatment dose due to variability in the case reports, as well as unclear length of follow-up, definition of cure or response to medication, and time to response.

Treatment duration is also a matter of contention. Heller et al. (2013) recommend continuing treatment for at least

Table 1. Summary of case reports of DP in patients on dialysis					
Author, Year	Patient	Antipsychotic	Dose	Effectiveness	Comments
Szepietowski, Reich, & Pacan 2004	60 year-old male HD patient	Risperidone	2 mg po daily	Delusions disappeared after 3 weeks	
Kaiser & Maqsood, 2005	67 year-old female HD patient	Olanzapine	5 mg po daily	"Very good response to treatment"	
Carpiniello, Pinna, & Tuveri, 2011	72 year-old male HD patient	Aripiprazole	10 mg po daily, then ↑ to 15 mg po daily after 2 weeks	Clinical picture significantly improved after 4 weeks	Risperidone was trialed first (starting at 1 mg and ↑ to 2 mg) with minimal clinical improvement
Duarte, Choi, & Li, 2011	75 year-old female PD patient	Aripiprazole	7.5 mg po daily, later ↑ to 10 mg then 15 mg po daily	Improved significantly after 2 months	Article in Portuguese; abstract available in English
Tzeng & Chiang, 2010	83 year-old male HD patient	Aripiprazole	5 mg po daily	Effective but adherence an issue	
Sharma, Bader, & Kline 2012	63 year-old male HD patient	Haloperidol	"low dose" bid	Confusions and delusions subsided after 4 days	Patient's diazepam was also discontinued

HD = hemodialysis, PD = peritoneal dialysis

three months once an effective dose has been achieved. It is prudent to determine treatment duration on a case-bycase basis. When an antipsychotic is discontinued, it should be tapered gradually over a period of weeks to months. If symptoms recur when a patient is being tapered, the antipsychotic should be re-initiated at the lowest previous dose where no symptoms occurred. An attempt to taper again may be made at the clinician's and patient's discretion. Relapses are common and some patients may require prolonged therapy to avoid relapse (Freudenmann & Lepping, 2009; Lyell, 1983).

It seems reasonable to suspect that successful treatment of the patient's pruritus may help to ameliorate their symptoms of DP. However, there is no published evidence of this. The discussion of treatment options for uremic pruritus is beyond the scope of this article, but it is an important adjunct in treating dialysis patients with DP. Further, while patients should be referred to psychiatry for management

REFERENCES

- Boggild, A.K., Nicks, B.A., Yen, L., Van Voorhis, W., McMullen, R., Buckner, F.S., & Liles, W.C. (2010). Delusional parasitosis: Six-year experience with 23 consecutive cases at an academic medical center. *International Journal of Infectious Diseases*, 14(4), e317–321.
- Carpiniello, B., Pinna, F., & Tuveri, R. (2011). Delusional infestation in a patient with renal failure, metabolic syndrome, and chronic cerebrovascular disease treated with aripiprazole: A case report. *Case Reports in Medicine, 2011*. doi:10.1155/2011/103652
- Duarte, C., Choi, K.M., & Li, C.L. (2011). Delusional parasitosis associated with dialysis treated with aripiprazole. Acta Médica Portuguesa, 24(3), 457-462.
- Freudenmann, R.W., & Lepping, P. (2009). Delusional infestation. Clinical Microbiology Reviews, 22(4), 690–732.
- Harima, M., Izeki, T., Nishio, S., Kishiguchi, S., Yasumoto, R., Wada, S., Maekawa, M. (1991). The case of a peritoneal dialysis patient whose diagnosis of scabies was delayed owing to parasite delusion. *Journal of Japanese Society for Dialysis Therapy*, 24(12), 1571–1574.
- Heller, M.M., Wong, J.W., Lee, E.S., Ladizinski, B., Grau, M., Howard, J.L., ... Murase, J.E. (2013). Delusional infestations: Clinical presentation, diagnosis and treatment. *International Journal of Dermatology*, 52(7), 775–783.
- Hinkle, N.C. (2010). Ekbom syndrome: The challenge of "Invisible Bug" infestations. Annual Review of Entymology, 55, 77–94.
- Kaiser, F., & Maqsood, H. (2005). Ekbom's syndrome and renal dialysis: Case report. *Rawal Medical Journal*, 30(2), 94–95.
- Lepping, P., Russell, I., & Freudenmann, R.W. (2007). Antipsychotic treatment of primary delusional parasitosis. *British Journal of Psychiatry*, 191, 198–205.

of their primary disorder, dermatology may also remain involved, as the patient often has skin excoriations, dermatitis, or secondary infections that require treatment (Levin & Gieler, 2013).

CONCLUSION

DP is a rare manifestation of pruritus in the dialysis patient population. Establishing a therapeutic alliance with patients as clinicians is vital in order to improve adherence to treatment and positive patient outcomes. The pharmacologic therapy of choice is an antipsychotic medication, though there is little evidence to support the use of any one agent over another. Risperidone, aripiprazole, haloperidol, and olanzapine have all been used with success in case reports of dialysis patients with DP. More research is required in this area to further characterize DP in the dialysis population, as well as to guide antipsychotic therapy.

- Levin, E.C., & Gieler, U. (2013). Delusions of Parasitosis. *Seminars in Cutaneous Medicine and Surgery*, 32(2), 73–77.
- Lyell, A. (1983). The Michelson lecture. Delusions of parasitosis. British Journal of Dermatology, 108(4), 485–499.
- Mettang, T., & Kremer, A.E. (2015). Uremic pruritus. *Kidney International*, 87, 685–691; doi:10.1038/ki.2013.454
- Rothschild, A.J. (Ed.). (2010). *The evidence-based guide to antipsychotic medications*. Washington, DC: American Psychiatric Press.
- Schairer, D., Schairer, L., & Friedman, A. (2012). Psychology and psychiatry in the dermatologist's office: An approach to delusions of parasitosis. *Journal of Drugs in Dermatology*, 11(4), 543–545.
- Sharma, T.R., Bader, G.M., & Kline, D.B. (2012). "Holes in My Head": A case of primary delusional parasitosis in a patient with end-stage renal disease. *The Primary Care Companion for CNS Disorders*, 14(3), PCC.11|01229. doi:10.4088/ PCC.11101229
- Szepietowski, J.C., Reich, A., & Pacan, P. (2004). Psychodermatoses in hemodialysis patients. *Dermatology*, 209(4), 344–345.
- Trabert, W. (1995). 100 years of delusional parasitosis. *Psychopathology*, 28(5), 238-246.
- Tzeng, N.S., & Chiang, C.P. (2010). Delusional parasitosis in a patient with brain atrophy and renal failure treated with aripiprazole: Case report. *Progress in Neuro-Psychopharmacology & Biological Psychiatry*, 34(6), 1148–1149.
- Wenning, M.T., Leigh, E.D., Catalano, G., & Catalano, M.C. (2003). Atypical antipsychotics in the treatment of delusional parasitosis. Annals of Clinical Psychiatry, 15(3–4), 233–239.

CONTINUING EDUCATION STUDY QUESTIONS

CONTACT HOUR: 2.0 HRS

Delusional parasitosis in patients on dialysis

By Jacqui Herbert, Karen Cameron, and Marisa Battistella

Copyright © 2015 Canadian Association of Nephrology Nurses and Technologists

- 1. Which atypical antipsychotic has a unique mechanism of action giving it a distinct side effect profile?
 - a) risperidone
 - b) quetiapine
 - c) aripiprazole
 - d) olanzapine
- 2. Which atypical antipsychotic has been used most commonly in published case reports in patients on dialysis for treatment of DP?
 - a) risperidone
 - b) quetiapine
 - c) aripiprazole
 - d) olanzapine
- 3. To be diagnosed with DP, a patient must believe they are infested with a pathogen without evidence of a true infestation PLUS:
 - a) demonstrate the "Specimen Sign"
 - b) have abnormal cutaneous symptoms
 - c) have an underlying psychiatric or medical disorder predisposing them to DP
 - d) exhibit self-destructive behaviours
- 4. What is the most important first step in treating a patient with DP?
 - a) establish therapeutic rapportb) prescribe antipsychotic medication
 - c) control the underlying pruritus
 - d) perform a physical exam

- 5. Besides patients on dialysis, delusional parasitosis may occur secondary to:
 - a) vitamin deficiencies
 - b) schizophrenia or other psychiatric illnesses
 - c) substance abuse
 - d) all of the above
- 6. Which of the following is one of the challenges associated with treatment of DP in the dialysis population?
 - a) there is likely publication bias present with respect to the case reports in the literature
 - b) most antipsychotics are unpredictable in dialysis patients and may require major dose adjustments
 - c) most patients will seek the medical advice of a psychiatrist but refuse dermatologic referrals
 - d) the published randomized control trials are of poor quality
- 7. Which of the following is TRUE regarding the population that DP is most likely to affect?
 - a) male-to-female incidence rate is identical
 - b) there is a bimodal age distribution
 - c) about 25% of patients with DP have a close contact who shares their symptoms
 - d) DP only occurs in patients who have other underlying psychiatric disorders

- 8. Which of the following is one of the symptoms associated with the extrapyramidal effects of the first-generation antipsychotics?a) asthenia
 - a) astrienia 1
 - b) dyslipidemia
 - c) bradykinesia
 - d) weight gain
- 9. What treatment duration do Heller et al. (2013) recommend for antipsychotics in patients with DP?
 - a) 3 months from day 1 of therapy
 - b) 3 months from the time an effective dose has been achieved
 - c) 6 months from day 1 of therapy
 - d) 6 months from the time an effective dose has been achieved
- 10. What is the order of the three steps involved in treatment of a patient with DP, as per Levin and Gieler (2013)?
 - a) thorough history and physical exam, pharmacologic therapy, establishing a therapeutic alliance
 - b) establishing a therapeutic alliance, acknowledge the patient's symptoms are real, pharmacologic therapy
 - c) establishing a therapeutic alliance, thorough history and physical exam, nonpharmacologic and supportive therapy
 - d) establishing a therapeutic alliance, thorough history and physical exam, pharmacologic therapy

CONTINUING EDUCATION STUDY ANSWER FORM

CE: 2.0 HRS CONTINUING EDUCATION

Delusional parasitosis in patients on dialysis

Volume 25, Number 2

By Jacqui Herbert, Karen Cameron, 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: CANNT National Office,
 P.O. Box 10, 59 Millmanor Place,
 Delaware, ON NOL 1E0 or submit online to www.cannt.ca
- Enclose a cheque or money order payable to CANNT.
- Post-tests must be postmarked by June 30, 2016.
- If you receive a passing score of 80% or better, a certificate for 2.0 contact hours will be awarded by CANNT.
- Please allow six to eight weeks for processing. You may submit multiple answer forms in one mailing, however, you may not receive all certificates at one time.

CANNT member - \$12 + HST (\$13.56); Non-member - \$15 + HST (\$16.95)

Г

Address:

POST-TEST ANSW	/ER GR	ID
----------------	--------	----

Please circle your answer choice:

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

EVALUATION	Strongly	disagre	- S	strongly	agree
	Strongry	uisagit		liongry	agree
1. The offering met the stated objectives.	1	2	3	4	5
2. The content was related to the objectives.	1	2	3	4	5
3. This study format was effective for the content	. 1	2	3	4	5
4. Minutes required to read and complete:	50	75	100	125	150
Comments:					
COMPLETE THE FOLLOWING:					

CANNT member? 🖵 Yes 🖵 No Expiration date of card

CANNT Membership

First Name	□ I have attained CNeph((C)/	
Last Name	cdt designation		
Home Address	I am a member of CNA		
City	Ontario applicants only		
	Do you belong to RNAO?		
Province Postal Code	I Yes I No		
Telephone (H) ()	Professional Status		
(W) ()	Registered Nurse		
Email	Licensed Practical Nurs	irse/Registered Nursing Assistant/	
	Technician		
Employer	Technologist		
Employer Address	Other (Specify)		
City	Number of years in nephro	ology	
Province Postal Code	Area of responsibility		
Mailing Address Professed D Home D Wash	Direct Patient Care	Teaching	
Maning Address Freierred G Home G Work	Administration	Research	
Do you consent to the use of your name and address on mailing lists that CANNT has considered pertinent and appropriate?	Technical	Other (Specify)	
Do you concert to the use of your small for all correspondence	Work environment		
with CANNT?	Acute Care	Independent Health Care	
□ Yes □ No	Self-Care Unit	Private Sector	
New Member or Renewal	Highest level of educati	on	
CANNT # (if renewal):	Nursing	Non-Nursing	
Manuk anakin Paa (110774100750020)	🖵 Diploma	🖵 Diploma	
Membership Fee (HS1 #100/59869) Membership fee is tay deductible	Baccalaureate	Baccalaureate	
\Box One Year: \$70.00 + HST/GST	☐ Master's	☐ Master's	
□ Two Years: \$130.00 + HST/GST	Doctorate	Doctorate	
□ Student Rate: \$35.00 + HST/GST*	I am at present studying	g toward	
*Proof of full-time enrolment must accompany application	Nursing	Non-Nursing	
AB/BC/SK/MB/N1/NU/QC/Y1: 5% GS1; UN/NL/NB: 13% HS1; DEI: 14% HST: NS: 15% HST	Specialty Certificate	Specialty Certificate	
	Baccalaureate	□ Baccalaureate	
I enclose \$	Master s	Master's	
of Nephrology Nurses and Technologists.			
Nothed of normants	Primary area of practice		
Cheque Money order Visa Mastercard	Progressive renai insur	nciency (pre-dialysis)	
Caralha I.Jan Nama	Hemodialvsis		
	Peritoneal		
Credit Card Number:	Pediatrics		
Expiry Date: 3-digit CVV code:	Other (Specify)		
Signature:	Re	turn to CANNT	
	N.	Iailing Address:	



CANNT,

P.O. Box 10, 59 Millmanor Place, Delaware, ON N0L 1E0 Telephone (519) 652-6767 Fax (519) 652-5015

Guidelines for authors

The Canadian Association of Nephrology Nurses and Technologists (CANNT) Journal invites letters to the editor and original manuscripts for publication in its quarterly journal. We are pleased to accept submissions in either official language—English or French.

Which topics are appropriate for letters to the editor?

We welcome letters to the editor concerning recently published manuscripts, association activities, or other matters you think may be of interest to the CANNT membership.

What types of manuscripts are suitable for publication?

We prefer manuscripts that present new clinical information or address issues of special interest to nephrology nurses and technologists. In particular, we are looking for:

- Original research papers
- Relevant clinical articles
- Innovative quality improvement reports
- Narratives that describe the nursing experience
- Interdisciplinary practice questions and answers
- · Reviews of current articles, books and videotapes
- Continuing education articles.

How should the manuscript be prepared?

Form: The manuscript should be typed double-spaced, one-inch margins should be used throughout, and the pages should be numbered consecutively in the upper right-hand corner. More formal research or clinical articles should be between five and 15 pages. Less formal narratives, question and answer columns, or reviews should be fewer than five pages.

Style: The style of the manuscript should be based on the **Publication Manual of the American Psychological Association (APA),** Sixth Edition (2009), available from most college bookstores.

Title page: The title page should contain the manuscript title, each author's name (including full first name), professional qualifications [e.g., RN, BScN, CNeph(C)], position, place of employment, address, telephone, fax numbers and email address. The preferred address for correspondence should be indicated.

Abstract: On a separate page, formal research or clinical articles should have an abstract of 100 to 150 words. The abstract should summarize the main points in the manuscript.

Text: Proper names should be spelled out the first time they are used with the abbreviation following in brackets, for example, the Canadian Association of Nephrology Nurses and Technologists (CANNT). Generic drug names should be used. Measurements are to be in Standards International (SI) units. References should be cited in the text using APA format. A reference list containing the full citation of all references used in the manuscript must follow the text.

Tables/Figures: Manuscripts should only include those tables or figures that serve to clarify details. Authors using previously published tables and figures must include written permission from the original publisher. Such permission must be attached to the submitted manuscript.

How should the manuscript be submitted?

Email your manuscript to: cannt.journal1@gmail.com or cannt.journal2@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 criteria for acceptance for all articles include originality of ideas, timeliness of the topic, quality of the material, and appeal to the readership. Authors should note that manuscripts will be considered for publication on the condition that they are submitted solely to the **CANNT Journal.** Upon acceptance of submitted material, the author(s) transfer copyright ownership to CANNT. Material may not be reproduced without written permission of CANNT. Statements and opinions contained within the work remain the responsibility of the author(s). The editor reserves the right to accept or reject manuscripts.

Checklist for authors

\checkmark Cover letter

✔ Article

- Title page to include the following:
 - title of article
 - each author's name (including full first name)
 - professional qualifications
 - position
 - place of employment
 - author to whom correspondence is to be sent, including address, phone, fax number, and email address
- Text of article, with abstract if applicable, **double-spaced, pages numbered**
- References (on a separate sheet)
- Tables (one per page)
- Illustrations (one per page)
- Letters of permission to reproduce previously published material.

Lignes directrices à l'intention des auteurs

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

Quels sont les sujets d'article appropriés?

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

Quels types de manuscrits conviennent à la publication?

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

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

Comment les manuscrits doivent-ils être présentés?

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

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

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

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

Texte : Les sigles, abréviations ou acronymes doivent être écrits au long la première fois qu'ils apparaissent dans le texte, suivis de l'abréviation entre parenthèses; p. ex., Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN). Les noms génériques des médicaments doivent être employés. Les unités de mesure doivent être indiquées selon le Système international d'unités (SI). Les références doivent être citées dans le texte en utilisant le format de l'AAP. Une liste de références comprenant la bibliographie complète de toutes les références utilisées doit suivre le texte. **Tableaux/Figures :** Les manuscrits ne doivent inclure que les tableaux et figures (incluant schémas, illustrations, croquis, etc.) visant à clarifier certains détails. Les auteurs qui utilisent des tableaux et des figures qui ont déjà fait l'objet d'une publication doivent fournir l'autorisation écrite de l'éditeur d'origine et la joindre au manuscrit soumis.

De quelle manière doit-on soumettre les manuscrits?

Veuillez envoyer par courriel votre manuscrit à :

cannt.journal1@gmail.com ou **cannt.journal2@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 de l'ACITN?

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

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

Aide-mémoire à l'intention des auteurs

✓ Lettre de présentation

🗸 Article

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