CANNT JOURNAL
JOURNAL ACITN

Official publication of the Canadian Association of Nephrology Nurses and Technologists

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Development and validation of a phosphate management infographic for patients receiving hemodialysis

CONTINUING EDUCATION SERIES
Financial hardship amongst patients living with chronic kidney disease in Canada

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

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Letter from the Editors

Dear readers, it is that time of year again when we await the CANNT National Conference, this time in beautiful Victoria, B.C. We look forward to seeing old friends and colleagues and meeting new acquaintances. In so many ways, the conference is a family reunion. The concept of family within nephrology nursing and technological practice is an interesting one. It could be said we see our patients receiving dialysis more than we see our family. There is no other area in the clinical realm where such a longitudinal relationship exists in the workplace. This relationality is sacrosanct to our practice and makes it virtuous. Our annual meeting is important for many reasons—knowledge exchange being a priority—but establishing or re-establishing connectedness with other nephrology nurse and technologist colleagues cannot be overlooked. As a collective workforce, we are integral to ensuring positive outcomes for our patients. Let us all enjoy and celebrate our successes and work together toward sustainable and accessible solutions, while we are in Victoria.

Our article offerings in this issue reflect the vital role our allied health colleagues have in ensuring patients receive timely and optimal care. Zlotnik and his renal pharmacy team share their infographic on phosphate management that could be a gamechanger in how patients engage in their care. This study is refreshing in its simplicity, but it has tremendous reach in its relevance to daily practice. Bookending the Zlotnik piece is a much-needed article and continuing education questions by Tyler Murphy (renal social worker) on the financial hardship people receiving dialysis may face. We learn about the different supports that are available to this population who are made vulnerable by their chronic illness, which encroaches on their ability to work. Medication coverage/subsidy, particularly for non-calcium-based phosphate binders or calcimimetics, is a vital consideration when managing hyperphosphatemia. We hope both articles contribute to a more holistic understanding of how the intersection of interdisciplinary practice can really make a difference in the delivery of quality kidney care.

On the eve of finishing her term as the CANNT President 2023–2025, we would like to take this opportunity to thank Dr. Alicia Moonesar for her contributions over the years to make the organization sustainable, relevant, and thriving. We wish her all the best as she embarks on her next adventure.

We look forward to seeing you in Victoria. Please come join us at our now-annual workshop, *Navigating the challenges of publication: From idea to manuscript submission*, on Thursday, October 16, 2025. We do not envy you for having to make the choice of attending one of five excellent concurrent workshops that day. This type of competition is a healthy thing—this means there is variety to suit the diverse needs of the attendees. If you are not able to attend our workshop, fret not—we will be available at the conference for personal consultations.

Until Victoria.

Sincerely from your *CANNT Journal* editors,

Jovina Bachynski
PhD, NP Adult, CNeph(C)
Editor-in-Chief,
CANNT Journal

Rosa M. Marticorena
CNS, CNeph(C),
DClinEpi, PhD
Associate Editor,
CANNT Journal

Message des rédactrices en chef

Chers lecteurs, chères lectrices, nous voilà une fois de plus à quelques semaines seulement du congrès national de l'ACITN, qui se tiendra cette année dans la magnifique ville de Victoria, en Colombie-Britannique. Nous sommes impatientes de reconnecter avec de vieux amis et collègues et de faire de nouvelles connaissances. Cette réunion est, de beaucoup de manières, comme une réunion de famille. Le concept de la famille dans le domaine des soins infirmiers et de la pratique technologique en néphrologie est particulièrement intéressant. Certains diraient que nous voyons nos patients sous dialyse plus souvent que notre propre famille. Il n'existe aucun autre domaine clinique dans lequel une telle relation à long terme existe au travail. Cet aspect relationnel est au cœur de notre pratique et la rend édifiante. Notre congrès annuel est important à plusieurs égards : en premier lieu, pour l'échange de connaissances, mais aussi pour établir ou rétablir un lien avec des collègues infirmiers et infirmières ou technologues en néphrologie. Nous sommes indispensables à l'atteinte de résultats positifs pour nos patients. Faites que nous puissions célébrer nos réussites et travailler ensemble pour trouver des solutions pérennes et accessibles pendant notre séjour à Victoria!

Les articles présentés dans cette édition laissent entrevoir le rôle vital de nos collègues du domaine de la santé dans l'offre de soins optimaux en temps opportun. Zlotnik et son équipe de pharmaciens en néphrologie présentent une infographie sur la gestion du phosphate qui pourrait révolutionner la participation des patients à leurs soins. Cette étude est d'une simplicité rafraîchissante, mais sa pertinence est sans commune mesure pour la pratique quotidienne. Vient ensuite un article de circonstance de Tyler Murphy (travailleur social en néphrologie) sur les difficultés financières que vivent parfois les personnes sous dialyse. On y découvre les différentes mesures de soutien offertes à cette population rendue vulnérable par une maladie chronique qui réduit sa capacité à travailler. Le remboursement des médicaments et les subventions, surtout pour les chélateurs de phosphate non calciques ou les calcimimétiques, doivent être au cœur des décisions sur la prise en charge de l'hyperphosphatémie. Nous espérons que ces deux articles contribueront à une meilleure compréhension du pouvoir de la pratique interdisciplinaire dans l'amélioration des soins néphrologiques.

Le mandat de présidente de l'ACITN 2023–2025 de la Dre Alicia Moonesar arrivant à sa fin, nous souhaitons la remercier pour son travail qui a renforcé la pérennité, la pertinence et la vigueur de l'organisation au cours des dernières années. Nous lui souhaitons bonne continuation.

Nous avons hâte de vous voir à Victoria. Joignez-vous à nous lors de notre atelier annuel, *Navigating the challenges of publication: From idea to manuscript submission* (Composer avec les défis de la publication : De l'idée à la soumission du manuscrit), le jeudi 16 octobre 2025. Nous ne vous en voudrons pas si vous choisissez de participer à l'un des cinq autres excellents ateliers qui se tiendront en même temps. Cette concurrence est une bonne chose – elle signifie qu'il y a une grande variété d'options pour répondre aux différents besoins des participants. Si vous n'êtes pas en mesure de participer à notre atelier, ne vous en faites pas, nous serons disponibles pendant le congrès pour des consultations individuelles.

Au plaisir de vous voir à Victoria.

Cordialement, Vos rédactrices de la *Revue de l'ACITN*,

Jovina Bachynski
Ph. D., IP (adulte), CNeph(C)
Rédactrice en chef, *Revue de l'ACITN*

Rosa M. Marticorena
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President's Message

With Gratitude, Purpose, and Hope for the Future

As I come to the close of my term as President of the Canadian Association of Nephrology Nurses and Technologists (CANNT), I reflect on this journey with a full heart, grounded in personal purpose, professional passion, and an unwavering belief in the power of education to transform care.

My journey into nephrology care is deeply personal. My late father was a nephrology patient and, unfortunately, his experience within the healthcare system was not a positive one. That experience left an imprint on me, not only as a daughter, but as a healthcare professional. It planted a seed of purpose: to ensure that every nephrology patient receives care that is compassionate, informed, and dignified. I knew that in order to change patient experiences, we need to start with empowering those who provide the care.

That vision brought me to CANNT, and over the past five years on the Board of Directors, and especially throughout my term as president, I have had the incredible honour of working alongside dedicated professionals who share this mission. CANNT's foundational commitment to education, professional development, and excellence in nephrology care has been our guiding light.

FACING THE CHALLENGES IN NEPHROLOGY TODAY

We are living through a period of immense transformation and challenge in healthcare, and nephrology is no exception. Staffing shortages, increasing patient complexity, burnout, and the rapid pace of technological change have all placed significant pressure on our workforce. Clinically and practically, nephrology nurses and technologists are being asked to do more with less and to do it with resilience and compassion.

As a community, we have also grappled with professional identity and recognition. Nephrology is a highly specialized field, and yet the unique skills and expertise of our members are not always fully understood or valued within broader healthcare settings.

WHAT WE HAVE ACCOMPLISHED TOGETHER

In the face of these challenges, CANNT has not only endured—we have evolved and grown stronger. I am proud of what we have accomplished together:

Educational Leadership

- delivered **multiple high-quality webinars**, e-learning sessions, and resources tailored to the needs of nephrology professionals
- partnered with **Elevate Nursing Academy** to support dynamic continuing education for nurses across Canada
- ensured **free and easy access to our journals** through our **newly redesigned website**, creating a seamless, modern user experience

Collaboration and Partnerships

- strengthened relationships with our colleagues at the American Nephrology Nurses Association (ANNA), European Dialysis and Transplant Nurses Association/ European Renal Care Association (EDTNA/ERCA), and Canadian Association of Nephrology Social Workers (CANSW), promoting cross-disciplinary learning and collaboration
- worked alongside the Canadian Nurses Association (CNA) to ensure our members have a voice in national conversations on the future of nursing and nephrology
- enriched our knowledge base and brought a global perspective to our local challenges through these relationships

Clinical Excellence

- supported updates to critical nephrology guidelines, including the Vascular Access Guidelines, to reflect the most current evidence-based practices and standards of care

Organizational Growth & Stability

- take pride in reporting that CANNT is in a **strong financial position**
- welcomed **new industry partners**, expanded our sponsorship network, and significantly **increased our membership base**—a clear reflection of the value our organization continues to provide
- ensured the **sustainability and continued impact** of CANNT for years to come, with these achievements

Looking Ahead – A Future of Possibility

As I pass the baton to the next president, I do so with profound hope for the future of nephrology care in Canada. I believe that, together, we will continue to lead the way in

- advancing clinical practice
- championing professional development
- leveraging innovation and technology
- and most importantly, **putting patients at the heart of everything we do.**

The strength of CANNT lies in its people, and I am deeply grateful to all of you who contribute your time, knowledge, and passion to this community.

With Thanks

To the **current and incoming board members,** thank you for your commitment, your leadership, and your belief in the mission of CANNT. It has been an honour to serve beside you. Your dedication ensures that the future of this organization is in excellent hands. To our **members**, thank you for continuing to believe in the power of education, connection, and collaboration. **You are the heart of CANNT**. To our **partners and collaborators**, thank you for walking this journey with us and amplifying the reach and impact of our work. As I conclude my term, I hold immense gratitude for this experience and even greater optimism for what lies ahead. We are stronger together, and our future is bright.

With heartfelt thanks and warm regards, God bless you!

Regards,

Alicia Moonesar

Alicia Moonesar, DNP, NP-PHC (she/her)
President – CANNT-ACITN

NOTICE BOARD

- Canadian Nurses Association (CNA) Exam Timeline. **https://www.cna-aiic.ca/en/certification/about-certification**

	Spring 2025	Fall 2025
Initial exam or renewal by exam application window	January 15–March 31, 2025	June 16–September 30, 2025
Certification exam window	May 1–15, 2025	November 1–15, 2025
Renewal by continuous learning application window	January 15–December 15, 2025	

- **October 11–14, 2025.** 53rd EDTNA/ERCA International Conference | *Addressing Inequities in Kidney Care for a Healthier Future* | Alfândega Congress Centre, Porto, Portugal | **https://www.edtnaerca.org/conferences/conferences-porto-2025**
- **October 16–18, 2025.** CANNT National Conference | *Leading the Future of Kidney Care: Inclusive. Sustainable. Accessible.* | Victoria Conference Centre, Victoria, British Columbia | **https://cannt-acitn.ca/**
- **November 5–9, 2025.** American Society of Nephrology 2025 Kidney Week | George R. Brown Convention Center, Houston, Texas | **https://www.asn-online.org/education/kidneyweek/archives/future.aspx**
- **Save the Date: February 26–March 1, 2026.** Annual Dialysis Conference | Kansas City, Missouri | **https://www.annualdialysisconference.org/**

CANADIAN NURSES ASSOCIATION

Nephrology Certification Registration Status Report 2025

Initial and Renewal by Exam to Renew in 2025	Renewal by Continuous Learning (CL) Hours	Total of Initials and Renewals	Due to Renew in 2025
36	18	54	142

Message de la présidente

Avec gratitude, détermination et espoir pour l'avenir

Alors qu'approche la fin de mon mandat de présidente de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN), je me remémore mon parcours avec gratitude, en m'ancrant dans ma détermination personnelle, ma passion professionnelle et ma foi inaltérable dans le pouvoir de l'éducation pour transformer les soins.

Mon parcours en néphrologie est profondément personnel. Mon défunt père était un patient en néphrologie, et malheureusement, son expérience dans le système de santé n'a pas été des plus positives. Cette expérience m'a marquée, non seulement en tant que fille, mais aussi en tant que professionnelle de la santé. Elle a fait germer une intention, celle de veiller à ce que chaque patient en néphrologie reçoive des soins éclairés, dignes et empreints de compassion. Je savais que pour changer l'expérience des patients, il fallait commencer par outiller les personnes qui fournissent ces soins.

C'est cette vision qui m'a amenée à l'ACITN, et, dans les cinq dernières années que j'ai passées au sein du conseil d'administration, et surtout pendant mon mandat de présidente, j'ai eu l'honneur incroyable de travailler avec des professionnels dévoués qui partagent ma mission. L'engagement fondamental de l'ACITN envers l'éducation, le perfectionnement professionnel et l'excellence en soins néphrologiques a été un phare pour nous.

FAIRE FACE AUX DÉFIS ACTUELS EN NÉPHROLOGIE

Nous vivons une période de grandes transformations et de défis en santé, et la néphrologie n'y échappe pas. La pénurie de main-d'œuvre, la complexité grandissante des cas, l'épuisement professionnel et le rythme rapide des changements technologiques mettent une pression importante sur nos effectifs. Sur le plan clinique et dans la pratique, on demande au personnel infirmier et aux technologues en néphrologie d'en faire plus avec moins et de le faire avec résilience et compassion.

En tant que communauté, nous nous sommes aussi attaqués aux questions d'identité professionnelle et de reconnaissance. La néphrologie est un domaine hautement spécialisé, et pourtant les compétences et l'expertise uniques de nos membres ne sont pas toujours bien comprises ou reconnues dans un contexte global de soins de santé.

CE QUE NOUS AVONS ACCOMPLI ENSEMBLE

Face à ces défis, l'ACITN n'a pas que résisté, elle a évolué et est devenue plus forte. Je suis fière de ce que nous avons accompli ensemble :

Leadership en éducation

- Création de **plusieurs webinaires de grande qualité**, séances d'apprentissage virtuel et ressources adaptées aux besoins des professionnels en néphrologie
- Partenariat avec **Elevate Nursing Academy** afin de soutenir la formation continue dynamique du personnel infirmier au Canada
- **Accès gratuit et facile à nos revues** grâce à notre **tout nouveau site Web**, qui offre une expérience utilisateur moderne et harmonieuse

Collaborations et partenariats

- Renforcement des relations avec nos collègues lors des congrès de l'American Nephrology Nurses Association (ANNA), de l'European Dialysis and Transplant Nurses Association/European Renal Care Association (EDTNA/ERCA) et de l'Association canadienne des travailleurs sociaux et travailleuses sociales en néphrologie (ACTSN), afin de mettre de l'avant les apprentissages et les collaborations interdisciplinaires
- Collaboration avec l'Association des infirmières et infirmiers du Canada (AIIC) afin de donner à nos membres une voix dans les discussions nationales sur l'avenir des soins infirmiers et de la néphrologie
- Ces relations ont enrichi notre base de connaissances et nous ont permis d'appliquer une perspective mondiale à nos défis locaux.

Excellence clinique

- Soutien dans la mise à jour des lignes directrices essentielles en néphrologie, notamment les lignes directrices sur l'accès vasculaire, afin de refléter les pratiques et les normes de soins fondées sur les données probantes les plus actuelles.

Croissance et stabilité organisationnelle

- Nous sommes fiers d'annoncer que la **position financière de l'ACITN est robuste**.
- Nous avons accueilli de **nouveaux partenaires de l'industrie**, élargi notre réseau de commanditaires et **grandement augmenté notre membrariat** – il s'agit là d'une démonstration claire de la valeur que notre organisation continue d'offrir.
- Ces réussites assurent la **pérennité et la portée continue** de l'ACITN pour les années à venir.

Tournés vers l'avenir – un éventail de possibilités

Alors que je passe le relais au prochain président, je le fais avec un profond espoir pour l'avenir des soins néphrologiques au Canada. Je crois qu'ensemble, nous continuerons d'ouvrir la marche dans les aspects suivants :

- Faire progresser la pratique clinique
- Promouvoir le perfectionnement professionnel
- Tirer parti de l'innovation et de la technologie
- Et surtout, **placer les patients au centre de toutes nos activités**.

La force de l'ACITN réside dans les personnes qui y œuvrent, et je remercie chaleureusement toutes les personnes qui offrent de leur temps, de leurs connaissances et de leur passion à cette communauté.

Du fond du cœur

Aux **membres actuels et futurs du conseil d'administration**, merci pour votre engagement, votre leadership et votre foi envers la mission de l'ACITN. Je suis honorée d'avoir siégé à vos côtés. Votre dévouement m'indique que l'avenir de l'organisation est entre bonnes mains. À nos **membres**, merci de continuer de croire au pouvoir de l'éducation, des liens et de la collaboration. **Vous êtes le cœur de l'ACITN**.

À nos **partenaires et collaborateurs**, merci de nous accompagner dans ce parcours et d'amplifier la portée et les répercussions de notre travail. Alors que je termine mon mandat, je pars avec une profonde gratitude pour cette expérience et avec un optimisme encore plus grand pour ce qui reste à venir. Ensemble nous sommes plus forts, et notre avenir s'annonce prometteur.

Je vous remercie du fond du cœur, Que Dieu vous bénisse!

Cordialement,

Alicia Moonesar

Alicia Moonesar DNP, NP-PHC (elle)
Présidente
- ACITN-CANNT

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JOIN THE CANNT COMMUNITY

The Canadian Association of Nephrology Nurses and Technologists (CANNT) provides leadership and promotes the best nephrology care and practice through education, research, and communication. Join today and receive:

- a discount of the annual conference registration fee
- educational opportunities at a reduced cost or free to members
- connections to the latest information and resources related to nephrology, technology or nursing
- networking opportunities with colleagues practising in your nephrology specialty on a national level
- opportunities for collaborative networking and problem solving through participation in a Refined Clinical Practice Group
- CANNT awards and research grants offered to individuals in recognition of their excellence in the workplace and/or to further their studies in Nephrology

Learn more at cannt-acitn.ca

CANNT Board in Action – Fall update

Fall brings a change of season and, with it, the 57th Annual Canadian Association of Nephrology Nurses and Technologists (CANNT) Conference, hosted in collaboration with the Canadian Association of Nephrology Social Workers (CANSW).

This year's national conference promises access to a wide range of timely and relevant topics, with an expanded technologist-focused stream. Sessions will provide insights on sustainability options for dialysis water treatment systems, strategies for optimizing dialysis equipment maintenance, and the use of bleach in dialysis facilities.

This year's program is designed with a focus on sustainability, accessibility, and inclusivity. A full list of accepted abstracts is available online: **CANNT 2025 Conference Abstracts**.

Earlier this year, CANNT launched its updated Awards Program. The conference will include an award ceremony where we are proud to showcase our award recipients. CANNT also will host its Annual General Meeting on October 18.

The conference would not be possible without the support of our industry partners. We look forward to welcoming delegates to an exhibit hall filled with vendors showcasing the latest products and services that advance our practice.

Beyond the conference, CANNT's collaboration with CANSW continues to expand learning opportunities for our members through their ongoing educational webinar series. Recent sessions included these webinars:

- Community of practice – Substance use (June 2025)
- Resilience in care (August 2025)
- Innovative integration of traditional and Western approaches in satellite dialysis (September 2025).

Additionally, this summer, the Canadian Nurses Association (CNA) released its brand-new Code of Ethics. Fresh, relevant, and built for today's realities, the Code addresses reconciliation, leadership, well-being, and the real-life challenges nurses face in practice. You can access it online here: **CNA Code of Ethics**.

We are looking forward to seeing everyone this October in Victoria for what promises to be an engaging and inspiring conference experience!

Megan Howes, CAE, CMP
CANNT Executive Director

Le conseil d'administration de l'ACITN en action – édition d'automne

L'automne marque un changement de saison et, avec lui, le 57e congrès annuel de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN), organisé en collaboration avec l'Association canadienne des travailleurs sociaux et travailleuses sociales en néphrologie (ACTSN).

Le congrès national de cette année promet d'aborder une large gamme de sujets d'actualité, avec un volet élargi destiné aux technologues. Les séances fourniront des réflexions sur les options durables pour les systèmes de traitement de l'eau en contexte de dialyse, des stratégies d'optimisation de l'entretien de l'équipement et des pistes sur l'utilisation de solution d'hypochlorite sodique dans les établissements de dialyse.

Le programme de cette année s'articule autour de la durabilité, de l'accessibilité et de l'inclusivité. La liste complète des résumés acceptés est accessible en ligne : Résumés du congrès 2025 de l'ACITN.

Plus tôt cette année, l'ACITN a lancé son nouveau programme de récompenses. Le congrès comprendra une cérémonie de remise de prix pendant laquelle nous vous présenterons fièrement les lauréats. L'ACITN tiendra également son assemblée générale annuelle le 18 octobre.

Le congrès ne serait pas possible sans le soutien de nos partenaires de l'industrie. Nous sommes impatients d'accueillir les délégués dans une salle d'exposition remplie de fournisseurs présentant les derniers produits et services qui font progresser notre pratique.

Au-delà du congrès, la collaboration de l'ACITN avec l'ACTSN continue d'élargir les occasions d'apprentissage pour nos membres, grâce à la série de webinaires éducatifs en cours. Parmi les séances récentes, citons :

- Community of practice – Substance use (Communauté de pratique – usage de substances) – juin 2025.
- Resilience in care (Résilience dans les soins) – août 2025
- Innovative integration of traditional and Western approaches in satellite dialysis (Intégration novatrice des approches traditionnelle et occidentale dans les unités satellites de dialyse) – septembre 2025

Par ailleurs, cet été, l'Association des infirmières et infirmiers du Canada (AIIC) a publié son tout nouveau Code de déontologie. Nouveau, pertinent et pensé pour la réalité actuelle, le Code porte sur la réconciliation, le leadership, le bien-être et les défis réels auxquels font face les infirmières et infirmiers dans leur travail. Vous pouvez y accéder ici : Code de déontologie de l'AIIC.

Nous avons hâte de vous voir tous à Victoria en octobre pour ce qui s'annonce être un congrès mobilisant et inspirant!

Megan Howes, CAE, CMP
Directrice générale, ACITN

Development and validation of a phosphate management infographic for patients receiving hemodialysis

By Noah Zlotnik, Madeline Theodorlis, Angelina Abbaticchio, and Marisa Battistella

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ABSTRACT

Background: *Most patients receiving hemodialysis have chronic kidney disease-mineral bone disorder, for which management of associated hyperphosphatemia can be complex and multifactorial. A comprehensive content- and face-validated infographic on phosphate management potentially could help patients manage their expectations of phosphate-lowering therapy, increase their engagement in their care, and improve medication adherence.* ***Methods:*** *An infographic was developed based on existing literature and practices at the University Health Network outpatient hemodialysis centre. To assess content accuracy and readability, the infographic was reviewed by a medical librarian and hemodialysis unit staff. Content and face validation were carried out by patients on hemodialysis using the Lynn method. Patients rated sections of the infographic on a four-point scale for content relevance and on a five-point Likert scale for face validity. A content validity index (CVI) and face validity score were calculated at each round of validation, and revisions were made between rounds, based on patients' feedback.* ***Results:*** *Fifteen patients across three rounds evaluated the infographic for content and face validity. The threshold CVI of 0.8 for the overall infographic and face validity score of 70% agreement were met in all three rounds, with round three yielding a CVI of 0.93 and 90% agreement. Qualitative feedback informed further revisions of the infographic to improve utility.* ***Discussion:*** *Patient review ensured that the infographic was content and face valid. Future research should include validation with a larger, geographically and linguistically diverse sample size, and evaluation of the use and effectiveness of the infographic in practice.*

Keywords: hemodialysis, phosphate, phosphate binders, infographic, validation, hyperphosphatemia

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Most patients receiving hemodialysis (HD) have chronic kidney disease-mineral bone disorder (CKD-MBD), which is characterized by abnormalities in calcium, phosphate, parathyroid hormone (PTH), 1,25-dihydroxyvitamin D, and fibroblast growth factor 23 (FGF23; Beto et al., 2019; Ruospo et al., 2018). Reduced kidney function leads to impaired excretion of phosphate in urine and increased serum FGF23, which leads to hyperphosphatemia, a common abnormality of CKD-MBD (Beto et al., 2019; Ruospo et al., 2018). Elevated FGF23 inhibits 1,25-dihydroxyvitamin D production and promotes its degradation, which decreases intestinal absorption of calcium and increases kidney phosphate excretion (Ruospo et al., 2018). Low 1,25-dihydroxyvitamin D and calcium contribute to elevated PTH, which increases bone turnover and raises calcium and phosphate levels (Ruospo et al., 2018). Fibroblast growth factor 23 and PTH then increase kidney calcium reabsorption and decrease phosphate reabsorption (Sprague et al., 2021). However, in end-stage kidney disease (ESKD), compensatory mechanisms fail to lower phosphate, resulting in sustained hyperphosphatemia and hyperparathyroidism (Ruospo et al., 2018). The consequences of CKD-MBD include degradation of bone tissue, soft tissue and vascular calcification, and secondary hyperparathyroidism (Beto et al., 2019; Ruospo et al., 2018). Patients receiving HD can develop advanced CKD-MBD, which can lead to increased bone fractures, cardiovascular morbidity, and mortality (Beto et al., 2019; Ruospo et al., 2018; Sprague et al., 2021). Phosphate-lowering therapy, including dialysis, dietary modifications, and phosphate binders, is a key approach for managing CKD-MDB and for mitigating the harmful downstream effects of hyperphosphatemia (Waheed et al., 2013).

Patients receiving HD have a phosphate target toward the normal range (Kidney Disease: Improving Global Outcomes [KDIGO] CKD-MBD Work Group, 2009). To lower serum phosphate, there are various phosphate-lowering medications, called phosphate binders, available in the Canadian market (Wilson & Holden, 2023). Phosphate binders commonly used in patients receiving HD include chewable and non-chewable calcium carbonate (TUMS®), lanthanum carbonate (Fosrenol®), sevelamer hydrochloride (Renagel®), sevelamer carbonate (Renvela®), and sucroferric oxyhydroxide (Velphoro®; Ontario Ministry of Health, 2023; Wilson & Holden, 2023). Patients may face challenges navigating insurance reimbursement, such as in Ontario, where the Ontario Drug Benefit (ODB) only covers these medications through exceptional access if the patient meets strict criteria (Ontario Ministry of Health, 2023), which are described using medical jargon. Although healthcare professionals are familiar with such language, patients seeking to comprehend their drug coverage may find it challenging to understand when a phosphate binder may or may not be covered. This can hinder a patient's ability to be involved in decision-making around phosphate binders. Poor health literacy and high incidence of side effects from phosphate binders are additional barriers to their uptake (Waheed et al., 2013). A patient infographic potentially could reduce these barriers by enabling shared decision-making when phosphate binders are indicated for patients receiving HD. Shared decision-making involves patient and family engagement in discussions regarding patients' care and treatment options, to promote informed choices (Faiman & Tariman, 2019). Infographics are particularly useful for simplifying complex topics and generating common understanding between patients and providers (Hätönen & Tolonen, 2021). Educating patients about dietary phosphate and personalizing phosphate binder prescriptions could help patients further in managing their expectations of phosphate-lowering therapy, increase their engagement in their care, and improve adherence (Brauer et al., 2019).

Although patient-directed educational resources about phosphate management are available (American Association of Kidney Patients, n.d.; BC Renal, 2014, 2025; Milazi et al., 2017; Padial et al., 2024), to our knowledge, there is no comprehensive, validated patient information tool for the HD population containing information about CKD-MBD, a review of dietary strategies to lower phosphate, and a comparison of phosphate binders. Additionally, there is no infographic that discusses public and private insurance coverage of phosphate binders.

The overall objective of this study was to develop and validate a patient-directed infographic on CKD-MBD and phosphate management for people receiving HD, ensuring content and face validity. Patients were involved in the validation phase to ensure that the infographic included relevant and clear information to support their understanding of their medical conditions and promote their active involvement in making informed treatment decisions.

METHODS

Setting and Participants

This study was conducted in the outpatient HD unit at Toronto General Hospital, University Health Network (TGH-UHN) in Ontario, Canada, between January and March 2025. The Lynn method for content validity (Lynn, 1986) requires a minimum of five reviewers to control for change agreement and at least three rounds of validation. Therefore, a minimum of 15 reviewers was required to assess the infographic for face and content validity. Members of the allied healthcare team in the outpatient HD unit at TGH-UHN screened potential patient participants to interview. Eligible participants were over 18 years old and had been receiving HD for at least 3 months in the outpatient HD unit at TGH-UHN. If a patient had a cognitive impairment or did not speak English, their caregiver participated. A member of the research team obtained written informed consent from all participants and conducted the validation interviews. This study received approval from the University Health Network Research Ethics Board (Study ID: 24-5759).

Infographic Development

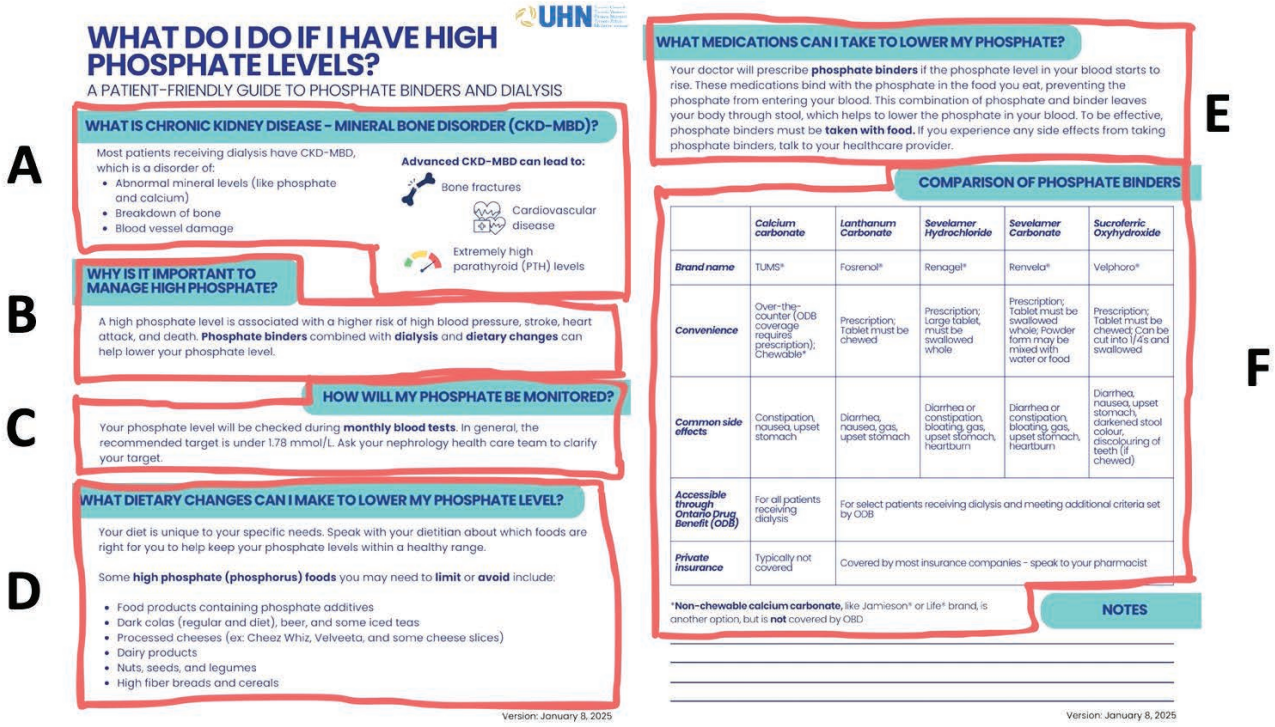
A phosphate management infographic was created using Canva, a graphic design platform used to create visual content, such as presentations, posters, and infographics (Figure 1). The infographic was developed by consolidating data from existing literature, the practices of the TGH-UHN outpatient HD centre, and the ODB Exceptional Access Program Reimbursement Criteria for Frequently Requested Drugs (Ontario Ministry of Health, 2023). To assess content accuracy and readability, the infographic was presented to a medical librarian and to HD unit staff at TGH-UHN for feedback, including a pharmacist, two registered dietitians, a nurse patient care coordinator, and a social worker.

Content and Face Validation

The infographic was validated using the Lynn method (Lynn, 1986). A questionnaire was developed (Tables 1 and 2) based on Lynn's proposed method of content validation, Feinstein's concept of clinical sensibility (Feinstein, 1987), and the Agency for Healthcare Research and Quality's (AHRQ) Patient Education Materials Assessment Tool for Printable and Audio-Visual Materials (Shoemaker et al., 2014). The process involved three rounds of validation, each by five participants, and revisions were made to the infographic between rounds based on participants' recommendations (Boulkedid et al., 2011; Goodman, 1987). Participants were given the infographic at bedside during their dialysis session and, after reviewing the infographic (approximately 5 minutes), were administered the questionnaire (approximately 15 to 20 minutes). All those who consented were able to complete both parts of the questionnaire in one session. Part A of the questionnaire assessed content validity by dividing the infographic into six sections (Figure 1), which were each reviewed by the participant or their caregiver and scored on a scale of one to four assessing its relevance (irrelevant, less relevant, relevant, extremely relevant) (Table 1). Part B of the questionnaire assessed face validity by scoring the participant's agreement with each statement

Figure 1

Initial Phosphate Management Infographic



Note. This is the initial infographic after it was assessed for content accuracy and readability by clinicians and a medical librarian, before patient review. Sections were divided to clarify how the infographic was divided into sections for content validity. Caregivers were approached, consented, and participated when patients had cognitive impairment (n = 1) or did not speak English (n = 2).

Table 1

Content Validity Questionnaire

Component	Irrelevant	Less Relevant	Relevant	Extremely Relevant	Comments
A. What is CKD-MBD?	1	2	3	4	
B. Why is it important to manage high phosphate?	1	2	3	4	
C. How will my phosphate be monitored?	1	2	3	4	
D. What dietary changes can I make to lower my phosphate level?	1	2	3	4	
E. What medications can I take to lower my phosphate?	1	2	3	4	
F. Comparison of phosphate binders	1	2	3	4	

Note: CKD-MBD = chronic kidney disease–mineral bone disorder

Table 2

Face Validity Questionnaire

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Comments
1. The tool is clear and understandable.						
2. The tool uses appropriate language and wording.						
3. The tool flows in a logical manner.						
4. This tool is an accurate representation of my experiences.						
5. The tool was useful for my understanding of phosphate binders and chronic kidney disease-bone mineral disorder.						
6. I would recommend this tool to other patients on hemodialysis.						

about the infographic on a five-point Likert scale (Table 2). Statements included "the tool is clear and understandable," "the tool uses appropriate language and wording," "the tool flows in a logical manner," "this tool is an accurate representation of my experiences," "the tool was useful for my understanding of phosphate binders and chronic kidney disease-bone mineral disorder," and "I would recommend this tool to other patients on hemodialysis." Participants were encouraged to provide comments or explanations for their scores. The research team member specifically requested a comment when a score was below three in Part A or below four in Part B to identify suggestions for improvements to the infographic between rounds.

Statistical Analysis

Participant demographics were collected via the HD unit's electronic medical record, other than highest level of education completed, which was self-reported. Categorical variables were reported as frequency and percentage, and continuous variables as mean and standard deviation, or median and interquartile range (IQR).

For content validity (Part A), a component with a score of three (relevant) or four (extremely relevant) was deemed content valid for a given participant (Lynn, 1986). Items with a score of one (irrelevant) or two (less relevant) were deemed to require revision. A Content Validity Index (CVI) was calculated for each component of Part A of the questionnaire as the proportion of participants who scored the component as relevant or extremely relevant. The CVI for the entire tool was the average of the CVI scores for each section. For this study, the minimum threshold for overall CVI was set at 0.8, as found commonly in the literature (Polit et al., 2007).

For face validity (Part B), participants were assumed to agree with a statement if they scored a statement as either four (I agree) or five (I strongly agree). Items that scored one, two, or three were deemed to require revision. Although there is no established standard threshold (Boulkedid et al., 2011; Trochim, 2000), a common threshold for face validity is greater than or equal to 70% of participants (four of five participants for this study) when using the Delphi method (Diamond et al., 2014).

Outcomes

The primary outcomes were the overall CVI and face validity percent of round three. The secondary outcomes included the CVI and face validity percent of rounds one and two, and participant comments from all three rounds.

RESULTS

Participants

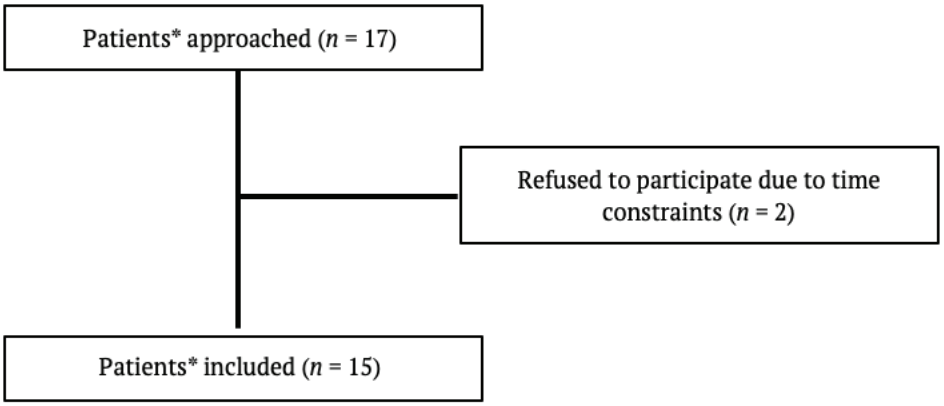
Participants were approached for consent between January and February 2025. Figure 2 provides participant recruitment details. Table 3 summarizes demographics for patients for those who consented or whose caregiver consented. Participants were a mean of 69 (± 10) years old and receiving dialysis for a median of 37 (16 to 61) months. Thirteen of the 15 participants (87%) were taking a phosphate binder, the majority of whom (10; 67%) were taking calcium carbonate. Most participants (11; 73%) had at least completed an undergraduate degree and the remainder (4; 27%) had completed high school. The study population had diverse ethnic backgrounds.

Content Accuracy and Readability

Review by HD unit staff and a medical librarian led to some modifications to the infographic. The term "Colas"

Figure 2

Participant Flow Diagram



Note. *Caregivers were approached, consented, and participated when patients had cognitive impairment (*n* = 1) or did not speak English (*n* = 2).

Table 3

Patient Participant Demographics

Participant Characteristic*	*N* = 15
Sex (%)	
Male	6 (40)
Female	9 (60)
Mean age in years (± SD)	69 (± 10)
Median dialysis vintage in months (IQR)	37 (16–61)
Taking a phosphate binder (%)	
Yes – Calcium carbonate (TUMS®)	10 (67)
Yes – Lanthanum carbonate (Fosrenol®)	2 (13)
Yes – Sucroferric oxyhydroxide (Velphoro®)	1 (7)
Yes – Sevelamer hydrochloride (Renagel®)	0
Yes – Sevelamer carbonate (Renvela®)	0
No	2 (13)
Highest level of education (%)	
High school	4 (27)
College/university	9 (60)
Postgraduate	2 (13)
Ethnicity (%)	
White	5 (33)
Black	4 (27)
Southeast Asian	3 (20)
South Asian	2 (13)
East Asian	1 (7)

Note. SD = Standard Deviation; IQR = Interquartile Range.
*Characteristics were of patients, not caregivers.

was clarified as "Dark colas." A cautionary statement was added advising patients to speak to their healthcare provider if they experience side effects from taking a phosphate binder. Additional common side effects were included, such as "diarrhea or constipation" for sevelamer hydrochloride and "upset stomach" for sucroferric oxyhydroxide. The distinction between chewable and non-chewable calcium carbonate was clarified. Finally, specific details regarding access to public insurance coverage were simplified, as the clinical parameters were thought to be overwhelming for a patient.

Content Validity

Round one had an overall CVI of 0.97, with only one participant rating section A as "less relevant" (Table 4), noting that their nephrologist had discussed bone disorder but not the associated cardiovascular risks. Some participants liked the inclusion of the target phosphate value, whereas others felt that the comparison of phosphate binders may be overwhelming if they have only been introduced to calcium carbonate (i.e., TUMS®) thus far. Based on this feedback, the comparison of phosphate binders was simplified by removing details about prescription requirements. Round two had a perfect CVI of 1.0 with no constructive feedback. Round three had an overall CVI of 0.93 with only sections E (0.8) and F (0.8) receiving scores less than 1.0. One participant considered sections E and F to be less relevant as they felt that the management of hyperphosphatemia was a lower priority compared to their other medical conditions, such as wound healing. Another participant reported that the infographic was "highly relevant with good key messages," highlighting the importance of understanding the disease state. All individual sections, as well as the overall infographic, surpassed the minimum CVI threshold of 0.8 in round three.

Face Validity

In round one, all participants agreed with all statements in the questionnaire (Table 5). One participant stated that the font size was appropriate for patients lying down in bed during dialysis sessions. Another participant mentioned that the comparison of alternatives included complex details that some patients might find difficult to understand. The language in the comparison table was simplified after round one, as previously stated.

Round two had an overall agreement of 90%. Participants agreed (100%) with most statements. However, one statement, "The tool flows in a logical manner," received an 80% agreement score, as one participant felt that the infographic was somewhat repetitive. Additionally, the statement, "The tool is an accurate representation of my experiences," received a 60% agreement score as one participant was not aware of CKD-MBD and the importance of phosphate management prior to this study, and another participant did not experience any side effects when they initiated calcium carbonate. Therefore, for readers to feel represented in their experiences, the infographic was edited to state that "*many* patients receiving dialysis have CKD-MBD," as opposed to "*most* patients." Furthermore, a disclaimer was added to clarify that only some patients may experience side effects. No changes were made to address repetitiveness as the research team felt this was essential to reinforce understanding.

Table 4

Content Validity Index of the Infographic

Section	Round 1 CVI*	Round 2 CVI	Round 3 CVI
A. What is CKD-MBD?	0.8	1	1
B. Why is it important to manage high phosphate?	1	1	1
C. How will my phosphate be monitored?	1	1	1
D. What dietary changes can I make to lower my phosphate level?	1	1	1
E. What medications can I take to lower my phosphate?	1	1	0.8
F. Comparison of phosphate binders	1	1	0.8
Overall (average)	0.97	1	0.93

Note: CKD-MBD = chronic kidney disease-mineral bone disease; CVI = Content Validity Index.
*CVI is the proportion of participants who ranked the section of the infographic as relevant. The overall CVI for the infographic is the average of the CVIs of each section.

Table 5

Face Validity Scores of the Infographic

Statement	Round 1 Agreement (%)	Round 2 Agreement (%)	Round 3 Agreement (%)
The tool is clear and understandable.	100	100	100
The tool uses appropriate language and wording.	100	100	80
The tool flows in a logical manner.	100	80	100
The tool is an accurate representation of my experiences.	100	60	80
The tool was useful for my understanding of phosphate binders and chronic kidney disease-mineral bone disorder.	100	100	100
I would recommend this tool to other patients on hemodialysis.	100	100	80
Overall (average)	100	90	90

Note: The overall score is the average agreement with each statement.

Round three had an overall agreement of 90%. One participant noted that others may find it difficult to understand changes to phosphate levels and that they would not recommend this infographic to all patients receiving HD, because its utility would depend on individual patient's circumstances and experiences. Another participant felt that the infographic did not fully represent their experiences, as managing diet did not significantly impact their phosphate level. This participant also suggested that patients may not be interested in all the details provided in the infographic. No changes were made to the infographic based on these comments, as some patients may appreciate the inclusion of specific details, and it is important to provide such information for those who find it useful, so long as it is understandable. All statements and the overall agreement surpassed the 70% agreement threshold in round three. The final infographic is shown in Figure 3.

DISCUSSION

To our knowledge, this is the first comprehensive phosphate management infographic that integrates information about pathophysiology, diet, and phosphate binders. It is also the first phosphate management infographic to be content- and face-validated by patients. Although there are no existing validated phosphate management infographics for patients receiving HD, there are validated educational tools for constipation and deprescribing for this population, which were developed using similar content and face validation methods (Cho et al., 2023; Ng et al., 2022). These studies highlight the importance of educational tools for patients receiving HD, to address knowledge gaps, promote health literacy, and increase patient engagement (Cho et al., 2023; Ng et al., 2022).

This infographic was developed to educate patients, receiving HD, on phosphate management and can be used by healthcare providers to enable shared decision-making with patients. Educational tools, including infographics, can significantly improve medication and diet adherence by enhancing patient understanding of their medical condition and engagement in care (Dsouza et al., 2023; Hjemås et al., 2019; Kanagaratnam et al., 2023; Milazi et al., 2017; Slyer, 2022; Umeukeje et al., 2018). Adherence to dialysis, diet, and medication regimens are vital in phosphate management, to achieve long-term outcomes, such as longer life expectancy (Milazi et al., 2017; Umeukeje et al., 2018). This infographic can be useful for patients recently diagnosed with CKD-MBD and those who are starting a phosphate binder or adhering to a low phosphate diet. The infographic can also remind patients at home of key messages, when they may no longer recall details of conversations with their healthcare providers.

Figure 3

Final Phosphate Management Infographic After Three Rounds of Content and Face Validation by Patients

A significant strength of this study is the use of the Lynn method, as validation of patient-directed educational tools is uncommon. Previous studies that have validated information tools for patients on HD reported that can help further simplify the language used the information presented is tailored to patient needs (Cho et al., 2023; Ng et al., 2022). The inclusion of both clinicians and patients in the development and validation process ensured that the infographic was end-user validated. Clinicians in the HD unit and a medical librarian provided valuable input clarifying clinical concepts and simplifying the wording of the infographic to ensure readability for patients. Patients and caregivers also provided helpful feedback, which informed clarifications and simplifications of infographic components. The positive content and face validity results suggest a strong potential for the infographic's acceptance, uptake, and utility. Furthermore, the sample population was ethnically diverse, which strengthens the generalizability of the results and the infographic.

Limitations to this study must also be noted. First, a small sample size of 15 participants from a single HD unit in a large academic centre reviewed the infographic. Although this size satisfies Lynn's validation criteria (Lynn, 1986), a larger sample size, including participants from multiple HD units across Canada and other countries, may have led to additional, more diverse feedback. Further, the infographic was developed in English and all reviewers were Anglophones. As patients benefit more from education in their first language (Al Shamsi et al., 2020), these results may not apply to non-English speakers. Given the diversity of the Canadian population, translation and review by non-Anglophones may yield more culturally relevant feedback, which may benefit certain underrepresented patient populations (Hunt & Bhopal, 2003). Additionally, although the sample fairly represented the age and ethnic diversity of Canada's dialysis population (Blake, 2020), the education level of the participant population may be discordant with that of the general dialysis population. Whereas 57.5% of adults in Canada have a college or university degree (Statistics Canada, 2022), the average level of education of patients on HD may be lower than that of the general population (Green & Cavanaugh, 2015). As 73% of participants had obtained a college education or higher, participants in this study may have understood the infographic better, compared to the average patient on HD. Although review by the medical librarian helped to develop an infographic that is comprehensible for most patients, direct feedback from patients without a post-secondary education may be needed.

This patient-directed phosphate management infographic was developed with input from clinicians and was validated by patients on HD and their caregivers. The infographic achieved high content and face validity scores, with the overall infographic surpassing both validity thresholds in all three rounds, suggesting that patients found the infographic to be relevant, clear, and informative. Next steps include implementing and evaluating the use of the infographic in the outpatient HD unit at TGH-UHN to assess its uptake and perceived utility and effectiveness. Validation with a larger sample size, including geographically and linguistically diverse patients, is also recommended to better meet the needs of diverse populations in HD, before implementation of the infographic on a larger scale.

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CONTINUING EDUCATION SERIES

CONTACT HOUR: 2.0 HRS

Financial hardship amongst patients living with chronic kidney disease in Canada

By Tyler Murphy

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ABSTRACT

Patients with chronic kidney disease (CKD) experience a higher risk for financial hardship, which can impact the access to treatment, transitions in care, health outcomes, and social support networks. When financial hardship is identified, it is essential for patients to be connected to available supports and benefits. Within Canada, there are financial resources and supports available at local, provincial, and federal levels, which may be utilized to mitigate the negative impacts of financial hardship.

Keywords: chronic kidney disease, financial hardship, income supports, social determinants of health, transitions of care

LEARNING OBJECTIVES

1. Understand the prevalence and risk factors for financial hardship for patients with chronic kidney disease (CKD)
2. Highlight the impacts of financial hardship on patients living with CKD
3. Summarize the Canadian resources available for patients struggling with financial hardship

BACKGROUND

People living with chronic kidney disease (CKD) face many challenges, including the potential negative relationship between having a chronic illness and non-medical factors of different areas of their lives. These non-medical factors are known as social determinants of health (SDH) and include education, social supports, employment, and income (Hundemer et al., 2023). The relationship between SDH and the impact on health is not unidirectional. It creates a feedback loop: Although these factors can impact health outcomes negatively, living with a chronic health condition, such as CKD, also can impact one's SDH.

Employment and income are key SDH that have a significant impact on patients with CKD. Financial hardship has been identified as a risk factor for negative impacts among patients with CKD, who often identify financial stress as a primary area of concern. Patients often reach out for support from their renal social workers, regarding available financial supports and benefits (Hansen et al., 2022). An analysis of data from across Canada by Manns et al. (2017) showed that approximately 90% of patients living with CKD in Ontario have an annual income of less than $30,000 CAD, which is below the low-income cut-off for a large metropolitan area (Statistics Canada, 2025). Manns et al. (2017) also reviewed data from British Colombia, which estimated that 30% of patients attending multidisciplinary CKD clinics and approximately 80% of patients receiving dialysis, between the ages of 40 to 65, are not able to work due to their illness. Van Manen et al. (2001) also found that the employment rates of patients with CKD drop within the first year of starting dialysis, decreasing from 31% to28% for patients receiving hemodialysis (HD) and from 48% to 40% for patients receiving peritoneal dialysis (PD), respectively. The decrease in employment rate can be attributed to changes in physical and psychosocial functioning along with low serum albumin levels, which may be an indicator of poor health (van Manen et al., 2001). Increased symptom burden, perceived physical functioning, and demanding dialysis schedules, also impact a patient's ability to continue employment after dialysis initiation (Hansen et al., 2022; Ng et al., 2021). The majority of patients receiving HD express concern about the deterioration of their financial status post-dialysis initiation; there is an increase for supports to be connected to community supports and government benefits within the first four months of treatment (Hansen et al., 2022). Given the financial hardships CKD patients face, it is important to understand what the potential negative impacts are and what resources may be available to help mitigate these impacts.

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IMPACTS OF FINANCIAL HARDSHIP IN PATIENTS LIVING WITH CKD

Transitions in Care

Experiencing financial hardship can start impacting patients from the very start of their CKD journey and can have an influence throughout their transitions in care. Research has shown that low income and financial hardship can have a significant impact on the prevention, progression, and treatment of CKD (Norris & Beech, 2021). Although Canada has universal healthcare to cover the cost of physician/clinic visits, there are other expenses patients with low income may find burdensome, such as the cost for transportation and parking, medication costs, and grocery costs to support a renal diet. Patients who are employed may not be granted time off from work, or patients may need to take unpaid time off to attend physician/clinic appointments. These barriers could lead to missed visits and non-adherence to their treatment regimen. Not being able to attend and be assessed by their nephologist and/or renal team, along with not being able to afford to follow their prescribed treatment and diet, may impact the progression of CKD negatively, leading to the potential need for dialysis.

Financial status is also a key factor for patients when considering choice of modality for dialysis. Walker et al. (2016) noted that patients living with CKD consider the impact of each treatment on their ability to work and many choose home dialysis, to maximize flexibility in dialysis treatment times so they can continue to work or return to work, if not currently employed. Employed patients also have to consider the time off from work to have dialysis access creation and to attend training for home dialysis (Walker et al., 2016). Patients living with CKD who are unemployed are more likely to start dialysis as an inpatient, are less likely to have a pre-emptive access creation, and are less likely to have a pre-emptive kidney transplant (Hundermer et al., 2023). There is also a relationship between income and housing—another social determinant of health—that can influence modality decisions. Patients with low income are less likely to have adequate housing to support home-based dialysis, due to lack of space, overcrowding, lack of privacy, and resistance from landlords to make accommodations for dialysis in the home (Walker et al., 2016).

A patient's financial status can also impact the outcomes of a kidney transplant and mortality rates post-dialysis initiation. Research on patients receiving dialysis in Ontario has shown that lower income and financial hardship are associated with higher mortality rates as these patients are less likely to receive a transplant (Ke et al., 2019). There is significant association between living in a lower-income neighbourhood and total graft failure (Naylor et al., 2019) and early hospital readmissions (Naylor et al., 2021) in kidney transplant recipients. It has been suggested by Naylor et al. (2019) that the impact of financial status on transplant outcomes may be due to continued barriers to access healthcare. These barriers may include the cost of transportation to attend post-transplant appointments that may not be local, time off needed from work, the cost of medications, and the impact of lower income on other SDH, such as a lower level of education and access to social supports post-transplant.

Psychological Functioning

Along with physical barriers, having a chronic health issue and experiencing financial hardship also can have a significant impact on a patients' psychological functioning. In a systematic review of the relationship between CKD and financial hardship, Ng et al. (2021) found an increased physical and psychological symptom burden, particularly depression and fatigue. Additionally, unemployment and lower income significantly increase the risk of depression, anxiety, and insomnia (Aggarwal et al., 2017). Ng et al. (2021) suggest the negative impacts may be due to challenges in adjusting to new social roles within the family, not being able to pursue personal goals, and the withdrawal from social activities due to cost. Adjusting to being diagnosed with CKD, as well as adjusting to dialysis initiation can also be challenging for some patients as they are facing changes in their health, may be struggling with a sense of loss of control and autonomy, and a possible increase in dependency on others for emotional and financial support. Financial status and unemployment were found to be predictors of poor adjustment issues among patients with CKD requiring more support from the renal team and the patient's social support system (Hansen et al., 2022).

Having a good social support system is a social determinant of health that can be impacted by financial hardship among patients with CKD. Many feel compelled to withdraw from social activities that they cannot afford, and this reduces access to their social support network (Ng et al., 2021). Attending in-centre dialysis multiple times per week, or completing home dialysis with higher treatment frequency and having to stop or reduce work, also may impact the ability to spend time with family, friends, and colleagues that patients consider to be important members of their social support network. Financial hardship also impacts the caregivers of patients with CKD. Research has shown that caregivers with lower income or who are unemployed are at higher risk for caregiver burnout, which also can have negative impacts on a patient's health outcomes (Alshammari et al., 2021). Financial hardship can impact the caregiver's access to appropriate resources to support the patient, limit access to transportation, and limit time for potential employment due to caregiving duties.

RESOURCES

Given the potential negative impacts CKD has on a patients' financial situation and the impact of finances on CKD outcomes, it is important to be knowledgeable about resources that are available, which may help mitigate those impacts. There are resources available within Canada to provide financial assistance to CKD patients ranging from local supports to federal benefits. These resources include financial support through employers, community support programs, grants, tax credits, income support, and federal benefits. A list of potential financial resources can be seen in Table 1.

Table 1

Canadian Financial Supports Available for Patients Living with CKD

Local	Provincial/Territorial	Federal	Other
Kidney Foundation of Canada – Short-Term Financial Assistance Kidney Foundation of Canada – Home Hemodialysis Utility Grant Municipal Water Rebate programs (home dialysis) Utility Grants Community Grants	**British Columbia** • Income Assistance • Disability Assistance • Shelter Aid for Elderly Renters • Fair PharmaCare (medication coverage) **Alberta** • Income Support • Assured Income for the Severely Handicapped • Alberta Adult Health Benefit (medication coverage) **Saskatchewan** • Saskatchewan Income Support • Saskatchewan Assured Income for Disability • Saskatchewan Drug Plan (medication coverage) **Manitoba** • Employment and Income Assistance Program • Manitoba Supports for Persons with Disabilities • 55 PLUS - A Manitoba Income Supplement • Pharmacare (medication coverage) **Ontario** • Ontario Works • Ontario Disability Support Program • Trillium Drug Program (medication coverage) **Québec** • Social Assistance Program • Social Solidarity Program • Prescription Drug Insurance (medication coverage) • Québec Pension Plan • Québec Pension Plan – Disability Benefits **New Brunswick** • Income Assistance • Disability Support Program • Prescription Drug Program (medication coverage) **Newfoundland & Labrador** • Income Support • Newfoundland and Labrador Disability Benefit • Newfoundland and Labrador Prescription Drug Program (medication coverage) **Nova Scotia** • Income Assistance • Nova Scotia Disability Support Program • Pharmacare (medication coverage) **Prince Edward Island** • Social Assistance Program • AccessAbility Supports • PEI Pharmacare (medication coverage) **Yukon** • Yukon Social Assistance • Income Assistance for First Nations **Nunavut** • Income Assistance Program • Disabled Incidental Allowance • Extended Health Benefits (medication coverage)	Canadian Pension Plan – Disability Benefits (Québec exempted) Canadian Pension Plan – Regular Benefits (Québec exempt) Old Age Security Guaranteed Income Supplement Canada Disability Benefit On-Reserve Income Assistance program Non-insured Health Benefits for First Nations and Inuit Veterans' Affairs Canada Disability Tax Credit Other tax credits Registered Disability Savings Plan	Employment Insurance Short-term and Long-term disability through employers Assistance for medical supplies through government or community support agencies Critical Illness through unions Utility grants

Federal

The Canadian government offers tax credits and benefits for individuals who have a disability, which may include patients with CKD, depending on the impact their health has on their ability to function and/or work. One of the tax credits is the Disability Tax Credit, which is required for other benefits, such as the Canada Disability Benefit and the Registered Disability Savings Program. For income support, patients as young as 60 years of age, with CKD, may apply for the Canada Pension Plan (CPP) regular benefits (Québec residents excluded). Patients with CKD, who are under the age of 65, may apply for CPP Disability Benefits (Québec residents excluded), if they are unable to work due to a disability. Research has shown that 30% of patients between the ages of 45 and 65, who attend a multidisciplinary CKD clinic, do not work; of that 30%, half meet the definition of having a severe and prolonged disability, thus making them eligible to apply for the CPP Disability Benefits (van Manen et al., 2001). Patients who are not eligible for CPP or CPP Disability Benefits may qualify for income assistance through their province or territory. Renal social workers may help with providing information on these benefits and provide instrumental support in assisting patients with applications, if assistance is needed.

Provincial and Territorial

Each province and territory offers social assistance and income support for individuals who are unable to work. The eligibility criteria and benefits offered differ between each province and territory. Patients residing in Québec who are over the age of 60 can apply for the Québec Pension Plan, or the Québec Pension Plan Disability Benefits program if they are under the age of 65 and unable to work due to a disability. Provincial agencies that fund the renal programs may also offer utility grants or other funding programs, such as the travel support program for patients who need to travel to attend home dialysis training. If a patient has questions about applying for social assistance and income support in their area, they can speak to their renal social worker for more information.

Each provincial and territorial government also offers a program to assist with medication coverage. The eligibility criteria differ between the provinces and territories including age, household income, receipt of social assistance or benefits, and the diagnosis of a disability. These programs have different names, including Pharmacare, Extended Health Benefits, Drug Benefit Program, or Drug Insurance. If a patient has questions about applying for assistance with medication coverage, they can speak to their renal social worker for more information.

Local

The Kidney Foundation of Canada has branches across Canada offering support to patients and caregivers alike. Depending on the location, the Kidney Foundation of Canada offers short-term financial assistance programs for patients with low incomes, travel loans, student scholarships, and utility grants. Financial assistance to patients is their second highest investment behind research (Kidney Foundation of Canada, 2024). Applications to the Kidney Foundation of Canada support programs are completed by the renal social worker or another member of the renal team.

Local supports also can be offered through different municipalities, if they provide utility grants or rebates such as the City of Toronto Home Dialysis Water Rebate Program. Additional grants and bursaries may be available through non-for-profit organizations to fund supports for basic necessities or medical equipment. As local resources can vary, patients who are identified as a risk for financial hardship should be encouraged to speak to their renal social worker for more information on what resources are available.

Other

Patients with CKD who are employed may be able to access financial support through their employer or union. Supports, such as Employment Insurance, short-term disability, and long-term disability, may be a part of the patient's employment benefits. Those patients who belong to a union may have access to critical illness benefits depending on the level of their kidney function or if they are going through the transplant process.

SUMMARY

It is important to recognize the reciprocal relationship between financial hardship and CKD, given the increased risk for negative impacts they have on each other. There are many resources within Canada that patients living with CKD may be able to access to help improve their financial situation and should be encouraged to speak to their renal social worker or other renal team members for information and assistance. Identifying patients who are experiencing financial hardship, or are at risk for financial hardship, and ensuring they are aware of potential resources are essential to mitigate the negative impacts and promote better overall health outcomes.

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CONTINUING EDUCATION STUDY QUESTIONS **CONTACT HOUR: 2.0 HRS**

Financial hardship amongst patients living with chronic kidney disease in Canada

By Tyler Murphy

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1. True or False: Social determinants of health are non-medical factors that can have an impact on heath outcomes.
   a) True
   b) False
2. According to research, what percentage of patients living with chronic kidney disease (CKD) in Ontario have an annual income of less than $30,000?
   a) 90%
   b) 80 %
   c) 50%
   d) 30%
3. Which of the following factors contribute to the decrease in employment rates after dialysis initiation?
   a) Changes in physical functioning
   b) Changes in psychosocial functioning
   c) Low serum albumin levels
   d) All of the above
4. True or False: There is an increase in requests for financial supports and government benefits within the first four months of dialysis initiation.
   a) True
   b) False
5. Which of the following factors may impact a patient's attendance to clinic visits or adherence to treatment?
   a) Cost of transportation and/or parking
   b) Cost of medication
   c) Grocery costs
   d) All of the above
6. Patients living with CKD and are unemployed are
   a) More likely to have a pre-emptive access creation
   b) More likely to start dialysis as an in-patient
   c) More likely to have a pre-emptive kidney transplant
   d) None of the above
7. True or False: According to research, low income and financial hardship are associated with higher mortality rates among patients on dialysis in Ontario.
   a) True
   b) False
8. Unemployment among patients with CKD was found to
   a) Decrease the risk of insomnia
   b) Decrease the impact of symptom burden
   c) Predict poor adjustment issues
   d) None of the above.
9. Financial support or benefits are available to patients with CKD from which level of government or community supports?
   a) Local community support programs
   b) Provincial or Territorial governments
   c) Federal government
   d) All of the above
10. True or False: Every provincial or territorial government offers a program to assist with the cost of medication.
    a) True
    b) False

CONTINUING EDUCATION STUDY ANSWER FORM

CE: 2.0 HRS CONTINUING EDUCATION

Financial hardship amongst patients living with chronic kidney disease in Canada

By Tyler Murphy

Volume 35, Number 3

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

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We also encourage letters to the editor as a way to promote dialogue and alternative perspectives to articles published in *CANNT Journal*. Choose "Letters to the Editor" from the Section dropdown on the submissions page.

SUBMISSION DECLARATION

Submission of the article implies that the work described has not been published elsewhere (except in the form of an abstract or a published lecture), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and responsible authorities where the research was carried out, and that, if accepted, it will not be published elsewhere in the same form without the written consent of the copyright holder. Upon acceptance of the submitted material, the author(s) must transfer copyright ownership to *CANNT Journal*. Statements and opinions contained within the work will remain the responsibility of the author(s).

PEER REVIEW

CANNT Journal operates on a double-blind peer review process. The names of the reviewers will not be disclosed to the author(s) submitting the manuscript, and the name(s) of the author(s) will not be disclosed to the reviewers.

All contributions will be initially assessed by the editors for suitability for the journal. Manuscripts deemed suitable are sent to two independent expert reviewers to assess the quality of the paper. A manuscript will only be sent for review if the editors determine that the paper meets the appropriate quality and relevance requirements in keeping with the particular aim and scope of *CANNT Journal*.

The editors are responsible for the final decision regarding acceptance or rejection of the manuscript. Editors are not involved in decisions about papers that they have written themselves or have been written by family members or colleagues, or which relate to products or services in which the editor has an interest. All manuscript submissions are subject to the journal's usual independent peer review process.

The criteria for acceptance for all manuscripts include the quality and originality of the research or intellectual material, its significance/appeal to journal readership, and the general writing style.

PREPARING THE SUBMISSION

The following components are required for all submissions. Manuscripts that do not meet these requirements will be returned to the corresponding author for technical revisions before undergoing peer review.

The manuscript should be submitted in separate files in the following order: title page; abstract with key words; main text including references; and figures/tables. A cover letter may be supplied at the authors' discretion.

Title page

Include:

- Title of the manuscript (concise and informative)
- Short running title of fewer than 40 characters
- Full names, highest academic degrees, and affiliations of all authors with email address and telephone/fax number of corresponding author
- Authors' institutional affiliations (department, institution, city, country) where research work was conducted
- Any acknowledgements (including disclosure of funding), credits, or disclaimers, conflict of interest statement for all authors

Abstract and keywords

Submit structured or summary abstract of up to 250 words. Word limit includes headers in a structured abstract (e.g., *background*, *purpose*, *method*, *findings*, and *discussion*).

The abstract should be a succinct summary of the major issue, problem, or topic being addressed, and the findings and/or conclusions in the manuscript. It should not duplicate material in the main text. It should not contain subheadings, abbreviations, or reference citations.

Provide up to eight keywords that describe the contents of the manuscript.

Main text (manuscript, reference list)

Main text:

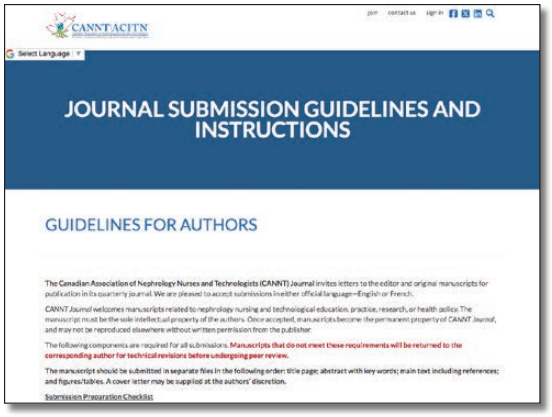
- Maximum length 15–20 pages, double-spaced
- Use the *Publication Manual of the American Psychological Association* (APA) 7th edition (copyright 2020) for style and format guidelines.
- As manuscripts are double-blind peer reviewed, the main text should not include any information that might identify the authors. Therefore, do not include any identifying information (i.e., authors' names).
- Number all pages consecutively in the upper right-hand corner.
- Cite tables/figures consecutively.
- Be sure to approve or remove all tracking changes in your Word document before uploading.

References:

- Use only sources from credible and high-quality journals.
- Double-spaced at the end of the manuscript
- Citations and reference list is to be styled according to the APA 7th edition (copyright 2020).
- Provide URL for all references where available.
- Ensure that every reference cited in the text is also present in the reference list (and vice versa).

Tables/figures

- Submit each table or figure as a separate file, and as editable text and not as an image.
- Prepare tables/figures according to APA 7th edition (copyright 2020).
- Cite tables/figures consecutively in the text, and number them in that order. Do not embed tables/figures in the manuscript text file.
- Number table and figure consecutively in accordance with their appearance in the text and place the title of the table/figure and any table/figure notes below the table/figure body.
- Use tables sparingly and ensure that the data presented in them clarify and supplement, rather than duplicate, results described in the main text. Only tables that are 3 manuscript pages or shorter will be accepted to be published within the article.
- Authors using previously published tables and figures must include written permission from the original publisher. Such permission must be attached to the submitted manuscript.



MANUSCRIPT SUBMISSION

Once the submission materials have been prepared in accordance with instructions in "Preparing the Submission" above, manuscripts must be submitted online at: **https://cannt-acitn.ca/page/journal-guidelines**

AFTER SUBMISSION

There are three stages of manuscript review prior to the final decision about the article's status for publication.

Preliminary

Preliminary review by the editors to determine the suitability of the article for peer review. The editors assess all manuscript presentation requirements including style and format of the manuscript.

Editorial peer review

The peer review process determines scholarly merit of the article. All manuscripts are reviewed by two members of the Editorial Review Panel. The acceptance criteria for all papers lie in the quality and originality of the work and its significance to journal readership. Manuscripts are only sent to reviewers if the editors determine that the paper merits further review.

Determination of eligibility for publication

After the peer review, the editors make a decision regarding the eligibility of the article for selection based on the comments and recommendations of the reviewers. Based on the peer review evaluation, the editors make one of the following decisions:

- Accept without revisions
- Accept after completing minor revisions
- Re-submit after completing major revisions – re-review by original reviewers
- Reject

AFTER ACCEPTANCE

Corresponding authors will receive a PDF proof of the article. The page proof should be carefully proofread for any copyediting or typesetting errors. It is the authors' responsibility to ensure that there are no errors in the proofs. Authors should also make sure that any renumbered tables, figures, or references match text citations and that figure legends correspond with text citations and actual figures. Proofs must be returned within the deadline specified by the editors.

Alterations to the proof that are beyond those required to correct errors or to answer queries, or are a reworking of previously accepted material will **not** be allowed. The editors reserve the right to deny any changes that do not affect the accuracy of the content.

POST-PUBLICATION

The corresponding author will receive a hard copy of the journal issue as well as a PDF copy of the article.

If accepted, your article must not be published elsewhere in similar form, in any language, without the consent of the publisher. You may not post the PDF file of your copyedited article, or your final published article in any repository or online social media site.

OPEN ACCESS OPTION

Authors of accepted peer-reviewed articles have the choice to pay a fee to allow perpetual unrestricted online access to their published article to readers globally, immediately upon publication. This option has no influence on the peer review process. All manuscripts are subject to *CANNT Journal*'s standard double-blinded peer-review process and will be accepted or rejected based on their own merit.

The article processing charge of $250.00 is charged on acceptance of the manuscript and should be paid within 5 days by the author(s). Payment must be processed for the article to be published open access.

CONFLICTS OF INTEREST AND SOURCE OF FUNDING

At the time of manuscript submission, authors should disclose any potential sources of conflict of interest, which includes any financial interest or relationship that might be perceived as influencing the authors' objectivity. The existence of a conflict of interest does not preclude publication. Authors must also declare if they have no conflict of interest. Sources of funding should be included on the title page under the heading "Conflicts of Interest and Source of Funding." Each author must complete and submit the journal's copyright transfer agreement, which includes a section on the disclosure of potential conflicts of interest.

COPYRIGHT TRANSFER AGREEMENT

At the time of submission, the submitting author will be presented with the copyright transfer and conflict of interest form. Co-authors will receive an email with instructions to also complete the form in order to proceed with the review process.

EDITORIAL OFFICE CONTACT DETAILS

Jovina Bachynski (Editor-in-Chief) and Rosa Marticorena (Associate Editor): **cannt.journal1@gmail.com**

SUBMIT YOUR MANUSCRIPT ONLINE TODAY

https://cannt-acitn.ca/page/journal-guidelines

Lignes directrices pour la soumission des manuscrits au *Journal ACITN*

DESCRIPTION

Le *Journal ACITN* est une revue publiée trimestriellement qui met en valeur l'excellence des écrits sur les soins infirmiers et les technologies en néphrologie par le biais d'articles évalués par des pairs qui examinent les questions et les tendances actuelles de la pratique, de la formation et de la recherche dans ce domaine. Le *Journal ACITN* est la revue officielle de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie et soutient la mission de l'association pour servir ses membres en perfectionnant le développement des connaissances en matière de soins infirmiers et de technologies en néphrologie. La revue est référencée dans les bases de données MEDLINE et CINAHL.

POLITIQUES RÉDACTIONNELLES

Le *Journal ACITN* accepte les manuscrits portant sur la formation, la pratique, la recherche sur les soins infirmiers et les technologies de néphrologie ou la politique en matière de santé. Le manuscrit doit être la propriété intellectuelle unique des auteurs. Une fois acceptés, les manuscrits deviennent la propriété permanente du *Journal ACITN* et ne peuvent être reproduits ailleurs sans l'autorisation écrite de l'éditeur.

Nous préférons les manuscrits qui présentent de l'information clinique nouvelle ou qui abordent des problématiques d'intérêt particulier pour les infirmières et infirmiers et les technologues en néphrologie. Plus précisément, nous recherchons :

- Rapports 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 de littérature ou revues systématiques.

Nous encourageons également les tribunes libres sous forme de courrier des lecteurs comme moyen de promouvoir le dialogue et des perspectives de rechange aux articles publiés dans le *Journal ACITN*. Veuillez choisir « Courrier des lecteurs » dans le menu déroulant de la Section sur la page des soumissions.

DÉCLARATION RELATIVE À LA SOUMISSION

La soumission de l'article laisse entendre que l'œuvre décrite n'a pas été diffusée autre part (sauf sous la forme d'un résumé ou d'une présentation orale publiée), qu'elle n'est pas à l'étude pour publication ailleurs, que sa publication est approuvée par tous les auteurs et les autorités responsables où la recherche a été réalisée, et que, si elle est acceptée, elle ne sera pas publiée ailleurs sous la même forme sans le consentement écrit du titulaire du droit d'auteur. À l'acceptation du document soumis, le ou les auteurs devront transférer la propriété du droit d'auteur au *Journal ACITN*. Les déclarations et les opinions contenues dans l'œuvre demeurent la responsabilité de l'auteur ou des auteurs.

ÉVALUATION PAR LES PAIRS

Le *Journal ACITN* fonctionne selon un processus d'évaluation par les pairs à double insu. Les noms des évaluateurs ne seront pas divulgués à l'auteur ou aux auteurs qui auront soumis le manuscrit, de même que le ou les noms des auteurs ne seront pas divulgués aux évaluateurs.

Toutes les contributions seront initialement évaluées par les rédactrices en chef pour leur pertinence à la revue. Les manuscrits réputés acceptables sont envoyés à deux experts indépendants qui en évalueront la qualité. Un manuscrit ne sera envoyé pour évaluation que si les rédactrices en chef déterminent que le manuscrit répond aux exigences de qualité et de pertinence appropriées, conformément à l'objectif et au champ d'application particuliers du *Journal ACITN*.

Les rédactrices sont responsables de la décision définitive en ce qui a trait à l'acceptation ou au rejet du manuscrit. Les rédactrices en chef n'interviennent pas dans les décisions relatives aux articles qu'elles-mêmes ont rédigés ou que des proches ou des collègues ont écrits ou encore qui portent sur des produits ou services pour lesquels elles sont en conflit d'intérêts. Toutes les soumissions de manuscrit font l'objet du processus habituel d'évaluation par les pairs indépendants de la revue.

Les critères d'acceptation de tous les manuscrits comprennent la qualité et l'originalité de la recherche ou du matériel intellectuel, son importance ou son attrait pour le lectorat de la revue et le style d'écriture en général.

PRÉPARATION DE LA SOUMISSION

Les éléments suivants sont requis pour toutes les soumissions. Les manuscrits qui ne répondent pas à ces exigences seront renvoyés à l'auteur-ressource en vue de révisions techniques avant d'être soumis à l'évaluation par les pairs.

Le manuscrit doit être soumis en fichiers séparés dans cet ordre : page titre; résumé avec mots clés; corps du texte incluant les références; et les figures ou les tableaux. Une lettre de présentation peut être fournie à la discrétion des auteurs.

Page titre

Inclure :

- Titre du manuscrit (concis et descriptif)
- Titre court comptant moins de 40 caractères
- Nom complet, diplôme de plus haut grade et affiliations de tous les auteurs, adresse courriel et numéros de téléphone/télécopieur de l'auteur-ressource
- Affiliations institutionnelles des auteurs (département, établissement, ville, pays) où les travaux de recherche ont été réalisés
- Tous les remerciements (y compris la divulgation du financement), les crédits ou les avertissements, un énoncé de conflit d'intérêts pour tous les auteurs

Résumé avec mots clés

Soumettre un résumé structuré ou succinct de 250 mots au maximum. La limite de mots inclut les en-têtes dans un résumé structuré (p. ex., *contexte*, *objet*, *méthode*, *résultats* et *discussion*).

Le résumé doit être une description succincte de la question, du problème ou du sujet principal abordé dans le manuscrit, ainsi que les résultats ou conclusions présentés. Il ne doit pas reproduire le corps du texte. Il ne doit pas contenir de sous-titres, d'abréviations ou de citations de référence.

Fournir jusqu'à huit mots clés qui décrivent le contenu du manuscrit.

Corps du texte (manuscrit, liste de référence)

Corps du texte :

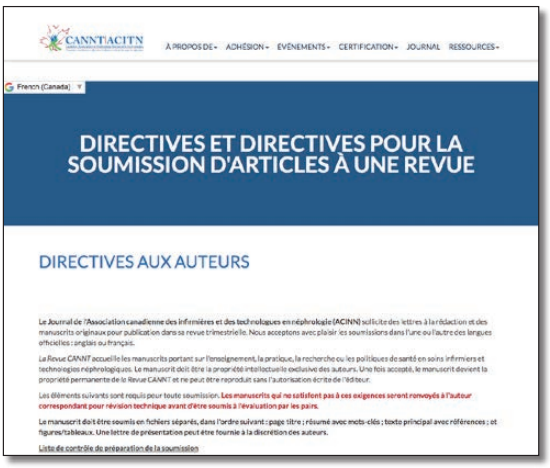
- Longueur maximum de 15 à 20 pages, à double interligne
- Se servir du guide de style *Publication Manual of the American Psychological Association* (APA), 7e édition (droit d'auteur 2020) pour les lignes directrices en matière de style et de format
- Comme les manuscrits font l'objet d'une évaluation par des pairs à double insu, le corps du texte ne doit inclure aucune information pouvant servir à identifier les auteurs. Par conséquent, il ne faut pas inclure de renseignements d'identification (p. ex., noms des auteurs)
- Paginer sans interruption dans le coin supérieur droit
- Citer les tableaux ou les figures à la suite
- S'assurer d'approuver ou d'éliminer toutes les modifications de suivi de votre document Word avant le téléversement

Références :

- N'utiliser que des sources publiées dignes de foi et de qualité
- À double interligne à la fin du manuscrit
- La liste de citations et de références doit être conforme au guide de style de l'APA, 7e édition (droit d'auteur 2020)
- Fournir les adresses URL pour toutes les références, le cas échéant
- S'assurer que toutes les références citées dans le texte figurent dans la liste de référence (et vice versa)

Tableaux ou figures

- Soumettre chaque tableau ou figure dans un fichier séparé, sous forme modifiable et non sous forme d'image
- Préparer les tableaux ou les figures selon le guide de style de l'APA, 7e édition (droit d'auteur 2020)
- Citer les tableaux ou les figures à la suite dans le texte et les numéroter dans cet ordre. Ne pas incorporer les tableaux ou les figures dans le fichier texte du manuscrit
- Numéroter les tableaux et les figures à la suite selon leur apparition dans le texte et positionner le titre du tableau ou de la figure et toute note connexe sous le corps du tableau ou de la figure
- Utiliser les tableaux avec retenue et s'assurer que les données qui y sont présentées clarifient et complètent les résultats décrits dans le corps du texte, sans toutefois les reproduire. Seuls les tableaux sur 3 pages de manuscrit ou moins seront acceptés aux fins de publication dans l'article.
- Les auteurs qui utilisent des tableaux ou des figures précédemment publiés doivent inclure l'autorisation écrite de l'éditeur original. Cette autorisation doit être jointe au manuscrit soumis.



SOUMISSION DU MANUSCRIT

Après avoir préparé le matériel de soumission conformément aux directives indiquées dans la rubrique « Préparation de la soumission » ci-dessus, les manuscrits doivent être soumis en ligne à cette adresse : **https://cannt-acitn.ca/page/journal-guidelines**

APRÈS LA SOUMISSION

L'examen du manuscrit se déroule en trois étapes avant que la décision ultime soit prise sur le statut de l'article aux fins de publication.

Examen préliminaire

Examen préliminaire par les rédactrices en chef afin de déterminer la pertinence de l'article aux fins d'évaluation par les pairs. Les rédactrices en chef examinent toutes les exigences de présentation de manuscrits, notamment le style et le format du manuscrit.

Évaluation rédactionnelle par les pairs

Le processus d'évaluation par les pairs détermine la valeur scientifique de l'article. Tous les manuscrits sont évalués par deux membres du comité d'évaluation rédactionnelle. Les critères d'acceptation pour tous les textes reposent sur la qualité et l'originalité de l'œuvre et sur son importance aux yeux du lectorat de la revue. Les manuscrits sont envoyés aux évaluateurs uniquement si les rédactrices en chef décident que le texte mérite un examen plus approfondi.

Détermination de l'admissibilité aux fins de publication

Après l'évaluation par les pairs, les rédactrices en chef prennent une décision concernant l'admissibilité de l'article à la sélection en se fondant sur les commentaires et les recommandations des évaluateurs. Selon l'évaluation par les pairs, les rédactrices en chef prennent l'une des décisions suivantes :

- Accepter le manuscrit sans modifications
- Accepter le manuscrit une fois les modifications mineures apportées
- Soumettre de nouveau le manuscrit une fois les modifications majeures apportées – réévaluation par les évaluateurs d'origine
- Rejeter le manuscrit

APRÈS L'ACCEPTATION

Les auteurs-ressources recevront une épreuve en format PDF de l'article. L'épreuve d'imposition doit être soigneusement relue afin de détecter toute erreur d'édition ou de composition. Il incombe aux auteurs de s'assurer que les épreuves sont exemptes d'erreurs. Les auteurs doivent également s'assurer que les tableaux, les figures ou les références renumérotés correspondent aux citations du texte et que les légendes des figures correspondent aux citations du texte et aux figures réelles. Les épreuves doivent être renvoyées dans le délai précisé par les rédactrices en chef.

Les modifications apportées à l'épreuve qui vont au-delà de ce qui est nécessaire pour corriger des erreurs ou pour répondre à des questions ou qui constituent un remaniement du matériel précédemment accepté **ne** seront **pas** permises. Les rédactrices en chef se réservent le droit de rejeter toute modification qui n'influe pas sur l'exactitude du contenu.

APRÈS LA PUBLICATION

L'auteur-ressource recevra une copie papier du numéro de la revue ainsi qu'une copie PDF de l'article.

S'il est accepté, votre article ne doit pas être publié nulle part ailleurs sous une forme similaire, en toute autre langue, sans le consentement de l'éditeur. Vous ne pouvez pas publier le fichier PDF de votre article révisé ou de votre article définitif publié dans un service d'archives ou sur un site de médias sociaux en ligne.

OPTION D'ACCÈS LIBRE

Les auteurs d'articles acceptés dans le cadre d'une évaluation par les pairs peuvent choisir de payer une redevance pour permettre aux lecteurs du monde entier d'accéder en ligne à leur article publié, sans restriction et à perpétuité, dès sa publication. Cette option n'a aucune influence sur le processus d'évaluation par les pairs. Tous les manuscrits font l'objet d'un processus standard d'évaluation par les pairs à double insu et seront acceptés ou refusés en fonction de leur propre valeur.

Des frais de traitement de l'article de 250,00 $ sont facturés à l'acceptation du manuscrit et doivent être payés dans les cinq (5) jours par le ou les auteurs. Le paiement doit être traité pour que l'article soit publié en accès libre.

CONFLITS D'INTÉRÊTS ET SOURCE DE FINANCEMENT

Au moment de la soumission du manuscrit, les auteurs doivent divulguer toute source potentielle de conflit d'intérêts, ce qui inclut toute relation ou tout intérêt financier qui pourrait être perçu comme influençant leur objectivité. La présence d'un conflit d'intérêts n'empêche pas la publication. Les auteurs doivent également déclarer qu'ils n'ont aucun conflit d'intérêts à déclarer. Les sources de financement doivent figurer sur la page titre sous la rubrique « Conflits d'intérêts et source de financement ». Chaque auteur doit remplir et soumettre le formulaire d'entente de transfert du droit d'auteur de la revue, lequel comprend une section sur la déclaration de conflits d'intérêts potentiels.

ENTENTE DE TRANSFERT DU DROIT D'AUTEUR

Au moment de la soumission, l'auteur qui soumet un manuscrit recevra un formulaire d'entente de transfert du droit d'auteur et de déclaration de conflits d'intérêts. Les coauteurs recevront des directives par courriel pour aussi remplir le formulaire afin d'amorcer le processus d'évaluation.

COORDONNÉES DU BUREAU DE LA RÉDACTION

Jovina Bachynski (Rédactrice en chef) et Rosa Marticorena (Rédactrice associée) : **cannt.journal1@gmail.com**