



# CANNT JOURNAL JOURNAL ACITN

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# CANNT JOURNAL JOURNAL ACITN



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Letter from the Editors: Janet Baker & Alison Thomas

## A strong foundation



Janet Baker



Alison Thomas

Our foundation is strong. A foundation—whether we are talking about a building or an organization—is what the structure rests upon. A foundation provides stability and allows for growth and development. The efforts of Gillian Brunier, as long-standing CANNT Journal editor, along with the CANNT Board of Directors, the editorial team, and numerous contributors, have made for a solid foundation for the *CANNT Journal*.

So what do we envision in the future? Our vision is to maintain the level of excellence that precedes us. We want to continue to engage nephrology nurses and technologists through the provision of a variety of high-quality, peer-reviewed articles and regular columns. Moreover, we wish for the *CANNT Journal* to flourish and grow to better meet the needs and expectations of you—our readers. You are part of the foundation that contributes to our success. Therefore, we want to know what you think. What changes would you like to see? Where would you like to see us go from here? Are there additions or opportunities that we should explore to enhance the existing journal?

For those of you who have written for the journal—how has your experience been? Have you felt supported

in your efforts? Was there adequate communication and feedback from the editorial board? For those of you who have considered writing for the journal—is there a way that we can assist you in being published? Please feel free to contact us with any feedback—we not only welcome your input but, in fact, we require your input in order to improve.

Between us, we bring a combined 42 years of experience in nephrology nursing. During our history together, as colleagues and friends, we have shared many experiences and learning opportunities. This new partnership, as co-editors of the journal, is not only an extension of past initiatives, but also a commitment to its future success. We are very grateful to the Board of Directors of CANNT for this opportunity to partner with you and for showing faith in our ability to continue the excellence that has already been established. We are up for the challenge!

Finally, we would like to extend a sincere thank you to Gillian for so many things. For her years of commitment to the *CANNT Journal* and her tireless enthusiasm, we thank her. For building a publication that is of high quality and that is well-recognized internationally, we thank her. For the countless hours of guidance and mentorship that she has provided to so many of us over the years, we thank her. For the support during our transition phase and her encouragement, we thank her. Gillian, we wish you all the best as you begin your retirement from the *CANNT Journal* editor's role and from the CANNT Board of Directors. It won't be the same without you—and by the way, how soon can we expect a manuscript submission?

**Please send all submissions, questions or comments to:**

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## Nos solides fondations



Janet Baker



Alison Thomas

Nos fondations sont solides. Les fondations—que ce soit les fondements d'un édifice ou d'une organisation—représentent ce sur quoi repose la structure. Elles fournissent la stabilité et permettent la croissance et le développement. Les efforts déployés par Gillian Brunier, à titre de rédactrice en chef de longue date au *Journal de l'ACITN/CANNT*, ainsi que par les membres du Conseil d'administration (CA), l'équipe de rédaction et les nombreux collaborateurs ont permis de poser de solides bases au *Journal de l'ACITN*.

Alors, qu'est-ce que nous envisageons pour l'avenir? Notre vision consiste à maintenir le même niveau d'excellence. Nous voulons capter l'attention des infirmières, des infirmiers et des technologues en néphrologie grâce à la publication d'une variété de rubriques courantes et d'articles de qualité supérieure, révisés par les pairs. De plus, nous désirons que le *Journal de l'ACITN* prenne du galon afin de mieux répondre à vos besoins et à vos attentes—à vous, nos lecteurs et lectrices. Vous faites partie intégrante des fondations sur lesquelles repose notre succès. Par conséquent, nous voulons savoir ce que vous en pensez. Quels changements aimeriez-vous que nous apportions? Quelle direction aimeriez-vous que nous prenions? Quelles voies aimeriez-vous que nous explorions pour améliorer le Journal actuel?

À ceux et celles d'entre vous qui ont déjà écrit pour le Journal—qu'elle a été votre expérience? Vous a-t-on donné le soutien nécessaire? Avez-vous reçu de la part de l'équipe de rédaction une communication et une rétroaction adéquates?

À ceux et celles qui ont déjà envisagé d'écrire pour le Journal—de quelle façon pourrions-nous vous aider à publier votre article? N'hésitez pas à nous faire parvenir vos commentaires—non seulement nous leur accordons une grande importance, mais nous vous prions en fait de nous les transmettre dans un but d'amélioration continue.

Nous combinons, à nous deux, 42 années d'expérience en sciences infirmières spécialisées en néphrologie. Au fil des années, en tant que collègues et amies, nous avons partagé de nombreuses expériences et occasions d'apprentissage. Notre nouveau partenariat en tant que corédactrices en chef du *Journal de l'ACITN* est non seulement un prolongement des initiatives antérieures, mais un solide engagement dans le succès futur de notre Journal. Nous sommes très reconnaissantes aux membres du CA de l'ACITN pour l'occasion qu'ils nous accordent de faire équipe avec vous et pour la confiance qu'ils témoignent dans notre capacité à poursuivre l'excellence qui a toujours été au rendez-vous. Nous sommes prêtes à relever le défi!

Pour conclure, nous aimerions offrir mille mercis à Gillian pour tout ce qu'elle a accompli. Pour son dévouement sans bornes au Journal de l'ACITN au fil des années et son enthousiasme infatigable, nous lui disons merci. Pour l'édification d'une publication de qualité supérieure et de renommée internationale, nous lui disons merci. Pour les innombrables heures de préceptorat et de mentorat qu'elle a offertes à tellement d'entre nous depuis des années, nous lui disons merci. Pour son précieux soutien durant la période de transition et ses encouragements sincères, nous lui disons merci. Gillian, nous te souhaitons un franc succès dans tout ce que tu entreprendras à l'aube d'une retraite dorée de tes rôles de rédactrice en chef du Journal et de membre du CA de l'ACITN. Les choses vont être bien différentes sans toi—en passant, quand doit-on recevoir ton manuscrit déjà?

### Le Journal ACITN

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• Voici les échéanciers à rencontrer pour soumettre des articles/nouvelles au journal: Janvier-mars: le 15 janvier, pour publication le 15 mars  
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*Message from the President*

## Spring yields new beginnings



How quickly this year is flying by! It seems like we were just celebrating the New Year, and now spring is here. The sun is shining, the geese are back and the golf courses are open! Now those are true signs of spring. Spring brings a feeling of rejuvenation. The grass is green and the flowers are blooming—it's like a fresh start for nature, and for us.

Springtime has also brought us some important dates and deadlines. On April 21, many nephrology nurses across Canada will have written the CNA certification exam. I have been a certified nephrology nurse for 11 years, and I wish you all congratulations and commend you for taking this important step in your nephrology career. May 1 was the deadline for applying for our awards and bursaries, and I hope you took advantage of the funding available and either applied yourself for a bursary, or nominated a colleague you felt was deserving of one of our many awards of excellence. May 15 marked the deadline for applications for CANNT Board of Directors. The new representatives for President Elect, VP Ontario, VP Western region and VP Technology will be announced in our next journal issue. Finally, please mark your calendars for October 25–27, when you can meet the incoming board members at CANNT 2012 in Ottawa.

On a personal note, spring 2012 also saw new growth with the opening of two new hemodialysis units in Manitoba. I was very happy to be involved in the opening of a new six-station unit in Hodgson, MB, which will accommodate 12 patients from four surrounding communities (Jackhead, Fisher River, Peguis and Fisher Branch). This new unit will allow patients to dialyze closer to home and eliminate the need to travel up to 400 kilometres three times per week for dialysis. This is not only a new beginning for staff—but it also offers a renewed sense of freedom for the patients who will now be able to spend more time with

family and NOT on Manitoba highways. I am also very pleased that one of the new Hodgson nurses has become a CANNT member. This shows real dedication to her nephrology career; a dialysis nurse less than three months and she has already recognized the benefits of being a CANNT member. Welcome, Tricia!

The second hemodialysis unit will be opening in Berens River, MB, this month. This unit has four stations and will accommodate eight patients. Both of these new units are located on Northern Manitoba First Nations Reserves. The partnerships and relationships developed when diverse groups of people unite with a common goal (in this case to allow patients to return to their home communities for dialysis), is a remarkable thing. The possibilities of what we can accomplish together are endless. And, like spring, everything in the unit is bright and new, and staff and patients alike are enthusiastic about the future.

*Enthusiasm*—now that is a word I like, but perhaps not as much as I like the word *celebrate*! We celebrated the grand opening in Hodgson on April 5, and will soon celebrate the grand opening in Berens River. On a personal note, I celebrated 30 years as a cancer survivor at our annual Relay for Life on May 25. The celebrations planned for this year are just beginning, with the biggest celebration of all occurring in Ottawa at our annual symposium (CANNT 2012) October 25–27. As I have said before (and will continue to say all year) I urge you to celebrate each other. I would love to hear about the celebrations you have planned!

Thanks to technology, no matter where you are, you can stay connected to CANNT! Don't forget to visit our website at [www.cannt.ca](http://www.cannt.ca), friend us on Facebook, and continue to follow us on twitter at @CANNT1.

And remember... take care of each other out there!

With kind regards,  
Marilyn Muir  
CANNT President 2011–2012  
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## Le printemps, la saison du nouveau

C'est fou comme le temps file! Il me semble qu'on vient juste de célébrer le Nouvel An, et voilà que c'est déjà le printemps. Le soleil brille, les outardes sont de retour et les terrains de golf reprennent vie! Ce sont là les vrais signes annonciateurs du printemps, ce printemps qui insuffle un vent de nouveau. Le gazon est vert et bientôt les fleurs s'épanouiront—c'est un nouveau départ pour la nature et pour nous.

Le printemps nous apporte aussi son lot de dates et d'échéances importantes. Le 21 avril dernier, beaucoup d'infirmières et d'infirmiers en néphrologie provenant des quatre coins du pays ont passé l'examen d'agrément de l'Association des infirmières et infirmiers du Canada (AIIC). En tant qu'infirmière agréée en néphrologie depuis 11 ans, je félicite ceux et celles qui ont réussi l'examen et qui ont entrepris cette importante étape dans leur carrière en néphrologie. Le 1er mai était la date de tombée pour déposer les mises en candidature pour les prix et bourses. J'espère que vous avez saisi cette occasion de financement qui vous est offerte et que vous avez posé votre candidature à une bourse ou encore celle d'un ou d'une collègue qui, selon vous, mérite de recevoir l'un de nos nombreux prix d'excellence. Le 15 mai marquait la date limite pour le dépôt des mises en candidature pour devenir membre du Conseil d'administration (CA) de l'Association canadienne des infirmières et infirmiers et des technologues de néphrologie (ACITN). Les nouveaux représentants de président(e) élu(e), v.-p. Ontario, v.-p. région de l'Ouest et v.-p. Technologie seront dévoilés dans le prochain numéro du Journal de l'ACITN. Enfin, veuillez réserver à votre agenda les dates du 25 au 27 octobre afin de venir rencontrer les nouveaux membres du CA au Congrès annuel de l'ACITN de 2012 qui aura lieu à Ottawa.

Sur une note personnelle, le printemps 2012 a été une période de croissance au Manitoba avec l'ouverture de deux nouveaux centres d'hémodialyse. J'ai été particulièrement heureuse de prendre part à l'inauguration d'un centre comportant six postes de traitement à Hodgson, au Manitoba, qui pourra recevoir 12 patients des quatre collectivités environnantes (Jackhead, Fisher River, Peguis et Fisher Branch). Ce nouveau centre permettra aux patients d'effectuer leur traitement

de dialyse plus près de leur domicile et d'éliminer la nécessité de parcourir jusqu'à 400 km, trois fois par semaine pour effectuer leur dialyse. Il s'agit non seulement d'une nouvelle aventure pour le personnel, mais aussi d'un sentiment de liberté renouvelé pour les patients qui peuvent maintenant passer plus de temps en famille au lieu de le passer sur les autoroutes manitobaines. J'ai aussi le plaisir de vous annoncer que l'une des nouvelles infirmières de Hodgson est maintenant membre de l'ACITN. Cela montre son réel dévouement pour une carrière en néphrologie; infirmière en dialyse depuis moins de trois mois, et déjà elle constate les avantages d'être membre de l'ACITN. Bienvenue Tricia!

Le second centre d'hémodialyse du Manitoba, situé à Berens River, sera inauguré ce mois-ci. Il comporte quatre postes de t et pourra accueillir huit patients. Ces deux centres sont situés dans des réserves autochtones des Premières nations du nord du Manitoba. Les liens et les partenariats qui se créent lorsque divers groupes de personnes, unies et solidaires dans un but commun (dans ce cas-ci, permettre à des patients de rester dans leurs collectivités pour recevoir leur traitement de dialyse), sont une chose remarquable. Les possibilités que nous pouvons accomplir ensemble sont infinies. Et, à l'image du printemps, tout dans notre nouveau centre brille comme un sou neuf! Personnel et patients débordent d'enthousiasme pour l'avenir.

*Enthousiasme*—ça, c'est un mot que j'aime, mais peut-être pas autant que le mot *célébrer*! Nous avons célébré en grande pompe l'inauguration du centre Hodgson le 5 avril dernier, et bientôt, ce sera au tour du centre Berens River de pendre la crémaillère. Sur une note personnelle, je vais célébrer mes 30 années en tant que survivante du cancer au Relais pour la vie qui aura lieu le 25 mai prochain. Les célébrations prévues cette année ne font que commencer et la plus grandiose de toutes est sans nul doute celle qui se tiendra à Ottawa dans le cadre de notre Congrès annuel (ACITN/CANNT 2012) du 25 au 27 octobre prochains. Comme je l'ai déjà mentionné (et je n'aurai de cesse de le répéter tout au long de l'année), je vous recommande vivement de prendre le temps de célébrer entre vous. J'aimerais beaucoup que vous m'informiez des célébrations que vous avez organisées!

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En toute amitié,  
Marilyn Muir, inf. CNeph(C)  
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# My top 10 ways to promote health, wellness, and disease risk reduction (Part I)

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Dear Green Tech,

*At last year's CANNT conference you did a presentation about your mean, green vegan diet and lifestyle, and your reasons for becoming a vegan. I was wondering if there was anything else lifestyle-wise that you could add in order to improve my current state of health and wellness, and reduce my risks of disease.*

Sincerely, Val from Vaughn

Dear Val,

Spring is here and what better way to kick-start the season of blooming buds and sunshine than with a cleansing detox? When we last met up with our fearless healthy superhero, he was presenting at CANNT 2011 (an awesome conference for those who missed out). He spoke about his life, his reasons for becoming a vegan, and how that lifestyle has changed the lives of countless others by eliminating disease. I know it's odd speaking about myself in the third person, but Reg does know a thing or two about green living. Instead of revisiting the entire presentation, I will use it as a springboard for this column and provide you with a top 10 list of ways to improve your life and health, starting immediately.

The term vegan has long been associated with animal rights and the avoidance of any animal-based products (food, clothing, etc.). But there is a new focus on the term, one based on eating a diet composed mainly of plant-based and whole foods. Experts such as Dr. Neal Barnard, Dr. Colin Campbell, Dr. Caldwell Esselstyn, Dr. Joel Fuhrman, Dr. John McDougall and Dr. Dean Ornish believe that the majority of the degenerative diseases we see in the 21st

century are linked to the consumption of animal-based and processed foods. By removing these foods from your diet, they would argue that you can reverse and even eliminate diseases. This was the subject of the recent film documentary, *Forks over Knives*. In this film, Doctors Esselstyn and Campbell prove their point that conditions such as cardiovascular disease can, in fact, be reversed through diet. Living this new lifestyle brings its own term—a *nutritarian*. The body is an amazing thing. It truly has the ability to heal itself, but can only do so if given the right ingredients to function.

In dialysis populations, diabetes is a very predominant chronic disease. Why does this play a huge factor for us in nephrology? Well, nearly half of new patients in every dialysis clinic have come our way as a result of having diabetes. That equates to one in three people with kidney failure having diabetes. Based on a new report from the Canadian Institute for Health Information (CIHI) in January 2011, our population of dialysis patients has tripled over a decade from 11,000 in the year 2000 to 38,000 in 2009. Diabetes is a disease with its primary cause centred on diet and lifestyle, and prevention is key. The evidence is clear on the fact that diabetes can be managed, in part, through changes in our diet (Barnard et al., 2006). The great thing is that this can be done quite simply and without taxing an already burdened health care system here in Canada.

It's not only diabetes we see on the rise as a result of our lifestyles. The incidence of many diseases such as cancer, Alzheimer's, obesity, and cardiovascular disease are on the rise and also have a direct link to lifestyle and diet. It has

been suggested that small diet changes can make an impact on cancer prevalence. We encounter toxins every day through the things we drink, the air we breathe, and the foods we eat. Our bodies become completely burdened and overwhelmed by this toxic overload, leading to inflammation, one of the main factors that has been implicated in disease.

Now it's time for the drum roll please (cue the drummer—DDRDRDRRDR). Here are the Green Tech's **Top 10 ways of detoxifying your life and improving your overall health.**

## 1. Drink more water:

Our body is made of up to 60% water, so it's a no brainer that we need it in our lives and without it, well, we wouldn't last long. We need it for burning calories (it takes one millilitre of water to burn one calorie), and for every single chemical reaction and function our body carries out. Sadly, many of us are in a constant state of dehydration. Is this you? Always tired, sluggish, always needing that caffeine high to get out the door, always opting for your comfort foods in place of fruit, and you just can't seem to lose those last 20 pounds? Well thankfully, there is a way out and a way for you to jumpstart your day.

So here is how you can determine how much water you need to consume. Take your body weight (in my case 162 lbs), divide that in half (81). This is the number of ounces of water needed daily. Finally, divide that by eight, giving you the number of glasses needed daily—for me, that works out to approximately 10 glasses. You may need to warn your manager that you may need extra bathroom breaks as a result, but you will feel like a million bucks.





But what if you hate the taste of water? Here are a few tips: Within 15 minutes of waking each morning, drink a glass of warm water with freshly squeezed lemon juice, which helps to detoxify your liver and kick-start your body. You can also add frozen fruit to your water to add flavour. You can drink herbal teas, many of which are fabulous. Try having fruit daily, many of which are 90% water—this will also help you meet your daily requirements. If you have to drink coffee, keep in mind that even though coffee and black teas are high in antioxidants, they are diuretics and you need to replenish the water loss that they will cause.

## **2. Eat more raw, organic, plant-based foods**

In order to be healthy you have to eat healthy. Eating foods high in antioxidants like fruits and vegetables reduces the oxidative stresses of daily life on our bodies. Consuming alkaline vegetables like spinach and kale, or really any green vegetable, will help improve your pH, for, as some believe, those of us who are suffering from an illness are likely in an acidotic state.

The biggest area of concern when eating vegetables and fruits is where they come from, i.e., how they are farmed. Eating organic foods will help reduce your exposure to toxic pesticides and herbicides due to the fact that they have not been sprayed with commercially used toxic chemicals to keep away the pesky bugs and weeds. As a line from the iconic Joni Mitchell tune *Big Yellow Taxi* says, “Hey Farmer, put away that DDT now, give me spots on my apples, but leave me the birds and the bees. Please!” (1970). There is reportedly a link to chronic diseases and the consumption of foods sprayed with synthetic fertilizers and pesticides. The use of organophosphates like parathion, malathion and diazinon as insecticides have a direct link to diseases such as ADHD in children, Alzheimer’s disease, and various other neurological disorders due to their neurotoxic effects. Ever heard of the nerve agents sarin gas and VX? The same chemicals used in chemical warfare and terrorist attacks? Well they are in that same family of chemicals. This group of chemicals inhibits the enzyme acetylcholinesterase from doing its job with respect to nerve function. Once it deactivates, unfortunately, you can’t switch it back on. So if it’s used to kill bugs, what do you think

it will do to us? Commonly sprayed produce are: corn, apples, pears, grapes, and peaches. Keep reading, as I have a special surprise below.

Now that we have covered the nasty bits of conventional agriculture, let’s look a bit more into organic farming. It utilizes a variety of ecological farming practices that work to conserve the soil’s nutrients and effective growing capacity. Here is the Wikipedia definition of organic farming:

“Organic farming is the form of agriculture that relies on techniques such as crop rotation, green manure, compost and biological pest control. Organic farming uses fertilizers and pesticides but excludes or strictly limits the use of manufactured (synthetic) fertilizers, pesticides (which include herbicides, insecticides and fungicides), plant growth regulators such as hormones, livestock antibiotics, food additives, genetically modified organisms, human sewage sludge, and nanomaterials” (Wikipedia, n.d.).

Over the years, we have seen huge problems with soil erosion and desertification as a result of conventional farming practices, which organic farming helps to prevent. In addition, organic farming promotes and protects our crop biodiversity, something that has been under attack since the creation of genetically modified/engineered foods, which I will further discuss in section five.

By eating organic foods, you are also helping promote a local economy. Purchasing organic foods pays the farmer directly and, in theory, it’s like the WestJet model of business. Everyone is an owner. You do pay a little more for organic foods, but they are well worth the price. You pay the true cost of the item. An everyday deal is likely not a deal at all. Cheap food is cheap for a reason!

Eating more raw and organic foods also helps us with intake of vitamins, minerals, macro nutrients and amino acids at their highest levels, as a great deal of nutrition is lost when heating foods. Try to incorporate some raw foods with every meal, such as fresh fruits, salads and smoothies. One easy way to remember this is to **eat a rainbow every day—incorporate vegetables and fruits of different colours in your diet.**

A couple of great tips when shopping for your produce are to recognize fruit and vegetable label numbers, and to remember the dirty dozen. Starting with

product labels—there is a sticker affixed to every produce item, upon which a code is listed. It’s that code that either you or the cashier will use to key in that item upon point of sale. The code will either be a four- or five-digit code. If it is a four-digit number, the food is conventionally produced. If it is a five-digit number beginning with an eight, it is genetically engineered (GE). If it is a five-digit number beginning with a nine, it is organic. But be forewarned that GE produce has voluntary labelling. Therefore, they may not, in fact, be labelled as such. The same applies to products that contain any sort of GE ingredients. Remember that point, as I will be bringing this up again in section five.

Secondly, I mentioned the dirty dozen. No, I’m not talking about the awesome 1967 war movie starring Lee Marvin, Charles “Death Wish” Bronson, and Ernest Borgnine. The dirty dozen I am referring to is the list of 12 produce items that you should buy organic no matter what. Now I know that I mentioned that organic foods cost more, but the cost saver with the plan is that there is a secondary list of produce items that you don’t need to buy organic, therefore saving cash. The Environmental Working Group, a U.S.-based environmental advocacy group, has compiled a shopping guide that you can use when purchasing produce and what to purchase either organic or conventionally grown. This guide can be found and downloaded at the following website: <http://www.ewg.org/foodnews/summary/>

A few items that are not listed in the dirty dozen that should also be mentioned due to their extremely high level of pesticide residues are coffee, chocolate, conventionally-raised meat, dairy, and wine. So when you can, try to purchase organic versions of those items as well. For more information on the EWG and your food choices, visit <http://www.ewg.org/foodnews/>. A very wise man once said, “Let thy food be thy medicine and thy medicine thy food.” You may have heard of him—Hippocrates.

## **3. Stop cooking in non-stick pans and no microwaving:**

How cool is it to not have to scrub your pans after cooking those scrambled eggs? Well, not really cool at all. Many manufacturers of non-stick cookware use a chemical called perfluorooctanoic acid or PFOA. It is branded as a health-

ier alternative to cooking with oil. Sadly, however, it is another lab creation gone wrong and one that has put us at serious risk of cancer. The U.S. Environmental Protection Agency (EPA) has listed PFOA as a likely carcinogen and has asked the makers of the Teflon® brand product line (DuPont) and others to remove it from their products. PFOA has also been linked to immune system dysfunction and a variety of other conditions like reproductive disorders and infertility. The EPA did a study and found that nearly all Americans have PFOA in their body (Calafat, Wong, Kuklenyik, Reidy, & Needham, 2007).

The other big concern is that PFOA is not just in cookware, but is also found in many other areas of our lives. We find it in many items that are being sold as waterproof or a water repellent like Teflon®, Scotchguard®, and Gore-Tex®. There are many alternatives to PFOA such as stainless cookware, new ceramic coated greenware, and even the old-school cast iron plates (also a great way to get some daily iron). For more information on the various cookware options available and their pros and cons, visit this Health Canada link: <http://www.hc-sc.gc.ca/hl-vs/iyh-vsv/prod/cook-cuisinier-eng.php>. Keep your cooking green and you'll be infusing so much more love in that food than ever before!

Microwave ovens have been around for decades and can be found in almost every kitchen today. Originally designed for the military, microwaves were branded as a way to reheat yesterday's supper and to help those busy families prepare food on the go. Sadly, whatever convenience it may give us, some argue that we lose more in the end with respect to nutrition. And while there are differing opinions on this topic, if you ask me, the best thing to do is to disconnect that microwave and store it in the garage. Plug it in and use it to disinfect your washcloths and sponges, and nothing else. How do you do without the convenience? A few tips to keep in mind are to try and cook enough food for the mouths you are feeding and not more, or just throw all those leftovers in a pan and create a fantastic new supper creation. Try to pack lunches that don't need reheating, opting for more raw options like salads, veggies and dip and wraps, just to name a few. If you need to eat on the go, why not quickly mix up a protein

shake with some great Vega protein powder or another whole-food brand to hold you over until you can grab something more nutritious.

#### 4. Ditch the cans and other plastics:

Canned beans and your favourite canned sudsy beverage are mandatory items for your summer camp-out. However, there are some real problems with those cans and their linings. Nearly all cans contain a chemical called bisphenol-A or BPA, which is one of the key ingredients in the epoxy resin used to create the protective lining. BPA is also used in the manufacturing of polycarbonate plastics (plastics with the #7)—those found in clear, hard beverage bottles such as water and baby bottles. It is also found in the toner coatings of cash register receipts, on drinking glasses and many more items. In the dialysis world, it is found in every dialyzer, contained in the epoxy resin glue for the potting compound and headers and the polycarbonate housing. (Until recently that is—but more on that later).

A few years back, Health Canada listed BPA as a health toxin, and was the first country to do so worldwide. This led to the ban and the recall of thousands of baby bottles. It also resulted in the recall of many plastic sports water bottles during that time. This single-handedly eliminated polycarbonate plastics from food and beverage containers. In addition, last year Canada released findings of its health measures survey and discovered that nearly all Canadians aged six to 79, (about 91% of us), had measurable levels of bisphenol-A in their urine. That means we are all at risk!

I know I have provided the “what happened” and the “what it is”, but you want to know the “why it's so bad” and, more importantly, “how do we ingest it”. Well, the big issue with BPA is that it has been linked to numerous adverse health effects, the most serious being that of birth and developmental effects in infants and children. It has also been linked to obesity, diabetes and many other diseases. It is an endocrine disruptor, as it is an artificial estrogen. So, by exposing ourselves to BPA we may put our endocrine system out of whack. BPA is ingested either by heating of food or contact with fats. For example, when we heat up a baby bottle in polycarbonate plastics, the BPA leaches out due to the heat, and since baby formula contains milk ingredients,

which contain various fats and oils, they also act to leach the BPA into the food. A double-whammy! You can find all the information relating to the health risks of BPA at this Health Canada link: <http://www.hc-sc.gc.ca/fn-an/securit/packag-emball/bpa/index-eng.php>

The other nasty plastic, which is even more of a concern than polycarbonate, is polyvinyl chloride or PVC (#3 plastics). PVC is found in everything from flooring, dialysis chairs, dialysis tubing, saline bags, shower curtains to toys and more. PVC and polycarbonate plastics have a direct link to one another in that they both contain chemicals that are known endocrine disruptors. In the case of PVC we have another group of plasticizers called phthalates. Phthalates are used in making of PVC, to allow it to be softer and more flexible. They are also used in personal care products, and are typically part of the “fragrance”. The most common bad dude we run into in our line of work is DEHP. It is what gives our saline bags and blood that flexibility. Phthalates have been linked to organ system toxicity, reproductive and fertility issues in men, brain and nervous system, and immune system dysfunction (Environmental Working Group, n.d.).

The other big issue with PVC is that the base chemical—vinyl chloride—is a known carcinogen. Most of the products we come across in health care and in our dialysis units are deemed biohazard products and, when incinerated produce a new problem called dioxins—another carcinogen—that pollute the air we breathe. Luckily it is illegal to incinerate PVC in Ontario, so our biomedical waste is autoclaved and landfilled instead.

We have discussed how PVC can affect us. What about dialysis patients? To them, this is even a much greater concern since they come into direct contact with these items via the dialyzer and blood tubing for countless hours with dialysis. Moreover, without urine output, patients are more at risk of accumulation. Things are a-changin' in the world of blood lines and dialyzers. We now have DEHP-free blood lines for use on nearly every model of dialysis machine. We also have an option for dialyzers, as this was the missing link for years. Baxter's new Xenium+ line of dialyzers are North America's only DEHP- and BPA-free dialyzer. When I heard this news I freaked out and did my totally awesome green dance. So, do your due diligence and make these items

“must haves” as part of your unit’s ancillary product list, and consider this when negotiating contracts and future RFPs if you haven’t already done so. Consider your patients’ well-being—they are part of our extended family and should be treated as such.

The health risks aren’t just with #7 plastics, but with all plastics. The term “microwave safe” just means it won’t melt. Have you ever noticed the stained colour or rough surface of those Ziploc® containers that contained spaghetti and meatballs? That is your evidence that they have leached out plasticizers. The biggest thing to keep in mind is that all plastics are made from oil and oil of any kind that comes into contact with them will leach out plasticizers. Recycle those plastic containers, or reuse them for other things like nails or dry goods.

My tips: Use glass, ceramic or stainless steel containers. Glass will forever and ever be the “in” thing. Glass has thankfully made a huge resurgence, and bottles, jars and storage containers are perfect for storing your juices and leftovers. When you are out getting your groceries, purchase as many items as possible in glass—beer and wine included. Never buy PVC again and if you need plastics around the house, make sure that you only see the numbers 1, 2, 4 or 5 listed—the fewer the better. Be a well-informed shopper. Ridding yourself of all plastics is impossible but, as someone who has done their homework and knows all the facts before going out and purchasing items, you are now provided with the tools to make much better purchasing decisions for yourself, your family and your unit.

So that covers sections one through four. Stay tuned for more with sections five to 10 in the next issue.

*For more information on any of the above diets or lifestyle changes, or if you need support, feel free to contact me at [regq101@gmail.com](mailto:regq101@gmail.com).*

Thanks and remember to keep it green, eh! You’ll thank me for it!

Sincerely,  
Rejean “Green Tech” Quesnelle

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- ❖ September 27–29, 2013. 15th Congress of the International Society of Peritoneal Dialysis (ISPD), Taipei City, Taiwan. Website: [www.ispd2012.org.my](http://www.ispd2012.org.my)



## Kidney disease in Canada: Highlights from the Canadian Institute for Health Information Annual Report

Colleen Wile, RN, BScN, CNeph(C), Clinical Educator, Community Dialysis, Halifax, NS

The Canadian Institute for Health Information (CIHI) recently released *The Canadian Organ Replacement Registry annual report, Treatment of End-Stage Organ Failure in Canada, 2000 to 2010*. The report examines dialysis and transplantation characteristics and trends occurring in Canada between 2000 and 2010 with information obtained from contributions from nephrology programs, organ procurement organizations, nephrologists, transplant physicians and surgeons, nurses and coordinators across Canada.

The annual report estimated that by the end of 2010, approximately 39,352 Canadians were living with end stage renal disease (ESRD). This number has more than tripled since 1991. Of those Canadians with ESRD 23,188 were on dialysis, while 16,164 were living with a functioning kidney transplant. In 2010, almost 80% of the 5,646 ESRD patients initiating renal replacement therapy (RRT) received hemodialysis as their initial treatment. By comparison, in 1991, 2,614 ESRD patients initiated RRT.

Diabetes continues to be the predominant cause of ESRD in Canada, causing 35% of all new cases in 2010. Renal vascular disease was identified as the cause in 18% of new cases. The aging population is also reflected in the demographic profile of new ESRD patients. In 2010, 53% of those initiating RRT were age 65 or older compared to 1991 when only 39% were over the age of 65. However, over the last 10 years incident rates have remained stable and may actually be starting to decline.

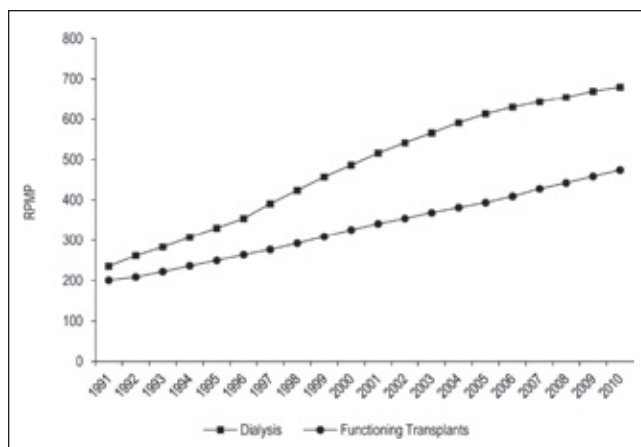


Figure 1. Prevalence rate for patients on dialysis or with a functioning transplant in Canada, 1991 to 2010 (Rate per million population)

Source: Canadian Organ Replacement Register, 2011, Canadian Institute for Health Information; Statistics Canada.

Transplantation is an increasingly important form of RRT. In 2010 there were 23 active kidney transplant programs in Canada operating in seven provinces. Of the 1,197 kidney recipients in 2010, 198 received pre-emptive transplants, thus eliminating the need to start dialysis. The median time spent on dialysis waiting for a deceased donor was 3.7 years while those patients with a living donor waited less than 1.5 years on dialysis.

The CIHI report also highlighted that both deceased and living donor rates have stagnated since 2006. The living donor rate was 16.3 per million population in 2010, compared to 17.0 in 2006. The deceased donor rates fell in 2010 to 13.6 donors per million from 14.0 in 2006. Although the latest rates are above the 2001 levels, the need for organ donation out-numbers the supply. By the end of 2010, 3,362 patients were waiting for a kidney transplant (see Figure 2). Between 2001 and 2010, approximately 68 patients died each year while on a transplant wait list.

This wait list results in substantial cost implications for the health care system. CIHI estimates the approximate cost of hemodialysis treatments at \$60,000 per patient per year. The one-time cost of a kidney transplant is approximately \$23,000 plus a yearly cost of about \$6,000 for medications to maintain the transplant. This is a cost savings of approximately \$250,000 per patient over a five-year period, while also improving quality of life.

For more information on *The Canadian Organ Replacement Registry annual report, Treatment of End-Stage Organ Failure in Canada, 2000 to 2010*, visit: [http://secure.cihi.ca/cihiweb/products/2011\\_CORR\\_Annua\\_Report\\_EN.pdf](http://secure.cihi.ca/cihiweb/products/2011_CORR_Annua_Report_EN.pdf)

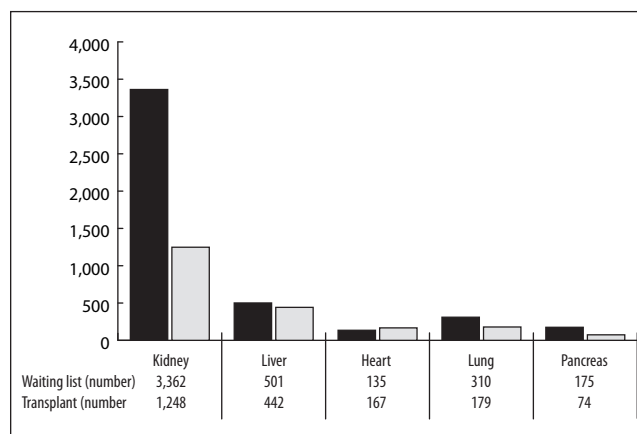


Figure 2. Waiting list on December 31, 2010, compared with transplants performed during 2010

Source: Canadian Organ Replacement Register, 2011, Canadian Institute for Health Information; Statistics Canada.





## **CANNT 2012 • ENVIRONMENTS OF EXCELLENCE!**

### **October 25–27 • OTTAWA, ONTARIO**

CANNT 2012 promises to be an “excellent” conference where nephrology professionals... nurses, technologists, administrators, researchers, pediatric nurses, pharmacists and more... will be able to learn, share, network, discuss and socialize together. Experience all that CANNT 2012 has to offer:

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We are excited to welcome Canadian nephrology professionals to Ottawa. Come and join us as we explore “ENVIRONMENTS OF EXCELLENCE”.

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### **ABSTRACTS**

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

CANNT’s national conference, CANNT 2012, provides an excellent venue for accomplishing these goals of CANNT. However, only a portion of CANNT members are able to attend the national conference annually. Cognizant of this, CANNT is pleased to be printing the abstracts to be presented in both oral and poster format at this year’s annual conference as a supplement to this issue of the CANNT Journal.

The following abstracts celebrate the diversity of nephrology topics being investigated and discussed across Canada. It is our hope that CANNT members interested in pursuing a profiled topic will contact our national office at 705-720-2819 or [cannt@cannt.ca](mailto:cannt@cannt.ca) to receive information regarding how to contact the author about the work.

We hope you will carefully review these abstracts!

Janet Baker & Alison Thomas,  
Co-Editors, CANNT Journal



## ORAL ABSTRACTS

### **Nursing Strategies to Support Self-Management in People with Chronic Kidney Disease**

*Sylvie Leung, RN, CNeph(C), PhD(c), Kathleen Hunter, RN, GNC(C), NCA, PhD, Belinda Parke, RN, GNC(C), PhD, Anne Sales, RN, PhD, Anita Molzahn, RN, PhD, FCAHS, and Sara Davison, MD, MSc, Edmonton, AB*

**Background:** To successfully manage chronic kidney disease (CKD), patients need ongoing support by health professionals. Nurses are the key organizers of many self-management programs. To date, we have gaps in our knowledge of how nurses support patients in self-management of CKD.

**Purpose of study:** The purpose of the study is to identify common strategies that nurses use to support patient self-management in clinical practice.

**Sample:** Two groups participated in the interviews: nephrology nurses and patients undergoing peritoneal dialysis (PD) in the Northern Alberta Renal Program. Seven participants were recruited for each group. Patients' age ranged from 50 to 75 years, and experience with PD ranged from immediately after training to more than six years. Nurses' work experiences ranged from two to 30 years.

**Method:** The study design is qualitative using interpretive description (ID) as the method. This method is suitable for the study, as the intent is to transfer practical knowledge into actions. Data analysis is now in progress. Data analysis is being conducted in three stages: (1) analysis of the nurse participant data, (2) analysis of the patient participant data, (3) integration and synthesis of categories and themes from two groups.

**Results and conclusion:** Preliminary findings include experiences of self-management of CKD—from patients' and nurses' perspectives, common strategies to support patient self-management, and barriers to and facilitators of supporting self-management. These findings include recommendations for nephrology nursing practice.

**Implication for nephrology care:** Knowledge from this study will help nurses develop clinical management tools or evaluation models to improve nephrology patient care.

### **Changing Practice from the Frontlines: A Nephrology Nurse's Perspective**

*Virginia Sulit, RN, Patsy Cho, RN, MScN, Gillian Brunier, RN, MScN, CNeph(C), and Shirley Drayton, RN, BA, Cert. Mediator, Toronto, ON*

Professional nursing has many challenges. At our university teaching hospital, the nurses on the medicine/nephrology ward care for patients requiring dialysis, as well as a fragile elderly patient population with complex medical conditions. Ensuring that all nurses on our ward are practising according to best practice guidelines is at times challenging. How can frontline nephrology nurses adapt to the demands of change in an increasingly complex environment?

Three years ago, our unit embarked on a journey to bring best practices to our unit. We were able to take advantage of provincial funds established to create alternative, less physically demanding roles for nurses 55 years of age or older. Since 2009, these practice change initiatives have included development of tools to teach best practice in back care, best practice in peritoneal dialysis (PD) clinical standards, best practice in PD exit-site care and best practice in transferring accountability for in-patients receiving hemodialysis.

This presentation will focus on our latest endeavour, which is navigating through the strategies used to develop a transfer of accountability communication record between the ward and the hemodialysis unit. Also, frontline nephrology nurses will gain some pragmatic insights on how to work with practice leaders to effect practice change using change strategies that involve interprofessional stakeholders to develop nursing protocols to support their practice. Frontline nephrology nurses can become drivers of change by participating in change initiatives. Accessing internal or external funding is most helpful in enabling frontline nephrology nurses to reach their potential.

### **Wound Care and the Nephrology Patient: An Overview of Wound Healing Principles Related Specifically to the Patient with Renal Failure**

*Lisa Gordey, RN, BScN, MCISc, Wound Healing, Edmonton, AB*

Wound care has not typically been included as an integral part of the care of a nephrology patient. This is despite the fact that chronic kidney disease and end stage renal disease are emerging as independent risk factors for the development of foot-related complications (Ndip, Lavery, & Bouton, 2010). Nephrology and wound care literature are constantly changing, attempting to stay current in both areas is understandably overwhelming for the nephrology practitioner.

Utilizing current best practice guidelines, this presentation will provide basic knowledge and tools needed to assess and initiate treatment of wounds that commonly affect the nephrology population. Special considerations relating to the unique symptoms of renal failure and how they affect wound healing will be discussed, allowing nephrology practitioners to return to their home unit and immediately put this knowledge to use.

## **Home Sweet Home: A Take-Home Peritonitis Kit**

*Jennifer Leechik, BSN, Kathleen Collin, BSc(Pharm),  
Chanel Prestidge, MD, and Colin White, MD, Vancouver, BC*

**Purpose:** We provide peritoneal dialysis (PD) to children spread over a large landmass in British Columbia and Yukon. Distance and lack of local facilities often lead to delay in initiation of peritonitis therapy. A kit was developed to enable immediate initiation of an empiric antibiotic protocol and standardize its delivery in the home and/or local facilities.

**Approach:** After reviewing our peritonitis episodes, organisms and sensitivities, we revised our peritonitis policies and procedures based on current best evidence. Our team chose Cefazolin, Tobramycin and Vancomycin for the kits. Kits have expiry dates, lot numbers and are individually assembled by a PD nurse and pharmacist. Each kit contains a 72-hour supply of antibiotics with provisions for sampling, reconstituting and administering the antibiotics, and replacing the transfer set. The kit includes a professionally designed booklet for parents or health care workers with step-by-step instructions for proper delivery of each antibiotic and replacement of the transfer set.

**Discussion:** Peritonitis is a major cause of PD failure. Promptly delivered and appropriately dosed antibiotics are paramount for effective treatment and salvage of membrane lifespan. Delay of antibiotic treatment, lack of facilities able to perform rapid sampling and antibiotic infusions often lead to poor outcomes. Late night episodes often lead to haphazard application of protocols, inefficient/insufficient dosing of antibiotics and/or situations where families forget how to use the antibiotics.

**Conclusion:** These kits allow best evidence-based delivery of empiric antibiotics in a timely manner to our distant patients. Measuring the cost and effectiveness of these kits is planned.

## **Meeting Ultrapure Standards for Water Quality**

*Mark Heathcote, Technologist, Ottawa, ON*

The Ottawa Carleton Dialysis Clinic has undertaken the task to meet ISO 23500 standards for ultrapure water quality and dialysate. The reason for this is to perform online priming, as well as hemodiafiltration on our Fresenius 5008 hemodialysis machines.

Online priming is the priming of the extracorporeal circuit with dialysate instead of saline.

Hemodiafiltration is the injecting of dialysate directly into the extracorporeal circuit during dialysis either pre or post dialyzer.

The criteria in meeting these standards involve having clean RO water, a hemodialysis machine capable of online priming and hemodiafiltration, a good disinfection process, and a good sampling process.

We had to meet the challenges of finding a microbiology lab that would test low enough to meet ISO 23500 standards, finding a method and process to obtain samples from the Fresenius 5008 machine consisting of one sample of substitute and one sample of dialysate, as well as going through a validation phase of weekly testing for bacteria and endotoxins for a month. This required the testing of all our dialysis machines, as well as the reverse osmosis water treatment unit.

By meeting ultrapure standards for water quality, we ensure a safer treatment for the patient, the treatment option of hemodiafiltration, as well as online priming to minimize saline bag use. This will result in more effective and efficient methods of dialysis.

## **Developing Protocols for a Home Peritoneal Dialysis Program**

*Gillian Brunier, RN(EC), MScN, CNeph(C),  
and Shirley Drayton, RN, BA, Toronto, ON*

Practice protocols are used by nurses to provide effective health care and to ensure there is consistency among health care providers' practice. Protocols provide a clear, logical structure for managing different clinical scenarios in a designated area of practice. Today, practice protocols are expected to be evidence based. For nephrology nurses, it is important that they understand how to develop practice protocols that are evidence based.

This presentation will focus on explaining the differences between practice guidelines and practice protocols. It will also provide an overview of how to establish a protocol and list some of the resources that can be used by nurses to write a protocol. Specific examples of protocols for managing patients who are to have a peritoneal dialysis (PD) catheter inserted will be discussed. Other examples of protocols, detailing how best to prevent PD infections in patients on home PD, will also be reviewed. Finally, there will be a discussion on how to evaluate the quality of different best practice guidelines and protocols.

The development of well-written protocols will provide nephrology nurses with more autonomy and help ensure that there is consensus among the different members of the nephrology health care team. They will also help optimize care for our home dialysis patients and potentially provide legal protection.

## **My KidneyCare Centre Kiosk: Description of an Electronic Self-Management Tool for Patients with Chronic Kidney Disease**

*Stephanie Ong, BScPhm, MSc, Eveline Porter, BScN, MN,  
Sarbjit Jassal, MB, MD, Alexander Logan, MD, and Judith  
Miller, MD, MSc, MHSc, Toronto, ON*

**Background:** Few IT solutions for self-management of complex conditions such as chronic kidney disease (CKD) exist.

**Objectives:** To describe the development and functionalities of an electronic self-management tool for CKD patients and present preliminary benefits evaluation results.





**Methods:** We used a multi-methods study design, entailing focus groups of patients and clinicians, a systematic literature review of IT solutions for chronic disease self-management, and a national survey of IT solutions used by Canadian nephrology programs.

**Results:** Themes extracted from the three phases formed the design principles for My KidneyCare Centre, a web-based self-management application that educates patients about CKD, allows them to monitor progress and set learning goals, and provides a tool for patient-provider collaboration. The touch-screen self-assessment kiosks had the following functionalities:

Patient view: self-assessment using the Edmonton symptom assessment scale, documentation of issues and concerns, identification of team members to see, and selection of learning topics.

Clinician view: patient self-assessment report summary, symptom score trends, and clinician recommendations.

Clinic summary report: patient printout generated at visit end reflecting self-identified learning needs and clinician recommendations.

Both patients and staff felt that the kiosk improved visit quality and strengthened patient-provider relationships. Although most kiosk users were aged 61 to 70 years, 75% found the kiosk not difficult to use.

**Conclusions:** My KidneyCare Centre is the first multifunctional self-assessment kiosk for a complex chronic disease. By expanding to personal computers, tablets, and/or smart phones to increase adoption, it is hoped that such solutions will empower and engage CKD patients in disease management.

### **Hemodialysis Vascular Access in Children after the Introduction of the Pediatric Priority for Renal Transplantation: A 14-Year Retrospective Cohort Study**

*Julie Paquet, RN, CNeph(C), Johanne Gagnon, RN, CNeph(C), Anne-Laure Lapeyraque, MD, Michel Lallier, MD, and Aicha Merouani, MD, Montreal, QC*

**Purpose of the study:** The policy to allocate a pediatric priority for deceased donor's kidneys for children under the age of 18, irrespective of HLA matching and waiting time, took effect on 08/02/2004 in Quebec. To assess its impact on

the choice of vascular access (VA) for chronic hemodialysis (HD) patients, we retrospectively analyzed information on the choice of the VA, as well as the waiting time before renal transplantation (RT).

**Results:** Seventy-eight children aged  $13.7 \pm 4.7$  years old treated on HD between 1997 and 2011 in the dialysis unit of CHU Ste. Justine were divided into two periods: period A: 01/01/1997–08/01/2004 and period B: 08/02/2004–12/31/2011.

The listing time before RT analyzed in 50 patients was 253 days with respective median values in period A ( $n=24$ ) and period B ( $n=26$ ) of 702 days (6-1910) and 63 days (2-692).

The choice of the VA was a permanent catheter for 25% in period A and 60% in period B, while arteriovenous fistulas (AVF) were performed for 75% in period A and 40% in period B.

**Conclusions:** In this retrospective study on the type of VA used in chronic HD after the introduction of the pediatric priority for RT in Quebec, we observed a shift in favour of catheters over AVF in patients waiting for their RT.

**Implications for nephrology care:** This represents challenges in the organization of care for these patients who had a decreased time on HD before their RT, with questions on what type of VA to choose when HD is required.

### **Shower and No-Dressing Technique for Tunneled Central Venous Hemodialysis Catheters: 2012—An Update**

*Andrea Pember, RN, and Suzanne Seiler, RN, London, ON*

The shower and no-dressing technique for tunneled CVC was initiated at the London Health Sciences Centre (LHSC) in 2008 as a pilot project, developed by the Vascular Access Interest Group, and led by NP (JulieAnn Lawrence Murphy). The procedure has now been rolled out to include all the dialysis units at LHSC, which includes two in-centre units, 10 satellite units and a home hemodialysis unit.

We have been able to positively demonstrate, through statistical analysis of infection control, the reduced numbers of blood stream infections (BSI) with individuals who have adopted this procedure, compared to the hemodialysis patients with a conventional permcath dressing. As well, we know with interactions with our patients that we are providing them with a safe way to shower, as we know many of our patients shower anyway.

We have promoted the use of “champions” in each of the dialysis units who are responsible for teaching the procedure to our patients. We use our inclusion and exclusion criteria to enrol patients, and require a written order by an MD/designate.

We now have almost four years of data in regards to infection and numbers of patients, which we can share. We currently use a database to keep track of all patients enrolled and tracking infections.

Recently (fall 2011), Accreditation Canada recognized LHSC for leading practice with regards to the procedure of shower and no-dressing technique for tunneled central venous hemodialysis catheters.



## **The Trials and Tribulations of Switching to Single Needle for Safety**

*Dana Vae Ross, RN, CNeph(C), and Sharon Calverley, RN, CNeph(C), Ottawa, ON*

**Purpose:** To share clinical experiences, insights and lessons learned with single needle (SN) nocturnal home hemodialysis.

**Description:** Patient safety is critical for home therapies. In 2008, the Home Dialysis Unit (HDU) implemented new hemodialysis machines capable of SN dialysis. Our goal was to reduce the risk of ex-sanguination in the event of a venous bloodline disconnect or a needle falling out. Initially, we had limited knowledge and experience in the practical application of teaching and supporting SN patients and scant resources were available. Issues encountered included learning a new machine, the concept and principles of SN, patient reluctance relating to change, access monitoring, alarm troubleshooting and many others. We will discuss the solutions that were developed to deal with these.

**Evaluation:** Safety motivated our decision to use SN. However, there were trade-offs. Clinically, SN patients did not always experience the benefits of a liberal diet, optimal clearance results, blood pressure control and improved sense of well-being that nocturnal double-needle patients report. We discovered SN has its place, but is not the answer for everyone.

**Implications:** Our knowledge, expertise and practice have evolved and valuable lessons have been learned following implementation of SN. By sharing our experience we hope to help other units contemplating the transition to single-needle nocturnal hemodialysis.

## **Green Infection Control: The New/Old Way to Kill Bugs!**

*Rejean Quesnelle, Toronto, ON*

Green Infection Control: The New/Old Way to Kill Bugs! is the fourth in the ongoing Green Dialysis presentation series. This time, the focus is on infection control practices within our dialysis units. We hear a great deal about “superbugs”, antibiotic resistant organisms that are now plaguing our hospitals. To ensure that all of our hemodialysis-related equipment (machines, chairs, water systems, staff, etc.) are safe for use, we require some means of disinfection—chemical, heat, or otherwise. This protocol is done after the patient’s use, for the reduction of cross-contamination and the proliferation of bacterial organisms. What we have now come to realize is that certain forms of disinfection, namely the use of certain chemicals, can, in fact, have adverse reactions and lead to the negative impact on one’s health, the health of other staff and patients, the increase in resistant organisms and the reduced health of the planet. There are new and innovative ways that we can incorporate within our dialysis environment to ensure that all of the above concerns become a thing of the past.

Topics covered during the presentation include: infection control practice basics, traditional disinfection protocols, disinfecting chemical agents of yesterday and today, the concerns and dangers, the new tools and the future of infection control.

Green Dialysis hopes to prove that eco-minded and sustainable practices can not only be simple to implement, but also a healthy trend that will soon become the norm for you, your patients and Mother Earth.

## **Evaluation of a New Model of Care to Support Home Peritoneal Dialysis Patients: The Nephrology Integrated Care Demonstration Project**

*Mary Ann Murray, RN, PhD, CONC(C), GNC(C), CHPC(C), Connie Twolan, RN, BScN, MHS, CNeph(C), Glenda Owens, RN, BCommerce, MScN, Chris Ferguson, RN, BScN, MHS, Monique Benard, RN, CNeph(C), Janice Verch-Whittington, RN, BScN, Karen Lapierre, RN, GNN(C), Marlene Steppan, RN, BScN, and Wendy Gifford, RN, PhD, Ottawa, ON*

**Purpose of project:** To evaluate patient and service delivery outcomes following implementation of a new regional model of peritoneal dialysis care.

**Description:** A gap analysis, undertaken by an intersectoral, interprofessional regional dialysis working group, revealed the need to better support home dialysis patients. Subsequently, through the reorganization of work processes a new model of community-based care delivery was created, guided by an articulated standard of care (guideline with associated tools and documentation templates). In this new model, patients receive care from specially trained community service providers who have access to tailored consultation and support from expert peritoneal dialysis nurse case managers. Through a partnership arrangement, a Community Care Access Centre nephrology case manager was dedicated to the regional program.

**Evaluation/outcomes:** Patient outcomes (retention on modality, technique failure rates, infection, satisfaction); provider outcomes (knowledge, perceived confidence/competence, satisfaction); and organizational outcomes (financial and human resource intensity) are being assessed six months post-implementation through chart audits, interviews and review of organizational data. Preliminary results, standards of care and accompanying procedures and documentation underpinning the project will be presented.

**Implications for nephrology practice/education:** Results will inform future reorganization of work including issues of training and assessment of competency for the individual and care teams related to best practices for peritoneal dialysis. Results will help to identify strategies to build capacity among providers, better understand how the environment and context of care impacts health human resources, and identify infrastructure mechanisms to support effective care delivery processes for community-based renal care.





### **How to Improve Patient and Clinical Outcomes Using Lean Management in Nephrology Units**

*Chantal Saumure, BSN, MBA, Moncton, NB*

Lean Management (LM) is a modern method currently adopted in many health care organizations to improve clinical processes and patient outcomes. LM also has the merit of offering results that will drive customer-focused, high-quality, and cost-effective care, including a better quality of life environment in the workplace.

As chronic kidney disease (CKD) continues to increase in Canada, as does the demand of optimal nephrology care, where rationalized resources are always at stake, programs should seriously consider LM as a key component for success. An effective LM process has to be incorporated in the organizational structure for a renewed, efficient and optimal care delivery model. However, literature is scarce on the implementation of LM in nephrology units.

This presentation will highlight, based on literature and a practical case study, the major challenges and drivers of LM implementation in an outpatient nephrology clinic at the Dr. Georges-L.-Dumont University Hospital Centre in Moncton, NB. Our findings are categorized as follows: 1—structural factors, 2—professional factors, 3—patient factors and 4—technology factors. We will present an adapted evidence-based framework for the implementation and monitoring of LM process in a nephrology unit.

### **Troubleshooting Skills for the New Renal Technologist**

*Clarence Graansma, Charge Renal Technologist, Kitchener, ON*

Being able to reliably troubleshoot problems with equipment is one of the most important skills a Renal Technologist needs to acquire and improve in his or her career. Most Renal Technologists have formal education in biomedical and renal technology and may receive additional formal training to service and maintain specific equipment but, often, general troubleshooting skills are learned informally over time on the job. At Grand River Hospital we recently started two new technologists and needed to improve their troubleshooting skills in a short time so that they could work effectively on equipment with minimal supervision. We came up with a program that summarized the troubleshooting process into five steps: investigate, diagnose, repair, validate and document. This presentation will cover the various steps and methods of effective troubleshooting and explain our approach.

### **The Introduction of Sustained Low-Efficiency Dialysis (SLED) in The Intensive Care Unit (ICU): A Collaborative Approach Between the Hemodialysis Unit and the ICU—A Pilot Project**

*Sharon Slivar, RN, MEd, Roselyn Castaneda, RN, MHS, CNeph(C), Deborah Dalton-Kischel, RN, CNCC(C), and Gail Sprott, RN, BScN, CNeph(C), Ottawa, ON*

Acute Renal Failure (ARF) is a common complication in the ICU (Kumar et al., 2004). Over the past 25 years there have been significant technological advances in the delivery of Renal Replacement Therapy (RRT). Some modalities of RRT include peritoneal dialysis (PD), intermittent hemodialysis (IHD), continuous renal replacement therapies (CRRT) and, more recently, the use of Sustained Low-Efficiency Dialysis (SLED), a form of hybrid therapy that uses slow blood and dialysate flow rates over an 8- to 12-hour period on a daily basis (Marshall et al., 2004; Kumar et al., 2004). Before implementing any programs using complex technology such as SLED, policies, procedures and protocols should be developed to address issues such as role demarcation, troubleshooting of equipment, required supplies and equipment, to name a few. This presentation will focus on the elements to be considered when planning and implementing a SLED program. A pilot SLED program was initiated in one of our ICUs. The authors will discuss their experience in the implementation of this project including the following: Why SLED?; the difference between CRRT and SLED; nursing advantages; the planning phase (creation of a multidisciplinary committee); the training of staff; roles and responsibilities of the team members; results from the evaluations of the pilot project; and the challenges and successes encountered. Although there is a paucity of nursing literature on SLED, we hope by sharing our collaborative experience, nursing knowledge can be enhanced.

### **Opportunities for Enhancing Diabetes Care for Peritoneal Dialysis Clients: Utilizing a Chronic Disease Prevention and Management Approach to Improve Health Care Outcomes**

*Christina Vaillancourt, MHSc, RD, CDE, Emily Harrison, RN, BHScN, CNeph(C), and Heather Reid, BScPT, MHSc, Oshawa, ON*

The Ontario Renal Network reports that 50% of incident patients have diabetes. In Ontario, there are programs that focus on either chronic kidney disease (CKD) or diabetes. This results in uncoordinated care, duplication and confusion for clients. The Chronic Disease Prevention and Management (CDPM) model suggests that the health care system needs to be redesigned to facilitate smooth transitions, patient empowerment and coordinated flow of information to support self-management and prepared practice teams. Lakeridge Health is committed to the adoption of CDPM. In 2010–2012, the

program facilitated the completion of a web-based survey collecting data from registered dietitians (RD) (N=18) in Ontario with practices in adult peritoneal dialysis programs (PDP) to examine the integration of CDPM into PDP. Data collection included program-specific data regarding program models, facilitators and barriers to the provision of dialysis-specific diabetes care. Results identified three major themes: client-focused care; RDs as unrecognized CDPM champions and the missing CDPM puzzle pieces of collaboration and integration of care. The conclusions suggest that many PD teams have embraced CDPM. However, some barriers still exist that affect the full adoption of CDPM. Building upon this study and in the continued focus to utilize the principles of CDPM, LH is progressing with a more purposeful program re-organization. Specifically, the regional nephrology and diabetes programs are integrating, which includes: consolidation under one directorship and management portfolio, a CKD and diabetes clinic with endocrinology presence, cross-appointed staff, and the creation of common education materials. The integration of nephrology and diabetes programs addresses many of the identified barriers in the study, resulting in a patient-centred environment of excellence, which eases disease burden by providing clear disease management for the individual living with these complex chronic illnesses.

### **Vascular Access: It's Not in VAIN**

*Patty Quinan, RN, MN, CNeph(C), Toronto, ON*

It is universally accepted among nephrology nurses and practitioners that arteriovenous (AV) fistulae are the best vascular access for chronic hemodialysis patients. AV fistulas are associated with decreased mortality and morbidity, fewer hospitalizations and interventions, and improved long-term survival when compared to AV grafts and central venous catheters (CVC).

Nurses play a vital role in improving patients' outcomes. Good clinical assessment of vascular access, close monitoring of treatment parameters related to access and prompt reporting of access problems are all factors necessary for achieving and maintaining a functional vascular access.

The purpose of this session is to provide nephrology nurses (from novice to expert) with a theoretical and practical review of vascular access. This session includes information on venous and arterial mapping, AV access creation, assessment and troubleshooting strategies for successful cannulation of new and developed AV accesses, CVCs and strategies to improve catheter patency, prevention and standardized reporting of catheter-related blood stream infections (CR-BSI), monitoring machine and access parameters, and common surgical and radiological interventions. Case studies including radiological images will be presented of patients with catheter-related central occlusion, insertion of tunnelled CVC, stenosis treated with angioplasty, vascular access thrombosis, stent placement, and coiling of collateral/accessory veins. Opportunities for discussion will be encouraged.

The implication for nursing practice is to increase nurses' knowledge and understanding about vascular access in order to optimize patient outcomes, reduce vascular access-related complications, and help prolong vascular access survival.

### **PARADISE Almost Found: Realizing Peritonitis Analysis of Rates Advancing Dialysis Information and Staff Education**

*Brenda Cyr-Mockler, RN, CNeph(C), Susan McMurray, RN, BN, CNeph(C), and Sharon Calverley, RN, CNeph(C), Ottawa, ON*

The Ottawa Hospital peritoneal dialysis (PD) program is an active program caring for approximately 140 patients. The program strives for optimal patient outcomes and, in doing so, regularly monitors infection rates. Prior to 2009, peritonitis rates were 1:28.

In the spirit of excellence, the PD team wanted to improve the peritonitis 2009 rate of 1:32 patient months. Thus, the PARADISE project was launched and with subsequent positive patient outcomes. Peritonitis rates steadily improved with results in 2010 of 1:37 patient months.

To sustain the gains and further optimize patient outcomes we continued to implement targeted interventions. The practice enhancements included: a home visit protocol; standardized documentation; targeted patient and nurse education; and an interprofessional team approach to care planning related to peritonitis problem solving.

All of these practice enhancements contributed to an improved peritonitis rate of 1:41 patient months in 2011. Lessons learned, resources developed to support these initiatives and strategies to address barriers will be shared during this presentation.

Creating environments of excellence requires attention to the ongoing monitoring and interpretation of data to advance best practices and optimize patient outcomes.

The Ottawa Hospital peritoneal dialysis program's journey to paradise continues.

### **New Hope for a Transplant**

*Mary Rada, BSc, RN, CNeph(C), and Diane Dumont, BScN, RN, CNeph(C), Ottawa, ON*

It is well known that there is a growing number of people with end stage renal disease (ESRD) each year. Though renal transplantation is the preferred treatment for potential candidates, there continues to be an increasing disparity between the supply and demand for organs. Living donation not only helps meet that need, but also offers potential recipients the best possible transplant outcome. Unfortunately, not all living donors are matches for their intended recipients. More than 50% of ineligible donors are due to incompatible blood type or tissue type. In







the past, an incompatible living donor meant the only hope for a transplant was a long wait on the deceased donor waitlist. The purpose of this presentation is to increase awareness about the transplant options for people with ESRD. One of the options we will focus on is the Living Donor Paired Exchange (LDPE) registry, which is run by Canadian Blood Services. This nationwide registry matches incompatible donor/recipient pairs with other incompatible pairs creating a direct exchange or a chain of several transplants. This presentation will describe The Ottawa Hospital's experience with LDPE, how it works, the challenges and the successes. There have been well over 100 transplants done across Canada through the LDPE registry since its launch in 2009. The Ottawa Hospital has participated in many chains resulting in an increase in living donor transplants within our program. This program has and will continue to greatly impact people with ESRD, as it offers new hope for a living donor renal transplant.

### **Moving Beyond the "Perpetual Novice": Understanding the Experiences of Novice Hemodialysis Nurses and Cannulation of the Arteriovenous Fistula**

*Barbara Wilson, RN(EC), MScN, CNeph(C),  
Lori Harwood, RN(EC), PhD(c), CNeph(C), and  
Abe Oudshoorn, RN, PhD, London, ON*

Cannulation of the arteriovenous fistula (AVF) is an essential skill, as part of the hemodialysis (HD) treatment. With declining rates of AVFs, opportunities to become expert in this skill have become limited. A previous qualitative study investigating the culture of vascular access cannulation identified a number of factors that hinder HD nurses from becoming expert cannulators. The term "perpetual novice" was coined to acknowledge the failure of some HD nurses to transition from novice to expert despite working in HD for a number of years. This study provides further exploration of the concept of "perpetual novice" in an effort to describe the attitudes and culture surrounding cannulation of the AVF from the perspective of the novice cannulator. A qualitative research design was used based on an ethnographic methodology. Nine hemodialysis nurses were interviewed using a semi-structured interview guide. Results revealed the interplay between personal and environmental/contextual factors that make it difficult for the HD nurse to move beyond the novice cannulator. On a personal level, the HD nurses' approach to learning, previous experience, emotional reaction to stress, as well as interpersonal relationships with

colleagues play significant roles. Environmental/contextual factors that hinder cannulation skill development include limited learning opportunities, attitudes and demands from patients, unit flow and time pressures, as well as continuity issues inherent in the current model of nursing care. Results of this study will be helpful in directing future educational, operational, and supportive interventions for novice HD nurses around cannulation competence.

### **A Nutritional Supplement Program for Malnourished Hemodialysis Patients**

*Jill Bondy, RD, Shelly Kett, RD, Donna Mallet, RD, Cindy Cockram, RN, CNeph(C), Colleen Cuddy, RN, BScN, MHS, Janet Graham, MHSN, Swapnil Hiremath, MD, MPH, Sara Kilcollins, RN, Cindy Leroux, RN, BScN, CNeph(C), Danielle Reklitis, RN, BScN, CNeph(C), and Marcel Ruzicka, MD, PhD, FRCPC, Ottawa, ON*

**Introduction:** Malnourished hemodialysis (HD) patients have an increased risk of overall morbidity and mortality. We assessed whether provision and integration of nutritional supplements with dialysis treatments improved nutritional status of these patients.

**Methods:** This prospective observational study included HD patients with low protein catabolic rates (PCR < 0.9g/kg) and hypoalbuminemia (albumin < 35 g/L). A nutritional supplement drink was given at each HD session, and consumption of the beverage occurred on the HD unit during treatment. Patients reached the end point and were discontinued from the program once PCR was > 0.9g/kg for three consecutive months.

**Results:** Over the period of 24 months, 20 patients met the inclusion criteria. For the 17 patients who participated in the nutrition supplement program, the baseline PCR was 0.79g/kg +/- 0.03, and baseline albumin was 28 g/L +/- 2. Nine patients met the end point and completed the program after an average of 7.4 months. Five patients died or transferred, and three patients remained on the program. For those who completed the program, PCR was 1.1 g/kg +/- 0.1, and albumin was 32g/L +/- 2. Data presented are means +/- standard deviation.

**Conclusions:** The nutritional supplement program was successful in achieving endpoints in more than 50% of patients. Whether the improvement in nutrition status decreases C-reactive protein and improves overall morbidity and mortality remains to be seen.

### **Extending Our Reach: Introducing Mobile Electronic Devices in a Regional Home Dialysis Program**

*Susan Leslie, RN, CNeph(C), Monique Sunstrum, RN, CNeph(C), Rene Corriveau, RN, MScN, Pamela Laprise, RN, BScN, CNeph(C), and Mary Ann Murray, RN, PhD, CON(C), GNC(C), CHPCN(C), Ottawa, ON*

**Purpose of project:** To assess the feasibility of mobile electronic devices to aid communication and care in home dialysis. The overall goal is to determine how these devices impact care delivery processes and patient outcomes.



**Description:** There is emerging recognition that mobile electronic devices can optimize care and facilitate communication processes. Accordingly, mobile electronic devices were implemented into a Home Dialysis nurse case management model of care. RN case managers, the unit care facilitator and Advanced Practice Nurse were provided with portable electronic devices and given user education. The e-technology was implemented to foster timely patient assessment, monitoring and education; enhance interprofessional communication; and to enable access to documentation systems during home and off unit clinic visits. Devices were equipped with access to resources, procedures, decision support tools and best practice guidelines.

**Evaluation/outcomes:** Device and software functionality in a home dialysis setting; perceived utility/impact on care processes, patient outcomes; satisfaction with user interface and team communication in improving care and access to services are being evaluated. Preliminary results will be presented.

**Implications for nephrology practice/education:** The successful implementation of information technology systems depends on staff support and engagement. As part of enhancing home therapies, renal programs will increasingly depend on nephrology nurses to deliver informatics-enabled transformation. Failure to embrace the digital opportunities jeopardizes improvements in quality, productivity and efficiency of patient care and service delivery. Leveraging opportunities to test and evaluate e-technologies at the direct point of care can help harness the power of informatics to enhance home therapy best practices and build environments of excellence.

### **Development of Cannulation Skills with Bedside Ultrasound-Guided Cannulation Using Phantom Models**

*Rosa Marticorena, RN, and  
Sandra Donnelly, MD, Toronto, ON*

Once a fistula or a graft for hemodialysis is deemed ready for cannulation, its functional longevity is determined by cannulation practice.

Cannulation complications caused by inaccurate needle placement can result in significant extravasations and hematoma formation that may delay a dialysis treatment or render the access inaccessible for treatment until healing occurs.

Cannulation is a skill obtained during hemodialysis training and is refined thereafter with continuous daily practice.

Hemodialysis nurses with minimal exposure to cannulation practice face a big challenge when they look after patients who require cannulation. The use of imaging technology at the bedside may represent the solution to this problem.

**Purpose of study:** To promote excellent cannulation practice with the application of real time ultrasound guided cannulation by nurses that have minimal exposure to cannulation practice.

**Methods:** An educational bedside ultrasound module, which included theoretical and hands-on practice components using phantom models, was delivered. Application of real-time ultrasound guided cannulation with the help of a mentor was evaluated. Complication rates pre and post intervention will be collected and analyzed.

**Results:** The results of this intervention, measured by a lesser rate of cannulation misadventures and, ultimately, by a lesser rate of patients decreasing or missing dialysis treatment over time will be presented.

**Implications for nephrology practice:** Increased opportunity for development of cannulation skills and prevention of cannulation complications that impact quality of dialysis delivery in a setting with minimal exposure to cannulation practice.

### **Back to Basics: Optimal Blood Pressure Measurement and Implications for Patient Outcomes and Nephrology Practice**

*Francine Poirier, RN, CNeph(C), Janet Mooney, RN,  
CNeph(C), Lise Gaudet, RN, and Pamela Laprise, RN,  
BScN, CNeph(C), Ottawa, ON*

**Purpose:** To strengthen nephrology nurses' knowledge and practice related to effective blood pressure (BP) measurement.

**Description:** Accurate measurement of BP is fundamental to nephrology patient care and BP measures often drive treatment planning. This has important implications for patients' quality of life. While BP measurement is considered a basic nursing skill, studies and clinical experience indicate that optimal technique is often not followed; equipment may be incorrectly calibrated; and/or BP cuffs may not be correctly fitted to the patient arm size. As well, as patients are often engaged in self-care, it is imperative that patients receive focused teaching in correct BP measurement.

**Outcome/evaluation:** Practical strategies, resources and tips, as well as a synthesis of the evidence supporting best practices in BP measurement will be profiled. Clinical examples of how to take BPs in the right way, at the right time, with the right equipment and with the right patient education will be offered. Patient teaching strategies and resources to support patients will be described. Techniques for equipment calibration will be demonstrated.

**Implications:** Excellence in nephrology nursing depends on attention to core nursing skills. Over time, nurses may experience desensitization to the importance of good BP technique with resultant skill decay. Raising awareness and reaffirming best practice in BP technique can only result in better patient outcomes and nursing practice.





## POSTER ABSTRACTS

### ***The Change Journey: Inspiring Excellence in In-Centre Hemodialysis (ICHHD) through the Application of Process Improvement and Lean Methodology Principles***

*Heather Reid, BScPT, MHSc, Carl Reid,  
LEAN Six Sigma Black Belt, and  
Shaunette Williams, RN, Oshawa, ON*

In 2010, the Regional Nephrology Program at Lakeridge Health (LH) began a more “formal” change initiative and process improvement journey to assist in driving excellence in patient outcomes, staff satisfaction and meeting the goals of the Ontario Renal Network (ORN).

The new role of “Renal Quality Leader (RQL)” was implemented to facilitate this journey and to improve the work life of staff by increasing staff satisfaction, to support improved patient outcomes. The RQL and manager struck the multi-disciplinary ICHD team: Communication-Workload-Clutter (CWC) working group. The CWC brought extensive knowledge and experience and applied LEAN methodologies to develop several improvement opportunities. A process was implemented to capture the “voice of the staff” and the “voice of the patient.” In a Value Stream Mapping session, the group utilized Gemba walks, spaghetti mapping and heat mapping as mechanisms to identify known wastes, barriers and issues.

The two largest forms of waste identified were “waiting” due to inefficiencies throughout the process and “defects” as a result of tools that lack the intended effectiveness. They developed and prioritized an improvement plan consisting of greater than 12 initiatives, some of which were implemented immediately. The solutions were aimed at standardizing work to tighten connections; increasing communication and transparency for both staff and patients, and eliminating clutter to improve productivity and reduce workload.

Preliminary outcomes achieved included the completion of a systematic method to offload supplies and reduce unnecessary time to locate equipment while simultaneously increasing valuable space in the equipment/supply rooms and hallways.

## **“An Old Friend—Revisited”:**

### **Review of Peritonitis Prevention Initiative**

*Irene Ryll, RN, Carol Ozubko-Malcolm, RN, CNeph(C),  
Sylvanie Williams, RN, CNeph(C), and Donna Mallach, RN,  
BScN, Edmonton, AB*

It has been five years since the home peritoneal dialysis unit at the Northern Alberta Renal Program (NARP) at the University Hospital in Edmonton, Alberta, focused on improving peritonitis rates, as a continuous quality initiative (CQI). Peritonitis continues to be the leading cause of technique failure and catheter loss and contributes to morbidity and hospitalizations (Piraino, *JASN*, 1998). In 2007, 60% of peritoneal dialysis (PD) attrition in our program was due to transfer to hemodialysis of which 39.3% was due to infectious reasons.

In the first quarter of 2007, our program’s peritonitis rate was 1:19.3 per patient months. The PD team sought to identify areas to improve this. Consequently, we developed the CQI project to reduce peritonitis rates to meet and exceed the international standards. Upon review, *Staphylococcus aureus* and coagulase-negative *Staphylococcus* were the most common organisms accounting for 46.1% of all peritonitis episodes. As these organisms are associated with connectology, we initiated a patient survey to identify causes of contamination. We learned that the majority of patients were not masking or performing adequate hand washing prior to procedures.

Along with revising existing protocols, we also focused on the importance of masking and hand washing for all PD patients. Peritonitis rates for 2007 improved from 1:23.4 to 1:27.2 in 2008, 1:26.9 in 2009, 1:23.2 in 2010 and 1:27.9 in 2011. This poster will highlight our program’s progress since the CQI project was initiated in 2007 and discuss our current status.

### ***Peritoneal Dialysis Champions in the Emergency Department to Reduce Calls Back and Create Capacity***

*Lisa Kaye-Lillebuen, RN BScN, CNeph(C), Donna  
Hackman, RN, CNeph(C), Margaret Dymond, RN, BSN,  
ENC(C), and Frances Reintjes, RN, BScN, BScSpec,  
Edmonton, AB*

At the home peritoneal dialysis unit of the Northern Alberta Renal Program (NARP) in Edmonton, Alberta, we found that on-call nurses were spending a significant amount of time while on call providing support to the emergency department (ED) staff. Nurses were being called back after regular hours to do procedures such as twin bag exchanges, transfer set changes, and assisting with peritonitis protocols. Although the nurses in the ED receive an orientation to basic peritoneal dialysis (PD) procedures, PD patients represent only a small proportion of ED patients, so most do not feel comfortable performing PD.

On-call practices, as well as nurse-to-patient ratios for PD vary between programs across Canada. In our unit, we have 8.4 nurses for 170 patients and our on-call hours are Monday to Friday 1530–2200 and 0730–2200 on weekends. NARP is encouraging home-based therapies and with program growth and limited resources, we wanted to find a way to build capacity in the ED to improve patient care and reduce calls back for basic PD procedures that emergency nurses are capable of performing.

The purpose of this presentation is to highlight our education initiative to improve capacity in the ED through the use of “PD champions” and the development of a flow chart that assists nurses with decision-making regarding who to call for help and when. This new role has helped decrease the amount of calls back to the ED and more timely care for our patients.

### **Striving for Excellence Between Two Worlds**

*Carol Ozubko-Malcolm, RN, CNeph(C), Frances Reintjes, RN, BScN, BScSpec, Irene Ryll, RN, Sylvanie Williams, RN, CNeph(C), and Donna Mallach, RN, BScN, Edmonton, AB*

The Northern Alberta Renal Program (NARP) at the University of Alberta Hospital in Edmonton, Alberta, has demonstrated excellence in dialysis care for 50 years of which at least 30 have included pediatric peritoneal dialysis (PD) care. This poster presentation highlights some of the features of our practice setting.

The home peritoneal dialysis unit in NARP is a predominantly adult PD program, which also cares for pediatric patients. Our program includes children from northern Alberta, Saskatchewan, and the Northwest Territories; and while the nephrologists and allied health team change at transition into the adult program, continuity for the patient is maintained, as the nurse and clinic setting remain the same.

Pediatric care is managed in a multidisciplinary setting including 8.4 nurses (six FT, four PT). Primary nursing is the model of care. Our program tracks many parameters including nursing time spent on training, clinic visits, nursing procedures, and on call activities through daily service logs. These data have never been reported. In 2011, we cared for 11 pediatric patients in a program of 170 PD patients. Those 11 represented 3,955 hours of care and remarkably monthly nursing workload varied from 7% to 22% for those 11 pediatric PD patients. Service log data assist in program planning and understanding of the requirements for successful pediatric care and outcomes.

### **Advance Care Planning:**

#### **The Patient Perspective**

*Jane Ridley, RN(EC), MScN, CNeph(C), Charlotte McCallum, RN(EC), MN, ACNP, CNCC(C), Marlene Rees-Newton, MSW, RSW, Dennis Smith, RN(EC), MN, and Susan Scott, MSW, RSW, London, ON*

Advance care planning (ACP) is a complex process that requires thoughtful and deliberate conversations. Over the past several years, a task team of allied health professionals in a teaching nephrology program has been developing a process and tools to enhance the quality and consistency of ACP with hemodialysis patients.

The team is preparing to conduct a CQI project with 10 dialysis patients who have not yet had end-of-life (EOL) care/resuscitation discussions with the dialysis team. These 10 patients will receive what has been the standard discussion about resuscitation status and selection of a power of attorney for personal care (POA-PC). Within a week, one of the task team will conduct a brief interview consisting of a series of pre-determined questions regarding how they felt about the EOL care talk, whether or not the discussion was helpful in planning for their future health care changes, and any concerns they have about EOL care.

The same 10 patients will then be guided through the new proposed process for ACP. This will involve providing them with written information on ACP and selection of a POA-PC, as well as spending time with either a social worker or nurse practitioner to guide them through the process of ACP. This will be followed with an interview asking the same questions to determine if this process was more valuable to them.

### **Illiteracy is Not an Issue for Learning PD**

*Kristi Kristensen, RN, Vancouver, BC*

The United Nations Educational, Scientific and Cultural Organization (UNESCO) defines literacy as “the ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning to enable an individual to achieve his or her goals, to develop his or her knowledge and potential, and to participate fully in the wider society” (2012). The latest literacy study by Statistics Canada shows that more than three million Canadians aged 16 to 65 have problems dealing with printed materials.

With this statistic in mind, it is not surprising that we often face literacy challenges in our patient education. In addition, our unique patient population encompasses many immigrant groups, which compounds the challenges for our peritoneal dialysis (PD) nurses. This poster will showcase how the PD nurses at St. Paul’s Hospital in Vancouver help one of our patients overcome the literacy hurdle and learn PD so he can remain at home—because illiteracy is not a barrier to learning PD.

### **Hemodialysis: New Start Unit— The Beginning and Its Purpose**

*Monique Vail, RN, CNeph(C), Ottawa, ON*

The New Start Kidney Unit (NSKU) was started in September 2007 at the Ottawa Hospital. Its purpose is to transition all new hemodialysis patients in the Ottawa Hospital through this unit. While in New Start, patients would complete an eight-step care map including education and teaching of different types of modalities. The program helps to facilitate assessment of eligibility and suitability of transplant and home therapies. The unit helps to give optimal care to the new patient to promote self-care. Another objective of the unit includes identifying vascular access needs.

This presentation will show proof of the program’s success with results of a study conducted showing 30% of New Start patients choosing home therapy as a modality. In conclusion, the presentation will give a case study of an actual patient’s progress through New Start.







### **Medication Reconciliation in a Pediatric Nephrology Clinic**

*Dana Kennedy, BScPhm, ACPR, Regis Vaillancourt, OMM, CD, BPharm, PharmD, FCSHP, Anne Chretien, RN, Celine Boulanger, RN, and Paula Tam, RN, Ottawa, ON*

**Purpose of the project:** A quality assurance assessment will be performed to optimize the medication reconciliation process within the pediatric nephrology clinic.

**Description:** Patients in the pediatric nephrology clinic often have very complex medication regimens with multiple medications, administration times, and dosing forms. Patients/families often find it difficult to remember to take or give medications at the appropriate dose and time. The pediatric nephrology nurses perform medication reconciliation and take a medication history on every patient at each visit. The nephrology pharmacist also prepares patient-specific medication calendars as an education tool for families that have difficulty with their complex medication regimens. The goal is to improve and facilitate patient compliance and education. This process allows physicians to have an updated medication history during their assessments for proper dosing changes and therapeutic assessment.

**Evaluations/outcomes:** The percentage of medication reconciliations that were performed in the transplant and chronic kidney disease clinics will be determined. The average number of medication changes from one clinic visit to another and the number of discrepancies (i.e., doses written in mL instead of mg) will also be analyzed. This will help to optimize the medication reconciliation process within the pediatric nephrology clinic.

**Implications for nephrology practice/education:** The pediatric nephrology team has established a medication reconciliation practice for outpatients. They hope to share their experiences with other departments in order to improve medication compliance and education, as medication reconciliation is an important patient safety practice that is considered to be a standard of care.

### **Calciophylaxis Prevention is the Best Medicine**

*Sylvia Burns, RN, and Shirley Sawler, RN, Sydney, NS*

Calciophylaxis is a rare and serious disorder characterized by systemic medial calcification of the arterioles that leads to ischemia and subcutaneous necrosis. It is most commonly found in patients with end stage renal disease (ESRD) or who have recently received a renal transplant. Although considered a rare complication, several of our hemodialysis patients have been diagnosed and treated for calciophylaxis in our Cape Breton dialysis population.

Our poster presentation will focus on various aspects of calciophylaxis, including:

- Calcium phosphorus balance in the renal population
- Diagnosis—how it is made
- Treatment options—daily dialysis, medications
- Cost analysis with statistical graphing.

**Conclusion:** Our goal is optimal patient renal care, which would include the scope of prevention of such complications, and education of the renal staff and patient population.

### **Best Volume: Best Practice**

*Valerie Cameron, RN, Gail Barbour, RN, CNeph(C), Jane Ridley, RN(EC), MScN, CNeph(C), Dennis Smith, RN(EC), MN, Kathryn Walton, RN, and Ruth Anne Wright, RN, CNeph(C), London, ON*

Achievement of dry weight is an ongoing challenge in hemodialysis patients. Patients who are above their dry weights are at risk for problems associated with volume overload; patients who are under their dry weights can experience listlessness, headaches, and dizziness among other symptoms. Identification of dry weight is often achieved through trial and error (Daugirdas, Blake, & Ing, 2007, p. 163). The *Nephrology Standards of Nursing Practice* direct us to conduct “comprehensive health assessments using a variety of assessment techniques including evidence-based tools/techniques for... collecting patient information” (CANNT, 2008, p. 13).

This presentation will present the results of a CQI project to evaluate volume status of conventional in-centre hemodialysis patients at the end of their dialysis treatments. Volume status will be assessed through traditional fluid assessment (chest assessment, central and peripheral edema assessment) and with Blood Volume Monitoring (BVM) technology. We are interested in determining if patients have any refill at the end of their treatments leaving them above their dry weights.



## **Electronic Medication Administration Records: The Road to an Environment of Excellence**

*Andrea Brown, RN, CNeph(C), Roxanne Brasier, RPN, Reshma Dole, RPh, Ryan Leppart, RPh, Karen Rehill, RPh, Sandy Thompson, RN, Elizabeth Whistle, RN, and Marilyn Young, RN, Oshawa, ON*

In 2011, the Regional Nephrology Program at Lakeridge Health (LH) had the unique opportunity to implement a new way to document the administration of medications through the use of an electronic medication administration record (eMAR). Previously, paper MAR's were used, creating a potential for an increased risk of error through the transcription process, time delays, and lack of pharmacist involvement.

The use of the new eMAR system improved timeliness, drug administration safety, and decreased medication errors. The main purpose of the MAR is to indicate to the clinical staff what medications have or have not been given. An eMAR also provides a summary of patient information and is considered part of the patients' permanent electronic health record. The eMAR is a step towards LH's goal of a complete patient profile and integrated patient record. Ultimately, eMAR reduces errors, provides functionality of dose warnings, allergies and lab results, and removes the need for manual documentation. The eMAR also features:

- Access dictionaries that provide the ability to control users' access to medications, documentation, and medication edits
- Allows utilization of customer-defined screens to capture all necessary patient data
- The ability to view medications immediately upon order entry in order to document administration accurately.

The successful implementation of eMAR in the Regional Nephrology Program at LH has once again demonstrated the ability of the staff in the program to achieve best practices within the nephrology arena, as well as align our program with our overall hospital vision of "Excellence – Every Moment, Every Day."

## **Out-patient Hemodialysis Unit—Dramatic Improvement on Hand Hygiene Compliance**

*Kim Wilson, RN, DSW, and Kit-Yu Wong, RN, BScN, BA, London, ON*

After applying a multidisciplinary team approach, the hand hygiene compliance rate increased dramatically from 30% to 80%. This presentation will outline the barriers to infection control in a hemodialysis setting and the challenges of adapting the parameters of an in-patient area to an outpatient area. It will utilize a three-dimensional display board reflecting the necessity to maintain proper hand hygiene protocol by identifying its benefits and challenges. By sharing our experience we will help other hemodialysis units overcome their own obstacles and offer helpful feedback.

### **Content:**

- a) Addressing hand hygiene rates in the past and its improvement since implementing a multidisciplinary approach.
- b) Distinguishing between hospital environment and patient environment.

- c) Improving hand hygiene practices decreases antibiotic resistant organism transmissions, decreases line sepsis rates and antibiotic use, and decreases hospital admission and length of stay. Overall, this decreases mortality and healthcare costs.
- d) Recognizing the challenges of increasing hand hygiene compliance by identifying barriers, which include environmental concerns, education, and time factors.
- e) Outline the steps initiated such as ongoing audits by Infection Control Safety Champions, providing ongoing question sessions, outlining four moments of hand hygiene throughout the health care team, providing instant feedback, and collaborating with infection control and management.
- f) Validation of our hand hygiene initiative by identifying improved hand hygiene audit results.

## **Renal Retreat**

*Ellen Blundon, RN, Thunder Bay, ON*

**Background:** The renal service had a "Renal Retreat" as part of Thunder Bay Regional Health Sciences Centre's organizational culture change, embracing patient and family centred care (PFCC). It was a day for all members of the renal team, as well as patient and family members, to come together and challenge "that's the way we have always done it" mentality; to work collectively to address items we do well and those that could be improved. Stories and experiences were shared.

### **Discussion:**

- Participating in the retreat >75 including two satellites via teleconference
- Organizing took several months to ensure all three nephrologists were present and high vacation time was over
- Round table discussions with patient and family members, staff and a facilitator
- "Brainstorming"
- Intra Professional Champions
- Patient and Family Advisors
- An opportunity to foster a common, shared understanding of PFCC
- Exemplify the word "family" in a renal patient's life, is any person who plays a significant role.

**Conclusion:** Patient and family advisors offer valuable input. We currently have advisors on the renal care team who participate in policy and program planning. Changes will not move forward without advisor involvement. As we journey through this cultural transformation, we are truly seeing a change.





### **A Quality Improvement Initiative: Matching Hemodialysis Patient's Potassium Bath with Potassium Blood Values**

*Jennifer Lee, BSc, RD, Aida Vigilia, RN, Nasuralah Rahaman, MHSM, BSc, RN, and David Mendelssohn, MD, FRCP(C), Weston, ON*

**Purpose:** Hypokalemia can occur in hemodialysis patients post dialysis treatment and may result in sudden death due to ventricular dysarrhythmias. At our dialysis unit, there was no standard process to detect potential mismatches between serum potassium and dialysate potassium or make recommendations for potassium bath adjustments. Our goal was to establish a standard process for potassium bath adjustment based on pre- and post-dialysis potassium values.

**Description:** Six Sigma Quality Improvement methodology was used to identify root causes contributing to post-dialysis hypokalemia. Using Cause and Effect Analysis, four root causes were identified. A potassium bath policy was developed and approved by the nephrologists.

**Outcomes:** Pre and post potassium were collected and adjustments to potassium bath were made based on the potassium bath policy. At baseline, 64/306 (21%) baths for conventional and daily hemodialysis needed adjustment to the potassium prescription. After six months, the number of bath changes had decreased to 9/306 (3%) using the potassium bath policy, as a new equilibrium state was reached.

Potassium bath changes							
	Baseline	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Conventional	56	13	52	13	5	2	8
Daily	8	2	2	0	7	9	1
Total	64	15	54	13	12	11	9

**Implications for nephrology practice:** Preliminary results indicate that the use of a standardized potassium bath policy in making adjustments to a patient's potassium bath markedly reduces mismatches between pre dialysis potassium and dialysate potassium, and reduces the risk of hypokalemia.

### **Expect the Unexpected: Leveraging Continuous Quality Improvement to Influence Change Processes in Peritoneal Dialysis Care**

*Monique Bénard, RN, CNeph(C), April Cyr, RN, CNeph(C), Roselyn Castenada, RN, MScN, CNeph(C), Nicole Brosseau, RN, CNeph(C), Normand Briault, RN, and Pamela Laprise, RN, BScN, CNeph(C), Ottawa, ON*

**Purpose of project:** The purpose was to evaluate home dialysis patients' experiences with peritoneal dialysis exchanges and to identify best practices for change management.

**Description:** A quality improvement initiative was instituted to complement a conversion in assisted peritoneal dialysis equipment within a large regional nephrology program. Leveraging the Plan/Do/Study/Act framework, patient outcomes were monitored and the change process evaluated. An intersectoral team involved in all stages of the change developed a plan to assess patient responses and to expedite the change process (Plan). The plans were implemented (Do), including case-by-case monitoring of patient responses and weekly monitoring of change processes (Study). When a problem with the change process pathway arose, the plan was revised (Act) and monitoring continued (Plan repeated). When issues related to patient experience were identified, the treatment plan was tailored and adapted for the larger patient population when required.

**Evaluation/outcomes:** Preliminary findings, process pathways and strategies to address identified patient-related issues will be presented.

**Implications for nephrology practice/education:** Using a systematic process grounded in quality improvement principles facilitates progress toward establishing environments for excellence. This can lead to better processes, provide insights into areas that need further attention and foster the development of evidence-based interventions to improve patient care and outcomes. Given the changing needs of patients and emergence of new technologies, implementing quality improvement cycles in tandem with change initiatives is critical to providing best care for patients and for engaging nephrology nurses in creatively transforming their practice and patient care processes.

### **Appetite for Life**

*Ann Chrétien, RN, BScN, Maureen Jones, RN, BScN, BEd, CCLS, and Cathy Walker, RD, Ottawa, ON*

Instilling health and dietary knowledge in adolescents with kidney disease can be challenging. The medical condition itself, the social isolation from frequent hospital visits and the imposition of lifestyle changes can seem restrictive to youth.

The challenge for the health care professional becomes how to present the health information so that the learning is relevant, integrated and sustainable.

To help meet this challenge, a cooking program for dialysis youth was implemented utilizing an interdisciplinary approach to provide an opportunity to learn, research, plan and prepare renal friendly recipes.

The purpose was to provide a supportive environment with an orientation toward positive outcomes and activities that involve multiple learning styles and are hands-on, experiential and relevant.

With the support of the dietitian, nursing and the child life specialist, weekly group cooking sessions offer the youth the opportunity to prepare a variety of renal-friendly recipes of their choice, integrating nutritional information and learning strategies to enhance their knowledge acquisition.

The recipes are printed in a cookbook format, journaling their culinary adventures. The book then serves not only as a reference manual, but also as an evaluation/reflective tool.

The outcome measured by anecdotal feedback from the youth and families plus the requests made to continue and expand the program speak to the success of the format.

The implications for practice are that in order to achieve youth buy-in, compliance and optimal health results, the team needs to apply core strategies to enhance youth's meaningful engagement by being involved in program planning, implementation, and evaluation/reflection.

### **Hemodialysis: A Nurse's Pocket Guide**

*Grace Archer, RN, Carolyn Bartol, RN, BScN, CNeph(C), Lisa Canning, RN, Leslie Jackson, RN, and Renee Taylor, RN, Halifax, NS*

There are 135 nursing staff working within the Capital District Health Authority (CDHA) dialysis program. There are two in-centre units and eight satellite units in which registered nurses (RNs) and licensed practical nurses (LPNs) work.

Annually, CDHA is provided with monies to fund Improving Nursing Practice Grants. The intent is to provide an opportunity for nurses, individually or in groups, to work together to address daily workplace issues. The program is based on the belief that nurses have the knowledge and capacity to solve problems, create quality practice settings, improve patient care and advance nursing practice.

The range of dialysis experience and knowledge among nursing staff led to identification of a need to give nurses a handbook for quick reference in the clinical area. A group of RNs at the Halifax in-centre dialysis unit were awarded a grant to develop a nurse's pocket guide to address learning needs of nurses working in the various dialysis unit settings.

The pocket guide topics included calculations of fluid removal, ultrafiltration profiling, complications during dialysis, transonic monitoring guidelines, blood work and related medication use, anaphylaxis management, and a list of patient teaching resources.

The guide was formatted to a pocket size, for portability, to address clinical concerns and complications as they arise.

The response to the effectiveness of the pocket guides was evaluated and a poster was presented during National Nurses Week for the district health authority.

### **Environment of Excellence: Establishing a Self-Care Unit within a Busy Hemodialysis Unit**

*Carolyn Bartol, RN, BScN, CNeph(C), Carrie-Ann Boyd, RN, CNeph(C), Rachael Blair, RN, BScN, CNeph(C), Shondal Byrne, RN, BScN, CNeph(C), Janet Campbell, RN, Risa Leblanc, RN, BScN, Gary McNeil, RN, Matthew Phillips, RN, BScN, Colleen Wile, RN, BScN, CNeph(C), Halifax, NS*

Self-care dialysis is now offered as a treatment option for patients within the in-centre hemodialysis unit in Halifax.

The purposes for expanding into self-care as an option were to: foster self management, independence and control among the patients/families who are currently receiving in-centre hemodialysis treatments; provide the option for new patients to develop self-care strategies immediately upon starting hemodialysis; and promote the choice for home hemodialysis by building capacity for self-care.

The philosophy for self-care included: all patients have the ability to perform some or all of their care; patients are individuals with varying needs and learning styles necessitating individualized care plans; and the maintenance of the multi-disciplinary team approach is essential to enable collaboration that will attain the highest possible level of patient care and satisfaction.

Pre-dialysis patients were informed of the option of self-care by the renal clinic nursing staff. In-centre hemodialysis patients were informed through the waiting room education sessions and an individual follow-up questionnaire and discussion. The in-centre nursing staff was educated and encouraged to promote it among patients. The initial patient teaching was performed by one nurse from the home dialysis program. An expanding core group of nurses was mentored by the home dialysis nurse.

Future goals are to increase the number of patients and nurses involved in self-care dialysis, in order to empower patients to self-manage, and to allow nurses to work to their full scope of practice.





## **New Patient Pathway**

*Tracey Brown, BScN, RN, London, ON*

**Problem:** Ensuring a consistent approach to the first three runs of dialysis is essential to enabling completeness in initial nursing assessments and documentation. It has been identified by the nurses in a teaching hospital dialysis unit that the current process of starting new patients on dialysis is unsatisfactory. The nurses feel there is an inconsistent approach to care of the new patient and an inadequate documentation system.

**Approach:** The current state of practice was assessed through process mapping and retrospective chart audits of previous new starts. Using this information we conducted an analysis of system gaps and identified areas for improvement.

**Outcomes:** The goal of this quality improvement project was to identify the nursing responsibilities that are necessary for a patient-centred approach to initiation of dialysis. We will create a new process map and outline a pathway for the new patient starting dialysis that ensures all necessary initial assessments and supporting documentation are completed within the first three treatments.

**Relevancy to practice:** Having a standardized approach to nursing patients during their first three treatments will enhance patient care through improving the consistency of performing initial nursing assessments and completeness of documentation.

## **The Role of Nurse Navigator (NN) and Peritoneal Dialysis (PD) Access Coordinator to Help with Transition of Patients to Home Dialysis**

*Mina Kashani, RN, BHScN, CNeph(C), Toronto, ON*

This poster presentation will discuss the impact of having the new role of nurse navigator (NN) over a one-year period of September 2011–2012, determining the effectiveness of having one dedicated nurse to provide modality education and Renal Replacement Therapy (RRT) to patients in different areas of nephrology, i.e., Kidney Care Clinic patients, nephrology in-patients, urgent start and the in-centre hemodialysis patients.

Furthermore, it will discuss the role of the nurse navigator to:

- Determine a standardized process to home dialysis modality education for patients within the program so that patients make informed modality decisions
- Review and identify patient eligibility/exclusion criteria of referred home dialysis patients throughout the hospital
- Educate those patients who are appropriate for the home dialysis program throughout the hospital
- Create referral/review criteria so that all eligible home dialysis program patients are referred to the NN and plan of care identified for the designated patient.

We did not previously have a designated PD access coordinator, so the role function was added to the NN's job description. As it is a new function, it would be interesting to analyze the impact of creating a pathway for referring patients for PD catheter insertion and the navigation through home dialysis.

Many programs have adapted or are in the process of adapting the NN position. This poster will help outline the pros and cons of the role of NN and what to consider to make it successful.

## **Acute Starts: Where Are They Now?**

*Susan M. Porteous, RN, CNeph(C), Hamilton, ON*

The preferred method to start dialysis is in a planned manner, following modality education and to a modality of choice. The Kidney Function Program (KFP) aims to prepare end stage renal disease patients for a smooth transition to their modality of choice. Unfortunately, there are patients who start dialysis in an unplanned, crash or acute manner. What happens to these acute starts? Do they remain on hospital-based hemodialysis (HD)? Do they receive education on all modalities?

I have identified acute starts as those patients who start HD due to a sudden change in patient status leading to sudden dialysis start, and continue on chronic HD.

**Objective:** The goals of this study are to identify the number of acute starts in a nephrology program in a five-month period and any potential interventions or strategies to educate these patients on all modalities.

**Method:** A retrospective database review was done for a period of five months on acute HD starts, and where they are dialyzing at present.

**Results:** Between August 1, 2011, and December 31, 2011, a total of 30 patients were identified as acute HD starts and as of February 29, 2012, all of these patients remain on hospital-based HD, with 16 in-centre, and 14 at a satellite.

**Conclusion:** These data demonstrate a need for a health care professional (nurse practitioner) to identify the acute starts. There is a need for a collaborative approach between this new nurse practitioner, our KFP and our independent therapies' program to repatriate these patients to the KFP for modality education.

## **Core Values: Getting “On Target” with “HEART” in the Work Environment—Staff Awareness of our Facility’s Core Values has brought forth a Culture of Excellence and Pride**

*Monique Moore, RN, CNeph(C), and Kathaleen Bijman, RN, BScN, CNeph(C), Cornwall, ON*

Employees come into the work environment bringing with them a value system that is shaped from past experiences, knowledge and behaviours. The leadership roles within the facility, in turn, articulate and demonstrate the organization’s values, visions and goals. These are often referred to as “core values.” The two value systems need to be at a parallel to each other so that a harmony of views and respect result. But staff and leaders can forget the *why*, the “HEART” of what we do or the “Target”, the *how* we manifest our facility’s values in our actions. Therefore, over time, a misalignment of values could be developed. The Ottawa Carleton Dialysis Clinic and the Cornwall Dialysis Clinic are directed by core values, but the awareness and meaningfulness of these values waned within the employee population. The two clinics wanted to inspire and rekindle the organization’s core values, but how? Thus, a poster with “HEART” was created, depicting the “On Target” core values. These core values were portrayed creatively for staff with examples/explanations integrated on it. Then, to bring the staff “On Target” with each piece of the “HEART”, we devised the core value treasure chest. Staff and leaders are encouraged to applaud each other’s core values in action by recognizing each other’s contributions, strengths and innovations. Acknowledgement and appreciation on a monthly basis brought forth excitement, pride and stimulus back into our core values. This poster presentation will demonstrate how our work environments found their “HEART”, and are now back On Target!

## **Development of Two Pediatric Intraperitoneal Antibiotic Dosing and Delivery Tools**

*Kathleen Collin, BSc(Pharm), Jennifer Leechik, BSN, Colin White, MD, and Chanel Prestidge, MD, Vancouver, BC*

**Purpose:** Distance and lack of local pediatric facilities require our physicians to initiate antibiotic therapy for peritonitis via phone calls to parents or health care providers. Correct antibiotic dosing calculations can be complex. Our purpose was to develop user-friendly antibiotic dosing tools to reduce the risk of medication error and ensure rapid and accurate administration of our empiric antibiotics.

**Approach:** During a redevelopment and standardization of current evidence-based peritonitis guidelines, we developed two tools for physicians to follow: an antibiotic dosing worksheet and antibiotic mixing instructions.

**Results:** Each antibiotic worksheet allows sequential dosing calculations with clearly designated and “letter labelled” outcomes at each step. Each step builds on those preceding it and feeds results into subsequent calculations. Worksheets have clear suggestions for making modifications for patient size,

calculating loading versus maintenance doses, change in dwell volume, choice of APD versus CAPD and presence of residual urine output. A format for the “outpatient prescription” of that antibiotic is suggested. The antibiotic mixing instructions provided to the physicians, as part of their peritonitis treatment algorithm, are identical to those provided to families in their Take-Home kits.

**Discussion:** Prompt delivery of appropriately dosed antibiotics is paramount to successful preservation of the peritoneal membrane. Failure to adhere to evidence-based guidelines and improper calculations can lead to sub-optimal or super therapeutic dose, neither of which are acceptable outcomes.

**Conclusions:** Delivery of peritonitis protocols can be effectively translated into dosing and mixing worksheets, which minimize risk of drug errors even where drug doses require significant modification. Mirroring of physician and patient mixing instructions allows for clarity and certainty during phone calls. Future direction to move to an electronic calculator from a paper-based set of worksheets to further minimize errors is desired.

## **Applying International Society of Peritoneal Dialysis Guidelines/Recommendations (2010) for Management of Peritonitis**

*Elizabeth (Betty) Kelman, RN-EC, MEd, CNeph(C), Toronto, ON*

**Purpose:** Review the diagnosis and management of peritonitis utilizing the ISPD Guidelines/Recommendations (2010) in a clinical practice setting.

**Description:** A review of the definition, diagnosis and pathophysiology of peritonitis will be presented. This will be followed with a description of two patients and the adaptation of recommendations related to individual peritonitis courses.

**Outcomes:** A discussion of the relevance of recommendations and the need to adapt according to clinical setting will be summarized.

**Implications for nephrology practice:** This will be a basic review of the current approach to the management of peritonitis with the intent to discuss the interpretation of recommendations and value of experiential approach to patient care.





## Why Was This Patient Admitted for Peritonitis?

*Elizabeth (Betty) Kelman, RN-EC, MEd, CNeph(C), Toronto, ON*

**Purpose:** To determine the differences in patients who are managed in the home setting versus hospital admission for the management of peritonitis in a single hospital setting.

**Description:** The approach of the home peritoneal dialysis unit is to support and maintain patients in the home; yet, a percentage of patients with peritonitis are admitted for management. The question asked post admission is "Why was this patient admitted?" This presentation will examine patient characteristics, peritonitis course and outcome over a one-year period in a single hospital setting to determine factors influencing admission.

**Outcomes:** Based on the findings, potential barriers to management of peritonitis in the home setting will be reviewed.

**Implications for nephrology practice:** In an attempt to understand the rationale for admission, factors contributing to management will be discussed with the potential to improve practice and approaches to patient care.

## Falls in the Dialysis Population

*Anuradha Sawant, PT, DPT, PhD(c), Dennis Smith, PHC-NP, MN, Charlotte McCallum, NP-Adult, MN, CNeph(C), Janet Groom, RN, BScN, CNeph(C), Sue Malloy, RN, Shelley Clarke, RN, Denise Soanes, RN, Fern MacDougall, RN, and Esther Gervais, RN, London, ON*

The incidence of falls in people on hemodialysis (HD) is higher than their nonuremic community dwelling counterparts. The incidence of falls in HD patients has been reported to be 1.18 to 1.6 falls/per person year. The difference in the incidence rates could be due to the age of the participants. One study recruited participants of all ages and the other recruited participants over the age of 65 only. The incidence of falls observed by Cook et al. (2006) are closer to those observed in nursing homes (1.6 fall/bed-year), while the incidence of falls for persons living in the community ranges from 0.32 to 0.70 fall/person-year. Since various factors lead to falls in this population we set out to evaluate the incidence of falls in the London Health Sciences Centre (LHSC) regional satellite dialysis units. We evaluated the fall incidences with a single question defining falls as "coming inadvertently to the ground." We observed 37.8 per cent of falls in this population. Rehabilitation services are required for appropriate assessment and interventions for the management

and prevention of injurious falls. LHSC is unique in providing physiotherapy/rehab services to our population. However, a population-specific falls assessment tool may be required to identify the at-risk population.

## Using Technology to go "Green"

*Kim Watkins, RN, BScN, CNeph(C), Debbie Potter, RN, CNeph(C), Cathy Egan, RN, and Kathleen Stringer, RN, CNeph(C), Ottawa, ON*

The environment is on everyone's mind these days. Everyone is being urged to Reduce, Reuse, or Recycle. With that in mind, our dialysis unit is looking at ways to decrease the amount of disposables we use. Technology exists on our hemodialysis machines to use solution from our R/O water system to prime the bloodlines. This method of priming creates less waste (Prime bag, saline line, and saline bags) and has the additional benefit of introducing less sodium to our patients.

Our technicians are currently testing our R/O water to ensure it is clear of endotoxins and bacteria. Once this has been verified, a procedure will be developed and training will be initiated with the dialysis staff to prime the dialysis machines with the R/O solution.

The outcomes we are anticipating:

- Our amount of disposables will decrease substantially
- Improving our time efficiency when priming our machines
- Decreased sodium given to our patients with priming and boluses.

By using available technology, it is possible to enhance patient outcomes and reduce waste.

## A Student-Centred Curriculum: A Novel and Integrative Approach

*Erick-Antonio Chacon, RN, BSN, CNeph(C), MN, and Josephine Dalmacio, RN, Burnaby, BC*

Nephrology nursing education presents challenges for educators. Our revised nephrology nursing curriculum is delivered via distance, online, classroom and across various clinical sites around the province. Our innovative, student-centred, evidence-based curriculum is informed by the Canadian Nurses Association (CNA) – Core Competencies, and is delivered through two different models. The first is the advanced certificate that contains seven courses and the second is our compressed timeframe (CTF) 14-week program, which consists of two courses with eight weeks of hemodialysis clinic. Students are registered nurses who require two years of acute care experience. Most students come from areas unrelated to nephrology. The challenge is to prepare nurses to practise safely and competently in an environment that expects nephrology nurses that are not just proficient in tasks. Rather, the emphasis is on having critical thinking skills and providing care across the renal disease continuum.

The purpose of this abstract is to present novel learning strategies in preparing different types of learners to be competent practitioners. The curriculum utilizes behaviourist, phenomenological, constructivist and postmodernist approaches such as problem-based learning (PBL), simulation, learning portfolios, case studies, interactive webinars, guest lecturers, client narratives, and critical reflection to facilitate learning in preparation for entry-level practice. The poster presentation highlights the use of advanced technology such as the nurse-client simulation and interactive multimedia, which has exciting implications for the future of nephrology nursing. The incorporation of these innovative pedagogies into our program will be discussed.



# The handwriting on the wall: Program transformations utilizing effective change management strategies

By Anita Amos, RN, BScN, CNeph(C), Colleen Johns, RN, Nordia Hines, BA, MA, Tracey Skov, RN, HBScN, MSN, and Linda Kloosterman, RN, BScN, CNeph(C)

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## Abstract

*Historically, there have been indications that we need to change the way we work and think about our health care processes. Yet, with the urgency to keep abreast of the changing needs of our patients, have we seen these signs? Moreover, how do we respond to the inevitable change processes that must occur?*

*In 2010, St. Michael's entered into a five-year partnership with Baxter Canada. The overall goal is to improve the quality of care and life for people living with chronic kidney disease. This initiative was undertaken in response to concerns identified internally related to existing health care delivery processes within the renal program. As in any work environment, the depth and breadth of inevitable changes evoke a variety of responses that are based on the individual's attitudes regarding change. As we embarked on this journey, the nursing leadership team and staff within the program were encouraged to review their usual responses toward change utilizing the book, *Who Moved My Cheese?* (Johnson, 1998).*

*It is imperative to identify the attitudes of those people involved in change processes. This awareness facilitates the use of specific strategies to enhance the effectiveness of their engagement in the process and the outcome of the initiative. Reading the writing on the wall prepares people to participate in and embrace changes that promise to benefit those for whom we provide professional care.*

**Key words:** chronic disease management, change management

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## Introduction

This article describes the approach taken by the Diabetes Comprehensive Care Program (DCCP) at St. Michael's to improve the quality of care processes and life for the patients within the program. It focuses on the use of the principles of change discussed in the book *Who Moved My Cheese?* (Johnson, 1998).

St. Michael's, an urban teaching hospital, offers a multifaceted chronic renal insufficiency program including an in-centre hemodialysis unit that provides conventional intermittent, short daily and nocturnal intermittent hemodialysis therapies. The renal transplantation aspect of the DCCP is a referral centre for multiple regional dialysis centres that includes assessment coordination for cadaveric and a variety of live donor alternatives, peri-operative in-patient, and outpatient follow-up care. The home dialysis unit provides patient education and follow-up care for both peritoneal dialysis and all hemodialysis modalities. The DCCP also includes an interdisciplinary Kidney Care Centre, Multidisciplinary Diabetes Care Clinic, urology and ophthalmology services.

## Background

Over the last few years, we have been scrutinizing our processes and systems, efficiencies, outcomes, patient and staff satisfaction, and many other facets of the program. We gained invaluable information in terms of gaps in care processes, strengths and areas for improvement. However, it is often more productive to have people external to the program review processes to gain an objective insight. St. Michael's invited Baxter Canada to help us gain a better understanding of the strengths and opportunities for improvement within the DCCP.

Baxter took a two-tiered approach to glean the information that the program was seeking. The first was to conduct interviews with clinicians, allied health and leadership from home dialysis, pre-dialysis and in-centre hemodialysis area staff. They gathered information pertaining to organization of the health care delivery system, community linkages, self-management support, decision support, clinical information systems and barriers within the program.

The second initiative was to assess St. Michael's readiness to change from both an organizational leadership and clinical readiness perspective. This was accomplished through the use of a "Change Readiness Survey" that was developed collaboratively by Baxter Canada and the University of Guelph. All staff, physicians and management within the renal program were invited to participate. In February 2010, the survey results were presented to the St. Michael's senior leadership team. They indicated that, overall, the program staff were ready for change—and indeed, needed it to deal with high workload demands, communication issues, and work stress identified by all disciplines and roles.

Based on these self-perceptions, survey results and interview findings, St. Michael's entered into a five-year partnership with Baxter Canada to implement a Renal Disease Management Initiative (RDMI). The RDMI initiative supports the DCCP to "establish, monitor and optimize patient outcomes and operational performance indicators" (Baxter Canada and St. Michael's, 2010). It is aligned with St. Michael's organizational strategic plan to implement a quality improvement initiative known as SOAPEE: Safety, Outcomes, Access, Patient Experience, Equity and Efficiency. Other strategic alignments include provincial Ministry of Health initiatives and organizations: the Ontario Chronic Disease Prevention and Management (CDPM) framework, Ontario Renal Network (ORN) and the Toronto Central LHIN 2010–2013 Integrated Health Service Plan (November 2009).

The RDMI is composed of the following components: leadership and governance, education and accreditation, patient self-management, risk stratification, longitudinal care (transitions) and population health outcomes. It is designed to improve the clinical and economic outcomes for the chronic kidney disease population through the redesign of care delivery processes and rigorous monitoring of specific indicators.

Within the project charter of our RDMI, St. Michael's has agreed on eight (8) specific areas for improvement within our program in response to the survey and interview results. They are to: increase and promote the use of home therapies through clinician referral, patient education and treatment choice; prevent or delay initiation of dialysis through improved patient care co-morbidity management; improve seamless coordinated care throughout the renal continuum; demonstrate a decrease in hospital utilization for patients treated with home-based modalities; demonstrate cost avoidance through increase in home-based therapy utilization; embed a culture of quality improvement through rigorous data capture, analysis, reporting and action planning; embed the principles and practices of self-management for patients and providers; and improve targeted resource allocation and care planning (Baxter Canada and St. Michael's, 2010).

To address the first of six components of the RDMI (leadership and governance), we have formed the Executive Steering Committee that is responsible for creating and maintaining an environment for the execution of the plan. The Operations/Quality Committee is accountable for the day-to-day operation of the project using evidence-based medicine and clinical practice guidelines. This includes meeting the goals, timelines and measurement criteria identified within the project charter. Routine and rigorous data analysis and review of key performance indicators (KPIs) by health care teams drive quality improvement initiatives in the areas of: clinical, humanistic, financial, and program outcomes (Baxter Canada and St. Michael's, 2010).

Education and accreditation, the second component, is addressed through Baxter's provision of on-site consulting support to St. Michael's staff. Baxter brings to the table knowledge and skills regarding the concepts and processes associated with change management, strategic planning, quality improvement, and project management (Baxter Canada and St. Michael's, 2010).

The third component of the RDMI, patient self-management, involves the delivery of Baxter's *Pathways to Empowerment*

education program. The program provides staff with tools and coaching for them to utilize in their patient interactions that facilitate the promotion of patient self-confidence and self-efficacy through principles of self-management (Baxter Canada and St. Michael's, 2010).

Risk stratification, the fourth component of RDMI, is aimed at the provision of proactive patient care with a focus on co-morbidity management while increasing the utilization of home-based dialysis therapies where medically appropriate. Patients are classified using a methodology that scores the individual health status of our specific population as high-, medium- or low risk. The purpose is to develop guidelines (care maps) that are designed to provide proactive care based on the patient risk level with a focus on co-morbidity management. Risk stratification tools for ESRD support the program as it seeks new ways to ensure targeted and focused health care planning and resource allocation (Baxter Canada and St. Michael's, 2010).

As in any multifaceted nephrology program, the patients at St. Michael's often move from one patient care area to another and back again with regularity. The fifth component of RDMI is the implementation of effective strategies that maintain seamless patient care coordination, communication and integration of health care service delivery throughout the trajectory of care. Traditional healthcare models—where episodic (acute) care dictates where integration of health care services emerges across the continuum of care—tend to be ineffective in the management of chronic longitudinal care. We are utilizing value stream mapping to identify opportunities to improve care coordination and integration of health care services, resulting in lower costs of care (Baxter Canada and St. Michael's, 2010).

A disciplined and organized approach toward data capture and analysis of the KPIs associated with the quality improvement initiatives designed to support clinical practice changes address the sixth component—population health outcomes (Baxter Canada and St. Michael's, 2010).

## Overview of change

Change is inevitable. Change does, however, create instability in our lives, as few issues are ever permanently resolved and conflict may arise between those supporting the status quo and those advocating for change. This instability can be very stressful, and the change demanding. At the same time, change can be exciting and challenging. There are a number of change theories discussed in the literature, examples of which are: Thorndike's Connectionism, which looks at the associations between stimuli and response (Heimann, 2010); the Trans-theoretical Model, which involves emotions, cognition and behaviour, with the dynamic interaction of the pre-contemplation, contemplation, preparation, action and maintenance stages (Heimann, 2006); the Theory of Reasoned Action, which addresses behaviour, intention, attitudes and norms (Heimann, 2003, Nov.), and the popular Health Belief Model (Heimann, 2003, July), which is based on perceived susceptibility, severity, benefits, barriers, and cues to action and self-efficacy.

While the theories differ in their approach, the types of change are consistent. The first three types of change—straight-forward change, learning to do something a different way, and responding to something that obviously needs to be changed—are relatively easy changes to accomplish. However, the fourth

type—changing something that you absolutely know you cannot change—involves a challenge or a threat to our beliefs that underpin our lives. It involves adopting a new way of seeing the world, and many of us are uncomfortable about moving outside of our comfort zone. When we do so, our sense of security is threatened. Moving into uncharted waters means that we can't necessarily rely on our tried and proven approaches to accomplishing our goals (Kohn, 2007).

Lastly, change that is imposed upon us and over which we believe we have no control is the most complex type of change and often the barriers may seem insurmountable. When we believe that change is being imposed upon us, our natural response is to feel cheated, under-valued and disempowered. Often we create barriers to making this type of change succeed and feel vindicated if it doesn't (Kohn, 2007).

Our comfort zone involves routines and patterns, easily set and potentially very difficult to step away from. The beliefs we hold are complex and once entrenched, are often stronger than any evidence provided to the contrary. Change involves negotiation, but before that can begin, it is imperative that individuals understand their typical responses to change and identify different ways of adapting (Albrecht, 2010).

To transition from a person who is terrified by change to one who embraces it, we need to learn to see change differently. Change was never meant to challenge our core beliefs but rather, in the health care setting, to improve the care that we provide based on what is valued by our patients and ourselves. Utilizing the simple approach discussed in *Who Moved My Cheese?* (Johnson, 1998), St. Michael's is attempting to minimize inherent stress while leading staff through change processes. This approach was chosen because it takes a very complex issue and breaks it down into simple workable solutions. It also provides for a bit of fun while at the same time is quite revealing.

Given the scope of this project, it is fairly safe to say that significant changes within our program affecting all members of the health care team are inevitable. Despite the fact that many recognize the problems, change may still be problematic for some in that they "have always done it that way" or they have created the system/process and have a sense of ownership. People respond to change differently and, therefore, often their responses will vary depending upon what aspect of their life will be affected by the change—personal versus work life. They may believe that it is often safer not to change. But is it?

Key to the success of any initiative is to understand potential responses to change and the underlying reasons for this response. St. Michael's believes that, as an organization, they have the responsibility to foster the development of the skills required by their staff in order to better position themselves to adapt to the challenging times in which we find ourselves. Part of the RDMI involves the use of the messages learned from the book *Who Moved My Cheese?* (Johnson, 1998).

The book is a parable that talks about four characters; two mice and two little people, who live in a maze and how they look for cheese to feed them and make them happy. The maze depicts where we look for what we want in life and the cheese represents what we want to have in life. During the story, the characters find cheese that they feed on until it disappears. When it is gone, each of the characters responds in a different manner.

Sniff, one of the mice, is always on the lookout for impending change and is usually aware of its coming before others. Scurry, the other mouse, sees what is needed and takes action immediately. Both of the mice respond rapidly when the cheese is gone and are off to find new cheese within the maze.

Hem, one of the little people, feels uncomfortable in new situations and wishes that change wasn't happening. He denies and resists change fearing that it will lead to something worse. When the cheese disappears, he blames everyone else for the situation and refuses to move beyond—out into the maze for new cheese. Haw, the last of the characters, is able to laugh at himself for not wanting to change, and is then able to move on and explore the maze to enjoy the taste of new cheese. He learns to adapt when he sees that the change leads to something better. When they found the first cache of cheese and when the supply disappeared, Haw shared with the reader what he had learned through his experience with change by leaving messages on the walls of the maze. He hoped that his friend Hem would move out into the maze and embrace the inevitable changes that are a fact of life (Champ, 2010).

### **Application of the handwriting on the wall to RDMI**

One aspect of the work being done in the DCCP is that the team charged with the RDMI is to assist staff to build change competencies. If they learn and practise these skills, the staff will become champions and transform the organization. The messages written on the walls by Haw in *Who Moved My Cheese?* are excellent cornerstones for discussions, as the staff move through the change process. Initially, the change process includes a recognition that change happens and that it is better to watch for the signs of impending change that are generally apparent in our environment. Being aware of the changes that are happening and adapting to them rapidly allows staff to prepare for the next round of inevitable change, to enjoy it, and to be ready for more.

To date, we have begun work in the Kidney Care Centre and will gradually extend to other key areas within the DCCP. As we begin work in each of the areas, the RDMI team presents background information about the initiative, as previously discussed. It is important for the staff to know that the journey we are about to embark upon is in response to the interviews with representatives across the program, as well as the "readiness" survey in which they participated. The reason for this is to demonstrate that the concerns/issues identified by their team members are the impetus for the changes that are to occur, and are not imposed upon them by management.

With this in mind, it is important that staff recognizes that change happens and an awareness of their response to change is essential. To address this, we introduce *Who Moved My Cheese?* The self-assessment carried out during these sessions helps staff to identify what is important to them. For example, we all know that having cheese makes us happy, but sometimes changes are made, either by our own determination or imposed upon us. This can affect our cheese supply and we respond in different ways. What is their cheese and, how important is it to them? What, if anything, are they willing to let go? How does each individual respond when someone takes away or threatens their cheese supply? In short, the question is: are you Sniff, Scurry, Hem or Haw?



In terms of the inevitability of change, many of us have heard the adage stating that insanity is doing the same thing over and over again and expecting different results, and we chuckle and agree. Why is it that in healthcare, we often hear “We’ve always done it that way”? Just because something may have worked before, doesn’t mean it still does. We are usually motivated by the basic desire to make things better. This means change! The status quo is constantly being challenged, as new research and literature are published. It is this that forms the basis for the changes in care and its related processes. Yes, they keep moving the cheese!

When change processes occur, it is generally over a very short period of time (Langley, Nolan, Nolan, Norman, & Provost, 2009). All of a sudden we are saying that the change was too fast and without a lot of forethought. The thinking behind most change begins long before the actual change is to take place so, in reality, if staff is aware of what is happening in their environment, they would easily be able to anticipate change. Unfortunately some of that thinking is not transparent or obvious, unless they are sensitive to the cues. Like many other organizations, St. Michael’s has many forums for sharing information regarding what is going on strategically within the hospital, e.g., Ministry of Health announcements and their potential impact, clinical research announcements, education opportunities, and so on.

So what do we do with this information? Through the transition work within the RDMI we are utilizing clinical practice guidelines and published research findings to create or revise policies, procedures, and education programs that are evidence-based. These types of activities provide for short-term wins and, when broken up into manageable portions, are not so overwhelming. Not only do staff members learn more about the care they provide, but they also become engaged and enthusiastic about the work they are doing through a sense of accomplishment and pride.

When trying to improve efficiencies and the quality of care, the staff is provided with survey results (patient and staff), comments from stakeholder interviews, and the results of value stream mapping. Employees are usually motivated to change by the stories this information provides. Awareness of the current state allows them to envision a future state. They can identify the problem and are able to develop potential solutions. Generally speaking, the initial negative responses to change evolve into those that promote change. The fear that may have originally existed takes a back stage and allows them to think outside the box, developing creative visions for the future state. Basically it asks the question, “What would you do if you weren’t afraid?” (Johnson, 1998).

One aspect of building change competencies with the staff is to assist them to recognize sources of information that will create an awareness of potential future changes. This also entails an examination of the effects of these changes and their potential impact on themselves, the patients, and the organization. This is further broken down to determine the likelihood of these possible outcomes. As they learn these skills, staff will become more adept at anticipating change, recognizing its significance to their environment, and preparing them for the cheese to move, thus avoiding extinction.

As employees learn to anticipate change, they also develop an ability to recognize when changes are happening. Identifying when the status quo will no longer be effective requires all health care personnel to stay abreast of what is happening around them. Ministry of Health and Long-Term Care (MoHLTC) initiatives such as the Chronic Disease and Prevention Management (CDPM) framework, and the establishment of the Ontario Renal Network (ORN), the Toronto Central LHIN 2010–2013 Integrated Health Services Plan, and Bill 46 – “Excellent care for All” creates quality expectations and have set the stage for many of the current change initiatives.

On an organizational level, the adoption of SOAPEE (the Quality Improvement initiative), the bid to be a Registered Nurses’ Association of Ontario (RNAO) Best Practice Spotlight Organization, and the signing of a Memorandum of Agreement with Baxter to embark on the RDMI have been clear messages that quality at St. Michael’s is valued. Ingrained in health care personnel is an understanding of the need to evaluate which activities may no longer be achieving desired results. Education regarding the RDMI has set the stage for staff to be made aware of the scope of issues and concerns that were identified by those working within the program.

During the RDMI transition work, staff is encouraged to look at what is currently happening and to express a vision of the future. When these views differ, they are invited to identify what beliefs, activities and processes are currently in place that interfere with them achieving their goals. As they cite the barriers, it becomes obvious that they must make changes. Any movement in a new direction will help them on their way to “find new cheese” (Johnson, 1998). Indeed, they might not be successful in reaching their goals immediately, but if they don’t do anything, they will never succeed. As we move through the change continuum, taking the pulse of the staff and their response to the initiatives is integral to addressing the roadblocks based on beliefs.

Creating an environment where staff can adapt to change quickly requires emotional intelligence and, often, some unlearning. Discussion regarding the culture of the organization and emotions that manifest themselves, as barriers to change, mitigates the associated stress. Self-awareness of personal responses to change and the barriers that they may impose can help staff put the concerns into perspective and begin the process of unlearning. Education regarding self-management principles facilitates the unlearning process where staff let go of their old beliefs, perceptions and interpretations, opening their minds to innovative approaches (Baxter, 2010). Previous ideas and perceptions may hold them back from moving out of their comfort zone to make the changes required and meet identified goals.

Generally speaking, people are not resistant to proposed changes but, rather, the perceived losses that may be experienced as a result of the transition processes. “It is not the changes that determine the success or failure of a project, it is the transitions. As suggested by Campbell (2008), changes are situational, and transitions are more psychological. Change-ready environments foster creative and effective working relationships among colleagues, innovative thinking, and assist in

advancing best practices. Adapting to change demands that staff move beyond their fears or “let go of old cheese so they can enjoy new cheese sooner” (Johnson, 1998).

It is only after their minds are open to new and innovative thinking that staff can objectively assess the issues, create a clear vision of the goal, identify strategies or steps that need to occur for the goal to be met, and determine how they will know the goal has been met.

The RDMI Project Charter specifies areas for improvement within the DCCP. The issues, goals and strategies are determined by a committee composed of members from each of the clinical areas within the scope of the RDMI. This is fuelled by information acquired through activities such as value stream mapping, stakeholder interviews, patient and staff surveys, risk stratification, and working group meetings. With these data in hand, the staff progress through the quality improvement process—articulation of issues, identification of goals, determination of metrics and strategies to achieve the vision. Communication regarding information relative to the proposed changes is communicated throughout the committee structure with all levels having the opportunity to participate in the development of the plan. This way, staff develops a sense of ownership and that buy-in propels them out into the maze where they develop and implement strategies, and assess their effectiveness in achieving their goals or targets. Concurrent to this, required education and supports to facilitate the identified changes are identified and implemented.

The RDMI committee structure ensures a “disciplined and organized approach towards data capture, analysis and quality improvement initiatives designed to support clinical practice changes” (Baxter Canada and St. Michael’s, 2010). Each committee has a role in moving the change processes forward and each is held accountable by another. It is important to note that there is no end point to this initiative and the goal is to embed this approach to quality improvement into the daily lives and practices of the staff of St. Michael’s DCCP.

Change is meant to be enjoyed. The energy and enthusiasm in a room of committed care providers is palpable. As cited by Campbell, “One of the unique characteristics of human beings is how a good deal of their motivation comes from the pictures they carry in their minds” (2008). This vision drives them forward. That isn’t to say that resistance will not be encountered but, as outcomes such as standardized care processes, streamlined patient flow, improved staff and patient satisfaction emerge, the culture changes. The definition of the future state will be modified continuously and change will be a way of life. Just when you think you have the answer, you realize that you don’t! The cheese is on the move!

The RDMI fosters growth and development in staff in a variety of arenas, including building change competencies. Helping staff to learn skills related to anticipating, monitoring and adapting to change will better position them to continually “move with the cheese and enjoy it!” (Johnson, 1998).

## Conclusion

Constant change in the health care environment is extremely challenging but, nonetheless, our reality. Since few issues are ever permanently resolved, it is essential that care providers develop sustainable processes that allow them to keep pace with the demanded changes. Effective navigation through the instability created by change is essential. Spencer Johnson discusses principles of change in his book *Who Moved My Cheese?* These have been incorporated into the work of the St. Michael’s/Baxter RDMI. While we work toward the successful implementation of such outcomes as standardized care processes, streamlined patient flow, and improved staff and patient satisfaction, the RDMI team is fostering the development of skills that will support staff to read the handwriting on the wall—while at the same time becoming the champions who will transform care in the St. Michael’s DCCP.

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# Physiologic and psychosocial approaches to global management of the hemodialysis patient in the Southern Alberta Renal Program

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## Abstract

*As frontline nurses, we know firsthand the many challenges of renal disease faced by our patients and the impact on their lives and their families. How can we help them cope with their illness? How can we improve their quality of life? How can we prevent the complications inherent to the disease? How do we know we are doing a good job? Where do we start?*

*The purpose of this presentation is to showcase the global management of the hemodialysis (HD) patient. It provides a collaborative and systematic approach to assessing, implementing, evaluating and coordinating the physiologic and the psychosocial aspects of their care. It is a model of case management followed by the Southern Alberta Renal Program (SARP) in meeting the many and complex needs of our hemodialysis patients. The quality indicators, to name a few, that relate to the physiologic aspects of their care are dialysis adequacy and fluid removal, improved blood pressure (BP) control, maintenance and improved vascular access function, anemia, bone and mineral disease management, nutritional, and diabetes management. The psychosocial aspects of care encompass goals of care, residential support, transportation, and mobility programs in the community.*

*There may be positive implications resulting from our practice that we believe would be invaluable in terms of improved patient care, increased adherence to therapeutic regimens, improved mortality*

*and morbidity and overall enhanced quality of life. Moreover, better communication would possibly be fostered and wise and prompt use of resources may be a result. To date, we have not done studies to prove or disprove these outcomes.*

**Key words:** case management, global management, quality assurance, hemodialysis

A tree has different meaning to individuals. For some, it represents life as it grows and matures. For others, it represents hope for the future. A tree can have many purposes: to bear fruit, to provide shade, to promote aesthetic value or to become a source of construction material. For these reasons we have chosen the tree as a foundation for our quality improvement process—our *Case Management Tree* (see Figure 1). It symbolizes life and hope. Our tree is rooted in research and allows us to provide evidence-based nursing care. The tree provides shade just as we, as nurses, provide shelter in a safe environment by improving the practices we use to care for our patients. Our caring attitudes colour the daily picture we paint for our dialysis patients much as trees provide aesthetic value to their surrounding areas. Like the tree, we grow and change to construct new plans for patient care and lay the foundations for the building of future dialysis nursing trends. The quality indicators of responsible patient management are like the fruit of the tree, providing a measure of vigilance of the health of the dialysis patient care system. The tree, most importantly for our case management process, is intended to encourage hemodialysis nurses to think about quality indicators as a guide to assess patient care, evaluate therapeutic interventions and ultimately improve patient outcomes. A healthy tree will bring forth fruit and the fruits—in our analogy—are the patient care indicators.

As you reflect upon this analogy, we would like you to ask yourselves these questions:

1. Are you meeting your targets?
2. How can you improve your care to achieve your targets?  
What else can you change to ensure you reach your targets?
3. How can you help your patients meet these targets?

Our computerized charting system is called PARIS [PAtient-based Renal Information System] and it encompasses a monthly case management section with room for comments where indicators can be documented. The following indicators reflect the sections covered in our PARIS case management documentation. While we are aware that every dialysis unit does not necessarily use the same charting system, the following indicators are listed in the NKF KDOQI™ guidelines and, therefore, you may want to ensure that the one used in your unit does include these indicators in some form (National Kidney Foundation: KDOQI, 2001).

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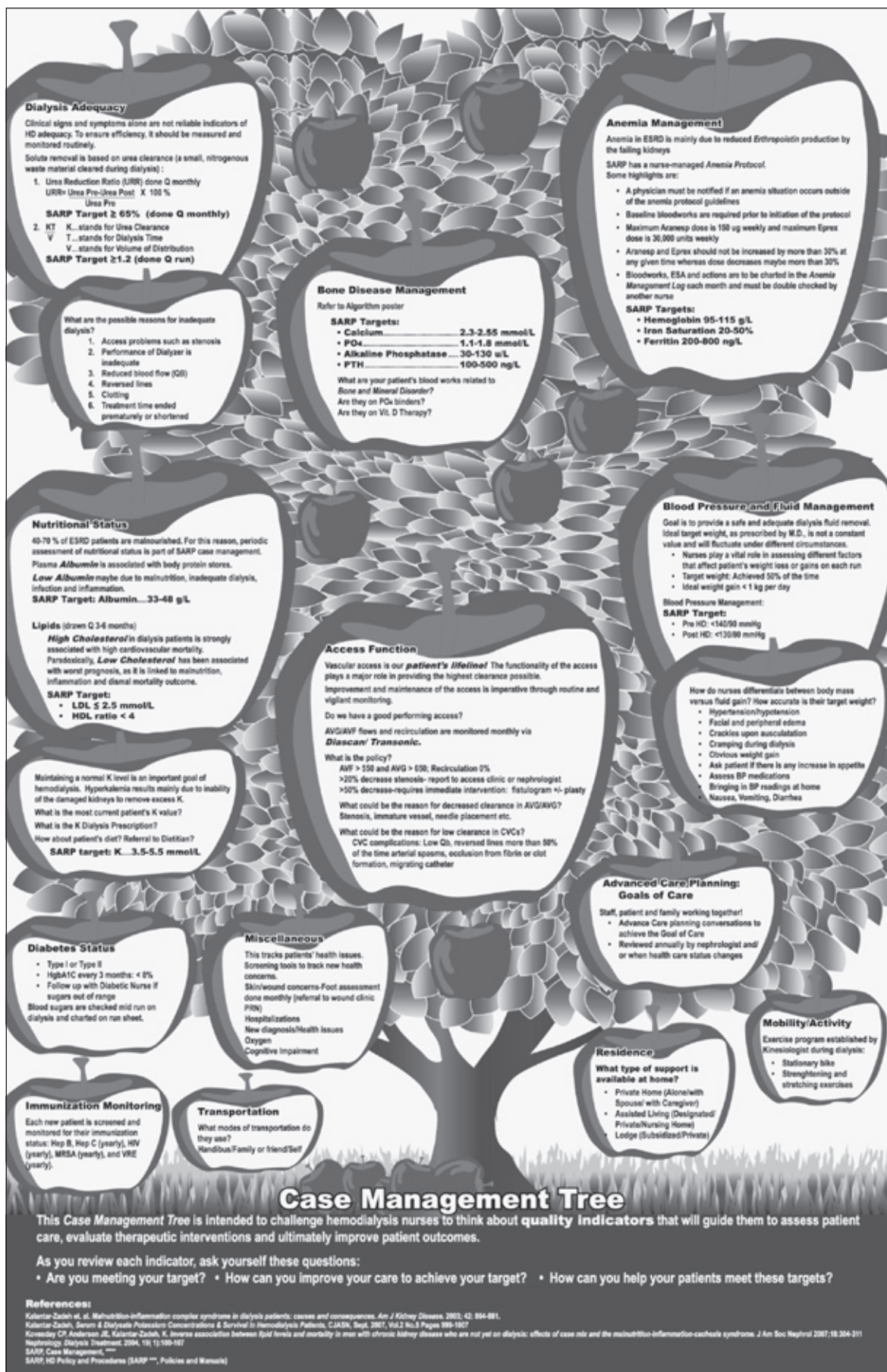


Figure 1: Case Management Tree

## Physiologic indicators

### A. Dialysis adequacy:

How efficiently and adequately are we dialyzing our patients? To ensure efficiency and adequacy of dialysis or solute removal, adequacy should be measured and monitored routinely. There are two formulas we use in the Southern Alberta Renal Program (SARP) to assess adequacy based on urea clearance.

i. Urea Reduction Ratio (URR) is measured with monthly blood work through the Calgary Laboratories Services. We review this within the context of the KDOQI and the SARP recommendations:

**SARP Target > 70%; KDOQI Target > 65%**

ii. KT/V is measured with the same expectations as KDOQI: Target  $\geq 1.2$

KT/V is measured during every treatment using Diascan® technology. This is software imbedded in our hemodialysis (HD) machines that has the capability of measuring dialysis efficiency every time the patient dialyzes. Diascan® provides instant trending of KT/V over time and the patient's real time value at the end of the treatment. One bonus of this dialysis evaluation tool is the ability to predict how efficiently the patient is being dialyzed, even at the start of the run (Lindsay et al., 2006).

What are the possible reasons for inadequate dialysis? The HD nurse will have to critically analyze the reasons for this and undertake appropriate interventions. Some of the usual causes are:

1. Access problems such as stenosis
2. Inadequate performance of the dialyzer. Perhaps there may be a need to change to a high flux, high efficiency dialyzer
3. Reduced blood flow (QB). A change in pump speed may be required
4. Reversed lines [in case of central venous catheter (CVC) use], which may lead to recirculation
5. Clotting (anticoagulation may need to be reviewed)
6. Treatment time ended prematurely or shortened. This usually occurs due to patient transportation problems, so rescheduling of patient pick-up time may be of value.

### B. Blood pressure (BP) control and fluid management:

Maintaining blood pressure at target and managing fluids are major struggles for a lot of our patients and can be very challenging for staff while the patient is undergoing HD. Cardiovascular morbidity and mortality remain unacceptably high in HD patients, in part due to inability to control these two indicators (Johnson et al., 2009).

#### SARP and KDOQI BP Target:

- Pre HD: < 140/90 mmHg
- Post HD: < 130/90 mmHg

#### Target Weight:

- Target weight: Achieved 50% of the time
- Ideal weight gain < 1 kg per day

At SARP, our goal is to provide a safe and adequate dialysis fluid removal. How do nurses differentiate between body mass versus fluid gain? How accurate is the target weight or dry weight? The following are clinical presentations and plasma values that an astute nurse should be evaluating and assessing:

- Hypertension/hypotension-patient should be bringing in BP readings taken at home if available
- Facial and peripheral edema
- Crackles upon chest auscultation
- Cramping during dialysis or between dialysis days
- Obvious weight gain
- Increase in appetite
- Assessed adherence to antihypertensive medications; review times medications are taken (before or after dialysis)
- Nausea, vomiting, diarrhea
- Assessed sodium status based on *Plasma Conductivity* (pre and post dialysis) and *Ionic Mass Balance*.

Education, especially on fluid and salt restriction, is imperative (Thomson, 2001). Our unit dietitian reviews these indicators on a monthly basis to implement ways through which fluids and sodium can be better managed. The fluid available for ultrafiltration or removal during dialysis is in the intravascular space. Problems with hypotension during and at the end of dialysis are usually due to rapid removal of fluid and the loss of osmolarity from the reduction of urea, glucose and middle molecules. We need to promote or enhance the movement of fluid and these solutes from the tissues to the circulation. We can achieve this through careful assessment and re-evaluation of the target weight, preferably every two weeks, as a minimum standard. Other strategies include adjusting dialysate temperature and prescribing different sodium (Na) and/or ultrafiltration (UF) profiling models. If the patient is a good candidate for nocturnal or home hemodialysis, our nurse clinician will carry out an individual discussion of the particulars of this self-managed modality with patients and their families. Nocturnal dialysis has been proven to be effective especially to those whose BP and weight gains are extremely hard to manage (Silverstein, 2007). Evidence has shown that it can even reverse the left ventricular hypertrophy or cardiac remodelling brought about by persistent and chronic fluid overload and high blood pressure (Chan, Floras, Miller, Richardson, & Pierratos, 2002).

### C. Access function:

Vascular access is our patient's lifeline! The functionality of the access plays a major role in providing improved clearance and therefore improved outcomes. Maintenance of the access is imperative through routine and vigilant monitoring carried on a monthly basis.

#### Access Policy Guidelines—AV Fistula/AV Graft Targets:

- Access flow values should be AVF > 550 ml/min and AVG > 650 ml/min
- > 20% decrease in flow may mean inflow stenosis. This is reported to the access clinic or nephrologist in a non-urgent manner
- > 50% decrease in flow requires immediate discussion with access team or nephrologist for intervention: fistulagram  $\pm$  angioplasty
- Recirculation above 0% should be reported to the access team and nephrologist

Is the access performing as expected? Are we cannulating our access successfully? We have three tools to assess the performance of the AVF/AVG:

- i. Dynamic flow monitoring is documented at the first few minutes of each patient treatment at a QB of 200 ml/min by measuring venous and arterial pressures. If, at any time, access problems are suspected based on these results, the nurses are educated to proceed and undertake a more complex measurement of access flow.



- ii. The Transonic Flow QC® Monitor uses ultrasound technology. It is the gold standard for direct flow measurement of the access and assessment of recirculation. It validates staff concerns on possibilities of access complications such as stenosis, and assists in gathering more accurate information in addition to the physical assessment of the access (observation, palpation and auscultation).
- iii. The Diascan® flow measurement is a feature of the Phoenix® machine. By measuring urea clearance (Kurea) in reversed and standard needle positions and entering the values through mathematical computations, access flow can be measured. However, there are a few caveats in undertaking this procedure to ensure accuracy.

What would be the reasons for decreased clearance in the AVF/AVG? Consider the potential of stenosis, immature vessel (poorly developed AVF), and needle placement.

#### Access Policy Guidelines—Central Venous Catheter Targets:

For patients with *Central Venous Catheter* as primary vascular access, staff monitor and document the following:

- Low QB
- Reversal of lines more than 50% of the time
- Line repairs
- Catheter migration
- Line exchange
- Line occlusion from fibrin or clot formation
- Cathflo® use to troubleshoot occlusion
- Evidence of infection
- Signs of/or documented central vein stenosis

#### D. Anemia management:

Anemia in end stage renal disease is usually caused by reduced *erythropoietin* production by the failing kidneys. As kidney function declines, almost all End-Stage Renal Disease (ESRD) patients will develop anemia and require intervention.

At SARP we have a nurse-managed *Anemia Protocol* by which RNs can administer and adjust erythropoiesis-stimulating agent (ESA) doses and supplemental iron. The indicators and target values are as follows:

Anemia indicator	SARP target	KDOQI target
Hemoglobin	95–115 g/L	100–120 (max 130)
Iron Saturation (TSat)	20–50%	> 20%
Ferritin	200–800 ng/L	> 200

Some additional highlights are:

- Upon admission to SARP, chronic patients will have the *Anemia Protocol* initiated unless otherwise specified by primary nephrologist
- A physician must be notified if an anemia situation occurs outside of the anemia protocol guidelines
- Baseline blood work is required prior to initiation of the protocol
- Maximum Aranesp® dose is 150 ug weekly and maximum Eprex® dose is 30,000 units weekly
- Aranesp® and Eprex® should not be increased by more than 30% increments at any given time, whereas dose decreases may be more than 30% increments

- Blood work, ESA doses and actions are to be charted in the *Anemia Management Log* each month and must be double checked by another nurse
- If for any reason the patient is to stop the *Anemia Protocol*, an order is to be written by the physician for discontinuation.

#### E. Nutritional status:

Many ESRD patients are malnourished. For this reason, periodic assessment of nutritional status is part of SARP's case management program. A panel of nutritional indicators, some of which are also inflammatory markers, are routinely measured.

Plasma albumin is associated with body protein stores. Low albumin may be suggestive of the following: malnutrition, underlying infection or inflammatory response, or under-dialysis (Kalantar-Zadeh et al., 2003).

- SARP Target: Albumin= 33–48 g/L
- KDOQI Target: > 40 g/L

**Lipids** are drawn yearly and every three to six months and if the patient is on a lipid-lowering medication.

*High cholesterol* in dialysis patients is strongly associated with high cardiovascular mortality. Paradoxically, *low cholesterol* has been associated with a worse prognosis, as it is linked to malnutrition, inflammation and dismal outcomes (Kovesday, Anderson, & Kalantar-Zadeh, 2007).

SARP and KDOQI Targets for lipid levels:

- LDL ≤ 2.5 mmol/L in non-diabetic, if diabetic < 2.0
- HDL ratio < 4.5 in non-diabetic, if diabetic < 4.0

We also take note of the following considerations when reviewing these parameters:

- Is the patient on Meals on Wheels?
- Has the patient been referred to the program dietitian?

Maintaining a normal potassium (K<sup>+</sup>) level is an important goal of hemodialysis. *Hyperkalemia* results mainly due to inability of the damaged kidneys to remove excess potassium.

Questions to consider and discuss with the team and patient are:

- What is the most current K<sup>+</sup> value?
- What is the dialysate K<sup>+</sup> prescription?
- What is the patient's dietary K<sup>+</sup> intake? Should you refer to the program dietitian?

SARP and KDOQI Target: K<sup>+</sup> = 3.5–5.5 mmol/L

#### F. Bone disease prevention and management:

As kidney dysfunction progresses, there is an inability to properly regulate mineral and bone metabolism. When the GFR falls, phosphate (PO<sub>4</sub><sup>-</sup>) excretion is affected, leading to *hyperphosphatemia*. In addition, the kidneys are not able to activate Vitamin D such that calcium absorption via the gastrointestinal system is decreased. This leads to *hypocalcemia*. The parathyroid gland senses the low calcium level and secretes parathyroid hormone (PTH) in order to release calcium from the bones to the circulation, often at the expense of the bones. Consequently, bone structure is weakened—this condition is called *Renal Osteodystrophy* or Renal Bone Disease. The parathyroid gland becomes increasingly unable to control this disordered system and continues to work overtime, resulting in *Secondary Hyperparathyroidism*. The excessive calcium pulled from bone can deposit in the intima and/or medial layers of the



arteries, causing arteriosclerosis and arteriolar calcification. The resulting skin necrosis is a painful and life-threatening complication called *Calciophylaxis* (Michael & Garcia, 2004).

*Alkaline Phosphatase* or ALP is measured as part of the mineral and bone profile because it is a marker of bone formation. A high ALP may indicate high-turnover bone disease as seen in *Renal Osteodystrophy*.

#### **SARP targets:**

- Calcium: 2.1–2.55 mmol/L
- Phosphate: 1.1–1.8 mmol/L
- Alkaline phosphatase: 30–130 u/L
- PTH: 100–500ng/L

#### **KDOQI targets:**

- Calcium: 2.20–2.37 (<2.54) mmol/L
- Phosphate: 1.13–1.78 mmol/L
- Alkaline phosphatase: 30–145 u/L
- PTH: 150–300 u/L

Some questions for staff to consider are:

- What are your patient's laboratory values related to *Bone and Mineral Disorder*?
- Are they on phosphate binders? How are they taking them? Are they on active Vitamin D Therapy?
- Are patients compliant to regular medication intake? How about their dietary regimen?

#### **G. Diabetes status:**

One out of three patients with CKD has diabetes (Canadian Institute for Health Information, 2009). Our goal is to have well-controlled blood glucose levels. This is difficult. Blood glucose levels can fluctuate widely. At SARP, we have a *Diabetic Nurse Clinician* whose expertise is invaluable in managing patients with diabetes and renal complications. The care of these patients is unique in the sense that uremia and dialysis can complicate glycemic control due to alterations in the secretion and clearance of insulin. In our program, we measure *Hemoglobin A1C* and consider the value a reasonable reflection of glycemic control.

#### **SARP Targets**

- HgbA1C every 3 months: <8%
- Blood sugars are checked mid-run on dialysis and documented on the treatment log

#### **KDOQI Targets:**

- HgbA1C <7%
- Glucose: diabetes (fasting): 4–6 mmol/L; if non-fasting >6.0 mmol/L

#### **H. Immunization and infectious disease monitoring:**

Dialysis patients, by nature and the characteristics of their disease, are at higher risk of morbidity and mortality from the Hepatitis B virus (Burdick et al., 2003). Each new patient is monitored for their immunization status and infectious diseases status as follows:

- Hepatitis B status is checked upon admission and every 6 months
- Hepatitis B Surface Antigen is measured to establish if the patient is actively infected
- Hepatitis B Surface Antibody titers are measured to establish presence and level of immunity

- Vaccination is administered to improve or boost immunity if the patient has no natural or acquired antibodies. Guidelines are well defined in our *SARP Hepatitis Policy*
- Vancomycin Resistant Enterococcus (VRE) and Methicillin-Resistant Staph Aureus (MRSA) testing is done upon admission and yearly, as well as on the first dialysis treatment upon return from travel outside of the SARP program and the first dialysis treatment after discharge from hospitalization.
- Hepatitis C is checked upon admission and yearly
- HIV is checked upon admission and yearly, only if active on transplant list
- Pneumococcal vaccination is administered upon admission and after five years (Patients can only receive a maximum of two pneumococcal injections in their lifetime).

### **Psychosocial indicators**

#### **I. Advanced care planning and goals of care:**

Conversations on advanced care planning and goals of care can be initiated by any of our staff. Health care professionals and individuals, family, or other designated representatives work together to make sure that the wishes of the patients are considered and followed. In our program, we consult our *Advance Care Planning Leader* who further explores and plans with the patient and their family if they choose to discontinue their dialysis. In addition, we can consult our *Social Worker* and *Spiritual Leader* who may participate in discussions with our patients on this very sensitive subject. We also have a *Palliative Care Team* exclusively dedicated to renal patients and led by a nephrologist to support the patients in their end of life journey. Our nurses refer to the palliative team especially when the patient's health status declines and the team assists them in facilitating comfort and other supportive measures.

- We have created a *Goals of Care* document that is reviewed annually by the nephrologist and/or when a patient's health care status changes.

#### **J. Residence:**

What type of support is available at home? A lot of our patients who are elderly and fragile need support if they still live at home. Sometimes, it is our nurses' astute assessment that uncovers areas of concern or safety risks that signal the inability of the client to live safely at home.

#### **Residential options:**

- Private home (alone/with spouse/with caregiver)
- Assisted living (designated/private/nursing home)
- Retirement living/lodge (subsidized/private).

#### **K. Mobility/activity:**

SARP is one of the hemodialysis programs that pioneered the use of an exercise program while the patient is undergoing dialysis. Patients are put on a stationary exercise bike and are supervised by our kinesiologist while exercising. Their vital signs—including oxygen saturation—are monitored over the length of the exercise regimen. The length of the exercise session can range between five minutes to an hour, depending on the patient's condition and capabilities. Evidence has shown that intradialytic exercise has a wide range of benefits from improved clearance, prevention of hypotension and improved overall well-being (Painter & Zimmerman, 1986; Leung, 2004). Strengthening and stretching exercises are also part of the exercise program.

Documentation standards:

- Exercise program participation and tolerance
- Use of mobility aids (cane, walker, or wheelchair)

#### L. Resources:

At SARP, we adopted a multidisciplinary team approach in order to provide holistic care for renal patients. The team enables them to adapt to the challenges of the disease itself and the changes in lifestyle that go along with it.

The following resources are available to patients:

- Social work
- Palliative care
- Row Your Own Boat program (self-management workshop)
- Spiritual care
- Interpretive services
- Dietary consults
- Wound clinic
- Home care

#### M. Transportation:

One of the major challenges of our patients is their access to transportation to hemodialysis treatments. Some are unable to continue to drive due to safety issues. Some depend on their family members to bring them to and from the dialysis centres.

#### The following information is documented:

What modes of transportation does the patient use?

- Handibus (assisted transportation)
- Family
- Friend/self?

#### N. Miscellaneous:

This portion of the case management program is a screening tool to track patients' other health issues and concerns.

Examples of miscellaneous items that are documented are as follows:

- Skin/wound concerns
- Foot assessment at monthly intervals (referral to wound clinic PRN)
- Hospitalizations
- New diagnosis/health issues
- Oxygen use
- Cognitive impairment or dementia

## Conclusion

Although we do not have the image of the case management tree posted in our hemodialysis unit, it has been used as a means for staff to envision the holistic approach required in providing case management. Like a real tree, case management can only flourish and produce fruit when all elements of patient care are taken into consideration. In SARP, case management is performed on all patients monthly by nursing staff to ensure the vigilance required for this holistic approach. We are starting, informally, to observe a change in our patient outcomes based upon the broad spectrum of monitoring and documentation of our case management parameters within our Primary Access Regional Information System (PARIS) charting tools. In addition, this process has opened dialogue between nurses and their patients, allowing conversation to occur that may have otherwise gone unsaid. It promotes and builds upon the therapeutic relationship between nurses and their patients, which can only lead to improved expression of needs—and, thereby, the opportunity to meet those needs. The fruit of our labours, then, becomes superior patient outcomes.

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Year of designation \_\_\_\_\_

Professional registration # \_\_\_\_\_

Date last renewed: \_\_\_\_\_

☐ I am a member of CNA

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☐ Yes ☐ No

**Professional Status**

☐ Registered Nurse

☐ Registered Practical Nurse/  
Registered Nursing Assistant/  
Licensed Practical Nurse

☐ Technician

☐ Technologist

☐ Other (Specify) \_\_\_\_\_

Number of years in nephrology \_\_\_\_\_

**Area of responsibility**

☐ Direct Patient Care

☐ Administration

☐ Technical

☐ Teaching

☐ Research

☐ Other (Specify) \_\_\_\_\_

**Work environment**

☐ Acute Care

☐ Self-Care Unit

☐ Independent Health Care

☐ Private Sector

**Highest level of education**

*Nursing*

☐ Diploma

☐ Baccalaureate

☐ Master's

☐ Doctorate

*Non-Nursing*

☐ Diploma

☐ Baccalaureate

☐ Master's

☐ Doctorate

**I am at present studying toward**

*Nursing*

☐ Specialty Certificate

☐ Baccalaureate

☐ Master's

☐ Doctorate

*Non-Nursing*

☐ Specialty Certificate

☐ Baccalaureate

☐ Master's

☐ Doctorate

**Primary area of practice**

☐ Progressive renal insufficiency (pre-dialysis)

☐ Transplantation

☐ Hemodialysis

☐ Peritoneal

☐ Pediatrics

☐ Other (Specify) \_\_\_\_\_

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Année de désignation \_\_\_\_\_

Numéro d'enregistrement professionnel: \_\_\_\_\_

Date du dernier renouvellement: \_\_\_\_\_

☐ Je suis membre de l'ACI

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Faites vous partie de l'AOIA?

☐ Oui ☐ Non

**Statut professionnel**

☐ Infirmière(ier) autorisée(sé)

☐ Infirmière(ier) auxiliaire autorisée(sé) /  
infirmière(ier) auxiliaire

☐ Technicienne /technicien

☐ Technologue

☐ Autre (spécifier) \_\_\_\_\_

Années d'expérience en néphrologie \_\_\_\_\_

**Domaine de responsabilité**

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☐ Recherche

☐ Technologie

☐ Autre (spécifier) \_\_\_\_\_

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☐ Diplôme

☐ Baccalauréat

☐ Baccalauréat

☐ Maîtrise

☐ Maîtrise

☐ Doctorat

☐ Doctorat

**Je poursuis présentement des études**

*Domaine infirmière(ier)*

*Autre domaine*

☐ Certificat

☐ Certificat

☐ Baccalauréat

☐ Baccalauréat

☐ Maîtrise

☐ Maîtrise

☐ Doctorat

☐ Doctorat

**Secteur de pratique spécialisé**

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# Guidelines for authors

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

## Which topics are appropriate for letters to the editor?

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

## What types of manuscripts are suitable for publication?

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

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

## How should the manuscript be prepared?

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

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

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

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

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

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

## How should the manuscript be submitted?

Email your manuscript to: [athomas6@cogeco.ca](mailto:athomas6@cogeco.ca)

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

## How are manuscripts selected for the CANNT Journal?

Each manuscript will be acknowledged following receipt. Research and clinical articles are sent out to two members of the **CANNT Journal** manuscript review panel to be reviewed in a double-blind review process. All manuscripts may be returned for revision and resubmission. Those manuscripts accepted for publication are subject to copy editing; however, the author will have an opportunity to approve editorial changes to the manuscript. The criteria for acceptance for all articles include originality of ideas, timeliness of the topic, quality of the material, and appeal to the readership. Authors should note that manuscripts will be considered for publication on the condition that they are submitted solely to the **CANNT Journal**. Upon acceptance of submitted material, the author(s) transfer copyright ownership to CANNT. Material may not be reproduced without written permission of CANNT. Statements and opinions contained within the work remain the responsibility of the author(s). The editor reserves the right to accept or reject manuscripts.

## Checklist for authors

- ✓ Cover letter
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  - Title page to include the following:
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    - professional qualifications
    - position
    - place of employment
    - author to whom correspondence is to be sent, including address, phone, fax number, and email address
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# Lignes directrices à l'intention des auteurs

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

## Quels sont les sujets d'article appropriés ?

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

## Quels types de manuscrits conviennent à la publication ?

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

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

## Comment les manuscrits doivent-ils être présentés ?

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

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

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

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

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

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

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

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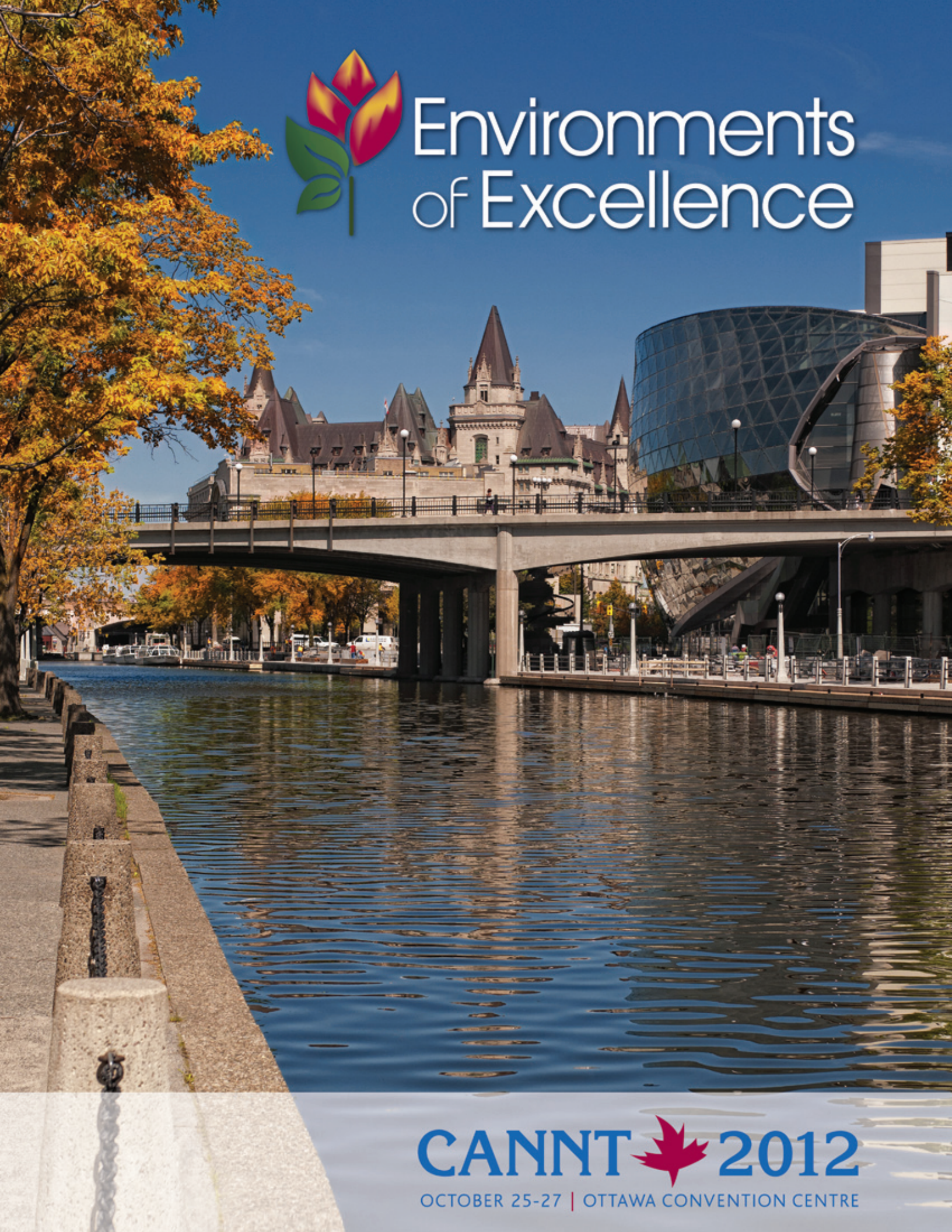
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