

1. **British Columbia's Chronic Kidney Disease (CKD) Targeted Screening Program**

Kidney Foundation of Canada, BC Branch

Leader: Karen Philp

Team members: Heather Johnson, Laurie Mark

In 2011, in order to encourage the early detection of CKD to prevent or delay the onset of kidney failure, KFOC-BC implemented a targeted screening program for people at risk of CKD. This is a unique program offered in a community setting. The 52 events held to date use healthcare professionals who measure BMI, BP, blood glucose, eGFR and creatinine at by-invitation only events in community and seniors' centres, workplaces, Aboriginal communities, city halls, Sikh and Buddhist temples across the province. To date, 2087 British Columbians have been screened, and 523 (25%) were identified with impaired kidney function. All participants are provided healthy living information, but those with <60 eGFR are advised to discuss further with their doctor.

Our poster will review the program, but also demonstrate its value by evaluating the data collected during our targeted screening events including breakdowns on gender, age, risk factors and eGFR.

2. **Acute Kidney Injury with Tobramycin-Impregnated Bone Cement Spacers in Prosthetic Joint Infections: A Controlled Study**

Vancouver General Hospital, Vancouver Coastal Health

Leader: Karen Shalansky

Team members: Elissa SY Aeng, Tim TY Lau, Nadia Zalunardo, Cindy XY Zhang, William Bowie, Guiyun Li, Clive Duncan

Background: A two-stage revision is frequently employed for the treatment of infected hip or knee arthroplasties. An antibiotic-impregnated bone cement spacer (ACS) with tobramycin \pm vancomycin is commonly used in the first stage of this procedure. We investigated the incidence and risk factors for acute kidney injury (AKI) after implantation of tobramycin-impregnated bone cement.

Methods: This was a prospective, observational, controlled study of 119 patients from Aug 2011 to Feb 2013. The tobramycin group included 50 consecutive patients who received tobramycin bone cement for the first stage of revision of infected hip or knee arthroplasties. The control group consisted of 69 consecutive patients who had a routine hip arthroplasty revision without ACS. AKI was defined as an increase of 50% or greater in serum creatinine from baseline within the immediate 7-day post-operative day (POD) period.

Results: The incidence of AKI was higher in the tobramycin group compared to the control group (20% vs. 4.3%, $p=0.01$). A multivariate analysis adjusting for potential confounders also confirmed the higher incidence of AKI in patients receiving tobramycin ACS (OR 7.2; 95% CI 1.5-33.5). Mean onset of AKI was on POD 3 in both groups and patients with AKI had longer duration of hospital stay (18.6 ± 13.7 days vs 8.8 ± 7.0 days, $p < 0.0001$). Other risk factors for AKI were baseline co-morbidity (OR 6.2; 95% CI 1.3-29.1), and administration of post-operative intravenous vancomycin (OR 5.3; 95% CI 1.6-17.7) or angiotensin converting enzyme inhibitors/angiotensin II receptor blockers (OR 4.0; 95% CI 1.2-13.04). Use of pre-manufactured bone cement containing gentamicin was also a risk factor in the tobramycin group (OR 4.5, 95% CI 1.1-19.3).

Conclusions: The incidence of AKI in infected hip or knee arthroplasties with tobramycin ACS was greater than in routine total hip arthroplasties. Measures to minimize AKI risk in the peri-operative period may reduce the incidence.

3. Save the Veins: Preserving the Veins of Patients with Advanced Chronic Kidney Disease Through the Use of an Online Learning Module

Providence Health Care and Fraser Health Authority

Leader: Lora J. Jensen-Almic

Team members: Kim C. Norman, Mirita B. Zerr, Thomas A. Grady

Many patients with advanced chronic kidney disease (CKD) are on hemodialysis (HD) or will require HD in the future. The best way for administering HD is through a fistula or graft. Unfortunately, medical interventions such as venipuncture (e.g. peripheral IVs, central venous line placements, and peripherally inserted central catheters) can damage blood vessels causing scarring, stenosis, and/or occlusion of the vessels. This damage jeopardizes future access creation. Additionally, venipuncture and other medical procedures (e.g. blood pressures) performed on a limb with a dialysis access already in place (e.g. fistula or graft) can result in damage to the access.

Many medical personnel are unaware of these risks. Through the development of an online learning module, "Save the Veins: Supporting Clients with Chronic Kidney Disease", we can more broadly educate practitioners that come in contact with patients with CKD about the importance of saving the veins.

4. Patient Centred Care

Royal Inland Hospital, Interior Health

Leader: Pam White

Team members: Deb Goodman, Laurel Baird

The interdisciplinary team at Royal Inland Hospital in Kamloops, BC is committed to compassion in kidney care through the incorporation of unique and innovative approaches to patient-centred dialysis care. A primary focus for the program is to create opportunities to support home therapy options such as peritoneal dialysis (PD); however, challenges often arise when attempting to meet the needs of a PD population where 56% live outside of the urban community of Kamloops.

This case study provides a glimpse into a 62 year old renal patient's journey on dialysis while living independently off his land over 50 miles from the dialysis centre. Outlined are the unique approaches implemented to address his physical and psychosocial needs and the subsequent learnings by both the renal team and the patient to achieve the mutually desired goal of remaining "home." Results reflect the value of collaborative teamwork between patient, community and the multidisciplinary team that focuses on patience, compassion, perseverance and creativity to achieve successful implementation of PD as a home therapy option.

5. Hemodialysis Short Stay Stations: Improving Patient Care

St. Paul's Hospital, Providence Health Care

Leader: Valerie Wai

Team members: Rick Luscombe, Michele Trask, Pauline Sun, Coleen Mar

Hemodialysis patients are complex requiring more than just a four-hour treatment three times a week.

The hemodialysis short stay stations were designed to meet the needs of the patients we care for.

This poster will identify some of the treatments and care provided to patients in the short stay area, the booking process involved and documents used.

It will also outline the continuity of care provided to a patient from the Kidney Care Clinic transitioning into hemodialysis.

6. Evaluation of a Dietitian-led Mineral Metabolism Protocol

Royal Columbian Hospital, Fraser Health Authority

Leader: Shelly Messenger

Team members: Ruth Burns, Sandy Wong, Samar Hejar, Mary DeVera

Patients with chronic renal failure have altered mineral metabolism associated with a higher rate of mortality. To address this issue, current practice is to aim for serum phosphorus, calcium and parathyroid hormone (iPTH) within target ranges. Historically, a standardized, efficient approach to addressing these target ranges has not been routine practice. Therefore, the Fraser Health Authority peritoneal dialysis team developed and evaluated a dietitian-led mineral metabolism protocol. This protocol includes an algorithm and set of pre-printed orders allowing the dietitian to make adjustments to phosphorus binders and vitamin D analogues within the parameters of the algorithm. After six months of the protocol being initiated there was a statistically significant improvement in the number of patients who met iPTH range (p 0.048). In addition, although not statistically significant, an improvement in the number of patients who met serum phosphorus target range (74.5% vs. 82.0%, p 0.126) was noted.

7. Dialyzing in the Wild! Supporting Home Hemodialysis Patients in Remote Communities

St. Paul's Hospital, Providence Health Care

Leader: Mary Lewis

Team member: Sarah Thomas

Dialyzing in the remote parts of British Columbia (BC) and Yukon Territory (YT) has many challenges. This poster presentation will detail two case studies. It will explore the lives of two spirited home hemodialysis (HHD) patients who live in remote communities and how they have managed their care over the past four years.

The experience of developing provincial strategies, policies and procedures to safely and effectively care for remote patients will also be outlined.

Their stories are an inspiration and highlight the value and importance of offering patient choice. They also help to dispel the misconception that patients who live far away from the dialysis unit are not suitable for home hemodialysis.

8. Helping Every Patient Achieve Their Highest Possible Level of Independence

St. Paul's Hospital, Providence Health Care

Leader: Leilani Ocampo

Team members: Michele Trask, Gillian Carter, Debra Fairhurst

Effective self-management of hemodialysis (HD) requires life-long adjustment and acquisition of self-care abilities and behaviors by patients. Educational interventions like self-care teaching and coaching were designed to assist selected adult patients with chronic failure on an in-centre HD unit in Vancouver, which have shown improvement to their self-care abilities and behaviors. A pre-test-post-test quasi-experimental design was utilized to evaluate the new intervention. The quality indicator was self care. This was measured using the Self Care for Adults on Dialysis (SCAD) tool, a 66-item, self-administered questionnaire. The tool was administered to 54 eligible, consenting patients, out of 81 patients asked to participate in the teaching intervention. The clinical outcomes revealed better utilization of existing staff in optimizing access to care; significant changes in the role of nurses; opportunity to enhance strategies to individualize patient care; and empowering patients to effectively promote their health through a more integral role in their well-being.

9. A Standardized Assessment of the Chinese Renal Nutrition Patient Education Materials at Providence Health Care

Providence Health Care

Leader: Winphia Koo

Team member: Jiak Chin Koh

Statistics Canada projects the Chinese in metro Vancouver will increase from 18% (2006) to 23% (2031). Evidence supports that cultural and language-tailored health education materials contribute to awareness of and access to health promoting practices. PHC renal dietitians, in partnership with the BC Provincial Renal Agency, developed 15 renal nutrition patient education handouts in Chinese which have gained widespread national and international use. A systematic evaluation, using the Suitability Assessment of Materials (SAM) tool by six dietitian reviewers, was done to assess the readability, presentation, learning stimulation, and cultural appropriateness of these handouts. The overall suitability scores showed that all 15 handouts were either superior (scoring 70-100%) or adequate (40-69%). The subscale scores indicated room for improvement in content (to include summary), literacy demand (to lower reading level to Grade 9 or below), and learning stimulation (to include interactive learning stimulation). Revision of these handouts has been planned for late 2013.

10. Nurturing the Nurse: A Survival Guide in Nocturnal Hemodialysis Nursing

St. Paul's Hospital, Providence Health Care

Leader: Neil Penalosa

Team members: Carolyn St. Germain, Barbara Carter

The in-centre nocturnal dependent hemodialysis program at St. Paul's Hospital is a nurse-led service that has garnered accolades for the evidence-based benefits to its thirty patients.

A few months following the program's launch in January 2011, the issue with staff retention had caused sporadic concern for those involved with the program; hence, some operational strategies were implemented.

Nevertheless, fragments of concerns have continuously enchanted the nocturnal nursing team, with both unique and common experiences.

The poster is aimed at promoting awareness on the commonly identified factors which influence one's perception with nocturnal nursing, based on Maslow's hierarchy of needs. It is our hope that such realization would stimulate self-evaluation, to determine its influence to the quality of nursing services being delivered and its effects to one's well-being and those we interact with.

Moreover, it is hoped that with the identified survival strategies, each professional nurse will find satisfaction in realizing that being part of a team that delivers exemplary care services is indeed a privilege and can be a potentially rewarding career.

11. Warfarin Assessing Risks, Finding Approximate Range of INr for Hemodialysis (WARFARIN HD)

Royal Jubilee Hospital, Island Health

Leader: Dan Martinusen

Team members: Jonathan Mailman

The use of the oral anticoagulant warfarin in patients receiving hemodialysis therapy is controversial. Warfarin is a commonly used medication to help lower the risk of a clot in those patients with atrial fibrillation, however, this has not been well studied in the hemodialysis population. This retrospective chart review will look at those hemodialysis patients with atrial fibrillation to assess their risk both on and off warfarin therapy using 4 common risk score systems (CHADS₂, CHA₂DS₂-VASC, R₂CHADS₂ and HAS-BLED) and to review use within the outpatient, community, and home hemodialysis patient population.

12. Learning Together: Engaging Nursing Students in Changes in the Practice Environment

St. Paul's Hospital, Providence Health Care

Leader: Lui Sera Josep

Team members: Michele Trask, Dave Morrison, Stan Marchuk

To meet the high demand for services and increasing acuity of patients within limited resources, transformational changes in unit operations were undertaken. As we engaged patients, the inter-professional team, nursing leaders and educators to enhance capacity and quality of care, we realized this could also be an innovative learning environment for student nurses. Collaborating with year 4 baccalaureate students from a local nursing program, the unit operations leader functioned as their preceptor. The improvement team was implementing changes to the delivery care model for hemodialysis patients, and planned to conduct a rigorous evaluation. The students were able to contribute to this process, designed to measure the impact of change on patients' self-care abilities, in exchange for course credit. Utilizing a leader in the practice environment for student support and guidance can reduce the burden on nursing faculty. These benefits translate into an improved environment for patients, nurses and learners.

13. Transition Nurses: Exploring the Changing Needs of the Renal Patient

Royal Columbian Hospital, Fraser Health

Leader: Koren Harmsma

Team members: Sony Sekhon, Sharon Acker

Kidney disease is on the rise, placing a huge burden on the already strained health care system. Home dialysis modalities, such as peritoneal dialysis and home hemodialysis, and community-based hemodialysis units, provide advantages that in-centre patients do not experience. The transition nurse role was developed to address patient needs and appropriate dialysis modalities. The role encompasses many aspects of patient care, both physical and psychosocial. It is initiating conversation, understanding patients' needs, accessing knowledge from team players, and smoothly moving patients through the renal flow. Transition nurses advocate for patients and their families by ensuring their wishes are met, addressing concerns in a timely manner, and helping patients to navigate to their chosen dialysis modality.

14. Joint NHARP, NPiC, KFOC Initiatives in Education and Kidney Care Across Northern BC

Northern Health

Leader: Robin Lowry

Team members: Tammy Klassen-Ross, Matthew Graveline, Daniel Horvat

Provincial data suggest some patients with early kidney disease are escaping detection in Northern BC limiting optimal intervention. Accordingly, the Northern Health Authority Renal Program (NHARP), Northern Partners-in-Care (NPiC) and Kidney Foundation of BC (KFOC) launched a pilot initiative incorporating: i) education and empowerment of primary care providers through onsite CME-accredited teaching events, ii) kidney consultation in visiting clinics, and iii) community meeting(s), in larger/smaller communities across the north (N = 7, Masset/ Haida Gwaii to Valemount, north to Fort St. John). Attendance/evaluations for CME events will be presented. Over 250 patients will have been seen at the completion of the present circuit October 4th. Efforts have also been launched to identify unrecognized kidney disease across the north through targeted community education and screening.

15. Review of Medication Safety Events from the Patient Safety Learning System (PSLS) in the Interior Health Authority Renal Program

Kelowna General Hospital, Interior Health

Leader: Piera Calissi

Team members: Matthew Lum, Christine Topley, Paula James

The Patient Safety Learning System (PSLS) is a province-wide web-based tool used by healthcare professionals to report and learn about adverse events, good catches and hazards. We reviewed 175 PSLS renal patient medication safety events (MSEs) from January 2011 to August 2013 to identify medication issues and trends, and provide recommendations for quality improvement. Of the 175 MSEs documented, the majority resulted in no harm (69%), followed by minor harm (25%), and moderate harm (6%). No event resulted in severe harm or death. Antibiotics (e.g. vancomycin), followed by anticoagulant (e.g. heparin) and hormone (e.g. epoetin alfa) resulted in the most MSEs typically because the dose was omitted or the incorrect amount was administered. Order documentation was the most frequently reported stage at which the event occurred. Recommendations to improve patient medication safety included a review of medication order documentation procedures and instituting an independent check for heparin given during hemodialysis.

16. Routine Symptom Assessment Reduced Overall Symptom Burden in Hemodialysis Patients

St. Paul's Hospital, Providence Health Care

Leader: Marianna Leung

Team members: Beverly Jung, Fong Huynh, Tinnie Chung, Stan Marchuk, Mercedeh Kiaii, Lee Er, Clifford Chan-Yan, Ronald Werb

Dialysis patients have an extremely high symptom burden. Unfortunately, their physical and psychological symptoms are often under-recognized and under-appreciated. Beginning September 2010, the Edmonton Symptom Assessment System (ESAS) questionnaires have been administered quarterly to patients at St. Paul's Hospital Hemodialysis Unit. The purpose of this retrospective review is to describe the prevalence and severity of ESAS symptoms at baseline and 3 years after implementation.

A total of 92 patients completed ESAS both at baseline and 3 years. The median [interquartile range] ESAS score for overall symptom burden reduced from 24.0 [14.0, 38.0] to 18.5 [8.5,32.5] after 3 years. Fewer patients had severe scores across all symptoms except for itchiness after 3 years although 14.1% continued to report severe tiredness or itchiness.

Routine symptom assessment and management of hemodialysis patients helps to reduce overall symptom burden. Practitioners caring for these patients should continue to strive to target patients with high symptom burden and improve their quality of life.

17. Dialyzability of Drugs During Intermittent Hemodialysis

St. Paul's Hospital, Providence Health Care

Leader: Marianna Leung

Team members: Polly Kwok, Fong Huynh, Tinnie Chung, Beverly Jung, Mercedeh Kiaii, Michele Trask

Drug removal during hemodialysis affects drug effectiveness, the administration timing around the dialysis schedule, and the needs for supplemental dosing. However, dialyzability data is often limited, difficult to interpret in the available literature and not readily accessible.

A comprehensive literature review of pharmacokinetic studies of drug dialyzability in patients undergoing chronic intermittent hemodialysis (IHD) was conducted. 186 drugs were reviewed utilizing PubMed, EMBASE, and IPA databases. The dialyzability data, where available, along with the pharmacokinetic parameters of the drugs and clinical experience of the renal pharmacists were used to provide dosing recommendations for patients undergoing IHD.

A website, www.dialyzeihd.com, was created to house this useful information including pharmacokinetic and dialyzability properties of each drug, along with dosing recommendations and administration timing around the hemodialysis schedule. Posters and pocket-sized booklets were also developed to provide easily accessible information for the busy clinicians caring for hemodialysis patients.

18. Don't Be Blue, You Can Help Too! Patients as Partners in Care

Interior Health Authority

Leader: Mary Lou Lester

Team members: Piera Calissi, Lia Briceno

Quality improvement initiatives focus on a best practice approach for healthcare providers when treating patients. Too often, the focus is entirely on their role, and the patient's role is overlooked. When developing a

medication reconciliation process for the renal program, time was spent identifying ways to involve the patient. For example, all dialysis patients are now given blue medication bags to carry their medications in and a letter explaining the purpose of the scheduled medication interviews. After medication reconciliation is complete, they are given the updated PROMIS “My Medication List” that describes the medication directions in layman’s terms and can include the medication indication. To assess the patient’s experience, we surveyed all in-centre hemodialysis patients after medication reconciliation occurred. The patient was asked to voluntarily and confidentially complete the survey and return it in a sealed envelope. The results of the survey will be tabulated and analyzed in October 2013.

19. Surviving the Flood of the Century: A Week in the Life of a Peritoneal Dialysis Program

Sheldon Chumir Health Centre, Calgary, Alberta

Leader: Tracy Zeiler

Team members: Wanda Bridden, Laurie Hermann, Linda Turnbull

The growing need for healthcare programs to focus on disaster plan development has become a priority over time. The obvious hope is that mobilization of the plans never occurs; however, unexpected crises can occur at any time.

Heavy rainfall that hit Alberta in June 2013 triggered catastrophic flooding described by the provincial government as the worst in Alberta’s history. As water levels rose, numerous communities in the city of Calgary and surrounding areas of High River, Canmore, Banff and Bragg Creek were placed under evacuation orders.

As a result, greater than 200 patients who receive medical care and follow up through the outpatient peritoneal dialysis (PD) clinic at the Sheldon Chumir Health Centre (SCHC) located in downtown Calgary were affected by the flood either directly or indirectly. 14 patients living in the outlined areas were evacuated from their homes and communities due to flooding or power outages. The PD outpatient clinic was closed for 7 working days as a result of power outages and road closures. Patient training and clinic appointment rescheduling, staff deployment, access to patient information and charts, supply availability and delivery were just some of the many challenges faced by the program as a result. Collaborative and innovative team work, however, ensured that positive clinical outcomes were maintained for all PD patients.

This poster will outline the process implemented by the Calgary PD program (SCHC site) upon awareness of the flood as well as subsequent learnings and recommendations for future disaster planning specific for this patient population.

20. Nutrition Education While You Wait

Nanaimo Community Dialysis Unit, Island Health

Leader: Aveleigh Hess

Team members: Eileen Carolan, Katie Duff, Patricia Good, Janet Krenz, Julia Steel, Tiffany McFadden

Nutrition education is defined as any combination of educational strategies, accompanied by environmental supports, designed to facilitate voluntary adoption of food choices and other food and nutrition related behaviors conducive to health and well-being. (Dr. Isobel Contento 2007)

Renal dietitians use many approaches to help people with chronic kidney disease modify their food habits to help control the build-up of body waste products and fluid, to slow down the progression of kidney disease and to maintain good health.

Renal diets are complex and involve modifications to protein, potassium, phosphorus, sodium, fluid and in many cases fat and carbohydrate intake.

A series of posters were developed to support long term learning and self management. These posters are displayed in waiting areas of kidney care clinics, hemodialysis units, peritoneal dialysis clinics and renal acute care wards within Island Health. Eight topics are covered. The poster displays are supported by handouts which provide key take home messages.

21. The Beginning or the End: Impact of Erythropoietin-Stimulating Agent Administration Time in Hemodialysis Patients

Surrey Memorial Hospital Renal Unit, Fraser Health Authority

Leader: Robin Cho

Team members: Vian Cheng, Phuong Hoang, Clifford Lo

Epoetin alfa and darbepoetin alfa are erythropoietin-stimulating agents (ESAs) frequently used in hemodialysis (HD) patients to maintain hematological parameters. The optimal timing of ESA administration during HD has not been established. This 6-month, single-centre, open-label study compared the effects between administering ESAs at the beginning and at the end of hemodialysis in 140 patients. The two groups did not show statistically significant differences in the average weekly ESA dose required or blood indices (hemoglobin, hematocrit, and MCV). The timing of ESA administration during hemodialysis can therefore be administered at any time that agrees with the workflow of the renal unit staff.

22. Exploring Hemodialysis Patients' Understanding and Beliefs About Their Chronic Pain

Surrey Memorial Hospital, Fraser Health Authority

Leader: Savita Korpai

Team members: Sony Sekhon, Sarah Derman, Marianne Mamaed, Alexandra Kruthaup-Harper

Our study set out to improve renal healthcare providers' understanding of their hemodialysis (HD) patients' pain experience by identifying commonalities in how these patients understand their pain and their pain beliefs. Study findings are based on 7 semi-structured participant interviews in which a qualitative descriptive design and qualitative content analysis were applied. A growing body of literature demonstrates the prevalence of under-recognized and under-treated chronic pain within this population. Findings from the cancer population indicate that some unaddressed patient beliefs and understanding regarding pain significantly influence multiple aspects of pain management, including communication or lack thereof with health providers, adherence to prescribed medications, requesting medication, and description of pain. This topic has not been explored in the HD population. The outcomes of our study provide preliminary information on how this group of HD patients understands their pain and types of pain beliefs they have.

23. Outcomes of a Renal Focused Approach to ACP Staff Education: Hidden Gems and Lightbulb Moments

Surrey Memorial Hospital, Fraser Health Authority

Leader: Alexandra Kruthaup-Harper

Team members: Cari Hoffmann, Victoria Lakusta-Lamberton, Nguyen Nguyen

A partnership between Fraser Health Authority's renal and end-of-life programs through a nursing grant enabled a multidisciplinary working group to develop and deliver a two-part workshop series that emphasized practical approaches to integrating ACP concepts into everyday practice. Picking up on patient cues highlighted the under-recognized role of the dietitian and unit clerk. Applying prognostic strategies to identify patients in greatest need of ACP gave staff an alternate approach for prioritizing conversations. Understanding the difference between a values-based versus medical-focused conversation suggested a different approach to a traditional discussion. Key outcomes for participants included a renewed understanding that ACP is also about living well, the importance of an interdisciplinary approach, and realizing the amount of existing renal practices that are already part of ACP.