Choosing Wisely Canada

National Meeting

Abstract Book

Choosing Wisely Canada™

In collaboration with:

Association médicale canadienne

Canadian Medical Association

CHAIR'S FOREWORD

Dear Choosing Wisely Canada attendees,

Welcome to the eighth annual Choosing Wisely Canada National Meeting.

It is my pleasure to welcome those joining us in Toronto, as we celebrate the return to an in-person event after three years of virtual meetings. For those joining online, we are pleased to offer a virtual experience to ensure your participation in the meeting. Regardless of how you choose to attend this year, we hope the meeting serves as a celebration and recognition of the remarkable accomplishments of the Choosing Wisely community.

Over the past year, Choosing Wisely Canada has made significant progress in highlighting the crucial role of reducing overuse in alleviating pressures on Canadian health systems. Our efforts have focused on mobilizing change through national and local quality improvement programs, reporting on the state of overuse in Canada with the Canadian Institute for Health Information, and raising awareness on issues that impact health system sustainability.

Next year will mark a decade since the official launch of Choosing Wisely Canada. It is appropriate for us to reflect on the progress so far and to embark on a new set of strategic directions for the next ten years. Over the coming year, we look forward to working with you to shape Choosing Wisely Canada's future efforts to achieve sustainable high-quality care for all Canadians.

Despite the immense challenges posed by the pandemic, this community has continued to undertake inspiring work in the pursuit of delivering high-quality care. The abstract book that we have prepared captures the depth and breadth of these efforts, and I strongly encourage you to take some time to explore the work taking place across the country.

I express my deep gratitude for your ongoing dedication and look forward to coming together at the National Meeting to celebrate our collective achievements.

Yours,

Wendy Levinson, MD OC
Chair, Choosing Wisely Canada & International
Professor of Medicine, University of Toronto

MESSAGE DE LA PRÉSIDENTE

À tous les membres de la communauté Choisir avec soin,

Bienvenue au huitième congrès national annuel de Choisir avec soin.

J'aurai le grand plaisir d'accueillir ceux et celles qui se joindront à nous à Toronto, en ce premier événement en personne après trois années de réunions virtuelles. Pour les personnes qui participent en ligne, nous sommes heureux d'offrir une expérience virtuelle qui vous permettra de prendre part à la réunion. Peu importe comment vous choisissez de participer cette année, nous espérons que le congrès sera l'occasion de célébrer et de reconnaître les réalisations remarquables de la communauté Choisir avec soin.

Au cours de la dernière année, Choisir avec soin a fait des progrès importants dans ses efforts visant à souligner le rôle crucial de la réduction de la surutilisation pour atténuer les pressions exercées sur les systèmes de santé du Canada. Nous nous sommes notamment employés à mobiliser le changement au moyen de programmes locaux et nationaux d'amélioration de la qualité, à préparer, en collaboration avec l'Institut canadien d'information sur la santé, un rapport sur l'état de la surutilisation au Canada et à sensibiliser la population aux enjeux qui touchent la viabilité du système de santé.

L'an prochain marquera le dixième anniversaire du lancement officiel de Choisir avec soin. C'est l'occasion pour nous de réfléchir aux progrès réalisés jusqu'à présent et d'adopter une nouvelle série d'orientations stratégiques pour les dix prochaines années. Au cours de l'année à venir, nous serons heureux de travailler avec vous pour façonner les prochaines initiatives de Choisir avec soin en vue d'offrir à toute la population canadienne des soins durables de grande qualité.

Malgré les défis énormes posés par la pandémie, notre communauté a continué d'entreprendre des initiatives inspirantes dans le but d'offrir des soins de qualité. Le cahier de résumés que nous avons préparé illustre l'intensité et l'ampleur de ces efforts, et je vous encourage fortement à prendre le temps d'explorer les initiatives qui sont menées partout au pays.

Je tiens à vous exprimer ma profonde gratitude pour votre dévouement indéfectible. J'ai très hâte de vous retrouver à l'occasion de notre congrès national pour célébrer nos réalisations collectives.

Cordialement,

Wendy Levinson, M.D., O.C.
Présidente, Choisir avec soin, Canada et international
Professeure de médecine, Université de Toronto

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Appropriate Prescribing

SLEEPWELL: TRANSITIONING FROM SEDATIVES TO BEHAVIOURAL INTERVENTIONS FOR INSOMNIA IN PRIMARY CARE

David Gardner, Dalhousie University
Andrea Murphy, Dalhousie University
Małgorzata Rajda, Dalhousie University

Goals:
In alignment with CWC's appropriate prescribing priorities and insomnia treatment guidelines, Sleepwell aims to reduce sedative use and increase access and uptake of recommended, first-line behavioural therapies, especially in older adults. This presentation will review Sleepwell-related activities, including health care professional education, community-engagement, research projects, and organizational collaborations.

Activities:
Public and professional collaborations, locally and nationally, have raised awareness of Sleepwell and its resources. A recent RCT demonstrated the impact of these resources when provided as booklets (designed with embedded behaviour change techniques) directly to people with chronic use of benzodiazepine receptor agonists (BZRAs).

Impact:
Results of the YAWNS NB RCT (n=580) will be presented (e.g., sedative discontinuation rates, sleep outcomes) leading to a discussion of the potential impact for insomnia care, including opportunities for efficiencies in BZRA deprescribing, facilitating access to behavioural interventions for insomnia, and supporting CWC aims and activities within NS and across Canada.

Challenges:
Transitioning insomnia care from a medication to a behavioural intervention requires a multi-dimensional strategy backed by policies, stakeholder support, effective resources, and, importantly, scalable and sustainable change in behaviour. Progress has been made with sedative deprescribing. Helping behavioural interventions become the default treatment strategy is facing ongoing challenges.

Lessons Learned:
There is broad acceptance of the need to reduce sedative use. Deprescribing can be achieved without decline in sleep outcomes. Lack of clinician familiarity with self-directed behavioural approaches to insomnia management slows their adoption. Sleepwell is a resource-rich initiative facilitating access to evidence-based behavioural interventions supporting clinicians and patients alike.

IMPROVING MEDICATION APPROPRIATENESS AND QUALITY OF CARE FOR COMPLEX OLDER ADULTS IN PRIMARY CARE

Alexander Singer, University of Manitoba
Celine Jean-Xavier, University of Manitoba
Simone Dahrouge, University of Manitoba
Donna Manca, University of Manitoba
Michelle Greiver, University of Manitoba

One quarter of older Canadians (≥ 65 years old) are prescribed 10+ medications. Polypharmacy is directly associated with persistent higher care needs, increased costs and reduced quality of life.

The Structured Process Informed by Data, Evidence and Research (SPIDER) approach engages primary care teams in:

1. Participation in quality improvement (QI) Learning Collaboratives (LCs)
2. QI coaching/facilitation to drive practice improvement
3. Using validated EMR data for audit and feedback that prioritizes meaningful changes.

The trial's primary objective was to reduce potentially inappropriate prescriptions in patients over 65 among 4 medication classes (Proton pump inhibitors, benzodiazepines/Z-drugs, antipsychotics, and sulfonylureas), all of which are associated with Choosing Wisely Canada recommendations.

A feasibility study was done in 3 Practice-Based Research Networks (PBRNs) conducted using a single-arm mixed methods approach. The SPIDER approach successfully demonstrated capacity to safely promote improved prescribing in complex older patients.

Currently, the 2-arm (SPIDER approach vs. Usual Care) pragmatic cluster randomized controlled trial is taking place in 5 PBRNs, with 52 practices and 186 clinicians participating. All sites have either completed or are nearly completion of their LCs.

One challenge the SPIDER investigators faced were intervention practices with small numbers of eligible patients and difficulty obtaining completed feedback surveys. Important lessons thus far, are the utility of having direct access to embedded QI and data support within practices and direct, meaningful collaboration of pharmacists to enhance the sustainability of the approach.

Currently, knowledge from the trial is being applied to spread the SPIDER method in other jurisdictions.

HARNESSING PRESCRIPTION ANTIBIOTIC DISPENSE DATA TO IMPROVE PHYSICIAN PRESCRIBING PRACTICES IN ALBERTA

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Nicole Kain, College of Physicians & Surgeons of Alberta
Iryna Hurava, College of Physicians & Surgeons of Alberta
Karen Smilski, College of Physicians & Surgeons of Alberta
Ed Jess, College of Physicians & Surgeons of Alberta

Objective:
To increase physician awareness of appropriate antimicrobial use, resistance, and stewardship with the ultimate goal of improving patient care and the health of Albertans.

Activities:
Various projects regarding antibiotic prescribing have been initiated by the College of Physicians & Surgeons of Alberta (CPSA) since 2018 and can be grouped into four themes:

1. Monitoring and providing an overview of provincial antibiotic medication utilization (e.g. Antibiotic Atlas https://www.tppalberta.ca/s/2021ABxAtlas.pdf);
2. Continuing medical education/enhancing physician antibiotic prescribing practices and providing guidance on various aspects of antimicrobial use;
3. Initiating various prescribing interventions (including educationally-focused, peer-led audit and feedback); and
4. Exploring the impact of MD Snapshot-Prescribing reports on physicians' prescribing behavior and self-reflection on antibiotic prescriptions while obtaining feedback on new data trends/measures for future reporting.

Impact:
Implementation of CPSA's prescribing initiatives improves physician prescribing awareness, allows for self-reflection on prescribing patterns of antibiotics compared to peers, and in turn, optimizes safe patient care. Additionally, geographical prescribing representations in the Antibiotic Atlas facilitates regionally directed initiatives.

Challenges:
Ongoing challenges include:

1. Lack of diagnostic/laboratory information;
2. Uptake of information; and
3. Evaluation of impact of initiatives.

Lessons Learned:

Even without diagnostic/laboratory data, valuable details regarding general prescribing of antibiotics such as days of therapy, receipt of multiple ingredients from multiple prescribers, and dosage, can be provided to physicians. Increased interest in antimicrobial stewardship supports local and cross-country collaboration. Audit and feedback data from the CPSA allows for sharing of antibiotic prescribing information in an educational, self-reflective and non-punitive manner.

ADDRESSING CARE GAPS IN ANTICOAGULATION THERAPY THROUGH A VIRTUAL WORKSHOP

Bryce Hardy, Physician Learning Program
Douglas Woodhouse, Physician Learning Program

A study published in the Canadian Journal of Cardiology (Orlandi et al., 2021) explored the prescribing patterns in frail versus nonfrail patients diagnosed with non-valvular atrial fibrillation (NVAF) in Alberta from 2009 to 2019. It was found that though a higher percentage of frail patients (92.1%) were indicated for anticoagulation, only 32.9% received anticoagulation therapy.

Moreover, these frail patients were also less likely to receive a direct oral anticoagulant (DOAC) in place of warfarin, despite clear recommendations supporting DOAC prescriptions for most frail elderly patients with NVAF.

The Physician Learning Program hosted a virtual session within a geriatrics conference supported by the CME&PD department of the Cumming School of Medicine, with the goal of allowing physicians and other health care practitioners the opportunity to reflect on the data, review the current guidelines regarding the intersectionality between anticoagulation and frailty, and subsequently improve their own practice to address this care gap.

The session had 48 participants, primarily family physicians. Through interactive activities including case studies, live polls, brainstorming, and facilitated breakout room discussions, participants generated practical ideas to improve patient care at all stages of the patient journey: diagnosis, treatment planning, treatment, and follow-up.

Using a prioritization matrix, participants then filled out personal commitments to change that were tailored to their own practices. All those who made a commitment to change indicated that the session helped them reflect on their practice, and that they felt confident about implementing change in their practice after participating in the session.

OPTIMIZING THE SUBMISSION OF SURGICAL SPECIMENS TO THE ANATOMIC PATHOLOGY LABORATORY

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Andrée Fortin, INESSS
Catherine Gravel, INESSS
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Frédéric St-Pierre, INESSS
Mélanie Tardif, INESSS
Ann Lévesque, INESSS
Catherine Truchon, INESSS

A large volume of surgical specimens are submitted to the anatomic pathology laboratory for analysis although a significant proportion of these examinations present low risks and are unlikely to provide useful information for patient management.

To promote the optimal use of anatomic pathology resources, the Quebec ministère de la Santé et des Services sociaux asked the Institut national d'excellence en santé et en services sociaux (INESSS) to formulate recommendations to guide clinicians in their decision to submit or not submit certain surgical specimens based on the relevance of an anatomopathological examination.

The project covered different medical specialties: orthopedic surgery and neurosurgery, general surgery, plastic surgery and dermatology; obstetrics/gynecology and urology; cardiovascular and thoracic surgery; otolaryngology and maxillofacial and cervicofacial surgery; and ophthalmology.

On the basis of the information gathered from
1. Systematic reviews of the scientific literature, recommendations and guidance from learned societies and,
2. The consultation of various stakeholders, lists of specimens that could be selectively submitted for an anatomopathological examination were elaborated.

An integrated tool aimed at facilitating the application of these guidelines was also produced. Recommendations to support the implementation and monitoring of the selective submission process were also formulated.

These tools should contribute to a more judicious utilization of anatomic pathology resources. Changes in clinical practice will depend however on the dissemination of the recommendations and the implementation strategies that are currently being developed by the ministry, the professional societies involved and the healthcare facilities.

BARRIERS TO USING EVIDENCE-BASED ANTIBIOTIC PRESCRIPTION GUIDELINES IN PRIMARY CARE: A QUALITATIVE SYSTEMATIC REVIEW AND SYNTHESIS

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Holly Etchegary, Clinical Epidemiology - Memorial University of Newfoundland
Kris Aubrey-Bassler, Primary Healthcare Research Unit - Memorial University of Newfoundland
Andrea Patey, Centre for Implementation Research - Ottawa Hospital Research Institute
Bradley Furlong, Primary Healthcare Research Unit - Memorial University of Newfoundland
Victoria A. J. Kavanagh, Department of Psychology - Memorial University of Newfoundland
Kristen Romme, Health Sciences Library - Memorial University of Newfoundland
Amanda Hall, Primary Healthcare Research Unit - Memorial University of Newfoundland

Background:
Overprescribing antibiotics contributes to antibiotic resistance, posing a significant threat to healthcare globally. Antibiotics should be predominately prescribed for bacterial infections but are often inappropriately given for uncomplicated upper respiratory tract infections (URTIs) and related conditions (such as the common cold).

Goal:
To understand why antibiotics continue to be prescribed for URTIs and related conditions by conducting a qualitative systematic review of physician-reported barriers to using evidence-based antibiotic prescribing guidelines in primary care.

Methods:
We searched MEDLINE, Web of Science, CINAHL, Embase, The Cochrane Library, and PsychInfo with no date or language restrictions for qualitative studies exploring barriers and enablers to following antibiotic prescribing guidelines for URTIs among primary care physicians. We found 2442 articles. Next, articles will be screened by two independent reviewers for inclusion in the review. Once screening is completed, we will complete a theory-based analysis of our findings using the Theoretical Domains Framework (TDF), an integrative synthesis of numerous behaviour change theories designed to identify determinants of behaviour. Using the TDF approach, we can identify the determinants of our behaviour of interest (i.e., following antibiotic prescribing guidelines for URTIs) and categorize them into the 14 TDF domains. Full results will be available for the meeting in May.

Impact:
Applying this theoretical lens to the barriers and enablers identified in the literature will provide the necessary information for future researchers to develop gold-standard evidence-based and theory-informed interventions designed to target the known barriers by applying the most effective behaviour change techniques to effect change.

POPULATION-BASED ASSESSMENT OF ANTIBIOTICS PRESCRIBING BY DENTISTS IN MANITOBA

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Kevin J Friesen, College of Pharmacy - Rady Faculty of Health Sciences, University of Manitoba
Jamie Falk, College of Pharmacy - Rady Faculty of Health Sciences, University of Manitoba
Robert J Schroth, Dr. Gerald Niznick, College of Dentistry - Rady Faculty of Health Sciences, University of Manitoba
Shawn Bugden, School of Pharmacy - Memorial University of Newfoundland

Background:
Antibiotic surveillance/stewardship programs have become important tools to promote optimal antibiotic use. Dental prescribing of antibiotics is a significant contributor to overall antibiotic use but has received limited assessment and review at the population level.

Methods:
Antibiotic prescriptions dispensed from 2014-2019 were evaluated in this longitudinal population–based study conducted in Manitoba, Canada. Antibiotic rates were adjusted for population numbers (per 1000 persons). Linear regression was used to assess trends over time for dentists and physicians.

Results:
Over the study period, 405,124 antibiotic prescriptions written by dentists were dispensed, representing 9.1% of all antibiotic prescriptions. Physician antibiotic prescribing dropped over time while dentist prescribing remained unchanged (60.1 prescriptions/1000 persons). More than a quarter (27.0%) had potentially inappropriate durations longer than a week.

Penicillins were most commonly prescribed (amoxicillin (64.1%), penicillin V (15.0%)). While limited prescriptions were written for the broader spectrum amoxicillin/clavulanate (1.9%), there was a modest increase over time of 12.5% per year ($p<0.0015$).

Analysis by region and income showed relatively consistent results except for northern remote regions where higher rates of dental prescribing were seen.

Conclusions:
Dental prescribing of antibiotics in Manitoba is stable but higher than national averages with some indications of increased use of broad-spectrum antibiotics. This is in contrast to a significant decline of overall antibiotic prescribing by physicians.

Practical Implications:
Current data suggest that limiting prescription duration, evaluating the need for a prescription, and increasing scrutiny of the need for broad-spectrum antibiotics may improve the overall quality of dental antibiotic prescribing.

ONDANSETRON ORAL DISINTEGRATING TABLET APPROPRIATENESS AND STEWARDSHIP INITIATIVE

Robin Scheelar, Alberta Health Services
Rhonda Shkrobot, Alberta Health Services

Goal:
Appropriate use of ondansetron oral disintegrating tablet (ODT)

Activities:

- Develop and implement educational tools and resources for front line
- Engage Clinical Nurse Educators and clinical information system governance groups
- Collaborate with order set content committees and order set owners to remove ondansetron ODT from Connect Care (CC) ordering tools
- Collaborate with Pharmacy Services site operations to remove ondansetron ODT from ward stock and automated dispensing cabinets

Impact:

- Increase awareness of ondansetron ODT Formulary restrictions
- Acceptance of initiative themes and educational material by frontline
- Increase frontline knowledge and confidence in assessing clinical situations for appropriate use of ODT
- Decrease ODT utilization

Challenges:

- Drivers of non-adherence include historical and established practice, ready availability via order sets, and lack of awareness of bioavailability and cost differences between dosage forms
- Reluctance from prescribers, nursing staff and order set owners to remove ODT formulation from CC order sets due to potential increased workload
- Competing organizational priorities affecting the prioritization of this work
- Delayed impact of initiative at non-CC sites

Lessons Learned:

- Collaboration with a broad range of stakeholders is key to achieving common goals.
- Using evidence to implement change:
  * Drug information resources support Formulary restriction criteria
  * Shared data model provides provincial utilization and expenditure data, aiding in initiative evaluation
  * Audit results support ordering tool changes, highlighting factors driving inappropriate use
- Leveraging the power of CC to optimize use and influence prescribing

Environmental Sustainability

REDUCING UNNECESSARY RESOURCE USE: CAN WE STOP USING STERILE WATER IN COLONOSCOPIES?

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Clinical Epidemiology Program, Ottawa Hospital Research Institute
David Smith, North York General Hospital
Husein Moloo, Department of Surgery - The Ottawa Hospital, University of Ottawa

Background:
The use of sterile water for irrigation in colonoscopy is ubiquitous in Canada, however, the evidence to support its use is not well known. Compared to tap water, sterile water in plastic bottles may significantly increase environmental and financial costs without patient benefits. Our objective is to summarize the evidence of the effects of tap vs sterile water use in colonoscopy.

Methods:
All studies examining the effects of colonoscopy irrigation were included. Two reviewers performed all steps of the review independently and in duplicate. Key stakeholders such as endoscopists, infection prevention and control leads, provincial quality improvement directors, a director of planetary health, patient input, and manufacturer leads were involved. Various databases were searched to July 2022 using PRESS standards.

Results:
Out of 317 articles, 3 were included in the final analysis. All were prospective studies. A total of 175 colonoscopies/ sigmoidoscopies were reported. In two studies, there were no clinical adverse events including infections using tap water. The remaining study did not report infectious complications. One study estimated an additional cost of USD$35 per colonoscopy using sterile water. Environmental impacts were not reported.

Conclusions:
There is limited evidence comparing tap and sterile water for irrigation in colonoscopy. In the context of the public health precautionary principle, based on sparse studies, tap water may be safe and economically and environmentally more beneficial compared to sterile water. Switching to tap water in re-usable bottles would support Choosing Wisely Canada's vision to reduce unnecessary interventions although further studies are required.

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WISELY CHOOSING LOW CARBON EMISSION INHALERS

Alicia Martin, HealthPRO
Alam Hallan, RPH, MBA
Christine Donaldson, RPh, M, Ed

Carbon emissions contribute to climate change that can exacerbate respiratory conditions, necessitating inhaler prescribing. Healthcare has been identified as a significant contributor to climate change. Within pharmaceuticals, metered dose Inhalers (MDIs) used for the treatment of respiratory conditions account for roughly 0.03% of annual global missions. On average, one inhaler has a carbon footprint equivalent to driving 290 kms. HealthPRO (a national group contracting provider) has developed a toolkit to assist their members to choose carbon friendly inhalers to promote this best practice within hospitals as treatment will continue post discharge thus reducing carbon emissions.

This toolkit was created by HealthPRO to provide pricing and carbon emissions data for all inhaler to hospital pharmacists. Members can input their current usage as baseline and use the toolkit to identify alternate lower emission inhalers within the same class. The carbon lowering and cost impact comparison thus generated will be used to support formulary changes.

This initiative identifies an efficient way for hospitals to measure their baseline carbon emissions and the impact of adopting low carbon alternative inhalers. Transition to dry powder inhalers, which are rated higher by patients for ease of use and lead to better clinical outcomes, is a relatively easy switch. With over 800 million MDI inhalers being produced every year, which translates to over 13 billion tons of CO2e, a switch in the formulary of hospitals can have a major positive climate impact which gets magnified in the community where most inhalers are dispensed in Canada.

REDUCING NITROUS OXIDE WASTE - LOW HANGING FRUIT FOR ENVIRONMENTAL IMPACT

Danette Beechinor, Sunnybrook Health Sciences Centre
Eric Cohen, Sunnybrook Health Sciences Centre
Susan Deering, Sunnybrook Health Sciences Centre
Barbara McArthur, Sunnybrook Health Sciences Centre
Daniel Nunes, Sunnybrook Health Sciences Centre
Martin Van der Vyer, Sunnybrook Health Sciences Centre

Nitrous oxide (N2O) contributes 75% of the global medical greenhouse gas footprint. N2O has 298 times the global warming potential (GWP) of carbon dioxide, and persists for over 100 years in the atmosphere. Lothian health district of Scotland reduced N2O consumption by 75-100% through addressing their N2O delivery systems which are prone to leaking due to their design and aging infrastructure. An analysis of our purchase data demonstrated that we consumed 32,599 Kg of N2O over 5 years. This has the GWP of driving over 38 million kilometres in a passenger vehicle. Offsetting this much N2O would require planting 160,630 tree seedlings and letting them grow for 10 years.

Most N2O consumption by hospitals is not related to the clinical use of N2O, as use has decreased over the years. N2O is released into the atmosphere due to leaks associated with system design. Addressing these systems based issues by transitioning to smaller tanks closer to the point of clinical use has been shown to reduce waste to less than 1% in some organizations.

We are targeting our N2O consumption through waste reduction. This means close collaboration with our physical plant operations staff and vendors to identify sources of N2O waste and changing the way we deliver N2O to clinical areas. We are targeting the reduction of N2O consumption by 75% in 2023/2024. Through sharing our resources, project charter and communication tools we are supporting other organizations in pursuing similar initiatives.

SUCCESSES AND CHALLENGES OF REDUCING MDI USE IN CLINICAL SETTINGS FROM PRIMARY TO ACUTE CARE

Susan Deering, Sunnybrook Health Sciences Centre
Dr. Debbie Elman, Sunnybrook Health Sciences Centre
Dr. Leslie Beyers, Sunnybrook Health Sciences Centre
Dr. Lee Fidler, Sunnybrook Health Sciences Centre
Dr. Adina Weinerman, Sunnybrook Health Sciences Centre
Dr. Carolyn Tan, University of Toronto
Dr. Briony Lago, University of Toronto
Jennifer Do, Sunnybrook Health Sciences Centre
Chris Fan-Lun, Sunnybrook Health Sciences Centre

Patients with asthma and chronic obstructive pulmonary disease (COPD) are oft prescribed metered dose inhalers (MDIs), which use a hydrofluorocarbon (HFC) propellant to deliver medication. HFCs are potent greenhouse gases (GHGs) that contribute significantly to the carbon footprint in health care. Clinically appropriate alternatives to MDIs exist, such as dry powder inhalers (DPIs), and changing to a DPI reduces CO2 emissions by 150-400kg per year (roughly equivalent to removing meat from one's diet). Despite this substantial environmental impact, nearly 75% of inhalers prescribed in North America are MDIs. Reducing MDI use is a high impact/low cost change opportunity and is a top priority of Canada's Centre for Sustainable Health Systems.

We hypothesized that there are multiple factors including knowledge gaps, time constraints, resistance to change, and systemic barriers that discourage prescribing alternatives to MDIs. The overall aim of this project is to reduce MDI use by 25-50% depending on the clinical setting (ie. Family Practice (FP) and Specialist clinics, Acute Inpatient Care, Nursing Home/Complex Continuing Care) over one year.

This presentation will review our results to date, celebrate our successes and evaluate the challenges that have presented themselves. There will be opportunity for discussion and brainstorming about ways to overcome these challenges, as well as how successful strategies could be implemented in other organizations.

ENGAGING FAMILY MEDICINE RESIDENTS TO REDUCE PMDI PRESCRIPTIONS IN A FAMILY HEALTH TEAM

Dr. Anthony D. Train, Department of Family Medicine - Queen's University
Nicole Nataksu, Department of Family Medicine - Queen's University

In primary care, one of the largest sources of greenhouse gases are from pressurized metered-dose inhalers (pMDIs). These inhalers use a propellant called hydrofluoroalkane, a powerful greenhouse gas, to deliver the medication. pMDIs are an effective delivery device for respiratory illnesses, however, about a third of patients prescribed inhalers do not have an objective diagnosis. Choosing Wisely recommends only continuing treatment with objective confirmation of asthma or COPD.

Our goal is to reduce pMDI prescriptions at the Queen's Family Health Team (QFHT) by 50% by June 2023. We recruited first year family medicine residents to tackle this problem as part of their quality improvement training. Residents work in clinical teams and compete to see which team has the largest overall decrease in pMDIs. Each resident team has autonomy to decide how they approach the problem (e.g., switch inhaler device, check for lung function testing and deprescribe where possible). Each month, metrics on pMDI prescriptions are shared with QFHT including which team had the largest monthly decrease. At the start of this project, we found that 63% of all inhaler prescriptions at QFHT were pMDIs, and months into the project, we are seeing a trend towards fewer pMDI prescriptions.

It can be challenging for individual physicians to adjust practices that positively impact the environment in a significant way; engaging learners not only increases the human resources available to make these changes, but also ensures the next generation of physicians are prescribing in an environmentally conscious manner.

BUILDING HEALTH SYSTEM SUSTAINABILITY AND RESILIENCE THROUGH THE CO-BENEFITS OF REDUCING LOW-VALUE CARE AND REDUCING THE ENVIRONMENTAL IMPACTS OF CARE: DEVELOPING AN INTERNATIONAL RESEARCH & IMPLEMENTATION AGENDA

Gillian Parker, University of Toronto
Karen Born, University of Toronto
Tasneem Bohra, University of Toronto
Sarah Hunter, University of Toronto
Fiona A. Miller, University of Toronto

Implementation of Choosing Wisely recommendations has been suggested as a critical component of efforts to reduce healthcare's climate impact. Reducing overuse and improving climate resilience and sustainability of health systems are not discrete and silo-ed issues, and awareness is developing among clinicians, system leaders and decision-makers on the interrelated and co-beneficial aspects of addressing these issues through aligned and integrated solutions.

Reducing low value care (LVC) is increasingly an integral and deeply beneficial focus for health system sustainability and resilience efforts, providing myriad benefits from improving patient care and outcomes, freeing resources for expanded coverage, improving adaptive capacity, and securing co-benefits such as reductions in emissions, waste and energy use. Urgent global collaboration and learning is needed, and it is important to understand where leading practices are present. This will be identified through a scoping review, research priorities synthesis and bibliometric analysis.

We present preliminary results from the scoping review. Forty-seven articles published 2014-2022 met inclusion criteria, with 70% of the articles published in the last two years. One quarter of the publications were empirical studies with the remainder being commentary, editorials or opinion. 25% of the articles focused equally on the importance of reducing LVC and improving environmental impact of healthcare; 65% of articles focused on reducing the environmental impact of care; 10% focused on reducing LVC. The majority of articles focused on healthcare generally, with the remainder focused on practices such as laboratory testing, anesthesia and hospital practices. One quarter of publications referenced Choosing Wisely campaigns. The majority of articles were written by multi-national teams, with first authors predominantly from Australia, UK and USA.

This project will synthesize and mobilize foundational knowledge on this emerging area of research to support practice change and development of a global community of practice.

MITIGATING THE CLIMATE IMPACT OF ASTHMA AND COPD THERAPY IN THE STANTON TERRITORIAL HOSPITAL

Celia Walker, University of Alberta
Hannah Shoichet, University of Alberta
David Pontin, University of Alberta

Emergency Department in Yellowknife, Northwest Territories Bronchodilators for the management of asthma and COPD are commonly administered by Metered Dose Inhalers (MDIs). The propellant in MDIs, hydrofluoroalkanes, is a major contributor to greenhouse gas emissions; ~200 actuations of an MDI are CO2 equivalent (CO2e) to driving ~600kms.

Dry Powder Inhalers (DPIs) are an alternative delivery mechanism with equal clinical efficacy and comparable costs. A salbutamol DPI has 10x less the environment impact compared to an equivalent MDI (MDI 26.9 kg CO2e/100 doses; DPI 2.7 kg CO2e/100 doses). The goal of this project is to reduce the climate impact of asthma and COPD therapy by decreasing salbutamol MDI use in the emergency department at Stanton Hospital.

The PDSA (plan, do, study, act) model for Quality Improvement was used to guide the project's design. Local stakeholder involvement was sought and presentations on the project's justification and design were provided to allied health professionals impacted by the study. Salbutamol DPIs were subsequently approved by the local Pharmacy & Therapeutics Committee to be included on Stanton Hospital's formulary.

The project will take place at Stanton Hospital's emergency department between February 1, 2023, and February 1, 2024. The study population will include patients >6 years old who present with an asthma or COPD exacerbation. The salbutamol DPI actuations will be recorded after each encounter and the CO2e saved will be estimated. The aim is to change the practice of inhaler prescribing in an acute setting in Yellowknife to help mitigate the contribution of our healthcare system to the climate crisis.

PATIENT, HOSPITAL, AND ENVIRONMENTAL COSTS OF UNNECESSARY BLOODWORK: CAPTURING THE TRIPLE BOTTOM LINE OF INAPPROPRIATE CARE

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Background:
Reducing over-investigation is a Choosing Wisely priority, aimed at minimizing low value care and its associated impacts including patient harms, as well as financial and environmental costs of care.

Goal:
To characterize the extent and impact of over-investigation in general surgery inpatients according to the triple bottom line

Methods:
Patients with uncomplicated acute surgical conditions were retrospectively evaluated for over-investigation according to previously established consensus recommendations. Impacts were captured to patients (excess phlebotomies and volume of blood lost), the hospital (expenditures), and the environment (greenhouse gas emissions, GHG). GHGs were estimated using PAS2050 methodology, including emissions generated from the production, transport, processing, and disposal of consumable goods and reagents.

Impacts:
Of 304 patients who met inclusion criteria, 83 were randomly selected for in-depth chart review. Of these, 76% underwent unnecessary bloodwork resulting in a mean of 1.84 excess phlebotomies, 4.4 blood vials, 16.5 tests, and 18 mL of blood loss per patient. The cost of these unnecessary activities was $5235CAD and 67kg CO2e (1,063g CO2e per person). The GHG emissions from a common set of investigations was (CBC, differential, creatinine, urea, sodium, potassium) 380g CO2e, while adding a liver panel (liver enzymes, bilirubin, albumin, INR/PTT) resulted in an additional 471g CO2e.

Lessons Learned and Challenges:
Considerable overuse of laboratory investigations among uncomplicated general surgery results in unnecessary impacts to patients, hospitals, and the environment. This study identifies an opportunity for resource stewardship and exemplifies a comprehensive approach to quality improvement.

ENVIRONMENTAL AND ECONOMIC SUSTAINABILITY ASSESSMENT OF PERI-OPERATIVE PATIENT WARMING STRATEGIES

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Background:
Intra-operative hypothermia is associated with adverse events including surgical site infections, coagulopathy, myocardial injury, and increased hospital length of stay. Current guidelines recommend maintaining peri-operative normothermia using forced air warming (FAW). However emerging evidence indicates that alternative active warming techniques may be equally effective. In practice, non-evidence-based flannel blankets are used with a high variability in clinical practice leading to avoidable waste.

Goal:
To reduce inefficient and ineffective practices by improving the current patient warming approach

Methods:
This two-phase study included an environmental and economic impact analysis of current warming devices, followed by a quality improvement initiative to optimize peri-operative patient warming practices at Vancouver General Hospital (VGH). A 50-patient audit of urology, thoracic, and general surgery patients was performed to characterize current warming practices, rates of hypothermia, and patient reported outcomes. Impact analysis and audit results informed the development of an optimized pathway to deliver effective, environmentally sustainable, and economical peri-operative warming.

Impacts:
Up to 11 flannel blankets were used per patient. Hypothermia rates varied from 8-18% with high variability in temperature monitoring techniques. Flannel blankets represented a considerable environmental impact stemming from the production and disposal of cotton, and the transportation of materials.

Lessons Learned and Challenges:
Our environmental-analysis-informed optimized patient warming pathway targets accurate temperature measurement and reduced flannel blanket use as opportunities for improvement. Although changing behaviour across multiple settings and disciplines is challenging, these interventions would reduce avoidable waste and unnecessary care by supporting appropriate patient selection and techniques for warming.

MEETING WISELY: REDUCING LOW-VALUE CARE, TELECARE AND TRAVEL

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Goal:
Include carbon emissions accounting in policies addressing low-value care and telecare.

Background:
Policy tools for reducing low-value care in some jurisdictions include patient copayments. The Canada Health Act disallows most copayments but travel costs are effectively patient copayments that inhibit low-value visits to physicians. Telecare reduces such copayments, allowing growth in low-value care. Yet telecare also reduces carbon emissions and carbon taxes.

Methods:
We assessed scenarios for payments for climate harm to be shared in different ways by organizations, care providers and patients. We assumed carbon emissions and carbon taxes are 'externalities,' and therefore external to the scope of the Canada Health Act.

Results:
Our health systems account for 10% of CO2-equivalent emissions: 1.6 ton per person annually. At $50/ton, Canada's carbon tax theoretically could yield $82 per person. Copayments (reimbursement reductions) for emissions from low-value care could be administered cheaply by annual data linkage with provincial pharmaceutical benefit program copayment systems, leading to carbon-based/income-based deductibles. A politically feasible top-down scenario is for burdens of carbon copayments to be borne first by health system administrators and care providers via travel carbon budgets. Organizations should calculate their 'flightprints' using travel reimbursement data.

Impact:
Measurement leads to engagement, awareness and action.

Challenges:
Similar to what Choosing Wisely was invented to address. Specialty conferences should add departure airport codes to online forms for meeting registrations and report 'flightprints.'

Lessons Learned:
Acceleration of telecare and the climate crisis demand new policies for addressing low-value care. Meeting Wisely should be a sub-campaign within Choosing Wisely.

ENVIRONMENTAL STEWARDSHIP: AN IMPLEMENTATION GUIDE FOR BOARDS, MANAGEMENT, AND CLINICAL STAFF

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Health Care contributes 4.6% of green-house-gas emissions in Canada and is already being impacted by a changing climate itself, thus mitigating emissions from healthcare institutions and their supply chains is urgently needed. We have created two guidebooks, oriented toward hospitals and LTC facilities, focused on educating clinicians about the impact of their decision-making on the climate using CWC recommendations, and providing key steps and actionable items for senior leadership. These guides fill the gap between an evident desire to move toward sustainability and the practicalities of implementation.

The guidebooks include background information on climate change and health systems, as well as a roadmap to sustainability. The center-piece is the action item checklist, which includes the categories of leadership, supply chain, and most importantly for clinicians, education and drugs/devices.

The education checklist items focus on CWC recommendations for LTC, and recommendations for hospital lab work, and blood transfusions. Every test and medication has its own carbon footprint! These recommendations provide simple ways for clinicians to adjust their practices, in ways that naturally promote a culture of sustainability while decreasing the carbon footprint of healthcare facilities. Following CWC recommendations is further incentivized by the associated cost savings.

Through dissemination of these guidebooks and early feedback, we are discovering that leadership and clinicians are interested in practices which support a culture of sustainability. Finding the right balance between patient-centered care and planetary health continues to be a salient challenge in moving toward more sustainable healthcare, however CWC recommendations address this topic.

DEVELOPING DIAGNOSTIC IMAGING REFERRAL GUIDELINES FOR OVER 250 CLINICAL SCENARIOS

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Marc Venturi, Canadian Association of Radiologists
Paul Pageau, The Ottawa Hospital
Ryan Margau, North York General Hospital

Goal:
Canada's radiology community and its referring clinicians are developing a comprehensive set of evidence-based, peer-reviewed referral guidelines to support clinical decision-making by referring clinicians. The objective, to promote the most clinically relevant diagnostic imaging procedure(s), so that patients receive these procedure(s) at the right time, expediting their journey and resulting in better health outcomes.

Activities:
Guidelines are being developed by section specific Expert Panels (EP) across 13 sections (https://car.ca/patient-care/referral-guidelines/). First, a list of clinical/diagnostic scenarios is created, followed by a rapid scoping review to identify existing systematically produced guidelines, and last, recommendations are formulated using the contextualization concepts in GRADE for guidelines. Although the guidelines focus on what is the best procedure for the clinical scenario, they include recommendations for imaging procedures not to do, aligning with the Choosing Wisely recommendations.

Impact:
As we have not yet completed this work, we have no formal measure of impact, however, we have formed new partnerships with radiologists, referring clinicians, patient advisors, the Government of Québec, and e-Health Centre of Excellence. These partnerships will help with further guideline development, and knowledge translation and dissemination. Choosing Wisely can adopt these recommendations, adding them to the existing Radiology section.

Challenges:
Ensuring national representation, identifying referring clinicians, and finding external peer-reviewers have presented challenges. We are using our expanding network of contacts to help with these challenges.

Lessons Learned:
We are adapting our strategies to better recruit EP members, develop the guidelines (e.g., hybrid in-person/virtual meetings), solicit peer-review feedback, and plan around down-times (e.g., summer).

THE CLIMATE IMPACT OF INHALER THERAPY IN THE FRASER HEALTH AUTHORITY REGION FROM 2016–2021

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Angela Jiayun Yao, British Columbia Centre for Disease Control

Background:
Inhaler therapy is a cornerstone treatment for asthma and chronic obstructive pulmonary disease. Propellants used in metered dose inhalers contain potent greenhouse gases that contribute to climate change. Dry powder inhalers and soft mist inhalers do not use propellants and have a lower carbon footprint.

Methods:
We conducted a retrospective longitudinal analysis of community-dispensed inhaler prescriptions in the Fraser Health Authority region in British Columbia, Canada, from 2016–2021 and calculated the resulting carbon footprint. We modelled three scenarios for switching inhalers to lower-carbon alternatives.

Results:
The average annual carbon footprint was 9,822 tonnes of CO2 equivalent (tCO2e), equal to 25.2% of the reported total emissions from Fraser Health facilities. Different prescribing scenarios for inhalers can eliminate a total of 1,506–7,842 tCO2e annually.

Conclusions:
Encouraging switches to low-carbon inhalers offer an opportunity to reduce healthcare-associated emissions with the potential to improve respiratory care.

IMPROVING RURAL ACCESS TO RHEUMATOLOGY IN GREY BRUCE, ONTARIO

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Goal:
Choosing Wisely Canada's Rural Medicine Recommendation #1 states: "Don't send a patient for a specialist visit that requires several hours of transport if the visit can be done virtually or by a local physician." In 2020, Grey Bruce, Ontario had 1 rheumatologist for 165,000 residents. London Rheumatology and The Arthritis Society partnered to reduce patient travel and wait times.

Activities:
We implemented a local, hybrid (virtual/in-person) model of care. Patients were assessed at The Arthritis Society in Owen Sound by an allied health professional. A rheumatologist in London joined the appointments by video-call to develop a care management plan. Patients completed an online pre-visit health survey and received a post-visit report. Travel was calculated as driving distance between the patients' hometown (midpoint) and the Owen Sound clinic, compared to the London clinic.

Impact:
From August 2020 to December 2022, 162 patients attended 305 appointments. Patients avoided approximately 107,000 kilometers by driving (round-trip) to Owen Sound instead of London. In anonymous post-visit surveys, 80% (97/122) requested future appointments in the same format. The rheumatologist required one patient to follow-up in London within 60 days post-appointment.

Challenges:
In December 2022, our new patients waited almost twice as long for urgent appointments in Owen Sound (61 days) vs. London (33 days), due to local service demand.

Lessons Learned:
Our model was effective and well-received, but average wait times were relatively high due to capacity constraints. In 2022, we received a research grant to increase clinic capacity.

THE CRITICAL AIR PROJECT: CLIMATE-CONSCIOUS INPATIENT INHALER USE

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Background:
Healthcare organizations are increasingly committed to sustainability. The Canadian healthcare system contributes 4.6% to national greenhouse gas (GHG) emissions, a quarter of which come from medications. Metered-dose inhalers (MDIs) specifically present an opportunity for improvement. They contain hydrofluoroalkane, a potent GHG, which delivers medication. Each MDI contains the GHG equivalent of driving up to 290km.

Outpatient initiatives targeting inhaler-related emissions are underway, but little is known about lowering such emissions in hospital.

Goals:
The Critical Air Project is an inpatient initiative aimed at decreasing our organization's carbon footprint using a quality improvement framework. A process map of inhaler use revealed inhaler loss, dispensing and disposal practices that contribute disproportionately to carbon emissions.

Activities:
We adopted a three-pronged approach targeting operational changes, policy changes and an education campaign.

Operational changes include editing clinical order sets with a planetary health lens, reprioritizing inhaler wardstock, and changing tamper seal locations. Health policy changes include adding lower-carbon formulary options, providing multidose products on discharge and facilitating communication with outpatient providers. The far-reaching education campaign includes patients, healthcare providers and trainees.

Impact:
Within our Health Authority, 2,930 inhalers are dispensed monthly which is equivalent to driving over 179,000 km, or 4.5 times around Earth's circumference. Preliminary results are underway; the potential impact is a significant reduction in GHG emissions and costs while providing high-quality, patient-centered care.

Challenges:
Systemic-level changes can have massive impacts on GHG emissions, but they require a large time commitment to implement effectively.

Lessons Learned:
Organizational support and broad-based stakeholder engagement are key to effective systemic change.

CHOOSING GREENER: PRACTICE RECOMMENDATIONS TO LOWER THE CARBON FOOTPRINT OF HEALTHCARE

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Background:
Climate change has been recognized as the greatest global health threat of the 21st century and its impact on the health of Canadians is worsening. There is a need to rapidly decarbonize healthcare, as Canadian healthcare delivery is responsible for 4.6% of the national carbon footprint. There are significant environmental co-benefits of reducing low-value care; however, there are no Choosing Wisely Canada (CWC) recommendations that explicitly highlight high-value, low-carbon approaches to care.

Methods:
We reviewed healthcare sustainability literature such as life cycle assessments (LCAs) as well as clinical trials to propose four evidence-based recommendations with a carbon footprint advantage, clinical benefits or noninferiority, and applicability in everyday practice.

Results:
Proposed recommendations:

1. For patients with asthma or chronic obstructive lung disease (COPD) requiring inhaled medications, prescribe dry powder inhalers (DPIs) instead of metered dose inhalers.
   Encourage patients to use reusable menstrual products such as menstrual cups and menstrual underwear instead of single-use tampons or pads.
2. Avoid the use of exam room paper.
3. Avoid desflurane and nitrous oxide, use minimal fresh gas flow rates, and use intravenous and regional techniques when possible.

Discussion:
Our findings highlight opportunities to advance high-value, low-carbon healthcare by expanding the scope of the CWC campaign to include recommendations with explicit environmental co-benefits. It is important to note that there is a paucity of high-quality healthcare LCAs reported in the literature; there is a need for more LCAs to clarify the environmental impacts of the products or processes used in healthcare to inform more recommendations.

Measurement & Evaluation

WHAT BARRIERS PREVENT PATIENTS FROM BEING DISCHARGED FROM HOSPITAL FOLLOWING ELECTIVE SPINE SURGERY?

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Background:
Length of stay (LoS) is problematic for patients and healthcare systems, with LoS representing substantial financial burden to healthcare systems, and increased complication risks to patients. Characterizing these factors can help identify how to use limited healthcare resources most efficiently.

Goal:
To identify what factors most frequently contribute to prolonged LoS following elective spine surgery.

Methods:
An 8-month long audit was performed, including all patients who had a stay of ≥1 day who had elective surgery for a degenerative spine disease. The charge nurse was asked daily at 10:00am and 3:00pm as to what factor(s) kept a patient in hospital, or, if they were discharged. Potential barriers included mobility, urinary retention, technical/logistical problems, pain management, nausea/vomiting, or "other".

Results:
A total of 102 patients were included. The average age was 60.69, and 49 patients were women. Average LoS was 2.69 (±3.52) days, with a median of 1. The most common reasons for delayed discharge were mobility (29.8%), and urinary retention (23.4%). Patients believed pain management (39.5%) and "other" (28.9%) were what most frequently kept them in hospital.

Impact:
Targeting healthcare resources towards mobilization and urinary retention could help facilitate faster discharge for patients who have a prolonged hospital stay.

Challenges:
Recruitment was difficult due to the Covid-19 pandemic, causing elective surgeries to be canceled or reduced during this study.

Lessons Learned:
Mobilization after surgery and urinary retention are frequent barriers to patient discharge. Furthermore, patients show different priorities than healthcare staff during their hospital stay, specifically regarding pain management.

A PROVINCE WIDE ASSESSMENT OF THE APPROPRIATENESS OF LUMBAR SPINE MRI

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Goal:
To assess the rate of appropriate ordering for lumbar spine magnetic resonance imaging (MRI) at a provincial level.

Background:
In Canada, diagnostic imaging of the lumbar spine is overutilized. Inappropriate imaging requests consume limited healthcare resources and exposes patients, and the system, to further unnecessary investigations and possibly treatments. Choosing wisely guidelines do not recommend imaging for acute low back pain in the absence of red flags.

Methods:
A retrospective chart review analyzed all lumbar MRIs during 2018 to determine how many scans were considered inappropriate, and of those inappropriate scans, how many patients were further referred to a surgeon. An evidenced-based algorithm based on the presence of red flags determined appropriateness. Chi-square tests were used for statistical analyses, and significance was observed at $p<0.05$.

Results:
A total of 3185 charts were reviewed, with 1905 (59.81%) considered appropriate. Age ($p<0.001$), specialty of the ordering physician ($p<0.001$), and geographic location significantly determined appropriateness ($p<0.001$). Sex did not differ regarding appropriate ordering ($p=0.548$). Of the patients who “inappropriately” received imaging, 38.1% were further improperly referred to a surgeon.

Impact:
Identifying the rate of inappropriate imaging allows us to target areas within healthcare that contribute the most to these scans, which, with education, could reduce improper utilization. A reduction in unnecessary imaging may contribute to reduced healthcare costs, reduced patient risk, and wait times for MRIs.

Lessons Learned:
A significant portion of MRIs are considered inappropriate. Furthermore, referrals to a surgeon after inappropriate imaging represents continued inefficient use of healthcare resources

UNDERSTANDING PATIENT PERSPECTIVES ON EVIDENCE-BASED CARE FOR LOW BACK PAIN CARE: A QUALITATIVE DESCRIPTIVE STUDY

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Goal:
To explore why patients in NL seek care from GPs for their LBP, their expectations for care, particularly regarding imaging, and how they feel imaging has impacted their care.

Methods:
We interviewed adults aged 18+ years or older, living in both rural and urban settings in Newfoundland and Labrador, Canada, who had visited their family physician about low back pain within the year before the interview. Interviews were transcribed verbatim and organized using a coding scheme informed by the interview guide and the main research objectives. Next, data were analyzed inductively to identify emerging themes.

Results:
Ten patients (six females and four males) participated in this study. Four main themes were identified: (1) seeking care from a GP for LBP was common, but most don't feel these visits were beneficial; (2) severity, persistence, or new onset of pain prompted patients to visit their GP, to request imaging, advice, or referral to another HCP; (3) participants reported being referred to imaging by their GPs, believing it essential to understanding the underlying cause of their symptoms, but less than half requested it specifically; (4) patients were divided about the effectiveness of imaging.

Impact:
This is the first study to assess why patients in NL visit their GPs for LBP and their expectations for that care and imaging. The confirmed mismatch between patient expectations and needs and physicians' perceptions of patient needs is an important finding that may help guide the design of future interventions to reduce low-value imaging for uncomplicated LBP.

A FUTURE DIRECTION- UNDERSTANDING AWARENESS OF CHOOSING WISELY IN

SASKATCHEWAN TO GUIDE RESOURCE STEWARDSHIP CAMPAIGNS

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Background:
Choosing Wisely (CW) Saskatchewan was launched with the goal of continuing National Quality Improvement (QI) strategies at a provincial level. At the core of QI is understanding awareness to assess impactfulness and the need for change. We sought to measure and understand awareness of CW among public and healthcare populations in Saskatchewan. Here we present preliminary data on awareness and use of CW.

Methods:
Two online surveys were created, one distributed to the public via social media and one to healthcare providers through SHA daily rounds, the SMA, a recent graduate email list from the College of Pharmacy and Nutrition, and the Saskatchewan College of Medicine Newsletter. Surveys were developed modeling "CWC Campaign Draft Questionnairev4." The Public survey evaluated demographics, awareness, and perceived importance of CW, and the health care survey evaluated demographics, awareness, agreement with, and use of CW principles.

Results:
Among the 137 healthcare respondents, 60% were aware of CW campaigns, but only 47% had used resources or recommendations. Among the 131 public respondents, only 38% were aware of CW campaigns, reported 36% through word of mouth, 30% via healthcare professionals, 30% via the internet or social media, and 26% from infographics in medical settings.

Conclusions:
This study's results suggest an overall need for increased awareness of CW in Saskatchewan. Future analysis is needed to study the discrepancy in awareness among population subgroups such as income, location, and specialty. Analysis of these results, among other variables collected, can aid health education and resource stewardship throughout the province.

OVERTREATMENT AND DEPRESCRIBING OF ANTIHYPERGLYCEMICS AMONG LONG-

TERM CARE RESIDENTS IN BRITISH COLUMBIA

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Background:
Choosing Wisely Canada recommends moderate glycemic control for most frail older adults with diabetes. We examined the rates of overtreatment and deprescribing of antihyperglycemic medications for individuals living in long-term care (LTC).

Methods:
We conducted a drug utilization study of people with type 2 diabetes living in LTC homes in Vancouver, Canada between December and June 2022. We used retrospective chart review to evaluate the rates of overtreatment (HbA1c < 7% on any antihyperglycemic[s] or <7.5% with a sulfonylurea and/or insulin) and antihyperglycemic changes (including deprescribing) during the study period.

Results:
120 residents were in our cohort. The median age was 82 years old, 57% were female and the median hemoglobin A1c level (HbA1c) at baseline was 7.4%. Of the 85 residents with an available HbA1c, 40% met the criteria for being overtreated. Over the 6-month follow-up period, deprescribing occurred in 50% of residents who were overtreated and 27% of those not overtreated. In the overtreated group, less than 5% of residents had a dose increased or a new antihyperglycemic started over the study period. In the non-overtreated group, the dose of antihyperglycemic was increased for 9% of antihyperglycemics used at baseline and at least one new antihyperglycemic was started in 33% of residents.

Lessons Learned:
Overtreatment of diabetes was common in our sample of LTC residents, but the rate of deprescribing in those overtreated was encouraging.

Impact:
There is need for continued efforts to optimize the well-being of individuals with diabetes living in LTC by addressing overtreatment.

OPTIMIZING STROKE IMAGING NB (OSI-NB)

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Goal:
The primary objective was to determine if the source of stroke can be identified by augmented CTA below the aortic arch (i.e. augmented scan including left atrium vs standard scan through aortic arch and circle of Willis). The secondary objective was to assess the inter-rater reliability of the presence of critical findings.

Methods/Activities:
REB approval was obtained from Horizon Health. Eligible patients were those who obtained an augmented CTA scan from September 2019 to April 2022, with a final diagnosis of stroke, and who underwent endovascular therapy at the Saint John Regional Hospital. Data including patient identifiers and critical findings from the augmented scan were collected from IMPAX. All cases were blindly re-interpreted by a second radiologist. Descriptive statistics were used to describe the study population and presence of critical findings on the augmented scan. The kappa statistic was used to measure the agreement between the original interpretation and the blind reviewer.

Results/Discussion:
Of the 102 eligible patients, the mean age was 72 (95% CI 70.0, 73.9) and 63 patients were female (61.7%). The data showed that using augmented CTA scans enabled radiologists to identify potential sources of stroke in 29.4% (95% CI 21.0%, 39.4%) of the patients (Table 1). The inter-rater reliability between radiologists was moderate (kappa=0.49, $p<0.05$) which is consistent with literature. By identifying the source of stroke with the original CTA scan, subsequent scans can be avoided.

Lessons Learned:
Using augmented CTA scans can elucidate the cause of proximal embolic stroke reducing the need for additional investigation in 29.4% of patients.

Table 1: Presence of Critical Findings by Original Interpretation and Blind Review (n,%)*

Critical Finding	Original Interpretation	Subsequent Interpretation
Left Atrial Thrombus	23 (22.5)	23 (22.5)
Left Ventricle Clot	-	-
Right Atrium or Right Ventricle Finding	8 (7.8)	14 (13.7)
Pulmonary Embolism	-	-
Lung Tumor	-	-
Aortic Dissection or Clot	-	-
Any Critical Finding	30 (29.4)	32 (31.4)

*small cell sizes have been suppressed.

Medical Education

NOVEL APPROACH TO QIPS TRAINING IN A FAMILY MEDICINE RESIDENCY PROGRAM

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Implementing Quality Improvement and Patient Safety (QIPS) curriculum into a residency program faces many challenges, including competing clinical obligations and lack of buy-in. While most residents in the Family Medicine program at Queen's University have reported feeling strongly that QIPS has value, most did not see themselves participating in QIPS initiatives after. As QIPS is a key driver for implementing practice changes such as Choosing Wisely recommendations, it is imperative that residents have the required attitudes and skills.

To combat this apathy and to bring about meaningful QIPS work within the department, our team sought to develop a novel approach QIPS curriculum. In 2022, we focused on a single 'wildly important goal' (WIG): reducing prescriptions of pressurized metered dose inhalers (pMDIs) by 50% by June 2023. In the summer of 2022, PGY1 residents participated in a 4-hour interactive, motivational, and engaging QIPS workshop. PGY1 residents are now working in clinical teams to address the department's WIG.

Using the BASiC-QI assessment scale to assess learning in the workshop, we saw statistically significant improvements in residents' attitudes, knowledge, and confidence related to QIPS. In their responses to open-ended questions on a workshop evaluation, residents shared their enthusiasm for the workshop and their interest in their upcoming QIPS project on inhaler prescriptions. Early performance results indicate an overall reduction in pMDI prescriptions within each of the teams. These results suggest that this novel curriculum can be used to implement practice changes within a teaching centre.

POTENTIALLY UNNECESSARY URINE CULTURES ORDERING IN AN EMERGENCY DEPARTMENT: A STUDENT-LED INITIATIVE TOWARDS RESOURCE STEWARDSHIP

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Background:
Previous studies demonstrated urine culture (UC) overuse is prevalent in emergency department (ED) settings.

Goal:
To analyze the amount of potentially unnecessary UCs in a university hospital's ED.

Activities:
Medical students from the Choosing Wisely (CW) Brazil STARS program led a retrospective analysis of simultaneous UC and Urinalysis (UA) orders obtained from electronic medical records (EMRs) at Hospital de Clínicas de Porto Alegre's (HCPA) ED from January 1st, 2021 to July 31st, 2021. The accuracy of UA findings relative to culture growth was assessed according to previous studies conducted to test reflex UC cancelation protocol.

Impact:
In 6,541 ED medical visits, 1,873 simultaneous UCs and UAs were ordered, with 25% positive cultures and 43% negative UAs. Negative UAs showed a 92% negative predictive value (NPV) for the absence of culture growth. Among the 67 (3.7%) negative UAs with positive UCs, 36 (54%) were associated with asymptomatic bacteriuria or uncomplicated urinary conditions. Therefore, 800 (43%) negative UAs could have safely automatically canceled low-yield UCs in the period studied.

Challenges:
The STARS group of medical students will present to the university hospital's board of directors a UC cancelation protocol proposition in the ED. This will be the first intra-hospital intervention led by a STARS student group

Lessons learned:
The UC cancelation protocol could be safely implemented in this studied ED. Most importantly, the advocacy for resource stewardship by medical students is possible and can drive an important cultural shift towards high-value care.

“TEACHING WITH THE GRAM”: USING SOCIAL MEDIA TO DISSEMINATE CHOOSING WISELY CANADA RECOMMENDATIONS AMONG MEDICAL STUDENTS

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Background:
Studies have shown that Instagram can serve as an effective platform for delivering medical education in various disciplines among medical students, but its application for teaching resource stewardship is limited. The University of British Columbia’s first Choosing Wisely Canada (CWC) social media page (@ubcchoosingwisely) was created on Instagram in October 2022. It features various CWC recommendations in the form of literature, pictures, videos, and quizzes.

Goal:
To measure interactive engagement of this initiative and evaluate Instagram as a platform in disseminating CWC recommendations among students.

Methods:
CWC recommendations from different disciplines in the forms of text, picture, video, and quiz are created using features of Instagram and shared on a weekly basis, often synchronizing with the content of the undergraduate medical program’s curriculum. Data collection is being performed using metrics collected by Instagram. Data for all published content will be collected, including the number of accounts reached, impressions, shares, replies, likes, follows, and poll responses.

Results:
Preliminary data over seven weeks demonstrated a consistent engagement of an average of over 100 accounts viewing each post and a range of 50-80 accounts viewing each story. At the end of the school year, further analysis will be conducted to compare effectiveness of different types of content based on the engagement data.

Lessons Learned:
This novel educational initiative on Instagram could provide students with early exposure to CWC recommendations in an interactive manner. It also has the potential to identify strategies of disseminating CWC recommendations on a social media platform.

Patient Engagement

FINDINGS FROM A STRATEGY FOR PATIENT ORIENTED RESEARCH INNOVATIVE CLINICAL TRIAL

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on behalf of the De-Implementing Wisely Research Group

Background:
Partnering with patients in the design and conduct of health research can improve research quality and outcomes and Choosing Wisely Canada (CWC) advocates the inclusion of patients as partners in all initiatives. However, the evaluation of patient engagement in research projects is understudied, making it difficult to understand what engagement strategies work best, and when, to meet intended outcomes. We evaluated patient engagement in a de-implementation research project targeting two CWC recommendations: 1. Reducing preoperative testing for low-risk ambulatory surgery, and 2. Reducing imaging for uncomplicated low back pain.

Methods:
Two online surveys were administered to all patient partners (PPs) and researchers/study research staff (R/SRS) who had had the opportunity to interact with the PPs in the project. Thirty-six respondents were invited, and 17 surveys completed, giving a response rate of 47%.

Results:
PPs felt that their input was valued but indicated that regular communication with research team members could be improved. A key interest of PPs was the translation of findings into practice, noted as a motivator for ongoing engagement. R/SRS were satisfied with their experience of patient engagement and strongly endorsed the value of partnering with patients in research. However, some indicated they did not have adequate advance information or support to feel comfortable partnering with patients on this study.

Discussion:
Evaluation findings will inform ongoing patient engagement activities and training for research team members. Findings also contribute to the literature on patient engagement evaluation and provide lessons learned for other research teams and patient engagement activities.

PATIENT EDUCATION MATERIALS FOR NON-SPECIFIC LOW BACK PAIN AND SCIATICA: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Choosing Wisely Canada has identified low back pain (LBP) imaging as an area of low-value care. Studies from physician and patient perspectives show that patients have unhelpful LBP beliefs and expectations for imaging–a primary driver of overuse. By providing clear and consistent information, PEMs may increase knowledge and reduce expectations for imaging. We conducted the first systematic review investigating the effectiveness of PEMs on process, health system, and clinical outcomes. We searched MEDLINE, EMBASE, CINAHL, PsycINFO, SPORTDiscus, OpenGrey, and trial registries, and two reviewers independently performed screening, data extraction, risk of bias, and quality of evidence gradings. Analyses were performed separately at immediate, short, medium, and long-term (6, 12, 24, and 52 weeks). We identified twenty-seven randomized controlled trials. Compared to usual care for acute LBP, we found very low to low-quality evidence that PEMs improved immediate, short, and long-term knowledge, short and long-term pain self-efficacy, and reduced long-term imaging referrals and physician visits.

We found moderate to high-quality evidence that PEMs improved short-term pain intensity and immediate-term quality of life. Compared to usual care for chronic LBP, we found very low-quality evidence that PEMs improved pain self-efficacy at all follow-ups and reduced medium-term fear-avoidance beliefs and long-term stress. We found low to moderate-quality evidence that PEMs improved pain intensity at all follow-ups, medium-term disability, and short and medium-term quality of life. There was a high degree of variability across outcomes, however, PEMs appear favourable to usual care and could be used for future LBP knowledge translation initiatives.

GOVERNMENT OF NUNAVUT- DEPARTMENT OF HEALTH'S FIRST-EVER CLIENT AND FAMILY ENGAGEMENT COMMITTEE: IQALUIT HEALTH SERVICES

Sabrina Dent, Iqaluit Health Services - Government of Nunavut

Goals:
Ultimately transform our healthcare system to be entirely client-centered by following Inuit Qaujimajatuqangit Principles (Inuit Societal Values).

Activities:
Developed a Client Engagement strategy by working closely with local and national stakeholders, conducted a call-out for committee volunteers, formed a committee of 8-10 community members, meet monthly to review and discuss all new policies, procedures, and practices that have an impact on client care, make amendments as recommended by the committee, and maintain a constant feedback loop of community and organizational needs.

Impact:
Immediate outcome:
a) Instant avenue for the community to provide open feedback to the Iqaluit Health Services leadership team.
b) Public awareness of Iqaluit Health Services community engagement work.
c) Immediate client and community involvement in policy development and implementation.

Intermediate Outcomes:
a) Provide a safe space for community members to become a part of their healthcare system.
b) Committee member involvement on additional hospital committees and working groups outside of the Client Engagement Committee.

Ultimate Outcomes:
a) Improved client outcomes by involving clients and families during all stages of processes, policy, and protocol development.
b) Increase trust in the healthcare system by creating a healthcare system with Nunavummiut, for Nunavummiut.

Challenges Identified:
COVID-19: committee rollout was delayed due to the inability to meet in person and community limitations with technology and bandwidth.

Lessons Learned:
Must be flexible in development and implementation, providing compensation for our community member's time and knowledge is a must.

Evaluation:
Quarterly anonymous qualitative surveys completed by all committee members.

Quality Improvement

AUGMENTING MEDICAL DIRECTIVES WITH BEHAVIOURAL INTERVENTIONS TO REDUCE URINARY CATHETERIZATION RATES

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Inappropriate urinary catheters have been shown to have multiple adverse effects on patient quality of life, including increased urinary tract infections, urethral trauma, hematuria, pain/discomfort, restrictions in activities of daily living and more. Given these detrimental effects of urinary catheters Choosing Wisely Canada developed the "Lose The

Tube" Toolkit to help reduce unnecessary urinary catheterization. Currently Newfoundland &

Labrador has not implemented any interventions aimed at reducing urinary catheterization rates – despite the tertiary care centres in the province having close to a 20% average urinary catheterization rate.

In line with Choosing Wisely recommendations we are implementing a medical directive within the Eastern Health region of Newfoundland & Labrador which allows nurses to remove unnecessary urinary catheters independently. Our novel approach to implementing this medical directive will involve a behavioural intervention where nurses receive an automated reminder when charting catheter care. A pop up screen will ask if the patient still requires the catheter as well as a graphic of the medical directive algorithm. We plan to compare the urinary catheterization rates across the two major hospitals in St. John's, Newfoundland where one receives the behavioural intervention along with the medical directive and the other receives only the medical directive.

The goal of this project is to establish a novel approach to implementing urinary catheterization reduction interventions by combining medical directives with behavioural interventions. This project will have a direct impact on urinary catheterization rates in Newfoundland & Labrador and provide a framework for implementing the "Lose The Tube" Toolkit more effectively.

VIRTUAL CARDIOLOGY CLINIC IN NUNAVUT

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Tracy MacDonald, Government of Nunavut
Sabrina Hasham, Government of Nunavut
Laura Kolb, Government of Nunavut

Healthcare in Nunavut is complex with a high cost associated with medical travel. For many Nunavummiut, a referral to a specialist involves traveling from their home community to a regional or southern healthcare hub. It is not uncommon for patients to be away from home for 5-7 days for a single routine specialist appointment. Virtual care solutions create a more sustainable, cost-effective healthcare system while improving access to care for patients in a care-closer-to-home model.

In 2022, Dr. Rick Davies, an Ottawa-based cardiologist, began offering virtual care services to Nunavummiut. He began in Clyde River, triaging all patients on the waitlist for initial consultations to determine which could be seen virtually. The community health team completed all necessary diagnostics prior to the consult, which Dr. Davies was able to access via Meditech. Consults were documented in Meditech and patients were referred further, as required.

As of January 2023, Dr. Davies has seen 73 patients across 5 communities and is on track to have seen all waitlisted patients in the Qikiqtaaluk region by the end of April. 100% of patients triaged have been eligible for virtual care; one patient has noted a preference for an in-person consult. Through 2023, Dr. Davies will visit communities in-person with an echocardiogram technician. To date, the program has an estimated cost savings of $235,936 and has enabled 73 patients to receive care in their home communities.

The program team plans to expand to additional locations and specialties with a focus on continuous quality improvement.

DROP THE PREOP IMPROVES PREOPERATIVE SURGICAL CARE AT CHINOOK REGIONAL HOSPITAL

Maria Chuquer, Alberta Health Services

Drop the Preop was initiated at the Chinook Regional Hospital in Lethbridge, Alberta on November 15, 2017 by Anesthesiologist Dr. Maria Chuquer by following the guidelines in the Choosing Wisely Canada Drop the Pre-op Toolkit. Through consensus building with surgeons and anesthesiologists, and collaboration with front-line staff, Dr. Chuquer lead the surgical team through the steps that transformed pre-operative ordering of laboratory/ diagnostic tests and medical/RN consults from an individual process that was sometimes guided by habit, to a standardized, evidence-informed collaborative approach informed by local context ensuring that appropriate pre-op care is provided to every patient, every time.

A 1-year post implementation evaluation showed an overall 10% decrease in Pre-op Assessment Clinic (PAC) in-person consultations. For high volume laboratory tests there was a reduction in testing that ranged from 31% to 88% (on average over a 4-year period) that has been consistently sustained over time. Currently an economic evaluation is underway and will be available to share at the conference. Surgeons report increased satisfaction with the program compared to pre-implementation approach.

BARRIERS AND FACILITATORS TO APPROPRIATE USE OF ROUTINE LABORATORY TESTS: A QUALITATIVE ASSESSMENT

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Goal:
To 1) investigate barriers and facilitators to appropriate laboratory test utilization by engaging hospitalists and internal medicine physicians involved in their use. 2) develop interventions targeting barriers using validated behaviour change techniques.

Activities:
An exploratory, qualitative study describing physicians' experiences related to routine laboratory tests in hospital settings guided by Theoretical Domains Framework (TDF). Data were collected from facilitated sessions with physicians. Sessions were transcribed and analyzed using TDF into barriers and facilitators. Physician participants co-designed intervention ideas which were mapped onto specific barriers using Michie et al BCI technique.

Impact:
Systematically identified barriers and facilitators to the appropriate use of laboratory tests, generated and prioritized these ideas based on ease of implementation and benefits and mapped these ideas onto barriers using the BCI model. Our study provides a baseline roadmap to mitigating the problem of over-utilization of laboratory tests.

Challenges:
Laboratory tests are overused by estimates of 16%-56% leading to adverse effects; hospital-acquired anemia, longer length of stay, higher mortality, and increased health care expenditure. Low-value testing leads to adverse clinical outcomes, patient dissatisfaction, resource waste and increased cost.

Lessons Learned:
Overall, six main barriers were identified: 1) Fear of negative Consequences 2) Patient Expectation 3) Training environment 4) Resource Constraints 5) Culture 6) Health Systems Organization. Moreso, four facilitators to the appropriate utilization of laboratory tests are 1) Education 2) Accountability 3) Consensus/Agreement among healthcare professionals 4) Health System change. Three themes emerged from intervention ideas: 1) easy implementation 2) moderate implementation 3) difficult implementation.

REDUCING THE USE OF SEDATIVES AND ANALGESIC INFUSIONS IN CRITICAL CARE (ROSA), PILOT SITE

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Background:
Excess use of sedative and analgesic infusions prolongs mechanical ventilation, increases intensive care unit (ICU) length of stay and complications. Choosing Wisely Canada recommends not prolonging mechanical ventilation by the over-use of sedatives and regular assessment of the patient's ability to awaken and breathe spontaneously using spontaneous awakening trials (SAT). ROSA is a quality improvement (QI) initiative reducing the use of sedative and analgesic infusions in ICUs in Edmonton, Alberta. The aim is to reduce the use of sedative and analgesic infusions by 35% over 12 months at our pilot site.

Methods:
A standardized, evidence and stakeholder informed guideline was developed, including a SAT protocol. Knowledge translation occurred via a multidisciplinary champion team with rapid change cycles addressing opportunities for improvement and regular audits and feedback. Outcome (cumulative duration and total dose of infusions), process (SAT completion rate and Richmond Agitation Sedation Scale ordering) and balancing measures (unplanned extubation and unplanned central line removal) were collected.

Results:
At baseline, the pilot site had 13.2 hours per patient day of infusions in ever mechanically ventilated patients. Initial SAT completion rate was 4%. Six weeks post implementation, there was a 42% reduction in duration of infusions, to 7.6 hours per patient day. SAT completion rate increased to 75%. There were no unplanned extubations or central line removals during this timeframe.

Conclusions:
Pilot site implementation of ROSA has successfully increased use of SAT and reduced use of sedative and analgesic infusions. These provide valuable learnings for spread and scale to the Edmonton zone.

THE EFFECT OF ERAS PROTOCOLS ON LENGTH OF STAY IN SPINE SURGERY: A SYSTEMATIC REVIEW

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Background:
Enhanced Recovery After Surgery (ERAS) Protocols are well established in many surgical fields. These protocols aim to reduce length of stay (LoS) after surgery by improving efficiency of care delivered throughout the patient surgical pathway. Hospital LoS is problematic for healthcare systems and patients, as LoS is associated with significant costs to healthcare systems, and each day in hospital increases patient risk for complications. It's unknown how effective ERAS is for elective surgeries for degenerative spine diseases.

Goal:
To determine the effect of ERAS protocols on LoS for patients undergoing elective surgery for degenerative spine conditions.

Methods:
A systematic review was performed according to the PRISMA guidelines. Patients with degenerative spine conditions were included, with other spine indications (tumor, deformity), or pediatric populations being excluded. Risk of bias was assessed with ROBINS-I, GRADE was used to assess the evidence, and a random effects model was used for the meta-analysis.

Results:
Twelve studies were included in the review, with all studies being uncontrolled before and after studies. One study showed a moderate risk of bias, with the rest being subject to serious risk of bias. The meta-analysis showed low quality evidence that ERAS protocols for spine surgery could reduce LoS by 1.03 days, with no difference in re-admission to hospital at 30-, 60-, or 90-days.

Lessons Learned:
Spine ERAS protocols may reduce LoS without increasing re-admission to hospital. Existing spine ERAS studies are at significant risk of bias, and better designed studies are necessary to research these pathways moving forward.

INTRODUCING AN AST REFLEX ALGORITHM TO REDUCE UNNECESSARY AST TESTING

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Background/Goal:
AST is a widely over-used test that is often bundled in orders despite a narrow clinical indication. This project assessed feasibility and acceptability of an AST reflex algorithm to reduce unnecessary AST testing.

Activities/Methods:
Key stakeholders and clinician champions at St. Michael's Hospital (SMH) and St. Joseph's Health Centre (SJHC) reviewed AST use to reduce over-testing. Stakeholders included representatives from gastroenterology, general internal medicine, emergency medicine, general surgery and lab medicine. AST was removed from all bundled orders, but could be individually ordered. An algorithm was created to automatically run AST if ALT was abnormal (reflex testing). Data from 3 months pre-intervention and 3 months post-intervention were collected to measure impact.

Impact:
AST testing reduced by 52% at SMH, 65% at SJHC, and 59% across both sites. ALT testing reduced by 23% overall which could reflect more thoughtful testing practices post-implementation. Challenges: Due to differences between the two Electronic Medical Record systems, we employed different approaches to collect data and build the reflex algorithm. In addition, we delayed implementation to not overwhelm staff and physicians during the COVID-19 pandemic. While not insurmountable, these introduced complexities to the project.

Lessons Learned:
Post-implementation, the SMH emergency department suggested that AST should be kept bundled when a patient presents with suspected acetaminophen overdose. As a result, SMH created a new panel and SJHC re-introduced AST into their existing toxicology panel. This highlighted the importance of being open to feedback ensuring that clinical teams have the data they need to provide optimal care.

USING "ADVANCED CANCER SHARED CARE LETTERS" TO IMPROVE SHARED CARE BETWEEN ONCOLOGISTS AND FAMILY PHYSICIANS

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Patricia Tang, Alberta Health Services
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Introduction:
A coordinated and shared palliative approach to care is critical for achieving Choosing Wisely Canada's recommendations 'Don't delay or avoid palliative care for a patient with metastatic cancer because they are pursuing disease-directed treatment' and 'Don't deliver care (e.g., follow-up) in a high-cost setting (e.g., inpatient, cancer center) that could be delivered just as effectively in a lower-cost setting (e.g., primary care).' We developed "advanced cancer shared care letters" to improve care coordination amongst patients and families, primary care, oncology and palliative providers, and to prevent delayed access to palliative care.

Goal:
Implement shared care letters for advanced colorectal cancer in two Alberta cancer centres, with letters ordered for 20% of all eligible patients.

Activities:
An implementation facilitator at each centre provided in-clinic training and support to clinic teams, coaching them to identify eligible patients and order the shared care letter. Number of letters ordered per number of eligible patients, clinic uptake, and family physician response rate, were measured.

Impact:
Shared care letters were ordered for 34% and 39% of eligible patients at the two centres. Two of fifteen clinics did not send any letters. The family physician response rate was 55% and 70%.

Challenges:
Challenges included cueing oncologists within clinic workflow and avoiding change fatigue.

Lessons Learned:
Implementation funding for project personnel, operational leaders' and local clinical champion support, behaviour modeling, training, enablement, and environmental restructuring (i.e. electronic health record modifications) were most influential on shared care letter uptake by oncology clinicians.

DESIGN OF A DIRECT ADMISSION PATHWAY FOR LTC RESIDENTS WHO REQUIRE TRANSFER TO ACUTE CARE

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Long-Term Care (LTC) residents spend between 10-26hrs in the ED waiting for a hospital bed. A 12hr exposure to the ED leads to delirium in 20% of older adults. If developed within the first week of admission, delirium prolongs hospital stay by 7.8 days.

Goal:
To test a pathway for LTC residents to directly admit them to an acute care ward bypassing the emergency department. The objective is to evaluate feasibility, process adherence and safety (goal n=10 transfers).

Method:
We combined quality improvement and design thinking methods and undertook detailed stakeholder analysis to elucidate priorities of LTC residents, caregivers, LTC staff, Toronto paramedic services and Sunnybrook staff and develop the direct admission pathway. We evaluated the pathway by treating each admission as its own Plan-Do-Study-Act (PDSA) cycle, chart review, and team meetings occurred to evaluate feasibility, acceptability and safety.

Results:
Six LTC residents to date have been directly admitted through this pathway; length of stay was variable (2-21days), one had escalation of care within 24hrs, and all 6 were transferred back to their LTC in stable conditions. Refinement of the pathway occurred after each PDSA cycle; these included optimizing nursing handover, revising inclusion criteria, increasing efficiency of transport and revising documentation sent with patients.

Lessons Learned:
Timely verbal handover is important for smooth transition of care, especially with complex frail patients. Determining the right LTC resident to bypass ED is crucial for patient safety and has significant implications for the quality of care they receive.

A CLUSTER RANDOMIZED CLINICAL TRIAL IN ONTARIO TO DECREASE UNNECESSARY PREOPERATIVE TESTS IN PATIENTS UNDERGOING AMBULATORY SURGERY

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Background:
Preoperative tests are ordered for patients undergoing low-risk surgeries without any clinical indication and are considered low-value care by the Choosing Wisely Canada. We identified the drivers of ordering to be uncertainty about responsibility of test ordering, inability to cancel tests ordered by fellow physicians and the problem with tests being completed before the anaesthesiologists see the patient. These findings informed the design of an intervention which focused on increasing accountability in the hospital for preoperative test ordering.

Objective:
To evaluate whether a theory-based intervention to improve accountability reduces unnecessary preoperative tests in patients undergoing low-risk surgery.

Methods:
A cluster randomized clinical trial in 22 Ontario hospitals. Eligible hospitals between the 26th-100th centile for routine preoperative tests will be randomly allocated into control (usual care) or intervention arm (changing hospital policy, identifying local champions, delivering an educational workshop, and restructuring patient flow and responsibility). A process evaluation (fidelity evaluation, mechanism of action, acceptability), and an economic evaluation are planned.

Outcomes:
The primary outcome at hospital level is the proportion of patients receiving ≥1 low-value preoperative tests within 60 days before surgery. Secondary outcomes are proportions of patients with overnight admission, re-operation in 24 hours, 30-day all-cause mortality from the date of surgery, and the proportions of patients receiving each of the above preoperative tests individually.

Conclusion:
Systematically addressing de-implementation of low-value care in a theory-informed manner and by identifying the most appropriate intervention components, increases the likelihood that the intervention will reduce unnecessary care delivered to patients.

UNDERSTANDING LOW-VALUE CARE AND ASSOCIATED DE-IMPLEMENTATION PROCESSES: A QUALITATIVE STUDY OF CHOOSING WISELY INTERVENTIONS ACROSS CANADIAN HOSPITALS

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Goals:
The goal of this study was to explicate the myriad factors which impact the processes and outcomes of de-implementation initiatives that are designed to address national Choosing Wisely campaign recommendations.

Activities:
17 team members, from interventions addressing Choosing Wisely Canada recommendations in four provinces, were interviewed. The interview guide was developed using the Magnitude of the Problem and the Implementation Process Model as a framework. All interviews were conducted virtually, recorded, and transcribed verbatim. Data were analyzed using thematic analysis.

Findings:
Participants identified numerous provider factors, most notably habit, which sustain low-value care (LVC). Contrary to reporting in recent studies, the majority of LVC in the sample was not 'patient facing'; therefore, patients were not a significant driver for the LVC, nor a barrier to reducing it. Participants detailed aspects of the magnitude of the problems of LVC, providing insight into the complexities and nuances of harm, resources and prevalence. Harm from potential or common infections, reactions, or overtreatment was viewed as the most significant types of harm. Unique factors influencing the processes of de-implementation reported were: influence of Choosing Wisely campaigns, availability of data, lack of targets and hard-coded interventions.

Conclusions:
This study explicates factors ranging from those which impact the maintenance of LVC to factors that impact the success of de-implementation interventions intended to reduce them. The findings draw attention to the significance of unintentional factors, highlight the importance of understanding the impact of harm and resources to reduce LVC and illuminate the overstated impact of patients in de-implementation literature.

REDUCING INAPPROPRIATE ANTIBIOTIC PRESCRIBING IN PATIENTS WITH NEUROGENIC BLADDER: A QUALITY IMPROVEMENT INITIATIVE

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Background:
Inappropriate antibiotic prescribing for asymptomatic bacteriuria and suspected urinary tract infections (UTIs) in patients with neurogenic bladder (NB) increases antibiotic resistance, nosocomial infections, and hospital length of stay. Amongst rehabilitation inpatients with NB due to spinal cord injury (SCI) at Parkwood Institute in London, ON, the rate of inappropriate antibiotic prescribing for asymptomatic bacteriuria and/or suspected UTI was 11% with 60% prescribed by resident physicians on call.

Goal:
Decrease the percentage of inappropriate antibiotic prescribing for SCI rehabilitation inpatients with NB at Parkwood Institute from 11% to 8%.

Methods:
Data were analyzed using interrupted time-series for consecutive patients admitted for inpatient SCI rehabilitation from October 2020 to August 2022 inclusive. Root cause analysis revealed knowledge gaps in diagnostic and treatment criteria for UTIs amongst resident physicians.

Interventions:
An infographic was devised to reinforce best practice recommendations for diagnosis and management of suspected UTI in patients with NB. Multiple iterations were devised based on stakeholder feedback; the infographic was distributed to all key stakeholders, including monthly to all resident physicians on-call.

Impact:
The rate of inappropriate antibiotic prescribing for asymptomatic bacteriuria and/or suspected UTIs in SCI rehabilitation inpatients with NB decreased from 11% to 9%; the proportion prescribed by residents on call decreased from 60% to 33%.

Lessons Learned:
Given the rotating nature of physician residency training and off-service residency requirements, knowledge gaps in best practices for specialized populations are inevitable. A high-yield infographic may be an effective communication strategy to reinforce population-specific antibiotic and resource stewardship in resident physicians.

REDUCING UNNECESSARY OXYTOCIN ADMINISTRATION FOR ELECTIVE FIRST TRIMESTER SUCTION DILATION AND CURETTAGE

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Background:
Oxytocin is a ubiquitous uterotonic agent used in obstetrics and gynecology for the induction and augmentation of labour and managing obstetrical hemorrhage. Oxytocin shortages in Canada have motivated stewardship of a limited supply. Oxytocin lacks demonstrable clinical benefit for hemorrhage in early pregnancy, as the uterus contains few oxytocin receptors. Despite this, some surgeons routinely administer it during elective first trimester suction dilation and curettage (D&C) procedures. These surgeries are targets for minimizing unnecessary oxytocin use.

Methods:
A quality improvement study was implemented to reduce oxytocin administration by 50% for elective first trimester suction D&Cs, during an 8-week intervention period. After baseline oxytocin use was established, iterative Plan-Do-Study-Act cycles were implemented over two intervention periods. The initial intervention excluded oxytocin from pre-populated anesthetist order sets for D&Cs. The second intervention educated surgeons and anesthetists about this study and the paucity of evidence for oxytocin use in early pregnancy.

Results:
Advancing gestational age was associated with oxytocin use (p-value <0.001). Odds ratios for oxytocin administration, adjusted for gestational age, were calculated at 0.345 (95% CI 0.137, 0.797; p-value 0.017) and 0.380 (95% CI 0.130, 0.962; p-value 0.054) for the first and second intervention, respectively. There was no significant difference in surgical bleeding or other antihemorrhagic agent administration.

Conclusion:
Using quality improvement principles, two rapidly implementable interventions sustainably reduced oxytocin administration for elective first trimester suction D&Cs by 50% without increased procedural bleeding or other antihemorrhagic agent utilization. Reducing unwarranted oxytocin use promotes its conservation for settings with proven clinical effect.

LESS IS BEST: PROVINCIAL SPREAD OF BRONCHIOLITIS APPROPRIATE CARE IN ALBERTA

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The primary goal is a 25% absolute reduction in chest x-rays utilization in both ED and inpatient settings (n=16) by project completion in Spring 2025.

Site implementation occurred in two phases. Phase 1 launched four sites in September 2021 and Phase 2 launched 12 sites in September 2022. Implementation strategies included:

• Audit & Feedback (A&F) - virtual sessions reviewed practice data, facilitated discussion with clinicians, and identified enablers and barriers to practice change.

• Education – sites selected posters/resources and shared information through newsletters, huddles, and team meetings.

• Order Sets – sites on Connect Care (provincial clinical information system) had access to ED and Admission order sets

After one year of follow-up, Phase 1 sites decreased the number of patients that received a chest x-ray in ED settings by 14% (95% CI: -21 to -7) and by 3% (95% CI: -12 to 5) in inpatient settings. Successful rollout of phase 2 was demonstrated by engagement at sessions where 298 interdisciplinary health providers attended a session.

Barriers encountered were delays in Connect Care rollout which limited staff capacity to engage in this project. As well many sites expressed concerns related to staffing shortages and parental expectations. Nonetheless site champions were able to help promote project uptake and address contextual factors and barriers at their facility that might impede practice change.

Additionally, the COVID-19 pandemic has impacted bronchiolitis case numbers, complicated the differential diagnoses of bronchiolitis, and changed patient management. Timely education on bronchiolitis diagnosis and management has helped to address some of these issues and benefited sites.

NON-PHARMACOLOGICAL INTERVENTIONS TO SUPPORT CORONARY ARTERY BYPASS GRAFT (CABG) PATIENT RECOVERY FOLLOWING DISCHARGE: PROTOCOL FOR A SCOPING REVIEW

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Robert Wells, Patient Partner
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Background:
In Canada, approximately 15,000 people undergo Coronary Artery Bypass Grafting (CABG) each year. However, 9.5% of these patients are urgently readmitted to hospital within 30 days of surgery. Post-operative interventions following discharge play an important role in reducing readmissions and improving CABG patient outcomes. Therefore, it is important to determine effective interventions available to enhance CABG patient recovery following post-operative discharge.

Objectives:
Our primary objective of this scoping review is to identify non-pharmacological interventions available to support recovery of patients who are discharged after CABG in the community setting and determine if and how interventions utilize digital technologies.

Methods:
The methodological framework described by Arksey and O'Malley will be applied to this review. We will search electronic databases (MEDLINE, EMBASE, COCHRANE Library, and CINAHL). Studies looking at non-pharmacological interventions targeting patients who are discharged after CABG will be included.

Results:
Preliminary searches conducted in Medline, Cochrane Library, Embase, and CINAHL retrieved 1592, 736, 2849, and 691 results, respectively, for a total of 5868. Following deduplication, the search retrieved a total of 3875 results.

Conclusions:
This scoping review aims to enumerate available non-pharmacological interventions and use of digital technologies to support recovery of patients who are discharged after CABG, determine their effectiveness if possible, and identify current gaps in postoperative recovery after discharge. The results may be used to inform future strategies utilizing digital technologies to improve CABG patient recovery, reduce readmission rates, and improve mental and physical health as well as social and emotional wellbeing of patients.

THE DEVELOPMENT AND VALIDATION OF A PRODUCTIVITY INDEX FOR EMERGENCY PHYSICIANS

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As ED visits continue to rise, the sustainability of Canadian healthcare has been identified as a national priority. ED physicians play a significant role in healthcare sustainability and have expressed interest in receiving performance feedback. However, there is no consensus or validation measuring ED physician productivity.

This project aims to develop and validate an ED physician productivity index. To determine its metrics (direct productivity measures) and modifiers (factors impacting productivity which physicians lack control over), a delphi approach will be employed in feedback interviews with 110 Canadian ED physicians. Participants will rate the impact of 20+ metrics and 20+ modifiers, using a 10-point Likert scale, over three rounds of group consultation and re-ranking. The resultant data will be used to create a multivariate measure of ED physician productivity.

A literature review was conducted to generate a list of potential productivity indicators. Based on two mock sessions (n=6), the three most relevant metrics were average charting time, length of ED stay, and patients seen per hour. The three most relevant modifiers were human resource shortages, average patient age, and nurse order completion delays. Remaining interviews will be completed, followed by index validation analyses.

This multivariate index reflects the complexity of ED productivity as a feedback measure and adjusts for its modifiers. The index was developed for national use in adult EDs, evidenced by the adoption of consensus-based methods throughout its development. Future directions include investigating the effectiveness of this index to facilitate evidence-based behaviour modification for Canadian ED physicians.

AH-CHOO-SING ALLERGY TESTING WISELY: REDUCING UNNECESSARY IGE ALLERGY TESTING TO IMPROVE PATIENT CARE

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Goal:
Align with Choosing Wisely Canada recommendations from the Canadian Society of Allergy and Clinical Immunology and the Canadian Pediatric Society to improve allergy investigations in the Northern half of Alberta by reducing unnecessary and inappropriate IgE Allergy Testing.

Activities:
IgE Allergy Testing in Northern Alberta is performed by DynaLIFE Medical Labs, and previously included a Food Allergen Screen (FAS) with age-dependent reflex panels of 3 or 5 of the most common food allergens, and an Inhalant Allergen Screen with seasonal reflex panels of 4 or 6 common inhalant allergens. We distributed educational material and then discontinued the FAS and associated reflex panels, discontinued the seasonal inhalant allergen reflex panels, introduced a new IgE Allergy Testing requisition with educational details, and enforced limits on the number of allergens orderable by non-allergy specialists.

Impact:
Educational initiatives had minimal measurable impact, but implementation of the remaining four activities has led to overall decreases of approximately 40% in food allergen tests and 50% in inhalant allergen tests, with appropriate increases in specific allergen requests.

Challenges:
Three main challenges were encountered, including (1) identifying all approved allergy specialists, (2) managing a high volume of follow-up with physicians who have inappropriate ordering practices (non-specific allergen requests and/or requesting more than the allowable number of allergens), and (3) balancing patient-centered care with enforcing appropriate utilization.

Lessons Learned:
Engagement with actively involved clinical specialist champions is essential to success and buy-in from non-specialist physicians. Communicating changes to busy and widespread primary care clinical practices requires ongoing support.

DEPRESCRIBING ANTIDEPRESSANTS: UTILIZING TELEMEDICINE IN TAPERING PSYCHIATRIC PSYCHOTROPICS

Monica Mina, Adult, Outro Health
Olivia Geen, Geriatric & Internal Medicine - Outro Health

Among the most heavily prescribed drug classes worldwide, antidepressants may be overutilized, thus frequent candidates for deprescribing according to principles endorsed by Choosing Wisely Canada.

A 2021 Statistics Canada report placed antidepressants, used by 10% of Canadian adults, in the top 3 prescribed drug classes for all age groups. In 2022, the Canadian Institute for Health Information reported more than 23% of seniors take antidepressants.

There are many reasons why continuing antidepressants may be unnecessary, chief among them that antidepressant treatment may no longer be beneficial. However, prudent deprescribing and discontinuation of antidepressants requires minimization of risk of withdrawal symptoms or relapse, both potentially serious adverse outcomes.

In 2020, UK's Royal College of Psychiatrists and National Institute for Clinical Excellence (NICE) recommended that antidepressants be proportionately tapered over months, a best practice not yet adopted by Canada.

We explore an innovative model for a harm reduction approach to antidepressant discontinuation via telemedicine. It incorporates shared decision-making to taper according to individual tolerance, optimized to avoid withdrawal symptoms, with recovery-oriented support to minimize relapse risk.

Via telemedicine, a collaborative hyperbolic tapering regimen might be efficiently managed through regular check-ins with a medical provider, with appropriate support conveniently delivered. Challenges include designing a system that will scale to demand while maintaining clinical treatment quality.

This presentation will discuss the considerations in designing and implementing a telemedicine resource for the effective deprescribing of antidepressants, which may also be employed in all clinical settings to deprescribe chronic psychotropics and other drugs requiring tapering.

REDUCING UNNECESSARY PLEURAL FLUID FLOW CYTOMETRY TESTING - SHARED DECISION MAKING BETWEEN THE CLINIC AND LABORATORY

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Inderdeep Dhaliwal, Respirology, London Health Sciences - Western University
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Pleural fluid flow cytometry is routinely overutilized in the workup of new pleural effusions. We reviewed 100 pleural fluid flow cytometry orders at our institution between January-July 2020 to develop a screening algorithm to reduce low-yield testing. The algorithm has two components. 1) Clinical criteria applied by clinician at the bedside with flow indicated for known or suspected history of hematologic malignancy and not indicated in patients receiving palliative thoracentesis or with active solid tumor malignancy. 2) Laboratory finding of any of fluid cell count <0.3x10^9/L, transudative effusion by Light's criteria, or prior negative pleural fluid flow cytometry within 6 weeks rules out need for flow cytometry which can then be canceled in-lab. Back-testing this algorithm on our initial dataset showed a sensitivity of 100% in identifying flow-positive pleural samples and would have retrospectively led to a 41% reduction in flow cytometry testing. Prospective validation of the algorithm on 107 pleural fluid flow samples collected between April-November 2022 demonstrated our algorithm had 93% sensitivity, 42% specificity, negative predictive value of 97%, and potential for 35% reduction in unnecessary testing with perfect use. One positive pleural flow result that was deemed an incidental positive was missed by the algorithm. No clinically significant positive results were missed. Our algorithm is a novel example of shared decision-making between laboratory and clinician, acknowledging both clinical uncertainty at the bedside and expertise in the laboratory to allow for reduced expensive specialized testing when deemed unnecessary by objective criteria.

FACTORS OF A PHYSICIAN QUALITY IMPROVEMENT LEADERSHIP COALITION THAT INFLUENCE PHYSICIAN BEHAVIOUR DESCRIPTION

Pamela Mathura, University of Alberta - Department of Medicine and Alberta Health Services

A coalition (Strategic Clinical Improvement Committee), with a mandate to promote physician quality improvement (QI) involvement, identified hospital laboratory-test overuse as a priority. The coalition developed and supported the spread of a multicomponent initiative across Alberta, Canada.

Goal:
Identify factors enabling physicians to lead, participate, and influence appropriate blood urea nitrogen (BUN) ordering.

Activities:
Using a sequential explanatory mixed methods approach, intervention components were grouped as person-or system-focused. Monthly averages of the BUN-test were compared pre-and post-initiative; physicians who lead or supported the initiative were divided into high (>50%) and low (<50%) BUN-test reduction groups. Structured virtual interviews with 12 physicians using a content analysis aligned to the Theoretical Domains Framework and the Behaviour Change Wheel.

Impact:
Monthly BUN-test ordering was significantly reduced in 5 of 6 hospital medicine programs and in two emergency departments (33% to 76%), resulting in monthly cost avoidance ($1,165 to $7,285). Physicians had similar perceptions of the coalition's characteristics enabling their QI involvement and the factors influencing BUN-test reduction.

Challenges:
Investigating several behaviours simultaneously complicated the analysis.

Lessons Learned:
Enabling physician confidence to lead and participate, the coalition used the following strategies: a simple QI-initiative linked to a coalition physician leader and/or member; credibility and mentorship; support personnel; QI education and hands-on training; minimal physician effort; and no clinical-workflow disruption. Implementing person-and system-focused intervention components, and communication from a trusted local physician — who shared data, physician QI-initiative role/contribution and responsibility, best practices, and past project successes — were factors influencing appropriate BUN-test ordering.

RESOURCE OPTIMIZATION IN THE INTENSIVE CARE UNIT SETTING: A STAFF EDUCATION INITIATIVE

Kwadwo Kyeremanteng, The Ottawa Hospital – The Ottawa Hospital Research Institute

Background:
Ontario intensive care unit (ICU) admissions are triple the cost of general hospitalizations given the complexity of ICU patients. With an aging Canadian population, ICU resource consumption is expected to significantly increase.

Goal:
This project's goal is the creation and implementation of an educational workshop presenting the Choosing Wisely Canada (CWC) Critical Care guidelines to increase ICU staff's knowledge of unnecessary tests, treatments and procedures. The intervention is anticipated to reduce costs associated with ICU health care delivery without sacrificing quality of care.

Activities:
Approximately 75 ICU physicians, nurses and Allied Health professionals will attend one of six "Lunch and Learn" workshops held at the Civic and General campuses of The Ottawa Hospital, and the Montfort Hospital. The sessions will describe and discuss these guidelines.

Methods:
A mixed-methods design will assess intervention effectiveness. Administrative data will measure changes in ICU procedures, case costs and patient outcomes. Changes to metrics will be quantified using pre-/post-analyses. A post-workshop survey will assess how guidelines are anticipated to impact clinical practice. ICU leaders will be interviewed to identify common themes related to intervention implementation.

Challenges:
COVID-19 has severely strained ICU resources. Despite being a challenging time to propose changes to practice, pandemic circumstances present a pivotal opportunity to improve knowledge of unnecessary tests, treatments and procedures.

Impact:
This study will inform how CWC guidelines can be sustainably integrated into this setting to improve ICU efficiencies. This intervention has the potential to result in significant ICU cost savings, without compromising patient care.

BEST PRACTICES FOR THE STRATIFICATION AND CLASSIFICATION OF SOMATIC BIOMARKERS OF VARIOUS TUMOR TYPES

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Catherine Gravel, INESSS
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Goal:
The aim of this presentation is to summarize the best practices for stratifying and standardizing the information generated by targeted next-generation sequencing (NGS)-based multigene panel testing in adult solid tumors.

Activities:
We will present five different tier-based classification systems for biomarkers or therapies regarding somatic variants stratification and share recommendations for the disclosure of NGS test results from the laboratory to the treating clinician. We will also highlight the similarities and discrepancies of each system using the example of non small cell lung cancer.

Impact:
The establishment of mechanisms to guide the choice of biomarkers to be reported for each tumour type would facilitate province-wide implementation of multigene panel testing, harmonize practices between healthcare institutions, and help to use these tests wisely.

Challenges:
NGS-based multigene panel testing is rapidly being introduced into healthcare systems as a promising method for the diagnosis, prognostic, and identification of therapeutic targets for several types of adult tumors simultaneously. However, the amount of clinically relevant information produced by these tests remains limited and the risk of increasing requests for the use of drugs through access programs is high.

Lessons Learned:
To respond to the increasing demand of multigene panel testing while avoiding creating disparities in the access to services or treatments, adopting a classification system based on levels of evidence for actionability of biomarkers and adapting it to the local context are important steps in the appropriate implementation of molecular profiling of solid tumours.

STANDARDIZED URINARY CATHETERIZATION GUIDELINES TO REDUCE PERIOPERATIVE URINARY TRACT INFECTION RATES

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Ellen Orchard, London Health Sciences Centre
Jennifer Lam, London Health Sciences
Julie Strychowsky, London Health Sciences Centre
Michael Dorward, London Health Sciences Centre
Jacob Davidson, London Health Sciences Centre
Claire Parent, London Health Sciences Centre
Leanne Muszynski, London Health Sciences Centre

Goal:
On project initiation in March 2021, our institutional rate of perioperative urinary tract infection (UTI) was 1.9X the predicted rate based on the NSQIP - Paediatric data. The project objective was to reduce the rate of perioperative UTI by 30% by September 2022.

Activities:
A multidisciplinary working group was formed, with broad stakeholder consultations. Audits were performed to assess current perioperative catheterization practices and identify areas for improvement. A 'permissive list' was developed of paediatric surgical procedures for which catheters could be required. Consensus was achieved to standardize early urinary catheter removal except for urologic procedures. Educational campaigns focused on proper catheter insertion, and catheter maintenance processes were developed. Standardization of urinary catheterization equipment, technique and maintenance was achieved. Electronic Medical Record order modules were developed to implement the above as a standardized 'forcing function'.

Impact:
By September 2022, a 47% reduction in perioperative UTI rate was achieved, with 97% adherence to the 'permissive lists'.

Challenges:
During a period of high staff turnover and pandemic-related pressures, the implementation of components of the bundle were delayed. Furthermore, ongoing staff turnover has necessitated repeated educational efforts.

Lessons Learned:
A multidisciplinary working group and broad stakeholder engagement helped achieve excellent buy-in throughout the institution and contributed to good early uptake of our protocol. An earlier focus on sustainability would have helped mitigate turnover-related challenges.

RENEWING CHOOSING WISELY CANADA RECOMMENDATIONS IN PHYSICAL MEDICINE & REHABILITATION TO MEET EVOLVING STEWARDSHIP NEEDS

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Christian D. Fortin, Division of Physical Medicine & Rehabilitation - Faculty of Medicine, University of Toronto & Hennick Bridgepoint Hospital, Sinai Health

Goal:
Revise the Physical Medicine & Rehabilitation (PM&R) Choosing Wisely Canada (CWC) recommendations to meet the evolving stewardship needs relevant to PM&R.

Activities:
A committee comprised of members of the Canadian Association of PM&R's Quality Improvement and Patient Safety (QIPS) Special Interest Group (SIG) was struck to update and raise awareness of CWC recommendations for Physical Medicine & Rehabilitation (PM&R). Surveys of the general membership of the Canadian Association of PM&R sought suggestions for updated CWC recommendations, which were drafted and refined through consultation with QIPS SIG membership and SIG leads specific to the updated recommendations' subject matter (e.g., spinal cord injury, acquired brain injury, pain, interventional medicine, and electrodiagnostic medicine).

Impact:
Updated CWC recommendations for PM&R recommend avoiding (1) investigating and treating asymptomatic bacteriuria in patients with neurogenic bladder; (2) recommending more than a brief period of physical and cognitive rest after mild traumatic brain injury; (3) starting opioid treatment for chronic noncancer pain without exhausting other approaches; (4) ordering diagnostic imaging for low back pain in the absence of red flags; (5) repeating interventional pain treatments without evaluating patients' responses to them; and, (6) recommending carpal tunnel release without first confirming the diagnosis with ultrasonography or electrodiagnostic testing.

Challenges and Lessons Learned:
An extensive consultative process resulted in updated CWC recommendations that address current appropriateness and resource stewardship concerns within PM&R. Future work will focus on raising awareness and equipping health care providers with quality improvement implementation tools to adopt these recommendations into their practices.

REDUCING UNNECESSARY ORDERING OF CD4 COUNTS IN THE HIV CLINIC: A QUALITY IMPROVEMENT PROJECT

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Benjamin Hedley, Department of Pathology and Laboratory Medicine - London Health Sciences Centre
Alan Gob, Division of Hematology - Western University

Objectives:
The Choosing Wisely Guideline from the Association of Medical Microbiology and Infectious Disease Canada suggests not repeating CD4 measurements in patients with HIV infection if the CD4 count is above 500 /µL with suppressed HIV viral loads for 2 years. A chart audit in the HIV clinic at our centre found that 67% of CD4 orders were deemed to be unnecessary based on current guidelines. Our objective was to reduce CD4 count testing per patient visit in the HIV clinic by 25%.

Methods:
A fishbone framework for root cause analysis revealed several potential causes underlying frequent ordering of CD4 counts. A series of Plan-Do-Study-Act (PDSA) cycles were undertaken, ultimately with creation of a computerized clinical decision support (CCDS) pop up that would trigger when a CD4 count was ordered less than a year since the last one. Frequency of CD4 count testing per patient visit to our clinic was the primary outcome measure. The number of times the pop up triggered per month was the process measure. The number of patients who required a CD4 count with their routine blood work but did not get one was a balancing measure.

Results:
After implementation, there was a 52% reduction in CD4 count testing per patient visit, with no adverse outcomes for patients. The CCDS was more effective than education, consistent with previous studies. The intervention represents >$23,000 annualized savings.

Conclusion:
We present a novel and straightforward intervention that can implemented in HIV clinics and results in substantial cost savings in addition to aligning patient care with best practices.

CHOOSING WISELY FOR CHILDREN IN EMERGENCY DEPARTMENTS: THE DEVELOPMENT OF RECOMMENDATIONS FOR PEDIATRIC EMERGENCY MEDICINE

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Kelly Levasseur, Children's Hospital Michigan
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Michelle Nypaver, University of Michigan
Jim Chamberlain, Children's National Hospital
Jennifer Thull-Freedman, Alberta Children's Hospital

Background:
Over-testing in children cared for in emergency departments (EDs) is common and can result in excessive resource use and potential harms. While Choosing Wisely (CW) recommendations exist for emergency medicine, the majority are focused on adults, and recommendations specific for pediatric emergency medicine (PEM) previously hadn't been developed.

Methods:
Eight Canadian and American PEM physicians, members of the American Academy of Pediatrics Section of Emergency Medicine (AAP SOEM) Committee on Quality Transformation (COQT), formed a task force to address this need. Frequently overused tests and interventions from a diverse group of interprofessional ED clinicians were collected and independently scored based on frequency of overuse, evidence and potential harm. The five top-ranked items were approved by AAP SOEM leadership and underwent peer review. The AAP and the Canadian Association of Emergency Physicians granted final approval.

Impact:
The task force received 205 initial tests and interventions that are overused in EDs. After combining similar recommendations and excluding those unrelated to overuse, 72 items were identified and ranked. The top 25 were submitted to COQT members for voting, and duplications from other society lists were removed. The five highest ranked items were included in the final list and jointly released in both countries.

Lessons Learned:
A collaborative process among North American PEM physicians successfully led to the development of five PEM recommendations and is the first pediatric CW list to be jointly released in both countries. This geographically diverse collaboration lays a foundation for widespread and impactful implementation of the recommendations.

LAB WISELY - HOW OUR ASSOCIATION MOBILIZED A COMMUNITY FOR CHANGE

Christine Nielsen, Canadian Society for Medical Laboratory Science (CSMLS)
Brandon Djukic, CSMLS
Amanda VanSpronsen, University of Alberta

Learn how the Canadian Society for Medical Laboratory Science mobilized a community, to foster recommendations to improve utilization and reduce the lab testing burden for a profession in crisis.

Through the art of conversation, to a taskforce, to a validated set of recommendation, to a curated bilingual database, to a website, to free knowledge products to advocacy and outreach, CSMLS started a movement in lab test utilization.

Guidelines that became critical, during the pandemic and supply chain issues in the industry, allowed for calculated change.

Learn how a casual project, became a major strategic initiative and continues to be a beacon of hope, while our members are buried under digital requisitions and non-value added work.

LOW-VALUE CLINICAL PRACTICES IN TRAUMA CARE: INTER-HOSPITAL PRACTICE VARIATIONS

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Natalie Yanchar, University of Calgary
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Patrick Archambault, Université Laval
François Lamontagne, University of Sherbrooke
Belinda Gabbe, Monash University, Australia
Jérôme Paquet, Université Laval
Tarek Razek, University McGill
Henry Thomas Stelfox, University of Calgary

Background:
Reducing low-value care has the potential to improve patient experiences and outcomes and free-up healthcare resources. We recently identified 16 clinical practices in trauma care whose use should be questioned based on a synthesis of the best available evidence, expert consensus, and patient preferences. The aim of this study was to measure frequency and assess inter-hospital variation in these practices.

Methods:
We included all admissions with a primary diagnosis of injury to any of the 57 provincial adult trauma centers in Québec (April 2013 to March 2020). We developed metrics to identify low value practices iteratively with clinical experts. We measured incidence and assessed inter-hospital variation using intraclass correlation coefficients (ICC).

Results:
We developed metrics for 12 of the 16 low-value clinical practices. Six practices had an incidence >10% and moderate to strong interhospital variation (ICC≥0.05): initial head, cervical spine, or whole-body computed tomography (CT) for low-risk patients, post-transfer repeat CT, neurosurgical consultation for mild complicated traumatic brain injury, and spine service consultation for isolated thoracolumbar process fractures.

Conclusions:
Our study shows the feasibility of evaluating low-value trauma care using routinely collected data. We identified six practices with high frequency and high inter-hospital variation that may be promising targets for interventions to reduce low-trauma value care.

TIME TO BREAK THE DOGMA?

Ruchika Bagga, LMP - University of Toronto
Tony Mazzulli

Goal:
To evaluate current blood culture practices including length of incubation and clinical utility of aerobic and anaerobic blood cultures in adults.

Methods:
All blood cultures received in Microbiology Department at Mount Sinai Hospital, Toronto between April 2020 and May 2021 were included. A total of ~152,000 blood cultures were analysed. Chart review was conducted for blood cultures that became positive > 96 hrs after incubation. An analysis of % positivity of anaerobic vs aerobic cultures and assessment of the spectrum of pathogens isolated from these cultures was performed.

Results:
A total of 15,289 (9.7%) blood cultures were positive. Approximately 0.156% (24/ 15289) organisms that were isolated after 96 hrs of incubation were deemed clinically relevant.
Of all blood cultures, 50.5% were aerobic cultures and 49.5% were anaerobic. Net positivity for aerobic cultures was 9.7% vs 8.4% for anaerobic cultures. Anaerobic cultures grew an additional 134 unique isolates.

Impact:
Incubation of blood cultures > 4 days increased isolation of contaminants, increased unnecessary antibiotic usage and led to additional lab burden in terms of manpower and reagent cost and additional calls to notify wards/clinicians/etc. of the results.
Contaminants grew more frequently in aerobic cultures. Obligate anaerobes and additional 59 aerobic isolates grew only in anaerobic media.

Conclusion:
Recent advances in blood culture media and technology necessitate re-evaluation of existing blood culture practices including length of incubation time which currently remains at 5 days. Anaerobic cultures appear to add value in terms of additional isolates and should be continued in adults.

OPTIMIZATION OF 25 OH VITAMIN D TESTING IN RENAL PATIENTS

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It is well understood in the Choosing Wisely statement "don't perform population-based screening for 25-OH-vitamin D deficiency" the past history of overutilization of 25 OH vitamin D testing in primary care in particular. However, within this framework, testing of 25 OH vitamin D in renal patients is not typically seen as overutilization. In follow-up to implementation of an in-house assay for 25-OH vitamin D testing at Kingston Health Sciences, an audit of testing was performed. It showed a high frequency of 25 OH vitamin D testing in renal patients and in particular patients on dialysis. Renal patients were being tested every 3 months as part of routine monitoring. It was revealed that main purpose for the 25 OH vitamin D testing was to monitor for vitamin D toxicity as the renal patients were weekly administered high dose vitamin D3. A more in-depth look at the available data showed a low frequency (0.3%) of renal patients had 25-OH-vitamin D levels > 250 nmol/L. This suggested the risk to vitamin D toxicity was far less than was the basis of the concern in frequent 25-OH vitamin D testing. As a result, 25-OH vitamin D testing in patients was changed to every six months. This change was primarily sustained by a change in the order set used for monitoring renal patients. The outcome was no change in the 25-OH vitamin D status of patients and no change in patients with 25-OH vitamin D levels > 250- nmol/L.

OPTIMIZATION DES TESTS DE LABORATOIRES : EXPÉRIENCE DES 25 DERNIÈRES ANNÉES DANS UN HÔPITAL REGIONAL

Ihssan Bouhtiauy, Réseau de santé Vitalité
Éric Ievasseur, Réseau de santé Vitalit
Étienne Saint-Aubin, Université de Sherbrooke
Mahamadou Douaré, Réseau de santé Vital

Objectif:
Le but principal de l'approche est l'utilisation judicieuse des tests de biochimie à la zone 4 du réseau de santé vitalité.

Activités:
L'approche du cycle : planifier, exécuter, étudier et agir a été utilisé. Des audits ont été effectués avant et après chaque changement. Des consultations, des présentations et des mémos ont été effectués avant chaque changement. Des ajustements ont été réalisés lorsque jugés nécessaires pour atteindre nos cibles. Plusieurs changements ont été effectués; entre autres : éliminations des tests désuets (CKMB, Myoglobine, Amylase, T4 total, T3 Total etc.); changements des profils (profil hépatique avec trois tests au lieu de neuf tests); utilisation des algorithmes décisionnels (Fonction thyroïdienne; Électrophorèse des protéines; ANA/ENA); fréquence des tests (établir une fréquence des tests et le système informatique du laboratoire bloque les tests qui ne respectent pas la fréquence (la vitamine D annuellement, A1c à 80 jours etc.).

Retombées:
L'approche utilisée a permis standardiser les profils, d'éliminer les tests désuets et de réduire significativement les tests qui donnent peu de valeurs ajoutées. Ainsi la demande d'AST représente moins de 10% par rapport à la demande d'ALT.

Défis:
L'ajout de plusieurs nouveaux médecins au cours des dernières années, nécessitait un rappel continu de l'utilisation judicieuse et le système informatique du laboratoire ne permet pas d'obtenir des données détaillés de façon continue pour faire un suivi plus étroit

Leçons Apprises:
Les consultations sont importantes lors des projets de changement et les ajustements sont nécessaires pour réaliser les objectifs.

VIRTUAL HALLWAY: A NOVEL, PEER-TO-PEER CONSULTATION PLATFORM

Jon Allen
Justin Hartlen
Luke Napier
Daniel Rasic
Jacob Cookey

In 2022, the Fraser Institute reported the longest waitlists ever in Canada. Virtual Hallway is a novel web-based platform aimed at reducing in-person specialist referrals by connecting physicians for peer-to-peer phone consultations.

A 6-month pilot project was completed in partnership with Nova Scotia Health's Innovation Hub. A total of 1257 physician and NP surveys were completed. The primary outcome of the survey demonstrated 84% of Virtual Hallway consults eliminated the need for family physicians to place their patient on a specialists' waitlist. Additionally, a 4.9/5 satisfaction rating was achieved. Exploratory data analysis revealed >90% of consults included discussion related to optimal medication use.

The primary challenges encountered with this pilot study included the limited number of specialty departments as well as navigating the billing/remuneration regulations for salaried physicians on alternative funding programs (thus limiting total study participants).

Key points of learning revealed high feasibility and ease of use of the platform, as well as a significantly higher % of consults avoiding overuse of in-person referrals compared to the asynchronous consult literature or current standard of care. Other highlights include subjective reports of high collegiality and educational value as well as developing strategies for optimal interventions.

A key aspect of Virtual Hallway pertinent to Choosing Wisely Canada's mission is that case-based phone discussions facilitate peer-to-peer education where family physicians receive evidence-based guidance from specialists with closer familiarity with clinical guidelines, including CWC guidelines related to their specialty.

Dr. Sepideh Behrooza is a Nova Scotia family physician (who has previously been involved with Choosing Wisely) who would welcome the opportunity to discuss her very positive experience using the Virtual Hallway platform within her practice here in Halifax.

TOWARD EFFECTIVE BLOOD BANK RESOURCE UTILIZATION: CREATING AN MSBO FOR NSHA

Bridgette Chan, Dalhousie University
Sina Sedighi, Dalhousie University
David MacDonald, Queen Elizabeth II Health Sciences Centre
Jason Quinn, Queen Elizabeth II Health Sciences Centre

Goal:
In this retrospective study we reviewed anesthesia intraoperative records from the past five years to determine the frequency of transfusion for specific surgeries, apply and compare the various thresholds and update the maximum blood ordering schedule (MSBOS). The NSHA MSBO was last updated in 2006.

Activities:
Classifying surgical procedures, calculating average estimated blood loss (EBL), and determining which procedures should have a pre-operative type and screen based on previously established literature. These criteria suggest a type and screen is only necessary for procedures in which over 5% of patients are transfused, median EBL is greater than 50mL or the transfusion index is equal or greater to 0.3

Impact:
We are still in the data analysis stage but based on preliminary research, peri-operative blood orders will decrease by just under 50% once our research is published and implemented. We will be finished the analysis and ready for publication/presentation at the time of the national meeting. This new MSBOS will help standardize peri-operative care in our health system, reduce unnecessary testing, and reduce healthcare costs – all goals that align with the Choosing Wisely campaign.

Challenges:
Gathering and translating the data from the perioperative records, lack EBL reporting in OR records, and challenging categorizations (especially when multiple procedures are done at once).

Lessons Learned:
MSBOS need to be updated regularly to reflect changes in practice, surgeons, and patient populations. Recent local changes have made type and screens extra cumbersome for patients and the system and our project will reduce this burden.

DE-PRESCRIBING IN OCCUPATIONAL THERAPY

Sandy Daughen, Occupational Therapy Area Lead/Chef de secteur des services d'ergothérapie

Goal:
Identifying and discussing treatments that are not supported by scientific evidence is not limited to medicine and can be applied in areas of rehabilitation therapy. The goal of this presentation is therefore to discuss low impact, low value interventions currently in use in occupational therapy practice in Canada. It will describe examples of these interventions, outline reasons why this may occur, describe specific practice supports that exist to reduce this, and challenge occupational therapists, and all health care providers, to reduce prescribing and recommending interventions that have low therapeutic value, even within the context of client-centred practice or care.

Impact:
There is a real potential to reduce health care costs, particularly in publicly funded OT practice or when the OT recommendations are funded by public or government agencies. Health costs would be impacted by reducing health professional time spent engaging in assessing for or delivering low impact, low value interventions, as well as costs associated with funding of specialized equipment.

Challenges:
Occupational therapists use collaborative, relationship-focused approaches to support occupational participation to help people achieve their goals and enhance their quality of life This can present a challenge when the OT wants to support a client's quality of life, goals, and develop therapeutic relationships while still being accountable for the quazity of care they provide.

GROWING A NATIONAL CHOOSING WISELY COMMUNITY OF PRACTICE IN PEDIATRICS: A PLATFORM TO ACCELERATE REDUCING LOW-VALUE CARE FOR CHILDREN

Olivia Ostrow, Hospital for Sick Children

Goal:
In 2019, Sickkids Hospital launched a Choosing Wisely in Paediatrics Community of Practice (CoP) to build national capacity for reducing low-value care in children. Despite challenges from the COVID-19 pandemic, the CoP's goal of knowledge sharing and collaborative learning to promote pediatric stewardship continues to grow and expand its reach.

Activities:
Using a virtual platform, the CoP meets quarterly hosting multi-disciplinary presenters to share initiatives focused on reducing pediatric overuse. Webinars are made available alongside additional resources through partnership with Children's Healthcare Canada. In addition to academic clinicians, membership expansion has targeted allied health, family partners, and community hospitals. A steering committee was convened consisting of leaders from across Canada to advance the CoPs mandate.

Impact:
To date, the CoP has hosted eight webinars offering 18 diverse presentations on overuse topics. Membership has grown to over 200 members from six provinces. While members primarily consist of general pediatricians and pediatric emergency medicine clinicians from academic sites, there is increasing reach to community hospitals and interprofessional and multidisciplinary areas of practice.

Challenges:
Clinical demands and staffing shortages has led to variability in webinar attendance and programming challenges. Future directions include mobilizing the steering committee to promote diverse participation within their province and expanding the CoP goals to facilitate collaborative work that targets reducing overuse.

Lessons Learned:
The continued momentum of the CoP demonstrates the interest in creating a space for knowledge sharing, collaboration, and capacity building in paediatric resource stewardship across Canada.

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