Dear National Meeting Attendees,

**Welcome to the fourth annual Choosing Wisely Canada National Meeting!**

We are excited to be hosting the National Meeting in Montreal, Quebec and for the first time featuring both English and French sessions. I would like to thank our co-host, the Quebec Medical Association and our partner, the Canadian Medical Association for their contributions to this year’s event. The 2019 National Meeting includes a special celebration marking the fifth anniversary of the Choosing Wisely Canada campaign. I am thrilled to celebrate this important milestone with the Choosing Wisely Canada community and recognize our collective efforts in reducing unnecessary tests and treatments.

In the past five years, Choosing Wisely Canada has evolved from a conversation between clinicians and patients to the national voice for reducing unnecessary tests and treatments in health care. There has been unparalleled engagement and dedication from clinicians, administrators, researchers and systems leaders. There are close to 350 quality improvement projects related to the campaign taking root across the country and 12 active provincial and territorial campaigns to help accelerate the pace of change locally. As Chair of Choosing Wisely Canada, I am proud of the sizable impact our community has had in Canada and the momentum the campaign has gained.

This year’s theme *Taking Action* is reflective of our next chapter of the campaign. The abstracts featured in this book are a testament to the breadth of projects taking place from coast-to-coast and showcase the energy of our community in putting campaign recommendations into practice.

I encourage you to browse the contents of this abstract book and learn about the impressive work of the Choosing Wisely Canada community. The abstracts are organized by topics including deprescribing, medical education, patient engagement, quality improvement and measurement and evaluation. I hope this abstract book will serve as a continued source of inspiration, innovation and ideas that engage the growing community of clinicians, individuals and organizations committed to the Choosing Wisely Canada campaign.

I sincerely thank you for your ongoing efforts and look forward to celebrating our past and envisioning the future of the campaign at the fourth annual National Meeting.

Yours,

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

Bonjour,

**Bienvenue au quatrième Congrès annuel Choisir avec soin!**

Nous sommes heureux de tenir notre Congrès annuel à Montréal (Québec) cette année et, pour la première fois, d’y inclure des séances en anglais et en français. J’aimerais remercier notre coorganisatrice, l’Association médicale du Québec, et notre partenaire, l’Association médicale canadienne, pour leur contribution à l’événement. Le Congrès annuel 2019 présente une célébration spéciale soulignant le cinquième anniversaire de la campagne Choisir avec soin. Je suis ravie de célébrer ce passage important avec la communauté Choisir avec soin et de reconnaître nos efforts collectifs pour réduire les examens et traitements inutiles.

Au cours des cinq dernières années, Choisir avec soins est passée d’un dialogue entre professionnels de la santé et patients à un rôle de porte-parole national de la réduction des examens et traitements inutiles en matière de santé. La campagne a donné lieu à une mobilisation et à un engagement sans pareil des médecins, des administrateurs, des chercheurs et des dirigeants du système. Près de 350 projets d’amélioration de la qualité en lien avec la campagne prennent forme partout au pays. De plus, 12 campagnes provinciales et territoriales actives accélèrent le rythme des changements sur la scène locale. En tant que présidente de la campagne Choisir avec soin, je suis fière de constater l’ampleur de l’influence de notre communauté sur le Canada ainsi que le dynamisme qui anime maintenant la campagne.

Le thème de cette année, « Le surdiagnostic : Passez à l’action », reflète les prochaines étapes de la campagne. Les résumés contenus dans le présent recueil témoignent de la portée des projets se déroulant d’un bout à l’autre du pays et de la volonté de notre communauté de mettre en pratique les recommandations de la campagne.

Je vous invite à parcourir ce recueil et à découvrir l’impressionnant travail de la communauté Choisir avec soin. Les résumés sont classés par thèmes, notamment la déprescription, les études de médecine, la mobilisation des patients, l’amélioration de la qualité des soins, et la mesure et l’évaluation des résultats. J’espère que ce recueil de résumés sera pour vous une source continue d’inspiration, d’innovation et d’idées qui mobilisent la communauté grandissante de médecins, de personnes et d’organisations engagés dans la campagne Choisir avec soin.

Je vous remercie grandement de vos efforts continus et je suis impatiente de célébrer notre passé et de discuter de l’avenir de la campagne lors de notre quatrième Congrès annuel.

Cordialement,

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

Choosing Wisely Canada would like to thank our lead sponsors for their generous support of the 2019 National Meeting.

We would also like to thank the following organizations for their support of this year’s event:

2019 NATIONAL MEETING
ÉDITION 2019 DU CONGRÈS ANNUEL :

PROGRAM GOALS

- Engage with the Choosing Wisely community in an energized exchange of ideas
- Learn about practical and implementable strategies for reducing overuse, and understand their impact
- Network with colleagues who share your passion

LEARNING OBJECTIVES

After active engagement in this program, participants will be better able to:

- Translate and apply best practices for reducing overuse in health care in their own clinical settings.
- Design effective approaches for evaluating interventions related to reducing overuse in health care.
- Develop strategies to share successful interventions across their health care organization.

OBJECTIFS DU PROGRAMME

- discuter avec la communauté Choisir avec soin et participer à un échange d’idées stimulant sur la surutilisation;
- acquérir des habiletés pour réduire la surutilisation dans la pratique;
- partager des stratégies concrètes pour réduire la surutilisation et en mesurer l’impact.

OBJECTIFS D’APPRENTISSAGE GÉNÉRAUX :

Après avoir participé au programme de façon active, les participants seront en mesure de mieux :

- comprendre et appliquer des pratiques exemplaires ayant pour but de réduire la prestation de soins de faible valeur dans leur milieu clinique;
- élaborer des approches efficaces leur permettant de repérer leurs interventions de faible valeur;
- élaborer des stratégies visant à mettre un terme aux interventions de faible valeur au sein de leur organisation.

THANK YOU

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Nous souhaitons également remercier les organisations suivantes pour leur soutien à l’événement de cette année:
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DEPRESCRIBING
LA DÉPRESCRIPTION
DEPRESScribing of Proton Pump Inhibitors Pilot Study in a Transitional Care Unit at a Community Teaching Hospital

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Michael Heffer, St Joseph’s Health Centre - Unity Health Toronto

Background:
Proton pump inhibitors (PPIs) are inappropriately prescribed in up to 50% of users. Long-term use of PPIs may be linked to increased risk of Clostridioides difficile infections, pneumonia, dementia, bone fractures and nutrient malabsorption.

Objective:
To examine the feasibility and impact of a PPI-deprescribing algorithm on a select group of patients on a transitional care unit in a community teaching hospital.

Methods:
This pilot project was a single centre intervention with pre- and post-study design conducted on alternate level of care (ALC) patients at St. Joseph’s Health Centre. The primary outcome was a composite of patients with PPI de-prescribed or dose-reduced. A retrospective chart review was completed for pre-intervention to evaluate the de-prescribing rate. Post intervention, the need for PPI was evaluated through chart review and discussion with prescriber(s). In patients eligible for deprescribing, the dose was halved every 2 weeks and patients were monitored until discharge.

Results:
A total of 70 patients were enrolled (n=36 pre, 34 post). PPI deprescribing increased from 44% before the intervention to 68% after the intervention (p=0.08). Rebound symptoms were only noted in one patient in the post intervention group.

Conclusions & Lessons Learned:
A trend toward improved prescribing was noted, but further studies with larger sample size are needed. This PPI de-prescribing algorithm is feasible in an ALC population. However, opportunities for improved feasibility include shortening the taper schedule and reducing the need for post-intervention monitoring. This pilot presents future opportunities to reduce PPI overuse in inpatient and long-term care settings.
JUST A LOT OF HOT AIR: DEPRESCRIBING INHALED CORTICOSTERIOIDS AMONG HOSPITALIZED MEDICINE PATIENTS

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Patrick Darragh, Michael Garron Hospital
Nazeg, Gabriel, Michael Garron Hospital
Andrew Liu, Michael Garron Hospital
Mayuri Mahentharan, Michael Garron Hospital
Reza, Pezeshki, Michael Garron Hospital
Ajanthiy Thayalan, Michael Garron Hospital
Stephanie Voong, Michael Garron Hospital

Background:
A large proportion of patients prescribed Inhaled corticosteroids (ICS) are unlikely to benefit. It is estimated only 20-40% of COPD patients meet criteria for ICS use, however > 70% receive them. ICS are not benign medications and are associated with significant adverse effects and cost to society.

Goal:
The goal of this initiative was to reduce unnecessary ICS use among all patients admitted to Michael Garron Hospital (MGH)-medicine health service for a non-respiratory illness.

Activities:
All patients admitted to the medicine health service for a non-respiratory illness who had an existing prescription for ICS were assessed by the deprescribing team consisting of a ward-based pharmacist and an internal medicine physician. An electronic hard stop on delivery of ICS was implemented until appropriateness of use was reviewed by the deprescribing team. ICS deprescribing recommendations were entered into our electronic health record (EHR) and autofaxed to the primary care physician. For this project we leveraged our EHR, strong physician-pharmacist dyad and an institutional culture amenable to reviewing prescribing practices. We applied continuous PDSA evaluations to various process measures introduced to ensure appropriate patients received ICS.

Impact:
MGH, a community teaching hospital in Toronto, spends approximately $120,000/year on ICS. We have reduced ICS costs by 50% within one year of implementation.

Lessons Learned:
Targeting high cost medications for deprescribing can lead to substantial cost savings that could then be utilized to for additional pharmacy support for further deprescribing programming at MGH.
APPROPRIATE USE OF ANTIPSYCHOTICS IN LONG TERM CARE: SPREADING AND SCALING IN DIVERSE CONTEXTS
Tanya MacDonald, Canadian Foundation for Healthcare Improvement
Jen Major, Canadian Foundation for Healthcare Improvement

The appropriate use of antipsychotics approach has proven to be repeatable in many jurisdictions; consistently resulting in positive outcomes for residents, providers and the system.

This evidence informed practice prioritizes the use of patient centered care strategies to manage the behavioural and psychological symptoms of dementia, systematic medications reviews, application of deprescribing guidelines with a focus on appropriate prescribing and continuous measurement and evaluation. The approach fosters inter-professional collaboration, communication, measurement and meaningful engaging with residents and families to reduce the inappropriate use of antipsychotics.

When spreading and scaling provincially, adaptation of the non-core elements, such as governance structures, alignment with provincial priorities, implementation, training, and use of local experts, allows each jurisdiction to take ownership of the improvements by leveraging local resources. This ensures the success of the improvement work and its sustainability.

This approach has demonstrated consistent improvements in the experience of care and the health of the residents living in long-term care across all jurisdictions. The pan-Canadian spread collaborative and full provincial scale in Quebec and New Brunswick have resulted in the reduction in antipsychotic use between 27% and 65% without any significant changes in behaviours in this patient population.

Knowledge gained through the incubation and pan-Canadian spread of the appropriate use of antipsychotics approach has led to improvements in the supports provided to the provinces with respect to education, governance and strategic partnerships. The experience of the OPUS team in Quebec will highlight the value of bringing clinical practice, research and implementation together.
REDUCING ANTIPSYCHOTICS IN NURSING HOMES IN THE EASTERN HEALTH REGION: AUDIT AND FEEDBACK FOR CLINICIANS WORKING IN LONG-TERM CARE

Robert Wilson, Quality of Care NL/Choosing Wisely NL
Pat Parfrey- Quality of Care NL/Choosing Wisely NL
Janice Fitzgerald, Eastern Health
Zac Giovannini-Green, Quality of Care NL/Choosing Wisely NL

Goal:
To reduce unnecessary prescribing of antipsychotics in Nursing Homes (NH) by Family Physicians and Nurse Practitioners in the Eastern Health (EH) Region of Newfoundland & Labrador (NL).

Implementation:
In 2016, 41% of all NH residents in EH were prescribed an antipsychotic. Of those prescribed an antipsychotic, 71% were deemed potentially inappropriate. In collaboration with the NL Medical Association (NLMA) and the Association of Registered Nurses of NL (ARNNL) QCNL/CWNL’s peer comparison program was created to provide clinicians of NL with their individual prescribing and test ordering data.

Measures:
Using the NL Pharmacy network and long-term care (LTC) pharmaceutical provider databases, data was collected on antipsychotic prescribing to NH residents from April 2017-September 2018. A total of 41 GP’s and NP’s in the Eastern Health region will be provided their individual prescribing data along with Choosing Wisely guidelines.

Results:
Of 15,874 prescriptions 69% were written by General Practitioners and 29% by Nurse Practitioners. Quetiapine was the most frequently prescribed agent, comprising 60% of total prescriptions.

Challenges:
(1) Ethical and bureaucratic barriers for data sharing
(2) Individual prescribing rates of antipsychotics compared to their peers will be provided in face-to-face academic detailing, undertaken by the Clinical Chief of LTC.
Choosing Wisely Canada and the Canadian Geriatrics Society do not recommend using pharmaceuticals as a first choice for treatment of dementia. However, antipsychotics and sedating medications are frequently prescribed to seniors to treat symptoms despite harmful side effects. In March 2019, the Physician Learning Program (PLP) will engage family physicians in Wetaskiwin in an Audit and Feedback intervention focused on decreasing antipsychotic and sedating medication use among seniors in facilities and the community.

The PLP delivers novel continuing medical education for physicians through Audit and Feedback. It is a proven method to engage physicians in quality improvement by 1) helping physicians to derive meaning from their practice data and 2) to identify corresponding practice changes that will improve patient care.

The project goal is to provide physicians with a safe, supportive environment in which to discuss practice data with their peers and co-develop improvement ideas for de-prescribing. Using a unique algorithm, we have assigned patients to the most responsible prescriber. Participants will receive individual prescribing data and peer comparators. Upon review of their data, participants will engage in a facilitated group discussion led by a local physician champion to identify the barriers and facilitators to changing practice. Upon leaving, they will have a list of improvement ideas prioritized by impact and ease of implementation. The Seniors Health SCN will provide concurrent education on de-prescribing to facility-based care teams to support multi-disciplinary de-prescribing efforts.

As this is research in progress, challenges and lessons learned will be shared at the National Meeting.
EXAMINING SECOND-LINE ANTIBIOTIC PRESCRIPTIONS IN THE HURON PERTH HEALTHCARE ALLIANCE

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Tyler Rouse, Huron Perth Healthcare Alliance
Colleen Bycraft, Huron Perth Healthcare Alliance
Thomas Haffner, Huron Perth Healthcare Alliance.

Background:
Choosing Wisely Canada advises against the prescription of second-line antimicrobials when beta-lactams are the recommended first line of treatment for those patients without severe beta lactam allergies.

Goal:
The intention of the study was to monitor second line antibiotic prescription rates at four community hospitals. Specifically, it examined fluoroquinolones that were prescribed over beta-lactams for patients labeled with beta lactam allergies.

Activities:
339 chart reviews were performed on emergency patients and inpatients who were prescribed levofloxacin or ciprofloxacin between May 2017 and May 2018. These reviews identified the reason for the prescription based on presenting/admitting diagnosis, identified drug allergies, and noted any microbiological data derived from a sampled culture.

Lessons Learned:
103 patients in the study cohort were noted as having a beta lactam allergy, and the majority (81%) of those patients reported non-severe or unknown allergy symptoms. Additionally, 70.2% of those patients who had non-severe or unknown allergy symptoms had received a diagnosis that would have supported the use of beta lactams. The review identified an overuse of fluoroquinolone antibiotics in patients with non-severe beta-lactam allergies.

Challenges:
Changing a culture of prescribing practices represented a significant challenge. Specifically, practitioners should clarify whether someone is truly allergic to penicillin prior to prescribing a different, less effective antibiotic.

Impact:
Given the finding that the majority of the prescriptions of second-line antibiotics to patients with beta lactam allergies were for patients who reported non-severe allergy symptoms, the Healthcare Alliance has proceeded with the implementation of a penicillin allergy clinic.
York Care Centre Benzodiazepine Optimization Project
Carole Goodine, York Care Centre

Goal:
Safely decrease sleeping pills such as benzodiazepine and sedative hypnotic (BSH) medications that may no longer be required.

Activities:
1. Established an inter-professional team and engaged stakeholders
2. Achieved consensus regarding BSH indications, risks and benefits
3. Educated care staff
4. Informed and involved families
5. Conducted medication reviews
6. Tapered BSH medication

Impact:
Twenty-four percent (51/212) of people at York Care Centre (YCC) were receiving a BSH medication at bedtime. Of these 51 people, 20 (39%) were identified by a nurse unit coordinator as potentially eligible for deprescribing. Ten participated. Five declined participation, 4 were excluded (2 ineligible, 1 transferred, 1 had BSH stopped prior to pharmacists’ review). One person withdrew prior to initiation.

Of the 10 participants, 5 (50%), had BSH medication discontinued, 4 (40%) had dose reductions, and 1 suggestion was not acted on by the physician.

All 3 nursing coordinators and both nursing administrators received a presentation on this initiative. Information was also provided to the Family Advocacy Committee and brochures were developed for families, patients and staff. Care staff on all 5 nursing units attended unit huddles.

Challenges:
Challenges included physician attendance at project meetings, in-service participation, non-pharmacological interventions, recruitment and intervention durability.

Lessons learned:
Deprescribing is a team effort. Successful interventions included motivated people with strong family support. The nursing home setting is a safe, supervised environment for deprescribing however BSH deprescribing may have greater impact in primary care.
The aim of this study was to assess post discharge opioid prescription versus consumption in patients undergoing simple laparoscopic surgery and determine whether a standardized prescription could affect opioid consumption without impacting patient satisfaction and pain scores.

Patients undergoing appendectomy or cholecystectomy were recruited prospectively during two separate time periods (April to June 2017 and November 2017 to January 2018). In phase one of the study, surgeons continued their usual postoperative analgesia prescribing patterns. During the second phase, a standardized prescription was implemented based on results from the first phase. The primary outcome was the quantity of opioid medication prescribed and consumed. Secondary outcomes included patient satisfaction with analgesia and disposal methods for unused opioids.

In the first phase, the median number of opioid pills prescribed was 20 and the median number consumed was 2, with over 2500 unused pills. Fewer than 10% of patients received education regarding proper disposal of unused opioids and fewer than 5% had disposed of the unused opioids. Based on these results, a standardized prescription was implemented. During the second phase, there was a significant decrease in the number of opioid pills prescribed (10) and consumed (0). Over 95% of patients reported satisfaction with their analgesia. The number of patients receiving opioid education increased (44%). Overall there was a 56% decrease in the number of opioids prescribed.

Implementation of a standardized prescription based on a quality improvement intervention was effective at both decreasing the number of opioids prescribed and increasing patient education.
MEASUREMENT & EVALUATION
LA MESURE ET L’ÉVALUATION
DO CARDIOLOGIST INCREASE THEIR MEDICO-LEGAL RISK WHEN THEY OVERUSE OR UNDERUSE DIAGNOSTIC TESTS?
Eileen Whyte, The Canadian Medical Protective Association
Lisa A. Calder, The Canadian Medical Protective Association
Eileen Whyte, The Canadian Medical Protective Association
Jun Ji, The Canadian Medical Protective Association
Sacha Bhatia, Women's College Hospital Institute for Health Systems Solutions and Virtual Care

Choosing Wisely Canada has issued evidence-based recommendations for cardiology diagnostic tests. Recommendation uptake has been varied and medico-legal risk concerns may be a contributing factor. Using the Canadian Medical Protective Association’s medico-legal, we determined the frequency of cardiologist medico-legal cases due to diagnostic test overuse and underuse.

We performed a descriptive analysis on all closed cases (civil-legal, regulatory [College], and hospital) involving cardiologists (2008-17). We used a coding framework to determine the provider, team, and system contributing factors. We defined underuse as when a peer reviewer opined that the cardiologist did not perform an indicated diagnostic test and overuse as when a diagnostic test was not clinically indicated.

There were 2,822 cases featuring diagnostic error among all physician members and 359 closed cases involving cardiologists. Half (181/359) contained peer expert criticism based on some aspect of care provided to the patient and 2.4% (67/2822) of cases involved cardiologists with diagnostic issues (misdiagnosis, missed or delayed diagnosis). Failure or delay to perform a diagnostic test or procedure was identified in 0.74% (21/2822) of those cases including: 14 cases of diagnostic imaging and 9 cases of diagnostic procedures. Contributing factors included: deficient patient assessment, communication breakdown between physicians, and inadequate test management systems. We did not identify a single case involving overuse of cardiology tests.

These findings suggests that medico-legal cases due to cardiology diagnostic test underuse are rare and supports the use of evidence-based recommendations such as Choosing Wisely Canada.
THE FREQUENCY OF REPEAT ANA TESTING IN ONTARIO:
A POPULATION-BASED STUDY
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Zhan Yao, Institute for Clinical Evaluative Sciences
Natasha Gakhal, Women’s College Hospital
Amanda Steiman, Sinai Health System
Gillian Hawker, Women’s College Hospital
Jessica Widdifield, University of Toronto

Background:
Duplicate antinuclear antibody (ANA) lab testing can be unnecessary, potentially harmful, and costly.

Goal:
To assess the frequency of repeat ANA testing in the province of Ontario, Canada and evaluate factors associated with repeat testing.

Methods:
We identified all repeat ANA tests within 12 months of a previous test performed over 2008-2016 among adults within the Ontario Laboratories Information System (OLIS), a nearly population-wide laboratory database linked with health administrative data. To assess patient and provider-level factors associated with the odds of repeat testing within 12 months of a previous test, as well as any repeat test in which the previous test was positive, we fit two separate marginal logistic regression models by means of generalized estimating equations, both models accounting for physician and patient demographic and clinical characteristics.

Results & Impact:
In total, 587,297 ANA tests were performed between 2008 and 2016, and 25% were repeats. Among 81,066 tests repeated within 12 months, 41% had a preceding positive result.

Comparing rheumatologists to other specialties, rheumatologists performed more repeat tests within 12 months (36% vs 11%).

After adjusting for patient and physician characteristics, the odds ratio (OR) of repeat testing within 12 months on patients with prior positive test results was 2.51 (95% CI 1.87, 3.39) for rheumatologists, and 1.31 (95%CI 1.02, 1.69) for family physicians.

Lessons Learned:
We observed a high frequency of repeat ANA testing in Ontario overall, many of which were performed on patients with prior positive tests. Rheumatologists were most likely to perform repeat testing.
APPROPRIATENESS OF PARENTAL B12 ADMINISTRATION IN A REAL-WORLD POPULATION
William Silverstein, University of Toronto
Yulia Lin, Sunnybrook Health Sciences Centre
Christoffer Dharma, Institute for Clinical Evaluative Sciences
Ruth Croxford, Institute for Clinical Evaluative Sciences
Matthew Cheung, Sunnybrook Health Sciences Centre

Introduction:
Vitamin B12 deficiency causes severe pancytopenia and cognitive dysfunction. Randomized controlled trials have demonstrated oral B12 supplementation is as effective as parenteral B12 administration in improving symptoms and increasing B12 levels. Despite this, many patients receive intramuscular (IM) B12. We assessed the prevalence of inappropriate B12 supplementation.

Methods:
We undertook a retrospective cohort study using health system databases within ICES, including the Ontario Laboratories Information System, and the Ontario Drug Benefit. We included all persons aged 65 and older that received an IM B12 prescription at least once, from January 1, 2011 to September 30, 2015. Our primary outcome was proportion of inappropriate B12 supplementation. This was defined as persons with a normal serum B12 level (≥221 pmol/L) or those without a documented B12, in the 12 months prior to receipt of their first intramuscular B12 injection. Logistic regression identified predictors of inappropriate B12 supplementation.

Results & Conclusion:
A total of 146,850 Ontarians received at least one IM B12 prescription during the study interval. 25.5% (n=37,487) of persons received IM B12 despite a normal B12 level in the preceding year. 38.2% (n=56,128) of persons received intramuscular B12 without a B12 test during the preceding 12 months. Being female, older, and having higher ADG co-morbidity scores predicted inappropriate receipt of IM B12. Physician factors that predicted inappropriate B12 prescribing included being male, a Canadian medical graduate, or having practiced for longer. Further studies should assess drivers of this practice, such that initiatives to reduce this unnecessary care can be tailored.
VITAMIN D TESTING: A DATA-DRIVEN APPROACH TO IDENTIFY OVER-UTILIZATION

Jennifer Taher, University of Toronto
Jeannie Callum, Sunnybrook Health Sciences Centre
Geetha Mukerji, Women’s College Hospital
Alison Culbert, Sunnybrook Health Sciences Centre
Lisa Del Giudice, Sunnybrook Health Sciences Centre
Jay Silverberg, Sunnybrook Health Sciences Centre
Andrea Goncz, Sunnybrook Health Sciences Centre
Suzanne Waldman, Sunnybrook Health Sciences Centre
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Goal:
Choosing Wisely recommends against routine testing for 25-OH vitamin D deficiency in low risk adults. In line with this, the current project aimed to identify inappropriate testing rates of vitamin D at Sunnybrook Health Sciences Centre (SHSC) using data-driven approaches.

Methods:
Inappropriate utilization was defined by the following criteria: (1) repeat testing after a normal result (75-250 nmol/L) within 12 months; (2) repeat testing within 3 months; (3) more than two tests within 12 months. Six years of test ordering patterns was collected and assessed. A questionnaire was circulated to physicians to understand ordering practices.

Impact:
The number of inappropriate vitamin D tests doubled since 2013 from 6.9% to 11.9% of all tests. Of ~700 overall tests that were considered unnecessary, 55% were inappropriate by criteria 1, 38% by criteria 2 and 7% by criteria 3. Substantial repeat testing occurred within 1 month, frequently after a previously normal result. Inappropriate tests originated from both inpatient and outpatient units.

Challenges:
Physician feedback revealed that previous test results in the provincial EMR often were not searched. Additional contributors to inappropriate orders included ease of test selection on printed requisitions and lack of internal hospital guidelines for orders.

Lessons Learned:
A data-driven approach can be employed to identify causes of over-utilization and guide interventions. Based on data-analysis, targeted interventions can be developed to reduce inappropriate vitamin D and other over-utilized laboratory testing. Improvements at SHSC should include modification to the test order process, inter-professional education, and hard-stops on repeat testing <3 months.
ROUTINE CREATINE KINASE TESTING DOES NOT PROVIDE CLINICAL UTILITY IN THE EMERGENCY DEPARTMENT FOR DIAGNOSIS OF ACUTE CORONARY SYNDROMES

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Jorden Arbour, University of Manitoba
Kristjan Thompson, University of Manitoba
Colette Seifer, University of Manitoba

Background:
Despite the high sensitivity and negative predictive value of contemporary high-sensitivity troponin T assays (hsTnT), creatine kinase (CK) continues to be routinely tested for the diagnosis of acute coronary syndrome (ACS). We conducted a study to identify the clinical utility of routine CK measurement, its relevance in clinical decision making in the era of hsTnT, and the potential cost-savings achievable by limiting its use.

Methods:
We conducted a retrospective review of all adult patients presenting to a tertiary care center in the year 2017. We identified patients presenting with cardiac complaints who had non-diagnostic hsTnT and positive CK. These patients underwent chart review to determine whether a diagnosis of AMI was made.

Results:
A total of 36,251 presentations were reviewed. 9951 had cardiac complaints and 8150 had CK measured. 82% of these patients had hsTnT and CK measured; 2012 of these patients had non-diagnostic hsTnT with positive CK. Of these 2012 patients, only 1 was subsequently diagnosed with AMI (0.012%). CK provided no diagnostic benefit over hsTnT alone in >99.9% of cases.

Conclusion:
Routine CK testing does not provide a significant benefit to patient care and therefore represents an unnecessary system cost. Routine CK testing for the diagnosis of AMI should be eliminated from emergency departments in the era of hsTnT assays.
INVESTIGATING FAMILY PHYSICIAN KNOWLEDGE OF THE COST AND RADIATION DOSE OF DIAGNOSTIC IMAGING TESTS (FaPoCaRDI STUDY)
Christine Campbell, Dalhousie University
Gailyne MacPherson, Director of Provincial Diagnostic Imaging Services Health

Background:
Diagnostic imaging (DI) tests are frequently ordered without clinical benefit. The largest number of DI are ordered by family physicians (FPs). We believed that cost and radiation dose are important to FPs and that awareness of how their practice compares with peers will influence their DI use.

Methods:
We conducted a survey of FPs, to assess knowledge of cost and radiation dose of DI and an audit of DI use before and after feedback on DI use, with peer comparison.

Impact & Results:
33.3% of FP and 90% of residents responded to the survey. 44.8% of FP and 25% of residents felt that it is part of their jobs to know the cost of DI, and none reported that they did not consider radiation dose before ordering DI. Regarding the feedback, 48.28% of FP found it useful, although only 17.4% reported a decrease in DI use following the intervention. 70% of FPs admitted to ordering unnecessary tests to reassure patients, with 90% of FP reporting pressure from patients to order tests. Estimation of cost was very inaccurate, with the majority respondents underestimating costs of common DI by >50%.

There was no change in the use of DI in the 12 months after the DI report.

Lessons Learned:
Although FPs profess to being concerned with issues of cost and radiation dose, their estimates of the cost of DI tests significantly underestimated the true costs. Practice patterns did not change in the year following feedback on DI use.
WITH THE USE OF OUR HOSPITAL’S REAL-TIME PHYSICIAN ORDERING DATA, WE HOPE BEGIN A DEPARTMENTAL WIDE AUDIT AND FEEDBACK STUDY TO REDUCE PHYSICIAN ORDERING OF THREE SPECIFIC TESTS.

Our main goal is to evaluate the effectiveness and sustainability of changing ED physician ordering behavior, through educational and audit and feedback interventions.

The following three tests will be targeted:

- Rib View X-rays: an unnecessary test for which a positive result does not change management
- 3-View Chest X-ray: an unnecessary test which does not add additional information to a standard Chest X-ray
- Urine Culture: a common test that is often unnecessarily ordered, which provides no benefit if ordered in the wrong context. If incorrectly ordered, it carries potential harms to patients from treating false positive results

These tests were selected based on strong evidence supporting their overuse, with published guidelines on the appropriate circumstances for ordering them. An initial internal audit reveals a significant percentage of inappropriate ordering with wide physician variability.

Intervention:

1) Education: a video highlighting evidence and guidelines on the appropriateness of ordering these tests. E-mail/physical reminders to reinforce the educational intervention.

2) Audit and Feedback: Physicians will receive their ‘pre-intervention’ ordering frequency (scorecard) for these three tests vs. the group average. Repeat scorecards at 3 and 6 months will be provided.

After 6 months, we will discontinue educational reminders and scorecards in order to evaluate the sustainability of our intervention for reducing ordering of these three tests.
REDUCING FREE THYROID HORMONE TESTING AT ST. MICHAEL’S HOSPITAL (SMH): A SECOND PDSA CYCLE

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Daniel Beriault, St. Michael’s Hospital
Lisa K. Hicks, St. Michael’s Hospital
Julie Gilmour, St. Michael’s Hospital

Background:
Women’s College Hospital (WCH) implemented a fT4/fT3 reflexive algorithm in 2015 with a 49% reduction in testing. This project was scaled to SMH in 2016 with a 21% reduction. The smaller impact at SMH was attributed to a relatively smaller reduction in fT3 testing (18.8% vs 64%).

Goal:
To optimize the initiative at SMH by implementing a 2nd PDSA cycle aimed at reducing fT4/fT3 testing by 35% from baseline.

Methods/Activities:
Two change ideas were implemented: 1) the reflex algorithm was modified to a two-tiered reflex, in which fT3 was only processed if TSH was low & fT4 was normal, and 2) a ‘TSH only’ option was made available. Calls to add-on fT4/fT3 tests were tracked for 4 weeks as a balancing measure.

Impact:
The introduction of a ‘TSH only’ option resulted in a 23% decrease in reflexive testing (n=2151 vs 1665/month) with only 2 add-on calls. FT4 testing decreased by 16% (230 vs 192/month) in the 4 months post-implementation, whereas, fT3 testing increased by 30% (n=117 vs 153/month). Further investigation revealed an error in the original coding for the 2nd tier of the algorithm.

Challenges:
Statistical Process Control charts identified an elevation in fT3 after introduction of the original algorithm. Detailed analyses of measures overtime uncovered a coding error.

Lessons Learned:
1) A pre-implementation test environment should be set up to test all aspects and tiers of a reflex algorithm.
2) Post-implementation, it is important to closely monitor data over time to identify, investigate, and ameliorate unintended consequences.
QUALITY OF POSTOPERATIVE DISCHARGE INSTRUCTIONS FOLLOWING PEDIATRIC UROLOGIC SURGERY: IS THE INFORMATION WE PROVIDE TO OUR PATIENTS THOROUGH AND CONSISTENT?

Martha Pokarowski, The Hospital for Sick Children
Alejandro Fernandez-Escobar, The Hospital for Sick Children
Martin Koyle, The Hospital for Sick Children

Background:
Approximately 1500 patients undergo surgery by our institution’s pediatric urology practice annually with up to 90% are performed as outpatient cases. Ensuring adequate and consistent postoperative instructions are provided by surgeons and nurses may limit the number of post-operative concerns that lead to unplanned calls, emails and returns to the hospital. We assessed familial attitudes and potential discrepancies between discharge information provided by surgeons and nurses.

Methods:
A single assessor observed surgical discharge instructions conveyed by the surgeon and nurse. A telephone call to families of patients undergoing day surgery on that same day of the procedure and a follow-up telephone call 48-72 hours following hospital discharge to address their understanding of instructions and presence of post-operative concerns.

Results:
55 families were recruited with 6 (11%) lost to follow-up. 36 (65%) families reported that the information provided by both the surgeon and nurse was very consistent (5 on a 5-point Likert scale), and family-reported clarity of information or satisfaction of information was comparable between the surgeon and nurse. 5 (10%) families indicated that they had outstanding questions related to medication instructions or follow-up appointments. Of the discussions observed, the most common discrepancies identified were related to postoperative pain medication (dosage and time in between doses) and bathing instructions.

Conclusions:
Despite high ratings of parental satisfaction, there are noted inconsistencies in the discharge information provided. The role of EPIC and introduction of My Chart will be considered in further studies.
DISCONTINUING ROUTINE PATHOLOGICAL EXAMINATION OF SPECIMENS RETRIEVED DURING TOTAL HIP AND KNEE ARTHROPLASTY: A REVIEW OF THE EVIDENCE

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Samuel Yoon, University of Toronto
Sarah Ward, St. Michael’s Hospital
Jesse Wolfstadt, Mount Sinai Hospital

Background:
Approximately 50,000 total hip and knee replacements are performed annually in Ontario. Routine practice in Ontario includes sending excised bone for pathologic analysis. An evidence review was conducted to evaluate whether this practice is supported by the literature.

Methods:
Medline, Embase and Pubmed were searched for terms related to cost-effectiveness, utility or usefulness of pathologic examinations of total hip and knee specimens. After initial screening, the identified articles’ references were evaluated for additional reports.

Results:
We identified 17 original articles and one previously published meta-analysis. Five articles concluded that histopathological examination was useful, despite low reported rates of discordant diagnoses (generally defined as differences resulting in a change in management) ranging from 0.2 – 5.4% and variable definitions of discordance. Three articles were either inconclusive or supported histopathological examination despite identifying no confirmed discordant diagnoses. Nine original articles and one meta-analysis concluded that routine histopathological examination was not useful. Several studies reported that positive histopathological findings resulted in further testing or clinical monitoring without clinical evidence of disease and there were also several reports of apparent false-positive histopathological diagnoses.

Impact & Challenges:
Choosing Wisely Canada, in collaboration with the Canadian Orthopaedic Association and Canadian Arthroplasty Society, recently recommended against the routine use of pathological examination for uncomplicated total hip and knee replacement surgery. However, many institutions in Ontario continue to routinely send excised bone for pathological analysis. This review of the literature supports stopping the practice of routine histopathological examination of bone resected during total hip and total knee arthroplasty in Ontario.
ARE RADIATION ONCOLOGISTS FOLLOWING GUIDELINES? AN AUDIT OF PRACTICE IN PATIENTS WITH UNCOMPPLICATED BONE METASTASES

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Choosing Wisely Canada and other best-practice guidelines recommend single-fraction (SFRT) instead of multi-fraction radiation therapy (MFRT) for uncomplicated symptomatic bone metastases. SFRT is convenient for patients, cost-effective, and offers comparable pain relief. Patterns of practice reveal that SFRT is underused, with significant variability across Canada. We audited SFRT use and studied factors that may influence treatment decisions at a large academic tertiary care centre in Montreal, Canada.

Patients who received radiotherapy for uncomplicated bone metastases between February 2014 and March 2015 were reviewed. Age, gender, primary histology, site of metastases and performance status were identified as potential factors affecting fractionation. These were explored by Fisher’s test on univariate analysis and logistic regression for multivariate analysis. Retreatment rates were analyzed with cumulative incidence and compared with Gray’s test.

254 treatments were administered to 165 patients; 85.4% as a single fraction. Patients under 70 years and those with breast histology were more likely to receive MFRT (p=0.04; p=0.0046). Performance status (ECOG) was a significant predictor of fractionation on univariate but not multivariate analysis because of high correlation with young age and breast histology. Patient follow-up was too short to derive definitive conclusions on retreatment.

In accordance with current guidelines, our audit confirms that SFRT use in patients with uncomplicated bone metastases at our centre is high. We identified that patient age, primary histology, and performance status influenced fractionation. Incorporation of this quality indicator into our performance dashboard will allow assessment of retreatment differences and other criteria that may also influence treatment choice.
EVALUATING THE IMPACT OF THE BEST PRACTICE IN MEDICINE (BPiM) FRAMEWORK: A RIGHT-SIZING TEST UTILIZATION CAMPAIGN

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Background:
Health care usage and costs are constantly under scrutiny. Campaigns targeting these issues mainly address over-utilization which increases resource strain; however under-utilization may result in inappropriate patient care. The Best Practices in Medicine (BPiM) project combines a personalized audit and feedback framework with online reflective activities with the aim of right-sizing utilization.

Methods:
Thyroid stimulating hormone (TSH) was the first test targeted for right-sizing. Ordering data was retrospectively collected over 3 months and personalized audit feedback cards were distributed. Practitioners were invited to complete an online learning activity comprised of a guideline refresher and an interactive self-reflective survey. One month after online learning was made available test ordering data was prospectively collected and new audit cards were distributed.

Impact:
The educational activity had a 30% participation rate. Following the audit and module, there was a significant increase in abnormal test results, 13%-39% (p=0.0002), and a significant decrease in number of repeat tests from 4.1-3.2 (p=0.049). The BPiM project demonstrated initial behaviour change and raised awareness among clinicians regarding appropriate test utilization.

Challenges:
1) effectively engaging practitioners in CPD activities;
2) ability to compile data and distribute 67 scorecards in a timely fashion.

Lessons Learned:
Linking reflective activities to maintenance of certification hours provides added incentive for clinician engagement. Computer programming for automation of data analysis can be used to streamline scorecard development. By championing appropriate test utilization rather than health resource usage reduction, the right care can be provided to the right patient at the right time.
PERCEIVED IMPACT OF THE RECOMMENDED USE REQUISITION (RUR) ON REFFERRALS FOR BONE MINERAL DENSITY TESTING

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Sonya Allin, University of Toronto
Sandra Kim, Women’s College Hospital
Susan Jaglal, University of Toronto

Background:
Evidence of inappropriate bone mineral density (BMD) testing has been identified in terms of overtesting in low risk women and undertesting among patients at high risk. To address this care gap, our team has created and implemented a Recommended Use Requisition (RUR) for BMD testing [https://www.osteostrategy.on.ca/toolbox/resources-for-health-professionals/hpeotools/].

The RUR was developed through the Ontario Osteoporosis Strategy by a team of researchers at Women’s College Hospital. It has been validated by the Ontario BMD Working Group and in relation to the current clinical guidelines for BMD testing, the OHIP Fee Schedule, and recommendations from Choosing Wisely Canada. Choosing Wisely Canada has recently partnered with our team. The objective of this study is to examine the perceived impact of the RUR on BMD testing and barriers and enablers to using the RUR in practice from the perspective of family physicians (FPs).

Methods:
We will be implementing an online survey of FPs in one of the largest Family Health Teams in Ontario. We will ask FPs about the perceived impact of the RUR on appropriate BMD testing and the specific barriers and enablers to using the RUR in practice. Results of the survey will be available in April 2019.

Results & Conclusions:
It is expected that FPs will report that the implementation of the RUR has led to more appropriate referral for BMD testing. The results of this study will inform future iterations of the form and lead to the widespread implementation and adoption of the RUR.
THE DIRECT HARMs OF OVERUSE OF MEDICAL DIAGNOSTICS

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The overuse of medical diagnostics is currently causing significant morbidity and mortality across the world. However, the extent of the harm has not yet been quantified. Concerns regarding the overuse of medical diagnostics have typically focused on the wasted healthcare dollars, rather than adverse health outcomes. Quantifying the clinical harms of overuse of any medical diagnostic requires accurate data on the incidence of harm and the rate of overuse of any particular diagnostic test. To begin quantifying the clinical harms of overuse, our group examined this question in detail in regards to screening colonoscopy. To accomplish this, my colleagues and I performed a systematic review of the direct harms of screening colonoscopy and a systematic review of the rates of overuse of screening colonoscopy in the United States. We found most studies systematically underestimate the incidence of harm (e.g., perforations, bleeding) due to various types of sampling bias. Studies examining the overuse of screening colonoscopy vary significantly in their estimates with a range of overuse from 17%-88%. Using studies with the only the highest quality of methods, we estimate the total number of harmful events that occur due to overuse of screening colonoscopy in the United States.

This talk uses screening colonoscopy as an example, to explore the general problem of the underreporting of harm, examining the causes, and their clinical implications. Quantifying the harms of overuse of medical diagnostics is still in its infancy, but hopefully, this effort can raise awareness of the gravity of the current problem.
THE USE OF ANTI-NUCLEAR ANTIBODY AS A SCREENING TEST IN NEWFOUNDLAND AND LABRADOR

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Patrick Parfrey, Memorial University of Newfoundland
Edward Randell, Memorial University of Newfoundland
Sam Aseer, Memorial University of Newfoundland

Background:
Choosing Wisely Canada (CWC) has made the recommendation “Don’t order anti-nuclear antibody (ANA) as a screening test in patients without specific signs or symptoms of systemic lupus erythematosus (SLE) or another connective tissue disease.”

The incidence of SLE is 10-250/million in North America, with females representing 90% of patients. Among patients with SLE, 85% will have disease activity before age 55. Anti-double stranded DNA (anti-dsDNA) is used in patients with confirmed SLE to monitor disease activity. The goal of this study is to assess ordering patterns of ANA and anti-dsDNA in Newfoundland and Labrador (NL).

Methods:
A retrospective analysis of ANA and anti-dsDNA tests ordered in NL between April 1 2016-March 30 2018 was completed. The number of tests ordered per physician, medical specialty, and patient age group were reviewed.

Results:
A total of 24,428 ANA and 31,817 anti-dsDNA tests were ordered. Of ANA tests, 23% were in patients over 65 years of age, 33% were in male patients, and 7% were repeated tests. The most common ordering specialties, of those a with known doctor, include general practice (57%), internal medicine (11%) and dermatology (10%).

Conclusions:
The number of ANA and anti-dsDNA tests ordered in NL is high (23064 tests/million annually) relative to the incidence of SLE, particularly in males and patients over 65. On average, for one potential diagnosis there are over 200 ANA tests ordered. There is a need to implement the CWC recommendations for ordering ANA in NL to reduce overuse of the test.
ARE LOW BACK PAIN CT REFERRALS FROM FAMILY PHYSICIANS CONCORDANT WITH THE CHOOSING WISELY RECOMMENDATIONS?
A RETROSPECTIVE MEDICAL RECORD REVIEW

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Bethan Copsey, University of Oxford
Holly Etchegary, Memorial University
Andrea Pike, Memorial University
Patrick Parfrey, Memorial University
Amanda Hall, Memorial University

Background:
Choosing Wisely (CW) recommends ordering Computed Tomography (CT) imaging for patients with low back pain (LBP) only if red flag indicators are present.

Goal:
This study evaluated family physicians’ reasons for ordering lumbar-spine CT images for patients with LBP and the number concordant with CW recommendations.

Activities & Methods
A retrospective medical record review of all family physician-ordered adult lumbar-spine CT images between January 1st, 2016 and December 31st, 2016 was conducted in Newfoundland and Labrador. Non-spinal cases and paediatric cases were excluded. Each CT image was linked with the corresponding referral via two databases (PACs and Meditech). Free-text data stating the reason for referral was coded into three categories: red flag indicated (CW-concordant), radicular syndrome, or nonspecific LBP.

Results & Impact:
3623 lumbar-spine CTs were included for adults (54.5% female) with a mean age of 54.7 (SD 14 years). 75.4% were to confirm radicular syndrome and 10% were for non-specific LBP. Only 5.4% (95% CI: 4.3-5.7%) were for a suspected red flag condition and thus concordant with CW recommendations.

Challenges & Lessons Learned:
Many referrals lacked information or a clear rationale. Modifying the referral form to be explicit may help with future audits. Overall, a very small percentage of CTs were ordered in concordance with CW recommendations. The majority of CTs were ordered to confirm radicular syndrome, which requires further investigation regarding their utility of the test for the patient.
MEDICAL EDUCATION
LA FORMATION MÉDICALE
SIGNAGE AS AN INTERVENTION ON A GENERAL MEDICINE WARD TO REDUCE UNNECESSARY TESTING
Evan Wiens, University of Manitoba
Izabella Supel, University of Manitoba
Max Rady, University of Manitoba
Justine Gallardo, University of Manitoba
Colette Seifer, University of Manitoba

Background:
Up to 30% of medical spending in developed countries offers no benefit to patient care. Unnecessary testing is not only wasteful economically, but can be injurious to patients. Studies have shown that interventions such as education, auditing, and restrictive ordering can reduce unnecessary testing. However, these interventions are time- and resource-intensive. We conducted a study to determine if the passive intervention of placing signs on clinicians’ computers was effective in reducing unnecessary testing.

Methods:
We identified two acute internal medicine wards at an academic tertiary care center on which all orders are placed via computer. On one ward (Ward A), we placed a sign outlining recommendations regarding responsible test-ordering. The other ward (Ward B) acted as a control. Data from Ward A the previous year acted as a historical control. Data was collected for each patient admitted during the 6-month study period to determine whether test-ordering practices differed between the two wards.

Results:
A total of 1645 patients accounting for 17,786 patient-days were included in the study. During the study period, fewer tests were ordered on Ward A than Ward B (7.38 vs 8.20 tests/patient-day; p<0.01). Additionally, significantly fewer patients on Ward B received 1 complete blood count/day (36.1% vs 42.5%, p=0.04). Similar, although less robust, results were found when comparing Ward A to the historical control. This effect was most pronounced among patients admitted for 7-30 days.

Conclusion:
The passive, easily-implemented, cost-negligible intervention of placing signs on clinicians’ computers outlining recommendations for responsible test-ordering significantly reduced unnecessary testing.
INCORPORATING RESOURCE STEWARDSHIP THROUGH THE LENS OF EVIDENCE BASED MEDICINE INTO THE UNIVERSITY OF ALBERTA UNDERGRADUATE MEDICAL EDUCATION CURRICULUM

Virginia Goetz, University of Alberta
Brandy Love, University of Alberta
Victor Do, University of Alberta

Background:
Advances in new technologies, tests and therapies require physicians to apply principles of Evidence Based Medicine (EBM) to make informed decisions about patient care and resource stewardship. Graduation surveys at the University of Alberta (UofA) indicated approximately 70% of students wanted more training and education in EBM.

Goal:
The main goals were:
1) enhance training in EBM to increase student understanding and comfort and
2) Apply principles of EBM to case based activities that integrate Choosing Wisely Canada (CWC) recommendations for resource stewardship.

Activities:
In part one, we completed a tagging and mapping project to identify how well the existing curriculum met objectives for understanding EBM at a level required by national competencies (CanMeds and LMCC). The process revealed deficiencies in competencies related to integration and lay communication of evidence. Part two addressed these deficits through creation of new curriculum that integrated CWC recommendations into cased-based activities as a platform for practicing integration and communication of EBM.

Impact:
Team Based Learning sessions and Communications Cases addressing stewardship in screening, diagnosis and treatment were implemented into curriculum. Preliminary results of online surveys demonstrate after the implementation, students understanding and confidence using principles of EBM to approach resource stewardship increased.

Challenges & Lessons Learned:
Challenges included identifying optimal ways to integrate resource stewardship into an already expansive curriculum. Using an EBM lens, in accordance with accreditation competencies, allowed us to successfully implement resource stewardship into curriculum. Others may want to use this approach to identify areas for implementation within their curriculum.
TEACHING THE FUTURE LEADERS IN HIGH VALUE CARE: LESSONS FROM THE HVPAA FUTURE LEADERS PROGRAM

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Remus Popa, University of California Riverside
Venkata Andukuri, Creighton University
Kencee K. Graves, University of Utah
Christopher J. King, University of Colorado School of Medicine
Robert Fogerty, Yale University

Goal:
Future Leaders Program (FLP) offered by the High Value Practice Academic Alliance (HVPAA) is a national program that supports trainees committed to High Value Care (HVC) and advances their understanding of HVC Quality Improvement (QI).

Implementation:
The participants complete educational modules on HVC, QI, and leadership, while leading an improvement project at their home institution. The FLP directors provide mentoring to supplement the local mentor's contribution and help the trainees working on similar projects exchange ideas and learn from each other. Additional activities include participation in monthly conference calls with the HVPAA, which include presentations related to HVC QI and opportunities to contribute to collaborative publications.

Impact:
After the one-year curriculum, the FLP participants reported statistically significant improvement in their knowledge and skills related to HVC as well as fewer low-value behaviors (comfort with skills of factoring cost into patient care, incorporating patient values in decisions, not repeating tests obtained previously, not ordering multiple tests at once, initiating conversations on cost with the patients). Over 30 participants presented more than 60 posters at national conferences.

Challenges & Lessons learned:
From our observations the main barriers for the residents and fellows to participate and succeed in projects are related to the local infrastructure and lack of educational or mentoring resources. In some cases, the mentors serve only as a faculty signee of the projects and their involvement and expertise is limited.
EDUCATING WISELY TO CHOOSE WISELY: ENHANCING MEDICAL EDUCATION IN LABORATORY MEDICINE

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Nic Fairbridge, Memorial University of Newfoundland
Vernon Curran, Memorial University of Newfoundland
Altaf Taher, Memorial University of Newfoundland

Introduction:
The majority of formal laboratory medicine instruction within medical school curricula typically takes place during the pre-clinical years, often in the form of didactic lectures. This pre-clinical teaching provides a solid foundation in the principles of laboratory medicine but does not build experience or understanding of how this applies to clinical practice. Without sufficient exposure to laboratory medicine services, clinicians may have unrealistic expectations of the process or the relevance of investigations, ordering unnecessary tests and contributing to wasteful spending in our healthcare system.

Objectives:
This environmental scan will gather information from practicing physicians in Newfoundland and Labrador on the adequacy of undergraduate teaching in laboratory medicine and assess the need for a clerkship rotation in this field.

Methods:
A brief survey was developed, piloted, and subsequently distributed electronically to physicians from all specialties across Newfoundland and Labrador. Questions included self-reflection of physician confidence in specific laboratory medicine competencies and open-ended assessment of educational needs.

Results:
Results of this study are pending and anticipated to be completed by February 2019.

Conclusion:
The appropriate use of laboratory medicine services is an important component of resource management within our healthcare system. This environmental scan should provide insights into the educational needs of practitioners and the potential utility of teaching these skills within a clerkship rotation at the undergraduate medical education level.
TOP RESEARCH STUDIES OF 2018 CONSISTENT WITH PRINCIPLES OF THE CHOOSING WISELY CAMPAIGN
Roland Grad, McGill University

An annual article series in American Family Physician highlights the consistency between two efforts to foster change in practice. 1 - The Choosing Wisely campaign, and 2 - The Daily POEM (Patient-Oriented Evidence that Matters). The latter are concise summaries of the latest clinical research on outcomes that matter to patients.

Methods:
In 2018, 255 POEMs were emailed to about 25,000 physician members of the Canadian Medical Association. These physicians used the validated Information Assessment Method (IAM) to reflect on POEMs in the context of a continuing medical education (CME) program. The IAM questionnaire captured their intention to use this POEMs information for a specific patient and any expected health benefit from using this information for decision-making.

Results:
On average, 1,574 physicians completed an IAM questionnaire for each POEM. The top POEMs of 2018 consistent with the Choosing Wisely campaign were identified by counting the number of times these physicians endorsed a questionnaire item about an ‘action to avoid in practice’. These POEMs point to studies of medical practices that should be shelved, ranging from broad spectrum (compared to narrow spectrum) antibiotics in children with acute respiratory infection to daily (compared to as needed) inhaled steroids for mild asthma to decompression surgery for adults who have received physical therapy for a shoulder impingement syndrome.

Lessons Learned:
In an ongoing CME program, the perspective of physicians provides data to identify which new research studies are consistent with principles of Choosing Wisely. Knowing more about these top research studies is a step towards realizing improved health care.
FACE-TO-FACE ACADEMIC DETAILING: USING CLINICAL LEADERS TO EDUCATE THEIR PEERS
Robert Wilson, Quality of Care NL/Choosing Wisely NL
Pat Parfey- Quality of Care NL/Choosing Wisely NL
Brendan Barrett- Quality of Care NL/Choosing Wisely NL
Lynn Taylor- Quality of Care NL/Choosing Wisely NL

Goal:
To provide face-to-face academic detailing sessions to family physicians in the Eastern Health (EH) Region of Newfoundland and Labrador (NL).

Activities:
In 2017, Quality of Care NL/Choosing Wisely NL (QCNL/CWNL) created a peer comparison program that provides clinicians with personal prescribing/ordering data through a secure email login. To build upon the email intervention, and based upon survey resulting indicating that physicians would like the opportunity to participate in academic detailing sessions, QCNL/CWNL created an academic detailing program to influence behavior change. In 2017, three physicians participated as QCNL/CWNL clinical leaders to provide face-to-face academic detailing in the Eastern Health region. Utilizing QCNL/CWNLs journal, ‘Practice Points Vol 1’, clinical leaders visited family physicians in-clinic to discuss the research within the journal, recommendations and guidelines for care, and personal ordering patterns. The success of the collegial approach to behavior change prompted QCNL/CWNL to develop a Clinical Leader Program comprised of volunteer physician champions who were willing to conduct clinic visits with peer physicians. In 2018, utilizing the content of ‘Practice Points Vol 2,’ 12 family physicians were provided clinical leader training and conducted 26 CME accredited sessions with peer physicians within the Eastern region.

Impact:
In 2017, 90% of 290 General Practitioners (GPs) received face-to-face academic detailing. In 2018, a total of 97 family physicians and GP’s participated in the face-to-face academic detailing session and an additional 144 received a hand delivered copy of Practice Points along with their individual prescribing/ordering information.

Challenges:
Face-to-face sessions have been limited to the EH Region due to geographical and travel restrictions of clinical leaders. While recruitment effort has been made to engage clinical leaders outside the Eastern region, there has been limited uptake. Web technology has been identified as a possible solution.

Lessons Learned:
Successful face-to-face academic detailing involves a well-organized effort with recognized champions.
A COMMUNITY OF PRACTICE (CoP) FOR CLINICAL PERTINENCE (CP) ACROSS A LARGE UNIVERSITY-BASED HEALTHCARE NETWORK:

LESSONS LEARNED
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Samuel Benaroya, McGill Réseau universitaire intégré de santé
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Annie Leger, McGill Réseau universitaire intégré de santé
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Rita, Ziadé, McGill Réseau universitaire intégré de santé

Goal:
To describe a CoP for CP within the McGill Réseau universitaire intégré de santé (RUIS).

Background:
The McGill RUIS supports healthcare delivery, teaching and research for 23% of the population of Québec living in an area extending from the American border to the far north. Healthcare is provided in a wide variety of settings including local clinics and hospitals, regional hospitals, and an academic healthcare centre.

Activities:
In February 2018 following a survey of needs, the Directors of Professional Services (DSPs) of the RUIS launched a CoP for CP with the goal of sharing knowledge and best practices across this vast territory. A coordinating committee (CC) was created to lead the activities of the CoP and a website that serves as forum for discussion and a library of resources was developed. Activities to date have included webinars on topics such as appropriate use of transfusion, prehabilitation for patients undergoing surgery, and evaluation of the pertinence of imaging studies, as well as a workshop-like session on managing change.

Impact:
Participation in the webinars has increased steadily. Attendees now include not only the DSPs and quality leads but others with interest in quality improvement (QI). Discussion has begun regarding a possible network-wide QI intervention.

Lessons learned:
Lessons learned include the need to be flexible and allow for organic growth of a CoP and for the CC to be responsive to different realities. Shared leadership of the CoP will develop over time and with a common focus as now planned.
NEW LIST/RECOMMENDATIONS
LA NOUVELLE LISTE/RECOMMANDATION
DEVELOPING CHOOSING WISELY CANADA RECOMMENDATIONS FOR CRITICAL CARE NURSING – CHALLENGES AND OPPORTUNITIES
Melanie Gauthier, Canadian Association of Critical Care Nursing
Aden Hamza, Canadian Nurses Association
Jane de Boer, Canadian Association of Critical Care Nurses

The Canadian Nurses Association (CNA) acknowledges the ongoing overuse of tests, treatments and procedures, and has partnered with nursing specialties to create Choosing Wisely Canada (CWC) Nursing Lists. Nurses are key members of the healthcare team and play a significant role in the reduction of overused tests, treatments and procedures. We are and remain vital to the implementation and change of practices to provide and improve safe patient care. CNA is partnering with the Canadian Association of Critical Care Nurses (CACCN) to develop the Critical Care Nursing List.

This presentation will share the process of creating the CWC Critical Care Nursing List, focusing on the challenges and opportunities that emerged in bringing together a diverse group of critical care nursing experts to address overuse. The diversity of members both geographically and across levels of leadership and practice (i.e. pediatric, adult, education and research) led to challenging discussions around conflicting practice cultures in critical care nursing and presented logistical difficulties in connecting members across Canada. The broad range of perspectives also created enriching discussions and encouraged challenging of current practice, with the working group applying strategies to find common ground through evidence. The lessons learned from developing these recommendations will inform the development of future nursing lists and may provide insights for other professional societies developing their own lists. We will also share our dissemination strategy moving forward to ensure that all nurses, our healthcare colleagues and the patients and their families will benefit from this important and timely work.
INTerventions to Reduce Overuse and Underuse of Diagnostic Tests and Treatments in Managing Musculoskeletal Disorders: A Scoping Review Informed by Choosing Wisely Canada Recommendations

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Luc. J. Hébert, Université Laval
Alexia Zidarova-Carrié, Université Laval
France Légare, Université Laval

Background:
Over 12% of all Choosing Wisely Canada (CWC) recommendations for 25% of medical specialties target overuse and underuse of tests and treatments in managing musculoskeletal disorders (MSKD). Interventions are now needed to implement the recommendations.

Objective:
Informed by CWC recommendations, to map the evidence about interventions designed to reduce overuse and underuse of tests and treatments in MSKD.

Methods:
We conducted a scoping review. We systematically searched eight electronic databases and grey literature from inception to July 9th 2018. Two independent reviewers included studies based on predefined criteria: 1) no restriction of study design, participants and interventions and 2) outcomes: reduced overuse and underuse of a test or treatment in MSKD. We extracted categories of MSKD, type of service and definition of outcomes. We charted data based on CWC recommendations. We used descriptive statistics and frequency counts.

Results:
We screened 8461 citations, read 248 full texts and included 115 eligible articles. MSKD covered by studies were low back or neck pain (37%), osteoporosis (25%), general musculoskeletal pain (17%), knee/hip osteoarthritis (10%), knee/ankle injuries (9%), shoulder pain (1%) and spondyloarthritis (1%). All interventions aimed to reduce overuse except for osteoporosis (underuse). Interventions addressed services such as imaging tests (e.g. radiograph, MRI), orthopedic surgery and referrals, pain medication (e.g. opioids, injections) and rehabilitation. Definitions of overuse/underuse outcomes were heterogenous.

Conclusions:
Most interventions were designed to reduce imaging for low back and neck pain. Interventions to reduce overuse and underuse of other services and for other MSKD are urgently needed to meet CWC recommendations.
The Canadian Nurses Association (CNA) recognizes the important role nurses play in decreasing the overuse of tests and treatments, and supporting evidence-informed practice. As the largest health profession in Canada, nurses are critical to ensuring patient safety and quality care. In 2016, CNA developed Choosing Wisely Canada’s (CWC) first non-medical list with recommendations for nurses in a wide range of settings. Since publication of this initial list, CNA has collaborated with our nursing partners to create specialty-specific lists with the goal of supporting nurses in providing quality care in distinct areas of practice.

Through this presentation, CNA will share two specialty nursing lists: infection prevention and control (November 2017) and gerontology (April 2018). Each list was jointly developed by CNA and a member of the Canadian Network of Nursing Specialties, the former with Infection Prevention and Control Canada and the latter with the Canadian Gerontological Nursing Association. The specialized nature of the lists allows for more relevant and timely recommendations to be incorporated into practice, as the gerontology list supports appropriate nursing care for Canada’s aging population, and the infection prevention and control (IPC) list supports nurses in evidence-informed decision-making by identifying inappropriate IPC practices. A review of each list will include highlighting the most relevant recommendations, their importance in practice and knowledge translation strategies. We will also share our plans for evaluation of the awareness and implementation of CWC nursing lists, which may inform the development of future lists for nursing and other professional societies.
By 2019, Choosing Wisely has grown to the point that it is possible to compare Top Five lists across settings of a similar nature. But being differentially placed, even within a shared clinical specialty, creates compelling opportunities to imagine new Top Five Choosing Wisely lists. For example, if a health care system is Canadian or American, or a clinical setting tertiary or community, it may have a significant impact on which five tests or treatments are targeted for cost reduction without compromising clinical outcomes.

Our team was inspired to create a Newborn Care Top Five list, because (1) Top Five lists can vary when the creators are approaching them from different standpoints and (2) there were no other applicable Top Five lists for community hospital neonatal intensive care units in Canada. Our panel consisted of seventeen (17) paediatricians and neonatologists from twelve (12) Level 2 NICU’s in the Greater Toronto Area in Ontario. A priori, we anticipated it would be a challenge to choose and rank items with both good literature evidence and the ability to enact a measureable change in clinical practice. Our participants readily accepted the Delphi technique while the convenience of email correspondence and the enthusiasm of our panelists meant that the creation of our Top Five Choosing Wisely List for Canadian Community Hospital Newborn Care Paediatrics ultimately took only a few months. As a result of this initiative, participating panelists have instituted the recommendations made; however, it remains challenging to fully embark on Quality Assurance projects in a community setting.
GENERATING CHOOSING WISELY CANADA RECOMMENDATIONS FOR NEUROLOGY
Catherine Beyak, University of Calgary
Fiona Costello, University of Calgary
Philippe Couillard, University of Calgary

**Goals:**
Many guidelines in neurology encompass the principles of Choosing Wisely Canada (CWC): resource stewardship, patient safety, and high value care. Despite this, a CWC neurology list is lacking. The Canadian Neurologic Society (CNS) needs to demonstrate commitment to these principles in neurology through endorsing specific CWC neurology recommendations.

**Activities:**
A descriptive process for list generation is outlined. A review of the American Choosing Wisely recommendations and Canadian literature was undertaken to generate an adapted list of ten recommendations. This list was reviewed by CNS board members prior to polling the membership at large via an online survey. Survey results will be included with the recommendations chosen by the CNS.

**Impact:**
There are currently 49 medical societies with CWC recommendations, not including the CNS. This process will disseminate information about CWC principles with the CNS. Additionally, publishing the neurology list will demonstrate CNS support for the CWC campaign.

**Challenges:**
As an initiative powered by a medical student, one challenge has been working with minimal experience on behalf of all the experience within the CNS. Survey participation is anticipated to be a challenge. Information about CWC was included with a single page survey to elicit input for the final list, which should help to encourage participation.

**Lessons Learned:**
There are numerous ways to incorporate resource stewardship into neurology in Canada. Eliciting CNS member input will reveal which recommendations are most valued in Canadian neurology and allow publication of a CWC list on behalf of the CNS.
PATIENT ENGAGEMENT
LA MOBILISATION DES PATIENTS
DEVELOPMENT OF AN ANTIBIOTIC STEWARDSHIP EDUCATIONAL VIDEO WITH PATIENT AND FAMILY ADVISOR INPUT

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Mark Downing, St. Joseph’s Health Centre - Unity Health Toronto

Goal:
There is evidence that patient knowledge about antibiotic use is suboptimal. This may contribute to inappropriate expectations for antibiotics. We sought to develop a patient-centered video, using design thinking, to help support the conversation about the benefits and harms of antibiotics.

Activities:
We identified patient knowledge gaps related to antibiotic use via literature review. The video development team included patient/family advisors (PFAs), antimicrobial stewardship pharmacists, collaborative practice leader, communications associate, and an infectious disease physician at Unity Health Toronto as well as an animator. Three meetings were arranged with PFAs to 1) introduce the topic and confirm interest, 2) identify learning needs, and 3) review and craft script for video. A storyboard and video was developed with clinician input. ([https://youtu.be/N9cuBP2S3C0](https://youtu.be/N9cuBP2S3C0))

Impact:
The video was co-branded with Choosing Wisely Canada and released during Antibiotic Awareness Week 2018 for maximal exposure. We disseminated the video on the Hospital Network and personal social media channels. Combined views on YouTube as of January 2019 was 887.

Challenges:
Two main challenges were measuring impact in a meaningful way and ensuring the targeted audience viewed and understood the video. Future opportunities include working with primary care partners to disseminate the video and combine it with more active interventions.

Lessons Learned:
Development of a patient educational video is feasible and early patient involvement provides valuable insight into key messaging. Although an individual video is insufficient alone to modify behaviour, an engaging educational message will be an important component of future knowledge translation initiatives.
The risks and benefits of diagnostic imaging tests are rarely discussed with patients prior to an imaging referral. In some cases, the risks may outweigh the benefits. These risks include exposure to ionizing radiation and over-diagnosis. We performed a scoping review followed by a systematic review of the scientific literature to determine whether there are evidence-based methods for improving patient knowledge and informed choice in diagnostic imaging. English language articles between 2005 and 2017 were searched for key words and phrases identified in the scoping review (i.e., “patient engagement and medical imaging”): 187/2992 articles were obtained for a full review and 105 original studies were analyzed to categorize knowledge domains and the level of education required to understand the questions (Flesch-Kincaid readability).

Outcome measures for each prospective study and Randomized Control Trial (RCT) were extracted and compared. Of 105 original studies of patients or caregivers, 64 were either cross-sectional observations of patient/caregiver knowledge (N=38, 59%) or prospective trials (N=16, 25%). Only ten (16%) RCTs were identified. Knowledge domains from patient surveys included: how the test was conducted, how the imaging decision was made, the risks and benefits of the imaging test, and descriptions of radiation exposure and risk. Only one RCT of asymptomatic patients measured knowledge improvement and informed choice, this was a web-based patient decision aid. The majority of survey questions required greater than a seventh grade education. More RCTs of patients with low levels of health literacy are needed in order to improve informed choice in diagnostic referrals.
UNDERSTANDING THE ROLE OF THE PUBLIC IN REDUCING LOW-VALUE CARE: A SCOPING REVIEW
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H. Thomas Stelfox, University of Calgary
Daniel J. Niven, University of Calgary

Background:
As initiatives and strategies to reduce low-value care evolve (e.g. Choosing Wisely), it is imperative to understand how citizens, patients, and caregivers become involved. We used scoping review methodology to systematically examine literature describing the involvement of patients and the public in initiatives to reduce low-value care.

Methods:
We searched Medline, EMBASE, and CINAHL from inception to June 28, 2018. Grey literature was searched using the CADTH Tool. Articles were screened in duplicate and were included if they referred to the public’s perception of and/or involvement in reducing low-value care.

Results:
From 5,459 unique citations, 151 articles were included in the review. Included articles were predominantly original research (n=65, 69%), published in the last ten years (n=126, 83%), originating from North America (n=104, 69%). Most articles spoke of low-value care in a general sense (n=65, 43%), with 31% (n=47) focusing on treatments, and 19% (n=29) on tests. Few studies (n=8, 5%) examined stakeholder perspectives about public involvement in reducing low-value care. The majority (n=143, 95%) described or tested a strategy for public involvement in reducing low-value care. Among these, the focus was on identification and prioritization of low-value practices (n=133, 93%), with a smaller number engaging the public in the design, implementation, or evaluation of an intervention to reduce low-value care (n=26, 18%).

Lessons Learned:
There is a rich body of literature examining public involvement in reducing low-value care. Additional research is required to understand the impact of public involvement on reducing low-value care and to explore stakeholder perspectives.
ARE PATIENTS’ BELIEFS AND ATTITUDES TOWARDS DEPREScribing PREDICTIVE OF DEPREScribing SUCCESS?
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Background:
Accurate identification of patients who are amenable to deprescribing may improve deprescribing efficiency. The ability of questionnaires such as the Patients’ Attitudes Towards Deprescribing (PATD) or the Beliefs about Medicines Questionnaire (Specific section) (BMQ-Specific) to successfully identify patients who will deprescribe remains unknown.

Goal:
To determine if screening questionnaires assessing patients’ attitudes and beliefs towards medications and deprescribing can predict deprescribing success.

Activities:
This is a post-hoc secondary analysis of the D-PRESCRIBE trial. 489 community-dwelling adults (≥65 years) who were chronic users (≥3 months) of a benzodiazepine, first-generation antihistamine, long-acting sulfonylurea, or non-steroidal anti-inflammatory drug, were randomized to a pharmacist-led educational intervention or usual care. Baseline responses to the PATD and BMQ-Specific were collected. Receiver operating characteristic curves were constructed and area under the curve was calculated to determine predictive validity for success deprescribing.

Impact:
Eighty-six percent (95% confidence interval [CI] 83-89%) of participants indicated a willingness to deprescribe medications at baseline, yet only 41% (95%CI 37-46%) successfully discontinued their prescription 6-month post-intervention. Six questions were associated with deprescribing success, however, no PATD or BMQ-Specific question – either independently or in combination – was able to meaningfully distinguish which participants succeeded or failed deprescribing attempts at 6-months (AUC < 0.7).

Challenges:
Current questionnaires do not include all critical domains relevant to deprescribing.

Lessons Learned:
Current tools assessing patient’s attitudes and beliefs towards medication use and/or deprescribing have low predictive validity for successful deprescribing. All patients should be invited to trial deprescribing regardless of their initial attitudes and beliefs towards deprescribing.
SPEAK UP FOR YOUR FUTURE CARE: A PAN-CANADIAN INITIATIVE TO BUILD CANADIANS' CAPACITY TO ENGAGE IN ADVANCE CARE PLANNING

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Mary Ann Murray, Canadian Hospice Palliative Care Association
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Introduction:
Upstream thinking is required to mitigate rising health care costs while maintaining quality person-centred care for people who are dying or living with life-limiting illnesses. Advance care planning is a process of reflection and communication on a person’s values, wishes, and preferences for their future care in the event they are unable to speak for themselves. Canadians need to be better empowered to access and benefit from the outcomes of advance care planning.

Goal:
The national Advance Care Planning in Canada “Speak Up” initiative recently launched a 3-year capacity building project in order to increase Canadians’ literacy and capacity to engage in advance care planning.

Activities:
The project has four primary activities to encourage advance care planning: 1) Deliver a multimedia social marketing campaign; 2) Coordinate implementation of community-based workshops across Canada; 3) Develop resources for underserved sectors in health care and law; 4) Lead a strategic planning initiative for pan-Canadian implementation.

Challenges & Impact:
Advance care planning has been found to increase patient and family satisfaction and lower their anxiety, improve quality of life and death, minimize decision-making conflicts, and lead to more appropriate use of health care resources in the final weeks of life. The capacity building project is addressing major barriers to the initiation and follow-through of advance care planning, including lack of public awareness, health professional training and resources, and implementation support.
TOOLKIT ON PATIENT AND PUBLIC ENGAGEMENT IN CHOOSING WISELY CAMPAIGNS

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Goal:
A shared priority of Choosing Wisely campaigns is to work with patients and the public to foster awareness of overuse and promote shared decision-making. Engagement of the public is challenging, and to address this, campaign leaders from 8 countries published an evidence-based framework.\(^1\)
Given diverse campaign contexts and local environments, there is a need to learn about the diversity of efforts. As Choosing Wisely continues to spread, there is a need to provide a resource to foster shared learnings.

Activities:
An environmental scan was conducted to gather cases of patient and public engagement in Choosing Wisely. Individuals leading the campaigns were contacted and interviewed. A summer student (AK), guided by a working group consisting of campaign leaders from 5 countries and two members of the public who serve as the Patient and Public Advisors to CWC developed and reviewed the toolkit. 28 case studies from 12 countries were included, along with relevant resources (e.g. templates, promotional materials etc.).

Impact:
The toolkit provides illustrative cases and tools to support the evidence that when patients and the public are engaged in Choosing Wisely campaigns, they can provide valuable insights around what is important to them. Overall, there is no singular way to engage patients; partnerships, patient roles and responsibilities, campaign messaging, and physician interactions vary depending on national context.

Lessons Learned:
The toolkit is advancing knowledge on innovative approaches to engaging patients and the public in health system quality and safety efforts, and specifically, in Choosing Wisely campaigns.

ENGAGING PATIENTS WITH COMPLEX CARE NEEDS WHO FREQUENTLY USE HEALTHCARE SERVICES: DEVELOPMENT OF AN INTERPROFESSIONAL SHARED DECISION-MAKING TOOL

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Karina Prévost, Patient Partner
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Pierre Pluye, Université McGill
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Context:
Patients with complex care needs (PCCN) who frequently use healthcare services often encounter difficulties in care integration. Case management (CM) programs are a promising approach in dealing with complex needs, fostering coordinated care among healthcare providers (HCP) and self-management support. However, opting for a CM program remains a difficult decision to make as perceived by PCCN and HCP.

Objective:
To develop an interprofessional shared decision-making (IP-SDM) tool to support patients’ decision to opt for a CM program.

Method:
We adopted a user-centred approach to create an IP-SDM tool, based on the Ottawa Decision Support Framework and the IP-SDM model. The entire project was carried out according to the principles of patient-oriented research.

Activities:
First, we performed a mixed-method study to identify the decisional needs of patients, the facilitators/barriers to the future implementation of an IP-SDM tool, and desirable formats and features of the tool. Second, we performed a meta-analysis, to identify the harms and benefits of CM programs for patients. Finally, we co-created the IP-SDM tool with our steering committee.

The use of an IP-SDM tool for these patients should reduce the burden of care, reduce the use of healthcare services and improve patient engagement in their care.

Obstacles:
The organizational structure of the health system is perceived by stakeholders as an important barrier to the implementation of the IP-SDM tool.

Lessons learned:
Patients’ commitment to their healthcare is perceived by HCP as a determining element in the SDM process.
QUALITY IMPROVEMENT
L’AMÉLIORATION DE LA QUALITÉ
Using Antibiotics Wisely Campaign – A National Collaboration between Choosing Wisely Canada (CWC), Public Health Agency of Canada (PHAC) and the College of Family Physicians of Canada (CFPC)

Allan Grill, The College of Family Physicians Canada
Guylene Theriault, Choosing Wisely Canada

Goal:
Using Antibiotics Wisely began in 2017 with the aim of leveraging CWC’s broad engagement of health professionals to reduce unnecessary antimicrobial use in clinical settings across Canada. Antibiotic overuse is particularly challenging in the community setting, where 92% of all antibiotics in Canada are prescribed (1). While guidelines on appropriate antibiotic prescribing exist across medical specialties and practice areas, these are often insufficient to improve antimicrobial stewardship.

Activities & Impact:
A joint collaboration between CWC, PHAC and CFPC is strategically focusing efforts in two key areas, with the first one being upper respiratory tract (URI) infections in primary care. Evidence-based statements focused on appropriate prescribing were co-developed by interprofessional stakeholders after an extensive review of barriers and enablers in existing clinical practice. These recommendations, targeting practice changes in primary care, were reviewed by physician specialists in family medicine, infectious diseases, respirology, pediatrics, and disseminated online (https://choosingwiselycanada.org/campaign/antibiotics) and by mail to over 33,000 family physicians across Canada with support from the CFPC. Existing antimicrobial stewardship materials (eg. recommendations, educational information, research and best practices) were curated with the expertise of the working group, to produce evidence-informed resources and tools shared nationally in both paper and digital formats to support clinical practice.

Lessons Learned & Next Steps:
There have been a number of successful local, regional and provincial efforts on this issue, and CWC/CFPC intends to scale and spread these in the next phase of this campaign.

References:
REDUCING LOW-VALUE CARE FOR BRONCHIOLITIS PATIENTS IN THE EMERGENCY DEPARTMENT BRONCHIOLITIS IS THE LEADING CAUSE OF INFANT HOSPITALIZATION IN CANADA.

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Practice guidelines do not recommend routine use of certain diagnostic tests and medications in managing bronchiolitis. Prior studies suggest that low-value interventions are commonly administered to bronchiolitis patients in the Emergency Department (ED). This project aimed to: 1. establish baseline management of bronchiolitis in Calgary EDs, 2. deliver audit and feedback reports to pediatric emergency physicians (PEP) to identify strategies for practice improvement, and 3. evaluate the effects of the intervention.

We queried administrative data to characterise bronchiolitis management of infants by Calgary ED PEPs. Consentng PEPs received confidential, baseline reports on their individual and group-average practice. In November 2017, PEPs, respiratory therapists, nurses, hospitalists, and learners, attended a facilitated feedback session. Stakeholders discussed the variability between practice guidelines and current practice. They identified strategies to reduce low-value interventions, including: individual self-reflection on practice, following a care pathway, aligning with in-patient care, and receiving repeated data reports.

To evaluate the intervention, data was collected for a subsequent six months. The pre-intervention period, April, 2013-November, 2017, included 3884 cases. The post-intervention period, November, 2017-April, 2018, included 774 cases. In the post-intervention period, the use of chest x-rays decreased from 21% to 18%, while respiratory viral tests decreased from 32% to 21%. Similarly, steroid use decreased from 13% to 5% and salbutamol decreased from 22% to 12%.

Providing physicians with individual practice data along with identifying areas for improvement in a collaborative group setting is an effective way to reduce low-value care.
Urinary tract infection (UTI) is a common diagnosis in the Paediatric Emergency Department and often leads to empiric antibiotic treatment prior to culture results. At our centre, 47% of children empirically diagnosed with a UTI and discharged on antibiotics had negative urine cultures. This study’s aim was to improve UTI diagnostic accuracy by 50% and promote antimicrobial stewardship through timely antibiotic discontinuation for negative cultures and standardized antimicrobial treatment duration for uncomplicated UTIs.

Methods:
In collaboration with the hospital’s Choosing Wisely campaign and antimicrobial stewardship program, an evidence-based empiric UTI diagnostic algorithm was created to aid with diagnostic decision-making. A daily call-back system was implemented to advise patients with a negative urine culture to stop antibiotics. Lastly, a practice alert was integrated in the EMR as a reminder of the standardized antimicrobial prescription duration. The main outcome measures were the percentage of inaccurate diagnoses and antibiotic days saved. Process measures included treatment duration, percentage with timely antimicrobial discontinuation and physician adherence to the algorithm. As a balancing measure, positive urine cultures were reviewed to assess accuracy of the algorithm to detect UTIs and any potential harm from delayed UTI diagnoses.

Impact:
Early results demonstrated a 14% reduction in inappropriate UTI diagnoses. Antibiotic days saved increased from 0 to 495 days. Call-backs for negative cultures increased from 0% to 68% of the time.

Conclusion:
Implementation of a diagnostic algorithm and call-back system can reduce harm from inappropriate use of antibiotics for paediatric UTIs. These interventions can easily be adopted at other institutions.
DO YOU REALLY NEED AN ANTIBIOTIC? A SUCCESS STORY IN THE REDUCTION OF ANTIBIOTIC PRESCRIPTIONS IN NEWFOUNDLAND AND LABRADOR

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Pat Parfrey, Quality of Care NL/Choosing Wisely NL
Brendan Barrett, Quality of Care NL/Choosing Wisely NL
Asghar Mohammadi, Quality of Care NL/Choosing Wisely NL

Goal:
To reduce prescribing of antibiotics by community clinicians in Newfoundland & Labrador (NL).

Background:
NL uses more antibiotics than any other province in Canada. In 2016, NL provided 955 prescriptions per 1000 inhabitants, 19% more than the second highest province. Since its official launch in 2016, CWNL has made the overuse of antibiotics a top priority.

Methods:
A multi-phase campaign has been ongoing for over two years. Campaigns targeting clinicians included CME accredited presentations, practice points and peer comparison data, clinic visits, online modules, and information resources for patients. Campaigns for the public were consecutive antibiotic awareness months which included YouTube videos, traditional and social media. Baseline data was collected on patients over the age of 65 enrolled in the NL Provincial Drug Program (NLPDP) to observe volume of antibiotic prescriptions by General Practitioners and Nurse Practitioners and again acquired post intervention to measure impact.

Results:
The number of total prescriptions given by GP’s in 2017 FY decreased by 9% compared to 2016 FY while NP prescriptions decreased by 15%.

Conclusions:
There was a notable reduction in antibiotic prescriptions from 2016-17. Since 2016, QCNL/CWNL has used a multi-phased campaign targeting clinicians and the public. The NL Pharmacy Network database is active therefore future analysis will include prescriptions for the entire population.
OPTIMIZING THE USE OF GASTROSCOPY FOR YOUNG, OTHERWISE HEALTHY PATIENTS WITH DYSPESIA
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Dyspepsia occurs in 20% of the population and is a common indication for referral to Gastroenterology (GI). Choosing Wisely Canada (CWC) recommends against the use of esophagogastroduodenoscopy (EGD) in patients < 55 years without alarm symptoms, as clinically significant finding are rare. Similar clinical practice guidelines have been in place since 2005, but are these recommendations followed in practice? Our goal was to measure and improve adherence to the CWC guidelines for dyspepsia.

The Physician Learning Program partnered with Calgary GIs to engage physicians in audit and feedback focused on improving EGD utilization. Of the 12,184 EGDs evaluated in a 9-month period, 1,358 were to investigate dyspepsia in patients <55 years, of which 38% (514/1358) of EGDs were low yield (done in patients with no alarm symptoms). Significant practice variation existed. Only 10 patients (2%) had any clinically significant findings, and no cancers were found.

Physician participation was over 80%. In March 2018, consenting physicians received their data with peer comparators and participated in a one-hour facilitated workshop. Physician leaders shared their data to stimulate discussion and coached peers towards practice change. Participants shared that patient expectations and fears of serious conditions being missed influenced their decision to use an EGD.

We have encouraged physicians to use a clinical care pathways co-developed by GI and primary care and are developing other education materials for physicians and patients to guide appropriate resource utilization. A repeat data pull is planned for the spring of 2019 to measure the impact of these interventions.
Background:
There has been a dramatic rise in opioid abuse, and diversion of excess, unused prescriptions is a major contributor. We assess the impact of implementing a new standardized pain care bundle, to reduce post-operative opioids in outpatient general surgical procedures.

Study Design:
This study was designed to demonstrate non-inferiority for the primary outcome: patient-reported average pain in the first 7 postoperative days. We prospectively evaluated 351 patients pre-intervention to 331 patients post-intervention who underwent outpatient open inguinal and ventral hernia repair, breast surgery and anorectal procedures. We implemented a multimodal intra- and post-operative analgesic bundle, including promoting co-analgesia, opioid-reduced prescriptions, and patient education designed to clarify patient expectations. Patients completed a brief pain inventory at their first post-operative visit. Groups were compared using chi-square, Mann-Whitney U, and independent samples t-tests, where appropriate.

Results:
No difference was seen in average post-operative pain scores in the pre- vs. post-intervention groups (2.3 vs. 2.2/10, p=0.34). The reported quality of pain control improved post-intervention (Good/Very Good pain control in 72% vs. 82%, p=0.001). The median total morphine equivalents for prescriptions filled in the post-intervention group was significantly less (100 (IQR 56-135) pre-intervention vs. 50 (IQR 50-50) post-intervention, p<0.001). Only 139/309 (45%) of patients filled their opioid prescription in the post-intervention group (p<0.001), with no significant difference in prescription renewals (5.1% pre-intervention vs. 3.2% post-intervention, p=0.37).

Conclusion:
For outpatient general surgical procedures, a standardized pain care bundle significantly decreased opioid prescribing and frequently eliminated opioid utilization, while adequately treating post-operative pain and improving patient satisfaction.
A CANADA-WIDE SURVEY OF PERCEPTIONS AND PRACTICES RELATED TO ROUTINE BLOOD TEST ORDERING IN THE ICU

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Introduction:
Routine blood testing, pre-ordered in advance, is common in the intensive care unit (ICU), and often occurs without considering the pretest probability of finding an abnormality. This practice may increase risk of anemia, blood transfusion, false positive findings, unnecessary investigations, and healthcare costs. The purpose of this survey was to understand practices and attitudes around blood test ordering among Canadian ICU physicians.

Methods:
We identified respondents through personal networks and critical care leads. The target sample was one intensivist from each Level 3 ICU in Canada. The final survey consisted of 15 questions across 3 domains, plus 11 demographic questions. The survey was administered over 7 months.

Results:
The 72 respondents (61% from Ontario) had an average 13 (SD = 9) years clinical experience. When asked how often unnecessary blood tests are ordered, 71% responded “sometimes”, and 24% responded “almost always”. Fifty six percent believed that complete blood count should be pre-ordered daily, and 67% stated that electrolytes should be pre-ordered daily. Most (>80%) did not favour daily testing of liver function, blood gas, lactate, and coagulation. Only 24% of respondents believed that pre-ordered blood testing frequently changes patient management. The most common factors perceived to influence blood testing were physician habits, institutional tradition, and pre-printed order set options.

Conclusion:
Most respondents believe blood tests are at least sometimes ordered unnecessarily. The most frequently cited determinant of routine blood testing was physician preference. The survey results warrant comparison to a prospective audit of actual practice before developing specific recommendations.
BLOOD WASTE AND THE POTENTIAL HARMs OF SERIAL PHLEBOTOMY IN THE ICU

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Background:
Frequent laboratory testing in the ICU facilitates patient monitoring and titration of invasive therapies. However, over-testing may harm critically ill patients.

Objectives:
1) Quantify daily blood volume drawn from ICU patients including blood discarded as waste when accessing vascular devices. 2) Explore if phlebotomy volume is independently associated with nadir hemoglobin < 80 mg/L or red cell transfusion.

Methods:
Retrospective cohort analysis of ICU patients from a tertiary center in Toronto, Ontario. Waste data obtained prospectively via bedside audit. Multivariate logistic regression controlling for sex, age, and ICU length of stay, exploring the association between phlebotomy volume and nadir hemoglobin, or the need for red cell transfusion.

Results:
The cohort consists of 1093 patients, mean age 61.8 yr, 41% female. Mean daily phlebotomy volume received by the laboratory was 25.8 mL/patient day. Additional blood was wasted prior to each phlebotomy: 3.9 mL for arterial, 5.5 mL for central venous, and 6.25 mL for peripherally inserted catheters. For every 10 mL increase in average daily phlebotomy the odds ratio (OR) for nadir hemoglobin < 80 mg/L increased by 2.13 (95% CI, 1.84 - 2.45, p < 0.001), and the OR for a red cell transfusion increased by 1.93 (95% CI, 1.67-2.23, p<0.001).

Conclusion:
Blood wasted during access of intravascular devices contributes to daily blood loss. Phlebotomy is associated with anemia and the need for blood transfusion. Multivariate regression controlling for severity of illness is needed to confirm our findings, but decreasing blood draw frequency and extent of laboratory testing seems prudent.
CHOOSING WISELY IMPROVES CLINICAL TRANSFUSION PRACTICE
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Regina underwent an audit of transfusion practice in 2015-2016. During that time frame an average of 738.3 units of red blood cells (RBCs) were transfused per month. The majority of transfusion orders (71.4%) were for 2 units of RBCs. 14.3% were for single units, and 14.3% were for 3 or more units.

In September of 2016, the Regina transfusion committee approved the use of Choosing Wisely’s, “Why Use Two When One Will Do?” campaign and posted posters of local clinician champions with the above slogan. The goal was and remains to improve transfusion appropriateness in Regina.

A significant amount of teaching and education with physicians, residents, nurses, pharmacists and administrators occurred over the next year to encourage restrictive transfusion practice as well as encouraging the use of intravenous iron in anemic iron deficient patients.

When we re-examined the impact on transfusion of RBCs, the monthly average of transfused RBCs was 594, representing a 19.5% decrease from baseline and an average decrease of 144.3 units per month. An audit of transfusion orders showed a change to the majority of transfusion orders being for single units (70.6%). 27.5% of orders were for two units and 1.8% were for 3 or more units.

Choosing Wisely’s toolkit is an effective means for hospitals and transfusion departments to improve clinician ordering practice.
APPROPRIATENESS OF RED BLOOD CELL TRANSFUSION WITHIN THE OBSTETRICS AND GYNECOLOGY DEPARTMENT IN A TERTIARY CARE CENTRE: DOES HOSPITAL-WIDE EDUCATION IMPROVE APPROPRIATENESS?

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Background:
Red blood cell transfusion is a common intervention in Obstetrics and Gynecology (O&G) with 1-2% of women receiving one in the peripar tum period and up to 11% receiving one perioperatively with hysterectomy. Although Choosing Wisely recommends single unit transfusion or non-transfusion alternatives in non-actively bleeding patients, inappropriate transfusion use continues.

Methods:
A local, hospital wide educational strategy to promote appropriate use of transfusion began in January 2017 with a combination of posters, Grand Rounds and other formal teaching events, and informal clinical teaching. To assess the effect of this campaign we are conducting a review of transfusion appropriateness before and after its implementation. We have currently reviewed all O&G patients who received a packed red blood transfusion in the year leading up to the implementation of the strategy. Appropriateness is determined from a set of criteria consisting of pre and post transfusion hemoglobin and the number of units ordered simultaneously.

Results:
The pre-intervention review found only 48% (34/71) of obstetrical transfusions to be appropriate and 47% (14/30) of gynecological transfusions to be appropriate. The most common reason for a transfusion to be deemed inappropriate was simultaneous ordering of multiple units of PRBC with no reassessment of the patient between units with rates of 68% (25/37) and 75% (12/16) in obstetrical and gynecological patients respectively.

Next Step:
The post-intervention review will be completed by a summer student and then compared to the pre-intervention data. This information will allow for more focused educational strategies and improved patient blood management practices.
IMPLEMENTING CHOOSING WISELY CANADA’S LOSE THE TUBE TOOLKIT AT LONDON HEALTH SCIENCES CENTRE

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Margaret Taabazuing, London Health Sciences Centre
Tim Rice, London Health Sciences Centre

Background:
Choosing Wisely Canada (CWC) developed the Lose The Tube toolkit to reduce unnecessary urinary catheters in hospitalized patients. London Health Sciences Centre is implementing the toolkit on seven general internal medicine (GIM) wards.

Goal:
Reduce indwelling urinary catheters by 30% on GIM wards by April 30, 2019.

Activities:
We used Plan-Do-Study-Act cycles to test change ideas and measurement strategies from the toolkit. Our primary outcome measure was catheters/patients/day, plotted weekly on a process control chart. At baseline, 18% of patients were catheterized and 40% lacked appropriate indication. Our change strategy involved developing consensus criteria, standardizing post-catheter care, cultivating nurse ownership, and implementing a removal directive. Process changes included: a charge-nurse daily audit to flag inappropriate catheters; digital scales to measure urine output; an electronic removal order-set; and educational in-services for over 100 clinicians.

Impact:
The first 14 weeks of changes have shown a trend toward special-cause variation in catheter reduction. Charge-nurses completed audits on 12/15 test days (80% fidelity), and the order-set was used in 6/15 recent opportunities. One catheter was re-inserted during the implementation period.

Challenges:
Challenges have included electronic catheter tracking, nurse resistance to catheter removal, order-set utilization, and the medical directive approval process.

Lessons Learned:
CWC’s toolkit has been an excellent guide, although some digital strategies were not possible in our organization. The biggest ongoing challenge is changing the nursing culture to consider catheter indications and request removals in lieu of a directive.
Efficacy of a Medical Directive to Reduce Inappropriate Indwelling Urinary Catheter Use on Orthopedic Wards

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Background:
Indwelling urinary catheters (IUC) are frequently used without appropriate guideline-based indications. Inappropriate catheter use, especially in older adults, is associated with catheter-related adverse outcomes including urinary tract infection, delirium, longer length of stay, immobilization, and mortality. This initiative assesses the efficacy of a medical directive for IUC use among orthopaedic inpatients at a large teaching hospital.

Methods:
A medical directive was implemented enabling nurses to remove unnecessary IUCs in patients admitted to orthopedic wards. Catheter days and reasons for catheter use were abstracted manually from the electronic medical record. Pre-intervention (July 2017 to January 2018) catheter-days per patient days were compared to post-intervention (February to May 2018) rates.

Results:
Catheter days per patient-days decreased by 31.5% (pre-intervention 11.8% vs post-intervention 8.2%), representing an ARR of 3.62% (95% CI 2.33-4.86, p < 0.0001). There was also a 38.1% reduction (pre-intervention 6.8% vs post-intervention 4.2%) in inappropriate catheter days per patient-days (ARR 2.59%, 95% CI 1.62-3.52, p < 0.0001). The most common approved conditions for indwelling catheter use were pre-operative hip fracture, immediately post-operative spine surgery patients, and pre-existing IUC.

Discussion & Conclusion:
This project demonstrates that implementation of a medical directive is an effective strategy to reduce inappropriate urinary catheter use in orthopedics, a surgical inpatient setting. Further directions of this project include analyzing two other strategies to further reduce rates including modifying post-operative order sets to default to IUC removal and implementation of a restrictive IUC insertion medical directive in the emergency department.
IMPLEMENTATION OF A CLINICAL DECISION LABORATORY ORDERING TOOL FOR PREECLAMPSIA: A QUALITY IMPROVEMENT INITIATIVE TO REDUCE EXCESSIVE UTILIZATION

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Goal:
Pregnant women suspected of having preeclampsia receive laboratory tests for diagnosis and surveillance. However, existing guidelines primarily list possible tests without suggesting which are most important. This poses considerable unnecessary healthcare costs and carries the potential for iatrogenic harm. This quality improvement (QI) project aimed to reduce unnecessary patient blood draws and associated healthcare costs, consistent with Choosing Wisely Canada’s mission.

Activities:
QI framework and tools were used to analyze the process on the labour and delivery, triage, and antepartum wards of a tertiary care center. Healthcare providers were surveyed regarding laboratory test ordering practices, which was corroborated with 20 inpatient chart reviews. An algorithm for ordering preeclampsia investigations was developed by a multidisciplinary team and disseminated. Post-intervention surveys and chart reviews were conducted to refine the interventions.

Impact:
Our project led to a 39% reduction in laboratory tests ordered for preeclampsia, resulting in an annual savings of $89,060. There was a particularly significant reduction in investigation costs for tests with low clinical utility, including D-dimer (69%) and urea (71%). Weekly data show the post-intervention reduction in excessive laboratory investigations were sustained.

Challenges:
Culture change was a significant undertaking while implementing our project, as survey data indicated that most providers acknowledged that some investigations did not affect patient management and were ordered based on institutional convention.

Lessons Learned:
Successful outcomes from our project reveal the value of working within a multidisciplinary team in creating sustained change, as well as the need to address cultural factors underlying provider decision-making.
Rachel Strauss, Sunnybrook Health Sciences Centre

**Goal:**
Aspartate aminotransferase (AST), commonly ordered with ALT (alanine aminotransferase), and Blood Urea Nitrogen (BUN), commonly ordered with creatinine (Cr), often add little value to patient management at significant cost. The goal of our Choosing Wisely-based quality improvement initiative was to reduce the ratio of AST/ALT and BUN/Cr to less than 5% for all inpatient and outpatient test orders.

**Activities:**
We created guidelines for appropriate indications of AST and BUN testing, provided education with audit and feedback, and removed AST and BUN from institutional order sets.

**Impact:**
The ratios of AST/ALT and BUN/Cr decreased significantly over the study period (0.37 to 0.14, 0.57 to 0.14 respectively), although the goal of 0.05 was not achieved due to a delay in adopting the Choosing Wisely strategies during the study time period by some inpatient units. The number of tests per 100 hospital days decreased from 20 to 7 AST (95% CI: 19-20.5, 5.6-8.7, p<0.001) and 72 to 17 BUN (95% CI: 70-73.4, 16.6-22.9, p<0.001). The initiative resulted in a projected annualized cost savings of $221,749 CAD.

**Challenges:**
Numerous outdated order sets required significant modification resulting in a delay in implementation.

**Lessons Learned:**
A significant decrease in the AST/ALT and BUN/Cr ratios can be achieved with a multimodal approach with little push back from healthcare professionals and will result in substantial healthcare savings.
INTRODUCING A HARD-STOP TO PREVENT UNNECESSARY HbA1C TESTING

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Background:
Automated change strategies are reportedly more effective than strategies targeting human behavior. However, hard-stops can cause unintended consequences and alienate stake-holders. Hemoglobin A1C (HbA1C) is a lab test routinely ordered to evaluate blood sugar control. Due to the life-span of red blood cells, HbA1C values repeated within 2-3 months are rarely meaningful.

Goal:
Assess the feasibility and acceptability of an electronic hard-stop of redundant HbA1C tests. Methods: Key stake-holders at St. Michael’s Hospital were engaged to define redundant HbA1C testing and develop an electronic algorithm to cancel redundant tests using the lab-informatics-system. Educational materials were developed to support the practice change. “Add-on” HbA1Cs and feedback on the new process were tracked as balancing measures.

Impact:
Stake-holders agreed that HbA1C tests ordered within 61 days of a previous result were redundant. Automatic cancellation of redundant HbA1C began May 1, 2018. Between May 1, and December 31, 2018, 96% of all redundant HbA1C tests were cancelled. On average, 145 tests were cancelled each month (4.25% of all HBA1c tests) and 7 cancelled tests were added back by a clinician. The hard-stop process was well received by laboratory staff: 72% reported that it was not confusing and 71% reported that it did not increase their workload.

Lessons Learned & Challenges:
It is feasible to introduce a hard-stop on a redundant lab test with high stake-holder acceptance and minimal consequences. The impact of a hard stop on this single test was modest; however, once expanded to other tests the impact may be substantial.
REDUCING WASTE: A GUIDELINES-BASED APPROACH TO REDUCING INAPPROPRIATE VITAMIN D AND TSH TESTING IN THE INPATIENT REHABILITATION SETTING

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Background:
Laboratory overutilization increases healthcare costs and contributes to negative health outcomes. Discipline-specific guidelines do not support routine testing for Vitamin D and TSH in inpatient rehabilitation yet 94% of patients had these tests on admission to our academic rehabilitation hospital.

Goal:
Reduce Vitamin D and TSH testing by 25% on admission to inpatient Stroke, Spinal Cord Injury, Acquired Brain Injury, and Amputee Rehabilitation.

Measures:
Primary outcome measure: frequency of Vitamin D and TSH testing on admission. Process measure: number of electronic admission order caresets containing automatic Vitamin D and/or TSH orders. Balancing measures: rate of Vitamin D supplementation; changes in thyroid-related medication.
Methods:
Root cause analysis revealed potential factors underlying overutilization of Vitamin D and TSH testing. This informed a series of PDSA cycles, including academic detailing that reviewed applicable guidelines, computerized clinical decision support (CCDS) limiting Vitamin D testing to Choosing Wisely Canada criteria, and audit and feedback that reviewed ordering practices.

Impact:
After implementation, 3.4% of patients had admission Vitamin D testing (91% reduction) and 56% of patients had admission TSH testing (37.5% reduction). Admission order caresets with pre-populated Vitamin D and TSH orders decreased from 100% (n=6) to 0%. 92% of patients received Vitamin D supplementation. Thyroid-related medications changed in 2.4% of patients. The cost savings is approximately $16.76 per admitted patient, or $9,011.64 annualized.

Challenges:
Manual data collection and one-on-one academic detailing and audit and feedback interventions are labour-intensive.

Lessons Learned:
CCDS was the most effective intervention; however, in-person, guideline-driven, discipline-specific interventions produced robust results.
IMPROVING LAB UTILIZATION IN NORTHERN CANADA

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Sarah Cook, Northwest Territories Health and Social Services Authority
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Goal:
In 2017, the Northwest Territories (NWT) Lab Information System (LIS) tallied a total of 1137 erythrocyte sedimentation rate (ESR) and C-reactive protein (CRP) tests which were ordered at the same time. As a result of suspected overutilization, in order to improve efficiency, effectiveness, and safety of health services, Choosing Wisely NWT (CWNT) set a goal towards reducing unnecessary lab testing to improve appropriateness of care and lessen the burden on the lab.

Activities:
The hard-coded intervention was implemented blocking redundant ESR and CRP testing, unless there was an appropriate exception. If both tests are ordered, only CRP will be completed. Exceptions are warranted if the diagnosis is temporal arteritis or as otherwise approved by a rheumatologist or orthopedic surgeon. ESR can still be ordered; but needs to be requested distinctively from CRP.

Impact:
The coordinated communication plan and the implementation of an ordering restriction by the lab to enforce the new directive led to a significant reduction (80%) of redundant ESR and CRP ordering practices within 6 months of implementation.

Challenges:
There are 4 labs throughout the NWT, each of which offers analysis for different tests. If a test is not available locally, duplicate/unnecessary testing on separate order form is still an issue. Additionally, outdated nursing clinical practice guidelines continue to be a source of over testing.

Lessons learned:
Robust communications informing all practitioner staff of upcoming changes increases support for interventions. Additionally, this allows for feedback and mitigation of issues prior to launching the directive.
APPROPRIATE LOW BACK DIAGNOSTIC IMAGING IN NORTHERN COMMUNITIES

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**Goal:**
Stanton Territorial Hospital in Yellowknife, Northwest Territories (NWT) provides approximately 40 patients per month with lumbar or thoracic X-rays/CTs. In the northern context, “Choosing Wisely” is not only relevant to determining the appropriateness of medical tests, but also the associated travel. The low back imaging initiative aims to provide safe, efficient, and quality care by reducing unnecessary low back imaging and associated medical travel.

**Activities:**
The hard-coded intervention implemented was a new requisition uploaded to the NWT’s single electronic medical records (EMR) system. The form required an appropriate red flag to prompt lumbar or thoracic X-ray/CT. Educational interventions included the development of new resources for ongoing reference, tools, and exercise/alternative treatments.

**Impact:**
Compared to 2017 data, within 6 months of implementation of the new requisition (March-September 2018), inappropriate imaging requests were reduced by 46.7% and improperly explained requests were reduced by 50%. Overall, there is a 15% reduction in total number of imaging requests.

**Challenges:**
MediPatient was used to track imaging data. Lumbar and thoracic imaging data was manually extracted and categorized by red flag. Vague terms such as “chronic” or “worsening” which were used to describe therapeutic indications were assumed to implicate persistent pain for 3 months as required.

**Lessons Learned:**
An attachment to the requisition with patient information about risks of radiation from X-rays/CT and the use of contrast would help inform patients of the potential harms of unnecessary imaging and encourage dialogue with providers about appropriate care.
In 2016, Choosing Wisely NL began a provincial initiative aimed at reducing unnecessary pre-operative testing prior to low risk surgeries, following the Choosing Wisely Canada "Drop the Pre-op" toolkit.

In January 2017, a medical directive was put forth in the only two hospitals in the province’s largest Regional Health Authority (Eastern Health, population served approx. 300,000). After one year, 2017 rates of pre-operative tests, including chest X-rays, ECGs, and blood tests (creatinine, INR and hemoglobin), were compared with the previous year. The number of low risk procedures conducted was similar for 2016 and 2017 (3997 and 4039, respectively). The results showed the following reductions in rates of testing from 2016 to 2017, respectively: chest X-rays were reduced from 23% of patients to 10% (1135 to 607), ECGs: 69% to 31% (2787 to 1711), creatinine testing: 62% to 53% (4235 to 4027), INR testing: 28% to 17% (1573 to 1223), and hemoglobin testing: 72% to 67% (4756 to 4621). Cost analysis indicates that cost avoidance in 2017 was approximately $97,000. From a patient impact perspective, following CWC recommendations resulted in over 500 patients avoiding unnecessary exposure to radiation from chest X-rays in 2017. In 2018, participation in a multi-provincial network incited the Newfoundland and Labrador Drop the Pre-op initiative to join in a collaborative effort to assess the barriers to reducing pre-operative testing.

In an ongoing interview-based study, healthcare providers responsible for ordering pre-op tests throughout the province are providing feedback which will inform a future province-wide intervention strategy.
REDUCTION IN BIOCHEMICAL TESTS IN GENERAL PRACTICE
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Pat Parfrey, Quality of Care NL/Choosing Wisely NL
Brendan Barrett, Quality of Care NL/Choosing Wisely NL
Asghar Mohammadi, Quality of Care NL/Choosing Wisely NL

Goal:
To reduce the number of potentially unnecessary biochemical test orders by family physicians in the Eastern Health (EH) Region of Newfoundland & Labrador (NL).

Background:
In the EH region there were high volume of blood urea, LDH, creatine kinase, AST, ferritin and uric acid tests ordered by family physicians. Data showed that for most tests 20% of physicians were ordering 80% of tests. Ordering of these biochemical tests may sometimes be unnecessary in general practice.

Methods:
In August 2016, Eastern Health provided a new requisition form which omitted blood urea, LDH, and AST. In 2017, Quality of Care NL (QCNL) sent family physicians their individual biochemical test ordering via email and visited family physicians and discussed the need for ordering such tests. Baseline data was acquired from the EH Laboratory to observe volume of biochemical tests by GP’s and again acquired post intervention to measure impact.

Results:
There was a 62%, 71%, 31%, 41%, 20%, and 26% reduction of blood urea, LDH, creatine kinase, AST, ferritin and uric acid tests respectively, when comparing data from 2015 to 2017.

Conclusions:
Deletion of tests from the requisition form, as well as academic detailing appear to be associated with reduction in unnecessary use of biochemical tests. Reduction in use of uric acid, which was not removed from the requisition and was not academically detailed, suggests reduction in overall testing.
RECORDING SCROTAL ULTRASOUNDS FOR CRYPTOCHIDISM

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The Canadian Urological Association submitted five recommendations to Choosing Wisely Canada in 2014, one of which was: “Don’t perform ultrasound on boys with cryptorchidism”. In 2016 the Department of Diagnostic Imaging at the Children’s Hospital in Winnipeg decided to implement this recommendation. A letter was sent to all pediatricians informing them of this new policy. Thereafter, any requisition for an ultrasound examination for cryptorchidism from a pediatrician or a family practitioner was returned to the referring doctor with the same letter.

The goal of this study was to determine if this new policy had resulted in an overall reduction in the number of ultrasound examinations for cryptorchidism.

Methods:
All the ultrasounds for boys 10 years and under performed in the department during the years 2014 and 2015 and the years 2017 and 2018 were reviewed. The total numbers of scrotal ultrasounds for each year were recorded, as well as the total numbers of ultrasounds for cryptorchidism. The ordering physician for each ultrasound for cryptorchidism was categorized as pediatrician, family physician, surgeon or urologist.

Results:
During the two years prior to implementing the policy an average of 148 scrotal ultrasounds were performed, of which an average of 57 were for cryptorchidism, approximately 30 for pediatricians and family physicians. In the two years since implementing the policy an average of 118 a year were performed, of which an average of 27 were for cryptorchidism.

Conclusion:
Implementing the recommendation has resulted in a substantial reduction in the number of ultrasounds performed for cryptorchidism.
DIAGNOSIS OF ACUTE PULMONARY EMBOLISM IN THE CANADIAN CONTEXT: WHEN IT COMES TO DIAGNOSTIC IMAGING, LESS IS MORE
Sarah Garland, CADTH

Background:
Pulmonary embolism (PE) is a diagnostic challenge, since it shares symptoms with other conditions. Diagnosis may involve one or multiple steps in a pathway consisting of various clinical prediction rules, tests, and diagnostic imaging. Due to the risks to patients, it is important to only use diagnostic imaging techniques when necessary. This health technology assessment (HTA) was to determine the best strategy for PE diagnosis.

Methods:
CADTH conducted a HTA to assess the clinical effectiveness, cost-effectiveness, patients’ perspectives and experiences, implementation issues, and ethical considerations of diagnostic strategies of adults with suspected PE. The Health Technology Expert Review Panel (HTERP) developed recommendations based on the HTA and guided by their multi-component deliberative framework.

Results:
HTERP developed three recommendations, each emphasizing the need risk stratification (i.e., two-tiered Wells rule) as an initial step. The use of D-dimer testing may further aid in diagnosis. Tests such as pulmonary embolism rule-out criteria, and leg ultrasound may be used for pregnant patients. When diagnostic imaging is needed, computed tomography pulmonary angiography was appropriate for the general population. Choice of diagnostic imaging modality may vary for pregnant persons, and those with contraindications to CT.

Conclusion:
The evidence and recommendations highlight the importance of using decision rules in the diagnosis of PE. This finding was consistent with the Choosing Wisely recommendation regarding the need for risk stratification and the application of decision rules in suspected PE. CT is the most accurate single modality, but is not appropriate under all circumstances; other factors must be considered.
IMPLEMENTING THE CHOOSING WISELY RECOMMENDATIONS FOR THROMBOPHILIA TESTING AT NYGH

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Background:
Thrombophilia Testing consists of a panel of 6-8 tests that are used to detect an increased tendency to develop blood clots. Several Canadian and American societies have released recommendations to limit the use of these tests to specific situations when the results will alter management.

Goal:
To set specific appropriateness rules for Thrombophilia Testing (TT) in hospitalized and non-hospitalized patients by using CW recommendations.

Implementation:
This initiative was led by one of our Physician Champions with expertise in thrombosis. The campaign involved meetings with several physician groups, including clinicians from Internal Medicine, Neurology, Emergency Medicine, Hematology, Rheumatology, Pediatrics, and Obstetrics & Gynecology. After more than 10 months of conversations with the above groups, the CW recommendations from more than six combined Canadian and American societies were adopted. In addition, we set specific testing criteria for hospitalized and non-hospitalized patients, identified the essential tests out of the full testing panel, limited their ordering to only a set of clinical specialties, and recommended other groups to consult or refer patients accordingly.

Measures:
An initial audit baseline report conducted in winter 2017 showed that TT ordered in acute settings was the area with the highest percentage of inappropriate testing. We anticipate significant changes to TT ordering practices and no impact on patient care.

Challenges:
Finding appropriate EMR tools to further limit the use of these tests to specific clinical specialties.

Lessons Learned:
Identifying a physician champion to lead the conversations is a paramount. Ongoing support from our VP Medical; physician education through a hospital wide memorandum, followed by dedicated medical rounds with broad participation from clinicians and other allied health care professions are also key to success in these types of efforts.
REDUCING UNNECESSARY CHEST X-RAY ORDERS FOR FRACTURED HIP CASES AT NYGH

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Lena Bell, North York General Hospital
Mike Sharma, North York General Hospital
Ryan Margau, North York General Hospital
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North York General Hospital (NYGH) Medical Imaging department continues to seek and adopt best practices in its effort to improve the appropriateness of imaging studies and protocols. We perform approximately 225,000 imaging exams through our department annually. Of these, approximately 225 AP chest x-rays were completed through the emergency department with clinical history of “querying a hip fracture” in 2018. An internal audit of our imaging protocols revealed that the routine practice of performing an AP Chest X-Ray for all patients incurring hip fracture lacked evidence.

A decision was made to improve the appropriateness of ordering this test by applying Choosing Wisely Canada’s preoperative clinical consultation guidelines. The new process achieved consensus by the Chief of Radiology, emergency physicians and Chief of Anesthesiology and became effective starting December 2018. A communication plan was developed and implemented. Hip fracture patients now receive a chest x-ray only if clinically necessary or deemed necessary through the preoperative grid highlighted in the Choosing Wisely Canada toolkit. As a result, NYGH has realized an 80% reduction in AP chest x-rays done in conjunction with fractured hip orders. We continue to monitor the impact of this practice change on our patient population and collaborate with key stakeholders to ensure sustainability.
IMPROVEMENT REDUCING INAPPROPRIATE ESR TESTS USING A MULTIMODAL APPROACH

Diondra Miller, University of Toronto
Lowyl Notario, Sunnybrook Health Sciences Centre
Suzanne Waldman, Sunnybrook Health Sciences Centre
Dominic Shelton, Sunnybrook Health Sciences Centre
Shirley Lake, Sunnybrook Health Sciences Centre

Goal:
The Choosing Wisely campaign supports the use of C reactive protein (CRP) to detect acute inflammation instead of erythrocyte sedimentation rate (ESR). ESR is often ordered simultaneously with CRP or inappropriately to assess inflammation despite having limited clinical application. At Sunnybrook Health Sciences Centre (SHSC), an academic hospital in Toronto, the emergency and rheumatology departments were identified as ordering over 45% of ESR tests. Our interprofessional quality improvement (QI) team aimed to reduce the ESR to CRP ratio by 50% at SHSC by December 31, 2018.

Activities:
We implemented several interventions at SHSC from May to December 2018 including 1) Providing education on appropriate ESR test indications to healthcare professionals 2) Audit and feedback to the top ESR ordering clinicians and providing targeted quarterly feedback on their usage and 3) Standardization: removing ESR from ordersets and outpatient requisitions.

Impact:
Over a 7 month period the ESR/CRP ratio at SHSC declined from 62% to 45%. The most significant reduction in ESR/CRP ratio was from the rheumatology department from 80% to 30%.

Challenges & Lessons Learned:
Our current interventions have not significantly impacted ESR ordering in the emergency department (ED). We are auditing ED charts to identify the root causes of ordering ESR/CRP and we will be developing a computerized clinical decision support forcing function to change how ESR tests are processed.
ELECTROCARDIOGRAM (ECG) CHOOSING WISELY - QUALITY IMPROVEMENT (QI) INITIATIVE AT ST. MICHAEL’S HOSPITAL - HEART HEALTH UNIT (HHU)-CARDIOLOGY AMBULATORY CLINIC

Jeunice Vianca Evangelista, St. Michael’s Hospital
Haytham Sharar, St. Michael’s Hospital
Anthony Graham, St. Michael’s Hospital

Goal:
To reduce the number of routine follow-up ECGs in the HHU using Plan-Do-Study-Act (PDSA) cycles.

Activities & Impact:
We conducted PDSA cycles 1, 2, and 3 from June 2017 to June 2018 in the HHU with each cycle lasting 2-4 weeks. In the first PDSA cycle, 106 surveys from 4 clinicians showed that 86% of routine ECGs did not affect patient management and 75% of patients did not require a follow-up ECG as per their clinician. We modified the “Cardiology Follow-up” form to include an ECG request category which requires the clinician to check off the box for an ECG to be performed, otherwise the ECG will not be done routinely. In the second PDSA, 292 surveys showed a 37% reduction in routine follow-up ECGs. Findings of the first and second PDSA cycle were communicated to all clinicians in the HHU via email and during the cardiology division meeting. We also created slips for weight and gown requests for patients not undergoing an ECG. In the third PDSA, 384 surveys showed a 29% reduction in follow-up ECGs.

Challenges:
Some clinicians did not change their practice and continue to order follow-up ECGs for >90% of their patients. Therefore, the implementation of new change and sustainability not to perform a routine follow-up ECG is still a challenge.

Lessons Learned:
Future steps include further communication with all HHU clinicians to reinforce the change of not ordering routine follow-up ECGs unless indicated.
ENCOURAGING QUALITY IMPROVEMENT IN PHARMACY THROUGH QUALITY INDICATORS: HOW DO WE DEFINE QUALITY IN COMMUNITY PHARMACY? HOW DO WE MEASURE A PROFESSION'S IMPACT ON PATIENT OUTCOMES?

Anisa Shivji, Ontario College of Pharmacists

The OCP is the regulating body for the pharmacy profession with a mandate to serve and protect the public. HQO, as Ontario's advisor on quality, monitors and reports on the quality of Ontario's health system. OCP and HQO are collaborating to establish a set of quality indicators for pharmacy. The overarching goals for the quality indicators include ensuring data is used to measure and report on quality of pharmacy care for public transparency, selecting indicators that are pharmacy centered, aligning measures to existing pharmacy frameworks, and ensuring measurement fosters a culture of quality improvement. These indicators will help shape public opinion of pharmacy, foster patient trust, and highlight pharmacy's impact on patient outcomes and support its improvement through measurement. Future considerations will include expanding these indicators nationally and reporting to pharmacies along with the support to improve their practice. The indicators will be selected through a modified Delphi process by an expert panel composed of various stakeholders including patients, practicing pharmacists, researchers, government associations, HQO and the College.

The modified Delphi process includes iterative surveys to the expert panelists to rate the indicators' importance, actionability, and interpretability. Results of the surveys, indicator evidence summaries and feedback through engagement with the patients and sector are used to help guide the panel's decisions. The final set of indicators will be finalized by May 2019.
Recent decades have seen many advancements in Critical Care that contribute to improved patient survival; however, improved survival is not risk-free. It is associated with significant morbidity, including long-term complications like neurocognitive decline and physical deconditioning, collectively known as Post-Intensive Care Syndrome (PICS). To counter this, evidence demonstrates the benefit of a “less is more” strategy, in particular when it comes to sedation, ventilation, polypharmacy, and bedrest. The Society of Critical Care Medicine (SCCM) advocates adoption of evidence-based ‘bundles’ to minimize unnecessary treatments; in concert, Choosing Wisely Canada (Critical Care) has identified minimizing bedrest as a priority. To support the paradigm shift from “too sick to get out of bed” to “too sick NOT to get out of bed”, we have adopted the SCCM ‘ABCDEF bundle’, and implemented an inter-professional Early Mobility Program. In alignment with the CW philosophies having conversations both between providers, and between patients/families and providers has been key in our success. We have seen that mobility mitigates deleterious effects of surviving critical illness, and supports patients and families in getting back to the life they want. This strategy has contributed to an overall reduction in our incidence of ICU delirium rates, a 33% decrease in intubation days, 10% fewer complications, and a decrease in mortality from 25% to 17% (Trauma subpopulation).

Our experience is an excellent example of how to shift the paradigm of care in high acuity quaternary care ICUs, reducing unnecessary treatments and their untoward impacts; if we can do it, everyone can!
REducing Length of Stay in Patients Following a Liver Transplant

Mayur Brahmania, Health Sciences Centre; Western University
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Paul Marotta, Health Sciences Centre; Western University
Peggy Kittmer, Health Sciences Centre; Western University
Melanie Dodds, Health Sciences Centre; Western University
Sandy Williams, Health Sciences Centre; Western University
Kelly Thomas, Health Sciences Centre; Western University
Lynne Sinclair, Health Sciences Centre; Western University
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Karim Qumosani, Health Sciences Centre; Western University
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Anton Skaro, Health Sciences Centre; Western University

There are seven transplant centers in Canada, however, data on length of stay (LOS) has not been analyzed in any center. Some United States transplant centers have suggested a target of ten days. Prolonged LOS in hospital can result in increased rates of infection, malnutrition, and increased healthcare resource utilization thus a multidisciplinary effort to reduce LOS may improve patient outcomes and reduce costs. London health Sciences Centre had a median LOS of 18 days from January 2015- August 2017. The aim of the current project was to reduce the median LOS by 3 days over a 16-month period.

We used the model for continuous improvement and instituted four Plan-Do-Study-Act (PDSA) cycles to achieve our aim. The first PDSA cycle (n=23) included educational sessions among liver transplant team members. The second PDSA cycle (n=9) included development of a liver transplant clinical pathway. The third PDSA cycle included institution of a clinical order set (n=14). The fourth PDSA cycle (n=19) involved patient oriented clinical pathway instrument. Over a 16-month period we had 49 liver transplants discharged from hospital with a median LOS of 9 days. We also analyzed balancing measures and found 30 day and 90 readmission rates to be 18.4% and 22.4%, respectively, which was not significantly different from the 2015-2017 rates of 15.4% and 22.7%. In conclusion, development of a multidisciplinary care pathway with patient engagement led to improved discharge rates within a target of ten days with no clinically significant differences in readmission rates.
The opioid crisis has taken the lives of thousands of individuals in Canada over the past few years. While there are no simple solutions, the crisis demands decisive action and that policy and practice decisions be informed by credible evidence. In particular, this includes understanding and applying the evidence on non-opioid interventions for managing pain.

In 2016, Health Canada’s Joint Statement of Action to Address the Opioid Crisis was released. Organizations across Canada, including the Canadian Agency for Drugs and Technologies in Health (CADTH), have since been working to create evidence informed recommendations in hopes to create system level changes that end this crisis.

This interactive oral session will explore the evidence synthesized by CADTH on managing pain with the help of drug and non-drug interventions as well as the evidence gaps. There will be opportunity for participants to discuss in small groups, common challenges and barriers to implementing non-opioid interventions for pain, from both a policy maker and practitioner viewpoint. Participants will also discuss possible methods of overcoming these barriers. A debrief will allow for communal sharing of ideas and concepts discussed by the smaller groups.

This is a valuable opportunity for participants to network, learn how other participants have addressed this crisis and develop a better understanding of the evidence surrounding non-opioid interventions for the management of pain. Participants can bring back the lessons learned on how to use opioids wisely and put the evidence into policy and practice.
REDUCING BLOOD LOSS IN HIP AND KNEE REPLACEMENT SURGERY

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Shawn Dowling, Physician Learning Program, University of Calgary, Alberta Health Services
Sampson Law, Physician Learning Program, University of Calgary
Christopher Rice, Physician Learning Program, University of Calgary
Brock Setchell, Alberta Health Services
Lara Cooke, Physician Learning Program, University of Calgary
Kelly Burak, Physician Learning Program, University of Calgary, Alberta Health Services
Leyla Baghirzada, Alberta Health Services
Ryan Endersby, Alberta Health Services
Lori Olivieri, Alberta Health Services

There is a risk of substantial blood loss during total hip and knee replacement surgeries, leading to poor patient outcomes. Clinical evidence supports tranexamic acid (TXA) as a safe and inexpensive way to reduce blood loss and red blood cell (RBC) transfusions.

Anesthesiologists at Calgary’s South Health Campus (SHC) hospital asserted that TXA was used inconsistently at their site. This quality improvement project aimed to increase IV TXA use in hip and knee replacement surgery.

We retrieved administrative data to characterize TXA use and post-operative RBC transfusions at SHC hospital. Consenting anesthesiologists received confidential reports on their individual and site-average practice. In October 2016, we hosted a feedback session where anesthesiologists discussed and identified factors contributing to their TXA practice. Two key factors emerged: the preference of the orthopedic surgeons, and an inconsistent approach to dosage and timing. To discuss the appropriate use of TXA, anesthesiologists and surgeons held a joint meeting in January 2017. We measured the rates of TXA and RBC between January 2014 and October 2017 to evaluate the project.

TXA use increased for both hip (67% to 74%) and knee (62% to 83%) surgeries. Patients who did not receive TXA were 2.3 times more likely to receive a blood transfusion. The use of RBC transfusions decreased by 37% in hip (5.2% to 3.3%) and 74% in knee (2.5% to 0.6%) surgeries.

Providing physicians with their own practice data along with identifying key causal factors in a collaborative group setting is an effective way to improve practice.
**OPTIMIZING QUALITY IMPROVEMENT THROUGH CLINICAL ORDERS, TECHNOLOGY, AND STANDARDIZATION**

Saad Shakeel, Trillium Health Partners  
Vaibhan Khanna, Trillium Health Partners  
Shivani Patel, Trillium Health Partners  
Claire Dong, Trillium Health Partners  
Christopher Fung, Trillium Health Partners  
Natasha Milijasevic, Trillium Health Partners  
Amir Ginzburg, Trillium Health Partners

**Introduction:**
In 2016, Trillium Health Partners started developing and implementing over 300 disease/procedure-specific standardized electronic order-sets (SOS), incorporating Provincial Quality Based Procedures, to standardize care and provide ‘one patient experience’ across 3 sites.

**Objectives:**
1) To evaluate the impacts of SOS on patient-care, process efficiencies, and uptake of evidence-informed practices for hip fracture repair and colorectal cancer surgeries; and 2) to assess barriers and enablers in adoption and implementation of SOS in view of end-users.

**Methods:**
Quantitative data was collected through retrospective chart review of patients that received surgical care 6-months before and after the implementation of SOS. Multivariate regression and survival models were adopted for adjusted analyses. Qualitative data was collected through focus groups and semi-structured interviews with staff physicians, midwives, and nurse practitioners.

**Key Results:**
We observed significant uptake of SOS across sites; 30% reduction in morphine prescription; 100% increase in Confusion Assessment Method (CAM) reducing of length of stay (3 days) for patients diagnosed with delirium; 40% reduction in lab tests; and 100% increase in uptake of post-op practices i.e. chewing gum, early ambulation.

SOS were reported to have improved productivity, patient safety, and quality of care. However, effective adoption and continued incorporation of emerging evidence rests on transparent development process, and involvement of field experts as well as front-line physicians.

**Conclusion:**
Our pilot evaluation shows positive trends towards early adoption of evidence-informed practices, minimized differences in clinical practice across sites, efficient resource utilization, improved multidisciplinary staff collaboration, and favourable patient-centered outcomes across sites in short timeframe.
Telemetry is an important tool in the detection and treatment of symptomatic and fatal arrhythmias. However, the literature suggests that telemetry is overused in most cases. As much as 30% of telemetry hours are not indicated based on American Heart Association Guidelines. Standardized admission criteria and reassessment has been shown to safely reduce the telemetry use in medical wards.

At St Paul's Hospital in Saskatoon, telemetry patients are admitted by either the Internist on call or the Hospitalist overnight. The current order set is borrowed from the University Hospital across town and is underutilized. No data exists on how frequently telemetry is reassessed by the Most Responsible Physician.

This project aims to improve the appropriate use of telemetry by creating a new order set that is tailored to St Paul's Hospital to improve utilization. We are also coordinating with an existing geographical and team-based rounding initiative to ensure daily reassessment of telemetry.

The goal is to ensure that every patient admitted to telemetry has an order set filled within 24 hours and that the average duration of telemetry per patient be decreased by 30%.
REDUCING UNNECESSARY URINE CULTURE UTILIZATION IN THE EMERGENCY DEPARTMENT

Alice Chan, Credit Valley Hospital

Over-testing and over-treatment of asymptomatic bacteriuria is common, leading to adverse patient events, antimicrobial resistance and increased healthcare costs. Educational efforts around appropriate indications has largely been unsuccessful. This quality improvement project aims instead to reduce unnecessary urine culture (UC) ordering. By minimizing the number of potential positive urine cultures, this will hopefully reduce downstream antimicrobial prescribing. From January to November 2017, nearly 9100 UCs were sent in the Credit Valley Hospital emergency department, representing 104 of every 1000 (or 9.3%) of ED visits. The goal is to reduce UC testing in the emergency department by 30% by December 2019. Interventions used include removal of automatic UC from medical directives and implementation of a physician audit system for increased accountability. Challenges include unawareness of updated directives, use of loop holes to continue UC ordering and lack of audit frequency. Despite initial progress on ordering rates, results eventually returned to baseline. Going forward, we recognize the need to fully engage frontline staff and to provide more regular feedback to sustain change. Further work will target a novel two-step urine ordering practice to encourage more thoughtful physician ordering behaviors.
LA PRISE DE DÉCISION PARTAGÉE EN PREMIÈRE LIGNE POUR
DIMINUER LA SURUTILISATION DES TESTS DIAGNOSTIQUES ET DES
TRAITEMENTS.
France Légaré, Chaire de recherche du Canada niveau
Décision partagée et Application des connaissances.
Centre de recherche sur les soins et les services de première ligne de l’Université Laval (CERSSPL-UL).
Département de médecine familiale et de médecine d’urgence, Pavillon Ferdinand-Vandry
Simon Décary, Chaire de recherche du Canada niveau, Décision partagée et Application des connaissances.
Centre de recherche sur les soins et les services de première ligne de l’Université Laval (CERSSPL-UL).
Département de médecine familiale et de médecine d’urgence, Pavillon Ferdinand-Vandry

Contexte :
La prise de décision partagée (PDP) est un processus lors duquel un(e) clinicien(ne) et son/sa patient(e)
 prennent des décisions basées sur les meilleures données scientifiques et les valeurs et préférences
 des patients. La PDP est actuellement proposée comme solution pour aider à diminuer la problématique
 de surutilisation des tests et traitements en première ligne.

Cible :
Explorer la PDP pour guider les discussions cliniques entourant la surutilisation des tests et des
traitements.

Objectifs d’apprentissage :
1. Définir les éléments essentiels de la PDP et des outils d’aide à la décision.
2. Acquérir des habiletés pour intégrer la PDP dans les discussions avec les patients et patientes.
3. Discuter des barrières et des facteurs pouvant favoriser le recours à la PDP.

Clientèle visée :
Professionnels de la santé, patient-partenaires, gestionnaires et décideurs.

Organisation de l’atelier (75 minutes)
1. Introduction aux concepts de la PDP, les outils d’aide à la décision et l’impact potentiel sur la
   surutilisation.
2. Activité interactive et jeux de rôle en sous-groupe : Décision+, un outil d’aide à la décision pour
diminuer la surutilisation des antibiotiques.
3. Discussion en grand groupe.

Impact :
Cet atelier permettra aux participants de développer leurs habiletés en décision partagée dans des
contextes cliniques de surutilisation.

L’AMÉLIORATION DE LA QUALITÉ ET LA FORMATION MÉDICALE :
L’EXPÉRIENCE DE L’UNIVERSITÉ DE SHERBROOKE
Marie-Claude Beaulieu, Université de Sherbrooke
Benoît Heppell, Université de Sherbrooke
INDICATIONS DU DOPPLER CAROTIDIEN : RESPECTONS-NOUS LES LIGNES DIRECTRICES ?
Stephane Elkouri, CHUM Québec

Selon la United States Preventive Task Force, l’usage du doppler carotidien devrait se limiter aux patients avec une sténose carotidienne symptomatique. Selon Choisir avec soin Canada, l’utilisation du doppler carotidien dans des cas de syncope avec examen neurologique normal est contre-indiquée. Le but de notre étude est de décrire les indications actuelles du doppler carotidien dans notre centre hospitalier et d’évaluer leur pertinence.


1253 dopplers (1429 indications) furent inclus. 61% (N=871) des indications étaient reliées à des sténoses asymptomatiques : 21% (n=297) préopératoires, 9% (n= 135) souffle carotidien, 9% (n=125) facteur de risque cardiovasculaire ou maladie athérosclérotique périphérique, 7% (n=100) recherche, 4% (n=61) suivi d’une sténose asymptomatique, 2% (n=35) post-opératoire, 2% (n=33) détection d’une sténose asymptomatique et 5% (n=75) autre raison. 14% (N=205) furent pour patients avec des symptômes non spécifiques : 6% (n=87) trouble d’équilibre, 2% (n=32) syncope, 2% (n=22) céphalée et 5% (n=64) autre symptômes. 25% (N=353) furent pour des sténoses symptomatiques : 12% (n=168) ischémie cérébrale transitoire, 6% (n=89) accident cérébro-vasculaire et 7% (n=96) symptômes suggestif d’atteinte neurologique.

Selon nos résultats, il existe une large discordance entre les indications actuelles de doppler carotidien et les lignes directrices les plus récentes.
Au cours de la dernière décennie, les gabapentinoïdes (prégabaline et gabapentin) ont connu un essor important de leur taux de prescription en Amérique du Nord. Plusieurs de leurs indications actuelles ne sont pas approuvées, avec des études antérieures ne montrant aucune efficacité des gabapentinoïdes pour celles-ci.

Une étude récente menée par notre équipe au Centre de Santé de l'Université McGill a montré qu’un patient sur huit admis en médecine interne reçoit des gabapentinoïdes à domicile, avec plus de 80 % des indications n’étant pas approuvées. Les utilisateurs de gabapentinoïdes sont polymorbidès et reçoivent fréquemment de manière concomitante des médicaments sédatifs, tels que des benzodiazépines, des hypnotiques et des opioïdes. Malgré cela, le taux de déprescription au congé dans notre étude n’était que de 13 %. La déprescription des gabapentinoïdes représente donc un champ potentiel d’amélioration dans notre pratique.

Dans le cadre du Congrès national de Choisir avec soin, nous animerons un atelier bilingue qui portera sur les données probantes supportant les différentes indications approuvées des gabapentinoïdes. Nous présenterons leurs effets secondaires et les risques associés à la coprescription des médicaments sédatifs. Nous explorerons également des situations dans lesquelles la déprescription serait à envisager et présenterons différentes stratégies pour celle-ci, incluant le sevrage et la surveillance à l’émergence de symptômes rebonds.
PROJET «BIBLIOTHÈQUES 2» : STRATÉGIE DE DISSÉMINATION DE RÉSULTATS PORTANT SUR LES MÉDICAMENTS POTENTIELLEMENT INADAPTÉS À TRAVERS LE RÉSEAU DES BIBLIOTHÈQUES PUBLIQUES

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Introduction :
En matière de transfert des connaissances, il existe relativement très peu de stratégies de dissémination active des résultats de recherche en santé en direction du public, principal bénéficiaire des soins. Le projet Bibliothèques2 est un projet en transfert des connaissances, qui désire évaluer l’efficacité d’ateliers de vulgarisation visant à disséminer des résultats de recherche au grand public par l’intermédiaire des bibliothèques.

Méthodologie :
S’inscrivant dans une approche de recherche participative, le projet est piloté par un comité multidisciplinaire aux expertises variées (patients partenaires, bibliothécaires, cliniciens, chercheurs, vulgarisatrice scientifique) ayant tous été impliqués dès le début, à toutes les étapes clés du projet notamment la rédaction du protocole de recherche, la sélection des résultats à disséminer à la suite d’un appel lancé à toutes les équipes de recherche en première ligne du Québec, l’élaboration du contenu des ateliers et leur promotion auprès des bibliothèques et personnes âgées.

Résultats préliminaires :
Cinq équipes de recherche en soins primaires ont soumis leurs résultats et ceux ayant été retenus portent sur la prévalence élevée des médicaments potentiellement inadaptés (PIM) chez les personnes âgées de plus de 65 ans. Par ailleurs, dix-huit bibliothèques à Montréal, et dix à Québec ont accepté de présenter à leurs clientes, les ateliers au printemps prochain.

Impacts escomptés :
Au terme du projet, nous espérons pouvoir sensibiliser au sein du public, non seulement des personnes déjà potentiellement exposées aux PIM, mais également, celles qui ne le sont pas encore. Nous espérons ultimement contribuer à l’«empowerment» de la clientèle vulnérable des personnes âgées.
POLYMÉDICATION ET DÉPRESRIPTION CHEZ LES AÎNÉS EN ONCOLOGIE: VISION DES CLINICIENS
Caroline Sirois, Université Laval, Québec

Introduction :
Les aînés atteints de cancer consomment beaucoup de médicaments, mais il existe peu d’information sur les défis qu’engendrent la polymédication et la déprescription.

Objectifs :
Dresser un portrait des pratiques et perceptions des cliniciens en matière de polymédication et de déprescription chez les aînés atteints de cancer.

Méthodologie :
L’étude présente un devis mixte. Un questionnaire en ligne comprenant 16 questions de type Likert a été proposé aux cliniciens. Deux groupes de discussion ont ensuite été effectués et une analyse thématique a été réalisée.

Résultats :
Au total, 54 cliniciens ont répondu au questionnaire (infirmières=25; pharmaciens=21; médecins=6; autres=2). La moitié a toujours ou souvent l’impression que les médicaments constituent un fardeau important pour les patients. Le quart aborde toujours/souvent la possibilité de cesser certains médicaments. Dix cliniciens ont participé aux groupes de discussion. La banalisation de la quantité de médicaments consommés associée au vieillissement de même que le manque de connaissances et la difficulté à gérer la médication sont rapportés. Parmi les barrières à la déprescription figurent le manque de temps, d’expertise et de communication entre les cliniciens. Le pharmacien est une ressource de premier plan, mais une prise en charge globale par le médecin de famille est suggérée.

Conclusion :
La polymédication représente un enjeu réel, mais peu de cliniciens abordent la déprescription de médicaments avec les aînés atteints de cancer. Le développement d’outils cliniques pourrait faciliter le repérage, réduire les barrières à la déprescription et pallier le manque de connaissances de la médication chez les aînés en contexte oncologique.
SEKMED, UN SYSTÈME INTÉGRATEUR DES RECOMMANDATIONS DE CHOSIR AVEC SOIN

Sylvain Croteau, Des relations universitaires et de la recherche du CISSS de l’Outaouais
Laurence Barraud, CISSS de l’Outaouais
Marie Chantal Leclerc, CISSS de l’Outaouais

Nul ne sait autant que l’ensemble d’entre nous. Rester à jours est un défi presque impossible. La pénétration des recommandations des organismes accréditeurs ou normatifs demeure limitée. Il nous faut réfléchir à des solutions alternatives.

SEKMED est une plateforme web de collaboration qui vise à utiliser le surplus cognitif de l’ensemble des membres d’une communauté de pratique et, de manière élargie, le travail des acteurs qui interagissent avec cette communauté, dans l’établissement d’un savoir commun qui intègre les meilleures évidences.

La plateforme inclut des outils de création de ressources interactives qui incorporent les connaissances qui aident à juger de la pertinence de certaines investigations ou gestes cliniques: des questionnaires, des calculateurs, des algorithmes... Un moteur de reconnaissance ontologique permet d’identifier des ressources existantes dans le contexte clinique, selon le principe du just-in-time. Ce savoir est également formaté de manière à être cliniquement immédiatement utile. Le clinicien a alors l’opportunité d’apprendre, mais aussi, concrètement, d’intégrer ces nouvelles connaissances dans ses processus.

Les participants pourront découvrir la plateforme SEKMED à travers une présentation et une démonstration dans un contexte de soins, identifier les avantages de la communauté de pratique dans la gestion des connaissances, reconnaître la valeur ajoutée des technologies de l’information à la formation continue et au passage des connaissances à la pratique. Des exemples concrets, en lien avec la campagne Choisir avec Soin, aideront à cristalliser les potentielles contributions de ce type de plateforme à l’atteinte d’objectifs de diffusion et d’application des connaissances.
EST-CE QU'UN MODULE D'AUTOAPRENTISSAGE AUGMENTE L'ACQUISITION DES CONNAISSANCES PORTANT SUR LES « TESTS INUTILES »

Lyne Pitre, Hôpital Montfort
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Les coûts liés aux soins de santé sont un critère non négligeable dans tout système de soins. Lorsque nous parcourons la littérature, nous constatons aussi que les patients de nos jours sont de plus en plus soumis à des procédures, des tests et de traitements jugés non seulement inutiles, mais souvent dommageables pour eux (Hudzik, Hudzik et Polonski, 2014). Il est donc primordial que des actions soient prises afin que les fonds investis dans la santé soient utilisés à bon escient. Une des actions concrète à prendre pour y remédier serait de former les futurs praticiens à ce concept. Il est donc nécessaire d’inclure dans le raisonnement clinique de l’étudiant de médecine, la notion de choisir ou de pratiquer avec soins. Plusieurs études démontrent qu’un module d’auto-apprentissage (MAA) est aussi efficace qu’un cours magistral pour améliorer les connaissances des étudiants (Olivet, Zerger, Greene Kenney, Herman, 2016; Porter, Pitter, 2014). Un projet de recherche est en cours pour mesurer l’effet à court terme d’un nouveau MAA écrit par une étudiante de 3e année sur d’incorporer dans le raisonnement clinique, du concept de « choisir/prescrire avec soin » par l’entraînement de l’ajout d’une démarche cognitive en 4 temps :

1. Pour quelle raison je demande le test ?
2. Est-ce vraiment nécessaire de faire le test ?
3. Si le test est nécessaire, quel en est le coût du test ?
4. Quelle question clinique, j’essaie de répondre?
APPROCHE ADAPTÉE À LA PERSONNE ÂGÉE : ÉVALUATION DE L’UTILISATION DES SÉDATIFS ET ANTIPSYCHOTIQUES EN MILIEU HOSPITALIER

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Contexte :
Un usage judicieux des sédatifs/antipsychotiques chez la personne âgée hospitalisée est recommandé compte tenu de leurs risques associés.

Objectifs :
Évaluer le pourcentage global de prescriptions de sédatifs (benzodiazépines et zopiclone)/antipsychotiques pour les patients de 75 ans et plus hospitalisés au Centre Universitaire de Santé McGill (CUSM) ainsi que le taux de prescriptions chez les patients naïfs à ces médicaments avant l’hospitalisation.

Méthodologie :
Une revue prospective des dossiers-patients d’une semaine par unité de soins a été réalisée entre juillet 2017 et janvier 2018 afin d’identifier les ordonnances de sédatifs/antipsychotiques chez tous les patients âgés, chez les patients naïfs ainsi que leur indication. Un suivi a été effectué à l’été 2018 après diffusion des résultats aux équipes médicales.

Résultats :
Un total de 775 dossiers-patients ont été évalués. Le pourcentage global de prescriptions de sédatifs était de 27,5% et de 14,7% pour les patients naïfs lors de l’audit initial, puis de 23,6% et 13,2% respectivement lors de l’audit subséquent. L’indication n’était pas documentée dans la majorité des cas. Une proportion importante (24-45%) des ordonnances pour les patients naïfs étaient pré-rédigées. Le pourcentage global de prescriptions d’antipsychotiques lors de l’audit initial était 16,6% et de 9,8% pour les patients naïfs, puis de 12,5% et 6,2% respectivement au second audit.

Conclusion :
Cette revue d’utilisation des sédatifs/antipsychotiques au CUSM a permis d’effectuer un suivi de ces prescriptions chez la personne âgée et d’initier des changements afin d’optimiser leur usage (révision des ordonnances pré-rédigées et rétroaction auprès des services médicaux).
LA GENOUGRAPHIE, UNE SOLUTION POTENTIELLE POUR RÉDUIRE LA SURUTILISATION DES SOINS EN ARTHROSE DU GENOU

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L’arthrose du genou est l’une des maladies chroniques les plus exigeantes en termes d'utilisation des services de santé. La prise en charge actuelle est peu efficace et coûteuse pour le système de santé (médicament, imagerie, orthèses, injections) et pour le patient (physiothérapie, médicaments sans ordonnance, médecines alternatives). Par manque de solution, les omnipraticiens réfèrent souvent vers une IRM malgré qu’elle soit non bénéfique et en orthopédie, engorgeant les listes d’attente.

La prise en charge courante repose sur le soulagement de la douleur alors que les guides de pratique soulignent l’importance de corriger les facteurs de risque, dont les facteurs mécaniques pour améliorer la fonction des patients, leur douleur, leur qualité de vie et réduire les cots en santé.

La genougraphie est un examen valide, objectif, simple et sécuritaire de la fonction articulaire du genou en mouvement et en charge. Elle permet de dépister des biomarqueurs mécaniques en lien avec les symptômes et le développement et la progression de problématiques au genou; ces informations permettent ainsi de cibler le plan de traitement. De nombreux bénéfices cliniques ont d’ailleurs été documentés.

Une étude clinique randomisée sur plus de 800 patients gonarthrosiques est en cours afin de confirmer l’impact de la genougraphie sur l’efficacité de la trajectoire de soins et sur la surutilisation des soins.

L’atelier permettra de comprendre les causes mécaniques liées à la progression de la gonarthrose, de discuter des recommandations des guides de pratique concernant l’évaluation et les traitements, et si possible, présenter les résultats de la large étude clinique.
PROTOCOLE SUR LES EFFETS D'UNE FORMATION EN LIGNE SUR LES CONNAISSANCES ET L'UTILISATION DE LA PRISE DE DÉCISION PARTAGÉE PAR LES PROFESSIONNELS LORS DU DÉPISTAGE PRÉNATAL

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Lors du suivi de grossesse, les professionnels offrent aux futurs parents la possibilité du dépistage prénatal de la trisomie 21. Les décisions entourant cette pratique exigent un accompagnement permettant un choix informé qui soit en accord avec les valeurs, croyances et préférences des femmes enceintes et de leur partenaire. Pour que les infirmières et autres professionnels puissent ainsi les accompagner, il est essentiel qu’ils aient accès à des formations visant la pratique clinique de la prise de décision partagée (PDP).

**But :**
Évaluer les effets d’une formation en ligne sur les connaissances et l’utilisation de la PDP lors du dépistage prénatal.

**Méthode :**
Étude contrôle randomisée auprès de professionnels de la santé (n = 36) aléatoirement assignés à une formation en ligne incluant le développement de compétences en PDP ou un groupe contrôle suivant la formation en ligne du Programme québécois de dépistage prénatal de la trisomie 21. L’étude se penchera sur

1. les connaissances,
2. l’intention d’utiliser les connaissances apprises dans la pratique clinique,
3. la satisfaction par rapport à la formation,
4. l’acceptabilité de celle-ci,
5. l’utilité perçue et
6. la réaction suscitée.

**Résultats attendus :**
Appréciation des effets d’une formation en ligne axée sur la PDP, tout en tenant compte de sa pertinence et de la faisabilité de son introduction en pratique. Conclusion : Cette première étude permettra de se positionner quant à la qualité et l’apport d’une formation sur l’intention d’utiliser la PDP dans l’accompagnement des futurs parents dans les choix entourant le dépistage prénatal.
Adhésion aux lignes directrices sur les pratiques cliniques à faible valeur dans les soins aigus des traumatismes: une étude de cohorte multicentre rétrospective

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Introduction :
Des procédures de soins inappropriées ont été identifiées comme l’un des domaines les plus importants de l’utilisation inconsiderée de ressources dans les soins en traumatologie. Les organisations de soins de traumatologie reconnues à l’échelle internationale émettent des directives contenant des recommandations sur les pratiques cliniques à éviter.

Objectifs :
1) identifier les pratiques à faible valeur dans les guidelines des soins des blessures,
2) évaluer leurs fréquences dans la pratique.

Méthodologie :
Identifier ces pratiques à partir de directives d’organisations de traumatismes reconnues: east, ACS, BTF et ATS. Développer des algorithmes pour mesurer ces pratiques à l’aide des données du registre des traumatismes et les valider avec des experts cliniques. Enfin, appliquer les algorithmes en utilisant les données du système de traumatologie intégré du Québec et calculer les fréquences.

Résultats :
Après consultation d’experts, 14 pratiques ont été retenues. Les exemples incluent : la TDM cérébrale chez traumatisés mineurs de la tête (24,25%), la radiographie pulmonaire chez des patients stables présentant un traumatisme thoracique contondant (10,8%) et la laparotomie chez les patientes stables victimes de traumatisme contondant du foie ou de la rate étaient (2,2% et 4,5%, respectivement).

Conclusion :
Les résultats de cette étude font progresser les connaissances sur les pratiques à faible valeur dans les soins aigus des traumatismes. Les résultats suggèrent que l’adhésion aux guidelines sur les soins à faible valeur peut être évaluée à l’aide des données du registre des traumatismes. En général, la fréquence de ces pratiques dans notre système de traumatologie était faible.