



**Choosing
Wisely
Canada**



In partnership with the
Canadian Medical Association

2018 National Meeting
**LEADING AND
IMPLEMENTING
CHANGE**

Abstract Book

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Overall Program Goals

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

Overall Learning Objectives

At the end of this meeting, participants will be able to:

- Exchange knowledge and best practices for reducing low-value care within the clinical setting
- Learn about strategies to measure and evaluate interventions
- Acquire tools and skills of implementation science as they relate to reducing low-value care

STUDY CREDITS

College of Family Physicians of Canada – Mainpro+:

This Group Learning program meets the certification criteria of the College of Family Physicians of Canada and has been certified by Continuing Professional Development, Faculty of Medicine, University of Toronto for up to 6.0 Mainpro+ credits.

Royal College of Physicians and Surgeons of Canada – Section 1:

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, approved by Continuing Professional Development, Faculty of Medicine, University of Toronto. You may claim a maximum of 6 hours (credits are automatically calculated).

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Chair's Foreword

Dear Choosing Wisely Canada 2018 National Meeting Attendees,

Welcome to the third annual Choosing Wisely Canada National Meeting!

We are excited to be hosting this year's National Meeting in Toronto at the Globe and Mail Centre. The National Meeting is a celebration of what we have accomplished together in partnership with you, our collaborators from across the country, and an opportunity to look forward and discuss how we can sustain the momentum for our campaign.

This year's theme, Leading and Implementing Change, was inspired by the fantastic efforts of our Choosing Wisely community. We hope this meeting will provide an opportunity to showcase practical and implementable examples of Choosing Wisely projects from across Canada.

The contents of this abstract book are a testament to the breadth of clinician leadership, engagement, and dedication of our stakeholders that are leading change and improving the quality of health care in their own organizations or practice settings. Browse the contents of this abstract book by topic, which include: deprescribing, medical education, patient engagement, quality improvement and measurement.

We hope this 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 beyond the National Meeting. This will be a thought-provoking meeting that will inspire and continue to build upon our collective efforts in the areas of quality and appropriateness.

I sincerely thank all of you for the commitment you have made to Choosing Wisely and your continued efforts in improving our health care system.

Yours,



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

Itinerary

8:00 AM - 8:30 AM	Registration and Breakfast
8:30 AM - 9:00 AM	Welcome and Opening Remarks The Honourable Ginette Petitpas Taylor, Federal Minister of Health Dr. Laurent Marcoux, President, Canadian Medical Association Dr. Joshua Tepper, President and Chief Executive Officer, Health Quality Ontario
9:00 AM - 9:50 AM	Morning Keynote: Common Pitfalls in Quality Improvement: Lessons for Choosing Wisely Projects Dr. Kaveh Shojania, Director, Centre for Quality Improvement & Patient Safety, University of Toronto and Editor-in-chief, BMJ Quality & Safety Session Learning Objectives: <ul style="list-style-type: none">• Appreciate the shared goals of quality improvement activities;• Understand common ways quality improvement projects go wrong;• Identify effective strategies for translating evidence into practice.
9:50 AM - 10:10 AM	Networking Break
10:10 AM - 11:10 AM	Successful Tales of Choosing Wisely From Coast-to-Coast The plenary will highlight Choosing Wisely implementation projects from our abstract submissions. Panelists will be asked to present on their topic and take questions from the audience. <ol style="list-style-type: none">1. Positively changing red blood cell transfusion practice using educational strategies<ul style="list-style-type: none">• Dr. Susan Witt, Alberta Health Services2. Choosing Wisely in the emergency department to reduce unnecessary tests<ul style="list-style-type: none">• Dr. Sam Campbell, QEII Health Sciences Centre3. Better Together. Working across primary care organizations to implement Choosing Wisely<ul style="list-style-type: none">• Dr. Kimberly Wintemute, Choosing Wisely Canada, North York Family Health Team4. Reducing benzodiazepines and sedative-hypnotics among hospitalized patients: Lessons Learned from a multi-site implementation journey<ul style="list-style-type: none">• Dr. Christine Soong, Sinai Health System
11:10 AM - 11:25 AM	Networking Break
11:25 AM - 12:25 PM	Concurrent Sessions 1 Concurrent sessions feature breakout and workshop sessions that will highlight Choosing Wisely implementation projects and interactive discussions with presenters.
12:25 PM - 1:25 PM	Lunch and Networking

1:25 PM - 2:25 PM	Concurrent Sessions 2 Concurrent sessions feature breakout and workshop sessions that will highlight Choosing Wisely implementation projects and interactive discussions with presenters.
2:25 PM - 2:45 PM	Networking Break
2:45 PM - 3:45 PM	Concurrent Sessions 3 Concurrent sessions feature breakout and workshop sessions that will highlight Choosing Wisely implementation projects and interactive discussions with presenters.
3:45 PM - 3:55 PM	Networking Break
3:55 PM - 4:05 PM	Remarks from the Canadian Medical Protective Association (CMPA) Dr. Hartley Stern, Canadian Medical Protective Association
4:05 PM - 4:55 PM	Afternoon Keynote: <i>Choosing Wisely and Medicine's Third Era</i> Dr. Dee Mangin, Professor, David Braley & Nancy Gordon Chair in Family Medicine, McMaster University Session Learning Objectives: <ul style="list-style-type: none"> • Appreciate the past and current influences shaping the changing framework of medicine; • Understand the implications for the third era of medicine; • Consider the opportunities for Choosing Wisely.
4:55 PM - 5:00 PM	Closing Remarks



DEPRESCRIBING

Promoting Appropriate Prescribing: Antipsychotic Stewardship for Older Patients in Acute Care

Deborah Brown, Sunnybrook Health Sciences Centre
Jesika Contreras, Regional Geriatric Program of Toronto
Mireille Norris, Sunnybrook Health Sciences Centre
Dov Gandell, Sunnybrook Health Sciences Centre
Robert Jaunkalns, Sunnybrook Health Sciences Centre
Joy Makari, Sunnybrook Health Sciences Centre
Romina Marchesano, Sunnybrook Health Sciences Centre
Barbara Liu, Sunnybrook Health Sciences Centre, University of Toronto

Background

In hospital, older patients with dementia or delirium may exhibit behaviours such as agitation or hallucinations, that may lead to pharmacological intervention. Evidence to guide appropriate use of antipsychotics in older patients is lacking and as a class, antipsychotics have significant adverse effects.

Objective

To implement and evaluate an antipsychotic stewardship program with the aim of optimized, appropriate use of neuroleptics for responsive behaviours in older patients in acute care.

Intervention

We reviewed patients (>70 years) who had antipsychotics ordered on 3 acute care units. The stewardship process included:

- Review of the chart and assessment of the patient
- Determining if the antipsychotic was necessary; the appropriate drug and dose ordered; determination of the antipsychotic effect on the target behaviour
- Ensuring appropriate medical assessment and investigations
- Reinforcing the use of non-pharmacological interventions
- Ensuring that the patient's response was monitored

Results

120 patients were reviewed, mean age 82 years, 55% are male; 86% from community. We discontinued or decreased antipsychotics in 64% of orders. In patients on antipsychotics at home, we reduced or discontinued the drugs in 53% of orders. We increased awareness of appropriate dosing in older patients and created a positive impact on delirium awareness. We have developed a web-based app for antipsychotic dosing and educational materials to support non-pharmacological strategies for responsive behaviours.

Lessons Learned

A valuable opportunity to reinforce non-pharmacological approaches to behaviour management; prescriber engagement is crucial and there is need for systematic care planning with responsive behaviours. As follow up, a delirium order set has been created.

Exploring Deprescribing Opportunities for Community Pharmacists

Clara Korenvain, Women's College Hospital
Linda MacKeigan, University of Toronto
Katie Dainty, North York General Hospital
Sara Guilcher, University of Toronto
Lisa McCarthy, Women's College Hospital

Background

Deprescribing can reduce the use of harmful or unnecessary medications but is a challenging process for patients and prescribers. Community pharmacists have potential opportunities to be involved with deprescribing but few studies have explored their role in the deprescribing process. We sought to describe Ontario community pharmacists' involvement with deprescribing and potential opportunities for enhancing deprescribing.

Methods

We conducted qualitative telephone interviews with a convenience sample of Ontario community pharmacists selected to achieve variability in experience, pharmacy position, and urban/rural location. Three interview transcripts were coded independently by four investigators to develop a codebook, and the remainder were coded and analyzed thematically by one investigator.

Results

All 17 participants were involved with deprescribing in their practices but to variable extents. Three themes were identified: (1) pharmacists' conceptualization of deprescribing affects how they identify and act on deprescribing opportunities; (2) community pharmacists' professional and business roles challenge their ability to prioritize deprescribing in daily practice; and (3) suboptimal access to information from prescribers influences pharmacists' willingness to assume responsibility for deprescribing.

Conclusion

Recommendations for enhancing community pharmacists' involvement in deprescribing include focusing pharmacists' time on steps in the process that they can contribute to efficiently and effectively (such as monitoring), and increasing patient engagement in the deprescribing process to help pharmacists gain access to information they are otherwise challenged to obtain. Future research is warranted examining broader strategies such as integrating education about deprescribing with existing education about best prescribing practices.

Use of a Standardized Process for Proton Pump Inhibitor (PPI) Deprescribing at Markham Stouffville Hospital

Alice Hogg, Markham Stouffville Hospital

Goal

The goal of the project was to reduce the number of patients discharged from hospital on inappropriate PPI prescriptions.

Implementation

A process was developed to teach pharmacy students to use a standardized assessment to identify patients admitted to the rehab/medicine units at Markham Stouffville Hospital that are candidates for deprescribing. Once identified the pharmacy student discusses potential PPI deprescribing with the patient and provides written information. If the patient is determined to be eligible, the student completes a PPI Deprescribing Preprinted Order Set (PPO) providing the rationale for deprescribing and the recommended deprescribing regimen. The completed PPO is left on the patient chart for physician review and sign off if agreeable. The student follows the patient while in hospital and assesses tolerance of PPI deprescribing.

Measures

At baseline, 11% of assessed patients that were candidates for PPI deprescribing were initiated on a deprescribing regimen prior to discharge. After the intervention this increased to 45% representing a 62% decrease in inappropriate PPI prescriptions at discharge.

Challenges

The main challenges of this project were 1) missed opportunities to complete the intervention 2) completed PPO's not being signed by the physician and 3) PPI prescriptions being written incorrectly at discharge.

Lessons Learned: To address the above challenges some adjustments were made to the process. These included adding a comments section on the PPO for physician to indicate a reason for disagreeing with the recommendation and development of a letter to send to the family provider detailing the intervention and requesting follow-up with the patient.

Developing a Sustainable Culture for a Deprescribing Program at Michael Garron Hospital (MGH)

John Abrahamson, Michael Garron Hospital
Heather Sampson, Michael Garron Hospital
Patrick Darragh, Michael Garron Hospital
Andrew Liu, Michael Garron Hospital
Cara Tannenbaum, University of Montreal
Stephanie Voong, University of Toronto
Nazig Gabriel, University of Toronto
Ajanthiy Thayalan, University of Toronto
Mayuri Mahenth, University of Toronto

Objectives

Develop a sustainable decision-making framework for deprescribing projects guiding reproducible program developments applicable to other acute care settings

Background

Up to 50% of patients prescribed inhaled corticosteroids (ICS) are unlikely to benefit from their use. ICS are not benign medications with substantial evidence for adverse effects. These costly medications, when prescribed inappropriately result in significant patient and healthcare system burden. Last year, MGH spent \$120,000 on ICS.

Methods

Deprescribing principles were introduced at MGH in 2016. Extrapolating these successful components encouraged MGH to run a "real-life" prospective QI project deprescribing ICS. Electronic stop on dispensing ICS was utilized until the appropriateness of ICS was determined for Medicine patients admitted with a non-respirology diagnosis. Patients/families were engaged in the shared decision-making process with the pharmacist/physician team. Where the appropriateness of ICS was not clear, respirology consult and pulmonary function tests were requested. Primary care physician and community pharmacists were electronically notified on recommendations

Results

Patient population was characterized i.e. demographics, comorbidities, smoking history, respiratory exacerbations and admissions. The proportion of total admitted patients using ICS and the proportion of those that can have ICS deprescribed were determined. Impact on seven day readmissions and patient adherence to deprescribing recommendations continues to be evaluated using Ministry records and phone call follow up.

Conclusion

ICS deprescribing reduces cost and disease burden to the healthcare system. Prototyping ICS stewardship in a collaborative multi-professional model developed systems-based changes required for a sustainable hospital based deprescribing program. A business plan based on savings accrued through deprescribing is underway at MGH.

PAACT (Partners for Appropriate Anti-infective Community Therapy): 25 Years of Antimicrobial Stewardship

Laurie Dunn, PArtners for Appropriate Community Therapy (PAACT)
Alexandra Barany, MUMS Health
John Stewart, Port Perry Medical Associates
John Pilla, PArtners for Appropriate Community Therapy (PAACT)

Goal:

PAACT is a national education network of family physicians that focuses on appropriate treatment of community-acquired infectious disease whose main reference is the Anti-infective Guidelines for Community-acquired Infections ("Orange Book"). The goals are the implementation of a community-based antimicrobial stewardship program and the reduction of unnecessary antibiotic prescriptions. This has curtailed antimicrobial resistance rates and preserve antibiotics for future use.

Implementation:

Two phases: 1) Development of evidence-based, user-friendly clinical guidelines. 2) Dissemination of guideline recommendations through small group case based workshops.

Measures:

Data was obtained from on-site programs (e.g., accredited CFPC sessions) evaluations and post-reflective exercises. Quantitative and content analyses were performed.

Challenges:

Various challenges were described by practitioners including patient pressure to prescribe antibiotics, lack of succinct, user-friendly tools (e.g., guidelines, patient educational materials), and environmental (e.g., walk-in clinics).

Lessons Learned:

A number of broad themes emerged from the data. Post-program, participants felt they were prescribing fewer antibiotics and that they had shifted away from use of second line antibiotics. This change in antibiotic use was confirmed in a published quantitative studies. Changes in patient education techniques and increased confidence with respect to dialogue around antibiotic resistance was reported. Properly designed guidelines for optimal knowledge translation were essential and tools to assist (e.g., viral prescribing pad) with the patient-physician encounter proved to be valuable.

Implementation of a Family Medicine Guide for Pain Management

Laurie Dunn, Partners for Appropriate Community Therapy (PAACT)
Alexandra Barany, MUMS Health
John Pilla, Partners for Appropriate Community Therapy (PAACT)

Background

Chronic and acute pain is a common presentation in the primary care setting. One outcome of a Canadian expert review panel on opioids, convened by ISMP Canada, was that development of a knowledge translation version of previously published Canadian and international pain management guidelines would be useful. A Modified-Delphi process, including a peer-reviewed component, was used to produce an evidence-based resource for front-line clinicians.

Goals

To implement the Pain Management Guide for Family Practice.

Development/Implementation

The document was initially implemented using a multi-faceted distribution and educational approach which included provision at national medical conferences; a CFPC accredited, case-based CPD program and accessibility through a website.

Challenges

It is a challenge to implement a knowledge translation document for family practitioners unless it has undergone a robust, peer-reviewed process and is made accessible via multiple platforms.

Lessons Learned

Any document that aims to set out clinical practice objectives should be field tested extensively with front-line clinicians. A multi-pronged approach is the most successful in implementing the guidelines, the most effective being access to a print version of the document and small-group, case-based, accredited learning. It is also essential that the guide will be continually revised based on user feedback and the emerging evidence.



QUALITY IMPROVEMENT

Positively Changing Red Blood Cell Transfusion Practice Using Educational Strategies

Susan Witt and Ken Wou
Alberta Health Services

Background

Red blood cells (RBCs) are a limited resource and transfusion poses potential patient harms. Changes in RBC transfusion best practice promote a conservative approach in stable non-bleeding patients. Anecdotal evidence suggested these recommendations had not been incorporated into local physician practices. We sought to improve clinicians' understanding of these new guidelines and demonstrate a measurable reduction in unnecessary and total RBC transfusion rates.

Methods

In partnership with lab/transfusion physicians and Choosing Wisely Canada's "Why Give Two When One Will Do?" campaign, we collected monthly data from April 2015 to October 2017. Percentage of RBC transfusions when hemoglobin

Multifaceted educational interventions targeted physicians, nurses and lab staff. These included: multi-site Telehealth workshop; succinct poster highlighting new guidelines (prominently displayed in key locations); repeated data and information feedback using existing communication streams (newsletters, bulletins, meetings).

Results

After the interventions, the following improvements were noted: 104% increase of percentage single unit RBC transfusion orders, 41% increase in RBC transfusions when pre-transfusion hemoglobin

Conclusions

We realized significant improvement in physician RBC transfusion practices utilizing simple low cost techniques and surrogate measures for transfusion appropriateness.

Choosing Wisely in the Emergency Department to Reduce Unnecessary Tests

Sam Campbell, Nova Scotia Health Authority, Dalhousie University
Manal Elnenaei, Dalhousie University
Bassam Nassar, Dalhousie University
Amy Lou, Nova Scotia Health Authority, Dalhousie University
Bryan Crocker, Nova Scotia Health Authority
Nancy Connor, Nova Scotia Health Authority

Background

In a response to ED over-crowding, guidelines commonly exist to guide blood test ordering using 'order sets' for patients waiting for care. In many cases, this increases the use of tests without benefitting patients. We describe a quality improvement project designed to reduce the number of laboratory tests considered 'routine' for waiting patients.

Methods

A multidisciplinary group reviewed existing symptom-prompted nursing blood test guidelines for serum electrolytes and glucose, renal function tests, liver tests, lipase, toxicological tests and beta Human Chorionic gonadotrophin levels. Order sets were revised with tests eliminated from the 'routine' panels that were not felt to 'routinely' contribute to patient care. The new guidelines were communicated to nursing staff in a series of educational sessions, and the revised guidelines were posted at nursing stations. Physician ordering practice was not addressed. A pre-post evaluation compared the period 1 December 2014, - 30 November 2015 with 1 December 2015 - 30 November 2016. Clinical outcomes and patient wait times were not evaluated.

Results

The use of tests in these categories decreased 32% between the two periods, at a net saving of \$210, 246. The largest savings came from total protein (73% decrease), Creatine kinase (68%), chloride (64%), glucose (49%), and albumin (47%). Sodium/Potassium testing decreased by only 13%. The only increase in test ordering recorded was AST (3% increase).

Conclusion

Simply changing order sets resulted in significant savings to the system. Further study is needed to assess the effect of these changes on patient flow and on clinical outcome.

Better Together: Working Across Primary Care Organizations to Implement Choosing Wisely

Karuna Gupta, Health for All Family Health Team
Betty Hum, South East Toronto Family Health Team
Tracy Lindsay, North York General Hospital

Goal

As part of the Adopting Research to Improve Care (ARTIC)-Choosing Wisely project, six Family Health Teams (FHTs) worked collaboratively to implement four common Choosing Wisely recommendations: reducing unnecessary thyroid function testing, and de-prescribing Proton Pump Inhibitors, Glyburide, and Sedative Hypnotics.

Implementation

Over two years, the FHTs chose two common recommendations to address each year. Lead Physicians from each FHT brainstormed interventions to test and implement, sharing learnings and tools from their respective organizations throughout the process.

Measures

The FHTs measured a set of common indicators, including the baseline number of patients targeted for each recommendation, the number of patients successfully de-prescribed or the number of tests reduced, and the number of physicians involved in implementing change. Positive reductions in test ordering and de-prescribing were observed across all four selected recommendations.

Challenges

FHTs experienced challenges to varying degrees depending on their context and the recommendation being implemented. Challenges included staff turnover, competing priorities within FHTs and data related issues. The FHTs shared ideas and resources to tackle these challenges, including conducting shared staff training, and focusing their Quality Improvement Plans (QIPs) on Choosing Wisely work.

Lessons Learned

The FHTs did things collectively that would not have occurred had they worked alone. Shared coordination of work and shared timelines/deadlines helped keep Choosing Wisely work moving forward. In hindsight, the FHTs would have broadened sharing and learning opportunities to other team members, changed the timing of one recommendation to enable greater planning and implementation time and adjusted the report used to implement another recommendation.

Reducing Benzodiazepines & Sedative-Hypnotics Among Hospitalized Patients: Lessons Learned from a Multi-Site Implementation Journey

Christine Soong, Sinai Health System
Cheryl Ethier, Sinai Health System
Deborah Brown, Sunnybrook Health Sciences Centre
Lisa Burry, Sinai Health System
Jesika Contreras, Regional Geriatric Program of Toronto
Yuna Lee, St Michael's Hospital
Karen Ng, Sinai Health System
Zahra Syavash Vahabi, Sinai Health System
Peter Wu, St. Michael's Hospital
Barbara Liu, Sunnybrook Health Sciences Centre, University of Toronto

Background

Inappropriate use of benzodiazepines and sedative-hypnotics (BSH) for sleep is prevalent. We describe the implementation and Lessons Learned from a multi-site Choosing Wisely project.

Goal

To reduce the proportion of new prescriptions of BSH medications used for sleep in select hospitalized patients by 20% across five hospitals in one year.

Methods

Implement the Sedative Reduction Bundle through iterative PDSA cycles Step-wedge evaluation design

Intervention

Sedative Reduction Bundle: Sleep hygiene and promotion, patient and caregiver education, order set amendments, pharmacy reviews of new orders, audit feedback to frontline staff and incorporating sleep and sedative conversations into daily nursing huddles.

Metrics

Outcome measure: Proportion of BSH-naïve patients prescribed any new BSH in hospital for the primary indication of sleep. PROM: Patient reported sleep quality Balancing measure: aggregate prescribing patterns of other sedatives.

Lessons Learned

Success enablers: alignment with organizational strategy to reduce high-risk medication use and falls, empowering nurses

Challenges

1. Synchronizing implementation across 5 sites: amendment of electronic order sets was challenging. achieving consensus to change long-standing process, complex approvals and clinician resistance.
2. Context: Variability in leadership and culture across hospitals shaped the effectiveness of the implementation. Ambiguous roles and processes were clarified through knowledge gained from PDSA cycles.
3. Staff changes: personnel changes when a team member left the project, constant reminders to new trainees
4. Sustainability: labour-intensive audit-feedback data collection
5. "Research vs QI": front line staff at times viewed the work as "research" rather than quality improvement.

ARTIC Choosing Wisely: An Idea Worth Spreading Across Five Ontario Hospitals and Affiliated Family Health Teams

Deepak Sharma and Donna McRitchie
North York General Hospital

Goal

This project aimed to reduce unnecessary testing, treatment and procedures in 5 hospitals and 6 Family Health Teams (FHT) serving the Greater Toronto Area, Markham, and Newmarket. Collectively referred to as the Joint Centres for Transformative Healthcare these like-minded organizations strive to develop, evaluate and implement innovative improvements in health care delivery.

Implementation

Implementation focused on creating awareness by formalizing clinician involvement, sparking inspiration by sharing stories and involving patients, building a sustainable infrastructure through local leadership, and continuing spread by sharing and publishing learnings.

Measures

Purpose oriented measures were developed to meet the needs of local improvement teams (e.g., lab tests reduced and patients de-prescribed compared to baseline), external project reporting (i.e., patients less likely to have an unnecessary test and providers aware of Choosing Wisely), and future focused sustainability (e.g., through a Sustainability Sub-Study conducted with in this project).

Challenges

Challenges experienced varied depending on the site, the sector, and the recommendation implemented. Common challenges experienced across sites included time and capacity to do Choosing Wisely work, competing with other organizational priorities, human resources availability and expertise and data availability/quality challenges.

Lessons Learned

1. Context matters. Hospitals and FHTs approached Choosing Wisely recommendation implementation differently to reflect their organizational needs and areas of focus: FHTs concurrently implemented common recommendations; hospitals each implemented different recommendations, with only some overlapping across sites.
2. Data is important but should serve the ultimate goal of culture change. Because Choosing Wisely work often requires non-traditional data sets, data work can consume time and attention.

Reducing Unnecessary BUN Testing at North York General Hospital

Manuel Giraldo, North York General Hospital

Goal

To reduce unnecessary testing of Blood Urea Nitrogen (BUN) by at least 50% at North York General Hospital (NYGH).

Implementation

Among the pillars of CWC is improving the appropriateness of Laboratory testing. In 2016, we proposed revisions to our order sets containing BUN in order to improve the appropriate utilization of this test. This was based on the knowledge that Creatinine is a better measure of renal function even though most health care providers still use both markers to evaluate renal function. Funds from the Adopting Research to Improve Care (ARTIC) project facilitated its adoption and implementation.

Measures

A baseline report conducted in summer 2016 showed that BUN was ordered on average 6,000 per month and Creatinine 5,400. After MAC approval, a multi-specialty NYGH physician group with laboratory representation was organized to review our Order Entry algorithms. It was agreed to remove BUN from 90% of the Order Sets, 100% of CareSets and from four of the eight Emergency Department's Medical Directives. These changes have not affected patient care and have not changed the triage process or length of stay. Overall BUN testing decreased hospital-wide by 50%.

Challenges

Although some physician groups requested re-institution of BUN and the numbers of Add-ons increased slightly, we have sustained the reductions made.

Lessons Learned

Engaging physicians, other leaders and key stakeholders was critical to the success of this initiative. We strongly recommend a physician champion to lead the conversations with other clinicians. Using electronic tools for order entry (i.e. CPOE) facilitates the review and implementation of this intervention.

An Idea Worth Sustaining: Evaluating the Sustainability Potential of the Choosing Wisely Initiative Across Five Ontario Community Hospitals & Affiliated Family Health Teams

Monika Kastner, Julie Makarski, Kate Mossman, Kegan Harris and Deepak Sharma
North York General Hospital

Background

Evaluating the sustainability potential of innovations is critical to maximizing their potential for impact. We evaluated the sustainability potential of CW at five Ontario community hospitals and affiliated family health teams (FHTs) as part of a CW spread project.

Methods

We conducted a mixed-methods study: 1) a validated sustainability survey with CW implementation teams at T0 (baseline), T1 (6 months), and T2 (12 months) to identify sustainability determinants; 2) focus groups with teams following survey completion at T0 (to discuss identified challenges from the survey, and to co-create an action plan to address them) and at T1 (to discuss action plan implementation, and any new challenges). Sessions were audio-recorded and transcripts were analyzed using content analysis.

Results

78 participants representing 15 teams (5 hospitals; 6 FHTs) completed surveys and participated in 30 focus groups. Three CW de-adoption priority areas were investigated: proton pump inhibitor (PPI) de-prescribing; reducing pre-op testing, BUN/Urea lab tests. The mean team sustainability scores ranged 61-73% (PPI), 87-89% (BUN/Urea), and 82-92% (Pre-Op), which were above the threshold of what is considered a sustainable innovation (55%). Top sustainability facilitators were clinical leadership engagement and fit with organization's strategic aims/culture; top challenges were adaptability of improved processes and infrastructure for sustainability. All teams identified at least one challenge for which they co-designed and implemented an action plan.

Conclusions

Our work contributes to advancing sustainability methods and highlights that implementation teams can be empowered to influence their implementation efforts, and to realize positive outcomes for their services and patients.

Gaining Momentum Through the Use of Choosing Wisely Canada: Ontario Transfusion Quality Improvement Plan (OTQIP)

Denise Evanovitch, Ontario Regional Blood Coordinating Network
Yulia Lin, Sunnybrook Health Sciences Centre
Allison Collins, Ontario Regional Blood Coordinating Network
Sheena Scheuermann, Ontario Regional Blood Coordinating Network

Background

The Ontario Regional Blood Coordinating Network (ORBCoN) in conjunction with the Ontario Transfusion Quality Improvement Plan (OTQIP) Committee developed a quality improvement toolkit that was launched in April 2016. The plan's goal is to reduce patient harm by improving transfusion practice in hospitals.

Design/Methodology

The OTQIP Committee has broad representation from the transfusion community in all regions of Ontario. The Committee also collaborated with Health Quality Ontario (HQO), Choosing Wisely Canada, the Local Health Integration Networks (LHIN), Canadian Society for Transfusion Medicine and the Healthcare Insurance Reciprocal of Canada. Several hospital surveys revealed a strong interest and desire to implement all or portions of the OTQIP.

Results

The toolkit contains:

- A narrative template based on HQO's model
- Clinical practice recommendations
- Transfusion order set template
- Choosing Wisely Canada screensaver
- SOP, algorithm, and training aid for technologist prospective blood order screening

Post-launch, other tools were added to further assist hospitals in advancing their QIPs: a technologist prospective screening educational module and an electronic tracking tool. Both hospital and provincial reports can be generated from the tracking tool. Twelve hospitals are using the tool and have conducted 72 audits.

Conclusion

Helping hospitals through the development of standardized templates, instructions, education and other tools for transfusion quality improvement increases the ability of hospitals to uptake quality improvement initiatives. Taking a standardized approach across the province allows for both aggregate and hospital data comparison analyses.

Double Edged Sword: Order Set Modification to Reduce Two Unit Red Cell Transfusions on an Oncology Ward

Alan Gob, Anurag Bhalla and Ian Chin-Yee
Western University

Introduction

Choosing Wisely Canada was introduced in 2014 to help guide conscious healthcare practices to reduce unnecessary tests, procedures and treatments. As part of the campaign, Canadian Society for Transfusion Medicine recommends one over two packed red blood cell unit (pRBCs) transfusions.

Objective

Aim of the study was to devise strategies to limit unnecessary 2 pRBCs transfusions.

Methods

We conducted real-time and retrospective audits, and survey of frontline staff on oncology inpatient ward at London Health Sciences Centre to identify factors associated with 2 pRBCs transfusions. Based on the surveys, we implemented two main targeted interventions including educating healthcare providers through posters and bulletins, and removal of automatic 2 pRBCs computerized transfusions orders. We monitored number of pRBCs ordered on a monthly basis from October 2015 to November 2016.

Results

After implementation of proposed strategies in April 2016, there was a 50% reduction in proportion of 2 pRBCs ordered in May 2015. In addition, the reduction in 2 pRBCs ordered was sustained for remained of the monitoring period. The number of 2 pRBCs transfusion decreased by 89% from 71 units per month (51.1% of total transfusions ordered) in October 2015 to 6 units per month (5.6% of total transfusions ordered) in November 2016.

Conclusion

The reduction in proportion of 2 pRBCs ordered was secondary to the proposed intervention, and was sustained over a period of six months. These initiatives highlight a novel way of limiting overutilization at the level of frontline providers and healthcare system.

An Innovative Digital Strategy for Dissemination of Choosing Wisely Canada Guidelines In Transfusion Medicine

Clinton Campbell, QEII Health Sciences Centre

Choosing Wisely Canada (CWC) has high relevance to the transfusion of human blood products, which carries significant risks and is based on a highly limited supply. One concern raised about CWC is that it may require more effective dissemination strategies to implement systemic practice change. Many healthcare professionals now use video-based platforms such as YouTube for continued professional education. Specifically, YouTube allows video producers to learn from viewers' watching habits through data metrics, leading to improved video efficacy. We summarized CWC blood transfusion guidelines as a series of short, entertaining and informative animated videos on YouTube, with the aim that this will enhance guideline dissemination toward the safest and most responsible transfusion practice.

Implementation

We produced five digitally animated videos encompassing key CWC transfusion medicine guidelines. Videos were produced between May and December 2017, and uploaded onto YouTube in January 2018.

Measures

YouTube data metrics including view metrics, watch time metrics, engagement metrics, playlist metrics and audience retention metrics are being collected. Data metrics will be measured after 6 months.

Challenges

Challenges included translating complex medical knowledge into a simplified format across disciplines (transfusion medicine to digital animation). The most significant ongoing challenge is knowledge translation to augment physician awareness of the videos on YouTube.

Lessons Learned

Translation of CWC transfusion medicine guidelines into a video format was a highly challenging yet rewarding process. Initial feedback has been highly positive; however, the efficacy of dissemination will be evaluated after several months of YouTube watch data metrics are collated.

De-Implementing Wisely: Planning your Implementation Strategy

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Andrea Patey, Ottawa Hospital Research Institute
Stefanie Linklater, Ottawa Hospital Research Institute
Françoise Ko, Choosing Wisely Canada
Sacha Bhatia, Choosing Wisely Canada
Wendy Levinson, Choosing Wisely Canada

Background

Low value care is common in healthcare systems in Canada and globally resulting in direct harm to patients and threatening healthcare system sustainability. There is considerable uncertainty about how best to reduce low-value care, suggesting the urgent need for implementation research in this area. To address this issue CWC has established the CWC Implementation Research Network (CWC-IRN) involving 12 provincial and territorial CW campaigns to establish a Canadian learning healthcare system on de-implementation. This Network brings together CWC, CW provincial campaigns, patient and health system partners and internationally leading implementation researchers.

Aim

The overall goal of the CWC-IRN is to develop the scientific basis to support implementation of CWC recommendations in Canadian healthcare settings. We will build capacity in innovative CRTs and implementation research with patient partners, early- and mid-career scientists and trainees. Patient partners will be given the opportunity to participate in a wide range of research training and patient engagement activities. Individuals within the CWC-IRN will receive tailored advanced training activities and engage with the scientists on the team (e.g., webinars and training on implementation science, patient engagement strategies). We will engage in a wide range of dissemination activities targeting CWC-IRN, provincial healthcare systems and international CW groups.

Conclusion

Implementation science aims to understand the underlying reasons for health care processes and to develop and test potential solutions to improve them. The CWC-IRN links CWC, provincial and territorial patient and health system partners with leading Canadian implementation scientists to develop and test solutions for de-implementation of low-value care.

Reducing the Rate of Postoperative Urinary Tract Infection Amongst Orthopaedic Patients in a Community Teaching Hospital

Hannah Brooks, David Smith, Linda Jussaume, Komal Patel, Paulina Ferreira, Hossein Mehdian, Shawn Garbedian, Sanjho Srikandarajah, Lindsay Taam, Mary Kapetanos, Nicole Golda, Jennifer Page, Valeria Thompson, David Hajek, Janet Moffat, Michell Richardson and Maria Salanga
North York General Hospital

Background

Postoperative urinary tract infections (UTI) are a commonly avoidable complication, with associated negative patient and administrative implications. During 2016, North York General Hospital (NYGH) in Toronto Canada identified UTI as a quality improvement opportunity within the surgical orthopedic patient population. At baseline, NYGH identified an odds ratio of 1.50, placing it in 9th decile in 2016 as reported by the Health Quality Ontario-National Surgical Quality Improvement Program (NSQIP).

Objective

To reduce UTI in surgical orthopedic patients to an odds ratio

Methods

An inter-professional team developed and implemented a “bladder bundle” change protocol reflective of best evidenced-based practices, Choosing Wisely Canada recommendations and local stakeholder input. The primary focus of the bundle included 1) Procedural insertion criteria 2) Early removal of catheter 3) The development of a urinary retention algorithm and 4) multi-professional education on appropriate sterile technique and catheter care. The primary metric was identified as the UTI rate as defined by NSQIP. The secondary metric was the total catheterization rate amongst NSQIP abstracted patients and the balancing metric was retention rates.

Results

From May 2017- October 2017, the surgical orthopedic population had an UTI odds ratio of 0.91. In conclusion, the orthopedic bladder bundle has shown early indications of being effective in reducing urinary tract infections in surgical orthopedic patients.

Lose the Tube at Humber River Hospital

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Humber River Hospital

Background

Humber River Hospital (HRH), North America's first fully digital hospital, recognizes the importance of reducing unnecessary treatments as part of the Choosing Wisely Canada (CWC) campaign. As part of this initiative, HRH embarked on a hospital-wide strategy to reduce unnecessary urinary catheterization using the CWC "Lose the Tube" toolkit. By monitoring urinary catheterization using electronic orders on eight targeted inpatient units, we established at baseline average catheterization rate of 22% at our institution. As such, HRH embarked on a multi-disciplinary quality improvement (QI) project to reduce unnecessary urinary catheter insertion.

Methods

Using the model for improvement, a number of interventions were taken to reduce the rate of unnecessary urinary catheterization at HRH including: 1) establishing a CWC steering committee with representatives from medical and surgical specialties, 2) modifying digital order sets to include reassessment of catheter need for hospitalized patients, 3) implementing multi-disciplinary educational activities such as a CWC newsletter and multi-disciplinary grand rounds, and 4) introducing standardized equipment for Foley catheterization with teaching on proper catheter insertion and indications discussed with nursing staff.

Results

From August 2016 to October 2017, HRH was able to reduce the urinary catheterization global average rate to 10% on targeted inpatient units.

Conclusions

The rate of urinary catheterization at HRH has significantly reduced in just over a year through multiple QI strategies aimed at education, promotion, standardized equipment, and forced functions through the use of computerized decision support. Future recommendations include exploring the cost of quality to demonstrate annual savings as a result of CWC implementation.

Collab with the Lab: Implementing Choosing Wisely with Laboratory

Kun-Young Sohn, Trillium Health Partners

Background

Even after the introduction of Troponin as the most specific marker of myocardial injury, Creatinine Kinase (CK) had still been included in laboratory test profiles and clinical order sets. In addition to ordering CK and Troponin together intentionally, bundled CK-Troponin also hinders ordering the appropriate test. Test utilization audit was performed to estimate the impact of educational memo and intervention at the test profile and order set.

Method

For the improvement of utilization, the two hospital sites (A & B) of Trillium Health Partners approached in two stages: 1) sending out of an educational memo; 2) removal of CK from test profiles and order sets. To assess their impacts, CK and Troponin results were downloaded from the LIS for the years 2011-2017. The CK/Troponin Index, number of CK tests per 100 Troponin tests, was used as the utilization indicator.

Result

The CK/Troponin index before sending out of a memo was 103 at site A and 93 at site B. Even after sending out the memo, the index remained same at 105 at the site A, while decreased to 55 at the site B. After removal of CK from the test profiles and order sets, the index dropped significantly to 6 at the site A and 12 at the site B.

Conclusion

The results implied that the educational memo helped physicians in choosing laboratory test wisely and the concerted efforts at the operational level, such as laboratory test profiles and clinical order sets, produced a greater impact.

Comparing Physician and Nurse Ordering in Emergency Departments: A Qualitative Study

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Janet Curran, Dalhousie University
Sam Campbell, Nova Scotia Health Authority, Dalhousie University

Background

Although LT ordering in EDs is a valuable diagnostic tool, it also has implications such as increased system costs and patient length of stay. We aimed to identify and compare patterns and perceptions associated with LT ordering by emergency physicians (EP) and emergency nurses (ERN) at two EDs.

Methods

Using the Theoretical Domains Framework to develop a questionnaire aimed to sort content into 14 broad domains, we conducted interviews with 25 EPs and ERNs to explore influences in decisions to order LTs. Qualitative data was analyzed by two individuals using a consensus methodology to highlight key themes that were associated with difficult or inconsistent clinical decision making.

Results

While EPs and ERNs agreed that LT ordering could improve patient flow, they differed in perceptions about flow disruption, busy EDs, and patient anxiety as motivating factors for ordering LTs. Additionally, ERNs reported to be most influenced by the staff EPs, while EPs reported most influence by consulting services. Finally, more EPs ordered LTs based on test result interpretation, while ERNs were more likely to order based on patient symptoms.

Conclusion

ERNs and EPs differ in factors influencing LT ordering, especially in the broad domains of beliefs about consequences, environmental context and resources, social influence, emotions, and knowledge. Further research will determine how this information can be used to support decision making around LT use.

A Pharmacist Led Strategy to Reduce Unnecessary Lab Tests for New Admissions into Long Term Care

Parnian Ghafari, Medical Pharmacies

Growing evidence shows inappropriate laboratory testing is a contributor to waste in healthcare and it's a common problem. Long term care setting is not immune to such wasteful practice. In a long term care setting, routine laboratory testing on new admissions has become the norm. In fact, there are facilities that have a blanket medical directive for routine new admission blood work.

The Better Coordinated Cross Sectoral Medication Reconciliation (BOOMR) project, which is a quality improvement initiative that involves a clinical pharmacist remotely leading a novel interdisciplinary medication reconciliation (MedRec) process has created a new opportunity to intervene and intercept unnecessary laboratory test orders. Prior to the admission, the pharmacist retrieves recent pertinent blood work from the Ontario laboratories information system (OLIS) and other organizations that may not be contributing data into OLIS. This information along with other clinical concerns are shared with the practitioners at the time of MedRec to guide clinical decision making in a timely manner and minimize re-ordering of unnecessary blood work.

This unique information sharing at the time of admission has challenged the status quo of ordering routine blood tests for new admissions in long term care with potential to improve clinical outcomes and reduce costs.

Evaluating Healthcare Providers' Understanding of CBT-I in an Interdisciplinary Family Health Team

Nicola Yang, Markham Stouffville Hospital

Background

Insomnia is the most commonly diagnosed sleep disorder and one that can have significant personal and economic consequences. Moreover, it is both a symptom and independent risk factor for multiple physical and mental health conditions. Cognitive Behavioural Therapy for Insomnia (CBT-I) is an effective treatment for chronic insomnia, and due to its low-risk profile, is recommended as the first-line treatment of choice.

Health for All (HFA) is a community-based academic teaching unit and one of six family health teams that implemented the Choosing Wisely recommendation of deprescribing sedative hypnotics as part of the ARTIC-Choosing Wisely Project. Although referrals to the deprescribe program commenced in 2017, a needs assessment had yet to be done to assess perceived need or interest in the program, healthcare providers' approach to chronic insomnia management, understanding of CBT-I and perception of its effectiveness. This study will provide baseline data to support successful implementation of the CBT-I Program at HFA.

Methods

A formal needs assessment survey was distributed electronically to all healthcare providers at HFA (i.e. staff physicians, family medicine residents, nurse practitioner, and physician assistant). The survey evaluates providers' demographics, current approach to insomnia management, knowledge and perception of CBT-I and interest in further CBT-I education.

Results

Results are pending (current response rate: 87%).

Conclusions

The collected responses will hopefully improve the design and execution of the CBT-I/hypnotic deprescribe program at HFA. Analysis of data will help identify knowledge gaps in insomnia management and guide further development of educational tools and curriculum on the subject.

Engage at Every Stage, Learn at Every Turn: How Saskatchewan is Building Continuous Clinical Quality Improvement Learning Pathways for Physicians

Gary Groot, University of Saskatchewan
Tanya Verrall, Health Quality Council

Goal

How do you change the conversation around improving Appropriateness of Care (AC)? How do you engage physicians in leading cultural change? Saskatchewan is using a unified, comprehensive approach to physician development in leadership and quality improvement.

Implementation

Working from a collaboratively-designed AC framework, the province has mobilized to build capacity through both informal and formal learning opportunities, such as:

- Informal learning – provincial AC program (with topics such as pre-operative testing), Saskatchewan Medical Association Appropriateness of Care Initiative (SACI) physician coaching support.
- Formal learning – Resident Quality Improvement Program, Clinical Quality Improvement Program, undergraduate quality improvement courses.

Measures

In addition to the AC program evaluation matrix, presentation will share early results from the pilot CQIP cohort – including why one participant described it as “one of the best learning experiences in my working life”. The evaluation framework includes results from participant experience, coach/faculty experience, and project progress.

Challenges

- Access to/support with data.
- Finding time for busy clinicians to learn.
- Long-term financial investment from funders – building for the next decade, not the next day.

Lesson Learned

- Managing expectations regarding pace of change, return on investment.
- Power of collaboration – unique partnership of the SMA and Ministry of Health.
- System buy-in and alignment – start with the willing, engage more strategically.
- Benefits of investing in physicians as peer coaches.
- Potential for spread – several projects show strong potential for greater provincial impact.

Examining the Implementation of Preoperative Diagnostic Testing Guidelines in Manitoba

Sarah Kirby, George and Fay Yee Centre for Healthcare Innovation
Eric Bohm, University of Manitoba
Ashley Struthers, George & Fay Yee Centre for Healthcare Innovation
Thomas Mutter, University of Manitoba

Goal

In Manitoba audits have shown that many patients continue to receive unnecessary preoperative tests despite province wide guidelines. This project aimed to identify the barriers and facilitators to effective guideline adoption and implementation in Manitoba in order to develop implementation strategies to reduce inappropriate preoperative testing in low risk surgeries.

Implementation

Implementation strategies included physician engagement, guideline revision, standardizing and removing cues from preoperative documents (i.e. patient cover letters, preoperative history and physical forms) and audit and feedback.

Measures

The project is being evaluated using qualitative, quantitative and survey methods. Data collection involved accessing existing administrative and chart data and collecting new data in the form of interviews and surveys with patients, healthcare providers and stakeholders.

Challenges

The quantitative evaluation is ongoing. Preliminary audit results reveal that out of a sample of 1769 surgeries, inappropriate tests were ordered in 722 cases (41%). These initial results underscore the challenge of changing individual physician behaviour despite extensive stakeholder engagement and multiple system level interventions. Qualitative and survey data demonstrate that many of the challenges lay in uptake and communication that was not aligned with guidelines.

Lessons Learned

Implementation methods must be multifaceted, involve established leaders and engage all disciplines involved in preoperative care. Preliminary results of surgical audits for audit and feedback reveal that there is large variation in the number of inappropriate tests being ordered between surgeons and surgical specialties (22% - 72%), indicating a need for targeted feedback.

Leveraging Audit & Feedback to Support Practice Change

David Zago, Health Quality Ontario

Background

Choosing Wisely Canada has developed recommendations to avoid unnecessary tests or treatments. Health Quality Ontario has produced a range of comparative audit and feedback products and supports aligned with these recommendations to enable improvement across Ontario.

Areas of Focus

Avoid routine pre-operative testing for asymptomatic patients undergoing low-risk surgery.
Avoid inappropriate use of antipsychotics in long term care.
Manage appropriate use of opioids in primary care.
Reduce urinary tract infection perioperatively.

Methods

Comparative utilization rate indicators are defined for each area of focus.
Using available administrative data sources, organization or practice-level rates are generated and trended overtime in a quarterly or biennial report to the organization or clinician.
If appropriate, a better performing rate or target is included for comparison purposes.
Actions or change ideas (including CWC Toolkits) accompany the indicators to prompt organizations or clinicians on approaches to improvement.
Collaboratives/communities of practice engage organizations/clinicians to share ideas and success with changing practice leading to improvement.

Results

Four audit and feedback approaches regularly provide comparative data, evidence-based change ideas and opportunities to connect with peers to initiate change.

Hospital Performance Series Report – 127 hospital organizations receive this report

My Practice Long-Term Care report - over 300 primary care physicians working in long-term care subscribe to this report

My Practice Primary Care report - over 2200 primary care physicians subscribe to this report

Ontario Surgical Quality Improvement Network - 31 hospitals participate

The Checklist for Head Injury Management Evaluation Study (CHIMES): A QI Initiative in the Emergency Department

Sameer Masood, University Health Network
Lucas Chartier, University Health Network
Joo Yoon, University of Toronto

Background

Over 90% of patients with head injuries (HIs) seen at emergency departments (EDs) are minor HIs. Over-utilization of computed tomography (CT) scans results in unnecessary exposure to radiation and increases health-care utilization. Using recommendations from the Choosing Wisely Campaign (CWC) and quality improvement (QI) methodology, our aim was to reduce the CT-scan rate for patients presenting with HIs by 10% over a 6-month period at two academic EDs.

Methods

Baseline CT-scan rates were determined through a 10-month retrospective cohort review. Our PDSA cycles included: 1) Improving provider knowledge about the CWC recommendations; 2) Testing, refining and implementing a modified Canadian CT Head Rule checklist; 3) Developing and giving patients CWC-themed HI handouts; 4) Bimonthly reporting of CT-scan rates to providers. Our primary outcome measure was the number of CT-scans performed for patients with HIs. Process measures included the number of checklists completed and ED length-of-stay (LOS). Our balance measure was return ED visits within 72 hours.

Results

We observed a 16% relative decrease in CT-scans at 3 months (47.9% to 40.5%, $P=0.005$) and 10.4% at 8 months (47.9% to 43.1%, $P=0.02$). Overall before-and-after median times were not significantly different (237min to 225min, $P=0.18$). 33% of total checklists were completed. 72-hr return visits did not change during the 8-month study period (4.0% to 4.16%, $P=0.85$).

Conclusions

Our local QI initiative was successful in decreasing CT rates for patients presenting with a HI. The decrease in effect at 8 months suggests the need for continued feedback and reminders to ensure long-term sustainability.

Implementing Choosing Wisely Recommendations Across 5 Alberta Emergency Departments Through Electronic Decision Support

Daniel Grigat, James Andruchow, Andrew McRae, Grant Innes and Eddy Lang
Alberta Health Services

Goal

To implement Choosing Wisely Canada recommendations for appropriate CT use for patients with mild traumatic brain injury (MTBI) and suspected pulmonary embolism (PE).

Implementation

Emergency physicians (EPs) at 5 Calgary sites were randomized to receive electronic clinical decision support (CDS) for CT imaging of patients with MTBI or suspected PE. CDS was launched in an external window whenever a CT was ordered from computerized order entry. Physician interaction was voluntary.

Measures

During the first 8 months of the intervention 102 EPs randomized to MTBI CDS saw 2,189 eligible patients, using CDS 36.2% of the time, and ordering head CT for 38.5%. Among 100 control EPs who saw 1,707 eligible patients, CT head was ordered for 45.1%. There was no difference in 30-day ED return visits, hospitalizations, or traumatic head injury diagnoses between groups.

4 EPs randomized to PE CDS saw 9,609 eligible patients and used CDS 43.2% of the time. CT Pulmonary Angiogram (CTPA) utilization was 9.7% among EPs receiving CDS, compared to 8.2% among 91 control physicians who saw 9,498 eligible patients. There was no difference in 90-day ED return visits or venous thromboembolism diagnoses between groups.

Challenges

CDS use was variable, ranging from 0-100% among physicians, likely owing to the voluntary nature of the intervention.

Lessons Learned

CDS implementation was associated with reduced head CT use for patients with MTBI, but increased use for patients with suspected PE. The voluntary nature of the intervention as well as triggering only on CT ordering likely contributed to its modest impact.

Reducing Unnecessary Blood Tests in a Downtown Emergency Department

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St. Michael's Hospital

Laboratory testing is a core component of patient assessment in the Emergency Department (ED). However, some testing may be unnecessary. We aimed to identify unnecessary lab testing in the ED and to reduce it by 30%.

Our change strategy included engagement of key stakeholders, education (around appropriate use of PT/aPTT) and changes to ED lab panels. The majority of lab testing in the ED is triggered by medical directives wherein ED nurses order from labs panels for common presentations. In collaboration with ED, Lab Medicine and with reference to best practices, we reviewed all of the SMH lab panels. Four tests were identified that were uninformative in certain settings (PT, aPTT, urea, albumin), and two tests were identified that were redundant with newer tests (CK, amylase). These tests were removed from five lab panels. Measurement focused on the mean testing rate per month of targeted tests and the reagent costs.

Immediately subsequent to our initiative, dramatic changes in the testing rates of targeted tests were observed. As illustrated below, monthly test volumes decreased by 47% to 93% depending on the test. The changes resulted in a projected annual savings of \$77,000 in reagent costs. Balance metrics including ED length of stay and transfusion rates showed no change. Add-on test rates were assessed pre and post panel changes for a subset of tests (PT/aPTT) and were stable.

	PT	aPTT	Urea	Albumin	CK	Amylase
Pre-Mean Test Vol./Mth	2341	2308	2948	1504	1204	1080
Post-Mean Test Vol./Mth	918	872	198	800	634	380
% Decrease	-61%	-62%	-93%	-47%	-47%	-65%

Revision of ED lab panels is a relatively simple change strategy that can result in dramatic reductions in test volumes without adversely impacting patient care.

Piloting a “chest x-ray for acute asthma” knowledge dissemination tool in Alberta emergency departments

Lynette D. Krebs, Cristina Villa-Roel, Maria Ospina, Brian R. Holroyd and Brian H. Rowe
University of Alberta

Background

To facilitate clinician-patient dialogue, a patient knowledge dissemination tool was designed to portray when chest x-rays (CXR) are needed for acute asthma (AA) care. This tool was piloted with patients and emergency physicians practicing in Alberta prior to use in an implementation trial.

Methods

An online survey was distributed to emergency physicians via email. Patients (17-55 years) with AA were enrolled in an emergency department (ED) study at two urban centres. Both populations provided feedback on the tool.

Results

A total of 55 physicians (29%) and 38 patients responded. Approximately 55% of physicians felt completely or mostly comfortable using the tool. Suggested changes were to include information on CXR radiation risk and refrain from discussing imaging variation. Most patients (92%) agreed they understood the information and 68% felt the information applied to them. Nearly half of the patients (45%) agreed that because of the tool they knew more about when a patient with AA should have a CXR and 71% agreed that they would discuss their CXR need with their emergency physician. Ten patients (26%) suggested tool modifications, including: additional details about the CXRs (i.e., risks, indications), removing the statement that CXRs are overused, and including an instruction for patients not to shy away from asking their physician questions.

Conclusion

These results indicate the need to ensure patients understand how the information in decision aides/tools applies to them. Further research is needed to uncover whether patients would act on the information and whether those actions would influence ED management.

Do I Really Need Antibiotics? Ask Your Doctor or Nurse Practitioner

Robert Wilson, Patrick Parfrey and Brendan Barrett
Translational and Personalized Medicine Initiative

Goal

To reduce unnecessary prescribing of antibiotics by Family Physicians & Nurse Practitioners in Newfoundland & Labrador (NL).

Implementation

NL uses more antibiotics than any other province in Canada. In 2016, NL provided 955 prescriptions per 1,000 inhabitants, 19% more than the second highest province. CWNL, in collaboration with the NL Medical Association (NLMA) and the Association of Registered Nurses of NL (ARNNL) created a peer comparison program for GP's and NPs antibiotic prescribing rates using data from the NL Prescription Drug Program (NLPDP).

Measures

A total of 502 GPs and 84 NP's in NL were sent by email, individualized de-identified reports on their antibiotic prescribing volume and rates plus type of antibiotic prescribed during the 2015/6 fiscal year compared to their peers. The Choosing Wisely Canada recommendations for antibiotic use were provided, and a link to resources created by Quality of Care NL to reduce antibiotic overuse. Data will be analyzed 6 months after the release of the report to see the effect of the intervention

Challenges

(1) Access to provincial pharmacy network for all residents of NL only available from 2017, (2) ethical and bureaucratic barriers for data sharing, (3) constructing clear and concise messaging with the report for easy understanding.

Lessons Learned

The Pharmacy Network database is active therefore future analysis will include prescriptions for all demographics. A data sharing agreement has been constructed and accepted by the NLMA, ARNNL and Memorial University to allow ethical and confidential data sharing amongst CHIA and the GPs and NPs

Randomized Controlled Trial of Audit and Feedback Intervention to Improve Adherence to the Choosing Wisely Recommendations in Primary Care

Alexander Singer, University of Manitoba

Leanne Kosowan, University of Manitoba

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Albert Mota, Centre for Healthcare Innovation

Lisa Lix, Centre for Healthcare Innovation

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Background

The effectiveness of audit and feedback interventions in primary care is unclear. The Manitoba Primary Care Research Network (MaPCReN) provides quarterly practice feedback reports to primary care providers. Using MaPCReN, this study assessed the impact of an audit and feedback program regarding 4 Choosing Wisely recommendations: antimicrobial prescriptions for viral infection, antipsychotic prescriptions for patients with dementia, screening serum vitamin D and annual blood screening (i.e. PSA).

Methods

243 clinicians from 46 clinics were randomized into one of three groups: (1) current practice feedback reports (control group), (2) current feedback reports with non-personalized information on CW recommendations, or (3) modified feedback reports with practice-based information related to CW recommendations. Following implementation, descriptive statistics and multivariate models explored differences in prescribing and screening between groups.

Results

Prior to implementation of the audit and feedback program, 15.6% (N=25,629) of the primary care encounters had an outcome contrary to the CW recommendations evaluated. Of these, 65.4% were prescribed an antibiotic for a viral infection, 28.7% received a PSA screen and 9.0% had a Vitamin D test. Among patients diagnosed with dementia, 17.0% were prescribed an antipsychotic medication. Statistical analysis of the study data is currently being conducted. This presentation will explore differences in prescribing and screening following implementation of the audit and feedback program.

Conclusion

Our study aims to evaluate the effectiveness of a low cost and accessible audit and feedback mechanism for primary care providers. By reducing unnecessary care, we can improve population health and reduce health care costs.

Implementation of changes in cervical screening recommendations.

James Dickinson, University of Calgary

Goal

To change Canadian cervical screening practices to evidence base.

Implementation

The Canadian Task Force report on cervical screening made strong recommendations against screening women under age 20, weak recommendations against for 20-25, weak recommendations for screening women 25-29 years, strong recommendations to screen from 30 to 69, Weak recommendation against screening after age 70.

Measures

The Task Force report was published in 2013, but provincial guidelines seem to dominate, and did not change from their existing start age of 21. BC and Alberta guidelines changed in 2016, and since then behaviour changes have been observed in those provinces.

Challenges

Most Family Physicians focus on their provincial guidelines, and the Task Force is not yet able to encourage them to change against their local guidelines. Current guideline committees in most provinces are entrenched in their ideas, and unwilling to consider change. Some have misquoted the Task Force guidelines and interpreted their approach as being congruent.

Lessons Learned

We must understand how to change local guidelines, not simply provide evidence-based recommendations.

Primed for Success: Using Implementation Science to Implement Change

Shusmita Rashid, Sobia Khan, Julia Moore, Melissa Courvoisier, and Sharon Straus
St. Michael's Hospital

Knowledge translation (KT) involves the implementation of research evidence into real-world practice. The science and practice of KT has become recognized as increasingly important within healthcare systems that continuously strive to integrate evidence-based practices, recommendations, and policies into routine healthcare. In an effort to facilitate these objectives, we developed a course, entitled Practicing KT (PKT) <https://knowledgetranslation.net/education-training/pkt/>, to provide individuals and organizations with the knowledge and support to apply implementation science to develop, implement, and evaluate evidence-based programs.

Drawing from our experience of delivering more than 15 implementation training courses, we propose delivering a workshop to provide an overview on how to use implementation science to navigate implementation challenges and plan for enhanced outcomes for Choosing Wisely recommendations. Participants will think through identifying and engaging stakeholders involved in implementation; challenges at the individual, organizational and system level; and how to operationalize strategies to foster change. This workshop, informed by best practices in organizational learning and adult education, will facilitate opportunities for participants to learn and apply concepts through an interactive presentation, small group activity, and a summary of implementation tips and resources. Participants will have examples of how to use relevant theories, models, and frameworks to help understand implementation issues, stakeholders, resources, and regulations at organization and system levels. Our goal is to make implementation science accessible to practitioners in a variety of health-related disciplines and this workshop will be beneficial for individuals and organizations working to implement evidence and de-implement unnecessary care across clinical, public health and policy settings.

Assessing the Completion and Appropriateness of Headache and Low Back MRI and CT Requisitions: A Canadian Perspective on Patient-Centred Referrals

Mark Khoury, Brock University/I-EQUIP
Michael Tolentino, Brock University

Inappropriate diagnostic imaging is a burgeoning problem within the Canadian healthcare system and imposes considerable burdens to efficiency, timeliness, and cost-effectiveness of care. A preliminary review of 267 patient charts indicates that 55% of MRI referrals for headache (HA) and low back pain (LBP) from the Diagnostic Imaging Department at Niagara Health (NH) were deemed inappropriate or incomplete based on Choosing Wisely Canada (CWC) guidelines. The ubiquity of LBP and HA, concomitant with inefficient use of resources, has contributed to rises in MRI and CT scans in Canada. Therein, improving the appropriate completion of MRI and CT requisitions would allow NH to reduce wait times and improve patient satisfaction. The quality improvement objective is to decrease inappropriate or incomplete referrals for head and lumbar MRI and CT scans in the Niagara Region from 55% to 20%, as defined by the CWC guidelines, by April 2018. We intend to accomplish this objective through modification of the MRI and CT requisition forms.

Changes to the requisition form reflect CWC guidelines and are expected to improve completion rates; changes include checklists for red flag indications, completion of 6 weeks of conservative management, and supplementary information in cases where tests are not indicated. New requisition forms have been distributed to a sample group of primary care physicians in the Niagara Region and post-intervention data is currently being collected. Ultimately, this intervention aims to facilitate a patient-centred approach to diagnostic referrals through affirmation that the patient's symptoms appropriately indicate a scan according to CWC guidelines.

The Joys and Sorrows of Implementing

Catherine Kohm, Fraser Health

Fraser Health is the largest Regional Health Authority in British Columbia serving a population of 1.7 million people. Care areas include hospital, residential, home health, mental health and addictions, and public health services. Our services areas are organized into ten communities with an Executive Director leading the operations of the community.

The Executive Director for Burnaby Community requested a Choosing Wisely Campaign designed to support eleven residential care homes, housing 1428 residents. Burnaby Community has the highest unscheduled transfer rate in Fraser Health to the Emergency Department, and this was identified as a specific objective to meet Fraser's target of 7.5 transfers per month per 100 residents. Wise use of the Emergency department for the vulnerable long term care resident ensures the right treatment for the right person at the right place.

An interdisciplinary task force which included family members collaborated to develop a Burnaby focused campaign aiming to improve the care of residents through appropriate transfers to the ED. The team developed documents with three specific goals in mind: enhance communications with residents & families, support our community physicians to provide services at long term care sites, and articulate to our acute care partners the types of services that are safely available in long term care homes.

The next steps for this campaign are to share with Fraser's nine other communities the lessons learned, the challenges and successes. A plan has been developed to measure the results of this initiative in meeting the three defined goals.

Elective Lumbar Laminectomy: Routine Perioperative Practices and Postoperative Outcomes

Mina Tohidi, Tiffany Lung and David Yen
Queen's University

Background

Routine investigations for asymptomatic patients undergoing low-risk, non-cardiac surgery contribute little value to perioperative care, but these tests are still ordered in many centres, including ours. The primary purpose of this study was to determine the prevalence of preoperative bloodwork for elective lumbar laminectomy. Secondary objectives were to determine the prevalence of intraoperative tranexamic acid administration, intraoperative complications, length of stay, and 30-day readmission.

Methods

The study sample included all patients 18 years of age and older who underwent elective lumbar laminectomy by one Orthopaedic spine surgeon between July 1, 2013 and June 30, 2017. All procedures were performed at the University Health Sciences Centre.

Results

256 patients underwent elective lumbar laminectomy of one or more levels during the study period. Among these patients, 89.5% underwent at least one preoperative blood test. The intraoperative complication rate was 2.34%. In the 30 days following surgery, there were no hospital re-admissions related to complications. Length of stay was lower for patients treated with bilateral decompression using a less invasive, unilateral approach compared to the traditional bilateral approach ($p = 0.0063$). Estimated blood loss and duration of surgery did not differ significantly between these two groups ($p = 0.86$, $p = 0.30$, respectively).

Conclusion

Hospital policies should be re-evaluated to address the overuse of preoperative investigations for elective lumbar laminectomies, which have low perioperative transfusion and complication rates. The use of a less invasive surgical approach, which is associated with shorter hospital length of stay without increased risk of complications, offers cost-saving opportunities and warrants further investigation.

Unnecessary Ultrasound in the Management of Subcutaneous Lipomas

Haris Imsirovic, Emily Zehnder and Trevor Bardell
Queen's University

Background

Lipomas are common benign tumours which sometimes require removal because of symptoms or rapid growth. Often patients are referred for surgical excision having undergone a diagnostic ultrasound; however, it is usually possible to diagnose lipomas by history and physical examination alone. The aim of the current study is to examine the prevalence of unnecessary ultrasound use in the diagnosis of lipomas.

Methods

A retrospective review using electronic medical record data was conducted for all patients assessed by a single community general surgeon with the diagnostic code for lipoma from January 2015 to December 2017. Demographic information, diagnosis, ultrasound use, and whether the diagnosis was clinically apparent without an ultrasound were collected, as well as referring practitioner information. Referring practitioners were classified into three groups: nurse practitioners, recently graduated physicians (10 or less years of experience), and experienced physicians (more than 10 years of experience).

Results

Information pertaining to 115 patients was analyzed. Of the patients referred, 48.7% had an ultrasound attached. Of those who had received an ultrasound for diagnostic purposes, 98.2% were deemed unnecessary. Fifty-nine percent of nurse practitioners, 46.8% of recently graduated physicians, and 45.1% of experienced physicians ordered an unnecessary ultrasound. These differences were not statistically significant ($p=0.61$).

Conclusion

Almost half of all patients referred for assessment of a lipoma came with an ultrasound, which was almost always unnecessary. Reducing unnecessary imaging of benign lesions could help reduce health care expenses, inconvenience and loss of productivity for patients.

Bye Bye Bedrest: Shifting ICU Culture from ‘Too Sick to Get Out of Bed’ to ‘Too Sick to Stay in Bed’

Karen Webb-Anderson, Marlene Ash, Patricia Daley, Douglas Vincent, Cynthia Isenor, Giselle Davis, Elinor Kelly, Tara Mercier, Robert Green and Sarah McMullen
Nova Scotia Health Authority

Numerous advancements in critical care have resulted in improved mortality despite sicker, more complex patients. However, this has also exposed ICU-associated morbidity in survivors, including long-term complications such as neurocognitive decline and profound physical deconditioning. Along with these adverse events, evidence has demonstrated that “less is more” in several key areas: sedation, ventilation days, polypharmacy, and bedrest. Organizations including the *Society of Critical Care Medicine* support an evidence-based approach to care. In addition, *Choosing Wisely Canada (Critical Care)* identifies the overuse of bedrest as a priority for action.

We have used our Early Mobility Program to shift our paradigm of care from “too sick to get out of bed” to “too sick to NOT get out of bed”. In doing so, many insights have been appreciated. Early mobility mitigates several deleterious effects of surviving critical illness, and supports patients and families in getting back to the life they want with improved quality of life. Adopting a team-based approach to moving people early and often, has contributed to an overall reduction in ICU delirium by 25%. Within our trauma subpopulation we have seen a 33% drop in intubation days, 10% fewer complications, and a decrease in mortality from 26.5% to 16.5%. Our experience is an excellent example of making smart choices to limit unnecessary treatments and their untoward impacts.

Unnecessary Ultrasound in the Management of Umbilical and Inguinal Hernias

Emily Zehnder, Haris Imsirovic and Trevor Bardell
Queen's University

Abstract

Background: Although clinically significant hernias can usually be diagnosed by physical examination alone, medical practitioners often order an ultrasound prior to referral to a surgeon. Unnecessary ultrasounds result in needless inconvenience to patients, in addition to the cost to the system. The objective of this study was to assess factors associated with unnecessary ultrasounds in patients referred to general surgery for hernia assessment.

Method

A retrospective review of electronic medical record data was performed for all patients referred with an umbilical or inguinal hernia between January 1, 2014 and December 31, 2015. One hundred and eight patients (22 with umbilical hernia, 84 with inguinal hernia and 2 with both umbilical and inguinal hernias) were identified. Patients with hernias not identifiable on physical examination were considered to require an ultrasound, otherwise it was considered unnecessary. Referring practitioners were classified as nurse practitioners, recently graduated physicians (10 or less years of experience) or experienced physicians (greater than 10 years in practice). The number of unnecessary ultrasounds was compared between these groups.

Results

Fifty-one percent of hernia patients arrived having had an ultrasound, of which 83.9% were deemed unnecessary. There was no significant difference found in the number of unnecessary ultrasound requests between the three groups ($p=0.196$). Additionally, no significant difference was found in the number of unnecessary ultrasounds between umbilical and inguinal hernias ($p=0.840$).

Conclusion

Nearly half of patients referred had an unnecessary ultrasound. Reducing unnecessary imaging in the management of inguinal and umbilical hernias has potential to reduce cost substantially.

A Collaborative, Diagnostic Stewardship Initiative to Improve Urine Culture Utilization In Alberta

Shobhana Kulkarni, Dynalife Diagnostic Laboratories
Michael Groeschel, Calgary Laboratory Services

Goal

To mandate the provision of relevant clinical information for urine culture requests to the laboratory and develop laboratory mechanisms that will restrict requests in the absence of a clinical indication.

Implementation

The College of Physicians and Surgeons of Alberta Referral Consultation Standard stipulates that test requests are a form of clinical consultation and that accompanying relevant clinical history should be provided since this is vital for interpretation of results by laboratory physicians. Currently, the majority of requisitions lack this important information.

A provincial urine culture stewardship working group is developing a framework to support compliance with this standard, which includes:

- Establishing clear indications for urine culture requests
- Communication to stakeholders that provision of clinical information on requisitions will be mandatory
- Developing processes for laboratories to best capture submitter provided clinical information
- Developing processes allowing laboratories to restrict requests in the absence of a clinical indication
- Developing post-implementation strategies to monitor the impact of this initiative on patient care, test utilization, and stakeholder response

Challenges

A significant change in mind set and current practices will be needed for both care providers and laboratories. Laboratory systems are also technically and operationally heterogeneous in Alberta, which poses challenges to the implementation of this initiative on a provincial scale. Efforts to overcome these challenges will be made worthwhile by better ensuring the clinical relevance of urine culture results with consequent improvements in patient care and safety, antimicrobial stewardship and test utilization.

Does Emergency Physician (EP) Diagnostic Imaging (DI) use Affect Clinical Productivity?

Sam Campbell, Nova Scotia Health Authority, Dalhousie University
Swarna Weerasinghe, Dalhousie University
David Urquhart, Dalhousie University

Introduction

Considerable variation exists in test use by EPs. We examined the association between physician productivity (PP) and diagnostic imaging (DI) use.

Methods

Using principal component analyses, we analysed PP using patients per hour (pt/hr), percentage of return visits and adjusted workload measurement (AWM), assigning higher scores to CTAS 1-3 patients, of 85 EPs at an academic ED, June 1, 2013 - May 31, 2017. DI utilization included ultrasound (US), CT scan (CT) and x-ray (XR).

Results

Mean pt/hr (1.8; range 1.2-2.5) and AWM (6.9; 4.4 - 9.7) varied significantly. An increase of DI was associated with lower pt/hr and AWM. For pt/hr: 40% CT reduction, doubled the mean ($p=0.001$); 50% x-ray reduction, increased the mean to 2.3 (27%) For AWM: 40% CT reduction, doubled the mean ($p=0.001$), 50% Xray reduction increased the mean by 30% ($p=0.0001$) and 10% reduction of US, increased it by 20% ($p=0.02$). Pt/hr was better correlated with DI ($R^2=38\%$) than AWM ($R^2=30\%$). The benchmark of PP with combinations of positive pt/hr, positive AWM and negative % of return visits was better predicted by DI use ($R^2=42\%$). Less DI ($p=0.0001$), CCFP(EM) training ($p=0.01$), Male gender ($p=0.02$), younger age ($p=0.04$), less CTAS 4 decision time ($p=0.01$) and less patients by a learner ($p=0.07$) were all associated with higher PP.

Conclusion

Increased use of DI were associated with lower pt/hr and AWM and likely contributes to ED overcrowding. Further research is needed to assess the association between DI use and clinical outcome.

Influence of Lab Tests (LT) Ordering on Emergency Physician (EP) Productivity (PP)

Sam Campbell, Nova Scotia Health Authority, Dalhousie University
Swarna Weerasinghe, Dalhousie University
David Urquhart, Dalhousie University

Introduction

Emergency Department (ED) overcrowding increases the importance of the ability of Emergency Physicians (EPs) to see patients as rapidly as is safely possible. We examined the association between physician productivity (PP) and lab test (LT) use.

Methods

We analyzed the practice variables of 42 EPs working at an academic ED, from June 1, 2015 - May 31, 2017. PP was measured by patients per hour (pt/hr) and adjusted workload measurement (AWM), assigning higher scores to higher acuity patients. LT was measured by the order rate of common tests.

Results

PP varied significantly: mean pt/hr (1.8; range 1.2-2.5) and mean AWM (6.9, 4.4 - 9.7). LT was significantly associated with Pt/hr, but not with AWM. 50% reduction in LT for CTAS 2 and 3 patients increased pt/hr by 32% while the same reduction for CTAS 4 tests ordered increased by 5%. Decision time is significantly correlated ($R^2=50\%$) with the combination of CTAS 2-4 lab tests ordered and 50% increase could double the decision time. No statically significant differences of LT ordering across demographic factors (training, age and gender). Diagnostic imaging and lab tests ordering are both correlated with PP, however diagnostic imaging was more strongly associated with PP ($R^2=41\%$) than LT ($R^2=7\%$).

Conclusion

We found a significant association between LT use on PP. Increased use of lab tests for CTAS 2-4 were associated with lower pt/hr and increased decision time and likely contributes to ED overcrowding. Further research is needed to assess the association between lab use and clinical outcome.

Improving Appropriateness of Mg Testing in ICU

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Peter Dodek, St. Pauls Hospital
Tony Zhao, University of British Columbia Faculty of Medicine

Background

Mg is 99% intracellular and serum total Mg concentration does not correlate with intracellular Mg concentration. However, serum total Mg is measured routinely.

Methods

We aimed to decrease the number of routine serum total Mg tests in a 15-bed medical-surgical ICU. First, we summarized current evidence and worked with ICU physicians to agree on indications for Mg testing: 1. suspected hypomagnesemia in the setting of renal failure, 2. optional in suspected hypermagnesemia. Then we implemented: education for clinical staff about the lack of evidence supporting routine Mg tests, prompts in the electronic order system to encourage our indications, and posters reminding staff of this improvement initiative. Patient data were acquired from an ICU database. Number of serum total Mg tests 12 months before implementation (Dec 19th, 2016) and 5 months afterward were collected from the order entry system.

Results

1 year before intervention, a mean of 69 (SD 16) tests (55 (SD 13) routine and 14 (SD 5) non-routine (stat)) were ordered weekly. After interventions, 56 (SD 16) tests (42 (SD 15) routine and 14 (SD 5) non-routine) were ordered weekly. This was a 24% reduction in routine tests without any change in non-routine tests. Severity of illness and length of ICU stay were not different between baseline and post-intervention periods.

Conclusion

Repeated education sessions and a prompt in the order entry system were associated with a significant decrease in the number of routine serum total Mg tests ordered in an ICU without compromising patient outcomes.

The Road Traveled-NPAC's Journey in Development of the "Nine Things Nurse Practitioners and Patients Should Question"

Cathy Scofield-Singh and Jennifer Fournier
Nurse Practitioner Association of Canada

The Nurse Practitioner Association of Canada (NPAC) is a national organization with a membership of nurse practitioners from across Canada. The NPAC presentation will look at the journey from the first contact of NPAC with Choosing Wisely Canada (CWC), and collaborating with CWC to explore the potential development of a NPAC CWC list and the rationale for doing so. The presentation will follow the path of the development of the NPAC CWC working group, to the publication of the "Nine Things Nurse Practitioners and Patients Should Question". This presentation will also explore the opportunities for moving forward to encourage dialogue around the NPAC CWC list, encourage discussion about necessary and unnecessary care among nurse practitioners and patients and increase awareness of Choosing Wisely Canada's campaign to promote awareness of best practices and current evidence.

Exploring Physician-Reported Barriers and Facilitators to Using Evidence-Based Recommendations Regarding Imaging for Low Back Pain: A Meta-Synthesis Using the Theoretical Domains Framework

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Helen Richmond, Rehabilitation Research in Oxford (RRIO), Oxford Clinical Trials Research Unit, University of Oxford

Holly Etchegary, Clinical Epidemiology and NL SUPPORT, Faculty of Medicine, Memorial University

Krista Mahoney, Choosing Wisely NL and Quality of Care NL

Patrick Parfrey, Translational and Personalized Medicine Initiative Memorial University

James Matthews, School of Public Health, Physio & Pop Science, Center for Sports Studies, University College Dublin

Jill Hayden, Department of Community Health & Epidemiology, Dalhousie University

Amanda Hall, Memorial University

Background

Several qualitative studies have explored physicians' reasons for using imaging for low back pain (LBP). We conducted a meta-synthesis about barriers and facilitators of appropriate imaging for LBP using the Theoretical Domains Framework (TDF).

Methods

We searched 3 electronic databases to July 2017 for English-language qualitative studies of Physicians who treat LBP and assessed their barriers/ facilitators to using imaging. Two reviewers selected studies, extracted data into NVivo and independently coded themes using the TDF.

Results

We included 9 studies; each used focus groups/interviews analysed using thematic analysis. We identified 4 overarching domains: Social influence – including social pressure from the patients either requesting an image or wanting a diagnosis and the GP felt that an image would provide this information. Beliefs about consequence – including outcome expectancy where GPs believed that the scan would reassure the patient and other consequences including fear of blame or legal action if they do not request the image. Skills – where GPs reported they lacked sufficient communication skills to explain why a test is not necessary for patients requesting an image. Environmental context and resources – included lack of time to have a full conversation with patients about diagnosis, and organisational culture in which scans are ordered as a requirement for sick certificates, treatment referrals, or legal cases. Knowledge about when to use imaging was not identified as a barrier.

Conclusions

Interventions must include strategies that target patient expectations, communication about diagnosis without imaging, and appropriate treatment strategies.

Fundamentals of Health Evidence: Practical Approaches to Critical Appraisal

Lisa Pyke, Jennifer Hartell
CADTH

Healthcare Professionals working on Choosing Wisely Recommendations demonstrate leadership in evidence-based medicine when they seek out credible sources of information and apply rigorous methodologies to develop strong evidence bases to support recommendation development, tools and approaches. Yet, do we really know how to find and evaluate the evidence? We are increasingly tasked to review best available evidence and to be skeptical of the information provided. Yet, how do we evaluate evidence: Is it reliable? Is the source unbiased? Is it based on high-quality evidence? Evidence is accessed in many forms, through journals and on websites for consideration as part of evidence-informed practice. Some forms of evidence, however, may contain bias, inaccurate information, or be based on opinion and conjecture. Not all content, definitions, or summarized research interpretations may be necessarily accurate or truly relevant to our clinical needs. Where we find research is another factor—some websites have greater credibility, structure, and pre-screening for validity than others. With increased access and use of web-based information, professionals need a simplified approach to critical appraisal of evidence that can be used quickly and efficiently to determine quality and value in research they locate on the internet or receive in other forms. This interactive oral session will provide a simplified, straight-forward step-by-step approach to critical appraisal and website quality assessment that anyone can use to detect potential bias in what they read. Several examples will be used throughout the presentation to illustrate common bias issues that are unfortunately more common than we realize!

Reducing Radiation and Cost Associated with Follow-Up Imaging for Pneumothorax

Usama Malik, University of Calgary, Cumming School of Medicine

Peter Dickhoff, Department of Radiology, Cumming School of Medicine (CSM), University of Calgary

Simon Chi, Diagnostic Imaging, Calgary Zone, Alberta Health Services (AHS)

Sandra Hovey, Diagnostic Imaging, Calgary Zone, Alberta Health Services (AHS)

Geoff Schneider, Department of Radiology, Cumming School of Medicine (CSM), University of Calgary

Mark MacMillan, Diagnostic Imaging, Alberta Health Services

Richard Walker, Department of Radiology, Cumming School of Medicine (CSM), University of Calgary

Introduction

Management of pneumothorax (PTX) typically includes serial follow-up chest x-ray (CXR) exams. Multiple guidelines recommend an erect postero-anterior (PA) CXR for follow-up of primary spontaneous pneumothorax (PSP), with a lateral view recommended only when additional diagnostic information is required. This study aims to determine whether these guidelines are being followed at two tertiary academic centres in our region.

Methods

Department analysts retrospectively identified 260 patients diagnosed with PTX and at least one follow-up CXR between January 1 and March 31, 2017. Inclusion criteria included age ≥ 18 -years and spontaneous pneumothorax or pneumothorax associated with minor trauma. Consensus review of images was performed by a staff radiologist and medical student. Data collected included patient age, gender, CXR order (2-view, 1-view, 1-view portable), ordering physician, patient location (inpatient or emergency department), and PTX etiology.

Results

35 patients meeting the inclusion criteria underwent 226 follow-up CXRs. 2-views were performed 71.7% (162/226) and a 1-view or 1-view portable 28.3% (64/226). There was no difference whether the ordering physician was a resident or attending ($p=0.161$). Inpatients were more likely to receive a 2-view follow-up exam ($p=0.00012$). The incremental cost associated with ordering a 2-view follow-up was \$1,989.36 and resulted in 2.0mSv of additional radiation exposure to the average PTX patient.

Conclusion

Our study demonstrates an opportunity to decrease cost and radiation exposure for inpatient and emergency department patients being followed for PTX. An education action plan directed towards departments managing patients with pneumothorax is planned with compliance re-evaluated between February 1 and April 30, 2018.

Bladder Matters: A Corporate Strategy to Reduce Urinary Tract Infections and Urinary Retention Rates

Mary Kapetanos, Donna Ruffo, Prateek Khatri and Linda Jussaume
North York General Hospital

Goal

To develop and implement a corporate approach for reducing catheter-associated urinary tract infections (CAUTI) and urinary retention rates at North York General Hospital (NYGH).

Implementation

A working group with representation that crossed medical services, clinical programs, and professions was established. Learnings from the Choosing Wisely Lose the Tube Toolkit (2017) were leveraged, in addition to NYGH's CAUTI work as part of the National Surgical Quality Improvement Program (NSQIP). The team began with a review of current practices related to urinary catheterizations, the management of urinary retention, and its impact on patient care. Strategies implemented included: 1) development of a standardized urinary retention management protocol, 2) revision of electronic orders related to urinary catheterization, 3) revision of medical directives that authorized insertion and removal of urinary catheters, and 4) broad education and communication to providers and nursing staff.

Measures

Key metrics include: 1) urinary catheter days, 2) indwelling urinary catheter rates, 3) urinary tract infection rates, and 4) urinary retention rates.

Challenges

Discussion points include: 1) engaging a broad group of stakeholders to standardize a corporate urinary retention protocol, 2) operationalizing the changes across clinical programs, including changes to order sets and medical directives, 3) sustainability of the strategy, and 4) ensuring data quality to allow for measurement of key outcomes.

Lessons Learned

Early and ongoing engagement of stakeholders from inception of program development is key to the success of any corporate initiative.

Electronic Referral Forms and Decision Support Tools Integrated into Electronic Medical Record Systems For Vascular Test Ordering by Physicians in Primary Care Settings in Newfoundland and Labrador (NL)

Krista Mahoney, Choosing Wisely NL and Quality of Care NL
Brendan Barrett, TPMI/Memorial University
Greg Browne, Eastern Health
Amanda Hall, Memorial University
Owen Parfrey, Memorial University of Newfoundland
Patrick Parfrey, TPMI/Memorial University

Background

Overuse of diagnostic testing has been demonstrated to be a significant problem in Canada. Analysis of test utilization patterns at the provincial vascular referral centre indicates that this issue is prevalent in NL; Of 17,600 carotid artery tests and 15,858 peripheral artery tests undertaken from 2007 to 2015, 60% (10,560) and 56% (8,901) were not indicated, respectively.

Aim

To reduce unnecessary vascular testing at the only tertiary vascular referral centre in NL.

Method

The introduction of electronic ordering in diagnostic vascular tests, with built-in decision supports to guide appropriate referring behaviours can help mitigate this pattern of overuse. Using clinical guidelines and algorithms, we will embed decision trees within e-referral forms. Physician responses to a set of check boxes including patient history, symptoms and previous testing will determine whether testing is needed urgently, recommended, or not recommended. In addition to deciding on priority for testing, the tool will connect to an e-scheduler to automatically provide a test date. All ordering for vascular lab testing will be electronic, eliminating all paper forms. Access for e-ordering will be through the provincial electronic health record, Health-e NL. An analytics component will report appropriate ordering by doctor and individualized feedback will be accessible online. The electronic referral will not prohibit ordering but will ensure specific rationale for ordering is provided if not recommended by the tool. Appropriateness will be evaluated to determine the effectiveness of these e-referral forms in real-world settings. We will build upon existing technology infrastructure in the province to design and deliver this referral system.

Influencing Emergency Department Management and Imaging Practices for Two Common Presentations: Developing and Implementing a Theory and Data-Informed Intervention

Lynette D. Krebs, University of Alberta
Cristina Villa-Roel, University of Alberta
Nicole Hill, University of Alberta
Scott W. Kirkland, University of Alberta
Chris Alexiu, Alberta Health Services
Patrick McLane, Alberta Health Services
Brian R. Holroyd, University of Alberta
Maria Ospina, University of Alberta
Brian H. Rowe, University of Alberta

Goal

The goal of this study was to develop a theoretically grounded and data-informed intervention to improve emergency department (ED) management of patients with acute asthma (AA) and benign headache (BHA), specifically as it relates to imaging and variation in image ordering.

Implementation

Preceding the intervention development, studies were undertaken, as follows: 1) systematic reviews, 2) administrative data analyses, 3) surveys with patients in the ED as well as emergency physicians with qualitative follow-up, 4) site chief interviews, and 5) nurse interviews. Using the Behaviour Change Wheel, preliminary data from these studies identified the intervention functions: education, incentivization and environmental restructuring. Content of intervention materials was informed by participating site data. Implementation at Alberta's largest urban and regional EDs is ongoing using a stepped wedge design.

Measures

Several intervention fidelity measures were implemented. The primary outcomes for the study (e.g., imaging, length of stay, disposition status) are being tracked through administrative data.

Challenges

Site clinician engagement continues to be a substantial challenge at high-volume urban and regional EDs, including academic EDs. Newer technologies, such as QR codes for clinical or patient engagement have been relatively unsuccessful.

Lessons Learned

This intervention development approach revealed the need for a systematic understanding of the sources of current image ordering behaviour. Local EDs willingness to engage in the study has varied considerably and can limit successful implementation. Collecting data on intervention fidelity may be key to understanding why and how interventions in the ED fail to achieve the intended or desired results.

Implementation of a New Diagnostic Algorithm for Anti-Neutrophil Cytoplasmic Antibody (ANCA) Testing

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Anti-neutrophil cytoplasmic antibodies (ANCAs) are an important diagnostic tool for ANCA-associated vasculitides. The dominant autoantigens in these conditions are proteinase 3 (PR3) and myeloperoxidase (MPO). ANCA testing also has a role in diagnosis of inflammatory bowel diseases (IBD) and autoimmune liver diseases. Historically, the gold-standard test for ANCA vasculitis screening has been indirect immunofluorescence (IIF), with subsequent antigen-specific immunoassay/ELISA for MPO and PR3. Recent evidence suggests that ELISA is as effective as the two-step algorithm previously proposed. For labs that do not perform these specialized tests on-site, turnaround times may be prolonged due to send-out and batch testing restraints. Furthermore, performing multiple manual tests can be costly and potentially unnecessary.

In order to ensure that the appropriate patients are being tested and results are received in a timely manner, we aimed to:

- 1) restrict ordering to subspecialties that treat ANCA vasculitis/IBD/hepatitis; and
- 2) optimize the diagnostic algorithm for ordering ANCAs.

Based on new developments in methodologies and discussions with clinical colleagues, we created two types of orders: ANCA vasculitis (to be tested by ELISA), and ANCA IBD/hepatitis (to be tested by IIF, with no reflex to MPO/PR3). As 99% of ANCA orders at our institutions are for ANCA vasculitis, we decided to restrict ordering of ANCA IBD/hepatitis to gastroenterologists and hepatologists.

The expected outcomes are a reduction in inappropriate ANCA ordering, faster turnaround times, and improved usage of lab resources. These changes have been implemented (January 2018) and will be followed-up prospectively to observe if the expected outcomes are met.

Conceptualizing ‘Unnecessary Care’ in Emergency Departments (ED): Qualitative Interviews with Ed Physicians and Site Chiefs

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Nicole Hill, University of Alberta
Cristina Villa-Roel, University of Alberta
Brian H. Rowe, Alberta Health Services

Background

“Unnecessary care” (UC) is an increasingly common term in medicine and frequently associated with Choosing Wisely® literature and interventions. Previous survey research indicates definitions of UC vary among emergency department (ED) stakeholders. This research explores how emergency physicians (EPs) and site chiefs (SCs) understand UC.

Methods

SCs and EPs in Alberta were recruited through email and online surveys for one hour one-on-one in-depth interviews exploring UC conceptualizations within the ED. Transcripts underwent thematic analysis.

Results

Five EPs and seven SCs completed interviews. Two key themes emerged. First, interviewees conceptualized UC as inappropriate/non-urgent presentations. This patient-centric view raised non-urgent presentations as a system problem resulting from: a lack of public knowledge and/or willingness to use other resources and shrinking comfort/scope of community providers. Despite non-urgent visit concerns, interviewees expressed that these patients required assessment/management. The second conceptualization focused on over-investigation (and to lesser extent, treatment). This physician-centric conceptualization identified issues around: variation in physician risk tolerance, established decision rules with allowable “miss rates”, patient expectation for testing or physician feeling that the patient was “owed” something. Interviewees were concerned by connections between UC and wasted resources. Interviewees emphasized that patient conversations are outside the scope of UC despite their possible implications for limited time resources.

Conclusion

A range of concepts surrounding UC in the ED were identified. Exploring nuances of these conceptualizations may enhance the effectiveness of campaigns seeking to improve efficiency and reduce inappropriate care. This work provides an impetus for developing clearer concepts of care within the ED.

The Use of Clinical Decision Support Tools in the Emergency Department to Optimize Clinical Practice: A Systematic Review and Meta-Analysis

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Background

Choosing Wisely Canada has identified that 30% of tests and procedures performed in Canada are potentially unnecessary. Clinical Decision Support (CDS) tools offer evidence-based, actionable recommendations to improve decision making. We undertook a systematic review of CDS implementations in the emergency department to evaluate effectiveness in changing physician behavior.

Methods

MEDLINE, EMBASE, PsychINFO, the Cochrane Central Register of Controlled Trials, and Cochrane Database of Systematic Reviews were searched. Included studies examined CDS in the ED, reported on physician adherence to or use of CDS, utilized a comparative study design, and reported primary data. Meta-regression assessed the effect of characteristics of the tool.

Results

Seventy-two articles met inclusion criteria; forty-six reported outcomes appropriate for meta-regression. A trend of increased CDS use was found (RCT OR: 1.36 [95% CI: 0.97-1.89]; observational OR: 2.12 [95% CI: 1.75-2.56]). Overall, physician interaction with CDS ranged from 0.37% to 100%; adherence to recommendations ranged from 16.2% to 93.5%. Clinical practice guidelines were superior compared to other interventions ($p = .150$). Multi-modal tools were not more successful than single interventions ($p = .810$). Lastly, voluntary tools may be superior to mandatory tools ($p = .148$). None of the results were statistically significant.

Conclusion

Our review suggests that CDS may have small but meaningful impacts on physician practice. CDS may be most acceptable and impactful with implementations integrated into workflow after consultation with physicians. Future research should examine physician's perspectives during CDS tools tool development and implementation and what they perceive to be most useful.

Reduced CD4 Measurements in Stable HIV Patients is Associated with Significant Cost Savings

Ahmed Ghaly, Lise Dupuis, Gordon Dow and Daniel Smyth
Horizon Health Network

Monitoring of CD4 counts has been part of HIV management for years. In 2015, Choosing Wisely Canada stated "Don't routinely repeat CD4 measurements in patients with HIV infection with HIV-1 RNA suppression for > 2 years and CD4 counts > 500/ μ L, unless virologic failure occurs or intercurrent opportunistic infection develops." The purpose of this study was to identify how much CD4 testing could be reduced and to identify the cost savings associated with this over a 12 month period. This study was conducted in a small hospital based HIV clinic where patients were having CD4 counts performed every 3 to 4 months. CD4 testing was done only when recommended but the remainder of our follow up (viral load testing, hematology and biochemistry monitoring, and clinical assessments) did not change. We kept track of all HIV patient visits and when CD4 testing was ordered and the reason. There were a total of 381 recorded patient visits. Of these, 250 (65.6%) had CD4 counts measured. 131 patient visits, where routine CD4 testing would have previously been done, did not have CD4 measurements done. Of the 250 patient visits where CD4 testing was completed, the most common reason (130;52%) was a CD4 count < 500. Our local cost for CD4 testing was \$133. The actual cost savings from reduced CD4 monitoring was \$17,290 (131 x \$133) over a 12 month period. . In summary, reduced CD4 testing in stable HIV patients was associated with a significant cost savings and no harm to the patient.

LHIN Collaboration & Standardization Improving Imaging Practices

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Christian Baldauf, Grey Bruce Health Services
Michelle Pierce, London Health Sciences Centre/South West LHIN
Brendon Pilgrim, London Health Sciences Centre/South West LHIN

The South West LHIN Medical Imaging Integrated Care Project was launched in 2016 to address the demand issues and strain on the system so that patient experience and patient care can be sustainably improved with regards to Medical Imaging services. One of the key barriers to efficiency occurs when there is a lack of consistency in tools and processes. As of Nov 2017, the SWLHIN is the first LHIN to implement a standard MRI requisition that is used by all hospital sites in the region. Supporting the MRI requisition forms are two appropriateness checklists for knee and spine, which help physicians to determine if an MRI is necessary and which conditions may not benefit from a scan. An advisory committee of LHIN Radiologists also collaborated on a standard MRI protocol set for the most common scans, to create further efficiencies and eliminate repeat scans for patients that move between sites.

There are challenges achieving engagement and agreement of all stakeholder teams across such a broad geographic region. Creating and sustaining productive collaboration takes time and a willingness to collaborate. Strong leadership and engagement of the LHIN team, comprised of technicians and physician leaders in radiology, family medicine and medical and surgical specialties has produced well thought out, high quality work with Choosing Wisely at its centre. Ensuring patients receive the same quality services and experience no matter what site they visit is the primary goal. By introducing one requisition form and ensuring each hospital delivers the same quality of imaging, the region will be able to reduce and eliminate unnecessary duplication of ordering and testing. CT is next.

Endometrial Biopsy in an Outpatient Gynaecological Setting: Over Investigation

Laurence Simard-Émond, CHUM

Objective

We reviewed the indications for endometrial biopsy at the general gynecology outpatient clinic of the Université de Montréal Hospital Center and measured their compliance with the Society of Obstetricians and Gynaecologists of Canada and other international guidelines.

Methods

371 files of patients who had an endometrial biopsy between January and October 2015 were reviewed. Indication for endometrial biopsy and pathology results were noted. Files were separated into four categories.

Results

In the postmenopausal bleeding category, all files complied with the SOGC. We found hyperplasia or neoplasia in 13% of patients. In the asymptomatic endometrial thickening category, 9% of the files did not show sufficient indication for biopsy. None of the patients presented hyperplasia or neoplasia. In the abnormal uterine bleeding (AUB)– under 41 years old category, there was no indication for biopsy in 23% of the files. We found hyperplasia or neoplasia in 13% of patients, but only in patients with an indication for biopsy. In patients with AUB – over 40, non compliance with SOGC was 3%. But according to international guidelines, 42% of patients with AUB between 41 and 45 years old did not have an indication for biopsy and none showed hyperplasia or neoplasia.

Conclusion

We demonstrated clinically significant overinvestigation in patients with AUB. Indications should be reviewed carefully before performing an endometrial biopsy in women under 41. In addition, the value of endometrial biopsies in patients between 41 and 45 years old with menorrhagia and no additional risk factor should be reevaluated.

Optimizing the use of Endoscopy for Young, Otherwise Healthy Patients with Dyspepsia

Jennifer Halasz, Brenna Murray, Sampson Law, Shawn Dowling, Kelly Burak, Mark Swain, Gilaad Kaplan, Tarun Misra, Jennifer Williams, Linda Slocombe and Kerri Novak
University of Calgary

Background

Dyspepsia is a common referral to Gastroenterology (GI). Collaboration between primary care and GI in Calgary helped develop a dyspepsia pathway and a telephone advice service "Specialist Link". Choosing Wisely Canada (CWC) recommends against the use of esophagogastroduodenoscopy (EGD) in patients < 55 years without alarm symptoms, as clinically significant findings are rare in these patients. The aim of this study was to measure and improve adherence to the CWC guidelines for dyspepsia in Calgary.

Methods

Ethics approval was obtained. EGD reports and pathology for procedures performed for dyspepsia in Calgary were evaluated (April 1-June 31 in 2015, 2016, 2017). Only procedures after clinic consultation were included. Referrals declined through Central Triage since January 1st 2015 were also reviewed. Laboratory data further refined the cohort. Physicians consented to receive individual reports with peer comparators. A facilitated audit & feedback session was held to develop change plans.

Results

There were 12,184 EGDs evaluated with 1358 performed to investigate dyspepsia in patients.

Conclusion

The number of low yield EGDs to investigate dyspepsia is significant. Opportunities exist to better investigate dyspepsia. Partnerships with primary care are important to enhance appropriate resource utilization.

Improving Appropriateness of Oxygen Saturation Monitoring in Paediatric Patients With Acute Respiratory Illness: a QI Initiative

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Hospital for Sick Children

Background

Oxygen saturation monitoring (OSM) is a key aspect in the assessment of paediatric patients with acute respiratory illnesses such as bronchiolitis, asthma and pneumonia. It often serves as a proxy for illness severity. However, there is a paucity of guidelines around appropriate OSM. Existing evidence shows intermittent pulse oximetry is as safe as continuous oximetry monitoring in children with bronchiolitis. Furthermore, inappropriate OSM may lead to overdiagnosis and overtreatment of mild hypoxia and contribute to prolonged length of stay.

Methods

As part of the local Choosing Wisely Campaign, our aim is to increase the appropriate use of OSM in paediatric inpatients with asthma, bronchiolitis or pneumonia to 90% by April 2018. Appropriate monitoring was defined as intermittent OSM when a patient is off oxygen for >2 hours and continuous OSM whilst the patient is receiving supplemental oxygen. A 4-week pre-intervention chart review showed 62% (23/37) had appropriate OSM. A series of interventions were then chosen to improve the main outcome measure:

- Educational sessions oriented at medical and nursing staff
- Visual cues displayed in patient rooms
- Weekly electronic reminders and performance updates

Post-intervention data collection by project leaders occurred from January to April 2018.

Results

OSM appropriateness increased to 77% (56/72) in the first month post-intervention. There were no recorded safety events associated with appropriate OSM.

Conclusion

This QI initiative will improve the appropriate use of OSM in patients admitted for bronchiolitis, pneumonia or asthma at our paediatric tertiary hospital without increasing the number of safety events. Further interventions are planned to ensure greater sustained uptake.

Merging Initiatives: Choosing Wisely and Antimicrobial Stewardship – An Underutilized Connection.

Olivia Ostrow, Kathryn Timberlake, Lauren Whitney, Jeremy Friedman and Michelle Science
The Hospital for Sick Children

Background

Rational use of antibiotics is a global priority. Inappropriate or unnecessary use of antibiotics drives selection of antibiotic resistant organisms and may lead to patient harm. The Choosing Wisely (CW) campaign at our hospital, with its record of significant improvement in metrics for past recommendations, provided a novel opportunity to promote antimicrobial stewardship (AS).

Goal

To describe the expansion of a hospital-wide CW campaign to include a focus on AS at a large Canadian children's hospital.

Implementation

The AS and CW programs combined efforts to identify targets for improvement. Antimicrobial usage data was reviewed and key stakeholders and subspecialty society CW lists were consulted. A survey was developed and broadly administered. Priority was given to initiatives that aligned with organizational priorities.

Measures

Three AS initiatives were selected: 1) improving post-operative prophylactic antibiotic use, 2) limiting broad spectrum antibiotic use and 3) improving outpatient antibiotic use for suspected urinary tract infections (UTI). Baseline drug utilization evaluations (DUE) identified opportunities in these areas. An audit of postoperative antibiotic use showed 70% adherence to the guidelines (ranging 0% to 100%). DUEs of vancomycin and meropenem identified duration of treatment as a key contributor to inappropriate use. Finally, a review of patients discharged from the Emergency Department with a suspected UTI showed that almost 50% received antibiotics despite subsequent negative cultures, leading to 530 unnecessary antibiotic days.

Lessons Learned

Developing a CW list with an AS focus was feasible and increased awareness and publicity for the program. Similar initiatives could easily be adopted by other institutions.

Dermatology Guidelines for Choosing Wisely Canada: Five Things Patients and Providers Should Question

Sabrina Nurmohamed, University of Calgary
Linda Zhou, University of Ottawa
Régine Mydlarski, University of Calgary

Dermatologists diagnose and treat disease of the hair, nails and skin. These presentations commonly present to both primary care and specialist physicians. The specialist referral system and relative shortage of dermatologists contribute to a practice gap for appropriate management of common dermatologic conditions. To date no Choosing Wisely Canada (CWC) guidelines exist for the specialty of Dermatology. The USA and Australian Choosing Dermatology guidelines were reviewed in depth to identify management principles with substantial evidence basis. A focused literature review was performed to generate an exhaustive list of common tests, procedures and treatments for dermatologic conditions such as: cellulitis, urticaria, fungal nail infections, stasis dermatitis and surgical wounds. A cross-Canadian panel of dermatologists in academic and community practice were then invited to contribute their input to develop a final list of five recommendations. This project developed recommendations for the provision of high-value cost-conscious dermatologic care by dermatologists, non-dermatologists and resident physicians in partnership with the Canadian Dermatology Association. The final consensus-driven Dermatology-specific recommendations will be presented. The results of a survey administered to panel members on barriers to guideline development will also be shared.

Bronchiolitis Management in Calgary Emergency Departments

Shawn Dowling, University of Calgary
Inelda Gjata, Physician Learning Program
Antonia Stang, Physician Learning Program
Kelly Burak, University of Calgary
Katharine Smart, Alberta Health Services

Bronchiolitis is the most common reason for hospitalization of infants but prior studies suggest there is significant variation in practice and low value care being performed. Our objective was to 1. establish baseline management of bronchiolitis, and 2. deliver audit and feedback (A&F) reports to pediatric emergency physicians (PEP) to identify strategies for practice improvement.

Methods

This cohort study included all patients ≤ 12 months old that presented to a Calgary emergency departments with a diagnosis of bronchiolitis from April 1, 2013 to March 31, 2017. Using data from various electronic data sources, we captured baseline characteristics, therapeutic interventions and investigations. Descriptive statistics were used to report baseline characteristics and interventions. Interhospital ranges (IHR) were provided to compare hospitals across the zone. For the A&F component of the project, consenting PEP received a report of both their individual and peer comparator data and an in-person multi-disciplinary facilitated feedback session.

Results

We included 4023 patients from all 6 sites (range from 28 to 3316 patients). Bronchodilator use was 27.0% (IHR 21-41%). 22.0% of patients received a CXR (IHR 0-57%) and 30.3% had viral studies done (IHR range 0.8-33%). 62% PEP consented to receive their individual A&F reports. In the facilitated feedback session PEP identified areas where improvements could be made and discussed specific strategies to decrease practice variation.

Conclusion

Significant variability exists in management of patients with bronchiolitis across different hospitals in our zone. The facilitated feedback session identified areas for improvement and multi-disciplinary strategies to reduced low value care for patients with bronchiolitis.

How to reduce inappropriate preventive care.

James Dickinson , University of Calgary
Ainsley Moore, McMaster University
Roland Grad, McGill University
Stéphane Groulx, CISSS de la Montérégie-Centre

The Canadian Task Force on Preventive Health Care is re-establishing itself as an authority providing evidence-based preventive recommendations. Many of these recommend refocussing or even stopping activities that have become routine practice for many Canadian physicians and their patients. Choosing Wisely recommendations run parallel to many.

However, changes in behaviour are slow, and appear to be limited to a small fraction of doctors, while others actively oppose the changes.

In this workshop, members of the Canadian Task Force will describe:

- The recommendations for change,
- How some recommendations have been egregiously “misunderstood”
- How some provincial guidelines have changed, while others support the status quo.
- Limited effectiveness of educational approaches
- Doctors in practice get “guideline fatigue” and need simple ways to communicate quickly with patients, such as effective scripts and “infographics”
- Alternate ways of changing behaviour such as billing changes
- Measurements of changed behaviour after guideline changes

We will then discuss how Choosing Wisely members can work to support change through various mechanisms: education, changing remuneration approaches, changed clinical protocols.

We encourage members of Choosing Wisely to attend and contribute their ideas on how to advance these evidence-based ideas.

Choosing Wisely – Engaging our Patients - A Unique Opportunity for Nurse Practitioners

Jennifer McDonald, TR FHT

The Nurse Practitioner is an autonomous yet collaborative health professional who integrates in-depth knowledge of advanced nursing practice and theory, health management, health promotion, disease/injury prevention, and other relevant biomedical and psychosocial theories to provide comprehensive health services. Nurse practitioners work in collaboration with their clients and other health-care providers in the provision of high-quality patient-centred care (Canadian Nurses Association). The NP core competencies support the choosing wisely program by incorporating a holistic, person centred approach to each patient encounter. NPs can leverage this approach in the context of each patient visit to champion the choosing wisely initiatives. This presentation will review the unique scope of practice and philosophy of care NPs bring to practice and offer practical tips for making each visit, whether for an acute episodic illness, or a chronic ongoing condition an opportunity to practice wisely

Implementing Critical Appraisal in the Choosing Wisely Recommendation Writing Process

Katherine Smith, Canadian Association of Medical Radiation Technologists
Grace Chung, Biomedical Zone
Stephanie Lea, Dalhousie School of Health Sciences
Lisa Pyke, CADTH

The Canadian Association of Medical Radiation Technologists (CAMRT) established its Choosing Wisely Canada Top 6 recommendations by assembling a core committee of Medical Radiation Technologists (MRTs) from across Canada, spanning all MRT disciplines. An initial meeting identified ten draft recommendations.

Using a modified Delphi method, the list was narrowed to 6 draft recommendation statements. Sub-committees were subsequently formed to oversee each statement. Through a lens of quality and rigour, significant efforts were made to find a process that would raise the standards for creating evidence-based informed recommendations relating to MRT practice. Comprehensive literature searches and reviews were simultaneously performed for each of the recommendations.

A Critical Appraisal Guide was used to help evaluate the quality of the evidence for inclusion. The tool was adapted and modified from brokered tools provided by the Canadian Agency for Drugs and Technologies in Health (CADTH). Three members of each recommendation committee completed the critical appraisal form for each piece of literature reviewed. The appraisals were then compared to achieve consensus for literature inclusion and exclusion. In doing so, the critical appraisal aspect became an integral part of the decision-making process regarding the quality of research evidence for inclusion.

This presentation outlines a useful template for other medical professional societies and associations to follow in the creation of recommendation statements for the CWC campaign. CAMRT will be adopting this critical appraisal tool and approach for future evidence-based guidelines and recommendations put forward by the association.

A large, stylized teal circular graphic that is partially cut off by the right edge of the frame. It consists of a dark teal outer ring and a lighter teal inner circle, creating a concentric effect.

MEASUREMENT & EVALUATION

The Role of Audit and Feedback In Choosing Wisely: Are Physicians Able to Accurately Predict Their Own Practice?

Antonia Stang, Physician Learning Program
Shawn Dowling, University of Calgary
Sampson Law, University of Calgary
Inelda Gjata, Physician Learning Program

Background

The objectives of this project were to determine if: 1) there are differences in practice between physicians who do, and do not, consent to receive a confidential audit and feedback (A &F) report on their practice and; 2) if there is a relationship between physicians self-predicted and actual practice.

Methods

This was a prospective, cross-sectional study. All physicians practicing in the ED of a tertiary care pediatric hospital were offered the opportunity to receive data on their practice. Prior to receiving their data, consenting physicians were asked to predict the proportion of bronchiolitic patients for whom they ordered diagnostic tests or treatments. We used chi-squared testing to compare the proportion of consenting and non-consenting physicians whose diagnostic test and treatment ordering was above the median for all ED physicians. We used Pearson's correlation to assess the relationship between consenting physicians self-predicted and actual practice.

Results

56% (37/66) of physicians consented. The median proportion of patients with an x-ray ordered was 20%, 63% of non-consenters were above the median, compared to 36% of consenters ($\chi^2 (1, N=66) = 4.91$ $p=0.03$). Overall, 18% of patients had Ventolin ordered, with 60% of non-consenters and 42% of consenters above the median ($\chi^2 (1, N=66) = 2.2$ $p=0.138$). There was minimal correlation between predicted and actual practice for CXR ($r=0.05$), steroids ($r=0.17$) or Ventolin ($r=0.33$).

Conclusion

The consent process may be a barrier to A &F, and physicians have a limited ability to accurately predict their own performance which highlights the importance of providing feedback.

Driving Change Using Audit and Feedback: Primary Healthcare Panel Reports

Markus Lahtinen and Jody Pow
Health Quality Council of Alberta

Audit and feedback play a positive role in changing family physician behavior that in turn, impacts patient care and patient experience. The HQCA's Primary Healthcare Panel Reports contribute to this change process by providing meaningful, relevant, and descriptive clinical and experiential information that supports reflective practice and quality improvement. For each report, the patient panel is based on either a confirmed patient lists (CPL) or the HQCA's proxy panel. Over the past year, we worked with key stakeholders to review the measures, layout and narrative of these reports to ensure they offer sound value to our primary healthcare partners. Specifically, the HQCA collaborated with the Physician Learning Program to develop and report on the following Choosing Wisely metrics:

- Papanicolaou (Pap) tests – for females aged under 21; 21 to 24; those between 25 to 69; and those over 70
- DEXA scans – the number of patients under 50; those aged 50 to 64; and over 65 who had a single DEXA scan in the last year and the number of patients who had multiple DEXA scans in the last two years
- Lumbar spine scans – the number of lumbar spine scans done by CT, and MRI

The reports provide information that is not available in EMRs, presents peer comparators, and adjust utilization metrics to control for the influence of patient characteristics. The 2018 Primary Healthcare Panel Reports, along with patient experience data, can be used for primary healthcare planning, evaluation, and service development.

Physician Utilization Scorecards in Primary Care: A Cross-Sector Partnership to Improve Test Utilization

Courtney Price, LifeLabs
Natalie Ceccato, LifeLabs
Deepak Sharma, North York General Hospital
Tracy Lindsay, North York General Hospital

Goal

Assess the impact of utilization data provided to individual physicians on ordering of common laboratory tests, focusing on reducing reflexive thyroid testing.

Implementation

Five Ontario Family Health Teams (FHTs), North York General Hospital and LifeLabs partnered to provide individual utilization data to 104 physicians on the top tests ordered and detailed data on thyroid testing. Baseline utilization reports were administered in Jan 2017, and then provided quarterly (May, July, and Nov). Reports were provided to each FHT lead who coordinated distribution to support physician privacy.

Measures

Utilization reports showed test ordering for most common tests and specific thyroid tests. It included individual performance changes relative to baseline as well as peer comparators using median monthly ordering, % of total TSH orders with associated T3/T4s, and ratio of TSH to T3/T4 orders.

Challenge

Physician consent to participate at some FHTs was initially difficult to obtain. Data quality issues presented challenges in establishing a valid baseline, particularly related to physician's ordering across multiple practice sites. An appropriate comparator was difficult to find in the absence of an available denominator with which to balance out variations in physician practice sizes.

Lessons Learned

Qualitative feedback demonstrates need for simplification of report design to improve actionability of findings. Formal evaluation to ensure reports provide the right level of information to the right audience in a visually intuitive manner is critical. Distribution through the research team to site leads was an effective model to identify data quality challenges and coordinate communication among site leads.

Screening for New Primary Cancers in Patients with Metastatic Breast Cancer: A Provincial Analysis of the Choosing Wisely Canada Recommendations

Megan Tesch, Memorial University of Newfoundland
Kara Laing, Dr. H. Bliss Murphy Cancer Centre

Background

As part of the broader Choosing Wisely Canada campaign, a list was published in May 2015 of practices in oncology that are commonly performed despite evidence showing negligible benefit and the potential to cause harm. One of these recommendations is for physicians to avoid routine cancer screening or surveillance for a new primary malignancy in patients with metastatic disease. The objective of our study was to assess whether local practice is in keeping with these recommendations.

Methods

A retrospective review of screening for new primary cancers was conducted in metastatic breast cancer patients seen at the Dr. H. Bliss Murphy Cancer Centre in St. John's, Newfoundland and Labrador (NL) during the three-year period of January 1, 2014 to December 31, 2016. Specific screening investigations included screening mammography, Papanicolaou test, fecal immunochemical test, and screening colonoscopy or flexible sigmoidoscopy.

Results

A total of 305 patient medical records were reviewed. Overall, 114 patients (37.4%) underwent at least one screening investigation (mean, 2.92 investigations per screened patient). 70% of screening investigations were ordered by primary care providers, in comparison to 14% by oncologists and 12% by other specialists. The median overall survival of breast cancer patients after diagnosis of metastatic disease was 42 months, with a 5-year overall survival of 35.9%.

Conclusions

A significant proportion of patients with metastatic breast cancer in NL are still undergoing screening for new primary cancers, in discordance with Choosing Wisely guidelines. Increased educational strategies are needed if recommendations are to be implemented into routine clinical practice.

Frequency and Utility of Pre-Consultation MRI Use in Patients Referred for Possible Total Knee Arthroplasty

Stephen Patton, Daniel Tushinski, Justin deBeer, Angela Accettura, Sherri Gavin, Susan Montgomery, Danielle Petruccelli, Sampa Samanta, Nancy Toffolo and Mitchell Winemaker
Hamilton Health Sciences

Purpose

To determine the frequency and utility of MRI in patients referred for assessment and management of knee osteoarthritis.

Method

Prospective audit was conducted on 3,598 patients referred to the Regional Joint Assessment Program. Patients were assessed by Advanced Physiotherapist Practitioners (APP) who specialize in the assessment and treatment planning of patients with hip and knee OA. All patients referred to one RJAP over a 10-month period underwent functional assessment and review by the APP. Frequency of MRI and its utility in determining knee OA diagnosis and subsequent treatment plan were determined.

Results

79.6% of patients presented with weight bearing knee radiographs. Obvious OA was evident on 83.7% of radiographic studies and was clearly clinically evident in 91.7% of patients on examination. 20.7% of patients presented with a knee MRI; in 8.1% of these patients, MRI was the first-line pre-consultation diagnostic test. In 59.0% of patients presenting with MRI, the findings were deemed to be of no value in supporting the diagnosis, nor were they of any value in treatment planning for 63.6% of patients.

Conclusion

Once weight-bearing x-rays have confirmed a diagnosis of osteoarthritis, further investigation with MRI has little value in patients with knee osteoarthritis. Unnecessary use of MRI among referring provider for patients with OA of the knee constitutes a burden to the healthcare system. There is a need to educate referring providers and patients to curtail the use of this diagnostic test in the assessment of knee OA.

A Data-Driven Approach to Identifying Laboratory Overutilization – Results from the General Medicine Inpatient Initiative (GEMINI)

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Yishan Guo, St. Michael's Hospital
Fahad Razak, St. Michael's Hospital
Amol Verma, St. Michael's Hospital

Background

Recommendations for resource stewardship are often based on expert opinion with relatively little utilization data to help identify or prioritize targets for intervention. The purpose of this study was to develop a data-driven approach to identifying potential sources of laboratory overutilization.

Methods

We extracted electronic clinical data for all laboratory tests performed during 26,469 General Internal Medicine inpatient admissions at an academic hospital in Toronto between April 1, 2010 and March 31, 2015. The cost of each test was obtained from the hospital case costing database. Tests with a cumulative cost of more than \$20,000 were analyzed to determine the proportion of abnormal results (using pre-specified clinical and laboratory thresholds) and physician-level variability in ordering (defined as the physician-level coefficient of variation in the number of tests performed per patient-day). Each test received a cumulative rank based on highest total cost, highest physician-level variation, and lowest proportion of abnormal results.

Results

The following tests had the highest cumulative ranks as potential resource stewardship targets: 1) RBC folate, 2) CSF cell count, 3) serum folate, 4) urine osmolality, 5) immunofixation electrophoresis, 6) CK, 7) TSH, 8) troponin, 9) lactate, and 10) bilirubin. In addition, ANA and ferritin were also identified as targets based on low proportion of abnormal results and high physician variability.

Conclusions

A data-driven approach to studying laboratory utilization identified novel targets and validated existing targets for resource stewardship based on total cost, physician-level variation, and proportion of abnormal results. These methods can be replicated to provide institution-specific insights.

Using Facilitated Audit and Feedback to Support Choosing Wisely Initiatives for Primary Care Physicians

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Kelly Burak, University of Calgary

Abstract:

Receiving feedback is a critical component of improving performance. Physicians often have limited opportunities to receive direct and relevant feedback related to adherence to best practice guidelines. We developed a multi-faceted learning workshop to provide family physicians with an opportunity to review, understand and use individualized data to self-reflect on their practice.

Goal

We aimed to support physicians in developing and implementing practice change plans to improve patient care related to CW recommendations on appropriate pap smear testing, bone mineral density scans, and lumbar spine imaging.

Implementation

Our workshops were CFPC Mainpro+ certified events comprised of: (1) didactic lecture where subject matter experts share latest evidence-based best practices; (2) participants receive and review individualized practice reports; (3) facilitated small group discussions identify barriers and enablers to achieving best practice; and (4) development of action plans and strategies for improvement.

Measures

Over 15 months, 5 primary care physician groups totaling 207 physicians and 60 allied health/quality improvement professionals participated. We delivered 182 individualized data reports directly, and over 2,500 through partnership with the Health Quality Council of Alberta. Participant feedback has been positive; 97.5% would recommend the program to a colleague, 87.8% felt the program directly supported their improvement initiatives, and 91.2% thought the program helped them set and evaluate personal improvement goals.

Challenges

Involving a patient-perspective can enhance the impact of this program, however, the best strategies to do this can be challenging to identify.

Lessons Learned

Data on actionable metrics is an extremely strong physician engagement tool and can drive physician-led implementation of change ideas.

Treatment of Asymptomatic Bacteriuria in Elderly Patients With Delirium: A Systematic Review

Adam Suleman, University of Ottawa
John Krakovsky, University of Ottawa
Pil Joo, St-Francis Memorial Hospital

Introduction

It is typical to look for UTI in delirious elderly patients, despite a high prevalence of asymptomatic bacteriuria (ASB) in this population. A common presentation of infection is delirium, which often has a non-specific and multifactorial etiology. Therefore, when bacteriuria is present with delirium in the absence of urinary symptoms, physicians prescribe antibiotics for the suspected UTI-induced delirium. We set to determine whether antibiotic treatment in the elderly presenting with delirium in the presence of ASB resulted in resolution of delirium.

Methods

Literature searches were performed in MEDLINE, EMBASE, CINAHL and Cochrane Library. Abstracts were independently reviewed by two authors for decision to include for full-text review. Inclusion criteria included female gender, >65 years of age, presenting in an acute care setting with delirium and ASB. The primary outcome was resolution of delirium. The secondary outcomes were mortality, frequency of side effects from antibiotics, length of hospital stay and readmission for delirium.

Results

930 abstracts published from 1946-2017 were screened, and 42 were included for full text review. No studies were eligible for inclusion in the systematic review, as none addressed the primary outcome. One study addressed the outcomes of poor functional recovery after delirium and the rate of improvement of delirium symptoms after presentation of delirium with ASB.

Discussion

Even though current guidelines recommend against treatment of ASB, no guideline states whether ASB should be treated in elderly patients with delirium. Little evidence exists to elucidate whether treating delirious patients with ASB results in improvement in outcomes.

A Database Platform to Monitor In-Hospital Glucometer Use

Jennifer Taher, University of Toronto
Jake Cosme, University of Toronto
Irvin Bromberg, Mount Sinai Hospital

Background

Glucometers are a common point-of-care testing device used for management of in-hospital patient glucose levels. The purpose of this study was: 1) to identify and improve management of hypoglycemia patients and 2) to monitor in-hospital utilization/frequency of glucometer measurements.

Methods

A database program (GLUM) was designed to access glucometer data from the hospital laboratory information system. Visual basic software was used to develop an excel-based digital application to graph the in-hospital glucometer results as 1) individual ward summary statistics, 2) individual patient trend charts over a specified date/time range and 3) number of glucometer measurements per patient per day. The program was developed and tested using data from Mount Sinai Hospital with Roche Accu-Chek Inform II glucometers.

Results

Ward plots provided a visual representation of hypoglycemia incidence and volume of glucometer use according to specified date ranges. Graphical points were selected on ward plots to identify individual patients and assess recent history of recurrent hypoglycemia. This data was correlated with daily frequency of glucometer use per patient. Within the Mount Sinai database, patients were identified to have up to 23 glucometer measurements per day without indication of hypoglycemia events (defined as glucose less than 4mmol/L in adults and less than 3mmol/L in neonates).

Conclusion

Frequency of in-hospital glucometer measurements can be assessed using the developed GLUM database platform. This data can be correlated with additional patient information (ie/hypoglycemia events) to determine the appropriateness of high frequency testing. The application aims to identify the appropriate use and potential over-use of in-hospital glucometer testing.

The Use of Theories and Frameworks to Understand and Address the Reduction of Low-Value Healthcare Practices: A Scoping Review

Gillian Parker, Nida Shahid, Whitney Berta
University of Toronto

Background

Efforts such as Choosing Wisely have initiated a paradigm shift in healthcare practice. Researchers have begun to use theory or develop frameworks to elucidate the dynamics of de-implementation and support efforts to reduce low-value practices. The purpose of this scoping review was to identify and characterize the use of theories and frameworks to understand and address the reduction of low-value care.

Methods

We conducted a systematic review of MEDLINE, EMBASE, CINAHL and Scopus databases from inception to December 2017. Building on previous research, 33 key terms were used to search the literature. To be included, papers had to present an explicit theoretical approach or framework.

Results

In total 55 articles were included after screening 1106 citations and 70 full-text articles. The majority of studies developed a new framework or tested an existing framework. Of studies which used a theoretical approach, the majority used psychological theories, such as the Theory of Planned Behaviour or applied Behavioural Science concepts to develop interventions. The majority of studies addressed low-value care at the provider level, but numerous studies were also identified which addressed the reduction of low-value care at the team and system levels. Antibiotic overuse, polypharmacy and appropriate prescribing practices were the practices targeted most frequently in the included studies.

Conclusions

De-implementation is an emerging field of research. The results of this review can provide direction and insight for future primary research in the use of theory to support de-implementation and reduction of low-value healthcare practices.

A Scoping Review Exploring Interventions Changing Image Ordering in Pediatric Emergency Medicine

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Lindsay A. Gaudet, University of Alberta
Meagan Carr, University of Alberta
Maureen Kruhlak, University of Alberta
Nicole Loewen, University of Alberta
Scott W. Kirkland, University of Alberta
Amanda Hall, Memorial University
Krista Mahoney, Choosing Wisely NL and Quality of Care NL
Sandra Campbell, University of Alberta
Brian H. Rowe, University of Alberta

Background

The introduction of Choosing Wisely® and concerns over radiation exposure in pediatric emergency medicine (PEM) have resulted in many studies on image ordering practices. This scoping review explores the literature on image ordering interventions in PEM.

Methods

Electronic databases and grey literature were searched. A priori exclusion criteria were established and followed. A minimum of two independent reviewers assessed study inclusion based on pre-defined criteria and extracted the data. Disagreements were resolved through discussion. Descriptive results for PEM studies are reported.

Results

Of the 389 full-text studies assessed, 135 meet the inclusion criteria, 35 of which were PEM studies. These studies focused on traumatic (14), non-traumatic (19) and mixed (2) presentations and the majority were single centre before-after studies. The most common imaging modality examined was computed tomography (CT; 24 studies). Half of the studies (18) reported outcomes for more than one imaging modality. Of the studies reporting on CT ordering (26 CT outcomes), 22 reported a decrease in ordering; 15 of which were statistically significant. The most common intervention across studies was introduction of a pathway/protocol (30 [86%]), followed by the use of information or education (23 [66%]). Most studies had multiple intervention components (23 [66%]) and half (18 [51%]) provided implementation details.

Conclusions

Interventions to change imaging ordering in PEM appear to be useful in reducing imaging use; however, low quality methods suggest caution is warranted. Systematic reviews to explore effectiveness of these interventions, intervention fidelity, and study quality are needed.

Piloting a Tool to Reduce CT for Benign Headache in Alberta Emergency Departments

Lynette D. Krebs, Cristina Villa-Roel, Maria Ospina, Brian R. Holroyd and Brian H. Rowe
University of Alberta

Background

Reducing unnecessary imaging for patients with benign headache (BHA) is a target of Choosing Wisely® activities. A structured handout was developed for patients with BHA presenting to the emergency department (ED) to inform them of when computed tomography (CT) is needed. The tool was piloted with a convenience sample of emergency physicians and patients.

Methods

An online survey was delivered via email to emergency physicians practicing in one Alberta region. Adult patients with BHA presenting to two urban Alberta EDs provided feedback on the tool. Descriptive results are reported.

Results

A total of 73 emergency physicians (38%) and 160 patients completed surveys. Approximately 50% of the physicians felt comfortable using the tool. Suggested changes included: removing information on ordering variation or health system costs, and including specific information on CT indications and risks. Physicians opposed the generality of the four Choosing Wisely® questions fearing they would increase patient's imaging expectations. Patients agreed (94%) they understood the information and that it applied to them (68%). Approximately half of the patients agreed that because of the information provided, they would discuss their need for imaging with their physician during the current or next presentation. Patient recommendations for tool modification were almost exclusively for more CT-related information.

Conclusion

These results led to reconceptualization of the tool. Information specificity was enhanced to support informed clinician-patient dialogue. This study reinforces the importance of piloting and highlights potential concerns with using the Choosing Wisely® questions without adjusting them for context and patient agency.

Choosing Wisely in Radiation Oncology: Driving Practice Change through Measurement and Quality Improvement

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Background

A single fraction of radiation therapy (RT) is recommended for the palliative treatment of uncomplicated bone metastases. A report released by the Canadian Partnership Against Cancer found adherence to this recommendation varied across the country, with Saskatchewan (SK) and Manitoba (MB) having the lowest use of single fraction RT (31%) for bone metastases. As a result, a quality improvement (QI) project involving the Partnership, Saskatoon Cancer Centre, Allan Blair Cancer Centre and CancerCare Manitoba was implemented to increase the evidence-based use of single fraction RT for uncomplicated bone metastases.

Methods

The Partnership conducted a literature search and held a focus group with radiation oncologists to identify barriers to adherence to the recommendation. Strategies aimed at addressing barriers (i.e., educational outreach with local champions, consensus development meetings) were implemented between January and March 2017. Post-implementation survey data were collected to identify the impact of the QI strategies, and will inform potential spread and scale across Canada.

Results

26 of 32 (81%) radiation oncologists in SK and MB responded to the survey. Survey results suggest that the QI project led to:

- increased awareness of the recommendation (MB: 86%, SK: 83%),
- increased knowledge of the evidence supporting the recommendation (MB: 86%, SK: 100%),
- practice change to increase use of single fraction radiation where appropriate (MB: 90%, SK: 100%).

Conclusions

This work has the potential to increase evidence-based use of radiotherapy for bone metastases, which can reduce unnecessary treatment burden on patients and can contribute towards more efficient use of resources and improved health system sustainability.

What Behaviour Change Techniques Have Been Used to Reduce Physician's Image-Ordering for Low Back Pain

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Charlotte Albury, Nuffield Department of Primary Care Health Sciences, University of Oxford

Jacqueline Thompson, University of Oxford

James Matthews, School of Public Health, Physio & Pop Science, Center for Sports Studies, University College Dublin

Holly Etchegary, Clinical Epidemiology and NL SUPPORT, Faculty of Medicine, Memorial University

Patrick Parfrey, TPMI/Memorial University

Background

Reviews of interventions to reduce physician's image-ordering for low back pain (LBP) indicate that decision-support and targeted reminders could have a small effect. The reviews described intervention content but not the specific techniques used to change behaviour. Therefore, we aim to build on existing literature by synthesizing what behaviour change techniques (BCTs) have been used to change physician's image-ordering behaviour for LBP. Methods: 3 Electronic databases were searched. Two reviewers assessed eligibility and coded interventions using the BCT taxonomy; which contains 93 BCTs organized into 16 categories. Interventions were synthesized by those targeting physicians (reported here), health-systems or patients.

Results

14 interventions were identified. Eleven of the 16 BCT categories were used: 4.0-Shaping-knowledge (10 interventions), 2.0-Feedback-and-monitoring (7 interventions), 7.0-Associations (7 interventions), 8.0-Repetition/substitution (6 interventions), 6.0-Comparison-of-behavior (5 interventions), 12.0-Antecedents (5 interventions), 9.0-Comparison-of-outcomes (4 interventions), 1.0-Goals-and-planning (4 interventions), 3.0-social support (3 interventions), 5.0-Natural-consequence (3 interventions) and 10.Reward-and-threat (1 intervention). In total, 29 of the 93 BCTs were used. The most common BCTs were 4.1-instruction on how to perform the behavior (i.e. red flag assessment) in 10 interventions, 7.1-Prompts-and-cues (i.e. generic posters about when to use imaging, reminders to use intervention materials, or personal electronic messages with alternatives for inappropriate imaging orders) in 7 interventions, and 2.2-Feedback-on-Behaviour (i.e. number of images ordered in the previous months/year) in 6 interventions. The number of BCTs used ranged from 1 to 17 with most studies using ≥ 5 .

Conclusion

Most interventions focused on knowledge/reminders of when to use imaging and personal performance reports. Few interventions target well-known barriers of social influence (e.g. patient expectations), skills (communicating satisfactory diagnosis without imaging) and resources (lack of time to discuss diagnosis, imaging needs and treatment recommendations), limiting the potential for effect.

Measuring Benzodiazepine use Among Seniors with In-Hospital Delirium

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Island Health

Choosing Wisely Canada (CWC) recommendations for Hospital Medicine and Geriatrics both include Don't use benzodiazepines and other sedative-hypnotics in older adults as first choice for insomnia, agitation or delirium. At Vancouver Island Health Authority, in-hospital delirium has been identified as a priority for Quality and Patient Safety. It is important to try to prevent delirium by addressing modifiable risk factors. It is also important that, once delirium is established, its treatment should follow best practice. Consistent with CWC recommendations, recommended best practices for treating delirium emphasise non-pharmacological strategies. Pharmacological interventions may augment these approaches; however, the evidence to support this is limited and their use is controversial because of the lack of evidence of their effectiveness and potential for harm. Clinical orders data from Island Health's electronic health record were linked with CIHI's Discharge Abstract Database to evaluate benzodiazepine use among seniors with in-hospital delirium. Nearly two thirds (64%) of in-hospital delirium cases at Island health were surgical cases. Among seniors (65+) who acquired in-hospital delirium at Island Health hospitals, 53% of surgical patients and 44% of medical patients were given benzodiazepines. Both rates are high given the recommendations, and the rate among surgical patients was significantly higher than the rate among medical patients ($\chi^2 = 3.8, p < 0.05$).

Assessing the Risk of Intracranial Bleeding in Emergency Department Seniors who have Fallen

Kerstin de Wit, McMaster University

Background

Falling is the most common cause of intracranial injury among the elderly, accounting for almost 80% of brain injury. The number of emergency department visits for falls in seniors is rising. Our aim was to 1). determine the proportion of elderly who present to the emergency department after a fall, who are diagnosed with intracranial bleeding and 2). report emergency physician use of head CT to diagnose intracranial bleeding in this patient group.

Methods

We conducted a prospective cohort study at two emergency departments with an annual volume of 100,000 patients. We recruited emergency department patients age >65 who had fallen on level ground or down 1-2 steps within the previous 48 hours. We followed the patient by chart review and telephone call for the next six weeks.

Results

We recruited 890 patients over a 10-month period. Overall, 34/890 (3.8%, 95%CI 2.7-5.3%) patients were diagnosed with an intracranial bleed within 6 weeks of presentation. 469/890 (52.9%, 49.4-56.0%) had a head CT on initial assessment in the emergency department of which 28/469 (6%) were positive for intracranial bleeding. 3/440 (0.7%) who had a CT and 3/421 (0.7%) who did not have a CT were diagnosed with intracranial bleeding during follow up.

Conclusions

Intracranial bleeding is not a common occurrence after a fall. The head CT yield was low. With better evidence on whom to scan, emergency physicians could reduce their use of head CT in this population.

The Prevalence of Intracranial Bleeding in Elderly who have Fallen

Kerstin de Wit, McMaster University

Background

The emergency department can be an uncomfortable and unpleasant place for seniors. Elderly frequently present with a fall. There is practice variation around ordering a head CT to diagnose intracranial bleeding after a fall in the emergency department. CT scans are costly and lead to delays which increase the risk of acute delirium in the elderly. We aimed to determine the incidence of intracranial bleeding among this population.

Methods

We systematically searched Medline, EMBASE and Google scholar for publications reporting the incidence of intracranial bleeding among patients >65 years who presented to the emergency department after a fall on level ground. Two authors reviewed all titles using predefined inclusion and exclusion criteria. Authors were contacted where data was missing. Two authors performed risk of bias assessment and extracted the data. The random effects model was used to report a point estimate of intracranial bleeding incidence.

Results

From an initial 6036 citations on Medline and EMBASE, 6 studies were included. An additional 2 studies were identified. Risk of bias was low for only 2 studies. There were 5961 patients included in the meta-analysis. The pooled estimate for the incidence of intracranial bleeding was 5.2% (95% CI 2.8-9.2%).

Conclusions

Only 1 in 20 elderly emergency department patients who have fallen on level ground develop intracranial bleeding. Research is needed to determine which patients should have head CT.

Serum Protein Electrophoresis Testing in Northern Alberta: An Audit and Intervention to Curtail Overuse

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Karina Rodriguez-Capote, Laboratory Medicine and Pathology, University of Alberta
Dylan Thomas, DynaLIFE Medical Labs
Mathew Estey, DynaLIFE Medical Labs
Trefor Higgins, Alberta Health Services
Don Zhang, DynaLIFE MEDICAL LABS
Irwindeep Sandhu, University of Alberta

Goal

DynaLIFE performs serum protein electrophoresis for a catchment area of 2 million people in Northern Alberta, Canada. The primary reason for requesting serum protein electrophoresis (SPE) is in the investigation of patients in whom plasma cell disorders suspected. Concerns regarding the perceived over-utilization of SPE prompted us to audit physician ordering patterns to assess and promote appropriate testing.

Implementation

Two family physicians responsible for the most SPE orders in 2014 were directly contacted by an oncologist to reduce SPE orders. Additionally, ordering patterns were tracked in family physicians who attended two lectures on SPE utilization. We compared the effects between direct peer education and symposium education through a lecture.

Measures

Audit of SPEs performed at DynaLIFE Medical Labs in 2014 revealed a total of 40930 SPE tests were performed in 2014, with 566 SPEs performed in patients younger than 19 years old. 90% of repeat testing was related to disease monitoring by oncologists and 20% of these orders were within 26 days. Direct physician education resulted in a 90% drop in monthly SPE orders from the two family physicians. In contrast, physician education via symposium did not lead to a significant reduction in test orders. For physicians who attended both education sessions, SPE orders were generally increased following the first session and SPE orders were lower or remained stable following the second session.

Challenges

How to successfully deliver physician education to best promote practice change.

Lessons Learned

Test-specific education with comparison by oncologist is most effective than didactic lecture.

Allergy Testing in Northern Alberta: An Audit and Intervention to Curtail Overuse

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Dylan Thomas, Tamara Stock, Mathew Estey, Don Zhang, Norma Page, Terence Agbor, Faye Chambers and Kay Ng
DynaLIFE MEDICAL LABS

Background

DynaLIFE Medical Labs is the sole laboratory performing allergy testing for a catchment area of 2 million people in Northern Alberta, Canada. In vitro allergen specific IgE testing (sIgE) is increasing in primary care where the skin prick/puncture test is impractical and waiting times from patient referral to specialist consultation are often lengthy. However, broad screening for allergens may have a negative impact on patient outcome. Guidelines require selection of individual allergens based on patient history.

Goal

To assess physician ordering patterns and promote appropriate use of diagnostic testing. To develop a strategy to improve allergy testing utilization.

Implementation

A multimodal process was implemented in 2015 that included: Modify reflex testing offered for positive inhalant and food screens according to prevalence and season. Providing physician education through symposia and CME sessions. Distributing educational faxes to physicians requesting an unwarranted number of sIgE tests or undefined requests (RAST, allergy testing).

Measures

The 2013 audit revealed that 168,038 sIgE tests were performed for 28,464 patients with 83% of the requests ordered as food or inhalant screens. Modifications to the reflex testing allowed a reduction of 55,952 tests. Prevalence of exposure and positivity rates were taken into consideration in the decision to remove tests from the inhalant screen reflex panel.

Challenges

Challenges include encouraging practice change and manual review of requisitions.

Lessons Learned

There is a need in the province for electronic test request system. There is a need for a better system to provide physician education and monitoring compliance.

Curtailing the Inappropriate Urine Hcg Qualitative Testing in a Community Lab Setting

Karina Rodriguez-Capote and Asifa Amin, Department of Laboratory Medicine & Pathology University of Alberta
Dylan Thomas, Mathew Estey, Deb Holmes, Terence Agbor, Don Zhang and Mark Malick
DynaLIFE MEDICAL LABS

Background

Tests to detect human chorionic gonadotropin (HCG) or pregnancy tests, can be performed on urine (uHCG) or serum (sHCG). Selection of the optimal test is influenced by analytical performance, convenience, and turnaround time. While sHCG is more sensitive, sample collection for uHCG is less invasive and results may be available sooner. In the community setting however, physicians often request uHCG concurrently with sHCG and/or other bloodwork. In addition, turnaround time is not significantly different between the two tests when sample transport time to the laboratory is considered. This study aims to dissect the community ordering patterns for HCG to assess if order substitutions can be implemented to improve patient care.

Methods

all physician-ordered qualitative urine HCG tests performed at DynaLIFE in 2017 were reviewed to determine whether other tests were requested simultaneously.

Results

9031 physician-ordered qualitative uHCG tests were performed during the study period. The majority of patients were of reproductive age, however some uHCG were requested in postmenopausal females. Blood was simultaneously drawn from 20469 (71%) of these patients, 5218 of which also had serum HCG requested.

Conclusions

A large proportion of of uHCG requests were performed in addition to sHCG or other blood work. In such instances, the uHCG test offers no advantage over sHCG as a blood specimen has already been collected and turnaround times are similar when analyzed in a community laboratory. Substitution of uHCG for sHCG in community patients would provide more accurate results and decrease unnecessary testing.

Stewardship with a Handshake: Impact of Collaborative, Prospective Audit and Feedback Antimicrobial Stewardship Rounds in an Adult, Medical-Surgical Intensive Care Unit in Saskatoon, Saskatchewan

Shaqil Peermohamed, Saskatchewan Health Authority
Justin Kosar, Saskatchewan Health Authority

Background:

Approximately 30% of antimicrobial use in ICUs has been shown to be inappropriate, particularly due to prescribing therapy too broad in spectrum of activity. Prospective audit and feedback is a core strategy of antimicrobial stewardship programs (ASP) with relevance in ICUs, which represent high-acuity care environments where higher proportions of broad-spectrum antimicrobials are often prescribed.

Methods:

A quasi-experimental study was performed to evaluate the impact of collaborative, prospective audit and feedback rounds in an adult, medical-surgical ICU. In-person ASP rounds were performed three times per week by a pharmacist-physician team in a seventeen-bed, medical-surgical ICU, beginning in mid-November 2016. A separate fifteen-bed, medical-surgical ICU served as a control. ASP recommendations were recorded prospectively in themed categories and acceptance rates were tracked. Monthly antimicrobial utilization data, collected for both ICUs, was measured using ATC/DDD methodology during pre-implementation (November 2015 to October 2016) and post-implementation (December 2016 to November 2017) periods.

Results:

ASP provided 270 recommendations amongst 327 patients, with an overall acceptance rate of 91.1%. The most common recommendations included duration optimization (26.3%), de-escalation of therapy (21.9%) and discontinuation of therapy (21.5%). A 19.6% reduction in the use of antimicrobials with broad-spectrum activity and coverage of multi-drug resistant organisms was observed ($p=0.03$). Significant decreases in use of anti-pseudomonal antimicrobials (21.4%, $p=0.04$) were also observed. No significant differences in antimicrobial usage were observed in the non-intervention ICU.

Conclusions:

Implementation of collaborative, prospective audit and feedback rounds in an adult, medical-surgical ICU is effective in reducing use of broad-spectrum antimicrobials, likely reflecting earlier de-escalation of antimicrobial therapy.

Appropriateness of CT and X-ray Ordering by Physicians for Low Back Pain: A Systematic Review

Gabrielle Logan, Memorial University
Amanda Hall, Memorial University

Background.

Choosing Wisely recommends appropriate use of diagnostic imaging for low back pain to decrease unnecessary testing. Several studies have investigated the appropriateness of imaging when compared to the guidelines, yet no synthesis has been conducted to date. This systematic review synthesizes what is known regarding the appropriateness of CT and x-ray imaging for low back pain.

Methods.

Pubmed and Embase were searched for derivative terms of “low back pain”, “guidelines”, and “adherence”. Titles, abstracts and full texts were reviewed for inclusion by reviewers. Reference lists of included studies were also scanned for eligible studies. National Institute of Health’s Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies was used on included studies. Data was extracted and descriptively synthesized.

Results.

671 publications were identified in the electronic search and 131 underwent full text review. Two studies reported appropriateness of CT scans, three reported appropriateness of x-rays, and eight studies reported combined appropriateness for a total of 13 included studies. Studies were conducted in Canada, United States, Ireland, France, Australia, & Finland. Comparison guidelines came from the European Commission recommendations, Agency for Healthcare Research & Quality, Agency for Health Care Policy & Research, National Institute for Health & Care Excellence, American College of Radiology, Royal College of Radiologists, or National Agency for Accreditation & Health Evaluation. Rates of appropriateness ranged from 2% to 96%.

Conclusion.

Wide variation in the rates of appropriateness exists which may be due to the different guidelines used to generate appropriateness criteria. This area would benefit from further collaboration among experts to generate a standardized set of criteria with which to judge imaging appropriateness.

A large teal-colored circular graphic, resembling a stylized 'Q' or a thick ring, is positioned in the upper right quadrant of the image. It has a dark gray center and a dark gray background.

MEDICAL EDUCATION

Incorporating Resource Stewardship into Undergraduate Medical Education at McMaster University

Bushra Khan, Catherine Friedman, Sonja Wakeling, Jasmine Liu, and Ifrah Shah
McMaster University

Background

Medical students receive limited formal education in resource stewardship (RS); with increasing healthcare costs and wait-times, students must be trained to make choices that minimize unnecessary tests and treatments to decrease potential harm and spending. Choosing Wisely Canada (CWC) created Students and Trainees Advocating for Resource Stewardship (STARS) to address this need. Two STARS cohorts at McMaster have initiated curricular change, conferences, interest groups and advocated for RS to be a priority of their provincial student organization.

Case Study

STARS met with McMaster's Undergraduate Medical Education (UGME) Dean and through his guidance formed a team to identify areas to implement RS in the curriculum.

A needs assessment was conducted through a survey, focusing on students' exposure to, attitudes towards, and confidence applying resource stewardship principles. A pilot study incorporating the CWC recommendations in five cases and assessing students' confidence in applying resource stewardship principles before and after the intervention was conducted. Learners were also introduced to CWC lists for specialties and for medical students at their clerkship orientation.

STARS connected with physician champions of RS in Hamilton and organized an annual conference to highlight how RS translated to practice. Additionally, an interest group was created to foster continued engagement with like-minded peers. STARS further assisted in establishing a partnership between CWC and the Ontario Medical Students' Association to advocate for RS training in UGME across Ontario. McMaster STARS' experience in incorporating RS in their UGME offers a prime opportunity for educators across Canada to learn how to foster leadership and engagement in RS in their own learners.

Choosing Wisely Canada STARS: Training the Next Generation of Medical Professionals at UBC

Melissa Wan and Dhruv Pandey
University of British Columbia

Background

Unnecessary testing, treatments, and procedures are rooted in physician habits. To encourage quality and cost conscious habits, we must act upstream to introduce trainees to resource stewardship principles early in their education. Currently, in BC, resource stewardship is not readily integrated into the medical school curriculum.

Goal

Our goal is to foster a culture that allows trainees to engage in conversations about medical testing and quality of care, by educating trainees about the importance of resource stewardship and equip them with necessary tools to advocate for appropriate care.

Intervention

As part of the student-led campaign, the UBC STARS have launched a BC-wide campaign. This involves advocating for pre-clerkship curriculum changes to include resource stewardship principles and the creation of an interest group. Here we will present a summary of the current knowledge level of pre-clerkship students, changes made to the UBC curriculum, and the activities of the interest group thus far.

Challenges/ Lessons Learned

Challenges included identifying opportunities to integrate resource stewardship principles into a packed, clinical presentation based, curriculum. As a result, our Lessons Learned include: distilling down our ambitions to focus our efforts; recommending small, realistic, and practical changes; and ensuring that we build a strong foundation to ensure the sustainability of the campaign.

Impact

We anticipate that these curriculum changes make a lasting impact on trainees, staff, and patients by increasing awareness about resource stewardship to improve the quality of patient care.

Incorporating Resource Stewardship into the University of Manitoba Undergraduate Medical Education Program

Andrea Kulyk, University of Manitoba
Ming-Ka Chan, University of Manitoba
Eric Bohm, University of Manitoba
Sarah Kirby, George and Fay Yee Centre for Healthcare Innovation
Youn Tae Chung, University of Manitoba

Goal

The main goals were 1) enhance training in resource stewardship principles and integrate Choosing Wisely Canada (CWC) recommendations into the University of Manitoba Undergraduate Medical Education (UGME) pre-clerkship curriculum and 2) study the impact of these changes on student attitudes and knowledge.

Implementation

Part one included reviewing the UGME PCC, identifying opportunities for enhanced resource stewardship training. We developed novel learning materials (lectures and team-based sessions) and suggested areas to integrate CWC recommendations throughout the pre-existing curriculum. In part two we analyzed the impact of these changes on students' attitude and knowledge.

Measures

The adapted curriculum was reviewed to determine 1) uptake of our suggestions into existing lectures, and 2) implementation of new content. Online surveys assessed students' attitude and knowledge towards resource stewardship pre and post implementation (September 2016, April 2017).

Challenges

Two lectures were added for first year and one into second year. Although authors had support of the Pre-Clerkship Committee, overall uptake of CWC recommendations was less than 20%. There was statistically significant improvement in students' knowledge scores (p

Lessons Learned

Students exhibited positive attitudes towards resource stewardship. Resource stewardship training at the pre-clerkship level should focus on resource stewardship principles, as opposed to specific CWC recommendations, giving students the ability to develop a core foundation, which can further evolve as they become immersed in the clinical setting. Further studies plan to examine the challenges of incorporating the aforementioned materials, and how to continue integrating resource stewardship training in undergraduate years.

Time to Forget About DRE?

Leen Naji and Jason Profetto
McMaster University

Purpose

Current recommendations regarding prostate cancer screening made by various Canadian guidelines are conflicting. Surveys have also shown that while over 80% of Canadian family physicians offer the digital rectal exam (DRE) as a screening tool for prostate cancer, only a minority believes it has benefit. Given the conflicting guidelines and lack of standardized practice, we aimed to evaluate the diagnostic accuracy of the DRE in screening for prostate cancer in the primary care setting.

Methods

Six databases were searched from inception to June 2016. All citations were independently screened for eligibility by three pairs of reviewers. The pooled sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of the DRE in screening for prostate cancer in the primary care setting were calculated using meta-analyses weighted by inverse variance. The GRADE framework was employed to assess the quality of our pooled analyses.

Results

Our search yielded 8,217 studies, and seven were eligible for inclusion (n=9,241 men). All participants analyzed received both a DRE and biopsy. Pooled sensitivity was 0.51 (95% confidence interval [CI] 0.36, 0.67; I²=98.4%) and pooled specificity was 0.59 (95% CI 0.41, 0.76; I²=99.4%). Pooled PPV was 0.41 (95% CI 0.31, 0.52; I²=97.2%), and pooled NPV was 0.64 (95% CI 0.58, 0.70; I²=95.0%). The quality of evidence was 'very low' in accordance with GRADE.

Conclusion

Given the lack of evidence supporting its efficacy, and the harms associated with over-investigation and over-treatment, we recommend against routine performance of the DRE as a screening tool for prostate cancer in primary care.

Resource Stewardship in Undergraduate Medical Education (UME)

Sahil Sharma and Matthew Rowe
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New research suggests Canadian physicians order more than 1,000,000 potentially unnecessary tests and treatments each year. Strategies to educate medical students about the CanMEDs Resource Stewardship directive and judicious testing practices can help the healthcare system manage fiscal stress and improve healthcare experiences for patients. This paper outlines several strategies that can be implemented at the undergraduate medical education level through Choosing Wisely Canada's Students and Trainees Advocating for Resource Stewardship (STARS) program. The educational strategies feature group-based learning, lecture integration, and supportive online modules. Educating medical students across the country about judicious testing can produce the generation of resource-conscientious doctors that healthcare's increasingly tight budget demands.

Evaluating Canadian Medical Students' Interest in and Readiness for Learning and Practicing High-Value Care: Preparing for Change

Ahmad Siddiqi, Noren Khamis and Geoffrey Blair
University of British Columbia

Introduction

The CanMEDS framework was recently updated to include high-value care and resource stewardship as a core competency. This principle, which encourages appropriate and judicious use of diagnostic and therapeutic actions, promotes patient safety and fosters financial sustainability. Whether current undergraduate and residency training programs effectively educate trainees on high-value care remains unknown. We aim to test: 1) medical students' current knowledge around resource stewardship; 2) the importance students place on high-value care education; 3) the ideal format to train students on this subject. Results will guide appropriate curriculum adjustments.

Methods

A validated and research ethics-approved 21-item online survey was piloted on 43 medical students and subsequently distributed to all medical students at the University of British Columbia via an electronic mailing list. The survey was voluntary. Student perspectives were analyzed using descriptive statistics.

Results

There were 88 survey responses. The majority of students (93%) agreed or strongly agreed on the importance of resource stewardship in clinical decision-making, however all respondents felt that their training has inadequately prepared them on this topic and only 28% feel comfortable discussing costs of care and overtreatment with patients. Discussing high-value care with resident and staff supervisors was reported by 86% of clinical clerks to be an effective and preferred teaching strategy.

Conclusions

Participants value resource stewardship education, but lack adequate training on the subject. Voluntary response bias may have confounded these results. Formally training residents in high-value care may enable them to transfer this knowledge to clinical clerks, and requires further investigation.

A large teal-colored circular graphic with a dark gray center, resembling a stylized 'Q' or a target, positioned in the upper right quadrant of the page.

PATIENT ENGAGEMENT

Engaging Patients as Partners in CWNL: Low Back Imaging Case Study

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Krista Mahoney, Choosing Wisely NL and Quality of Care NL

Robert Wilson, TPML/MUN

Patrick Parfrey, TPML/Memorial University

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Background

CWNL is underpinned by CIHR's Strategy for Patient Oriented Research (SPOR) and Integrated Knowledge Translation (iKT). Thus, engaging patients/stakeholders as partners is core component in project planning. Projects are approved by a steering committee of patients, physicians, researchers, and decision-makers. Approved projects convene a team including patients/key stakeholders as partners with resource-assistance from the NL Support Unit. We present an example of our stakeholder engagement-process using the CWNL project: reducing unnecessary imaging for low back pain.

Methods

Knowledge-brokering (KB) and knowledge-exchange (KE) were used to initiate engagement. First, relevant knowledge users/stakeholders were identified and contacted to set-up informal KB discussions to (i) hear their experience treating/having LBP, (ii) understand relevant tacit knowledge, (iii) share the CWNL-LBP project. Second, all stakeholders were invited to a multi-disciplinary KE session to (i) introduce the project aim/research team, (ii) share Lessons Learned from KB, (iii) document the problem from their perspective, and (iv) confirm desired engagement level.

Results

Telephone and face-to-face KB sessions with over 12 stakeholder groups (i.e. patients/community groups, radiologists, physicians/specialists, allied health, and decision makers) were conducted. 33 participants (organised into 4 groups with representation from different perspectives) attended the KE session. All agreed LBP management needs improvement including reducing unnecessary imaging. Desired engagement levels included "inform" (n=23), "consult" (n=10) and "collaborate" in project planning (n=16) and disseminating results (n=14).

Conclusion

This process allowed us to confirm that unnecessary imaging for LBP is a priority issue for stakeholders. It provided a venue for open KE between researchers and knowledge users and was successful for developing meaningful partnerships.

Regional Media Strategies: Choosing Wisely in Former Cypress Health Region

Kevin Wasko, Saskatchewan Health Authority

As a local physician community, the Cypress Regional Medical Association recognized that the successful implementation of Choosing Wisely depended on engagement and education of patients. The medical association approached the local health authority leadership to partner on an advertising campaign targeting patients.

After reaching out to Choosing Wisely Canada, the medical association and the health authority created a local media and advertising strategy. The campaign was launched with the creation of a video featuring local physicians espousing the principles of Choosing Wisely. It was directed at the local patient population in the area and circulated on social media. It was thought that featuring local physicians would resonate more with patients than simply promoting generic materials. This video was a very successful communication vehicle, with over 32,000 views around the world and 265 shares on Facebook. It has been posted to the Choosing Wisely Canada and College of Physicians and Surgeons of Canada websites. The video was followed up with print ads in the local papers, dissemination of choosing wisely materials and another video featuring a local physician. The second video focused on the annual physical. It has been viewed 12,000 times and again was featured nationally.

This campaign is still ongoing but has been a successful way to introduce the movement amongst the general population and has allowed for conversations between physicians and patients that would have otherwise been difficult to initiate. We feel that the lessons we have learned could help inform similar campaigns.

Changing the Way we Understand and Label Behaviour will Reduce the use of Antipsychotics in Dementia Care

Susan Macaulay, MyAlzheimersStory.com

Background

In the mid-1980s, researcher Dr. Jiska Cohen-Mansfield developed a tool to measure agitation in people living with dementia (PLWD) in long-term care facilities (LTCFs). Called the Cohen-Mansfield Agitation Inventory (CMAI), the tool comprises 29 behaviours. In the late 1990s, the International Psychogeriatric Association (IPA) took the CMAI and similar scales and “renamed” the behaviours on the list the Behavioural and Psychological Symptoms of Dementia (BPSD). The IPA’s new construct became a way of labeling normal behaviour as aberrant in PLWD.

Objectives

Show that BPSD are generally not the result of dementia, but rather normal human responses to particular sets of circumstances, and that PLWD should not be inappropriately medicated for normal behaviour.

Methods

Personal observation, one-on-one interaction with a PLWD (6,850 hours over five years) hundreds of hours of audiovisual documentation; review and analysis of nurses’ notes; online survey with 1,300+ responses.

Results

Assessing and reporting the behaviour of PLWD through the lens of BPSD is problematic. Using BPSD as an assessment tool leads PLWD to be inappropriately prescribed antipsychotic medications.

Conclusions

We must reframe behavioural expressions in PLWD in ways that enable us to identify their root causes and, in turn, inform improved efforts to implement humane, personalized, and effective approaches for the care of PLWD. Better understanding of what causes behaviours that dementia care partners and care staff experience as challenging will reduce such behaviours and thus the rates at which antipsychotics are prescribed to address them.

Deepening Patient Engagement: Sharing the patient voice at all levels of an organization and beyond

Melissa Giguere (Presenter), Health Sciences North
Rosie Graffi, Health Sciences North

Background

On our journey to improve the patient experience, Health Sciences North implemented a framework to deepen the level of patient engagement by implementing a Patient and Family Advisory Program. It began with the formation of the CEO Patient and Family Advisory Council in 2012 with 12 members, and has grown to an additional pool of 28 Patient Advisors (PA). PA onboarding includes Introduction to Lean Management as advisors participate in improvement work (36 projects out of the total 116 they were involved in 2017) across the system. Patients who have gone through the patient relations process are referred to apply to become a PA and to share their patient story, further deepening their level of engagement with the organization. Four patient stories are collected each month (video, audio, written, speaking engagements) and analyzed for sharing with the Board, Quality Committee of the Board, Program Councils, Medical Advisory Committee, Leadership Development Sessions, Northern Ontario Medical School events and with staff through an electronic patient story library. Patient stories are also profiled on a social media blog called "Humans of HSN", including the experience of patients who have been affected by a critical incident.

Case Study:

Participants given a critical incident. Using a patient stories collection guide, participants are tasked with role playing to collect and record the patient story, to analyze the patient story with the analysis guide which includes: quality dimensions, learnings, and problem/improvement/countermeasure/measurement/results.

