ABSTRACT BOOK

May 31, 2024

Department of Academic Family Medicine
College of Medicine | University of Saskatchewan

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UNIVERSITY OF SASKATCHEWAN

Academic Family Medicine
Family Medicine Unit, Regina Centre Crossing
172 - 1621 Albert Street
Regina SK S4P 2S5

May 13, 2024

I am looking forward to celebrating your scholarship achievements at the end of the month. This will be our 34th Annual event.

Asking and answering questions about practice is incredibly important for our patients and colleagues. I hope through the day, you will learn new things and be inspired to ask more questions about how we practice. The diversity of your questions re-enforces the breadth of our discipline.

Skilled evaluation of information, knowledge of and participation in the research process, and implementation, evaluation and adaptation of new processes are critical components of our ability to provide the best possible care to patients and communities.

To our graduating second-year and third-year residents, congratulations and all the best in your future practice. I also want to say thank-you to our team in the Research Division as well as the faculty who have served as supervisors for these projects.

Sincerely,

Kathy Lawrence
Provincial Head
Family Medicine

UNIVERSITY OF SASKATCHEWAN

Department of Academic
Family Medicine

Congratulations on arriving at this stage of your Family Medicine Training!

As a former participant in the Resident Scholarship Day in Saskatchewan, I am aware of the feelings and emotions associated with completing a resident scholarship project. This is the first Resident Scholarship Day that has been held in person since the pandemic, so I am grateful we are able to come together to celebrate your success. Please know that your contributions to Family Medicine scholarship are greatly appreciated and valued.

The skills of research, scholarship and critical appraisal have never been more important than they are now. The rate of increase in medical information has ballooned in the past two years, with information seeming to evolve almost hourly during the COVID-19 pandemic. Considering this, your investment in your project has exposed you to skills that are crucial to your growth as a Family Physician.

It is my hope that as you read this collection of abstracts you are inspired to ask questions and find the answers to them. Scholarship is not just a list of publications. It is lifelong learning, inquiry, and the critical appraisal of information.

Please join me in thanking those people who have made this moment possible: the Research Division; Faculty Advisors; and Award Sponsors, which are only a partial list of the many important contributors. Thank you to all who make this day happen.

I would like to take this opportunity to wish the graduating FMRs all the best in the future and in their chosen careers.

Sincerely,

Sheila Smith, MD, CCFP (EM), FCFP
Postgraduate Program Director
Department of Academic Family Medicine
University of Saskatchewan

UNIVERSITY OF SASKATCHEWAN

Academic Family Medicine
West Winds Primary Health Centre (Research Division)
3311 Fairlight Drive
Saskatoon SK S7M 3Y5

May 31, 2024

Colleagues

On this occasion, the 34th Annual Resident Scholarship Day, I want to take this opportunity to recognize Residents, Faculty who have been Coaches/Supervisors, Faculty, Staff and members of the research teams for:

- all the hard work that has gone into making this possible;
- your commitment and perseverance given some of the challenges; and,
- for the many contributions that you have brought to these learning endeavours.

Since its inception in 1990, we have gathered together once a year to: celebrate our successes; learn about the scholarly questions that have been systematically answered over the past two years; ask and answer questions that will enhance our knowledge and understanding; and, provide feedback (peer-review). The Annual Scholarship Day in the Department of Academic Family Medicine has evolved and grown over the years providing us with the opportunity to celebrate our academic achievements and to plan for the future.

Over the past 34 years, we have come a long way, but we must continue to transform to meet the needs of the people we serve, and the Accreditation Standards set by the College of Family Physicians of Canada.

Mahatma Gandhi stated, "you must be the change you wish to see in the world." Ian McWhinney (1926-2012) who was known as "the father of family medicine" transformed family medicine worldwide from a little-known subject or area of practice into an academic discipline with postgraduate training. Thus, improving practice provides opportunities for innovation each and every day.

I would also like to recognize the support that we receive from: the Department of Academic Family Medicine; the College of Medicine; the University of Saskatchewan; the Saskatchewan College of Family Physicians; and the College of Family Physicians of Canada.

I want to take this opportunity to wish each of you much success and the very best as you move forward in your chosen vocation.

Yours sincerely,

Vivian R Ramsden, RN, PhD, MCFP (Hon.), FCAHS
Distinguished Professor & Director, Research Division
Department of Academic Family Medicine

34th ANNUAL RESIDENT SCHOLARSHIP DAY

DEPARTMENT OF ACADEMIC FAMILY MEDICINE

Friday, May 31, 2024
Prairieland Park – Hall C
Saskatoon, SK

0850 - 0900 Opening Remarks & Introductions
Dr. Vivian R Ramsden, Director, Research Division
Dr. Kathy Lawrence, Provincial Department Head

0900 – 0910 Scheduling Call Shifts for Family Medicine Residents in Saskatchewan
Robert DE Henderson, Jason Hosain, Rhonda Bryce, Carolyn Augusta

0910 – 0920 Family Medicine Resident-Led Clinics in Northern Saskatchewan: A Program Evaluation
Daniel Ferguson, Jessica Froehlich, Kristi Galloway, Jeff Irvine, Udoka Okpalauwaekwe, Rhonda Bryce, Vivian R Ramsden

0920 - 0930 Assessment of the appropriateness of the OSCE (Objective Structured Clinical Examination) for incoming First-Year Family Medicine (FM) Residents at the University of Saskatchewan (UofS) in Regina, SK
Alana Goertzen, Grace Kwok, Kaitlyn Hughes, Olivia Reis, Nicole Shedden, Adam Clay

0930 – 0940 Saskatchewan Family Medicine Resident Academic Half Day Quality Improvement Project
Corey Ziegler, Samantha Hayes, Volker Rininsland, Kaitlyn Hughes, Adam Clay

0940 – 0950 Moral Distress among Family Medicine Resident Physicians
Elisabeth Fortier, Anne-Sophie Fortier, Solveig Nilson, Adam Clay

0950 - 1000 Communication is Key: A Quality Improvement Project for Patient Case Presentations in an Urban Family Medicine Residency Training Program
Kate Morrison, Nicole Shedden, Kaitlyn Hughes, Matt Wong, Andries Muller

1000 - 1010 Do doctors know that it takes more than an apple a day? Impact of formal nutrition training on family medicine residents' nutrition knowledge, confidence, attitudes, and counselling abilities.
Katherine (Connor) Ostoich, Rejina Kamrul, Adam Clay

1010 - 1020 Break

1020 - 1030 Is a shortage of primary care physicians leading to increased Emergency Department visits and hospitalizations? A look at Emergency Department visits in Regina, Saskatchewan over the course of 2021-2023.
Ashkan Ataellahi, Ryan Donnelly, Mykola Sackett, Payton Pederson, Adam Clay

1030 - 1040 Visits to the Emergency Department at Battlefords Union Hospital for low-acuity health issues: A cross-sectional study
Alaa Baiou, Kiranjot Bhangoo, Baber Iqbal, Brady Bouchard, Rhonda Bryce

1040 – 1050 Following your heart: Examining current use of the HEART Pathway for chest pain at the Cypress Regional Hospital's Emergency Department for outpatient referral and discharge
Alicia Mah, Emmett Harrison, Ravdip Dhaliwal, Alexandra Akinfiresoye, Lynsey Martin, Adam Clay

1050 - 1100 Increasing Acetylsalicylic Acid Prescribing in Pregnancy Based on the New SOGC Guidelines: A Program Evaluation in Prince Albert, Saskatchewan
Charleen Salmon, Kimberly-Ann Bordun-Slater, Breanna Davis, Vijayalakshmi Udayasankar, Vivian R Ramsden, Rhonda Bryce

1100 – 1110 72h re-presentation rates at a rural Emergency Room in Weyburn, Saskatchewan: The common characteristics of patients re-presenting
Theron Ng, Aamna Sohail, Jessi Warren, Adam Clay

1110 – 1120 Effects of Interdisciplinary Bedside Rounds (IDBR) vs. Whiteboard Rounds at Battlefords Union Hospital on Patient Satisfaction, Physician Satisfaction and Duration of Rounds
Daveena Sihota, Heena Kumar, Hari Hullur, Rhonda Bryce

1120 - 1130 The Role of Educational Intervention and Implementation of a Standardized ACP EMR Template in Improving ACP Discussion and Documentation with Geriatric Patients at Regina Centre Crossing Family Medicine Unit
Gagandeep Gill, Simran Saini, Jessica Pietrzyk, Barb Beaurivage, Adam Clay, Radhika Marwah

1130 - 1140 Screening for AAA in Adult Males 65 years and older
Anonymous

1140 - 1150 POG: Physical Health in Gamers – A Systematic Review
Philip Lam, David El-Sabawy, Matthew Wong

1150 - 1200 Anticipated rural retention among internationally trained family physicians in Saskatchewan: An early practice-intention comparison between those accessing Canadian practice through the SIPPA Program vs. a Family Medicine Residency Training Program
Cara Fallis, Natasha Premji, Mahmood Beheshti, Rhonda Bryce, Jon Witt, Carla Fehr

1200 - 1300 Volker Rininsland – Celebration Song followed by Lunch/Networking

1300 - 1310 Clearing the Air: A quality improvement approach to changing metered dose inhaler prescription practices at West Winds Primary Health Centre
Cuylar Conly, Bruna Murvay, Michael Moroz, Cathy MacLean, Meredith McKague, Rhonda Bryce

1310 – 1320 An Evaluation of Mild Asthma Management at the Family Medicine Unit
Danielle Earis, Candina Beaurivage, Adam Clay

1320 – 1330 Evaluation of a Regional Centre's Outpatient Alcohol Detox Program
Kade Robertson, Joy Sarofim, Emmett Harrison, Adam Clay

1330 – 1340 Assessing the initiation of Alcohol-Use Disorder medications for presentations related to alcohol-use disorder in the hospital setting: An analysis of the Dr. FH Wigmore Regional Hospital
Benjamin McMillan, Julie Saby, Robert Haver, Adam Clay

1340 – 1350 Attitudes and practices of family physicians in diagnosis and management of Childhood Attention Deficit Hyperactivity Disorder (ADHD) in North West Saskatchewan
Fatima Waqar, Mohammed Mohammed, Rhonda Bryce

1350 – 1400 Frequency of CDM appointments and reaching diabetes control in patients with type 2 diabetes in a northern Saskatchewan family medicine clinic
Emilie Mesec, Natalia Liamprekht, Christo Lotz, Breanna Davis, Rhonda Bryce

1400 – 1410 Improving Patient's Type II Diabetes Glycemic Control at the Associate Family Physicians Clinic through Interdisciplinary Outpatient Diabetes Therapies
Rosemond (Rose) Ennin, Sonya Mannala, Brenda Andreas, Adam Clay, Emmett Harrison

1410 – 1420 Primary or secondary prevention? Assessing statin use in the elderly
Fraser Woodside, Candina Beaurivage, Adam Clay

1420 – 1430 Breastfeeding duration following frenotomy consultation in infants with suspected ankyloglossia and feeding difficulty at West Winds Primary Health Centre and Cornerstone Maternity Clinic
Fei Ge, Denise Kim, Jill Farrukh

1430 – 1440 Break

1440 – 1450 Are the Volumes and Catchment Area of the Humboldt District Hospital Emergency Department expanding? Facts or Opinion
Tanner Dusyk, Dominic Hauck, Adam Clay, Aileen Hamilton

1450 – 1500 Understanding the use of delayed antibiotic prescriptions in a Regional Saskatchewan Centre
Kurt Lukas, Joseph Paul, James Ting, Jamie Grunwald, Breanna Davis, Rhonda Bryce

1500 - 1510 Investigating the uptake and patient satisfaction with virtual STI Screening Clinics in Student Athletes at the University of Saskatchewan
Razaq Daud Shah, Sahil Rana, Peter Vastis, Danielle Frost, Adam Clay

1510 - 1520 A review of current telemedicine applications for intraoperative surgical consultation
Celine Akyurekli, Malcolm Tan, Andre Grobler, Rhonda Bryce

1520 - 1540 Reflections – R Elwood Martin
Research Awards – K Lawrence/A Muller/VR Ramsden
Closing Remarks

Adjudicators

Ruth Elwood Martin – MD, MPH, FCFP – University of British Columbia, Vancouver, BC
Clinical Professor Emerita MD, FCFP, MPH
School of Population and Public Health, Faculty of Medicine
& Canadian Collaboration for Prison Health and Education, Past & Inaugural Director

Dr. Ruth Elwood Martin was the lead faculty for UBC Family Medicine's Post-Graduate Research Program from 2002-2015. She also worked as a family physician in British Columbia's Provincial Correctional Centres from 1994 – 2011. She initiated a prison cervical cancer-screening pilot in 2000, and later became Co-Investigator on 'HPV-FOCAL', an evaluation study of HPV primary screening in British Columbia. In 2005, she became the Inaugural Director of the UBC Canadian Collaboration for Prison Health and Education (CCPHE), a network of academic, community and prison persons interested in improving the health of individuals in custody, their families and communities. In 2005, she helped to initiate participatory health research with women in prison, correctional staff and academics, to address concerns raised by the women themselves, which is the focus of two books, Arresting Hope and Releasing Hope (Inanna, 2014 and 2019), and a number of peer-reviewed journal articles.

Mark Milne, MSc, PhD – University of Saskatchewan, Saskatoon, SK
Dr. Mark Milne is the Research Facilitator for six departments in the College of Medicine at the University of Saskatchewan including the Department of Academic Family Medicine. His role as a Research Facilitator ranges from meeting with students and faculty to discuss research ideas all the way to helping find and apply for grants. He has a MSc in Chemistry from the University of Saskatchewan, and a PhD in Chemistry and Medical Imaging from the University of Western Ontario. His PhD and research focused on the development and use of novel contrast agents for medical imaging along with the development of therapeutics for cancer treatment. Mark has been an adjudicator for the Department's Scholarship Day for the past three years and is excited to continue in this role at the 34th Annual Resident Scholarship Day.

Charlene Thompson, RN, BSN, MPH, PhD – University of Saskatchewan, Saskatoon, SK
Dr. Charlene Thompson is an Assistant Professor in the College of Nursing. She has twenty years of public health nursing experience working in multiple programs that included building health equity, child health clinics, maternal-child health, and sexual/street health. Dr. Thompson's research interests in Indigenous peoples' health and health equity grew through her work in public health. In addition, Dr. Thompson is interested in the roles of frontline workers, i.e., nurses, community health workers, community program builders, and their contributions to public health programs. Her recent research involves a maternal-child focus in public health that includes the voices of families and frontline workers. For Charlene, the best part of nursing practice and research is the privilege to serve children and their families to foster positive health outcomes.

Acknowledgements

The Research Division of the Department of Academic Family Medicine, University of Saskatchewan gratefully acknowledges the **Saskatchewan College of Family Physicians** and the **Department of Academic Family Medicine**, University of Saskatchewan for the Resident Scholarship Awards.

Masters of Ceremonies – Drs. Andries Muller and Emmett Harrison

Research Support – Dr. Rhonda Bryce, Adam Clay, Nicole Jacobson

Administrative Support – Kayla Woo, Jaime Markowski & the Program Administrators

Prairieland Park – Staff and Technical Support

Scheduling call shifts for family medicine residents in Saskatchewan

Robert DE Henderson, FMR II; Jason Hosain, MD, CCFP
Rhonda Bryce, MD, MSc; Carolyn Augusta, PhD*

Department of Academic Family Medicine, College of Medicine, University of Saskatchewan
*Department of Finance and Management Science, Edwards School of Business, University of Saskatchewan

ABSTRACT

Background: In Saskatchewan, family medicine clinics are required to provide continuous call coverage; Family medicine residents (FMRs) participate in these services. The nature of the call experience and the scheduling process vary from site to site.

Objective: This study aims to assess the current nature and distribution of call scheduling, and its impact on resident wellness.

Methods/Methodology: We conducted an email survey of current FMRs in Saskatchewan (Saskatoon, Regina, and 6 rural/remote sites) in March 2024. Actual call schedule data for two academic years (2021-2023) was obtained for Saskatoon and Regina. This study was approved by the University of Saskatchewan's Behavioural Research Ethics Board (Beh ID 4645).

Results/Findings: Fifty-two FMRs completed the survey (52% response). Rural/remote residents were the most satisfied with the learning experience; Regina residents were markedly more dissatisfied. Residents in Saskatoon were more positive about the general experience (e.g., reported less stress/fatigue). Many Regina residents reported attending in person nearly every call shift, while Saskatoon residents rarely attend in person while on call. Call schedules were found to be unevenly distributed among residents in Saskatoon and Regina, with some working an average of one shift every two weeks, and others more than double that. There are mixed opinions regarding the benefits of call stacking. The most preferred call schedule notice period was 2-3 months.

Discussion: More in-person attendance during call likely accounts for the Regina residents' dissatisfaction compared to Saskatoon. Scheduling residents considering each month individually, rather than on a yearly basis, probably yields the uneven distribution of shifts.

Conclusions: While rural/remote sites are more satisfied with the learning opportunities, they and Regina residents have more negative feelings toward call than the Saskatoon. Analysis of actual schedule data revealed that shifts are not evenly distributed among residents over program length.

Recommendations: We aim to pilot the *option* to stack call shifts for Saskatoon residents for 2024-25. Expectation management should be enhanced among both patients and residents with

respect to the nature of the on-call service in Regina. Call scheduling should also take the entire program length into account to ensure equitable distribution of shifts.

References:

1. Nicol AM, Botterill JS. On-call work and health: a review. Environ Health [Internet]. 2004 Dec 8 [cited 2024 May 13];3(1):[7 p.]. Available from: https://doi.org/10.1186/1476-069x-3-15.
2. Yuan JH, Huang Y, Rosgen BK, Donnelly S, Lan X, Katz SJ. Burnout and fatigue amongst internal medicine residents: a cross-sectional study on the impact of alternative scheduling models on resident wellness. PLoS One [Internet]. 2023 Sep 14 [cited 2024 May 13];18(9):[13 p.]. Available from: https://doi.org/10.1371/journal.pone.0291457.
3. Parshuram CS, Amaral AC, Ferguson ND, Baker GR, Etchells EE, Flintoft V, Granton J, Lingard L, Kirpalani H, Mehta S, Moldofsky H. Patient safety, resident well-being and continuity of care with different resident duty schedules in the intensive care unit: a randomized trial. CMAJ. 2015 Mar;187(5):321-9.
4. Scali EP, Strovski E, Forster BB, Mar C, Chang SD. Sink or night float: University of British Columbia radiology residents' experience with overnight call. Can Assoc Radiol J. 2015 May;66(2):185-9.
5. Connelly CR, Bohan PM, Cook MR, Moren AM, Schreiber MA, Kiraly LN. A night float week in a surgical clerkship improves student team cohesion. Amer J Surg. 2016 May;211(5):913-8.
6. Chowdhary A, Davis JA, Ding L, Taravati P, Feng S. Resident sleep during traditional home call compared to night float. J Acad Ophthalmol. 2023 Jul;15(2):e204-8.
7. Research Square [Internet]. Durham (NC): Research Square Company; c2024. Machine learning to improve resident scheduling: harnessing artificial intelligence to enhance resident wellness; 2022 Dec 6 [cited 2024 May 13];[about 12 screens]. Available from: https://doi.org/10.21203/rs.3.rs-2335705/v1.
8. Bordley J, Agustin AG, Ahmed MA, Khalid R, Paluso AM, Kobza BS, Spaugy AW, Emens J, Desai SS, Khan A. Restoration of resident sleep and wellness with block scheduling. Med Educ. 2017 Oct;51(12):1241-9.
9. Heppe D, Baduashvili A, Limes JE, Suddarth K, Mann A, Gottenborg E, Sacro Y, Davis L, Chacko K, Connors G. Resident burnout, wellness, professional development, and engagement before and after new training schedule implementation. JAMA Netw Open [Internet]. 2024 Feb 5 [cited 2024 May 13];7(2):[12 p.]. Available from: https://doi.org/10.1001/jama networkopen.2024.0037.
10. Runyan C, Savageau JA, Potts S, Weinreb L. Impact of a family medicine resident wellness curriculum: a feasibility study. Med Educ Online [Internet]. 2016 Jun 8 [cited 2024 May 13];21(1):[5 p.]. Available from: https://doi.org/10.3402/meo.v21.30648.

11. Eckleberry-Hunt J, van Dyke A, Lick D, Tucciarone J. Changing the conversation from burnout to wellness: physician well-being in residency training programs. Surv Anesth. 2015 Feb;59(1):15-6.
12. University of Saskatchewan [Internet]. Saskatoon (SK): University of Saskatchewan; c2024. Resident wellness; [cited 2024 May 13];[about 5 screens]. Available from: https://medicine.usask.ca/policies/resident-wellness.php.
13. King DE, Larsen L, Shende AM. Family practice night-call frequency: 1981-1997. Fam Med. 1998 Sep;30(8):571-3.
14. Hamadani FT, Deckelbaum D, Sauve A, Khwaja K, Razek T, Fata P. Abolishment of 24-hour continuous medical call duty in Quebec: a quality of life survey of general surgical residents following implementation of the new work-hour restrictions. J Surg Educ. 2023 May-Jun;70(3):296-303.
15. Yu JN. Night shift call systems in family practice residencies. Fam Med. 1994 Mar;26(3):163-7.
16. Eggertson L. Residents claim 24-hour call violates Charter rights. CMAJ. 2009 Apr;180(9):918.
17. B-Lajoie MR. Is the elimination of 24-hour resident call a good idea? YES. Can Fam Physician. 2013 Feb;59(2):132-4.
18. Cools-Lartigue J. Is the elimination of 24-hour resident call a good idea? NO. Can Fam Physician. 2013 Feb;59(2):133-5.
19. B-Lajoie MR. End of 24-hour institutional on-call duty in Quebec: a measure even practising physicians are calling for. Can Fam Physician. 2012 May;58(5):e296-7.
20. Maurice S, Beaton J, Ng V. Family matters: does this mean the end of 24-hour on-call shift for Canadian residents? Can Fam Physician. 2011 May;57(5):e192-3.
21. Yun JJ, Jane JA. Is the grass greener with night float? J Neurosurg. 2022 Sep;138(4):1114-5.

Family Medicine Resident-Led Clinics in Northern Saskatchewan: A Program Evaluation

Daniel Ferguson, FMR II; Jessica Froehlich, FMR II; Kristi Galloway, FMR II; Jeff Irvine, MD, MPH, CCFP; Udoka Okpalauwaekwe, MBBS, MPH, PhD (C); Rhonda Bryce, MD, MSc; Vivian R Ramsden, RN, PhD, MCFP (Hon.)

Department of Academic Family Medicine, College of Medicine, University of Saskatchewan

ABSTRACT

Background: Since the establishment of the La Ronge Family Medicine Residency program in 2012, family medicine residents have been providing medical care in network agencies, high schools, and First Nations communities through resident-led clinics. The initiative was born out of community-identified needs for bringing healthcare services to them directly. The resident-led clinics serve the intention of bringing care to patients who otherwise might experience significant barriers. Residents are challenged to advance their independent clinical decision making while gaining experience providing culturally informed and sensitive care. A formal evaluation of this program has not previously been undertaken.

Question(s): Through understanding past resident experiences, how may we optimize the healthcare services and residency training opportunities provided by the La Ronge resident-led clinics?

Methods/Methodology: This program review was deemed exempt from ethical review by the University of Saskatchewan's Behavioural Research Ethics Board (ID E473). Data collection involved conducting semi-structured interviews with the past six years of La Ronge family medicine residents for a total of 15 interviews. Braun and Clarke's (2006) framework was applied for reflective thematic analysis.

Results/Findings: Six themes emerged: Building skills for practice with distant supervision; Overcoming barriers and resource limitations; Awareness of inequities; Building culturally respectful relationships; Optimizing clinic utilization; Ways of implementing change.

Discussion: The level of independence in resident-led clinics comes with a trade-off in mentorship; there is a desire to balance these aspects. Experiences in resident-led clinics led to valuable professional and personal development and strengthening of relationships with patients and communities as a result of the unique settings of the resident-led clinics (eg. home visits, group home, long term care, high schools). The intended services are optimized when emphasis is placed on care for vulnerable populations (eg. prioritizing home visits, visits at network agencies with the homeless community). Areas for improvement include optimizing translation services, technology, booking and utilization. Collaboration with community and patient partners is desired in making decisions for future clinic changes.

Conclusions: Six key themes were elicited from interviews with previous residents of the La Ronge Family Medicine Program. Future steps include hearing from community and patient stakeholders.

References:

1. Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol. 2006 Jan;3(2):77-101.
2. Gracey M, King M. Indigenous health part 1: determinants and disease patterns. Lancet. 2009 Jul;374(9683):65-75.
3. Jardine C, Lines L. Social and structural determinants of Indigenous health. In: Butler L, Exner-Pirot H, Norbye B, editors. Northern and Indigenous health and healthcare [Internet]. Saskatoon (SK): University of Saskatchewan; 2018 [cited 2024 May 13];[about 5 p.]. Available from: https://openpress.usask.ca/northernhealthcare/chapter/ chapter-11-social-and-structural-determinants-of-indigenous-health/.
4. Kim P. Social determinants of health inequities in Indigenous Canadians through a life course approach to colonialism and the residential school system. Health Equity. 2019 Jul;3(1):378-81.
5. Kitty D, Funnel S. CanMEDS-FM Indigenous health supplement [Internet]. Mississauga (ON): College of Family Physicians of Canada; 2020. 56 p. Available from: https://www.cfpc.ca/CFPC/media/PDF/CanMEDS-IndigenousHS-ENG-web.pdf.
6. Nguyen N, Subhan F, Williams K, Chan C. Barriers and mitigating strategies to healthcare access in indigenous communities of Canada: a narrative review. Healthcare (Basel) [Internet]. 2020 Apr 26 [cited 2024 May 13];8(2):[16 p.]. Available from: https://doi.org/10.3390/healthcare8020112.

Assessment of the appropriateness of the OSCE (Objective Structured Clinical Examination) for incoming first-year Family Medicine (FM) residents at the University of Saskatchewan (UofS) in Regina, SK

Alana Goertzen, FMR II; Grace Kwok, FMR II; Kaitlyn Hughes, MD, CCFP, DRCPSC (CE)
Olivia Reis, MD, CCFP; Nicole Shedden, MD, CCFP, DRCPSC (CE); Adam Clay, MSc

Department of Academic Family Medicine, College of Medicine, University of Saskatchewan

ABSTRACT

Background: Canadian residencies typically consist of graduates from various Canadian and international medical schools, which may cause inconsistencies from prior education and clinical experiences. As OSCEs can have both high validity and reliability and are frequently used to evaluate learners' clinical approach and judgement, we have developed an OSCE for incoming first-year FM residents in Saskatchewan.

Question(s): Our objective is to evaluate appropriateness and level of difficulty of OSCE stations via surveys with residents and examiners.

Methods/Methodology: Four OSCE stations across different FM-oriented clinical domains were designed, and faculty graded resident performance on each station. Narrative feedback was gathered from residents and examiners using evaluation forms adapted from the student version of the Simulation Design Scale, and are based off the Kirkpatrick level 1 model using 5-point Likert scales. This project was granted an exemption by the University of Saskatchewan's Behavioural Ethics Research Board (Beh E456).

Results/Findings: While residents generally performed well on the stations, common themes (residents and faculty) include lack of preparedness for the OSCE itself, and lack of prior clinical experience in certain clinical areas. Over 90% of residents and faculty indicated that the OSCE resembled real-life scenarios, provided opportunity for independent problem-solving, and had appropriate difficulty for the residents' stage of training.

Discussion: While this study only evaluated four designed OSCE stations, the format developed can be used to evaluate future OSCE stations for continuous quality improvement. Though not initially intended, a secondary outcome includes the feedback provided by faculty during the stations to improve resident experience and provide extra learning opportunities.

Conclusion: Resident performance on the OSCE and narrative feedback from residents and faculty are indicative that the OSCE stations used were of appropriate difficulty for incoming year-one family medicine residents.

Recommendations: We recommend future OSCEs to also be evaluated using similar feedback scales and data analysis. Additionally, though provision of feedback and identification of individual resident areas of weakness was not an initial anticipated outcome, we recommend that this may be considered to provide learning resources and opportunities that may be tailored to the individual resident.

References:

1. Short MW, Jorgensen JE, Edwards JA, Blankenship RB, Roth BJ. Assessing intern core competencies with an objective structured clinical examination. J Grad Med Educ. 2009 Sep;1(1):30-6.
2. Hijazi M, Downing SM. Objective structured clinical examinations as an assessment method in residency training: practical considerations. Ann Saudi Med. 2008 May-Jun;28(3):192-9.
3. Wallenstein J, Heron S, Santen S, Shayne P, Ander D. A core competency-based objective structured clinical examination (OSCE) can predict future resident performance. Acad Emerg Med. 2020 Oct;17(Suppl 2):S67-71.
4. Gollehon NS, Stansfield RB, Gruppen LD, Colletti L, Haftel H, Woolliscroft JO, Lypson ML. Assessing residents' competency at baseline: how much does the medical school matter? J Grad Med Educ. 2017 Oct;9(5):616-21.
5. Lypson ML, Frohna JG, Gruppen LD, Woolliscroft JO. Assessing residents' competencies at baseline: identifying the gaps. Acad Med. 2004 Jun;79(6):564-70.

Saskatchewan Family Medicine Resident Academic Half Day Quality Improvement Project

Corey Ziegler, FMR II; Samantha Hayes, FMR II; Volker Rininsland, MD, CCFP, FCFP
Kaitlyn Hughes, MD, CCFP, DRCPSC (CE); Adam Clay, MSc

Department of Academic Family Medicine, College of Medicine, University of Saskatchewan

ABSTRACT

Background: Academic half days (AHD) can be described as time set aside by medical education programs for learners to improve their understanding of medical content relevant to practise. These educational sessions often include a wide variety of teaching methods, however, little research has been done in seeking to understand Saskatchewan residents' perspectives regarding the value/utility of various AHD educational approaches. This quality improvement research project focused on current residents' perceptions of AHD learning experiences in terms of their utility in increasing medical knowledge, improving clinical practise, and impacts on resilience/mental health.

Question: What academic half day learning experiences do family medicine residents identify as most effective in enhancing medical content knowledge, clinical practise, and resilience/mental health?

Methods/Methodology: With an exemption from the University of Saskatchewan's Behavioural Research Ethics Board (Beh ID E442) data was collected via the University of Saskatchewan's SurveyMonkey platform as a one-time, cross-sectional survey, gathering demographics as well as closed and open-ended questions related to residents' perceptions of academic half day experiences. Quantitative responses were analyzed using frequencies; Qualitative variables were analyzed using thematic analysis.

Results/Findings: Among 51 respondents (49% response rate) there was over 90% agreement regarding AHD methods that residents resonate with regardless of gender, age, residency location and medical training background.

Discussion: Residents perceive local/smaller groups as more effective than central/larger settings in terms of enhancing their medical content knowledge and clinical practise.

Recommendations:

1. Reduced time spent in centralized learning and increased time spent in smaller/local group settings.
2. Improvements to both instructional content and instructor's pedagogical methods are important, especially in centrally delivered sessions. Additional training and mentorship for instructors in terms would be beneficial.
3. Improvements are needed in terms of technological access and reliability for remotely/centrally delivered AHD curriculum.

4. Effort to include rural physicians in delivery of centralized curriculum.
5. Restructuring mental health and resiliency modules with an eye towards maximizing local site autonomy and responsiveness.
6. Increase opportunities for hands-on learning sessions.

Additional research in AHD coordinator perspectives and new-to-practise physicians with retrospective AHD lenses would improve the power of this study.

References:

1. Aikenhead GS. Science education for everyday life: evidence-based practice. New York (NY): Teacher College Press; 2005. 192 p.
2. Novak JD, editor. Human constructivism: toward a unity of psychological and epistemological meaning making. Proceedings of the Second International Seminar: Misconceptions and Education Strategies in Science and Mathematics; 1987 Jul 26-29; Ithica, NY. Ithica (NY): Cornell University; 1987 Sep. 1064 p.
3. Shymansky JA. Using constructivist ideas to teach science teachers about constructivist ideas, or teachers are students too! J Sci Teacher Educ. 1992 Mar;3(2):53-7.

Moral Distress among Family Medicine Resident Physicians

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ABSTRACT

Background: Moral distress was first described as knowing the right thing to do but facing organizational barriers in making it possible. Experiencing moral distress in healthcare is a well-known issue, however, there is limited evidence exploring it among resident physicians.

Question(s): What items contribute to moral distress among family medicine residents and are there differences in the intensity of distress between R1s/ R2s, training sites, and CMGs/IMGs?

Methods/Methodology: Family medicine residents at the University of Saskatchewan were invited by email to complete a survey via SurveyMonkey in January 2024. The survey included the Moral Distress Scale – Revised, which was modified to the Canadian context. Each item was scored, and an overall composite score was calculated by summing participants responses to assess moral distress intensity. Composite scores for different demographic characteristics were compared using Mann Whitney U or Kruskal-Wallis tests. This study was approved by the University of Saskatchewan's Behavioural Research Ethics Board (Beh ID 4539).

Results/Findings: Forty-seven family medicine residents completed the survey. All participants identified items causing moral distress. The most highly rated items were: 1) Moral distress in providing care that does not relieve the patient's suffering due to limited healthcare services available. 2) Moral distress in witnessing care suffer because of physicians or nurses' lack of time to provide quality patient care 3) Moral distress in watching patient care suffer because of a lack of provider continuity. There were no significant differences in composite scores between demographic groups.

Discussion: Moral distress has been linked to burnout and intentions to leave the healthcare profession. Moral distress has been classified into three groups: 1) patient level factors, 2) team miscommunication or inadequate collaboration, and 3) system-level causes including lack of staffing/resources, and pressure from administrators. This study aligns with these findings and acknowledges moral distress also stems from lack of provider continuity. Further it reaffirms that working in an environment with short staffing and time constraints may cause moral distress.

Conclusions: In summary, this research identifies systemic factors causing moral distress among residents.

Recommendations: Future research may explore moral distress interventions including education, and debriefings. Additionally, collaborative care and improved communication among teams may diminish moral distress.

References:

1. Abdolmaleki M, Lakdizaji S, Ghahramanian A, Allahbakhshian A, Behshid M. Relationship between autonomy and moral distress in emergency nurses. Indian J Med Ethics. 2019 Jan-Mar;4(1):20-5.
2. Giannetta N, Villa G, Bonetti L, Dionisi S, Pozza A, Rolandi S, Rosa D, Manara DF. Moral distress scores of nurses working in intensive care units for adults using Corley's scale: a systematic review. Int J Environ Res Public Health [Internet]. 2022 Aug 26 [cited 2024 May 10];19(17):[13 p.]. Available from: https://doi.org/10.3390/ ijerph191710640.
3. Fortier E, Malloy D. Moral agency, bureaucracy & nurses: a qualitative study. Can J Pract Ethics [Internet]. 2019 May 18 [cited 2024 May 10];3(1):[14 p.]. Available from: https://scholar.uwindsor.ca /csspe/vol3/1/1/.
4. Fortier EP. Moral agency and moral distress among registered nurses: novice to expert [master's thesis]. Regina (SK): University of Regina; 2018. 145 p.
5. Jameton A. Nursing practice: the ethical issues. Englewood Cliffs (NJ): Prentice-Hall; 1984. 331 p.

Communication is Key: A Quality Improvement Project for Patient Case Presentations in an Urban Family Medicine Residency Training Program

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ABSTRACT

Background: Verbal case presentations (VCP) are an oral summary of a clinical encounter with the purpose of demonstrating clinical reasoning skills [1]. Formal training on VCP is limited in residency training. Given the daily use of VCP during residency and the importance of residents demonstrating clinical reasoning, this research aims to assess VCP quality improvement measures.

Question(s): What is the perceived effectiveness and satisfaction for Saskatoon Family Medicine residents of a one-hour formal didactic training session on VCP skills, utilizing the SNAPPS framework.

Methods/Methodology: Ethical exemption (Beh E269) was obtained from the University of Saskatchewan's Behavioural Research Ethics Board. Voluntary Saskatoon Family Medicine residents (N=19) received a one-hour didactic training session on the SNAPPS framework. A twenty-question post-session survey, using a 10-point Likert scale and comment boxes assessed participant satisfaction.

Results/Findings: Results indicate that the majority of participants (>85% selecting Likert 5-10, 10= "very useful") found the session to be well organized and useful, with clearly stated objectives, material provided and videos shown helpful, provided sufficient opportunity to apply the skills taught, feedback helpful, and the stated objectives were met. A qualitative review of comments indicated that the supplied cases were "exhaustingly thorough," and a suggestion to teach the one-minute preceptor VCP framework along with the SNAPPS framework was made.

Discussion: Considering time constraints in residency teaching, combining teaching on VCP frameworks (i.e., SNAPPS and one-minute preceptor) will likely prove most realistic.

Limitations include, a) no use of a pre-teaching session survey, b) omitting demographic data collection, and c) small sample size. Affinity bias may exist because the teaching session was delivered by a fellow co-resident of the participants.

Conclusions: This pilot project demonstrated that a one-hour formal didactic teaching session on the SNAPPS VCP framework is perceived as effective and satisfactory.

Recommendations: Future study should aim to reproduce this teaching session at different residency training sites, add a pre-teaching session survey, and demographic data collection.

Future VCP quality improvement research may benefit from assessing the optimal time in training to teach VCP frameworks and the optimal way to implement their use in training, including faculty development and engagement.

References:

1. Fagundes EDT, Ibiapina CC, Alvim CG, Fernandes RAF, Carvalho-Filho MA, Brand PLP. Case presentation methods: a randomized controlled trial of the one-minute preceptor versus SNAPPS in a controlled setting. Perspect Med Educ. 2020 Aug;9(4):245-50.
2. Heiman HL, Uchida T, Adams C, Butter J, Cohen E, Persell SD, Pribaz P, McGaghie WC, Martin GJ. E-learning and deliberate practice for oral case presentation skills: a randomized trial. Med Teach. 2012 Aug;34(12):e820-6.
3. Jain V, Rao S, Jinadani M. Effectiveness of SNAPPS for improving clinical reasoning in postgraduates: randomized controlled trial. BMC Med Educ [Internet]. 2019 Jun 21 [cited 2024 May 14];19(1):[8 p.]. Available from: https://doi.org/10.1186/s12909-019-1670-3.
4. Kapoor A, Kapoor A, Kalraiya A, Longia S. Use of SNAPPS model for pediatric outpatient education. Indian Pediatr. 2017 Apr;54(4):288-90.
5. Wolpaw TM, Wolpaw DR, Papp KK. SNAPPS: a learner-centered model for outpatient education. Acad Med. 2003 Sep;78(9):893-8.
6. Wolpaw T, Papp KK, Bordage G. Using SNAPPS to facilitate the expression of clinical reasoning and uncertainties: a randomized comparison group trial. Acad Med. 2009 Apr;84(4):517-24.

Do doctors know that it takes more than an apple a day? Impact of formal nutrition training on family medicine residents' nutrition knowledge, confidence, attitudes, and counselling abilities.

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ABSTRACT

Background: Malnutrition and poor dietary intake are major health challenges today.[1,2,3,4,5] There are well-established benefits of nutrition interventions, but a lack of formalized nutrition training in medical school and residency.[3,6,7,8] There is also little published information regarding nutrition training impact on residents. Physicians lack knowledge, skills, confidence, and training to effectively counsel in daily practice.[1,3,9,10,11,12] Consequently, there is urgent need to improve nutrition training in medicine.

Question(s): Does implementation of formal nutrition training during residency positively influence family medicine resident physicians' nutrition knowledge, attitudes, personal dietary patterns, and rates of nutrition counselling with patients?

Methods/Methodology: This pre-post study evaluated the impact of an online nutrition course provided to family medicine residents. Time was provided at Academic Half Day to complete the course as well as pre- and post-course surveys with knowledge tests through SurveyMonkey. Descriptive statistics were used to evaluate responses. The project was approved by the University of Saskatchewan Behavioural Research Board (Beh 4433).

Results/Findings: Thirteen residents completed the pre-course questionnaire (response rate = 76%). Of these, ten (77%) felt they received inadequate nutrition training and all thought patients would benefit from improved nutrition counselling. Six residents completed the post-course questionnaire (response rate = 24%). All post-course respondents thought the course was beneficial and that it should be offered to all Canadian family medicine residents, with majority believing it should be mandatory. Respondents' nutrition knowledge, confidence, beliefs on importance of nutrition counselling, and nutrition counselling in practice appear to increase/improve after training.

Discussion: Results support the literature demonstrating residents receive inadequate nutrition training and spend limited time discussing nutrition with patients.

Conclusions: Implementation of formal nutrition training during residency positively influences family medicine residents' nutrition knowledge, attitudes, and rates of nutrition counselling. It did not, however, have an impact on personal dietary patterns.

Recommendations: Future research with larger sample sizes is needed to support these conclusions and improve nutrition training during residency. Future studies should look at nutrition training in other specialties as well as examine the rate and quality of nutrition counselling after residency completion.

References:

1. Aspry KE, Van Horn L, Carson JAS, Wylie-Rosett J, Kushner RF, Lichtenstein AH, Devries S, Freeman AM, Crawford A, Kirs-Etherton P. Medical nutrition education, training, and competencies to advance guideline-based diet counseling by physicians: a science advisory from the American Heart Association. Circulation. 2018 Jun;137(23):821-41.
2. Blunt SB, Kafatos A. Clinical nutrition education of doctors and medical students: solving the catch 22. Adv Nutr. 2019 Mar;10(2):345-50.
3. Castillo M, Feinstein R, Tsang J, Fisher M. Basic nutrition knowledge of recent medical graduates entering a pediatric residency program. Int J Adolesc Med Health. 2016 Nov;28(4):357-61.
4. Devries S, Dalen JE, Eisenberg DM, Maizes V, Ornish D, Prasad A, Sierpina V, Weil AT, Willet W. A deficiency of nutrition education in medical training. Am J Med. 2014 Sep;127(9):804-6.
5. Lenders CM, Deen DD, Bistrian B, Edwards MS, Seidner DL, McMahon MM, Kohlmeier M, Krebs NF. Residency and specialties training in nutrition: a call for action. Am J Clin Nutr. 2014 May;99(5 Suppl):1174-83.
6. Devries S, Willet W, Bonow RO. Nutrition education in medical school, residency training, and practice. JAMA. 2019 Apr;321(14):1351-2.
7. Fitzgerald JD, Andrade JM, Curl SL, Smith EB, Torna E, Nelson DS. Development of nutrition counselling resources for family medicine using the knowledge to action framework. Fam Pract. 2021 Feb;38(1):32-7.
8. Harkin N, Johnston E, Mathew T, Guo Y, Schwartzbard A, Berger J, Gianos E. Physician's dietary knowledge, attitudes, and counseling practices: the experience of a single health care center at changing the landscape for dietary education. Am J Lifestyle Med. 2018 Nov;13(3):292-300.
9. Daley BJ, Cherry-Bukowiec J, Van Way CW, Collier B, Gramlich L, McMahon MM, McClave SA. Current status of nutrition training in graduate medical education from a survey of residency program directors: a formal nutrition education course is necessary. JPEN J Parenter Enteral Nutr. 2016 Jan;40(1):95-9.
10. DeLegge MH, Alger-Mayer S, Van Way CW, Gramlich L. Specialty residency training in medical nutrition education. JPEN J Parenter Enteral Nutr. 2010 Nov-Dec;34(6):47-56.
11. Han SL, Auer R, Cornuz J, Marques-Vidal P. Clinical nutrition in primary care: an evaluation of resident physicians' attitudes and self-perceived proficiency. Clin Nutr ESPEN. 2016 Oct;15:69-74.
12. Vetter ML, Herring SJ, Sood M, Shah NR, Kalet AL. What do resident physicians know about nutrition? An evaluation of attitudes, self-perceived proficiency and knowledge. J Am Coll Nutr. 2008 Apr;27(2):287-98.

Is a shortage of primary care physicians leading to increased Emergency Department visits and hospitalizations? A look at Emergency Department visits in Regina, Saskatchewan over the course of 2021-2023

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ABSTRACT

Background: With poor access to primary care facilities, mostly from a lack of access to family physicians, patients are often forced to access care through the emergency department (ED).

Question(s): What proportion of patients presenting to EDs in Regina, SK do not have a primary care provider or family physician? What are the patient demographics, triage acuity level and the proportion of patients hospitalized for ambulatory care sensitive condition (ACSC) for unattached compared to attached patients?

Methods/Methodology: Data for Regina ED's from April 1, 2021 to March 31, 2023 were extracted from National Ambulatory Care Reporting System. Intergroup comparisons were performed, and multivariable logistic regression was used to determine demographic predictors (gender, age, ACSC diagnosis) of having a family physician. Ethics approval was obtained from the University of Saskatchewan Biomedical Research Ethics Board (Bio-REB 4378) and operational approval was granted from the SHA (OA-UofS-4378).

Results/Findings: Twenty-five percent of all visits were patients without a family physician, with a slight increase of 3.1 percent over the course of the study period. Females, older adults, and patients with ACSCs were more likely to have a family physician and less likely to present with a lower acuity complaint. Patients with ACSC were less likely to be hospitalized when less than 75 years old if they had a family physician.

Discussion: Patients without an attached family physician presented with a higher portion of lower acuity concerns compared to patients with a family provider, which is consistent with other studies showing high quality primary care reduces emergency department usage. As the primary care landscape in Regina became more difficult over the course of the pandemic, a higher percentage of patients presented to the emergency department, potentially as their only option.

Conclusions: Twenty-five percent of patients who presented to the ED did not have a family physician. Patients without a family physician were more likely to be hospitalized for ambulatory care sensitive conditions under the age of 75, and were more likely to be male.

References:

1. The Global and Mail [Internet]. Toronto (ON): The Globe and Mail; c2024. Saskatchewan seeing a decline in active family doctors; 2022 May 10 [cited 2024 May 9];[about 7 screens]. Available from: https://www.theglobeandmail.com/canada/article-saskatchewan-seeing-a-decline-in-active-family-doctors/.
2. Canadian Institute for Health Information [Internet]. Ottawa (ON): CIHI; c2024. COVID-19's impact on emergency departments; 2021 Dec 9 [cited 2024 May 10];[about 9 screens]. Available from: https://www.cihi.ca/en/covid-19-resources/impact-of-covid-19-on-canadas-health-care-systems/emergency-departments.
3. CBC News [Internet]. Ottawa (ON): CBC/Radio-Canada; c2024. Doctors call for reforms as people in Sask. struggle to find a family doctor; 2022 Oct 5 [cited 2024 May 10];[about 10 screens]. Available from: https://www.cbc.ca/news/canada/saskatchewan/doctor-shortage-sask-family-physician-1.6607146.
4. Duong D, Vogel L. National survey highlights worsening primary care access. CMAJ. 2023 Apr;195(16):E592-3.
5. Li K, Frumkin A, Bi WG, Magrill J, Newton C. Biopsy of Canada's family physician shortage. Fam Med Community Health [Internet]. 2023 May [cited 2024 May 10];11(2):[4 p.]. Available from: https://fmch.bmj.com/lookup/doi/10.1136/fmch-2023-002236.
6. Marshall EG, Stock D, Buote R, Andrew MK, Breton M, Cossette B, Green ME, Isenor JE, Mathews M, Lenskjold A, MacKenzie A, Martin-Misener R, McDougall B, Mooney M, Moritz LR. Emergency department utilization and hospitalizations for ambulatory care sensitive conditions among unattached people actively seeking a primary care provider during the COVID-19 pandemic: a retrospective cohort study [Internet]. Laurel Hollow (NY); medRxiv; 2022 Feb 1 [cited 2024 May 10]. 16 p. Available from: https://doi.org/10.1101/2022.01.31.22270015.
7. Collier R. Doctors call for plan to curb physician shortage. CMAJ. 2008 Feb;178(4):384.
8. Jones H. Working as a doctor in Canada. BMJ [Internet]. 2019 Dec 30 [cited 2024 May 10];367(12):[2 p.]. Available from: https://doi.org/10.1136/bmj.l6971.
9. Walsh R, Telner D, Butt DA, Krueger P, Fleming K, MacDonald S, Pyakurel A, Griever M, Jaakkimainen L. Factors associated with plans for early retirement among Ontario family physicians during the COVID-19 pandemic: a cross-sectional study. BMC Prim Care [Internet]. 2024 Apr 18 [cited 2024 May 10];25(1):[9 p.]. Available from: https://doi.org/10.1186/s12875-024-02374-9.
10. Mercer C. Family medicine faces shortage of doctors willing to teach. CMAJ. 2018 May;190(21):E666.
11. Duong D. Primary care is facing a capacity crisis—can pandemic lessons help chart a path forward? CMAJ. 2022 Nov;194(43):E1488.
12. Regina Leader Post [Internet]. Toronto (ON): PostMedia; c2024. 'Overwhelmed' family doctors in Sask. unable to help strained ERs; 2022 Nov 24 [cited 2024 May 10];[about 8 screens]. Available from: https://leaderpost.com/news/overwhelmed-family-doctors-in-sask-unable-to-help-strained-ers.

13. Coster JE, Turner JK, Bradbury D, Cantrell A. Why do people choose emergency and urgent care services? A rapid review utilizing a systematic literature search and narrative synthesis. Acad Emerg Med. 2017 Sep;24(9):1137-49.
14. Government of Saskatchewan. Ministry of Health annual report 2021-2022 [Internet]. Regina (SK): Government of Saskatchewan; 2022. 26 p. Available from: https://publications.saskatchewan.ca/#/products/25499.
15. Habbous S, Lambrinos A, Petersen S, Hellsten E. The effect of the COVID-19 pandemic on hospital admissions and outpatient visits in Ontario, Canada. Ann Thorac Med [Internet]. 2023 Apr-Jun;18(2):70-8.
16. Kwok E, Clapham G, Calder-Sprackman S. The impact of COVID-19 pandemic on emergency department visits at a Canadian academic tertiary care center. West J Emerg Med. 2021 Jul;22(4):851-9.
17. Finkelstein Y, Maguire B, Zemek R, Osmanlliu E, Kam AJ, Dixon A, Desai N, Sawyer S, Emsley J, Lynch T, Mater A, Schuh S, Rumantir M, Freedman SB. Effect of the COVID-19 pandemic on patient volumes, acuity, and outcomes in pediatric emergency departments. Pediatr Emerg Care. 2021 Aug;37(8):427-34.
18. Chami N, Shah HA, Nastos S, Shaikh S, Tenenbein PK, Lougheed T, Mizdrak N, Conlon P, Wright JG, Weir S, Kantarevic J. Association between virtual primary care and emergency department use during the first year of the COVID-19 pandemic in Ontario, Canada. CMAJ. 2023 Jan;195(3):E108-14.
19. Vogel JA, Rising KL, Jones J, Bowden ML, Ginde AA, Havranek EP. Reasons patients choose the emergency department over primary care: a qualitative metasynthesis. J Gen Intern Med. 2019 Nov;34(11):2610–9.
20. Almeida A, Vales J. The impact of primary health care reform on hospital emergency department overcrowding: evidence from the Portuguese reform. Int J Health Plann Manage. 2020 Jan;35(1):368-77.
21. Leung S, McDonald E, Watson A, Doan Q, Desai N. Community healthcare appointments as an alternative to emergency department assessment: an exploration of family acceptability and preferences. Can J Emerg Med. 2023 Dec;25(12):984-91.

Visits to the Emergency Department at Battlefords Union Hospital for low-acuity health issues: A Cross-Sectional study

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ABSTRACT

Background: Millions of Canadians lack family physician (FP) access, particularly impacting rural communities where physician retention rates are low. The Battlefords Union Hospital (BUH) Emergency Department (ED) faces frequent low-acuity presentations, exacerbating physician burnout, patient wait-times, and dissatisfaction with family medicine in Saskatchewan.

Question(s): Our quality improvement project investigates factors motivating low-acuity ED visits over primary care alternatives. We aim to identify patient-driven barriers and enhance access to patient-centered care.

Methods/Methodology: Triage nurses invited all patients presenting to BUH ED between December 2023 and February 2024 with a Canadian Triage Acuity Scale level of 4 or 5 to complete a paper survey. Questions inquired about demographics, concerns, primary care access, and presentation reasons. The study received an exemption from the University of Saskatchewan Research Ethics Board (Beh ID 4461).

Results/Findings: Participants (N=184) were typically 19-50 years old and white (35.1%) and/or First Nations (51.5%). Fifty-seven percent were female. Most presented within working hours and similarly across the week. Of the 113 with an FP, 84.1% indicated location within 100km of BUH. One-quarter of concerns were ongoing, two-thirds had been present for more than 48h, one-third had been previously seen by a physician, and thirty percent reported a contributing condition. Perceived urgency was common, with 53.4% indicating immediate treatment need or inability to wait for an appointment. Thirteen percent came due to their lack of an FP, and another 13.6% felt they required services unavailable from an FP. Among those with an FP, 30.6% and 25.2% did not respectively know if same-day or after-hours care was available.

Discussion: Patients require clear information and access to quality care options, pathways, and resources available when needs perceived as urgent arise. In keeping, FPs should ensure that patients are aware of same-day, after-hours, and procedural/investigative services offered. The need for more FPs was evident. Consideration should also be given to effectively supporting First Nations patients.

Conclusions: Low-acuity BUH presentations are often driven by perceived urgency and limited availability/awareness of primary care access.

Recommendations Educate patients with alternative care education, facilitate physician practice transitions, raise after-hours care awareness, offer culturally sensitive care and ensure continuity of care.

References:

1. Hing E, Hall MJ, Ashman JJ, Xu J. National Hospital Ambulatory Medical Care Survey: 2007 emergency department summary. Natl Health Stat Report. 2010 Sep;28(1):1-32.
2. Young GP, Wagner MB, Kellermann AL, Ellis J, Bouley D. Ambulatory visits to hospital emergency departments: patterns and reasons for use. JAMA. 1996 Aug;276(6):460-5.
3. Idil H, Kilic TY, Toker İ, Dura Turan K, Yesilaras M. Non-urgent adult patients in the emergency department: Causes and patient characteristics. Turk J Emerg Med. 2018 Apr;18(2):71-4.
4. Murray M, Bullard M, Grafstein E; CTAS National Working Group, CEDIS National Working Group. Revisions to the Canadian Emergency Department Triage and Acuity Scale implementation guidelines. CJEM. 2004 Nov;6(6):421-7.
5. Durand A, Gentile S, Gerbeaux P, Alazia M, Kiegel P, Luigi S, Lindenmeyer E, Olivier P, Hidoux MA, Sambuc R. Be careful with triage in emergency departments: interobserver agreement on 1,578 patients in France. BMC Emerg Med [Internet]. 2011 Oct 31 [cited 2024 May10];11(1):[10 p.]. Available from: https://doi.org/10.1186/1471-227x-11-19.
6. Field S, Lantz A. Emergency department use by CTAS Levels IV and V patients. CJEM. 2006 Sep;8(5):317-2.
7. Ontario Hospital Association. Ontario Emergency Department Patient Experience of Care survey [Internet]. Toronto (ON): Ontario Hospital Association; [cited 2024 May 10]. 15 p. Available from: https://www.oha.com/Documents/Survey%20-%20EDPEC.pdf.

Following your heart: Examining current use of the HEART pathway for chest pain at the Cypress Regional Hospital Emergency Department for outpatient referral and discharge

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ABSTRACT

Background: Acute coronary syndromes result in high morbidity and mortality. The HEART pathway is a risk-stratification tool for Emergency Department (ED) chest pain patients which adds a 3-hour troponin to the HEART score. It recommends low-risk patients with a negative 3-hour troponin be discharged, and all other patients be admitted.

Implementation of a modified HEART pathway may help triage referrals in Swift Current, Saskatchewan where there are three Internal Medicine specialists.

Question(s): For ED chest pain patients presenting to the Cypress Regional Hospital (CRH) ED:

1. What is the current Internal Medicine referral rate and wait time for outpatient follow-up?
2. What is the incidence of major adverse cardiac events (MACE) within 4 weeks?

Methods/Methodology: A retrospective chart review was conducted on all patients with chest pain >21 years old presenting to the CRH ED from September 1, 2022 to February 28, 2023. Secondary chart reviews were performed in Regina and Saskatoon to capture MACE data. Approval was provided by the University of Saskatchewan Biomedical Research Ethics Board (Bio ID 4012) and the Saskatchewan Health Authority (OA-UofS-4012).

Results/Findings: 261 patients were included in the study. Internal Medicine was consulted for 5.4% (n=14) patients in the ED, and for 13.8% (n=36) of patients in the outpatient setting. The average time for consultation was 47 days. The incidence of MACE was 13.4% (n=35).

Discussion: Another study showed intermediate-risk HEART score patients may be managed safely as outpatients with a low risk of MACE. This patient group may be similar to high-risk HEART pathway patients with a negative 3-hour troponin, a patient group for which admission for observation is currently recommended. This provides the basis for the implementation of a modified HEART pathway at our center.

Conclusions: This study provided baseline data on referral patterns, wait times and MACE for ED chest pain patients at the CRH.

Recommendations: A follow-up prospective study will implement a modified HEART pathway at the CRH ED to risk-stratify patients for discharge, outpatient referral and admission. It is

expected this will improve wait times and reduce low-risk referrals to Internal Medicine, with no change in MACE rate.

References:

1. Fanaroff AC, Rymer JA, Goldstein SA, Simel DL, Newby LK. Does this patient with chest pain have acute coronary syndrome? The rational clinical examination systematic review. JAMA. 2015 Nov;314(18):1955–65.
2. Chew PG, Frost F, Mullen L, Fisher M, Zadeh H, Grainger R, Albouaini K, Dodd J, Patel B, Velavan P, Kundaian B, Rawat A, Obafemi T, Tong S, Jones J, Khand A. A direct comparison of decision rules for early discharge of suspected acute coronary syndromes in the era of high sensitivity troponin. Eur Heart J Acute Cardiovasc Care. 2019 Aug;8(5):421–31.
3. Poldervaart JM, Langedijk M, Backus BE, Dekker IMC, Six AJ, Doevendans PA, Hoes Aw, Reitsma JB. Comparison of the GRACE, HEART and TIMI score to predict major adverse cardiac events in chest pain patients at the emergency department. Int J Cardiol. 2017 Jan;227 (1):656–61.
4. Six AJ, Backus BE, Kelder JC. Chest pain in the emergency room: value of the HEART score. Neth Heart J. 2008 Jun;16(6):191–6.
5. Moustapha A, Mah AC, Roberts L, Leach A, Kaban G, Zimmermann R, Shavadia J, Orvold J, Mondal P, Martin LJ. Can ED chest pain patients with intermediate HEART scores be managed as outpatients? CJEM. 2022 Nov;24(7):770–9.
6. Mahler SA, Riley RF, Hiestand BC, Russell GB, Hoekstra JW, Lefebvre CW, Nicks BA, Cline DM, Askew KL, Elliot ST, Herrington DM, Burke GL, Miller CD. The HEART pathway randomized trial: identifying emergency department patients with acute chest pain for early discharge. Circ Cardiovasc Qual Outcomes. 2015 Mar;8(2):195– 203.
7. Kuehner ZCD, Dmitriew MD, Wu LK, Shearing AD. The impact of the HEART score on the prevalence of cardiac testing and patient outcomes in a rural emergency department. Can J Rural Med. 2020 Jul-Sep;25(3):105–11.

Increasing Acetylsalicylic Acid Prescribing in Pregnancy Based on the New SOGC Guidelines: A Program Evaluation in Prince Albert, Saskatchewan

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ABSTRACT

Background: Hypertensive disorders in pregnancy are a leading cause of maternal and neonatal morbidity and mortality. The Society of Obstetricians and Gynecologists of Canada (SOGC) released updated guidelines in May 2022 and redefined pre-pregnancy BMI>30 kg/m^2 as a high-risk factor (previously moderate risk), warranting prevention with acetylsalicylic acid (ASA, Aspirin.) Statistics Canada estimates that 13.6% of women of childbearing age have a BMI of 30 or more.

Question(s): Our aim was to develop an educational program (EP) behavioural change project, providing physician education about appropriate prescribing of ASA in pregnancy at two primary care clinics in Prince Albert, Saskatchewan. We hoped to improve the adoption of this new change in guideline.

Methods/Methodology: From January to March 2023, we evaluated the baseline frequency of ASA prescribing along with patient characteristics (age, parity, risk factors for pre-eclampsia) from the electronic medical record. We hosted a voluntary Lunch and Learn session at the two clinics to increase physician knowledge about the updated guidelines. We collected similar data from these clinics post-session. We received a Letter of Exemption from the UofS REB for application Bio 4421.

Results/Findings: One-hundred nineteen (N=119) patients were evaluated. Of these, forty-six patients (n=46) were found to be at increased risk of pre-eclampsia, twenty-nine (n=29) from the pre-session time period and seventeen (n=17) from the post-session time period. There was a substantial increase in ASA use **among high-risk patients** post-session, with 2 of 29 patients [6.9%] treated before and 6 of 17 [35.3%] treated after the educational lunch.

Discussion: It was noted after the session in discussion with physicians that they were not aware of changes to the SOGC guidelines regarding hypertension in pregnancy. We found there was a low level of ASA prescribing in pregnancy for the prevention of hypertension pre-session, with improvement after the lunch educational session. Many women at risk have elevated BMI as their **only** major risk factor, reinforcing the importance of awareness of the new guideline.

Conclusions: In general, family physicians locally were not aware of the new SOGC guidelines on ASA prescribing. We found that an educational lunch effectively improved adherence in practice.

References:

1. Magee LA, Smith GN, Bloch C, Côté AM, Jain V, Nerenberg K, von Dadelszen P, Helewa M, Rey E. Guideline no. 426: Hypertensive disorders of pregnancy: diagnosis, prediction, prevention, and management. J Obstet Gynaecol Can. 2022 May;44(5):547-71.
2. Sinkey RG, Battarbee AN, Bello NA, Ives CW, Oparil S, Tita ATN. Prevention, diagnosis, and management of hypertensive disorders of pregnancy: a comparison of international guidelines. Curr Hypertens Rep [Internet]. 2020 Aug 27 [cited 2024 May 15];22(9):[16 p.]. Available from: https://doi.org/10.1007/s11906-020-01082-w.
3. Agrawal A, Wenger NK. Hypertension during pregnancy. Curr Hypertens Rep [Internet]. 2020 Aug 27 [cited 2024 May 15];22(9):[9 p.]. Available from: https://doi.org/10.1007/s11906-020-01070-0.
4. Gupta S, Petras L, Tufail MU, Rodriguez Salazar JD, Jim B. Hypertension in pregnancy: what we now know. Curr Opin Nephrol Hypertens. 2023 Mar;32(2):153-64.
5. Malik R, Kumar V. Hypertension in pregnancy. Adv Exp Med Biol. 2017 May;956(2):375-93.
6. Jain V, Bujold E. Screening for preeclampsia risk and prophylaxis with acetylsalicylic acid. CMAJ. 2023 Nov;195(45):E1557-8.
7. Health Canada. Prenatal nutrition guidelines for health professionals [Internet]. Ottawa (ON): Government of Canada; 2009 [cited 2024 May 15]. 9 p. Available from: https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/fn-an/alt_formats/hpfb-dgpsa/pdf/pubs/guide-prenatal-eng.pdf.
8. Podymow T, August P. Hypertension in pregnancy. Adv Chronic Kidney Dis. 2007 Apr;14(2):178-90.
9. Mather AR, Dom AM, Thorburg LL. Low-dose aspirin in pregnancy: who? When? How much? And why? Curr Opin Obstet Gynecol. 2021 Apr;33(2):65-71.
10. Rolnik DL, Nicolaides KH, Poon LC. Prevention of preeclampsia with aspirin. Am J Obstet Gynecol. 2022 Feb;226(2s):S1108-19.
11. Atallah A, Lecarpentier E, Goffinet F, Doret-Dion M, Gaucherand P, Tsatsaris V. Aspirin for prevention of preeclampsia. Drugs. 2017 Nov;77(17):1819-31.
12. Jin J. Use of aspirin during pregnancy to prevent preeclampsia. JAMA [Internet]. 2021 Sep 28 [cited 2024 May 15];326(12):[3 p.]. Available from: https://doi.org/10.1001/jama.2021.15900.
13. Choi YJ, Shin S. Aspirin prophylaxis during pregnancy: a systematic review and meta-analysis. Am J Prev Med. 2021 Jul;61(1):e31-45.
14. American College of Obstetricians and Gynecologists; Society for Maternal-Fetal Medicine. ACOG Committee opinion no. 743: low-dose aspirin use during pregnancy. Obstet Gynecol. 2018 Jul;132(1):e44-52.
15. Densen P. Challenges and opportunities facing medical education. Trans Am Clin Climatol Assoc. 2011;122(2011):48-58.
16. Balas EA, Boren SA. Managing clinical knowledge for health care improvement. Yearb Med Inform. 2000 Jan;9(1):65-70.

17. Green LW, Ottoson JM, García C, Hiatt RA. Diffusion theory and knowledge dissemination, utilization, and integration in public health. Annu Rev Public Health. 2009 Jan;30(1):151-74.
18. Bauer MS, Kirchner J. Implementation science: what is it and why should I care? Psychiatry Res [Internet]. 2020 Jan 1 [cited 2024 May 15];283(1):[6 p.]. Available from: https://doi.org/10.1016/j.psychres.2019.04.025.
19. Morris ZS, Wooding S, Grant J. The answer is 17 years, what is the question: understanding time lags in translational research. J R Soc Med. 2011 Dec;104(12):510-20.
20. Munro CL, Savel RH. Narrowing the 17-year research to practice gap. Am J Crit Care. 2016 May;25(3):194-6.
21. Rubin R. It takes an average of 17 years for evidence to change practice-the burgeoning field of implementation science seeks to speed things up. JAMA. 2023 Apr;329(16):1333-6.
22. Hamm RF, Iriye BK, Srinivas SK. Implementation science is imperative to the optimization of obstetric care. Am J Perinatol. 2021 Jun;38(7):643-8.

72h re-presentation rates of a rural emergency room in Weyburn, Saskatchewan, and the common characteristics of patients re-presenting

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ABSTRACT

Background: Patients sometimes re-present to the Emergency Room (ER) after their initial visit. This can be due to misdiagnosis, unclear discharge instructions, poor medical management, recurrence/progression of disease, or simply patient anxiety. The authors studied the reasons for re-presentation of a rural ER in Weyburn, Saskatchewan.

Question(s): We investigated the rate of ER re-presentation within 72h at Weyburn General Hospital (WGH), percentage of re-presentations with the same clinical problem, common characteristics of re-presentations as well as if these were more suited for the clinic setting.

Methods/Methodology: This was a retrospective review of WGH ER patients in June 2020 and June 2022. Paper charts were audited to assess re-presentations within 72h, presenting complaints, CTAS scores, diagnoses, reasons for re-presentation, and registration status with a family physician. This study was approved by the University of Saskatchewan Biomedical Research Ethics Board (Bio 4176) and received Operational Approval from the Saskatchewan Health Authority.

Results/Findings: Nine hundred and forty-four patients in June 2020 and 1318 patients in June 2022 were included. Comparing 2020 with 2022, the rates of re-presentation are similar (13.4% vs 13.2%, $p<.001$). However, there was an increase in re-presentations (n=65 to n=88). The characteristics of this population has changed too - re-presentations with the same clinical problem (66.1% vs 93.1%, $p<0.001$), problems more suited for clinic (36.9% vs 44.85%, $p=0.75$), misdiagnosis (3.1% vs 12.6%, $p=0.02$), unclear discharge instructions (1.5% vs 3.4%, $p=0.55$), and recurrence/progression of disease (27.7% vs 34.5%, $p=.56$).

Discussion: These changes may be attributed to reduced ER presentations during COVID-19 pandemic, longer GP wait times, and worsening ER patient load leading to reduced quality of care.

Conclusions: Our study showed an increase in ER re-presentation numbers in June 2022 compared to June 2020. It trends towards re-presentations with the same clinical complaint, and

complaints more suited to the clinic setting. Higher rates of mis-diagnosis and unclear discharge instructions may have contributed to these re-presentations. Further studies involving pre-COVID years as well as including all months of the year may be performed to confirm these trends.

References:

1. Chartier LB, Ovens H, Hayes E, Davis B, Calder L, Schull M, Dreyer J, Ostrow O. Improving quality of care through a mandatory provincial audit program: Ontario's emergency department return visit quality program. Ann Emerg Med. 2021 Feb;77(2):193–202.
2. Gantayet A, Ang M, Cao X, Halperin I. Persistent and non-persistent high-users of acute care resources: a deeper dive into the patient and system factors. Healthc Q. 2017 Jul;20(2):31–4.
3. Truong M, Meckler G, Doan QH. Emergency department return visits within a large geographic area. J Emerg Med. 2017 Jun;52(6):801–8.
4. Uscatescu V, Turner A, Ezer H. Return visits to the emergency department: what can we learn from older adults' experiences? J Gerontol Nurs. 2014 Jul;40(7):32–40.
5. Palmer E, Leblanc-Duchin D, Murray J, Atkinson P. Emergency department use: is frequent use associated with a lack of primary care provider? Can Fam Physician. 2014 Apr;60(4):e223-9.
6. Gruneir A, Dhalla IA, van Walraven C, Fischer HD, Camacho X, Rochon PA, Anderson MA. Unplanned readmissions after hospital discharge among patients identified as being at high risk for readmission using a validated predictive algorithm. Open Med. 2011 May;5(2):e104–11.
7. McCusker J, Ionescu-Ittu R, Ciampi A, Vadeboncoeur A, Roberge D, Larouche D, Verdon J, Pineault R. Hospital characteristics and emergency department care of older patients are associated with return visits. Acad Emerg Med. 2007 May;14(5):426–33.
8. McCusker J, Cardin S, Bellavance F, Belzile É. Return to the emergency department among elders: patterns and predictors. Acad Emerg Med. 2000 Mar;7(3):249–59.
9. McCusker J, Healey E, Bellavance F, Connolly B. Predictors of repeat emergency department visits by elders. Acad Emerg Med. 1997 Jun;4(6):581–8.
10. Zhou JG, Cameron PA, Dipnall JF, Shih K, Cheng I. Using network analyses to characterise Australian and Canadian frequent attenders to the emergency department. Emerg Med Australas. 2023 Apr;35(2):225–33.

Effects of Interdisciplinary Bedside Rounds (IDBR) vs Whiteboard Rounds at Battlefords Union Hospital on Patient Satisfaction, Physician Satisfaction and Duration of Rounds

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ABSTRACT

Background: Currently at Battlefords Union Hospital (BUH), interdisciplinary rounds (IDR), or "whiteboard rounds", involve health care providers from multiple disciplines assessing patients independently and then convening to discuss interdisciplinary patient management. Patients do not attend these discussions. The objective of our study was to introduce and assess the effectiveness of interdisciplinary **bedside** rounds (IDBR).

Question(s): Are there differences in patient and staff satisfaction and rounding duration when comparing IDBR and IDR at BUH?

Methods/Methodology: Resident researchers surveyed participants on wards 2nd East/West on random data collection days regarding satisfaction with IDBR versus usual IDR on ward 3rd North/South. Clinical team members participating, length of time required, and any unusual events affecting rounding were documented. Median time and satisfaction were compared using the Mann-Whitney-U test. All hospitalists involved were interviewed to discuss their preferences. Our study (Beh ID 4375) was exempted by the University of Saskatchewan's behavioral ethics review board.

Results/Findings: The median percent satisfaction for every outcome was higher in the IDBR group but was not statistically significantly different between groups. The median amounts of time spent per patient in each group were not statistically significantly different between groups either. A conclusion about physician satisfaction could not be drawn as only one hospitalist participated in IDBRs.

Discussion: Although none of the results reached statistical significance, there was a tendency for IDBR patients to report higher satisfaction for all aspects studied. Any conclusions in our study are limited, as we only have the experience of four data collection days. Additionally, we only had two hospitalists involved in our study and only one participated in IDBRs, making it impossible to draw conclusions about physician satisfaction. There may have been confounders that influenced levels of satisfaction and the time required for rounding (i.e. age).

Conclusions: Patients admitted to the wards at BUH may have some preference for IDBR. However, differences are minimal and not statistically significant in this sample. Staff members of all multidisciplinary backgrounds may be more likely to participate in IDR.

Recommendations: We would recommend that this study be repeated with a larger sample size and more hospitalists at BUH.

References:

1. Emergency Department Waits and Patient Flow Initiative. Patient flow toolkit [Internet]. Saskatoon (SK): Saskatchewan Health Quality Council; 2016 [cited 2024 May 14]. 109 p. Available from: https://www.saskhealthquality.ca/wp-content/uploads/2024/02/Patient-Flow-Toolkit-April-2016.pdf.
2. Dunn AS, Reyna M, Radbill B, Parides M, Colgan C, Osio T, Benson A, Brown N, Cambe J, Zwerling M, Egorova N, Kaplan H. The impact of bedside interdisciplinary rounds on length of stay and complications. J Hosp Med. 2017 Mar;12(3):137-42.
3. Cao V, Tan LD, Horn F, Bland D, Giri P, Maken K, Cho N, Scott L, Dinh VA, Hidalgo D, Nguyen HB. Patient-centered structured interdisciplinary bedside rounds in the medical ICU. Crit Care Med. 2018 Jan;46(1):85-92.
4. Dodek PM, Raboud J. Explicit approach to rounds in an ICU improves communication and satisfaction of providers. Intensive Care Med. 2003 Sep;29(9):1584-8.
5. Chow MY, Nikolic S, Shetty A, Lai K. Structured interdisciplinary bedside rounds in an Australian tertiary hospital emergency department: patient satisfaction and staff perspectives. Emerg Med Australas. 2019 Jun;31(3):347-54.
6. Seigel J, Whalen L, Burgess E, Joyner BL Jr, Purdy A, Saunders R, Thompson L, Yip T, Willis TS. Successful implementation of standardized multidisciplinary bedside rounds, including daily goals, in a pediatric ICU. Jt Comm J Qual Patient Saf. 2014 Feb;40(2):83-90.

The Role of Educational Intervention and Implementation of a Standardized ACP EMR Template in Improving ACP Discussion and Documentation with Geriatric Patients at Regina Centre Crossing's Family Medicine Unit

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ABSTRACT

Background: Advanced care planning (ACP) is informed discussions and recording of patient goals of care. ACP requires understanding physician and patient barriers including time constraints, inadequate ACP training, and lack of standardized documentation. Increasing ACP documentation serves to improve patient quality of life and autonomy.

Question(s): To have standardized ACP discussions and a template in Electronic Medical Record (EMR) of patients aged 65 years or older at the Family Medicine Unit (FMU), to increase entries from 7.6% to 20-30% in one year. The project aims to improve effectiveness and patient-centeredness.

Methods/Methodology: A quality improvement project was implemented. Percentage of patients with ACPs documented was the outcome measure. The project has implemented change ideas:

1. Survey assessing provider confidence and barriers to initiating ACP.
2. Self-directed education and a didactic lecture for providers.
3. Developing a standardized ACP EMR template.

Project was deemed exempt from ethical review by the University of Saskatchewan's Behavioral Research Ethics Board (E404) and received Operational Approval from the Saskatchewan Health Authority (OA-UofS-E404 Exempt).

Results/Findings: The initial survey identified time, lack of formal training and absence of a standardized ACP template as barriers. Following educational interventions, there was a 22% increase in the total number of ACP documents. With implementation of the template, there was a 54% increase in total number of ACP documents. Following all interventions, ACP documents in EMR for those older than 65 years increased from 7.6% to 14.51%.

Discussion: This project analyzed provider barriers to ACP communication and documentation. Inclusion of provider education and development of standardized/accessible documentation (i.e. templates) has previously been identified as a component of effective ACP and is supported by our quality improvement project. Impact of education may be limited by insufficient time for provider self-review and access to educational interventions. Additional factors influencing

documentation may be insufficient patient follow-up to record completed documentation, patient refusal of ACP conversations, and incomplete transfer of ACP documents from paper to EMR.

Conclusions: Our study has increased ACP documentation at the FMU.

Recommendations: Patient barriers were not addressed and can be assessed in future cycles.

References:

1. Brinkman-Stoppelenburg A, Rietjens JA, van der Heide A. The effects of advance care planning on end-of-life care: a systematic review. Palliat Med. 2014 Sep;28(8):1000–25.
2. Ben Ami N, Shvartzman P. Oncologists' approaches and barriers for discussing advanced care planning with severely ill cancer patients. Harefuah. 2022 May;161(5):316-21.
3. Myers J, Cosby R, Gzik D, Harle I, Harrold D, Incardona N, Walton T. Provider tools for advance care planning and goals of care discussions: a systematic review. Am J Hosp Palliat Med. 2018 Aug;35(8):1123-32.
4. Hall A, Rowland E, Grande G. How should end-of-life advance care planning discussions be implemented according to patients and informal carers? A qualitative review of reviews. J Pain Sym Man. 2019 Apr;58(2):311-35.
5. Poveda-Moral S, Falcó-Pegueroles A, Ballesteros-Silva MP, Bosch-Alcaraz A. Barriers to advance care planning implementation in health care: an umbrella review with implications of evidence-based practice. Worldviews Evid Based Nurs. 2021 Sep;18(5):254-63.
6. EpicShare [Internet]. Verona (WI): Epic Systems Corporation; c2024. Normalizing advanced care planning gives patients power and families peace of mind; 2021 Nov 8 [cited 2024 May 16];[about 3 screens]. Available from: https://www.epicshare.org/share-and-learn/normalizing-advance-care-planning-gives-patients-power-and-families-peace-of-mind.
7. Rose BL, Leung S, Gustin J, Childers J. Initiating advance care planning in primary care: a model for success. J Palliat Med. 2019 Apr;22(4):427-31.
8. Huber MT, Highland JD, Krishnamoorthi VR, Tang JW. Utilizing the electronic health record to improve advance care planning: a systematic review. Am J Hosp Palliat Care. 2018 Mar;35(3):532-41.
9. Bzura M, Haider K, West S, Schramm L, Clay AT, Nilson S. Engagement and attitudes towards advanced care planning in primary care during COVID-19: a cross-sectional survey of older adults. Prog Palliat Care. 2023 Dec;31(2):89-94.

Screening for AAA in adult males 65 years or older

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ABSTRACT

Background: The occurrence of abdominal aortic aneurysms (AAAs) among individuals aged 66 years or older varies from 1% to 5% in the general population, with lower rates in females. The Canadian Task Force on Preventive Health Care 2017 guidelines recommend one-time AAA ultrasound (US) screening for men aged 65 to 80.

Question(s):

1. How many male patients age 65-80 years have undergone AAA screening in select community practices in Moncton, New Brunswick?
2. Do accessible patient information sheets increase screening in select community practices in Moncton, New Brunswick?
3. What is Saskatchewan's current climate of AAA screening based on a literature review and anecdotal electronic medical record (EMR) experience in Saskatoon, SK?

Methods/Methodology: This is a two-phase chart review study in New Brunswick accompanied by a literature review and discussion of the finding's Saskatchewan application. The chart review conducted within seven Family Medicine clinics in Moncton, New Brunswick included male patients aged 65-96. Patient information sheets and posters were then displayed promoting AAA screening in primary care offices. One month later, 350 randomly selected charts were reviewed from the same clinics. A literature review was conducted through PubMed.

Results/Findings: Among 350 charts initially reviewed, there was an 8.6% intent to screen either by US or computed tomography. In those screened, AAA was identified in nine patients. After patient information was placed, intent to screen increased to 22%, with 20 identified AAAs. The literature review demonstrated an overall lack of research for AAA screening in Saskatchewan but a need for screening specifically in rural Saskatchewan.

Discussion: Screening for AAA in adult males over 65 has been shown to decrease morbidity and mortality with minimal psychological harm. Our study showed that promoting screening may increase screening uptake by patients and physicians. One promotional mechanism to consider in Saskatchewan is leveraging EMRs.

Conclusions: AAA screening is infrequent among high-risk patients, and in-office promotional materials may improve uptake. Although understudied, Saskatchewan may benefit from a similar approach.

Recommendations:

1. Advertise screening recommendations in family practices to both physicians and patients.
2. Increase Saskatchewan research about AAA screening and outcomes.

References:

1. Scott RAP, Ashton HA, Buxton MJ, Day NE, Kim LG, Marteau TM, Scott RAP, Thompson SG, Walker NM; Multicentre Aneurysm Screening Study Group. The Multicentre Aneurysm Screening Study (MASS) into the effect of abdominal aortic aneurysm screening on mortality in men: a randomised controlled trial. Lancet. 2002 Nov;360(9345):1531–9.
2. Medical Advisory Secretariat. Ultrasound screening for abdominal aortic aneurysm: an evidence-based analysis [Internet]. Toronto (ON): Government of Ontario; 2005 [cited 2024 May 17]. 67 p. Available from: https://www.hqontario.ca/Portals/0/Documents/evidence/reports/rev_usaaa_010106.pdf.
3. Canadian Task Force on Preventative Healthcare. Recommendations on screening for abdominal aortic aneurysm in primary care. CMAJ. 2017 Sep;189(36):E1137–45.
4. Owens DK, Davidson KW, Krist AH, Barry MJ, Cabana M, Caughey AB, Doubeni CA, Epling Jr JW, Kubik M, Landefeld CS, Mangione CM, Pbert L, Silverstein M, Simon MA, Tseng CW, Wong JB. Screening for abdominal aortic aneurysm: US Preventive Services Task Force recommendation statement. JAMA. 2019 Dec;322(22):2211-8.
5. Kapila V, Jetty P, Wooster D, Vucemilo V, Dubois L. Screening for abdominal aortic aneurysms in Canada: 2020 review and position statement of the Canadian Society for Vascular Surgery. Can J Surg. 2021 Sep;64(5):E461-6.
6. Misskey J, Osman M, Kopriva D. Geographic disparities in the burden of ruptured and unruptured abdominal aortic aneurysms. J Vasc Surg. 215 Dec;62(6):1421-8.
7. Park EM, Yoneoka GM, Yoon HC. Harnessing the electronic medical record to improve the utilization of ultrasound screening for abdominal aortic aneurysms. J Am Coll Radiol. 2022 Dec;19(12):1338–42.
8. Olmstead C, Wakabayashi A, Freeman T, Cejic S. Abdominal aortic aneurysm screening in an academic family practice: short-term impact of guideline changes. Can Fam Physician. 2022 Dec;68(12):899-904.
9. Shaw C, Abrams K, Marteau TM. Psychological impact of predicting individuals' risks of illness: a systematic review. Soc Sci Med. 1999 Dec;49(12):1571-98.

POG: Physical Health in Gamers – A Systematic Review

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ABSTRACT

Background: Electronic Sports (eSports), a form of competitive video gaming, was recognized by the Olympic Committee as an organized sport in 2021. The American Osteopathic Academy of Sports Medicine estimates that eSports has a global audience of over 300 million fans. Given the relative novelty of the sport, albeit its high prevalence, little is known about the Physical Health of Gamers.

Question(s): Highlight what is known in the current body of knowledge regarding the physical pathology of athletes when exposed to video-games.

Methods/Methodology: Studies from the PubMed databases were identified using the following search terms: “esports injury”, “video-game injury”, but excluding “rehabilitation”. Duplicates were removed. Only Free, Full-text, on humans, and in English studies were included. The remaining studies were appraised by two researchers, and the final studies were selected. Studies relating solely to Active Video-Gaming, Accidental Injury, or Mental Health were removed.

Results/Findings: Final count of studies included was 55. 20 studies were case-reports, 11 cross-sectional, 8 reviews, 4 systematic reviews and a small proportion of editorials and case series. 56% of the physical pathology was musculoskeletal injuries with hand/finger at 14%, back/spine and wrist at 9%, neck and elbow at 7% and shoulder at 4%. Ophthalmological, dermatology and respiratory (mostly DVT/PE) made up 8% of the injuries, respectively. Notably, there were 12 studies that did not cite what type of video game was played.

Discussion: There is a variety of physical pathology encountered by eSports athletes, with musculoskeletal pathology unsurprisingly being common. Notably, there was a significant proportion of dermatological, respiratory (DVT/PE) and ophthalmological. This review has highlighted the significant impact that professional or high-volume video gaming can have on physical health. The paucity of experimental design research and large cohort studies does leave more questions on the true burden of these ailments.

Conclusions: eSport athletes have a burden of physical ailments that spans a wide variety of organ systems. This prompts the need for a multimodal and multidisciplinary approach to the screening and treatment of these athletes, in order to optimize their health outcomes.

References:

1. Franks RR, King D, Bodine W, Chisari E, Heller A, Jamal F 4th, Luksch J, Quinn K, Singh R, Solomon M. AOASM position statement on esports, active video gaming, and the role of the sports medicine physician. Clin J Sport Med. 2022 May;32(3):e221–9.
2. Statista [Internet]. New York (NY): Statista Inc.; c2024. Number of video game users worldwide from 2019 to 2029; 2024 May [cited 2024 May 14];[about 6 screens]. Available from: https://www.statista.com/statistics/748044/number-video-gamers-world/.
3. CNBC [Internet]. Englewood Cliffs (NJ): NBC Universal; c2024. This esports giant draws in more viewers than the Super Bowl, and it's expected to get even bigger; 2019 Apr 14 [cited 2024 May 15];[about 8 screens]. Available from: https://www.cnbc.com/2019/04/14/league-of-legends-gets-more-viewers-than-super-bowlwhats-coming-next.html.
4. Dot Esports [Internet]. Beaconsfield (AUS): Gamurs; c2024. 10 biggest prize pools in esports; 2024 Feb 22 [cited 2024 May 14];[about 22 screens]. Available from: https://dotesports.com/general/news/biggest-prize-pools-esports-14605.
5. StreamYard [Internet]. Wilmington (DE): StreamYard, Inc.; c2024. How much money do Twitch streamers make in 2023?; [cited 2024 May 15];[about 13 screens]. Available from: https://streamyard.com/blog/live-stream-business/how-much-do-twitch-streamers-make.
6. Emara AK, Ng MK, Cruickshank JA, Kampert MW, Piuzzi NS, Schaffer JL, King D. Gamer's health guide: optimizing performance, recognizing hazards, and promoting wellness in esports. Curr Sports Med Rep. 2020 Dec;19(12):537–45.
7. Lam WK, Chen B, Liu RT, Cheung JCW, Wong DWC. Spine posture, mobility, and stability of top mobile esports athletes: a case series. Biology (Basel). 2022 May 11 [cited 2024 May 15];11(5):[11 p.]. Available from: https://doi.org/10.3390 /biology11050737.
8. Zwibel H, DiFrancisco-Donoghue J, DeFeo A, Yao S. An osteopathic physician's approach to the esports athlete. J Am Osteopath Assoc. 2019 Nov;119(11):756–62.
9. Clements AJ, Paul RW, Lencer AJ, Seigerman DA, Erickson BJ, Bishop ME. Analysis of musculoskeletal injuries among collegiate varsity electronic sports athletes. Cureus [Internet]. 2022 Nov 14 [cited 2024 May 15];14(11):[7 p.]. Available from: https://doi.org/10.7759/cureus.31487.
10. Wang D, Tang L, Wu H, Gu D. Analysis of the effect of overusing thumbs on smartphone games. J Int Med Res. 2019 Dec;47(12):6244–53.
11. Sekiguchi T, Hagiwara Y, Momma H, Tsuchiya M, Kuroki K, Kanazawa K, Yabe Y, Yoshida S, Koide M, Itaya N, Itol E, Nagatomi R. Excessive game playing is associated with musculoskeletal pain among youth athletes: a cross-sectional study in Miyagi prefecture. J Sports Sci. 2018 Aug;36(16):1801–7.
12. McGee C, Hwu M, Nicholson LL, Ho KKN. More than a game: musculoskeletal injuries and a key role for the physical therapist in Esports. J Orthop Sports Phys Ther. 2021 Sep;51(9):415–7.
13. Tholl C, Bickmann P, Wechsler K, Froböse I, Grieben C. Musculoskeletal disorders in video gamers - a systematic review. BMC Musculoskelet Disord [Internet]. 2022 Jul 16 [cited 2024 May 15];23(1):[16 p.]. Available from: https://doi.org/10.1186/s12891-022-05614-0.

14. Lindberg L, Nielsen SB, Damgaard M, Sloth OR, Rathleff MS, Straszek CL. Musculoskeletal pain is common in competitive gaming: a cross-sectional study among Danish esports athletes. BMJ Open Sport Exerc Med [Internet]. 2020 Aug 28 [cited 2024 May 15];6(1):[5 p.]. Available from: https://doi.org/10.1136/bmjsem-2020-000799.
15. Monteiro Pereira A, Bolling C, Birch P, Figueiredo P, Verhagen E, Brito J. Perspectives of eFootball players and staff members regarding the effects of esports on health: a qualitative study. Sports Med [Internet]. 2023 Jul 26 [cited 2024 May 15];9(1):[17 p.]. Available from: https://doi.org/10.1186/s40798-023-00617-0.
16. Harding N, Noorbhai H. Physical activity levels, lifestyle behaviour and musculoskeletal health profiles among seated video gamers during COVID-19. BMJ Open Sport Exerc Med [Internet]. 2021 Sep 7 [cited 2024 May 15];7(3):[8 p.]. Available from: https://doi.org/10.1136/bmjsem-2021-001194.
17. Ma T, Song L, Ning S, Wang H, Zhang G, Wu Z. Relationship between the incidence of de Quervain's disease among teenagers and mobile gaming. Int Orthop. 2019 Nov;43(11):2587–92.
18. Kohorst MA, Warad DM, Nageswara Rao AA, Rodriguez V. Obesity, sedentary lifestyle, and video games: the new thrombophilia cocktail in adolescents. Pediatr Blood Cancer [Internet]. 2018 Ju l;65(7):[7 p.]. Available from: https://doi.org/10. 1002/pbc.27041.
19. Kuperczko D, Kenyeres P, Darnai G, Kovacs N, Janszky J. Sudden gamer death: non-violent death cases linked to playing video games. BMC Psychiatry [Internet]. 2022 Dec 23 [cited 2024 May 15];22(1):[12 p.]. Available from: https://doi.org/10.1186 /s12888-022-04373-5.
20. DiFrancisco-Donoghue J, Balentine J, Schmidt G, Zwibel H. Managing the health of the eSport athlete: an integrated health management model. BMJ Open Sport Amp Exerc Med [Internet]. 2019 Jan 10 [cited 2024 May 15];5(1):[6 p.]. Available from: https://doi.org/10.1136/bmjsem-2018-000467.
21. Kishi S, Li D, Takahashi M, Hashimoto H. Photoreceptor damage after prolonged gazing at a computer game display. Jpn J Ophthalmol. 2010 Sep;54(5):514–6.
22. Argilés M, Quevedo-Junyent L, Erickson G. Optometric considerations in sports versus e-Sports. Percept Mot Skills. 2022 Jun;129(3):731–46.
23. Bernabeu-Wittel J, Domínguez-Cruz J, Zulueta T, Quintana J, Conejo-Mir J. Hemorrhagic parallel-ridge pattern on dermoscopy in "Playstation fingertip". J Am Acad Dermatol. 2011 Jul;65(1):238–9.
24. Wolf R, Wolf D. Playstation thumb. Int J Dermatol. 2014 May;53(5):617–8.
25. Vaidya HJ. Playstation thumb. Lancet. 2004 Mar;363(9414):1080.
26. Lennox M, Rizzo J, Lennox L, Rothman I. Subcorneal hematomas in excessive video game play. Cutis. 2016 Jan;97(1):35–8.
27. Carter B, Rees P, Hale L, Bhattacharjee D, Paradkar MS. Association between portable screen-based media device access or use and Sleep Outcomes: a systematic review and meta-analysis. JAMA Pediatr. 2016 Dec;170(12):1202–8.
28. Lee S, Bonnar D, Roane B, Gradisar M, Dunican IC, Lastella M, Maisey G, Suh S. Sleep characteristics and mood of professional esports athletes: a multi-national study. Int J

Environ Res Public Health [Internet]. 2021 Jan 14 [cited 2024 May 15};18(2):[14 p.]. Available from: https://doi.org/10.3390/ijerph18020664.
29. Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, DonCarlos L, Hazen N, Herman J, Hillard PAJ, Katz ES, Kheirandish-Gozal L, Neubauer DN, O'Donnell AE, Ohayon M, Peever J, Rawding R, Sachdeva RC, Setters B, Vitiello MV, Ware JC. National Sleep Foundation's updated sleep duration recommendations: final report. Sleep Health. 2015 Dec;1(4):233–43.
30. Andre TL, Walsh SM, ValladÃo S, Cox D. Physiological and perceptual response to a live collegiate esports tournament. Int J Exerc Sci. 2020 Sep;13(6):1418–29.
31. Yamagata K, Yamagata LM, Abela M. A review article of the cardiovascular sequalae in esport athletes: a cause for concern? Hellenic J Cardiol. 2022 Nov-Dec;68(1):4

Anticipated Rural Retention among Internationally Trained Family Physicians in Saskatchewan: An early practice-intention comparison between those accessing Canadian practice through the SIPPA Program vs. a Family Medicine Residency Training Program

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ABSTRACT

Background: The influx of international medical graduates (IMGs) into Saskatchewan healthcare prompts an examination of their entry pathways and the factors influencing their rural retention. This study aims to compare the long-term rural practice intentions of IMGs entering through the Saskatchewan International Physician Practice Assessment (SIPPA) program versus family medicine residency programs.

Question(s): Is there a difference in long-term rural practice intentions between internationally trained physicians who enter Canadian practice through SIPPA versus family medicine residency and what factors influence this?

Methods/Methodology: An email invitation to participate in an electronic survey was sent to all new and recently completed SIPPA participants and current University of Saskatchewan family medicine IMG residents in February 2024. Utilizing a 5-point Likert scale, we evaluated aspects of practice intention, preferences, influences, and self-perceived readiness, among others. The University of Saskatchewan's Research Ethics Board approved the project (Beh ID 4595).

Results/Findings: Thirty-one respondents (SIPPA=9, DAFM=22) represented 29% and 32% of the respective groups. Forty-four percent of SIPPA participants and 29% of family medicine residents intended to stay beyond return of service obligations. Spousal life/work satisfaction significantly influenced decision-making, with 85% and 100% indicating importance, although only 33% and 40% conveyed that their spouse was satisfied. Mentorship was also crucial for both groups, with approximately 80% stating its impact on their practice location decisions. Regarding remuneration, 86% and 71% indicated that higher remuneration could sway their decision to leave.

Discussion: Although limited by low response rates, spousal life satisfaction, remuneration, and mentorship appear influential to retention regardless of pathway. A substantial proportion of partnered respondents makes spousal life satisfaction, which was concerningly low, an important consideration. Aligning with this, previous studies have demonstrated financial incentives to be less important to physicians relative to ongoing mentorship and spousal employment opportunities.

Conclusions: Aspects important to both participant groups in the period prior to return of service include mentorship, spousal satisfaction, and financial incentives. Unfortunately, neither pathway appears to have very high Saskatchewan-practice intention rates.

Recommendations: Future studies should examine practicing physicians beyond their return of service period and consider alternative methodologies for data collection due to low survey uptake.

References:

1. Statistics Canada [Internet]. Ottawa (ON): Government of Canada; c2024. Health fact sheets: primary health care providers, 2019; 2020 Oct 22 [cited 2024 May 13];[about 4 screens]. Available from: https://www150.statcan.gc.ca/n1/pub/82-625-x/2020001/article/00004-eng.htm.
2. Canadian Institute for Health Information [Internet]. Ottawa (ON): CIHI; c2024. Proportion of physicians in rural areas; 2023 Oct [cited 2024 May 13];[about 4 screens]. Available from: https://www.cihi.ca/en/indicators/proportion-of-physicians-in-rural-areas.
3. Canadian Institute for Health Information [Internet]. Ottawa (ON): CIHI; c2024. Scott's Medical Database metadata; 2022 [cited 2024 May 13];[about 2 screens]. Available from: https://www.cihi.ca/en/scotts-medical-database-metadata.
4. Canadian Institute for Health Information [Internet]. Ottawa (ON): CIHI; c2024. A profile of physicians in Canada; 2022 [cited 2024 May 13];[about 2 screens]. Available from: https://www.cihi.ca/en/a-profile-of-physicians-in-canada.
5. Thommasen H, Berkowitz J, Grzybowski S. Community factors associated with long-term physician retention. B C Med J. 2000 Nov;42(9):426-9.
6. Mathews M, Kandar R, Slade S, Yi Y, Beardall S, Bourgeault I. Retention patterns of Canadians who studied medicine abroad and other international medical graduates. Healthc Policy. 2017 May;12(4):33-45.
7. Mathews M, Ouédraogo AM, Lam M, Gozdyra P, Green M. A cross-sectional study of community-level physician retention and hospitalization in rural Ontario, Canada. J Rural Health. 2023 Jan;39(1):69-78.
8. Mou H, Olfert MR. Inter-provincial migration intentions of family physicians in Canada: the roles of income and community characteristics. Healthc Policy. 2015 Nov;11(2):58-71.
9. Mowat S, Reslerova M, Sisler J. Retention in a 10-year cohort of internationally trained family physicians licensed in Manitoba. Can J Rural Med. 2017 Winter;22(1):13-9.
10. Rohatinsky N, Udod S, Anonson J, Rennie D, Jenkins M. Rural mentorships in health care: factors influencing their development and sustainability. J Contin Educ Nurs. 2018 Jul;49(7):322-8.
11. Wasko K, Jenkins J, Meili R. Medical practice in rural Saskatchewan: factors in physician recruitment and retention. Can J Rural Med. 2014 Summer;19(3):93-8.

Clearing the Air: A quality improvement approach to changing metered dose inhaler prescription practices at West Winds Primary Health Centre

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ABSTRACT

Background: Healthcare contributes significantly to greenhouse gas emissions. While a single metered dose inhaler (MDI) emits emissions equivalent to driving 290 kilometers, dry powder inhalers (DPIs) offer less emissions. This project aims to reduce MDI prescribing at West Winds Primary Health Centre (WWPHC).

Question(s): The aim of this project is to assess the prevalence of MDI and DPI prescribing among asthmatic patients at WWPHC. We aim to describe patient characteristics, quantify MDI reductions, and identify associated characteristics.

Methods/Methodology: This project reviewed the medical records of WWPHC asthma patients, excluding those with coexisting COPD, aged 12 to 60 who had a recent DPI or MDI prescription and a WWPHC appointment in the past two years. Data collected included demographics, care duration, pulmonary function testing results, visit history, medication details, and physician information. Analysis included sample description, MDI and DPI prevalence calculation, changes in use, and related characteristics. Ethical approval was granted by the University of Saskatchewan's Biomedical REB (Bio ID 3940).

Results/Findings: MDIs were the primary inhaler type, with 43.1% and 46.0% of patients respectively using MDIs alone or with DPIs during the prior three years. Salbutamol was the predominant MDI agent, followed by Fluticasone. Regarding inhaler changes, 10.7% transitioned from MDIs alone to using DPIs alone or alongside MDIs; however, 3.7% of patients used only DPIs initially but either had an MDI added or used only MDIs by last visit. Furthermore, 11.7% had a reduction in the number of MDIs prescribed, while 9.7% increased. Pulmonary function tests (PFTs) were not recorded for 35% of patients, and when documented, approximately two-thirds did not exhibit a 12% diagnostic threshold change.

Discussion: The low MDI to DPI switch rate warrants targeted interventions to encourage DPI adoption, aiding in mitigating greenhouse gas emissions. Additionally, confirming asthma diagnoses before prescribing inhalers could reduce MDI usage. Salbutamol and Fluticasone are available in DPI versions, supporting the adoption of more environmentally friendly options.

Conclusions: This project offers insights into asthma inhaler prescribing at WWPHC, emphasizing the potential to reduce environmental impact through DPI promotion. Future efforts should prioritize interventions to boost DPI uptake and optimize asthma management.

References:

1. Watts N, Amann M, Arnell N, Ayeb-Karlsson S, Beagley J, Belesova K, Boykoff M, Byass P, Cai W, Campbell-Lendrum D, Capstick S, Chambers J, Coleman S, Dalin C, Daly M, Dasandi N, Dasgupta S, Davies M, Di Napoli C, Dominguez, Salas P, Drummond P, Dubrow R, Ebi KL, Eckelman M, Ekins P, Escobar LE, Georgeson L, Solder S, Grace D, Graham H, Haggar P, Hamilton I, Hartinger S, Hess J, Hsu SC, Hughes N, Mikhaylov SJ, Jiminez MP, Kelman I, Kennard H, Kiesewetter G, Kinney PL, Kjellstrom T, Kniveton D, Lampard P, Lemke B, Liu Y, Liu Z, Lott M, Lowe R, Martinez-Urtaza J, Maslin M, McAllister L, McGushin A, McMichael C, Milner J, Moradi-Lakeh M, Morrissey K, Munzert S, Murray KA, Neville T, Nilsson M, Sewe MO, Oreszczyn T, Otto M, Owfi F, Pearman O, Pencheon D, Quinn R, Rabbaniha M, Robinson E, Rocklov J, Romanello M, Semenza JC, Sherm J, Shi Liuhua, Springmann M, Tabatabaei M, Taylor J, Trinanes J, Shumake-Guillemot J, Vu B, Wilkinson P, Winning M, Gong P, Montgomery H, Costell A. The 2020 report of the Lancet Countdown on health and climate change: responding to converging crises. Lancet. 2021 Jan;397(10269):129-170.
2. Eckelman MJ, Sherman JD, MacNeill AJ. Life cycle environmental emissions and health damages from the Canadian healthcare system: an economic-environmental-epidemiological analysis. PLoS Med [Internet]. 2018 Jul 31 [cited 2024 May 16];15(7):[16 p.]. Available from: https://doi.org/10.1371/journal.pmed.1002623.
3. Fidler L, Green S, Wintemute K. Pressurized metered-dose inhalers and their impact on climate change. CMAJ. 2022 Mar;194(12):E460.
4. Morice AH, Peterson S, Beckman O, Osmanliev D. Therapeutic comparison of a new budesonide/formoterol pMDI with budesonide pMDI and budesonide/formoterol DPI in asthma. Int J Clin Pract. 2007 Nov;61(11):1874-83.
5. Wilkinson AJK, Braggins R, Steinbach I, Smith J. Costs of switching to low global warming potential inhalers. An economic and carbon footprint analysis of NHS prescription data in England. BMJ Open [Internet]. 2019 Oct 29 [cited 2024 May 16];9(10):[8 p.]. Available from: https://doi.org/10.1136/bmjopen-2018-028763.
6. Pritchard JN. The climate is changing for metered-dose inhalers and action is needed. Drug Des Devel Ther. 2020 Jul;14(1):3043-55.
7. The Telegraph [Internet]. London (UK): Telegraph Media Group; c2024. Asthma inhalers as bad for the environment as 180-mile car journey, health chiefs say; 2019 Apr 8 [cited 2024 May 15];[about 6 screens]. Available from: https://www.telegraph. co.uk/news/2019/04/08/asthma-inhalers-bad-environment-180-mile-car-journey-health/.
8. National Institute for Health and Care Excellence. Asthma: diagnosis, monitoring and chronic asthma management: NICE guideline [NG 80] [Internet]. Manchester (UK): National Institute of Health and Care Excellence; 2017 Nov 29 [updated 2021 Mar 22; cited 2024 May 15]. 40 p. Available from: https://www.nice.org.uk/guidance/ng80/resources/asthma-diagnosis-monitoring-and-chronic-asthma-management-pdf-1837687975621.
9. Liang KE, Yao JA, Hui P, Quantz D. Climate impact of inhaler therapy in the Fraser Health region, 2016–2021. B C Med J. 2023 May;65(4):122-7.

10. Centre for Sustainable Health Systems [Internet]. Toronto (ON): University of Toronto; c2024. CoP sustainable inhalers initiative; [cited 2024 May 16];[about 7 screens]. Available from: https://www.sustainablehealthsystems.ca/copsustain ableinhalerinitiative.
11. Fink JB. Aerosol device selection: evidence to practice. Respir Care. 2000 Jul;45(7):874-85.
12. Dhand R. Aerosol therapy for asthma. Curr Opin Pulm Med. 2000 Jan;6(1):59-70.
13. Amirav I, Newhouse MT, Mansour Y. Measurement of peak inspiratory flow with in-check dial device to simulate low-resistance (Diskus) and high-resistance (Turbohaler) dry powder inhalers in children with asthma. Pediatr Pulmonol. 2005 May;39(5):447-51.
14. O'Byrne PM, FitzGerald JM, Bateman ED, Barnes PJ, Zhong N, Keen C, Jorup C, Lamarca R, Ivanov S, Reddel HK. Inhaled combined budesonide-formoterol as needed in mild asthma. N Engl J Med. 2018 May;378(20):1865-76.
15. Aaron SD, Vandemheen KL, FitzGerald JM, Ainslie M, Gupta S, Lemière C, Field SK, McIvor RA, Hernandez P, Mayers I, Mulpuru S, Alvarez GA, Pakhale S, Mallick R, Boulet LP; Canadian Respiratory Research Network. Reevaluation of diagnosis in adults with physician-diagnosed asthma. JAMA. 2017 Jan;317(3):269-79.
16. Wilkinson A, Woodcock A. The environmental impact of inhalers for asthma: a green challenge and a golden opportunity. Br J Clin Pharmacol. 2022 Jul;88(7):3016-22.

An Evaluation of Mild Asthma Management at the Family Medicine Unit

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ABSTRACT

Background: Asthma is one of the most common chronic diseases worldwide. The Global Initiative for Asthma no longer recommends treatment with short-acting beta2-agonists (SABA) alone due to adverse outcomes. To provide optimal care, appropriate inhaler therapy must be selected. Spirometry results and individualized asthma action plans (AAP) should be documented. Adherence to these evidence-based recommendations for mild asthma at the Family Medicine Unit (FMU) are unknown.

Question(s): (1) Are patients with mild asthma at the FMU being treated with SABA monotherapy? (2) Are spirometry tests documented? (3) Are AAPs documented for asthma exacerbation visits?

Methods/Methodology: A retrospective chart review of a subset of asthmatic patients (≥6 years of age) at FMU was performed. Descriptive analyses for patient demographics, inhaler therapy, and quantification of SABA monotherapy and documentation of spirometry and AAPs was completed. Ethics and operational approval were granted by the Biomedical Research Ethics Board at the University of Saskatchewan (ID 4168) and Saskatchewan Health Authority (OA-UofS-4168).

Results/Findings: In the asthmatic cohort (n = 100), the majority were adults (55%) and female (56%). The most common inhaler therapies included fluticasone with SABA (30%), budesonide/formoterol monotherapy (15%), and then SABA monotherapy (12%; 95% CI: 6.7-19.4%). Less than half (46%) of patients had spirometry completed (95% CI: 36.5-55.8%). A minority (21%) of patients had AAP documentation (95% CI: 13.9-29.7%).

Discussion: Many asthmatic patients at the FMU clinic have not had confirmation of their diagnosis, follow-up of lung function, or self-management guidance for exacerbations. These findings are consistent with existing literature of observed asthma management gaps in primary care settings. Most patients were prescribed inhaled corticosteroid (ICS) therapy which is in keeping with guideline recommendations. Further research is required to explore strategies to improve asthma guideline adherence and its impact on clinical outcomes. Suggestions to minimize management gaps include enhanced physician training, asthma chronic disease management templates, and EMR notifications which flag absent or overdue documentation.

Conclusions: Adherence to current asthma guidelines was suboptimal. A large proportion of patients did not have spirometry results or documented AAPs. The majority of patients had ICS inhaler therapy with only 12% of patients receiving SABA monotherapy.

References:

1. Public Health Agency of Canada. Report from the Canadian Chronic Disease Surveillance System: Asthma and Chronic Obstructive Pulmonary Disease (COPD) in Canada, 2018 [Internet]. Ottawa (ON): Government of Canada; 2018. 61 p. Available from: https://www.canada.ca/en/public-health/services/publications/diseases-conditions/asthma-chronic-obstructive-pulmonary-disease-canada-2018.html.
2. Yang CL, Hicks EA, Mitchell P, Reisman J, Podgers D, Hayward KM, Waite M, Ramsey CD. Canadian Thoracic Society 2021 guideline update: diagnosis and management of asthma in preschoolers, children and adults. Can J Respir Crit Care Sleep Med. 2021 Nov 2;5(6):348-61.
3. Yang CL, Hicks EA, Mitchell P, Reisman J, Podgers D, Hayward KM, Waite M, Ramsey CD. 2021 Canadian Thoracic Society guideline: a focused update on the management of very mild and mild asthma. Can J Respir Crit Care Sleep Med. 2021 Feb;5(4):240-5.
4. Crawley A, Strautman K, Zimmermann L, Ryan C. Mild asthma in adults and adolescents: inhalers, adherence, and optimization. Can Fam Physician. 2022 Aug;68(8):595-8.
5. Global Initiative for Asthma. Global strategy for asthma management and prevention, 2023 [Internet]. Fontana (WI): Global Initiative for Asthma; 2023 [updated 2023 Jun]. 246 p. Available from: https://ginasthma.org/2023-gina-main-report/.
6. Crossingham I, Turner S, Ramakrishnan S, Fries A, Gowell M, Yasmin F, Richardson R, Webb P, O'Boyle E, Hinks TS. Combination fixed-dose beta agonist and steroid inhaler as required for adults or children with mild asthma. 2020 Jan 14 [amended 2021 May 4; cited 2024 May 10]. In: The Cochrane Database of Systematic Reviews [Internet]. Hoboken (NJ): John Wiley & Sons, Ltd., c1999-2024. 129K. Available from: https://doi.org/10.1002/14651858.cd013518.pub2. Record No.: CD013518.
7. FitzGerald JM, O'Byrne PM, Bateman ED, Barnes PJ, Zheng J, Ivanov S, Lamarca R, Larsdotter U, Emerath U, Jansen G, Puu M, Alagappan VKT, Surmont F, Reddel HK. Safety of as-needed budesonide-formoterol in mild asthma: data from the two phase III SYGMA studies. Drug Saf. 2021 Apr;44(4):467-78.
8. Roychowdhury P, Badwal J, Alkhatib F, Singh DK, Lindenauer PK, Knee A, Lagu T. Spirometry utilization among patients with asthma. J Asthma Allergy. 2020 Jun;30(13):193-203.
9. Akinbami LJ, Salo PM, Cloutier MM, Wilkerson JC, Elward KS, Mazurek JM, Williams S, Zeldin DC. Primary care clinician adherence with asthma guidelines: the National Asthma Survey of Physicians. J Asthma. 2020 May;57(5):543-55.
10. Sharpe H, Claveria-Gonzalez FC, Davidson W, Befus AD, Leung JP, Young E, Walker B. Adult asthma diagnosis: physician reported challenges in Alberta-based primary care practices. SAGE Open Nurs [Internet]. 2020 May 25 [cited 2024 May 10]:6(1):[9 p.]. Available from: https://doi.org/10.1177/2377960820925984.
11. Dombkowski KJ, Hassan F, Wasilevich EA, Clark SJ. Spirometry use among pediatric primary care physicians. Pediatrics. 2010 Oct;126(4):682-7.
12. Gibson PG, Powell H, Coughlan J, Wilson AJ, Abramson M, Haywood P, Bauman A, Hensley MJ, Walters EH, Roberts JJL. Self-management education and regular practitioner review for adults with asthma. 2002 Jul 22 [cited 2024 May 10]. In: The Cochrane Database of Systematic Reviews [Internet]. Hoboken (NJ): John Wiley & Sons, Ltd., c1999-2024. 129K. Available from: https://doi.org/10.1002/14651858.CD001117. Record No.: CD001117.

13. Takala J, Vähätalo I, Tuomisto LE, Niemelä O, Ilmarinen P, Kankaanranta H. Documentation of comorbidities, lifestyle factors, and asthma management during primary care scheduled asthma contacts. NPJ Prim Care Respir Med [Internet]. 2024 Mar 9 [cited 2024 May 10];34(1):[10 p.]. Available from: https://doi.org/10.1038/s41533-024-00360-3.
14. Price C, Agarwal G, Chan D, Goel S, Kaplan AG, Boulet LP, Mamdani MM, Straus SE, Lebovic G, Gupta S. Large care gaps in primary care management of asthma: a longitudinal practice audit. BMJ Open [Internet]. 2019 Jan 29 [cited 2024 May 10];9(1):[10 p.]. Available from: https://doi.org/10.1136/bmjopen-2018-022506.
15. Kaplan A, Price D. Matching inhaler devices with patients: the role of the primary care physician. Can Respir J [Internet]. 2018 May 23 [cited 2024 May 10];2018:[10 p.]. Available from: https://doi.org/10.1155/2018/9473051.

Evaluation of a Regional Centre's Outpatient Alcohol Detox Program

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ABSTRACT

Background: Alcohol detoxification can occur in the community for those who meet the criteria for low-risk abstinence symptoms. This enables the patient to remain in their own environment and is more efficient for the healthcare system. Anecdotally, the detoxification program in Swift Current is underutilized, resulting in inpatient detoxification becoming the mainstay treatment.

Question(s): What percentage of patients at low-risk of withdrawal in the Emergency Department (ED) in Swift Current and are referred to outpatient detoxification? What are physicians' opinions regarding the home detoxification program?

Methods/Methodology: The ED's electronic medical record at Cypress Regional Hospital was reviewed to assess if patients who were classified low-risk alcohol were referred to the program. Low-risk features include medical stability, mild withdrawal symptoms (PAWS < 4, CIWA < 20), and home support. Charts from April 2020 - January 2023 were reviewed. Additionally, a cross-sectional survey was distributed to physicians and residents working in the ED to assess physician awareness and barriers to the program. This study was deemed exempt from ethical review by the University of Saskatchewan Behavioral Research Ethics Board (Beh ID 4302).

Results/Findings: Thirty-nine patients presented to the ER with a diagnosis of alcohol withdrawal for a total of 111 visits. Sixteen (14%) visits were considered low-risk and not referred to outpatient treatment, accounting for 52 days in hospital. Thirteen physicians completed the survey (response rate = 59%). The physician surveys indicated that physicians believe home alcohol detoxification is practical, however, barriers exist including patient interest, weekend coverage, confusing referral form and lack of patient support.

Discussion: It is evident that the outpatient alcohol program is underutilized despite evidence establishing its effectiveness and feasibility. At home treatment has been shown to have high patient uptake and treatment completion yet, patients are not being referred. Physicians reported affirmative responses regarding referring patients to the outpatient program, however, this was conditional on physician education, simplified referral process and additional coverage.

Conclusions: Outpatient alcohol detoxification is underutilized due to limited resources, physician knowledge and patient support despite efficacy and cost-effectiveness.

Recommendations: Physician education sessions should be introduced to increase utilization of the program.

References:

1. Feldman DJ, Pattison EM, Sobell LC, Graham T, Sobell MB. Outpatient alcohol detoxification: initial findings on 564 patients. Am J Psychiatry. 1975 Apr;132(4):407-12.
2. Callow T, Donaldson S, Ruiter MD. Effectiveness of home detoxification: a clinical audit. B J Nur. 2008 Jun;17(11):692-5.
3. Williams S. Introducing an in-patient treatment for alcohol detoxification into a community setting. J Clin Nurs. 2001 Sep;10(5):635-42.
4. Evans DJ, Street SD, Lynch DJ. Alcohol withdrawal at home. Pilot project for frail elderly people. Can Fam Physician. 1996 May;42(5):937-45.
5. Abbott PJ, Quinn D, Knox L. Ambulatory medical detoxification for alcohol. Am J Drug Alcohol Abuse.1995 Nov;21(4):549-63.
6. Hayashida M, Alterman AI, McLellan AT, O'Brien CP, Purtill JJ, Volpicelli JR, Raphaelson AH, Hall CP. Comparative effectiveness and costs of inpatient and outpatient detoxification of patients with mild-to-moderate alcohol withdrawal syndrome. N Engl J Med. 1989 Feb;320(6):358-65.
7. Bartu A. Guidelines for the nursing management of alcohol related withdrawal symptoms in the home. Aust Nurses J.1991 Oct;21(4):12-3.
8. Roche AM, Watt K, Fischer J. General practitioners' views of home detoxification. Drug Alcohol Rev. 2001 Dec;20(4):395-406.
9. Nadkarni A, Endsley P, Bhatia U, Fuhr DC, Noorani A, Naik A, Murthy P, Velleman R. Community detoxification for alcohol dependence: a systematic review. Drug Alcohol Review. 2017 May;36(3):389-99.

Assessing the initiation of Alcohol-Use Disorder medications for presentations related to alcohol-use disorder in a Hospital setting: An analysis from the Dr. F.H Wigmore Regional Hospital

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ABSTRACT

Background: Alcohol Use Disorder (AUD) and subsequent alcohol-related diseases are common presentations to the hospital, offering an opportunity to provide therapies to assist with alcohol cessation. Pharmacotherapeutic options for alcohol cessation exist, with the most common being naltrexone and acamprosate.

Question(s): How often is alcohol cessation pharmacotherapy offered during emergency department and inpatient encounters for patients with AUD at Dr. F.H. Wigmore Regional Hospital?

Methods/Methodology: A retrospective chart review was performed to assess the offer rate of counseling and initiation of either acamprosate or naltrexone, in-hospital or upon discharge, from either the emergency department or the inpatient ward for patients presenting with and/or having a comorbidity of AUD between January 2020 and December 2023.

A Certificate of Approval was obtained from the University of Saskatchewan's Biomedical Ethics Research Board (Bio 4370). Operational Approval was received from the Saskatchewan Health Authority.

Results/Findings: Fifty patients presented for 171 visits. Naltrexone was initiated 15 times while admitted, and on 5 occasions at discharge. This was generally done on the ward, with only 1 administration prior to emergency department discharge. Acamprosate was not initiated. One-hundred visits (58.5%) resulted in a referral to addictions counseling.

Discussion: Based on chart review results, it appears that using pharmacological agents for aiding in alcohol cessation in patients with alcohol use disorder at the Dr. F.H. Wigmore Regional Hospital was limited, concurrent with similar findings demonstrated in the literature.

Conclusions: Naltrexone or acamprosate are not widely used in either the inpatient or emergency room at this regional hospital.

Recommendations: While our study did not aim to assess ways to promote the utilization of AUD cessation pharmacology, we would encourage providers to consider providing this treatment when appropriate by the opportunity provided by these patient presentations to care.

This project could be built upon by subsequent residents through assessing ways to promote the utilization of these medications, such as informational resources for emergency physicians and hospitalists, and assess their impact.

References:

1. Stockwell T, Andreasson S, Cherpitel C, Chikritzhs T, Dangardt F, Holder H, Naimi T, Sherk A. The burden of alcohol on health care during COVID-19. Drug Alcohol Rev. 2021 Jan;40(1):3-7.
2. Hartney E. The shadow pandemic of alcohol use during COVID-19: a Canadian health leadership imperative. Healthc Policy. 2021 May;16(4):17-24.
3. Roerecke M, Rehm J. Alcohol use disorders and mortality: a systematic review and meta-analysis. Addiction. 2013 Sep;108(9):1562-78.
4. Burnette EM, Nieto SJ, Grodin EN, Meredith LR, Hurley B, Miotto K, Gillis AJ, Ray LA. Novel agents for the pharmacological treatment of alcohol use disorder. Drugs. 2022 Feb;82(3):251-74.
5. Winslow BT, Onysko M, Hebert M. Medications for alcohol use disorder. Am Fam Physician. 2016 Mar;93(6):457-65.
6. D'Onofrio G, O'Connor PG, Pantalon MV, Chawarski MC, Busch SH, Owens PH, Bernstein SL, Fiellin DA. Emergency department-initiated buprenorphine/naloxone treatment for opioid dependence: a randomized clinical trial. JAMA. 2015 Apr ;313(16):1636-44.
7. Philippine T, Forsgren E, DeWitt C, Carter I, McCollough M, Taira BR. Provider perspectives on emergency department initiation of medication assisted treatment for alcohol use disorder. BMC Health Serv Res [Internet]. 2022 Apr 7 [cited 2024 May 14];22(1):[14 p.]. Available from: https://doi.org/10.1186/s12913-022-07862-1.
8. Furlong K, Lang E. The management of alcohol use disorder in the emergency department, is it time for version 2.0? CJEM. 2023 Feb;25(2):108-9.
9. Anderson ES, Chamberlin M, Zuluaga M, Ullal M, Hawk K, McCormack R, D'Onofrio G, Herring AA. Implementation of oral and extended-release naltrexone for the treatment of emergency department patients with moderate to severe alcohol use disorder: feasibility and initial outcomes. Ann Emerg Med. 2021 Dec;78(6):752-8.
10. Danovitch I, Nuckols T, Watkins KE, Ober AJ, Mirocha J, Ros P. Alcohol use disorder among general hospital medical inpatients. Addict Res [Internet]. 2021 Apr [cited 2024 May 14];5(1):[5 p.]. Available from: https://www.scivisionpub.com/abstract-display.php?id=1607.
11. Englander H, King C, Nicolaidis C, Collins D, Patten A, Gregg J, Korthuis PT. Predictors of opioid and alcohol pharmacotherapy initiation at hospital discharge among patients seen by an inpatient addiction consult service. J Addict Med. 2020 Sep-Oct;14(5):415-22.
12. Wei J, Defries T, Lozada M, Young N, Huen W, Tulsky J. An inpatient treatment and discharge planning protocol for alcohol dependence: efficacy in reducing 30-day readmissions and emergency department visits. J Gen Intern Med. 2015 Mar;30(3):365-70.
13. Bernstein EY, Baggett TP, Trivedi S, Herzig SJ, Anderson TS. Outcomes after initiation of medications for alcohol use disorder at hospital discharge. JAMA Netw Open [Internet]. 2024 Mar 4 [cited 2024 May 14];7(3):[12 p.]. Available from: https://doi.org/10.1001/jamanetworkopen.2024.3387.

14. Lee E, Navadurong H, Liangpunsakul S. Epidemiology and trends of alcohol use disorder and alcohol-associated liver disease. Clin Liver Dis (Hoboken). 2023 Jun;22(3):99-102.
15. Bernstein EY, Baggett TP, Trivedi S, Herzig SJ, Anderson TS. Pharmacologic treatment initiation among Medicare beneficiaries hospitalized with alcohol use disorder. Ann Intern Med. 2023 Aug;176(8):1137-9.
16. Bernstein EY, Pfoh ER, Le P, Rothberg MB. Relationship between primary care providers' perceptions of alcohol use disorder and pharmacotherapy prescribing rates. Alcohol Alcohol. 2023 Jan;58(1):54-9.
17. Bernstein E, Guo N, Goto T, Rothberg MB. Characterizing the variation of alcohol cessation pharmacotherapy in primary care. J Gen Intern Med. 2021 Jul;36(7):1989-96.
18. Chockalingam L, Burnham EL, Jolley SE. Medication prescribing for alcohol use disorders during alcohol-related encounters in a Colorado regional healthcare system. Alcohol Clin Exp Res. 2022 Jun;46(6):1094-102.

Attitudes and practices of family physicians in diagnosis and management of Childhood Attention Deficit Hyperactivity Disorder (ADHD) in North West Saskatchewan

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ABSTRACT

Background: ADHD is a neurodevelopmental disorder with symptoms of hyperactivity, impulsivity, and/or inattention. It is thought to be a lifelong disorder. The prevalence of ADHD is estimated to be 5-9% for children and adolescents and 3-5% for adults. According to the Canadian ADHD Practice Guidelines, it can be diagnosed and managed in primary care with involvement of specialists in complex cases. However, the role of family physicians in diagnosis and management of ADHD varies widely. This results in difference in quality of care and long waiting times to see specialists.

Question(s): Our aim was to explore the attitudes and practices of family physicians towards the diagnosis and management of ADHD in north west Saskatchewan. We also wanted to identify potential barriers that affect the provision of childhood ADHD care.

Methods/Methodology: The project (Beh ID 4407) was approved by the University of Saskatchewan's Behavioural Research Ethics Board. We conducted a quantitative cross-sectional survey. An electronic survey link was sent out to 107 family physicians and 9 family medicine residents in north west Saskatchewan.

Results/Findings: About 6% (n=6) of the practicing physicians and 67% (n=6) of the family medicine residents responded. Overall, 91.7% of the respondents see childhood ADHD in clinical practice and 100% were aware of diagnostic criteria. Approximately half (58.3%) were comfortable with making a diagnosis and starting medications. Immediate referral to specialist on first encounter would be made by 41%. All were familiar with CADDRA and unaware of other resources. The findings were comparable in resident and physician groups. There were some barriers to providing care identified by physician group only. There was an interest in receiving extra training.

Discussion: Resident experience was over-represented in the data and overall response was low. Although all respondents knew the diagnostic criteria, not all of them were comfortable in making a diagnosis and managing childhood ADHD.

Conclusions: There exist variations in practices around childhood ADHD diagnosis and management in North West Saskatchewan. The survey suggests the importance of providing education and resources to support family physicians to manage this condition in primary care.

References:

1. Canadian ADHD Resource Alliance. Canadian ADHD practice guidelines [Internet]. Toronto (ON): CADDRA; 2020 [cited 2024 May 10]. 112 p. Available from: https://adhdlearn.caddra.ca/wp-content/uploads/2022/08/Canadian-ADHD-Practice-Guidelines-4.1-January-6-2021.pdf.
2. Shaw K, Wagner I, Eastwood H, Mitchell G. A qualitative study of Australian GPs' attitudes and practices in the diagnosis and management of attention-deficit/hyperactivity disorder (ADHD). Fam Pract. 2003 Apr;20(2):129-34.
3. Tatlow-Golden M, Prihodova L, Gavin B, Cullen W, McNicholas F. What do general practitioners know about ADHD? Attitudes and knowledge among first-contact gatekeepers: systematic narrative review. BMC Fam Pract [Internet]. 2016 Sep 7 [cited 2024 May 14];17(1):[15 p.]. Available from: https://doi.org/10.1186/s12875-016-0516-x.
4. French B, Perez Vallejos E, Sayal K, Daley D. Awareness of ADHD in primary care: stakeholder perspectives. BMC Fam Pract [Internet]. 2020 Feb 28 [cited 2024 May 14];21(1):[13 p.]. Available from: https://doi.org/10.1186/s12875-020-01112-1.

Frequency of CDM appointments and reaching diabetes control in patients with Type 2 Diabetes in a northern Saskatchewan family medicine clinic

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ABSTRACT

Background: According to Diabetes Canada, diabetes is a chronic disease affecting 9% of the Saskatchewan population. The Saskatchewan Chronic Disease Management (CDM) program aims to improve care for patients with chronic conditions including diabetes through regular monitoring.

Objective: Our project serves as a clinic audit to determine the provincial CDM Guideline's effectiveness in controlling diabetes at a family medicine clinic in Prince Albert, SK, by evaluating if the frequency of CDM appointments was a contributing factor to reaching diabetic disease control, assessed via hemoglobin A1C (HbA1c) targets.

Methods/Methodology: This retrospective correlational study collected anonymized data from the electronic medical record between October 2021 and October 2023. The study included 293 adult patients with DM II, ages 18-65, who had a minimum of two CDM visits during the study period. A linear mixed regression model was used to analyze the association between HbA1c levels and the number of CDM appointments. The study received an exemption from the University of Saskatchewan biomedical Research Ethics Board (Bio 4509).

Results/Findings: Patients had a median HbA1c interval of 132 days among their individual average values and received between one and 12 CDM visits. When analyzing the fixed effects on HbA1c values obtained, the number of CDM appointments had an association with HbA1c values. For every appointment added to the interval between HbA1c assessments, HbA1c fell on average by 0.12 points ($p = 0.01$). The time between HbA1c results also had an effect, showing that for every 30 days between assessments, the HbA1c increased by 0.04 on average ($p < 0.001$).

Discussion: Evaluating the number of CDM visits showed that there may be value in shorter HbA1c intervals and more CDM visits. A similar trend in relationship between regularity of appointments and achieving better HbA1c control was seen in research conducted in other countries.

Conclusions: The relationships between the HbA1c measurement interval, the frequency of CDM visits, and HbA1c values observed in our study confirmed that CDM appointments positively impact HbA1c control. However, more work is needed to better understand variations in patients' diabetes control.

Recommendations: Encouraging regular HbA1c measurements and CDM appointments may improve diabetes control.

References:

1. Diabetes Canada. Diabetes in Canada: backgrounder [Internet]. Ottawa (ON): Diabetes Canada; 2020 Feb [cited 2024 May 16]. 6 p. Available from: https://www.diabetes.ca/DiabetesCanadaWebsite/media/Advocacy-and-Policy/Backgrounder/2020_Backgrounder_Canada_English_FINAL.pdf.
2. Diabetes Canada. Diabetes and diabetes-related out-of-pocket costs: 2022 update [Internet]. Ottawa (ON): Diabetes Canada; 2023 Feb [cited 2024 May 16]. 34 p. Available from: https://www.diabetes.ca/DiabetesCanadaWebsite/media/Advocacy-and-Policy/Advocacy%20Reports/Diabetes-Canada-2022-Out-Of-Pocket-Report-EN-FINAL.pdf.
3. Public Health Agency of Canada. Diabetes in Canada: facts and figures from a public health perspective [Internet]. Ottawa (ON): Government of Canada; 2011 [cited 2024 May 16]. 126 p. Available from: https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/cd-mc/publications/diabetes-diabete/facts-figures-faits-chiffres-2011/pdf/facts-figures-faits-chiffres-eng.pdf.
4. Public Health Agency of Canada. Twenty years of diabetes surveillance using the Canadian chronic disease surveillance system [Internet]. Ottawa (ON): Government of Canada; 2019 [cited 2024 May 16]. 2 p. Available from: http://publications.gc.ca/collections/collection_2019/aspc-phac/HP35-122-2019-eng.pdf.
5. Hux J, Booth J, Slaughter P, Laupacis A. Diabetes in Ontario: an ICES practice atlas [Internet]. Toronto (ON): Institute for Clinical Evaluative Sciences; 2003 [cited 2024 May 16]. 314 p. Available from: https://www.ices.on.ca/Publications/Atlases-and-Reports/2003/Diabetes-in-Ontario.
6. Diabetes Canada Clinical Practice Guidelines Expert Working Group. Diabetes and mental health. Can J Diabetes. 2023 Jun;47(4):308-44.
7. Diabetes Canada. 2018 clinical practice guidelines: quick reference guide [Internet]. Ottawa (ON): Diabetes Canada; 2018 [cited 2024 May 16]. 10 p. Available from: https://diabetes.ca/DiabetesCanadaWebsite/media/Health-care-providers/2018%20Clinical%20Practice%20Guidelines/CPG-quick-reference-guide-web.pdf?ext=.pdf.
8. Saskatchewan Medical Association. SK CDM-QIP diabetes flow sheet [Internet]. Saskatoon (SK): Saskatchewan Medical Association; 2015 Apr [cited 2024 May 16]. 2 p. Available from: https://www.sma.sk.ca/wp-content/uploads/2022/12/2022.12.23-CDM-QIP-Diabetes-Flow-Sheet-April-2015.pdf.
9. Saskatchewan Health Quality Council. The Saskatchewan chronic disease management collaborative progress report [Internet]. Saskatoon (SK): Saskatchewan Health Quality Council; 2008 [cited 2024 May 16]. 28 p. Available from: https://www.saskhealthquality.ca/wp-content/uploads/2021/06/ HQC_CDM_Interim_Report_FINAL.pdf.

10. Stock S, Pitcavage JM, Simic D, Altin S, Graf C, Feng W, Graf TR. Chronic care model strategies in the United States and Germany deliver patient-centered, high quality diabetes care. Health Aff (Millwood). 2014 Sep;33(9):1540-8.
11. Christ E, Czock A, Renström F, Ammeter T, Ebrahimi F, Zechmann S, Kutz A, Diem P, Häuptle C, Brändle M. Evaluation of type 2 diabetes care management in nine primary care practices before and after implementation of the criteria of good disease management of diabetes established by the Swiss Society of Endocrinology and Diabetology. Swiss Med Wkly [Internet]. 2022 Jul 26 [cited 2024 May 16];152(2930):[9 p.]. Available from: https://doi.org/10.4414/smw.2022.w30197.
12. Imai C, Li L, Hardie RA, Georgiou A. Adherence to guideline-recommended HbA1c testing frequency and better outcomes in patients with type 2 diabetes: a 5-year retrospective cohort study in Australian general practice. BMJ Qual Saf. 2021 Sep;30(9):706-14.
13. Tataryn A, Derbowka H, Shen X, Gage E, Kang E, Wlock J, Lieffers J. A qualitative evaluation of patient experiences with group medical and individual education appointments for type 2 diabetes management in Saskatchewan, Canada. Diabetes Educ. 2020 Jun;46(3):261-70.
14. Xue-Juan W, Hao W, Cai-Ying G, Xin-Ying L, Hony-Yan J, Li W, Xiao-Ling G, Wan-Ying L, Wen-Juan G, Wan-Nian L. Impact of an intelligent chronic disease management system on patients with type 2 diabetes mellitus in a Beijing community. BMC Health Serv Res [Internet]. 2018 Oct 29 [cited 2024 May 16];18(1):[8 p.]. Available from: https://doi.org/10.1186/s12913-018-3610-z.

Improving Patient's Type II Diabetes Glycemic Control at the Associate Family Physicians Clinic through Interdisciplinary Outpatient Diabetes Therapies

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ABSTRACT

Background: An interdisciplinary team approach, that includes nurse educators (NE) and registered dieticians (RD), has been shown to improve glycemic control (hemoglobin A1c) compared to usual diabetes care provided by a primary care physician. From October 2022 to September 2023, 58% (317/547) of patients with Type 2 diabetes mellitus (T2DM) who attended at least one Chronic Disease Management (CDM) appointment at Associate Family Physicians Clinic (AFPC) met their hemoglobin A1C target.

Question(s): Using an interdisciplinary team approach incorporating NE and RD, we aimed to increase the percentage of patients at AFPC with T2DM meeting their hemoglobin A1c target (<7.0% or 7.0-8.5%) to 68% by October 2023.

Methods/Methodology: We utilized the Model for Improvement and implemented several change ideas targeting the number of referrals made to a NE and RD. Specifically, infographics were distributed to patients, a collaborative care lecture was given to AFPC physicians, and a summary of this lecture was emailed to AFPC physicians and residents. This project received was exempt of ethical review by the University of Saskatchewan Biomedical Research Ethics Board.

Results/Findings: The number of referrals made to NEs and RDs for patients who attended a CDM visit increased from 6.2% (4/65) to 29.6% (21/71) from April to September 2023. Of those referred, attended appointment with NE and RDs were of marginal improvement at 0% (0/65) to 5.5% (4/71) over the same time frame. There was limited improvement in the population (n=365) average A1c glycemic control after integrating a Plan-Do-Study-Act approach to improving chronic disease management with interdisciplinary care. As of October 2023, 61% (232/365) of patients with T2DM met their glycemic target.

Discussion: The project has continued past the targeted completion date. More recent data are beginning to show co-bookings visits with nurses and physicians under the Patient's Medical Home Pilot offer potential increase in referral. Furthermore, new quality improvement interventions, such as CDM training for nurses may also increase the acceptance and follow-through of patient's utilizing the interdisciplinary resources offered and overall help patient's reach A1c targets effectively.

Conclusions: The AFPC QI team did not meet their aim of increasing the percentage of patient meeting their A1c target to 68%.

References:

1. Miller-Rosales C, Rodriguez HP. Interdisciplinary primary care team expertise and diabetes care management. J Am Board Fam Med. 2021 Jan-Feb;34(1):151–61.
2. Davidson AR, Kelly J, Ball L, Morgan M, Reidlinger DP. What do patients experience? Interprofessional collaborative practice for chronic conditions in primary care: an integrative review. BMC Prim Care [Internet]. 2022 Dec 14 [cited 2024 May 14];23(1):[12 p.]. Available from: https://doi.org/10.1186/s12875-021-01595-6.
3. Abdel-Rahman N, Manor O, Valinsky L, Mosenzon O, Calderon-Margalit R, Roberman S. What is important for people with type 2 diabetes? A focus group study to identify relevant aspects for patient-reported outcome measures in diabetes care. PLoS One [Internet]. 2022 Nov 14 [cited 2024 May 14];17(11):[14 p.]. Available from: https://doi. org/10.1371/journal.pone.0277424.
4. Adams OP, Carter AO. Knowledge, attitudes, practices, and barriers reported by patients receiving diabetes and hypertension primary health care in Barbados: a focus group study. BMC Fam Pract [Internet]. 2011 Dec 2 [cited 2024 May 14];12(1):[7 p.]. Available from: https://doi.org/10.1186/1471-2296-12-135.
5. Arana MA, Valderas JM, Solomon J. Being tested but not educated - a qualitative focus group study exploring patients' perceptions of diabetic dietary advice. BMC Fam Pract [Internet]. 2019 Jan 3 [cited 2024 May 14];20(1):[7 p.]. Available from: https://doi.org /10.1186/s12875-018-0892-5.
6. Unni EJ, Van Wagoner E, Shiyanbola OO. Utilizing a 3S (strategies, source and setting) approach to understand the patient's preferences when addressing medication non-adherence in patients with diabetes: a focus group study in a primary outpatient clinic. BMJ Open [Internet]. 2019 Jan 15 [cited 2024 May 14];9(1):[9 p.]. Available from: https://doi.org/10.1136/bmjopen-2018-024789.

Primary or secondary prevention? Assessing statin use in the elderly

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ABSTRACT

Background: Statins are one of the most prescribed medications in the elderly. Guidelines regarding their use in those aged 75 and older have been changing over the years, but have consistently demonstrated the benefit to those using statins for secondary prevention.

Question(s): What are the proportionate rates of statin prescriptions used for primary vs. secondary prevention for patients attending the Family Medicine Unit in Regina? How effective is utilising coded electronic medical record (EMR) data at identifying patients using statins for primary or secondary prevention?

Methods/Methodology: An observational study was conducted assessing all patients at the family medicine unit age ≥75 years and currently prescribed a statin medication as of April 2024. This group was separated into primary or secondary prevention using diagnostic codes on the EMR based on the CPCSSN definition of cardiovascular disease. A subsequent manual chart review of 200 patients was conducted. The specificity and sensitivity of the CPCSSN definition was determined using manual review as the reference standard.

This study received approval from the University of Saskatchewan's Biomedical Research Ethics Board (Bio 4563) and Operational Approval from the Saskatchewan Health Authority.

Results/Findings: 261 patients met inclusion criteria for the study. Manual review demonstrated 105 (53%) patients were prescribed statins for primary prevention, while 93 (47%) patients were prescribed statins for secondary prevention. Coded EMR data identified 196 (75.1%) patients prescribed statins for primary prevention and 65 (24.9%) patients prescribed statins for secondary prevention. The CPCSSN definition has a sensitivity of 51.6% (95% CI: 41.0-62.1%) and a specificity of 96.2% (95% CI: 90.5-99.0%).

Discussion: While we manually determined the proportion of patients prescribed statin medications for primary vs. secondary prevention, the EMR data was less sensitive than observed in previous studies due to inaccurate or absent diagnostic code input in the EMR.

Conclusions: Based on manual review, 53% of included patients are currently using statin medications for primary prevention vs. 47% for secondary prevention. EMR data had low sensitivity in identifying these patients.

Recommendations: Future studies might assess EMR accuracy in a younger population without conditions predating the introduction of the EMR.

References:

1. Arnett DK, Blumenthal RS, Albert MA, Buroker AB, Goldberger ZD, Hahn EJ, Himmelfarb CD, Khera A, Lloyd-Jones D, McEvoy JW, Michos ED, Miedema MD, Munoz D, Smith Jr CS, Virani SS, Williams Sr KA, Yeboah J, Ziaeian B. 2019 ACC/AHA guideline on the primary prevention of cardiovascular disease: a report of the American College of Cardiology/American Heart Association Task Force on clinical Practice Guidelines. J Am Coll Cardiol. 2019 Sep;140(11):e596-646.
2. Marshall B, Bennett N. PURL: how old is too old for statins? J Fam Pract. 2020 Jun;69(5):257-9.
3. Singh S, Zieman S, Go AS, Fortmann SP, Wenger NK, Fleg JL, Radziszewska B, Stone NJ, Zoungas S, Gurwitz JH. Statins for primary prevention in older adults—moving toward evidence-based decision-making. J Am Geriatr Soc. 2018 Nov;66(11):2188-96.
4. Ramos R, Comas-Cufí M, Martí-Lluch R, Balló E, Ponjoan A, Alves-Cabratosa L, Blanch J, Marrugat J, Elosua R, Grau M, Elosua-Bayes M, García-Ortiz L, Garcia-Gil M. Statins for primary prevention of cardiovascular events and mortality in old and very old adults with and without type 2 diabetes: retrospective cohort study. BMJ [Internet]. 2018 Sep 5 [cited 2024 May 14];362:[12 p.]. Available from: https://doi.org/10.1136/ bmj.k3359.
5. Mortensen M, Falk E. Primary prevention with statins in the elderly. J Am Coll Cardiol. 2018 Jan;71(1):85–94.
6. Shepherd J, Blauw GJ, Murphy MB, Bollen ELE, Buckley BM, Cobbe SM, Ford I, Gaw A, Hyland M, Jukema JW, Kamper AM, Macfarlane PW, Meinders AE, Norrie J, Packard CJ, Perry IJ, Stott DJ, Sweeney BJ, Twomey C, Westendrop RGJ. Pravastatin in elderly individuals at risk of vascular disease (PROSPER): a randomised controlled trial. Lancet. 2002 Nov;360(9346):1623-30.
7. Ridker PM, Lonn E, Paynter NP, Glynn R, Yusuf S. Primary prevention with statin therapy in the elderly: new meta-analyses from the contemporary JUPITER and HOPE-3 randomised trials. Circulation. 2017 May;135(20):1979-81.
8. CFPC Learn [Internet]. Mississauga (ON): College of Family Physicians of Canada; c2024. #344 Statins in older adults; 2023 Jul 10 [cited 2024 May 14];[about 5 screens]. Available from: https://cfpclearn.ca/tfp344/.
9. Canadian Institute for Health Information. Drug use among seniors on public drug programs in Canada, 2012 [Internet]. Ottawa (ON): CIHI; 2014. 71 p. Available from: https://secure.cihi.ca/free_products/Drug_Use_in_Seniors_on_Public_Drug_Programs_2012_EN_web.pdf.

Breastfeeding duration following frenotomy consultation in infants with suspected ankyloglossia and feeding difficulty at West Winds Primary Health Centre and Cornerstone Maternity Clinic

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ABSTRACT

Background: Exclusive breastfeeding for the first 6 months of life and continued breastfeeding to 2 years and beyond is widely recommended. Ankyloglossia may contribute to breastfeeding difficulty; however there is limited evidence in the effect of frenotomy on breastfeeding outcomes.

Question(s):

1. Does frenotomy improve breastfeeding duration during three months' follow-up among mother-infant dyads presenting with ankyloglossia and feeding difficulties?
2. Does frenotomy decrease maternal nipple pain during three months' follow-up among mother-infant dyads presenting with ankyloglossia and feeding difficulties?
3. What are rates of maternal satisfaction following frenotomy among mother-infant dyads presenting with ankyloglossia and feeding difficulties?
4. What are the rates of adverse effects post-frenotomy in mother-infant dyads presenting with ankyloglossia and feeding difficulties?

Methods/Methodology: This was a prospective observational quality improvement study evaluating breastfeeding outcomes following frenotomy. Participants were recruited by physician consultants and emailed surveys at 2 weeks, 1 month, and 3 months post consultation/procedure. We received ethics approval from the University of Saskatchewan's Behavioural Research Ethics Board (Beh ID 3046).

Results/Findings: Unfortunately, we were unable to collect a meaningful sample size so a literature review was performed to better understand challenges and strategies for recruitment and retention.

Discussion: In longitudinal studies, recruitment and retention are major challenges, with more than 50% of studies failing to meet targets. Barriers to recruitment include lack of interest, fear of harm to the child, time constraints, and confidentiality concerns. Barriers to retention include health issues, time constraints, and return to work or relocation.

Conclusions: Recruitment and retention are common challenges, and there are even more challenges when studying postpartum women. Our study likely would have benefited from a broader recruitment approach that included social media, print media, websites, and community groups. Retention may have been improved if we had utilized multiple methods of communication including phone calls, texting, or family contacts.

Recommendations: In future studies we recommend anticipating challenges in the planning process, employing a multimodal recruitment approach, and offering incentives for participation. There remains a gap in clinical research for postpartum women, and more research is needed to better understand the effect of frenotomy on breastfeeding.

References:

1. Brookes A, Bowley DM. Tongue tie: the evidence for frenotomy. Early Hum Dev. 2014 Nov;90(11):765-8.
2. Caloway C, Hersh C, Baars R, Sally S, Diercks G, Hartnick C. Association of feeding evaluation with frenotomy rates in infants with breastfeeding difficulties. JAMA Otolaryngol Head Neck Surg. 2019 Sep;145(9):817-22.
3. Canadian Paediatric Society [Internet]. Ottawa (ON): Canadian Paediatric Society; c2024. Nutrition for healthy term infants, birth to six months: an overview; 2013 Apr 2 [updated 2024 Feb 7; cited 2024 May 13];[about 4 screens]. Available from: https://www.cps.ca/en/documents/position/nutrition-healthy-term-infants-overview.
4. Canadian Paediatric Society [Internet]. Ottawa (ON): Canadian Paediatric Society; c2024. Ankyloglossia and breastfeeding; 2015 May 11 [updated 2024 Feb 1; cited 2024 May 13];[about 9 screens]. Available from: https://www.cps.ca/documents/position/ankyloglossia-breastfeeding.
5. Emond A, Ingram J, Johnson D, Blair P, Whitelaw A, Copeland M, Sutcliffe A. Randomised controlled trial of early frenotomy in breastfed infants with mild-moderate tongue-tie. Arch Dis Child. 2014 May;99(3):F189-95.
6. Lisonek M, Liu S, Dzakpasu S, Moor AM, Joseph KS; Canadian Perinatal Surveillance System. Changes in the incidence and surgical treatment of ankyloglossia in Canada. J Paediatr Child Health. 2017 Oct;22(7):382-6.
7. Muldoon K, Gallagher L, McGuinness D, Smith V. Effect of frenotomy on breastfeeding variables in infants with ankyloglossia (tongue-tie): a prospective before and after cohort study. BMC Pregnancy Childbirth [Internet]. 2017 Nov 13 [cited 2024 May 13];17(1):[9 p.]. Available from: https://doi.org/10.1186/s12884-017-1561-8.
8. O'Callahan C, Macary S, Clemente S. The effects of office-based frenotomy for anterior and posterior ankyloglossia on breastfeeding. Int J Pediatr Otorhinolaryngol. 2013 May;77(5):827-32.
9. O'Shea JE, Foster JP, O'Donnell CPF, Breathnach D, Jacobs SE, Todd DA, Davis PG. Frenotomy for tongue-tie in newborn infants. 2014 Apr 14 [amended 2017 May 11; cited 2024 May 13]. In: The Cochrane Database of Systematic Reviews [Internet]. Hoboken (NJ): John Wiley & Sons, Ltd., c1999-2024. 129K. Available from: https://doi.org/10.1002/14651858.cd011065.pub2. Record No.: CD011065.
10. Power RF, Murphy JF. Tongue-tie and frenotomy in infants with breastfeeding difficulties: achieving a balance. Arch Dis Child. 2015 May;100(5):489-94.
11. Sethi N, Smith D, Kortequee S, Ward VMM, Clarke S. Benefits of frenulotomy in infants with ankyloglossia. Int J Pediatr Otorhinolaryngol. 2013 May;77(5):762-5.
12. Walsh J, Links A, Boss E, Tunkel D. Ankyloglossia and lingual frenotomy: national trends in diagnosis and management in the United States, 1997-2012. JAMA Otolaryngol Head Neck Surg. 2019 Apr;156(4):735-40.

13. World Health Organization [Internet]. Geneva (CE): World Health Organization; c2024. Infant and young child feeding; 2023 Dec 20 [cited 2024 May 13];[about 4 screens]. Available from: https://www.who.int/news-room/fact-sheets/detail/infant-and-young-child-feeding.
14. Macleod M, Craigie AM, Barton KL, Treweek S, Anderson AS; WeighWell Team. Recruiting and retaining postpartum women from areas of social disadvantage in a weight-loss trial—an assessment of strategies employed in the WeighWell feasibility study. Matern Child Nutr. 2013 Jul;9(3):322–31.
15. Chaudhari N, Ravi R, Gogtay N, Thatte U. Recruitment and retention of the participants in clinical trials: challenges and solutions. Perspect Clin Res. 2020 Apr-Jun;11(2):64-9.
16. Gul RB, Ali PA. Clinical trials: the challenge of recruitment and retention of participants. J Clin Nurs. 2010 Jan;19(1–2):227–33.
17. De Wet M, Hannon S, Hannon K, Axelin A, Uusitalo S, Bartels I, Eustace-Cook J, Escuriet R, Daly D. Systematic review of ethical issues in perinatal mental health research. Nurs Ethics. 2023 Jun;30(4):482-99.
18. Beasley LO, Ciciolla L, Jespersen JE, Chiaf AL, Schmidt M, Shreffler KM, Breslin FJ, Bakhireva LN, Sanjaun PM, Stephen JM, Coles CD, Chambers CD, Kable JA, Leeman L, Siner LT, Zellner J, Morris AS, Croff JM. Best practices for engaging pregnant and postpartum women at risk of substance use in longitudinal research studies: a qualitative examination of participant preferences. Advers Resil Sci. 2020;1(4):235-46.
19. Parks AM, Duffecy J, McCabe JE, Breman RB, Milgrom J, Hirshler Y, Gemmill AW, Segre LS, Felder JN, Uscher-Pines L. Lessons learned recruiting and retaining pregnant and postpartum individuals in digital trials: viewpoint. JMIR Pediatr Parent [Internet]. 2022 Apr 20 [cited 2024 May 13];5(2):[12 p.]. Available from: https://doi.org/10.2196/35320.
20. Leach LS, Butterworth P, Poyser C, Batterham PJ, Farrer LM. Online recruitment: feasibility, cost, and representativeness in a study of postpartum women. J Med Internet Res [Internet]. 2017 Mar 8 [cited 2024 May 13];19(3):[5 p.]. Available from: https://doi.org/10.2196/jmir.5745.
21. Stendell-Hollis NR, Laudermilk MJ, West JL, Thompson PA, Thomson CA. Recruitment of lactating women into a randomized dietary intervention: successful strategies and factors promoting enrollment and retention. Contemp Clin Trials. 2011 Jul;32(4):505–11.
22. Haste A, Adamson AJ, McColl E, Araujo-Soares V, Bell R. Problems recruiting and retaining postnatal women to a pilot randomised controlled trial of a web-delivered weight loss intervention. BMC Res Notes [Internet]. 2018 Mar 27 [cited 2024 May 13];11(1):[7 p.]. Available from: https://doi.org/10.1186/s13104-018-3305-x.
23. Aguirre TM, Koehler AE, Joshi A, Wilhelm SL. Recruitment and retention challenges and successes. Ethn Health. 2018 Jan;23(1):111–9.

Are the Volumes and Catchment Area of the Humboldt District Hospital Emergency Department expanding? Facts or Opinion

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Abstract

Background: It has been discussed by staff at Humboldt District Hospital (HDH) that the Emergency Department (ED) visits have been at an all-time high coming out of the Covid-19 Pandemic. With surrounding center emergency departments closing, it is presumed that the Humboldt Emergency Department volumes and catchment area have increased significantly.

Question(s): Has the volume and catchment area truly expanded at the Humboldt District Hospital ED?

Methods/Methodology: The data obtained from the registration database includes ED volumes from April 1, 2017, to December 31, 2023. It includes catchment area data from the top ten surrounding communities with respect to annual volume from the start of 2017 to the end of 2023. The study was deemed exempt by the University of Saskatchewan's Biomedical Research Ethics Board (Bio 4540) and received Operational Approval from Saskatchewan Health Authority.

Results/Findings: From the end of April 2017 to the end of March 2018 the Humboldt ED had 8,030 emergency department visits. Volumes steadily increased reaching 10,751 for the same time in 2019-20. Apart from the expected decrease noted during pandemic lockdown, volumes have steadily increased to an all-time high in 2022-23 of 12,834. This constitutes an increase in volume of 59.8% from 2017-18 (8,030), to 2022-23 (12,834). Excluding Saskatoon, a 79% increase in volume over the same period has been witnessed from the top 8 surrounding communities.

Discussion: Speculations from medical staff at HDH are backed by data. Volume has increased through the ED with the most rapid increases post-pandemic. Presently, it is not uncommon for ED volumes to reach 40-50 patients in a 24-hour-period. Often these volumes are falling on one physician doing a 24-hour call shift, with 2 nurses scheduled.

Conclusions: The HDH-ED volumes are increasing substantially. To account for this influx, we suspect that additional staff and resources will be required to provide safe and adequate healthcare in the Humboldt area.

References:

1. Statistics Canada [Internet]. Ottawa (ON): Government of Canada; c2024. Census Profile, 2021 census of population, city of Humboldt; [modified 2023 Feb 1; cited 2024 May 15];[about 50 screens]. Available from: https://www12.statcan.gc.ca/ census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText =Humboldt&DGUIDlist=2021A00054715008&GENDERlist=1,2,3&STATISTIClist=1&HEADERlist=0.
2. Canadian Medical Association [Internet]. Ottawa (ON): Canadian Medical Association; c2024. Burnout among rural and remote physicians is a significant issue we can help with; 2022 Oct 24 [cited 2024 May 16];[about 7 screens]. Available from: https://www.cma.ca/physician-wellness-hub/content/physician-wellness-burnout-among-rural-and-remote-physicians-significant-issue-we-can-help.
3. Harry ML, Sudak NL, Engels MJ, Karly KK, Horn K, Dean K, Poplau S, Stillman MJ, Linzer M. Physician and advanced practice clinician burnout in rural and urban settings. J Am Board Fam Med. 2024 Mar;37 (1):43-58.
4. Lespérance S, Anaraki NR, Ashgari S, Churchill A. Systemic challenges and resiliency in rural family practice. Can J Rural Med. 2022 Jul-Sep;27(3):91-8.
5. Greenwood-Ericksen MB, Kocher K. Trends in emergency department use by rural and urban populations in the United States. JAMA Netw Open [Internet]. 2019 Apr 5;2(4):[12 p.]. Available from: https://doi.org/10.1001/jamanetworkopen.2019.1919.
6. Pino-Moya E, Ortega-Moreno M, Gomez-Salgado J, Ruiz-Frutos C. Determining factors for the increase in self-referrals to the emergency department of a rural hospital in Huelva (Spain). PLoS One [Internet]. 2018 Nov 28 [cited 2024 May 16];13(11):[13 p.]. Available from: https://doi.org/10.1371/journal.pone.0207199.

Understanding the use of Delayed Antibiotic Prescriptions in a regional Saskatchewan centre

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ABSTRACT

Background: Delayed antibiotic prescribing (i.e., the provision of a prescription to a patient with instruction to delay filling it until specific criteria are present) is a safe and effective alternative to immediate antibiotics for a number of common family physician presentations and can help to reduce antibiotic overuse. The success of delayed antibiotic prescribing depends on a family physician's ability to educate the patient about this management option.

Question(s): This quality improvement project will provide better understanding as to how effective delayed prescribing is based on how many patients follow the advice of their family physician regarding antibiotic practice. We expect that the knowledge attained from this project will further contribute to safe, effective, patient-centred care.

Methods/Methodology: We will prospectively determining how many individual patients are filling their delayed antibiotic prescriptions from their family physicians, whether the filled prescription was actually taken, and what type of condition the prescription was for. Participating family physicians will distribute enrolment/informational pamphlets to patients/guardians of all ages and genders who receive a delayed antibiotic prescription. The study was approved by the University of Saskatchewan's Behavioural Research Ethics Board (Beh ID 4639).

Results/Findings: We are in the recruitment phase and are awaiting data collection and analysis. The project will run onwards into the 2024-25 academic year. There is a minimum target enrolment of 50 participants with no fixed upper limit.

Discussion: This prospective study will continue to recruit study participants until the minimum target enrolment is reached. One potential confounding variable is that the patients who choose to provide responses may self-select and the observed percentage of delayed antibiotic prescriptions that are filled may be lower than the actual percentage.

Conclusions: The percentage of delayed antibiotic prescriptions that are filled is an understudied area of medicine and it may represent an area for further patient education. To our knowledge there are no studies of this kind that have been conducted in Canada to date and we aim to share our novel findings when available.

Recommendations: Other physicians we would like to include in future iterations of this project include emergency room and walk-in clinic physicians.

References:

1. Davey A, Tapley A, Mulquiney KJ, van Driel M, Fielding A, Holliday E, Davis JS, Glasziou P, Dallas A, Ball J, Spike N, FitzGerald K, Magin P. Immediate and delayed antibiotic prescribing strategies used by Australian early-career GPs: a cross-sectional analysis. Br J Gen Pract. 2021 Nov;71(713):e895-903.
2. Llor C, Moragas A, Cots JM. Implementation of the delayed antibiotic prescribing strategy. Prospective observation study in primary care. Rev Esp Quimioter. 2022 Apr;35(2):213-7.
3. McNulty CA, Lecky DM, Hawking MK, Quigley A, Butler CC. Delayed/back up antibiotic prescriptions: what do the public think? BMJ Open [Internet]. 2015 Nov 27 [cited 2024 May 14];5(11):[7 p.]. Available from: https://doi.org/10.1136/bmjopen-2015-009748.
4. Spurling GK, Del Mar CB, Dooley L, Foxlee R, Farley R. Delayed antibiotic prescriptions for respiratory infections; 2003 Oct 20 [amended 2023 Oct 4; cited 2024 May 14]. In: The Cochrane Database of Systematic Reviews. Hoboken (NJ): John Wiley & Sons, Ltd., c1999-2024. 129K. Available from: https://doi.org/10.1002/14651858. cd004417.pub5. Record No.: CD004417.
5. Stuart B, Hounkpatin H, Becque T, Yao G, Zhu S, Alonso-Coello P, Altiner A, Arroll B, Böhning D, Bostock J, Bucher HC, Chao J, de la Poza M, Francis N, Gillespie D, Hay AD, Kenealy T, Löffler C, McCormick DP, Mas-Dalmau G, Muñoz L, Samuel K, Moore M, Little P. Delayed antibiotic prescribing for respiratory tract infections: individual patient data meta-analysis. BMJ [Internet]. 2021 Apr 28 [cited 2024 May 14];373(1):[16 p.]. Available from: https://doi.org/10.1136/bmj.n808.
6. van Staa TP, Palin V, Brown B, Welfare W, Li Y, Ashcroft DM. The safety of delayed versus immediate antibiotic prescribing for upper respiratory tract infections. Clin Infect Dis. 2021 Jul;73(2):e394-401.

Investigating the uptake and patient satisfaction with virtual STI screening clinics in Student Athletes at the University of Saskatchewan

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ABSTRACT

Background: University students, including athletes, often lack sexual health knowledge, which increases sexually transmitted infection (STI) risk due to high-risk behaviours. Sporting clubs could be effective STI screening recruitment sites. The Virtual Care Playbook supports STI screening through virtual clinics, such as those using videoconferencing or telemedicine, which can overcome testing barriers. Virtual screening, especially if free, may help test high-risk populations. Telephone screening for HIV risk has identified at-risk individuals.

Question(s): Does the implementation of virtual STI clinics for University of Saskatchewan athletes lead to patient uptake, high patient satisfaction, and a reduction in barriers to STI testing?

Methods/Methodology: A virtual STI clinic was offered via email recruitment to student athletes at the University of Saskatchewan. Led by a sports and exercise physician and three family medicine residents, the clinic offered screening via phone using standard protocols, with limited continuity of care. Clinic uptake, patient satisfaction, and barriers to STI screening were to be evaluated using surveys and electronic medical record data. This study was approved by the University of Saskatchewan's Biomedical Research Ethics Board (Bio ID 4523) and received Operational Approval from the Saskatchewan Health Authority.

Results/Findings: Seven clinic dates were offered to athletes between February 26 and March 6, 2024. No student athletes attended the virtual STI clinic.

Discussion: Results showed zero uptake by University of Saskatchewan athletes, potentially indicating a lack of appeal. Factors such as timing of clinic bookings and limited advertisement may have contributed. Athletes may have been reluctant to discuss personal health especially STIs with unfamiliar individuals. Further investigation and strategies are needed to enhance acceptability and accessibility of virtual STI clinics for this demographic.

Conclusions: There was no uptake of virtual STI clinics among University of Saskatchewan athletes, suggesting a need for improved engagement strategies. Tailoring virtual healthcare services to meet specific needs is crucial, highlighting the need for further research and intervention.

References:

1. Grossbard JR, Lee CM, Neighbors C, Hendershot CS, Larimer ME. Alcohol and risky sex in athletes and nonathletes: what roles do sex motives play? J Stud Alcohol Drugs. 2007 Jul;68(4):566-74.
2. Scholly K, Katz AR, Cole D, Heck RH. Factors associated with adverse sexual outcomes among college students. Am J Health Stud. 2010 Dec;(4):176-85.
3. Mercer CH, Fuller SS, Saunders JM, Muniina P, Copas AJ, Hart GJ, Sutcliffe LJ, Johnson AM, Cassell JA, Estcourt CS. Examining the potential public health benefit of offering STI testing to men in amateur football clubs: evidence from cross-sectional surveys. BMC Public Health [Internet]. 2015 Jul 17 [cited 2024 May 17];15(1):[6 p.]. Available from: https://doi.org/10.1186/s12889-015-1951-7.
4. Dermer M. Virtual care playbook [Internet]. Ottawa (ON): Canadian Medical Association; College of Family Physicians of Canada; Royal College of Physicians and Surgeons of Canada; 2021 Sep [updated 2022 Sep; cited 2024 May 17]. 16 p. Available from: https://www.cma.ca/sites/default/files/pdf/Virtual-Care-Playbook_mar2020_E.pdf.
5. Chai SJ, Aumakhan B, Barnes M, Jett-Goheen M, Quinn N, Agreda P, Whittle P, Hogan T, Jenkins WD, Rietmeijer CA, Gaydos CA. Internet-based screening for sexually transmitted infections to reach nonclinic populations in the community: risk factors for infection in men. Sex Transm Dis. 2010 Dec;37(12):756-63.
6. Lorimer K, McDaid L. Young men's views toward the barriers and facilitators of internet-based chlamydia trachomatis screening: qualitative study. J Med Internet Res [Internet]. 2013 Dec 3 [cited 2024 May 17];15(12):[11 p.]. Available from: https://doi.org/10.2196/jmir.2628.
7. Gasmelsid N, Moran BC, Nadarzynski T, Patel R, Foley E. Does online sexually transmitted infection screening compromise care? A service evaluation comparing the management of chlamydial infection diagnosed online and in clinic. Int J STD AIDS. 2021 May;32(6):528-32.
8. Montgomery K, Lewis CE, Kirchgraber P. Telephone screening for risk of HIV infection. Med Care. 1991 May;29(5):399-407.
9. Brown L, Copas A, Stephenson J, Gilleran G, Ross JD. Preferred options for receiving sexual health screening results: a population and patient survey. Int J STD AIDS. 2008 Mar;19(3):184-7.
10. Parmanto B, Lewis Jr AN, Graham KM, Bertolet MH. Development of the telehealth usability questionnaire (TUQ). Int J Telerehabil. 2016 Jul;8(1):3-10.

A Review of Current Telemedicine Applications for Intraoperative Surgical Consultation

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ABSTRACT

Background: Maintaining access to local maternity and surgical services is challenging in rural Canada; however, enhanced surgical and obstetrical skill programs exist to train rural practitioners in a broad range of surgical competencies. Within their communities these practitioners face challenges, including low procedural frequency and volume. Having outside surgical specialist support is important for maintaining the sustainability of rural surgical programs. Telemedicine has been applied to support other areas of rural health care including rural critical care, emergency medicine and obstetrics. Using various platforms, specialists provide real-time virtual support to rural practitioners and their teams.

Question(s): What are the current telemedicine applications for providing remote intraoperative surgical consultations?

Methods/Methodology: A systematic search of the literature was conducted in early November 2023 in PubMed. A total of 226 articles were identified, with abstracts screened by two reviewers independently. Seven articles met the inclusion and exclusion criteria. Each reviewer then conducted a full-text review of eligible articles using a data extraction template to make a narrative account of the findings. An additional 10 articles, which did not meet the full inclusion criteria, were felt to be relevant to the study question and were included in the discussion.

Results/Findings: Five full-text articles were included in the final review. These were mainly pilot studies and case reports. The surgical specialities included general surgery, urology, thoracic surgery, neurosurgery, and gynecology. Most utilized pre and post-op surveys of both surgeon and remote mentor to assess the efficacy of tele-mentoring.

Discussion: The application of telemedicine for real time intraoperative specialist consultation appears to be safe and beneficial to rural practitioners. Our search identified additional studies investigating the application of tele-mentoring in surgical training programs. These also demonstrated a benefit in shortening learning curves for trainees and could be applicable locally.

Conclusions: There appears to be a benefit to the application of telemedicine for intraoperative consultation.

Recommendations: Future high-quality studies are needed to demonstrate measurable benefit, address barriers to adoption, and to show the precise role telemedicine can play in continuing surgical education after training and as an adjunct to rural surgical programs.

References:

1. Aminoff H, Meijer S, Groth K, Arnelo U. User experience in remote surgical consultation: survey study of user acceptance and satisfaction in real-time use of a telemedicine service. JMIR Hum Factors [Internet]. 2021 Nov 30 [cited 2024 may 21];8(4):[14 p.]. Available from: https://doi.org/10.2196/30867.
2. Antoniou SA, Antoniou GA, Franzen J, Bollmann S, Koch OO, Pointner R, Granderath FA. A comprehensive review of telementoring applications in laparoscopic general surgery. Surg Endosc. 2012 Aug;26(8):2111-6.
3. Anvari M. Telesurgery: remote knowledge translation in clinical surgery. World J Surg. 2007 Aug;31(8):1545-50.
4. Augestad KM, Han H, Paige J, Ponsky T, Schlachta CM, Dunkin B, Mellinger J. Educational implications for surgical telementoring: a current review with recommendations for future practice, policy, and research. Surg Endosc. 2017 Oct;31(10):3836-46.
5. Davis MC, Can DD, Pindrik J, Rocque BG, Johnston JM. Virtual interactive presence in global surgical education: international collaboration through augmented reality. World Neurosurg. 2016;86(1):103-11.
6. DeBakey ME. Telemedicine has now come of age. Telemed. 2009 Jan;1(1):3–4.
7. Erridge S, Yeung DKT, Patel HRH, Purkayastha S. Telementoring of surgeons: a systematic review. Surg Innov. 2019 Feb;26(1):95-111.
8. Faris H, Harfouche C, Bandle J, Wisbach G. Surgical tele-mentoring using a robotic platform: initial experience in a military institution. Surg Endosc. 2023 Dec;37(12):9159-66.
9. Gambadauro P, Magos A. NEST (network enhanced surgical training): a PC-based system for telementoring in gynaecological surgery. Eur J Obstet Gynecol Reprod Biol. 2008 Aug;139(2):222–5.
10. Glenn IC, Bruns NE, Hayek D, Hughes T. Rural surgeons would embrace surgical telementoring for help with difficult cases and acquisition of new skills. Surg Endosc. 2017 Mar;31(3):1264-8.
11. Kornelsen J, Geller B, Janke F, Iglesias S. Learners' experiences of an enhanced surgical skills training program for family physicians. Can Med Educ J. 2018 Nov;9(4):e46-58.
12. Kornelsen J, Lin S, Williams K, Skinner T, Ebert S. System interventions to support rural access to maternity care: an analysis of the rural surgical obstetrical networks program. BMC Pregnancy Childbirth [Internet]. 2023 Aug 29 [cited 2024 May 21];23(1):[13 p.]. Available from: https://doi.org/10.1186/s12884-023-05898-7.
13. Laudari U, Pradhan R, Shrestha D, Bhandari S, Thapa PB. Feasibility of telementoring as an intraoperative time-out tool during laparoscopic cholecystectomy for prevention of biliovascular injuries. J Nepal Health Res Counc. 2022 Mar;20(56):816-9.
14. Ponce BA, Jennings JK, Clay TB, May MB, Huisingh C, Sheppard ED. Telementoring: use of augmented reality in orthopaedic education: AAOS exhibit selection. J Bone Joint Surg Am. 2014 May;96(10):e84.

15. Raborn LN, Janis JE. Overcoming the impact of COVID-19 on surgical mentorship: a scoping review of long-distance mentorship in surgery. J Surg Educ. 2021 Nov-Dec;78(6):1948-64.
16. Rural Coordination Centre of British Columbia [Internet]. Vancouver (BC): RCCBC; c2024. Real-time virtual support; [cited 2024 May 21];[about 11 screens]. Available from: https://rccbc.ca/initiatives/rtvs/.
17. Schlachta CM, Lefebvre KL, Sorsdahl AK, Jayaraman S. Mentoring and telementoring leads to effective incorporation of laparoscopic colon surgery. Surg Endosc. 2010 Apr;24(4):841-4.