

Calming the COVID-19 Storm With Socio-Clinical Interventions

Kristin Pon^{1,2}, Saugata Chakraborty³, Annalee Coakley^{2,4}, Adam Vyse⁵, Turin Chowdhury^{1,2}
¹University of Calgary Dept. Community Health Sciences, ²University of Calgary Dept. Family Medicine, ³Alberta Health Services, ⁴Mosaic Primary Care Network, ⁵Calgary Rural Primary Care Network

Background: COVID-19 Outbreak and Impact

Cargill meat-packing plant located in High River, AB was the site of the largest workplace outbreak in North America during the first wave of the pandemic.

- **936/2000 employees** tested positive
- **1560 total cases** linked to the outbreak
- Socioeconomic risk factors played a large role in transmission

Profile of Employees Who Were Impacted

- Temporary Foreign workers
- Newly arrived immigrants
- Refugees
- Low Income Earners
- English as a Second Language
- Job insecurity

Same COVID-19 Storm but Different Socioeconomic Boats

Figure 2. Overview of Canada's epidemic with selected key milestones (December 2019 to August 2020)

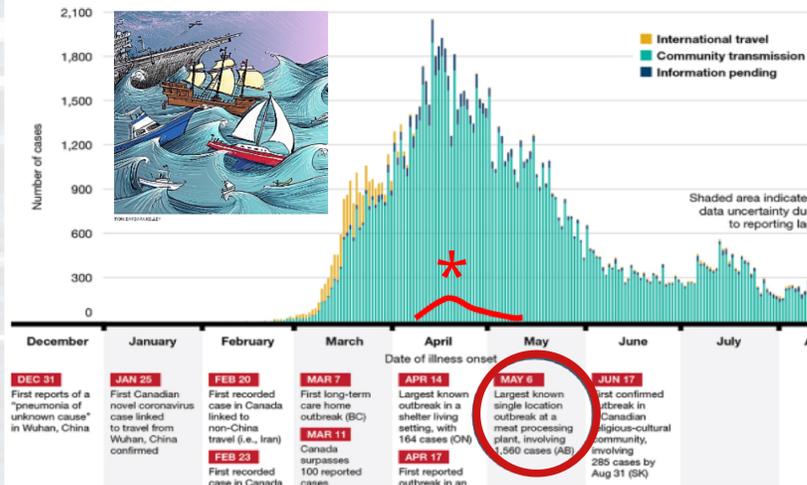


Fig. 1 COVID-19 incidence in Canada from February to July 2020. Cases related to the Cargill outbreak are represented in red.

source: health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html

Weathering The Storm: Primary Care Response

Primary Care Networks (PCNs) were instrumental in detecting the outbreak and rapidly responding by:

- organizing COVID testing sites
- referring to community agencies for social supports
- managing COVID patients in the community
- preventing calls to Health Link and emergency department visits

Community Agency Response

Supported **2163 households** over the course of months to address needs related to:

- COVID-19 (**26%**) & isolation (**29%**)
- Underlying medical conditions (**15%**)
- Unemployment, reduced income (**30%**)
- Family violence (**5%**)

PCNs and community agencies collaborated in new ways to meet the patients' medical and social needs



COVID (+) employees managed in the community



Employees offered social support



Languages identified

Objectives

- Evaluate and improve service delivery
 - Goal: patient-centered, efficient & effective
- Improve connections between community, primary

Methods

Recruitment through community-based methods:

- Patient advisors from ethno-cultural groups (also involved in planning & recruitment)
- Town halls
- Online platforms
- Snowball sampling

Qualitative data collection:

- Semi-structured interviews with first language translation
- Thematic analysis for pain points & gain points

Results

Data collection in progress. Preliminary pain points from initial scoping interviews with providers revealed a need for improved role clarity and data sharing.

We plan to collect:

- 40 Patient interviews
- 40 Provider interviews
- Stop collection if saturation is reached

Future Work

The COVID-19 outbreak at Cargill meat-packing plant in High River was a catalyst for primary care and the social sector to collaborate like never before. At this time, these new relationships between primary care and the social sector are being leveraged for the roll out of the COVID-19 vaccine.

We hope to improve and strengthen these relationships for the future not only to respond to future outbreaks, but also to improve the overall health and well-being of our communities.



Fig. 2 Project Timeline

Community Agency and PCN Collaborators



Special thanks to Edna Ramirez Cerino, Mussie Yemane, Adanech Sahilie, and Michael Youssef for their contributions

The Efficacy of Journaling in the Management of Mental Illness

A Systematic Review and Meta-Analysis

Monika Sohal | P.I: Dr. Harbir Singh Gill

Author list: Monika Sohal, Pavneet Singh (PhD), Bhupinder Dhillon (MD), Gursharan Dhillon P.I: Dr. Harbir Singh Gill



UNIVERSITY OF CALGARY
CUMMING SCHOOL OF MEDICINE

Rationale

- Journaling is a widely used tool in many forms of non-pharmacological mental health therapy.
- Family physicians are commonly the first line of access for mental health support yet receive minimal formal training on mental health therapy.
- Significant data exists on this modality, but limited efforts to systematically review it in a Canadian context.

Objective

- To perform a meta-analysis assessing the efficacy of journaling as an intervention for improving mental health outcomes.
- To inform primary care clinicians regarding the current state of the literature and strength of recommendations on utilizing journaling as an intervention.

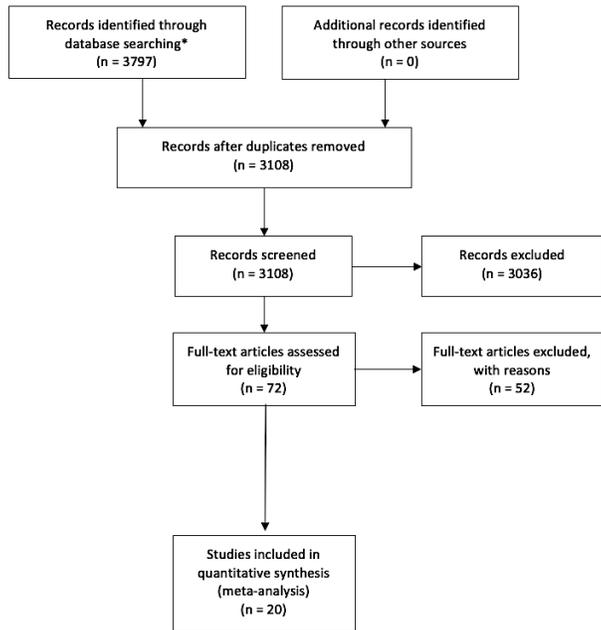
Methods

Identification

Screening

Eligibility

Included

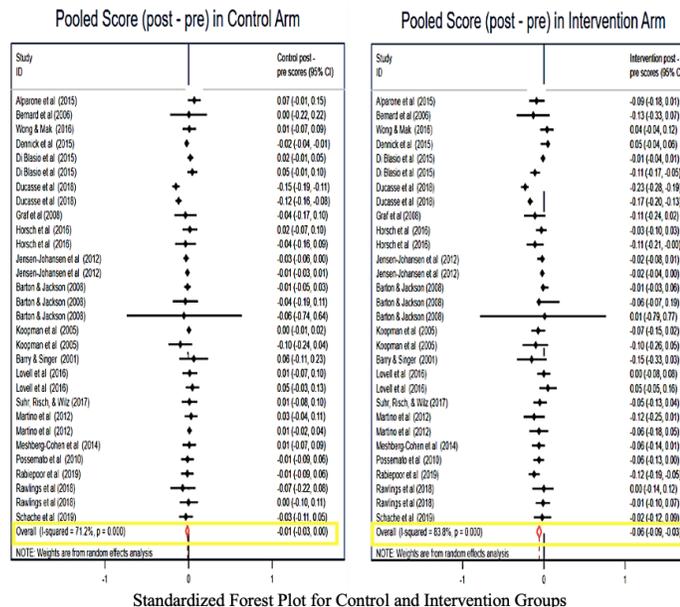
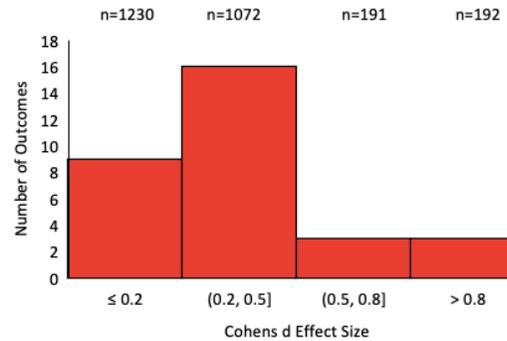


Methods (continued)

Inclusion Criteria	Exclusion Criteria
Peer reviewed	Studies which examined the effect of multiple types of journaling
Randomized control trials	Studies with insufficient or missing data which was required to perform a meta-analysis
Studied the impact of a journaling intervention on mental illness	Studies which examined the effects of a journaling intervention on well-being only

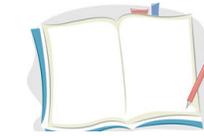
*Search terms: journaling, gratitude, reflective journal, journal writing, reflective practice, expressive writing, written emotional discourse AND depression, depress, self-injurious behaviors', substance-related disorders, addictions, anxiety/anxiety disorders, mental health, stress disorders/post-traumatic, mental disorders, trauma, chronic pain
*Databases used: MEDLINE, EMBASE, PsycInfo

Results



Results (continued)

- 20 peer-reviewed, randomized control trials (31 outcomes) (MEDLINE, EMBASE, PsycInfo) met inclusion criteria.
- Studies addressed the impact of a journaling intervention on PTSD, other anxiety disorders, depression or a combination of the aforementioned.
- Data is highly heterogenous with the control arm having an I² of 71.2% and the intervention arm having an I² of 83.8%. SORT = B-level recommendation.
- Effect size analysis of studies suggest an overall small to moderate benefit.
- There is a significant difference between control (-0.01, CI: {-0.03-0.00}) and intervention arms (-0.06, CI: {-0.09 - -0.03}). This 5% difference between groups indicates that a journaling intervention resulted in a greater reduction in scores on patient health measures when compared to the control arm. It is unlikely this reaches clinical significance. However, it is suggestive that journaling is an effective tool in the management of mental illness.



Limitations

- Heterogeneous and low-quality data (SORT = B-level recommendation)
- Lack of standardized protocols across studies (e.g., all studies implemented variable durations of journaling)

Key Conclusions

- Journaling, is overall an effective tool in the treatment of mental illness
- Journaling as an intervention, is low risk, cost efficient and builds self-efficacy

Future Directions

- Higher quality RCTs needed, particularly with comparison of journaling to medications
- Studies should be conducted in a family physician context with a model similar to "exercise as a prescription"

References

- ◆ Alparone, F. R., Pagliaro, S., & Rizzo, I. (2015). The words to tell their own pain: Linguistic markers of cognitive reappraisal in mediating benefits of expressive writing. *Journal of Social and Clinical Psychology, 34*(6), 495–507. <https://doi.org/10.1521/jscp.2015.34.6.495>
- ◆ Barry, L. M., & Singer, G. H. S. (2001). Reducing Maternal Psychological Distress After the NICU Experience Through Journal Writing. *Journal of Early Intervention, 24*(4), 287–297. <https://doi.org/10.1177/105381510102400404>
- ◆ Barton, K., & Jackson, C. (2008). Impact of Writing About Caregiving Experiences. *Australian and New Zealand Journal of Psychiatry, 42*, 693–701.
- ◆ Bernard, M., Jackson, C., & Jones, C. (2006). Written emotional disclosure following first-episode psychosis: Effects on symptoms of post-traumatic stress disorder. *British Journal of Clinical Psychology, 45*(3), 403–415. <https://doi.org/10.1348/014466505X68933>
- ◆ Ebell, Mark H, Siwek, Jay, Weiss, Barry D, Woolf, Steven H, Susman, Jeffrey, Ewigman, Bernard, & Bowman, Marjorie. (2004). Strength of recommendation taxonomy (SORT) – a patient-centered approach to grading evidence in the medical literature. *American Family Physician, 69*(3), 548–567. <https://doi.org/10.3122/jabfm.17.1.59>
- ◆ Cipriani, A., Furukawa, T. A., Salanti, G., Chaimani, A., Atkinson, L. Z., Ogawa, Y., ... & Egger, M. (2018). Comparative efficacy and acceptability of 21 antidepressant drugs for the acute treatment of adults with major depressive disorder – a systematic review and network meta-analysis. *Focus, 16*(4), 420–429.
- ◆ Dennick, K., Bridle, C., & Sturt, J. (2015). Written emotional disclosure for adults with Type 2 diabetes: a primary care feasibility study. *Primary Health Care Research & Development, 16*(2), 179–187. <https://doi.org/10.1017/S1463423614000188>
- ◆ Di Blasio, P., Camisasca, E., Caravita, S. C. S., Ionio, C., Milani, L., & Valtolina, G. G. (2015). The effects of expressive writing on postpartum depression and posttraumatic stress symptoms. *Psychological Reports, 117*(3), 856–882. <https://doi.org/10.2466/02.13.PRO.117c.2973>
- ◆ Ducasse, D., Dassa, D., Courtet, P., Brand-Arpon, V., Walter, A., Guillaume, S., ... Olié, E. (2019). Gratitude diary for the management of suicidal inpatients: A randomized controlled trial. *Depression and Anxiety, 36*(5), 400–411. <https://doi.org/10.1002/da.22877>
- ◆ Fournier JC, DeRubeis RJ, Hollon SD, et al. Antidepressant Drug Effects and Depression Severity: A Patient-Level Meta-analysis. *JAMA. 2010*;303(1):47–53. doi:10.1001/jama.2009.1943
- ◆ Hayman, B., Wilkes, L., & Jackson, D. (2012). Journaling: Identification of challenges and reflection on strategies. *Nurse researcher, 19*(3).
- ◆ Horsch, A., Tolsa, J. F., Gilbert, L., du Chêne, L. J., Müller-Nix, C., & Graz, M. B. (2016). Improving Maternal Mental Health Following Preterm Birth Using an Expressive Writing Intervention: A Randomized Controlled Trial. *Child Psychiatry and Human Development, 47*(5), 780–791. <https://doi.org/10.1007/s10578-015-0611-6>
- ◆ Hubbs, D.L., & Brand, C.F. (2005). The Paper Mirror: Understanding Reflective Journaling. *Journal of Experiential Education, 28*, 60 – 71.
- ◆ Jensen-Johansen, M. B., Christensen, S., Valdimarsdottir, H., Zakowski, S., Jensen, A. B., Bovbjerg, D. H., & Zachariae, R. (2013). Effects of an expressive writing intervention on cancer-related distress in Danish breast cancer survivors – Results from a nationwide randomized clinical trial. *Psycho-Oncology, 22*(7), 1492–1500. <https://doi.org/10.1002/pon.3193>
- ◆ Koopman, C., Ismailji, T., Holmes, D., Classen, C. C., Palesh, O., & Wales, T. (2005). The effects of expressive writing on pain, depression and posttraumatic stress disorder symptoms in survivors of intimate partner violence. *Journal of Health Psychology, 10*(2), 211–221. <https://doi.org/10.1177/1359105305049769>
- ◆ Lerner, A. J. (2014). Effect Size (Cohen's d) of Cognitive Screening Instruments Examined in Pragmatic Diagnostic Accuracy Studies. *Dementia and Geriatric Cognitive Disorders Extra. https://doi.org/10.1159/000363735*
- ◆ Lim, K. L., Jacobs, P., Ohinmaa, A., Schopflocher, D., & Dewa, C. S. (2008). A new population-based measure of the economic burden of mental illness in Canada. *Chronic diseases in Canada, 28*(3), 92–98.
- ◆ Lovell, B., Moss, M., & Wetherell, M. A. (2016). Assessing the feasibility and efficacy of written benefit-finding for caregivers of children with autism: A pilot study. *Journal of Family Studies, 22*(1), 32–42. <https://doi.org/10.1080/13229400.2015.1020987>
- ◆ Martino, M. L., Freda, M. F., & Camera, F. (2013). Effects of Guided Written Disclosure Protocol on mood states and psychological symptoms among parents of off-therapy acute lymphoblastic leukemia children. *Journal of Health Psychology, 18*(6), 727–736. <https://doi.org/10.1177/1359105312462434>
- ◆ Meshberg-Cohen, S., Svikis, D., & McMahon, T. J. (2014). Expressive Writing as a Therapeutic Process for Drug-Dependent Women. *Substance Abuse, 35*(1), 80–88. <https://doi.org/10.1080/08897077.2013.805181>
- ◆ Pennebaker, J. W., & Chung, C. K. (2011). Expressive writing and its links to mental and physical health. *The Oxford Handbook of Health Psychology.*
- ◆ Phipps, J. J. (2005). E-journaling: Achieving interactive education online. *Educuse Quarterly, 28*(1), 62–65.
- ◆ Possemato, K., Ouimette, P., & Geller, P. A. (2010). Internet-based expressive writing for kidney transplant recipients: Effects on posttraumatic stress and quality of life. *Traumatology, 16*(1), 49–54. <https://doi.org/10.1177/1534765609347545>
- ◆ Rabiepoor, S., Vatanikhah-Alamdary, N., & Khalkhali, H. R. (2019). The Effect of Expressive Writing on Postpartum Depression and Stress of Mothers with a Preterm Infant in NICU. *Journal of Clinical Psychology in Medical Settings, (0123456789).* <https://doi.org/10.1007/s10880-019-09688-2>
- ◆ Rawlings, G. H., Brown, I., Stone, B., & Reuber, M. (2018). A pilot randomised controlled trial of a home-based writing intervention for individuals with seizures. *Psychology and Health, 33*(9), 1151–1171. <https://doi.org/10.1080/08870446.2018.1478974>
- ◆ Schache, K. R., Hofman, P. L., & Serlachius, A. S. (2020). A pilot randomized controlled trial of a gratitude intervention for adolescents with Type 1 diabetes. *Diabetic Medicine, 37*(8), 1352–1356. <https://doi.org/10.1111/dme.14078>
- ◆ Smetanin, P., Stiff, D., Adair, C. E., Ahmad, S., & Khan, M. (2011). The life and economic impact of major mental illnesses in Canada: 2011 to 2041. *RiskAnalytica, on Behalf of the Mental Health Commission of Canada 2011.*
- ◆ Steenkamp, M. M., Litz, B. T., Hoge, C. W., & Marmar, C. R. (2015). Psychotherapy for Military-Related PTSD. *JAMA. https://doi.org/10.1001/jama.2015.8370*
- ◆ Suhr, M., Risch, A. K., & Wilz, G. (2017). Maintaining Mental Health Through Positive Writing: Effects of a Resource Diary on Depression and Emotion Regulation. *Journal of Clinical Psychology, 73*(12), 1586–1598. <https://doi.org/10.1002/jclp.22463>
- ◆ Ullrich, P. M., & Lutgendorf, S. K. (2002). Journaling about stressful events: Effects of cognitive processing and emotional expression. *Annals of Behavioral Medicine, 24*(3), 244–250. https://doi.org/10.1207/S15324796ABM2403_10
- ◆ Waters, L. (2011). A review of school-based positive psychology interventions. *Australian Educational and Developmental Psychologist. https://doi.org/10.1375/aedp.28.2.75*
- ◆ Wong, C. C. Y., & Mak, W. W. S. (2016). Writing can heal: Effects of self-compassion writing among Hong Kong Chinese college students. *Asian American Journal of Psychology, 7*(1), 74–82. <https://doi.org/10.1037/aap0000041>
- ◆ Wong, Y. J., Owen, J., Gabana, N. T., Brown, J. W., McInnis, S., Toth, P., & Gilman, L. (2018). Does gratitude writing improve the mental health of psychotherapy clients? Evidence from a randomized controlled trial. *Psychotherapy Research, 28*(2), 192–202
- ◆ Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review. https://doi.org/10.1016/j.cpr.2010.03.005*
- ◆ Wang, J., Langille, D. B., & Patten, S. B. (2003). Mental Health Services Received by Depressed Persons Who Visited General Practitioners and Family Doctors. *Psychiatric Services, 54*(6), 878–883. <https://doi.org/10.1176/appi.ps.54.6.878>

INTRODUCTION

BACKGROUND

- Canadian rural communities play an essential role in the training of urban-based Family Medicine (UBFM) postgraduate learners.
- The original intent of rural rotations was to influence practice location in the UBFM resident.

BUT...

- As urban programs have grown, there has been increased pressure on rural preceptors to accommodate these learners.
- The outcome of “practice location” has remained the primary measure of success in the evaluation of the rural training experience. We do not know the impact on teaching rural physicians.

RESEARCH QUESTION

- In what ways do rural rotations of urban-based postgraduate family medicine (UBFM) residents impact the rural preceptor?

METHODS

PARTICIPANTS

- The University of Calgary Department of Family Medicine teaching preceptor data base was used to identify potential participants.
- Demographic data was collected including:
 - duration of teaching appointment,
 - the preceptor’s own FM training location (rural/urban),
 - location of practice and,
 - the scope of practice in their community.

SURVEY

- Online survey designed and vetted by practicing rural preceptors collected quantitative and free-text data.
- Communities were categorized by size as well as scope of practice.
- Impact rated on a 5-point Likert scale (significantly negative to significantly positive) across three domains: personal, professional, and financial.

RESULTS

DEMOGRAPHICS

- 46% response rate with 28 of 61 physicians; mostly male (75%).
- Largest age category was between ages 31-40 (39%).
- Majority in practice for more than 10 years (61%).
- 61% had less than 10 years of experience specifically teaching UBFM.
- 64% attended faculty development events, usually irregularly.

RATING OF IMPACT

- No statistically significant differences for participant age, gender, and community size.
- Preceptors graduating from rural residency training more likely to rate impacts negatively.

PERSONAL

- Majority of benefits are intrinsic with some extrinsic:
 - *“I continuously learn new things when I have residents”*
 - *“At urgent care they help significantly with ED flow”*
- An emotional toll apparent on preceptors when they are asked to supervise learners who have little intention of rural practice:
- Majority of benefits are intrinsic with some extrinsic:
 - *“tiring”, “disappointed”, “fatiguing”, “frustrating”, “resentment”*

PROFESSIONAL

- UBFM residents may have fewer clinical skills than expected, thus requiring more supervision.
- Patient-resident interactions cause additional stress for supervisor.

FINANCIAL

- No reported significant overall impact on finances.

FACULTY DEVELOPMENT

- Preceptors do not link their own teaching skill to the experience of having an UBFM learner.
 - *“The issue is not faculty development, [it] is getting them more up to speed before they get to us”*

COUNTER BALANCING PERSPECTIVES

- Respondents sometimes mentioned one positive or negative impact that was immediately followed by a contrasting statement:
 - *“longer days, occasionally dealing with unprofessional behaviours along with better job satisfaction and ability to accommodate more appointments to service our panel.”*

DISCUSSION

- Overall, the impact of the UBFM resident was positive within personal and professional spheres; negative impacts are often offset.
- Personal/Professional impacts outweighed neutral financial impact
- Personal residency experience of the preceptors may contribute to expectations of incoming learners.
- With program growth, the purpose of rural rotations may have moved from recruitment to the teaching of core procedural and clinical skills.
- Given the generalist tradition of rural medicine, learners may arrive with the needed theoretical knowledge but without the clinical experience to perform the required skills.
- Preceptor satisfaction with growth in their residents highlights the importance of:
 - the quality of teaching relationship and,
 - longitudinality in learning experiences.

UNEXPECTED RESULTS

- The duration in practice and the duration of teaching did not significantly impact the perceptions of these teaching physicians.
- A suggested role of Faculty Development is to inform the preceptor of the urban program structure.
 - *“Know limitations of urban program in providing independence and experience”*

CONCLUSION

- Rural preceptors describe intrinsic rewards as well as the emotional stress and frustration related to working with some residents.
- Financial impact was reported as neutral across the respondents.
- Rural training location of the rural preceptor was significantly linked to negative perception of the UBFM learner.
- Potential disconnect between expectations of the rural rotation for the preceptor and the UBFM resident may fuel discontent.





Aim

- To evaluate a care model developed in response to the first wave of COVID-19 in Alberta, Canada
- To describe the facilitation of patient attachment to Primary Care Network (PCN) or family physician and primary care follow-up
- To inform model refinement for mobilization and up-scaling in response to future wave

Background

The last 20 years have seen increasing interest in Primary Care (PC) integration. Connecting family physicians with their counterparts in the broader health system to deliver wraparound patient care has become a major aim. The first wave of COVID-19 in Calgary, Alberta, Canada accelerated achievement of this goal, giving rise to the COVID-19 Integrated Pathway (CIP). Calgary and Rural Primary Care Networks (PCNs) led rapid and unprecedented collaboration between PC, acute care, and Alberta's Public Health systems. Prior to CIP, family physicians were unaware of their patients' COVID status and did not provide follow-up.

Method

Study Design: Mixed quantitative and qualitative study.
Setting: Communities and PCNs in Calgary and surrounding areas
Intervention: The CIP has 2 components: the Information Pathway and the Clinical Pathway
 CIP integrates PCNs, acute care specialists, and Alberta's Public Health and HealthLink telephone referral systems to provide follow-up and social work referral, as well as attach patients to medical homes for continuity of care

Outcome Measures

Quantitative objectives:

- To characterize patients cared for via the CIP by age, sex, ethnicity, and risk-level
- To quantify the proportion of patients without a family physician who were attached to a medical home via the CIP
- To quantify the number of patients followed by their physicians in community, and the number of specialist consultations made by family physicians to support care

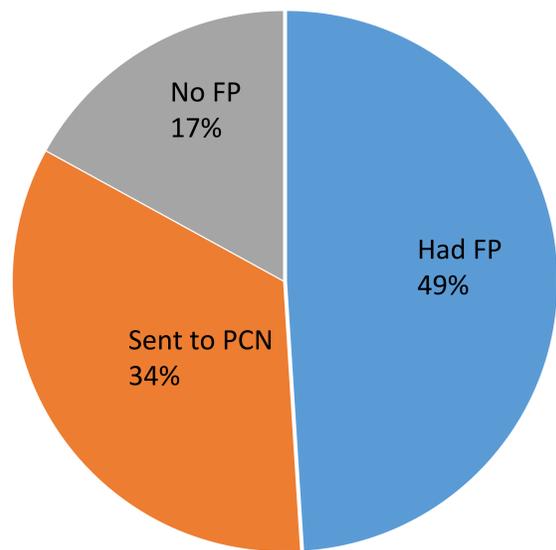
Qualitative objectives:

- Qualitative exploration of patient experience
- Quality and timing of relationships and communication flows
- Public Health, HealthLink, and PCN perceptions of workload, role clarity, system efficiency

Preliminary Findings

- Between April 16 to September 27, 2020, 7753 patients were referred by public health to C4 (Calgary COVID-19 Care Clinic- a designated hub clinic for COVID19 patients during pandemic)
- Majority of patients had a follow up by C4 clinic using Clinical pathway (CIP)
- 3832 patients had a family physician (FP)
- 2617 patients were sent directly to PCN
- 1305 patients had no FP
- 1899 of these patients were monitored by C4 physicians – either did not have FP or their FP were not available to follow their patient

Family Physician attachment status at referral from Public Health



Discussion

- CIP has a potential to increase attachment to medical homes or reconnection to family physician, especially for patients at risk of poor outcomes (i.e. patients who are older, live alone, or have multiple co-morbidities, etc.)
- Improves bidirectional information flow between CIP partners
- This project will evaluate the CIP for potential scale to other parts of Alberta and Canada



Aim

- To evaluate a care model developed in response to the first wave of COVID-19 in Alberta, Canada
- To describe the facilitation of patient attachment to Primary Care Network (PCN) or family physician and primary care follow-up
- To inform model refinement for mobilization and up-scaling in response to future wave

Background

The last 20 years have seen increasing interest in Primary Care (PC) integration. Connecting family physicians with their counterparts in the broader health system to deliver wraparound patient care has become a major aim. The first wave of COVID-19 in Calgary, Alberta, Canada accelerated achievement of this goal, giving rise to the COVID-19 Integrated Pathway (CIP). Calgary and Rural Primary Care Networks (PCNs) led rapid and unprecedented collaboration between PC, acute care, and Alberta's Public Health systems. Prior to CIP, family physicians were unaware of their patients' COVID status and did not provide follow-up.

Method

Study Design: Mixed quantitative and qualitative study.
Setting: Communities and PCNs in Calgary and surrounding areas
Intervention: The CIP has 2 components: the Information Pathway and the Clinical Pathway
 CIP integrates PCNs, acute care specialists, and Alberta's Public Health and HealthLink telephone referral systems to provide follow-up and social work referral, as well as attach patients to medical homes for continuity of care

Outcome Measures

Quantitative objectives:

- To characterize patients cared for via the CIP by age, sex, ethnicity, and risk-level
- To quantify the proportion of patients without a family physician who were attached to a medical home via the CIP
- To quantify the number of patients followed by their physicians in community, and the number of specialist consultations made by family physicians to support care

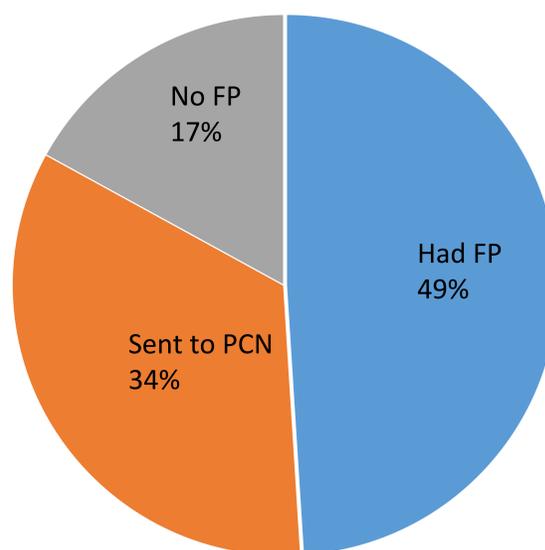
Qualitative objectives:

- Qualitative exploration of patient experience
- Quality and timing of relationships and communication flows
- Public Health, HealthLink, and PCN perceptions of workload, role clarity, system efficiency

Preliminary Findings

- Between April 16 to September 27, 2020, 7753 patients were referred by public health to C4 (Calgary COVID-19 Care Clinic- a designated hub clinic for COVID19 patients during pandemic)
- Majority of patients had a follow up by C4 clinic using Clinical pathway (CIP)
- 3832 patients had a family physician (FP)
- 2617 patients were sent directly to PCN
- 1305 patients had no FP
- 1899 of these patients were monitored by C4 physicians – either did not have FP or their FP were not available to follow their patient

Family Physician attachment status at referral from Public Health



Discussion

- CIP has a potential to increase attachment to medical homes or reconnection to family physician, especially for patients at risk of poor outcomes (i.e. patients who are older, live alone, or have multiple co-morbidities, etc.)
- Improves bidirectional information flow between CIP partners
- This project will evaluate the CIP for potential scale to other parts of Alberta and Canada

Antihypertensive Deprescribing in long-term Care (ADCare): Protocol for a Randomized Controlled Trial

Roni Kraut MD, Cheryl Sadowski PharmD, Jeff Bakal PhD, Donna Manca MD, Douglas Faulder MD, Dean Eurich PhD, Oksana Babenko PhD, Margaret Manville MD, Carina Lundby Olesen PhD, Paul Kivi MD, Scott Garrison MD PhD

Results: primary outcomes

Context and Objective

- Studies suggest deprescribing antihypertensive medication (AH) in frail older adults is beneficial
- RCTs are needed to confirm this finding

Objective: Determine if deprescribing AH in frail older adults will lead to a change in time to all cause mortality compared to those whose AH is not deprescribed.

Design

- Randomized controlled
- Open label
- Parallel group
- Event driven

Participants: Alberta long-term care residents with hypertension on AH

Timing:

- Year 1: deprescribe AH
- Year 2-3: monitor outcomes, trial will end when 247 events (deaths) occur

Outcomes

Primary: all cause mortality

Secondary: hospital/emergency visit, non vertebral fracture and cost

Process: AH and blood pressure changes

Exploratory: falls, cognition, depression & activities of daily living

Safety: composite of emergency, hospital & physician callbacks with specific diagnoses

Innovative

- ★ RCT on deprescribing AH in the frail older adult population
- ★ Data steward – Alberta Health Services Research Data Services - will select, randomize and assess outcomes using administrative data
- ★ Facility pharmacist will lead the deprescribing
- ★ Creation of an AH deprescribing algorithm

Trial process

Intervention group:

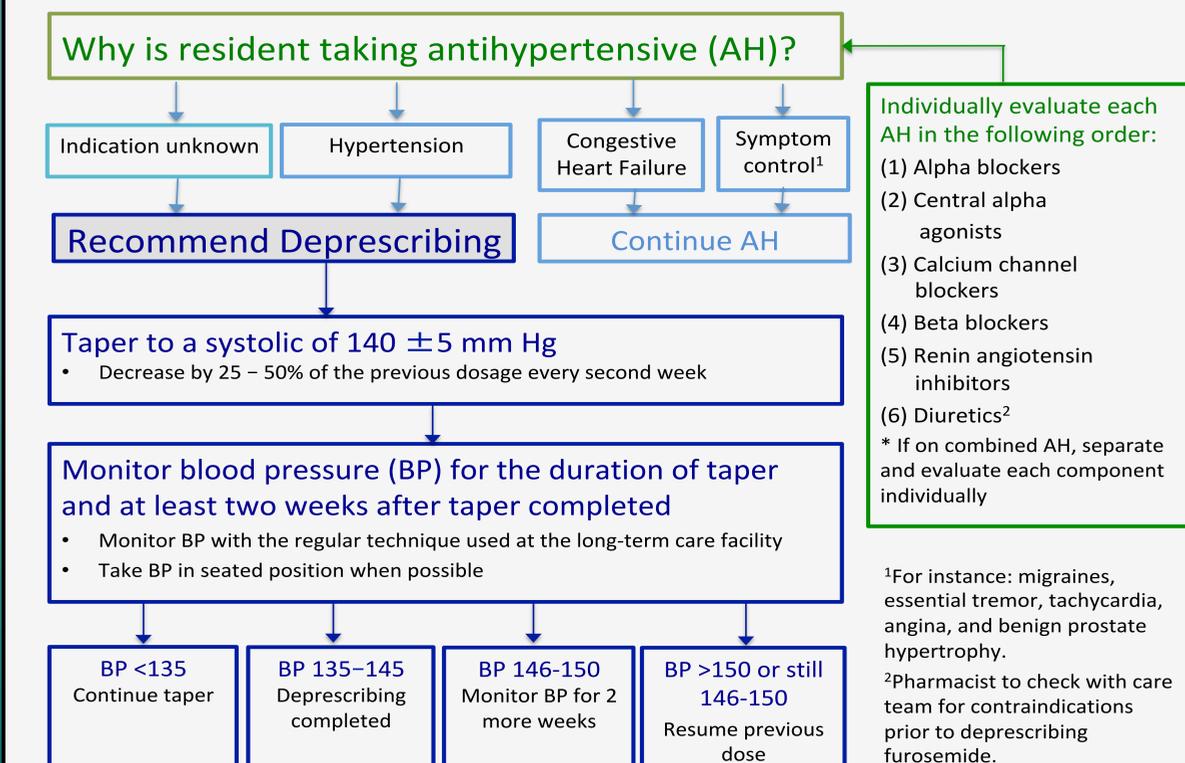
- Facility pharmacist will deprescribe AH per the protocol

Control group:

- Will receive usual care

Feasibility study: will be conducted at a pilot site prior to the study starting

Deprescribing Algorithm



Statistics

Primary outcome:

- Time to event survival analysis with cox proportional hazard model
- Adjusted for covariates

Other outcomes:

- Secondary & safety: cox proportional hazard model
- Process: Student's t-test
- Exploratory: logistic regression

Sub study

- To access barriers and facilitators of this initiative
- Survey to be given to facility pharmacists before & after the intervention
- Survey follows the RE-AIM framework (reach, effectiveness, adoption, implementation & maintenance)

THE PRACTICAL CLINICAL ADVANTAGES OF THE EDMONTON OBESITY STAGING SYSTEM

Rukia Swaleh¹, Taylor McGuckin², Tyler W Myroniuk^{2,3}, Donna Manca⁴, Karen Lee^{5,6}, Arya Sharma^{6,7}, Denise Campbell-Scherer^{2,4,7}, Roseanne O Yeung^{1,7}

¹Division of Endocrinology & Metabolism, University of Alberta, ²Office of Lifelong Learning & the Physician Learning Program, Faculty of Medicine and Dentistry, University of Alberta, ³Department of Public Health, University of Missouri-Columbia, ⁴Department of Family Medicine, Faculty of Medicine and Dentistry, University of Alberta, ⁵Division of Preventive Medicine, Department of Medicine, Faculty of Medicine and Dentistry, University of Alberta, ⁶School of Public Health, School of Urban and Regional Planning, University of Alberta, ⁷Alberta Diabetes Institute, University of Alberta

BACKGROUND

- The 2020 Canadian Adult Obesity Clinical Practice Guidelines highlight the impact of comorbidities on obesity
- There is a need for early person-centred interventions in primary care to prevent excessive weight gain and development of obesity-related comorbidities
- Edmonton Obesity Staging System EOSS stage is a better predictor of mortality than Body Mass Index (BMI)

OBJECTIVE

To determine the usability of data from the Northern Alberta Primary Care Research Network (NAPCRen) database to develop a dashboard to assess patient EOSS stage

METHODS

Data Source & Study Design:

We conducted a retrospective secondary analysis using data from the Northern Alberta Primary Care Research Network.

Participants:

Individuals ≥ 18 years old, with a BMI ≥ 30 and ≤ 60 kg/m² who had at least one visit from July 2016 to July 2019 with primary care clinicians contributing data to NAPCRen were included (n=23,460).

Outcome Measures:

Descriptive statistics and ordinary least squares regressions were conducted to describe the population. Overall and comorbidity EOSS stages were assigned.

EOSS STAGE	EOSS 0 No clinical risk factors
	EOSS 1 Subclinical risk factors
	EOSS 2 Established disease
	EOSS 3 Severe disease

RESULTS

Figure 1: Percentage of population in each BMI class by overall EOSS stage (n=22932). Excludes patients whose EOSS stage could not be assigned (n=528).

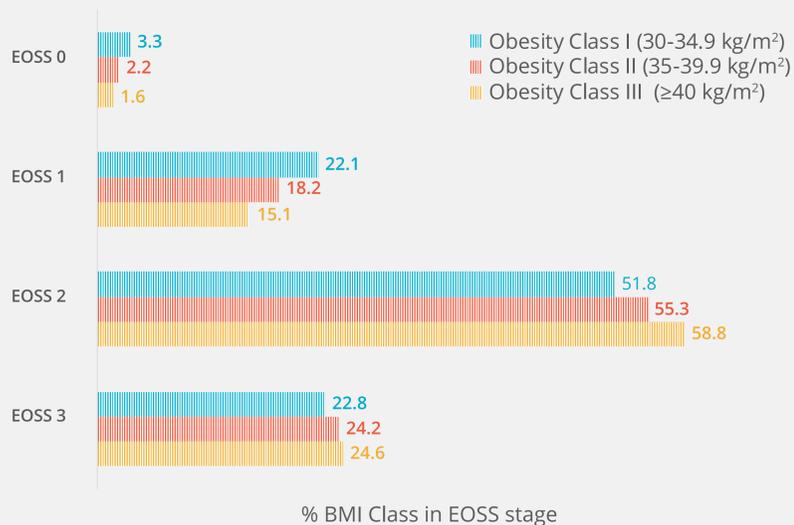


Figure 2: Percentage of population in each EOSS stage for each comorbidity.

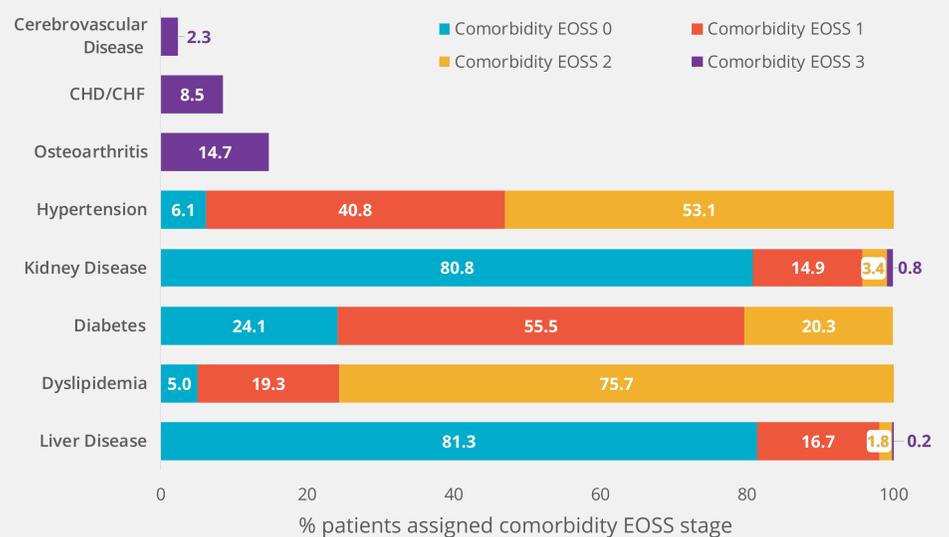


Figure 3: Data presentation tool for EOSS stage.

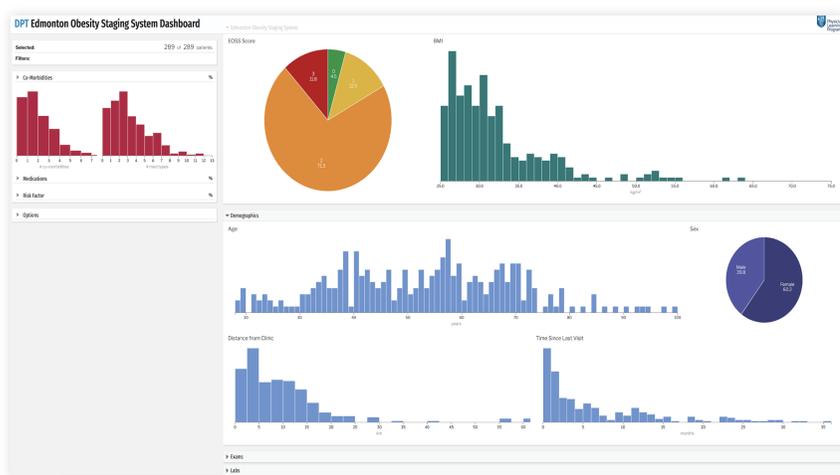


Figure 4: Percentage of patients whose comorbidity EOSS scores could be assigned.

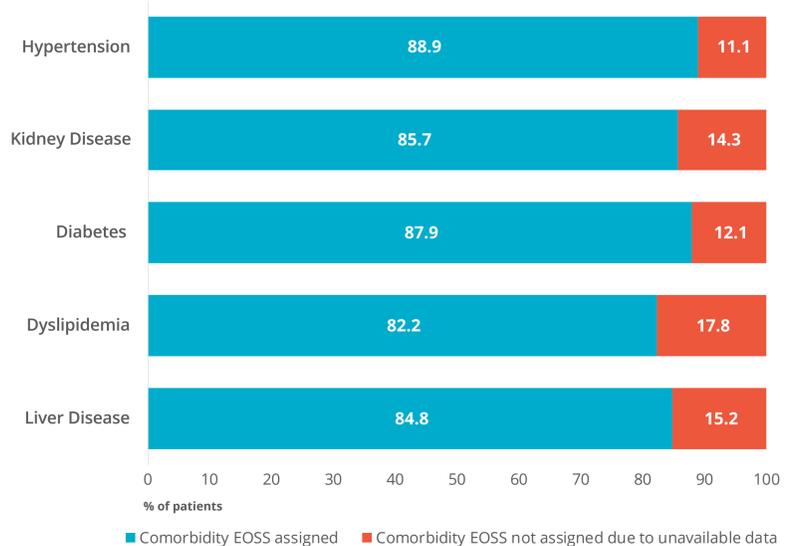


Table 1: Regression results N=22,932 (528 missing/no EOSS stage).

Step Wise Model	% of variation in EOSS stage explained (r ²)
Age	31.04
Age+Sex	31.05
Age+Sex+BMI	32.26

CONCLUSION

- Over half our region is in the EOSS 2, providing an opportunity to intervene to improve clinical outcomes for people living with obesity.
- 11 to 18% of patients could not be assigned comorbidity EOSS stage scores based on unavailable data. Physicians can use the dashboard to identify these patients and determine whether it would be appropriate to obtain measures for them.
- The dashboard offers an opportunity for physicians and teams to quickly identify patients at risk of disease (EOSS 1) or with established disease.
- The dashboard makes information easily accessible for quality improvement and individual clinical care.

The Care-of-the-Elderly Health Guide

Jean Triscott, MD¹; Bonnie Dobbs, PhD¹; Lesley Charles, MBChB¹; James Huang, MD¹; David Moores, MD²; Peter Tian, MD, MSc¹; Judith Cerna, MLIS¹

¹Division of Care of the Elderly, Department of Family Medicine, University of Alberta; ²Department of Family Medicine, University of Alberta

Corresponding Author: Dr. Jean Triscott (jean.triscott@albertahealthservices.ca)

BACKGROUND

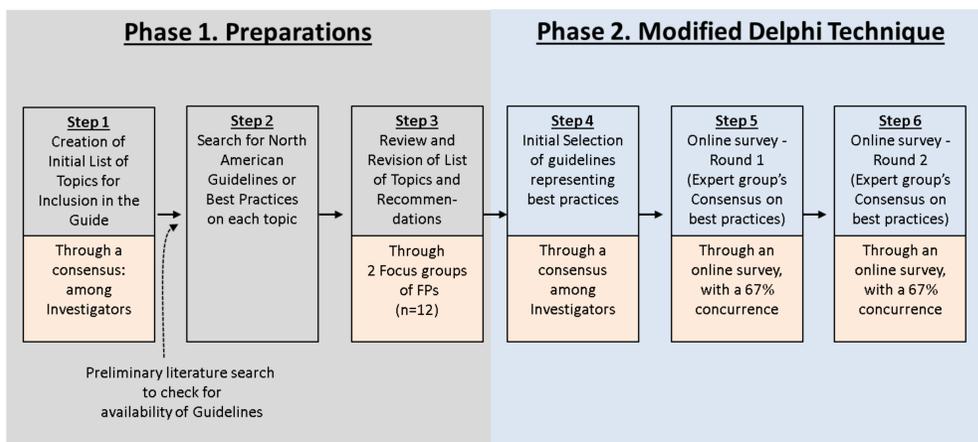
- The Care-of-the-Elderly Health Guide (Triscott J, et al., 2002) is a clinical record with cross-references to care recommendations for the elderly.
- In 2003, the Guide was endorsed by the Health-Care of the Elderly Committee of the College of Family Physicians of Canada.
- Since then, family physicians have used the Health Guide as a checklist and a monitoring tool for care to older persons.

OBJECTIVE

- To update the Health Guide with current published evidence-based recommendations.

METHODS

- Mixed methods with two phases.
- In Phase 1, the investigators, through consensus, created an initial list of topics and chose published recommendations on the topics, with consideration to relevance in family practice.
- This initial list was reviewed by family physicians in two focus groups. The investigators then revised the list based on the feedback.
- In Phase 2, a panel of ten Care of the Elderly physicians and geriatricians, through a modified Delphi technique with two rounds of online surveys, reviewed whether the recommendations represented current *Standards of Care*.
- Participants: Twelve family physicians and a panel of ten Care of the Elderly physicians and geriatricians.



RESULTS

In Phase 1:

- Initial list of 43 topics and selected recommendations.
- Two focus groups among family physicians (n=12).
- The list of topics and recommendations were reviewed, with overarching themes of user-friendliness, relevance to clinical practice, and quality of evidence.

In Phase 2:

- In the 1st online survey, the panel of physicians was in consensus that 63 of the 66 groups (95%) of recommendations represented current *Standards of Care*. In the 2nd survey, three more groups of recommendations achieved consensus.

Final List of Topics

Section A. Geriatric Syndromes

Delirium, Dementia, Mild Cognitive Impairment, Falls, Urinary Incontinence, Polypharmacy

Section B. Geriatric-Specific Concerns

Constipation & Fecal Incontinence, Decubitus Ulcer, Depression, Leg Edema, Insomnia, Severe Nutritional Risk, Chronic Pain, Parkinson's Disease

Section C. Geriatric Safety & Caregiving Issues

Caregiver Burden, Decision-Making Capacity Assessment, Fitness to Drive, Frailty Scale, Goals of Care, M.A.I.D., Environmental Safety, Elder Abuse

Section D. Primary Prevention for Geriatrics

Hearing, Oral Health, Osteoporosis, Vision

Section E. Secondary Prevention for Geriatrics

Abdominal Aortic Aneurysm, Atrial Fibrillation, Breast Cancer, Cervical Cancer, Colorectal Cancer, Coronary Heart Disease, Type-II Diabetes, Dyslipidemia, Hypertension, Chronic Kidney Disease, Lung Cancer, Prostate Cancer

Section F. Other Preventative Areas

Diet, Physical Activity, Sexuality, Sun Protection, Tobacco-Alcohol Use, Vaccination (Hepatitis A & B, Herpes Zoster, Influenza, Pneumococcus, Tetanus-Diphtheria-Pertussis).

CARE OF THE ELDERLY HEALTH GUIDE (DRAFT)

Section A. Geriatric Syndromes

1. DELIRIUM

National Clinical Guideline Centre (UK). Delirium: Diagnosis, Prevention and Management [Internet]. London: Royal College of Physicians (UK); 2010 Jul. Available from <http://www.ncbi.nlm.nih.gov/login.ezproxy.librarygov.login.ezproxy.library.ualberta.ca/books/NBK65558/PubMed> PMID: 22319805.

- 1.1. Diagnosis (specialist clinical assessment). If indicators of delirium are identified, carry out a clinical assessment based on the *Diagnostic and Statistical Manual of Mental Disorders (DSM-IV)* criteria or short Confusion Assessment Method (short CAM) to confirm the diagnosis. A healthcare professional who is trained and competent in the diagnosis of delirium should carry out the assessment. If there is difficulty distinguishing between the diagnoses of delirium, dementia or delirium superimposed on dementia, treat for delirium first (2010 recommendation from the National Clinical Guideline Centre. No grading).

2. DEMENTIA – BEHAVIOURAL AND PSYCHOLOGICAL SYMPTOMS OF DEMENTIA

Moore A, Patterson C, Lee L, Vedel I, Bergman H; Canadian Consensus Conference on the Diagnosis and Treatment of Dementia. Fourth Canadian Consensus Conference on the Diagnosis and Treatment of Dementia: recommendations for family physicians. *Can Fam Physician*. 2014 May;60(5):433-8. PubMed PMID: 24829003; PubMed Central PMCID: PMC4020644.

- 2.1. Valproate should not be used for agitation and aggression in Alzheimers Disease (Grade 1A) (2012 recommendation from the 4th Canadian Consensus Conference on the Diagnosis and Treatment of Dementia – GRADE 1A: Strong recommendation; high-quality evidence).
- 2.2. A trial of antidepressant medications could be considered if the patient has an inadequate response to nonpharmacologic interventions or has a major depressive disorder, severe dysthymia, or severe emotional lability.

CONCLUSION

The Care-of-the-Elderly Health Guide is a quick reference to geriatric care, reviewed for relevance by family physicians and a panel of experts. The Guide will be useful in primary care.

What do patients and primary care providers value in a prevention visit?

A qualitative evaluation of the BETTER WISE project

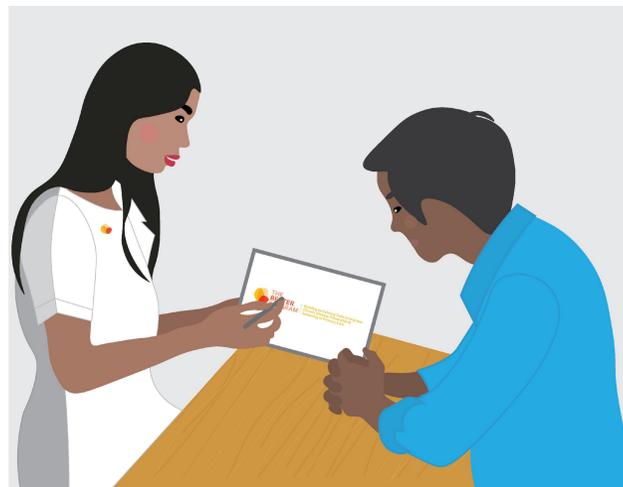
N. Sopcak¹, C. Fernandes¹, M.A. O'Brien², D. Ofofu¹, M. Wong¹, T. Wong³, M. Kebbe⁴, D. Manca¹

¹Department of Family Medicine, University of Alberta, Edmonton, AB; ²Department of Family and Community Medicine, University of Toronto, Toronto, ON;

³Patient Advisor, Strategic Clinical Networks, Alberta Health Services, Calgary, AB; ⁴Pennington Biomedical Research Center, Louisiana State University, Baton Rouge, LA

Background

- Chronic diseases such as cancer, heart disease, and diabetes account for almost 70% of all deaths worldwide.
- Integrated and comprehensive prevention and screening strategies are needed in primary care.
- The BETTER WISE (Building on Existing Tools to Improve Cancer and Chronic Disease Prevention and Screening in Primary Care for Wellness of Cancer Survivors and Patients) Project a comprehensive approach that proactively addresses chronic disease prevention, screening and cancer survivorship, including screening for poverty and addressing lifestyle risks.
- Prevention visits are provided by a healthcare professional, the Prevention Practitioner (PP).



- PPs are trained in the BETTER WISE tools & approach and Brief Action Planning. In a 1-hour visit with the patient, the PP reviews the patient's health status, including family history and health behaviors. The PP then informs patients about eligible screening, and guides patients towards healthy lifestyle modifications.

Objectives

- This qualitative evaluation is a sub-component of the BETTER WISE study and aims to identify key components of a BETTER WISE prevention visit based on patients' and primary care providers' perspectives.

"Great feeling when you can talk so openly about health issues, meds you are taking and no judgment" [Patient, female, AB]

"We uncover things that even their physician for years was not even aware of. It just speaks to how valuable it has to be to give the patient the time and to be heard and to explore what they feel is important to them" [PP, KI 012, ON]

https://www.freepik.com/free-vector/illustration-healthy-life-style_2945081.htm



Theme 1: Creating a safe space and building trust

"It kind of provides people with a reality check. So, a lot of people that I see, whether it's for blood pressure medication, medication for diabetes or cholesterol, they really seem to be open to the idea of making those lifestyle changes to be able to stop or avoid taking medication" [PP, KI 015, ON]

Theme 2: Personalized health education

"[PP] helped me make realistic goals" [Patient, female, NL]

"Setting goals for my health with my prevention practitioner will go a long way for me. I feel like I'm doing this for myself but also have a coach motivating me in the background. (...) If I can maintain the goals I set for myself and confide in my practitioner to help me achieve good health, I will be very happy with myself" [Patient, ON, male]

"Traditionally, it's been the physician mostly, but I think in the last few years it's becoming more and more of a team work. And [BETTER WISE] is taking it a step further. And to me, it means less patients falling through the cracks" [Physician P6, Alberta]

Theme 3: Non-judgmental empowerment of patients



<http://employmentfirstaid.com.au/why-is-it-important-to-set-goals/>

Theme 4: Integrating care for patients

Methods

Setting

- Thirteen primary care settings (urban, rural, and remote) in Canada (6 in Alberta (AB), 4 in Ontario (ON), and 3 in Newfoundland and Labrador (NL))

Participants

- Primary care providers (N = 124; including all 13 PPs) participated in 14 focus groups and 19 key informant interviews. They were asked about implementation, uptake, impact, and sustainability of BETTER WISE.
- 356 feedback forms from 527 Patients (40-65 years of age) who attended a 1-hour visit with their PP. They were asked about demographic details, expectations from the visit, what they liked and what they would like to be different about the visit, and any other comments.

Analysis

- Qualitative data was analyzed using the constant comparison method informed by grounded theory.

Results

Four themes (Figure 1) were identified:

1) Creating a safe space and building trust

PPs provided time and a safe space for patients to share what was important to them including their concerns related to poverty, alcohol, and mental health that were often not shared with physicians.

2) Personalized health education

PPs used BETTER WISE tools to provide patients with a personalized overview of their health and eligible screening.

3) Non-judgmental empowerment of patients

Instead of directing patients what to do, PPs evoked patients' preferences and helped them to set goals (if desired).

4) Integrating care for patients:

PPs clarified information in patients' charts and helped patients navigate resources within and outside of the primary care team.

Conclusion

Personalized, trusting, and non-judgmental relationships between primary care providers and patients as well as integrating care are key to successful chronic disease prevention and screening as exemplified by the BETTER WISE prevention visits.

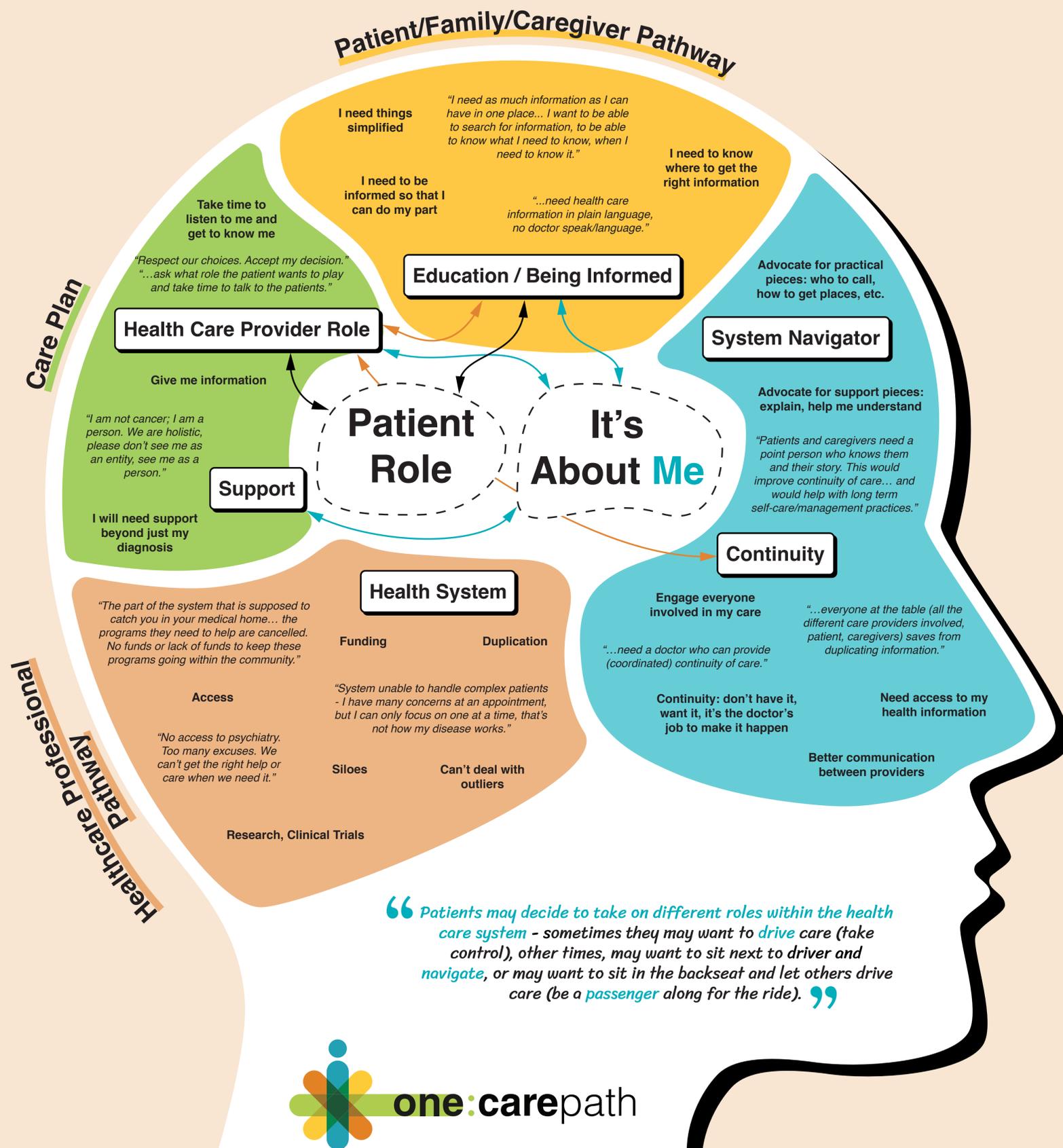
Acknowledgement

Production of this poster has been made possible through a financial contribution from Alberta Innovates. The views expressed herein represent the views of the authors and do not necessarily represent the views of the project funders.

Figure 1. Themes and quotes for identified themes from patients and primary care providers on a BETTER WISE prevention visit

Drivers, Navigators, and Passengers: how do those living with advanced complex chronic diseases want to self-care?

Toon L., Barber T., Lakusta B., Scott K., Davison S., Green LA.



Key Takeaways

In the context of self-care, patients described barriers that make self-care difficult:

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> The health system is complex and difficult to navigate, even those who feel empowered struggle to advocate for themselves within this complex system | <ul style="list-style-type: none"> Gaps in knowing how to access and use information, how to get to appointments, and what resources are available | <ul style="list-style-type: none"> Health care provider's unspoken expectations of a patient's ability to self care |
| <ul style="list-style-type: none"> Variation in how active they want to be in their self-care | <ul style="list-style-type: none"> Care and treatment being disease focused | |

Facilitators that would enable self-care:

- | | |
|--|---|
| <ul style="list-style-type: none"> A need for relational continuity: provider needs to take time with patient; understand patient is unique and has distinct wishes they want heard and respected | <ul style="list-style-type: none"> A need for access to resources and information to play a more active role and make informed decisions |
| <ul style="list-style-type: none"> A need for support in navigating the system – a System Navigator Role | <ul style="list-style-type: none"> That a care pathway could be beneficial if: it is interactive, accessible to all involved, and personalized to each patient |

Context

Patients with advanced stage chronic diseases, often characterized by high rates of hospitalization or aggressive use of treatments with limited benefit, present significant challenges. These patients have extensive unmet care needs as they transition between hospital and home and regularly return to hospital. This results in poor quality of life for patients, frustration, and rework for health care providers with increased costs to the health system.

Methods

World Café Methodology

Enables participants to interact, share experiences, explore issues, identify gaps & working solutions, and inform implementation strategies.

Organized in small groups at four tables, participants rotated between all tables. Each table had a set of questions and assigned facilitators and note takers to record the discussions. Notes were transcribed verbatim for analysis.

Framework Analysis

Is grounded in original accounts, attempts to answer specific questions, and is best applied with a specific sample population. Its goal is to answer pre-determined questions. It was well suited to analyzing the World Café data, and the interpretation of our results.

Participants

Patients (n= 12) living with, and caregivers (n= 4) caring for a patient with, advanced chronic disease from both rural and urban areas across Alberta. The majority of the patient participants were living with cancer-related illnesses. Others were living with end-stage kidney disease, fibromyalgia, dementia/Alzheimer's, and neurological diseases.

Objective

To determine the barriers and facilitators of self-care when living with an advanced stage complex chronic disease, and to understand the potential of an interactive care pathway to support patients in their self-care when living with an advanced stage complex chronic disease.



If you have any comments, questions or would like to request a print copy of this poster, contact Lynn Toon lynn.toon@albertadoctors.org



BACKGROUND

Context: Osteoarthritis (OA) is a chronic musculoskeletal condition common among older adults. It is typically diagnosed and managed within community-based settings. Digital record-keeping such as EMRs within primary care practices provides a valuable source of information for chronic disease research and surveillance.

Because EMR data are recorded for patient care and administrative tasks, the quality and suitability of the data should be assessed before being used for secondary purposes.

Objective: To determine the quality of pan-Canadian primary care EMR data for osteoarthritis surveillance and research.

METHODS

Design: Secondary analysis of de-identified, pan-Canadian primary care EMR data extracted from participating primary care providers by the Canadian Primary Care Sentinel Surveillance Network (CPCSSN).

Participants:

- Active within the practice
- 45 years or older
- Diagnosed with OA

Outcome Measures: Completeness and plausibility for patient-level demographics, clinical observations, OA medications, total knee replacements (TKR) and chronic co-morbidities. External validity compared to other published population-level sources.

RESULTS

Overall completeness of CPCSSN data was **good** for:

- demographics (age, sex, urban/rural) (98.6%)
- BMI (84.4%), height (79.2%), weight (75.6%)
- CPCSSN defined chronic co-morbidities (84.9%)

RESULTS

Completeness was **lower** for:

- other chronic co-morbidities (45.7%)
- dose & frequency information for OA-related medications (47.1% of prescription records)

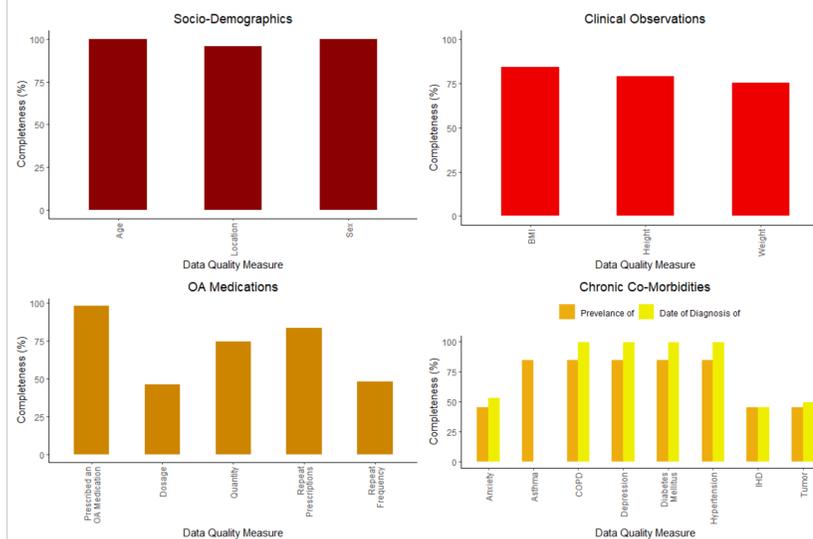


Figure 1: Completeness (%) of CPCSSN data in four categories of data quality measures.

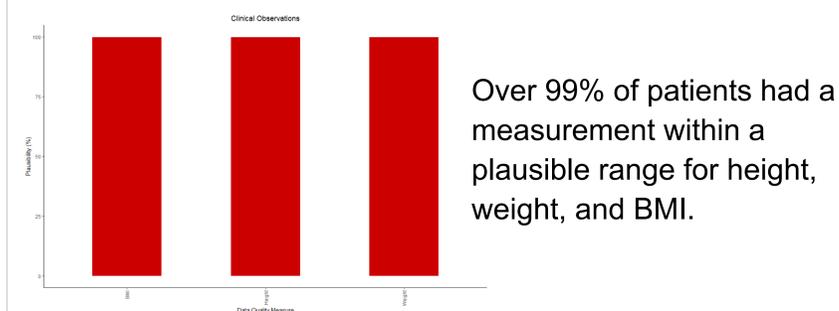


Figure 2: Plausibility (%) of values for height, weight & BMI.

Over 99% of patients had a measurement within a plausible range for height, weight, and BMI.

REFERENCES

- 1) Birtwhistle, R., Morkem, R., Peat, G., Williamson, T., Green, M. E., Khan, S., & Jordan, K. P. (2015). Prevalence and management of osteoarthritis in primary care: an epidemiologic cohort study from the Canadian Primary Care Sentinel Surveillance Network. *CMAJ open*, 3(3), E270.
- 2) Public Health Agency of Canada. (2020-12-24). Osteoarthritis in Canada. Retrieved from <https://www.canada.ca/en/public-health/services/publications/diseases-conditions/osteoarthritis.html>

RESULTS

Table 1: Prevalence of OA based on different data sources; N(%)

Data Source	Male	Female	Overall
CPCSSN ⁽¹⁾	87,072 (12.4)	120,538 (15.6)	207,610 (14.2)
PHAC ^{**} (2)	1.6 M (11.13)	2.4 M (16.05)	4.0 M (13.63)
SLCDC ^{***} (3)	--	--	1,755 (37.1)

*Age-sex standardized 2012 CPCSSN-EMR data based on the national age-sex distribution from the 2011 Canadian census data

**Based on the results from the Canadian Chronic Disease Surveillance System for the 2016 - 2017 fiscal year

***Based on the results from the 2009 Survey on Living with Chronic Diseases in Canada - Arthritis

CONCLUSION

The completeness and plausibility for most outcome measures were high. Low percentages for dosage and frequency of OA prescription records could be due to the use of over-the-counter medications. Prevalence of OA in the CPCSSN population was slightly higher compared to the Canadian population when compared to administrative data but lower when compared to survey data.

Limitations: Currently, the national CPCSSN database has no processed information on medical procedures, thus the quality of TKR data can not be reported. Future CPCSSN work could focus on developing methods to process & code medical procedures.

REFERENCES

- 3) MacDonald, K. V., Sanmartin, C., Langlois, K., & Marshall, D. A. (2014). *Symptom onset, diagnosis and management of osteoarthritis*. Statistics Canada.
- 4) Courtesy of Multimedia, Instructional Resources, Cumming School of Medicine

Early Learnings from Engaging Older People with Experiences of Homelessness in Health Service Co-Design

Megan Sampson (MA)¹; Fadzai MoreBlessing Punungwe (DrPH)¹; “The Exchange” Community Advisory Group at Peter Coyle Place; Martina Kelly (MD, PhD)¹; Lara Nixon (MD)¹

¹Department of Family Medicine, University of Calgary, Calgary, AB, Canada



UNIVERSITY OF CALGARY

Conclusion

- Patient engagement in service co-design can enhance care delivery, and **patient-oriented research aligns with family medicine’s community-based and relational principles²**
 - however, the service needs of Older People who Experience Homelessness (OPEH) are currently under-explored, with few studies engaging this population using participatory methods.
- Engaging OPEH in service co-design requires:
 - Attentiveness to current and historical ways that **power** and **stigma** shape care experiences.
 - Strategies to promote **power-sharing**, and **accountability** to co-developed priorities.

References

1. Brown, R. T., et al. (2017). Geriatric conditions in a population-based sample of older homeless adults. *The Gerontologist*, 57(4), 757-766.
2. Greenhalgh, T., et al. (2016). Achieving Research Impact Through Co-creation in Community-Based Health Services: Literature Review and Case Study. *The Milbank quarterly*, 94(2), 392-429. doi:10.1111/1468-0009.12197

More Info



Lara Nixon: lnixon@ucalgary.ca
Megan Sampson: mbsampso@ucalgary.ca

*This project was funded by Health Canada’s Substance Use and Addictions Program. The contents of this presentation do not necessarily represent the views of Health Canada.

Context

Older People with Experiences of Homelessness (OPEH)

- Functional decline at an earlier age¹
- Complex health and social service needs
- Often mental health and/or substance use challenges

Excluded From conventional seniors housing (w/ linked primary care supports), and other senior-oriented health services

- Due to substance use or complexity of mental health challenges
- Typically targeting only those aged 65 +

Unmet Care Needs

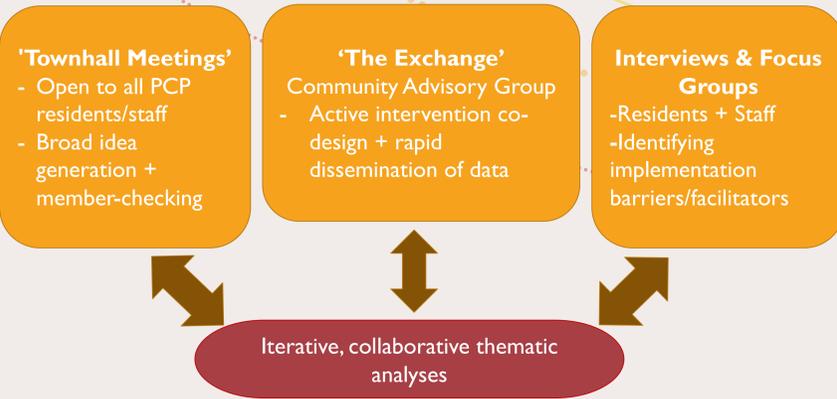
- Long-term hospital stays (awaiting appropriate placement)
- Living at high-risk in the community
- Lack of connection to Primary Care

Objective: Engage Older People with Experiences of Homelessness (OPEH) and their care providers in the **co-design** of enhanced supports, including **primary care and harm reduction**.

Setting: **Peter Coyle Place**, a Permanent Supportive Housing site in Calgary, Alberta, for older people (55+) with experiences of homelessness, substance use, and mental health challenges.

Study Design:

- Mixed-method (qualitative + quantitative), **Community-Based Participatory Action Research (CBPAR)** to inform the co-design, implementation & evaluation enhanced primary care, wellness & addiction supports
- **Engagement + qualitative data collection through:**



Project-funded Housing-based Intervention

Harm Reduction **Mental Health**

Primary Care

New Staff

- Addiction/Mental Health RN (0.8 FTE)
- Rec Therapist & Wellness Support team (3.0 FTE)
- Peer Support Worker with relevant lived expertise (0.4 FTE)

New Programming, co-designed + implemented in partnership with PCP residents + staff

Participants

Interviews

- Residents (n=15)
- Staff (n=16)

Staff Focus Groups

- 7 staff, over 2 FG's

"The Exchange" Community Advisory Group

- 14 meetings to-date**
- 7 residents (4 female, 3 male)
- 10 staff (3 support, 3 recreation, 4 clinical, 2 management)

Results

Challenges to Engagement

Power Dynamics

- Between residents, staff, and the research team.
- Overcoming initial perception of residents, staff, and researchers making up 'camps' of competing interests – rather than the same team

Substance Use Stigma

- Reluctance to speak openly about needs and preferences re: harm reduction services and/or recovery supports.

"[During our Advisory Group meetings] I feel that there were little camps, where it was 'OK, we're [management's] people', 'OK, we're Dr. Nixon's people'"

"I prefer to share [my opinion]. But I prefer to share one-on-one, because I'm a private person"



"20 years ago, all I was taught was 'if you [meet] an addict, you have a problem'. I think the target for our [resources + educational materials] should be everybody [...] people with prejudices against people who use substances [and] people who use substances."

Community-Developed Strategies

Flexible Engagement & Power-Sharing

- Opportunities for individual and group sharing.
- Meeting community members at times, locations, + forums comfortable to them

Co-creating Educational Resources

- To create shared understanding + reduce conflict
- To reduce stigma around substance use + other social determinants of health
- **Finished outputs demonstrate accountability toward shared goals**

Care-of-the-Elderly Graduates Provide Essential Services in Alberta

Bonnie Dobbs, PhD; Jean Triscott, MD, CCFP(COE); Lesley Charles, MBChB, CCFP(COE); Peter Tian, MD, MSc

Division of Care of the Elderly, Department of Family Medicine, University of Alberta

Corresponding Author: Dr. Bonnie Dobbs (bdobbs@ualberta.ca)

BACKGROUND

- The Care of the Elderly (COE) Program is a 6-month to 1-year residency program on the care of older persons.
- This program was developed by The College of Family Physicians of Canada to address the increasing demand for health services among seniors.
- At the University of Alberta, the program has trained more than 60 COE physicians since 1993.

OBJECTIVE

- To determine the practice characteristics, practice preparedness, and service provision among graduates of the COE program at the University of Alberta.

METHODS

Design. Online survey in 2019.

Participants. Graduates of the COE Program in the University of Alberta.

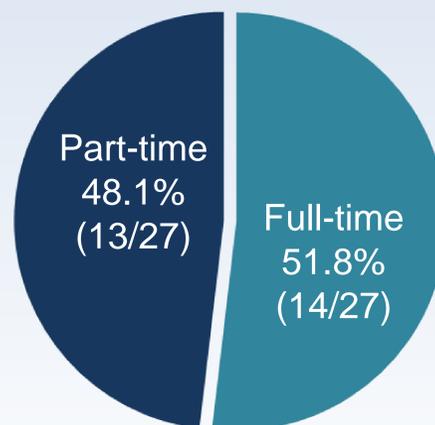
Instrument. The 38-item online survey consisted of Likert-type, multiple-choice, and open-ended questions on demographics, current practice, care-of-the-elderly practice, professional activities, practice location, lifestyle satisfaction, and program structure.

Outcome Measures. Descriptive statistics (frequencies, proportions, and means) of participant characteristics.

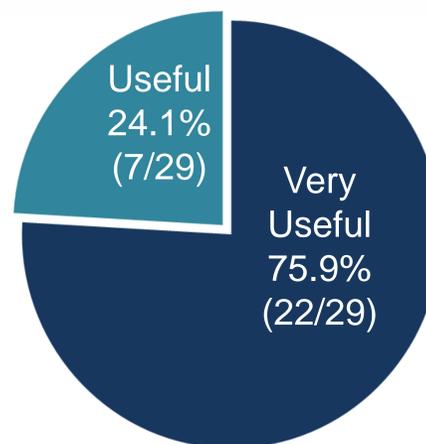
RESULTS

- There were 33 respondents with a response rate of 56% (33/59).
- The median age was 44 years (range: 30-66), with 72% females (24/33).
- The vast majority (92.6% [25/27]) were satisfied with their professional life.

COE Practice



Residency Program's Usefulness for Practice



Practice Settings

Practice Setting	n	%
Office-based Continuing Care	16	48.5%
Acute Care Consults	16	48.5%
Supportive Living	14	42.4%
Acute Care Inpatients	11	33.3%
Home Living	9	27.3%

Remuneration

Remuneration Type	n	%
Fee for Service	20	60.6%
Clinical Alternative Relationship Plan	13	39.4%
Academic Alternative Relationship Plan	4	12.1%
Sessional	4	12.1%
Legacy	4	12.1%

Hours Worked per Week

Hours Worked	n	%
≤ 30 hours	4	14.3%
31-40 hours	13	46.4%
41-50 hours	7	25.0%
51-60 hours	3	10.7%
>60 hours	1	3.6%
Total	28	100.0%

Other Duties

Other Duty	n	%
Teaching	15	45.5%
Administration	12	36.4%
Research	10	30.3%

CONCLUSION

The COE graduates provide clinical, academic, and administrative service in a variety of settings. As the older population increases, the need for COE physicians increases as well.

INTRODUCTION

Problem: reduce risk factors to prevent average 9 strokes in each family physician's practice
Objectives: 1. **Primary Prevention:** A. reduce risk factors to prevent the average prevalence of nine new strokes in each family physician's practice; B. detect patent foramen ovale (25% of population) by echocardiogram, assessing stroke risk and refer cardiology assessment for device to close foramen and stop shunt; 2. **Secondary Prevention of further strokes**
Design: Literature Review

RESULTS: Primary Prevention

- **PRIMARY PREVENTION: Context**
- Stroke is third leading cause of death in Canada
- Annually 62,000 strokes and TIAs in Canadian emergency departments or acute inpatient care
- 400,000 Canadians live with effects of a stroke (=average 9 in practices of 44,589 family physicians)
- For each symptomatic stroke, estimated 9 covert strokes resulting in subtle changes in cognitive function and processes

89% of population-attributable risk factors are modifiable: Stroke odds in INTERSTROKE study Risk factor	Increase in risk
Hypertension	2.5
heavy alcohol use	2
Smoking	> 1.5 times
Other risks: dyslipidemia, diabetes, BMI >23, diets low fruits/vegetables, high sodium, low physical activity levels	

PRIMARY PREVENTION: Should aspirin be prescribed?	
Aspirin: Low dose aspirin not recommended for primary prevention of a first vascular event for these individuals:	Evidence Level
with vascular risk factors who have not had a vascular event	A
healthy older individuals without vascular risk factors	B
uncertain net benefit with asymptomatic atherosclerosis	B

Evidence Level A = Evidence from a meta-analysis of randomized controlled trials or consistent findings from two or more randomized controlled trials. Desirable effects clearly outweigh undesirable effects or vice versa

The evidence for and against ASPIRIN is from three (2018) RCTs in individuals with no previous cardiovascular disease; median follow-up 4.7 to 7.1 years

RCT	Hazard ratio and 95% CI cardiovascular events	Hazard ratio and 95% CI major bleeding
ARRIVE (2018) men ≥ 55 years with 2 to 4 cardiovascular risk factors and women ≥ 60 years with 3 or more risk factors, excluded diabetics	0.96 (0.81 to 1.13)	any GI bleed 2.11 (1.36 to 3.28)
ASPREE (2018) men and women ≥65 or ≥70 years (11% diabetics)	0.95 (0.83 to 1.08)	1.38 (1.18 to 1.62)
ASCEND men and women ≥40 years with type 1 or 2 diabetes	0.88 (0.79 to 0.97; p=0.01)	1.29 (1.09 to 1.52)

- N.B.: Two organizations have cautious recommendations for use:
- 2019 ACC/AHA guidelines on primary prevention of cardiovascular disease suggest low-dose ASA (75-100 mg/day) might be considered among selected adults 40-70 years at higher risk of cardiovascular disease; avoid in >70 years
 - U.S. Preventive Services Task Force suggests 50 to 59 years of age initiate low-dose ASA if 10-year cardiovascular risk is >10% and risk of bleeding not increased. Insufficient evidence for < 50 or > 69 years

PRIMARY PREVENTION: Detecting Patent Foramen Ovale

- Patent foramen ovale (PFO) occurs in 25% of the population
- Cardiologists have published multiple systematic reviews on PFO. There is no concerted national detection strategy
- Thus family physicians need to be the first to identify PFOs, auscultate for interatrial shunt murmur, order echocardiogram with counting of bubbles passing across the inter-atrial shunt, refer to cardiology for potential placement of device to close foramen
- Risk of PFO for patient if siblings have shunt = RR 6.98 (95%CI 5.75 to 8.48)
- If 1st degree relatives = RR 5.64 (95%CI 4.76 to 6.68)

OUTCOMES OF SHUNT PLACEMENT

Systematic review and network analysis (Mir BMJ 2018): 10 RCTs (n=4416, average age ranged 44.2-63.6, so advice is for patients <60)

Risk	Risk with PFO closure + antiplatelet therapy per 1000 patient-years	Risk with only antiplatelet therapy per 1000 patient-years
ischemic stroke	13/1000	100/1000
TIAs	28/1000	34/1000
adverse events	36 /1000	
adverse events:	17/1000 (mostly in 1 st month after device placement)	5/1000
atrial fibrillation		

REFERENCES:

Abdelhamid AS, Brown TJ, Brainard JS, Biswas P, Thorpe GC, Moore HJ, Deane KH, Summerbell CD, Worthington HV, Song F, Hooper L. Omega-3 fatty acids for the primary and secondary prevention of cardiovascular disease. Cochrane Database of Systematic Reviews. 3:CD003177, 2020

Canadian Stroke Best Practice Recommendations. Heart and Stroke Foundation of Canada.

Jakob T, Nordmann AJ, Schandelmaier S, Ferreira-Gonzalez I, Briel M. Fibrates for primary prevention of cardiovascular disease events. Cochrane Database of Systematic Reviews. 11:CD009753, 2016 11

Karmali KN, Lloyd-Jones DM, van der Leeuw J, Goff DC Jr, Yusuf S, Zanchetti A, Glasziou P, Jackson R, Woodward M, Rodgers A, Neal BC, Berge E, Teo K, Davis BR, Chalmers J, Pepine CJ, Rahimi K, Sundstrom J. Blood Pressure Lowering Treatment Trialists' Collaboration. Blood pressure-lowering treatment strategies based on cardiovascular risk versus blood pressure: A meta-analysis of individual participant data. PLoS Medicine / Public Library of Science. 15(3):e1002538, 2018 03.

METHODS

SEARCH: Medline and Embase to 5 February 2021: search terms stroke, TIA, prevention, therapy, systematic review, meta-analysis

RESULTS: Secondary Prevention

SECONDARY PREVENTION: Canadian Stroke Best Practice Recommendations For Secondary Prevention of Stroke (2017)	
1. React promptly to a TIA	Risk of stroke is highest next 2 days; then in next 90 days 12%-20%; over five years 5 times greater
2. Treat risk factors: systematic review of 147 RCTs	
if Bp decrease 10 mm Hg systolic and 5 mm Hg diastolic	41% reduced stroke risk
Treating to new targets (TNT) trial: statins for LDL	15% reduced stroke risk
Rapid access to TIA/stroke clinics	reduces risks

Secondary Prevention of Stroke	
Risk factor and investigations	Evidence level
12 lead ECG to detect atrial fibrillation/flutter in suspected ischemic stroke or TIA	B
24 hour ECG monitoring to detect paroxysmal AF in suspected ischemic stroke or TIA	A
At least 2 weeks ECG monitoring if acute embolic ischemic stroke or TIA undetermined source and cardioembolic mechanism suspected	A
If ischemic stroke or symptomatic TIA and 50-99% carotid stenosis, MRI (better than CTA); urgent revascularization if 70-99% stenosis;	A

SECONDARY PREVENTION: How large are the effects in RCTs and systematic reviews?		
Systematic review	Number of RCTs and participants	Outcome; Relative Risk; GRADE evidence assessment
Abdelhamid 2020; Omega-3 fatty acids (Cochrane review)	86 RCTs (n=162,796); RCTs 12-88 months duration; mainly high income countries; dose ranged 0.5 to > 5 g/day	Stroke: RR 1.02 (0.94 to 1.12) moderate certainty evidence; All-cause mortality RR = 0.97 (0.93 to 1.01), high certainty evidence Stroke: RR ranged from 0.64 (0.48 to 0.88) to 0.90 (0.87 to 0.93)
Saule 2019; Mediterranean diet Jacob 2016; Fibrates (Cochrane Review)	6 meta-analyses of high adherence to Mediterranean diet 6 RCTs (n=16,135); 4 trials included only DM2; average duration treatment 4.8 years	Cardiovascular death, non-fatal MI, or non-fatal stroke: RR = 0.84 (0.74 to 0.96); moderate quality evidence; detection bias, attrition and reporting bias unclear
Schandelmaier 2017; Niacin (Cochrane Review)	23 RCTs (n=39,195); median % prior MI = 48%; average treatment duration 11 months	Strokes: RR = 0.95 (0.74 to 1.22), low quality evidence; Mortality: RR 1.05 (0.97 to 1.12), high quality evidence. Cardiovascular mortality: RR = 1.02 (0.93 to 1.12), moderate quality evidence
Karmali 2018; BP lowering strategies based on predicted cardiovascular risk assessment compared to systolic Bp (Blood Pressure Lowering Treatment Trialists Collaboration)	11 RCTs (n=47,872) median 4 years follow up	Number of cardiovascular events (measured by Area Under the Curve [AUC]); CVD risk + BP strategy avoids more cardiovascular events AUC = 0.71 (0.70 to 0.72) than Bp only strategy, AUC = 0.54 (0.53 to 0.55) and prevents 16% (14% to 18%) more CVD events
Naqvi 2020 single vs. multiple antiplatelet agents (Cochrane review)	15 RCTs (n=17,091) participants	Risk of stroke recurrence: multiple antiplatelet agents 5.78% vs. single platelet agent 7.84%; RR = 0.73 (0.66 to 0.82; P < 0.001), moderate-certainty evidence. Multiple platelet agents higher risk of intracranial hemorrhage 0.42% versus 0.21%, RR = 1.92 (1.05 to 3.50; P = 0.03), low-certainty evidence); higher risk extracranial hemorrhage 6.38% versus 2.81%, RR = 2.25 (1.88 to 2.70; P < 0.001), high-certainty evidence

CONCLUSIONS:

1. Family physicians have main role in reducing stroke risks and are key first contact to identify/treat interatrial shunts
2. Primary and secondary prevention. Reduce these risks: BP, heavy alcohol use, smoking, dyslipidemia, diabetes, BMI >23, diets low fruits/vegetables, high sodium, low physical activity levels.
3. 25% of population have PFO. Listen for murmurs, refer echocardiogram for bubble test for PFO.
4. Implement Canadian Stroke Best Practice Recommendations as above and on their excellent website for your specific patient.

Naqvi IA, Kamal AK, Rehman H. Multiple versus fewer antiplatelet agents for preventing early recurrence after ischaemic stroke or transient ischaemic attack. Cochrane Database of Systematic Reviews. 8:CD009716, 2020

Saule R, Lia L, De Giusti M, La Torre G. A systematic overview of the scientific literature on the association between Mediterranean Diet and the Stroke prevention. Clinica Terapeutica. 170(5):e396-e408, 2019

Schandelmaier S, Briel M, Sacclotto R, Olu KK, Arpagaus A, Hemkens LG, Nordmann AJ. Niacin for primary and secondary prevention of cardiovascular events. Cochrane Database of Systematic Reviews. 6:CD009744, 2017

Using co-design to create patient-centred tools for living with dyspepsia

Authors: Christopher Rice¹, Ashleigh Metcs¹, Brenna Murray¹, Dr. Kelly Burak^{1,2,3}, Dr. Kerri Novak^{1,2,3}

¹Physician Learning Program, University of Calgary, ²Calgary Division of Gastroenterology and Hepatology, ³Department of Medicine, University of Calgary

Using co-design, we developed patient and physician resources that can optimize gut health management and potentially reduce esophagogastroduodenoscopy (EGD) usage.

This project is part of a larger quality improvement initiative led by the University of Calgary's Physician Learning Program and the Calgary Division of Gastroenterology and Hepatology.

Research Questions:

1. Why are patients with dyspepsia being referred for EGDs?
2. How might we support patients and providers along the dyspepsia primary care pathway?
3. How might a patient education resource package support a reduction in low-yield EGDs?



Phase 1
July 2019



Phase 2
Oct 2019



PCN Engagement
Dec-Jan 2020



Phase 3
2020



Next Steps

What we did:

Engaged participants in virtual experience mapping sessions to understand the patient experience for referrals.

Outcome:

Feedback was translated into experience maps which stimulated discussion in subsequent focus groups to identify unmet needs.

What we did:

Conducted two virtual multi-disciplinary co-design sessions with participants focused on how to develop user-centred resources.

Outcome:

Sessions informed the first poster prototype.

What we did:

Engaged Red Deer PCN to evaluate poster prototype.

Outcome:

Re-evaluated poster messaging and content based on feedback. Expanded intervention to include a patient journal for tracking gut symptoms.

What we did:

Developed journal prototype and engaged participants in virtual co-design sessions to refine.

Outcome:

Feedback from virtual co-design sessions informed final journal prototype.

What we plan to do:

Partner with the Digestive Health SCN to spread and scale these resources. Test resources with patients and physicians to evaluate effectiveness.



Experience Map



Synthesis Map

What we learned:

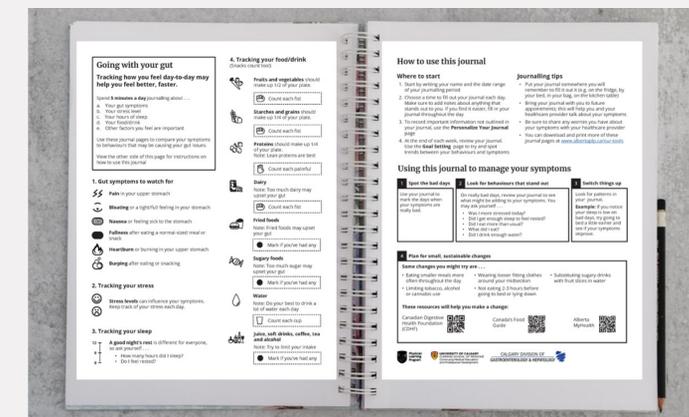
1. Patients expressed a need to advocate for themselves and communicate their experiences and symptoms to providers
2. Providers identified a need to communicate to patients that dyspepsia can be successfully managed in most cases without performing an EGD.

Developed Resources



View Posters

Two patient-facing posters featuring a creative, personable approach to reducing low-yield EGDs using scuba diving and cave exploration imagery.



View Full Journal

A patient journal designed to empower patients to track lifestyle factors such as diet, sleep, and stress, all of which may influence gut health. A summary page gives providers a quick overview of which symptoms and potential triggers are the most problematic for the patient.

Conclusion:

Using co-design, physicians and patients helped develop useful point-of-care resources that empower patients to manage their condition and facilitate clear communication with primary care providers. We anticipate these resources will also optimize the use of EGDs for healthy adults with dyspepsia. Evaluation of these resources in practice will tell us how effectively they meet the needs of patients and providers.

Influenza Surveillance In Alberta During The COVID-19 Pandemic

S Orenstein¹, Y Efegoma¹, S Mohsen¹, J Dickinson¹
¹Department Of Family Medicine, University of Calgary



Background

- The TARRANT surveillance program helps monitor influenza activity in Alberta and is part of the Sentinel Practitioner Surveillance Network (SPSN) that quantifies vaccine effectiveness (VE) in Canada each year.
- With the increased public health control measures for COVID-19, the influenza season was drastically affected this year, along with how our surveillance program was structured.
- Because ILI patients were attending COVID assessment centers, we began sampling from 5 centers in addition to community practitioners.

Objective:

To describe the effect of the COVID-19 pandemic on a community-based influenza surveillance system.

Methods

Inclusion criteria for TARRANT Study:

- Cough or fever with one or more of: Arthralgia, myalgia, prostration, or sore throat.
- Samples collected from November 01, 2020 to January 22, 2021

- Nasopharyngeal (NP)/Throat swabs collected by community sentinel clinicians and testers at 5 COVID-19 assessment centers across the province.
- Swab samples and requisition forms sent to the provincial lab analyzed for COVID-19 & Influenza using a PCR nucleic acid test and a multiplex respiratory panel for other respiratory viruses.

Statistical Analysis:

- Prevalence of respiratory viruses (i.e.. COVID-19, Enterovirus/Rhinovirus, Influenza) and distribution of collected samples by age and sex determined using Stata 16 software.

Findings

- This season, NO lab-confirmed influenza samples were collected.**
- Last reporting season, 180 (47%) of the 380 tested samples tested positive for influenza.
- We received 134 samples, compared to 391 samples collected over this same time period last reporting season.
- The median age of the 134 patients was 41. 61.9% were female.

Table 1. Demographic and clinical characteristics of 134 included patients by testing source

Characteristics	Sentinels (n=35)	Assessment Centers (n=99)	Total (n=134)
Age, yr, median (IQR)	41(31-56)	35 (24-47)	37(52-24)
Sex, female, n (%)	21 (60.0)	62 (62.6)	83 (61.9)
Patient Symptoms, n (%)			
Fever	13 (37.1)	96 (97.0)	109 (81.3)
Cough	14 (40.0)	93 (93.9)	107 (79.9)
Sore Throat	16 (45.7)	55 (55.6)	71 (53.0)
Myalgia	11 (31.4)	38 (38.4)	49 (36.6)
Lethargy	10 (28.6)	62 (62.6)	72 (53.7)
Nausea	27 (77.1)	2 (2.0)	29 (21.6)
Vomit	0(0)	15 (15.2)	15 (11.2)
Loss of Smell	1 (2.9)	7 (7.1)	8 (6.0)
Loss of Taste	0(0)	14 (14.1)	14 (11.0)

Table 2. Prevalence of respiratory viruses by testing source

Virus Type	Prevalence by Sample Location, n (%)		
	Sentinel (n=35)	Assessment Center (n=99)	Total (n=134)
COVID-19	2 (5.7)	31 (31.3)	33 (24.6)
Rhino Virus	4 (11.4)	10 (10.1)	14 (10.4)

Table 3. Patient symptoms presented by respiratory virus.

Patient Symptoms, n (%)	COVID Positive (n=33)	Enterovirus/rhinovirus positive (n=14)	P-value
Fever	33 (100.0)	12(92.9)	0.126
Cough	32(97.0)	14(100)	0.504
Sore Throat	18 (54.6)	12(85.7)	0.054
Myalgia	13(39.3)	3(21.4)	0.208
Lethargic	10(30.3)	1(7.1)	0.048
Nausea	10(30.3)	2(14.3)	0.311
Vomit	2(6.1)	1(7.1)	0.911
Loss of Smell	5(15.2)	0(0)	0.117
Loss of Taste	7(21.2)	1(7.1)	0.225

Discussion

- There are no lab-confirmed cases of influenza mid-season, for the first time since initiation of TARRANT Viral Watch.
- There was a higher prevalence of COVID-19 positive patients from assessment centers (31.3%) compared to sentinels (5.7%). This may be due to patients presenting with COVID-19/ influenza-like symptoms going to assessment centers and not their family physician.
- Mid-season VE could not be determined** due to no lab confirmed cases of influenza being detected in Alberta, and very few in other provinces.
- Rhinovirus was still observed** (10.4%) this season but no other common respiratory viruses compared to past seasons.
- There were no differences in presenting symptoms between COVID-19 positive patients and Enterovirus/Rhino virus positive patients. Due to the small sample size, the analysis was underpowered to detect differences.
- We will continue partnering with assessment centers as well as sentinel practitioners to assess changes in the epidemic, once vaccination is widely available. Through this, we hope to calculate vaccine effectiveness for COVID-19 in addition to influenza.

Conclusion

- This season has been unprecedented due to the onset of the COVID-19 pandemic.
- The lack of detected influenza and other respiratory viruses may be due to public health measures.
- Collaboration with both community clinics and assessment centers may be necessary during surveillance programs for COVID-19 immunization.

Improving the quality of prescription information in primary care EMR data using a machine learning approach



M. Taylor,¹ S. Garies,² N. Drummond,^{1,2,3,4} M. Cummings,¹ B. Soos,^{2,3} C. Weaver,³ S. Aponte-Hao,³ R. Miyagishima,¹ A. Pham,¹ T. Williamson³

¹Dep't of Family Medicine, University of Alberta; ²Dep't of Family Medicine, University of Calgary; ³Dep't Community Health Sciences, University of Calgary;

⁴School of Public Health, University of Alberta

CONTEXT

- Prescribed medications from community-based primary care settings are important for many secondary purposes:
 - Med recall lists
 - Prescribing surveillance
 - Policy decision-making
 - Pharmacovigilance
- Prescribing data from EMRs can be difficult to use due to poor quality, high variation, and unstructured free text.

Objective

1. To build a machine learning tool to clean unstructured prescribing information in primary care EMR data into consistent, standardized terms.

DATABASE

- Canadian Primary Care Sentinel Surveillance Network (CPCSSN): a collaboration of 13 primary care practice-based research networks across Canada
- Family physicians & nurse practitioners contribute de-identified patient data from their EMR.
- Approx. **41 million prescribing records** from >1.8 million patients

APPROACH

- Health Canada's Drug Product Database used as reference standard
- A FastText linear classifier was developed by training a model with a set of labeled data derived from the Drug Product Database, and a learned text representation based on CPCSSN's collection of medication strings.
- Manual review of a random sample of 5,000 prescription records to check for accuracy

Example of uncleaned text & coded text

Original EMR text	Cleaned Code	Cleaned Name
oxycodone HCL 30 mg Oral Tablet, Oral Only, Extended Release 12 Hr	N02AA05	Oxycodone
Fluticasone-salmeterol (Advair 250 250 mcg-25 mcg AERO) i INH BID	R03AK06	Salmeterol and Fluticasone
VICTOZA MULTIDOSE PEN-INJECTOR. 30DOSES(0.6MG)-15DOSES(1.2MG)-10DOSES(1.8MG). 1/2/3	A10BJ02	Liraglutide
CONCERTA 36MG 1 po od total 56 in lots of 14 q14 days x 4 Qty:14 Repeats:3	N06BA04	Methylphenidate
fluticasone propionate 125 mcg Inhalation Aerosol With Adapter (Gram)	R03BA05	Fluticasone
budesonide/formoterol fumarate 200 mcg-6 mcg/actuation Inhalation Aerosol Powder, Breath Activated (Ea)	R03AK07	Formoterol and Budesonide
rabeprazole sodium 10 mg Oral Tablet, Delayed Release (Enteric Coated)	A02BC04	Rabeprazole
Codeine/guaiFENesin/pseudoephedrine (Ratio-Cotridin Expectorant 10 mg-100 mg-30 mg/5 mL LIQ) 0.5 tsp i PO BID prn	R05DA04	Codeine
ALUPENT SYR 10MG/5.0ML 2 TSP TID for COUGH Qty:120 Repeats:1	R03CB03	Orciprenaline
cholera vaccine (whole cell-cholera toxin B subunit, recomb) Oral Suspension, Reconstituted, Oral (mL)	J07AE01	Cholera, Inactivated, Whole Cell
HYDROCORTISONE CREAM 0.5% USP CREAM TOPICAL (JAMP PHARMA CORPOR...)	D07AA02	Hydrocortisone
acetylsalicylic acid 81 mg Oral Tablet, Delayed Release (Enteric Coated)	B01AC06	Acetylsalicylic Acid
pantoprazole magnesium 40 mg Oral Tablet, Delayed Release (Enteric Coated)	A02BC02	Pantoprazole
acetaminophen/codeine phosphate/caffeine 300 mg-30 mg-15 mg Oral Tablet	N02AJ06	Codeine and Paracetamol
zoster vaccine live/Pf 19,400 unit/0.65 ml Subcutaneous Vial (Ea)	J07BK01	Varicella, Live Attenuated
fluticasone propionate/salmeterol xinafoate 250 mcg-25 mcg/actuation Inhalation Hfa Aerosol With Adapter (Gram)	R03AK06	Salmeterol and Fluticasone
ciprofloxacin/ciprofloxacin HCL 500 mg Oral Tablet, Extended Release Multiphase 24 Hr	J01MA02	Ciprofloxacin
VARENICLINE TARTRATE 0.5 mg (11)-1 mg (3x14) TABLET, DOSE PACK (0.5(11)-1)	N07BA03	Varenicline
acetaminophen/codeine phosphate/caffeine 300 mg-30 mg-15 mg Oral Tablet	N02AJ06	Codeine and Paracetamol
VIMOVO MODIFIED RELEASE TABLET 20MG/500MG 1 po bid prn Qty:60 Repeats:0	M01AE52	Naproxen and Esomeprazole

PRELIMINARY OUTCOMES & NEXT STEPS

- Preliminary observations comparing CPCSSN's previous medication coding process to the new machine learning method:
 - The error rate has decreased by an estimated order of magnitude;
 - Any identified coding errors seem to be relatively close to the correct code, which is helpful when related medication codes are part of a clinical query or case definition;
 - Updating the ML model with newly approved drugs and corrections appears to have less stability issues in how it may affect other aspects of CPCSSN coding and processing.
- We are currently conducting a manual review to quantify the accuracy of the algorithm (sensitivity, specificity, PPV, NPV).



Contact: Stephanie Garies (sgaries@ucalgary.ca)

This work is funded by the Alberta Children's Hospital Research Institute (Calgary, Alberta).

Methods for Defining a Patient Denominator in the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) Database: Recommendations for Best Practices



Stephanie Garies,¹ Michael Cummings,² D. Himasara Marasinghe,¹ John Queenan³

¹Dept of Family Medicine, University of Calgary; ²Dept of Family Medicine, University of Alberta; ³Centre for Studies in Primary Care, Queen's University

CONTEXT

- Disease reporting & prevalence studies require definition of a:
 - **numerator** (number of affected individuals)
 - **denominator** (number of individuals at risk in the population)
- Calculating the denominator or patient population from primary care electronic medical record (EMR) data can be challenging, as various types of biases & limitations exist within these data.

Objectives

- To describe different methods used to define patient denominators in primary care EMR databases globally;
- To assess different patient denominators in Canadian primary care EMR data.

CPCSSN DATA

- Collaboration of 12 primary care practice-based research networks across Canada.
- Family physicians & nurse practitioners contribute de-identified patient data from their EMR.
- EMR data are cleaned, coded, and standardized by CPCSSN to use for secondary purposes.

APPROACH

- Part 1: Scoping review of published & grey literature (2000-2020) to understand how other international primary care EMR databases define their patient denominators.
- Part 2: Descriptive analysis of national CPCSSN data (up to Dec 31, 2019).
- EMR data for over 1.8 million patients from 7 provinces, with up to 10 years of longitudinal data, including:
 - 43 million billing records
 - 52 million encounter records
 - 28 million encounter dx records
 - 41 million prescribed medication records

Fig 1. Variation in % patients included by data table & EMR system

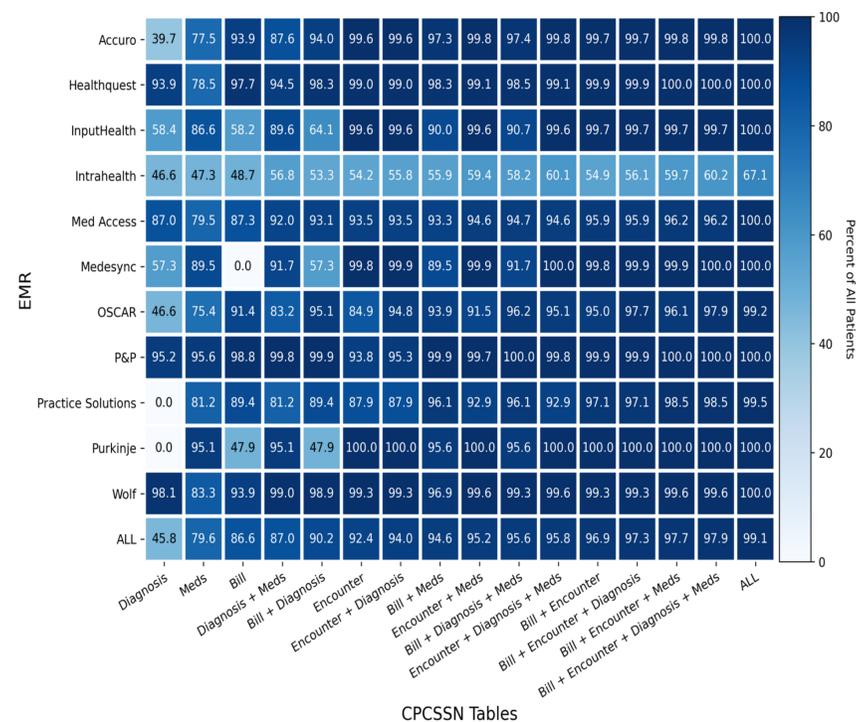
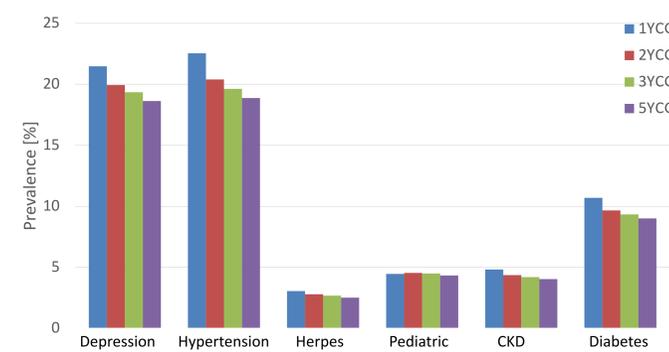


Fig 2. Variation in disease prevalence by different contact group time periods



FINDINGS & RECOMMENDATIONS

From scoping review: International studies calculate denominators for EMR data primarily using external registries (claims, insurance, census) or statistical modelling to standardize for age, sex, SES.

Denominator in CPCSSN Data:

- Use "Date Created" variable across 4 tables (encounter, diagnosis, billing & medications) to define a contact; this mitigates the gaps in data resulting from different EMR systems.
- Use one contact with a 2-year time period for a CPCSSN denominator ("2YCG") for most chronic disease epidemiology.
 - Includes more 'active' patients (vs. longer time period)
 - Balanced % male/female (more females in 1YCG)
 - Balanced median age (older patients in 1YCG)
 - Reasonably expected disease prevalence (gradient, with highest in 1YCG, lowest in 5YCG)
- Study of rare diseases may require a larger contact group to capture more patients (e.g. 5YCG)

Creating Effective Infographics, What Matters? A Literature Review

Samin Dolatabadi, Dr. Sonja Wicklum, Dr. Martina Kelly
Cumming School of Medicine, University of Calgary

Introduction

Infographics are data visualizations that present complex information quickly and clearly to an audience. They are commonly used in various fields such as law and healthcare to communicate key messages. Even though there are multiple benefits to creating medical infographics (Figure 1), learning to make effective infographics is not commonly taught in medical school.

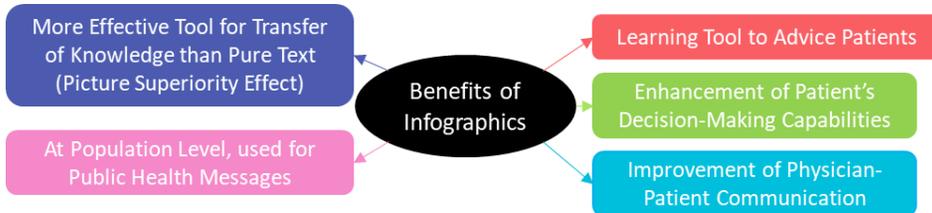


Figure 1: Benefits of Infographics in the Medical Field

Objectives

To determine characteristics of an effective infographic that increases cognition, supports knowledge translation and physician-patient communication.

Methods

The following databases were searched using search terms suggested by a librarian: MEDLINE (OVID), EMBASE, CINAHL, Library and Information Science Source, Library and Information Science Abstracts, ERIC, and Communication Mass Media Complete. English-language articles published after 2010 were included. Data from included articles (author, year of publication, country, research question, target population, study design, criteria used to evaluate infographics, outcome measures, and results) were tabulated on a custom-made data extraction form.

Results

Ten articles that met the inclusion criteria were found, all of which were published after 2015 with 7 being from US and the rest from UK, Saudi Arabia, and Turkey. Based on these studies, five key features of an effective infographic were identified (Figure 2).

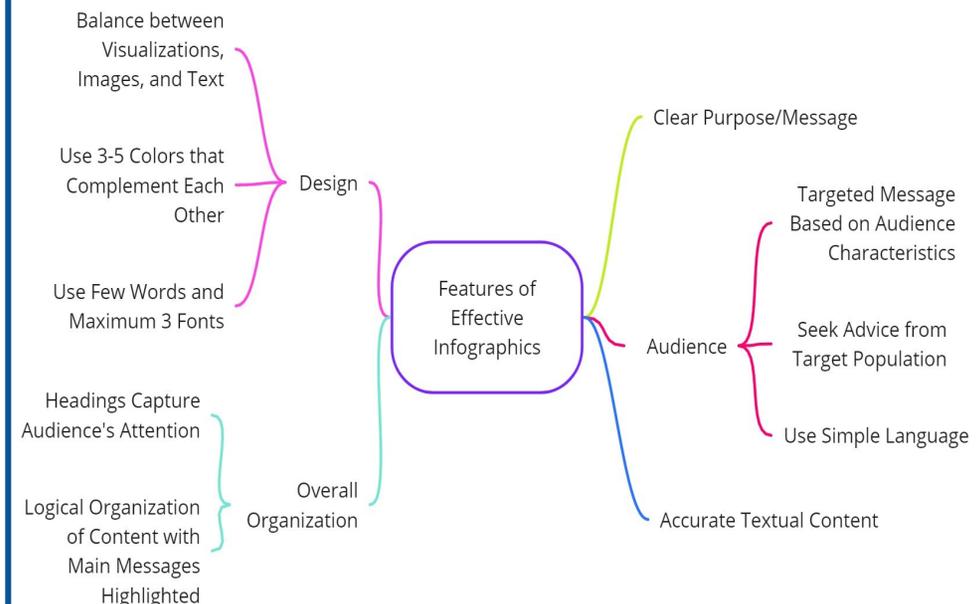


Figure 2: Features of Effective Infographics

Conclusion

Although an infographic can transfer knowledge about a topic faster than pure text, this condition is dependent on the quality of the infographic. The findings of this study are being used to develop a rubric to help students design effective infographics as part of Family Medicine Clerkship at the University of Calgary. Developing infographics in partnership with patients using empathy and human-centered design theories has potential to improve patient-centered communication.

Family physician prescribing practices and perspectives on shared decision making regarding the use of oral anticoagulants for stroke prevention in patients 75 years or older with atrial fibrillation.

Jahaan Ali BSc, Marjan Abbasi, MD, CCFP(COE), Sheny Khera, MD, MPH, CCFP(COE),
Paul Kivi, MD, CCFP(COE) & Peter George Tian, MD, MSc

Division of Care of the Elderly, Department of Family Medicine, Faculty of Medicine and Dentistry, University of Alberta
Corresponding Author: Sheny Khera <sheny.khera@gmail.com>

INTRODUCTION

- Older adults are at higher risk of Atrial Fibrillation (AF), yet many go undertreated with oral anticoagulant therapies (OAC), posing an increased risk of preventable ischemic stroke, greater morbidity and healthcare costs.
- Approximately 85% of OACs are prescribed by family physicians, whose longitudinal doctor-patient relationships make them ideal for delivering patient-centered approaches for stroke prevention in AF.
- Shared decision making (SDM) is a key aspect of patient-centered care.
 - SDM involves collaboration between clinicians and patients to make decisions informed by evidence and in line with patient values.
 - SDM is especially valuable in situations requiring a balance between potential benefits and harms, such as initiating OAC for stroke prevention in elderly patients with AF.

Objective: To determine the management practices and perspectives of family physicians in Edmonton on SDM for the use of OACs for AF in patients aged 75 years or older.

METHODS

A self-designed 18-item survey, consisting of Likert-type, multiple-choice, and open-ended questions on decision-making practices and demographics. Online Survey distributed to 20 family physicians (mean age 44.7 years; 75% female; average 15 years in clinical practice) affiliated with Edmonton Oliver Primary Care Network. Responses collected Oct. – Dec. 2019.

Outcome measures:

- Family physician understanding of the risks and benefit of OACs
- The tools family physicians use to assess OAC risks and indications
- In AF patients ≥ 75 years:
 - Factors family physicians consider when deciding to initiate OACs for stroke prevention
 - Family physician confidence in initiating OACs for stroke prevention
 - Reported use of SDM; perceived patient understanding of options regarding the use of OAC for stroke prevention

Family physicians involve patients in shared decision making when starting oral-anticoagulation for atrial-fibrillation but are not equally confident in initiating therapy.

“I am confident initiating oral anti-coagulation for stroke prevention in atrial fibrillation patients 75 years of age or older.”

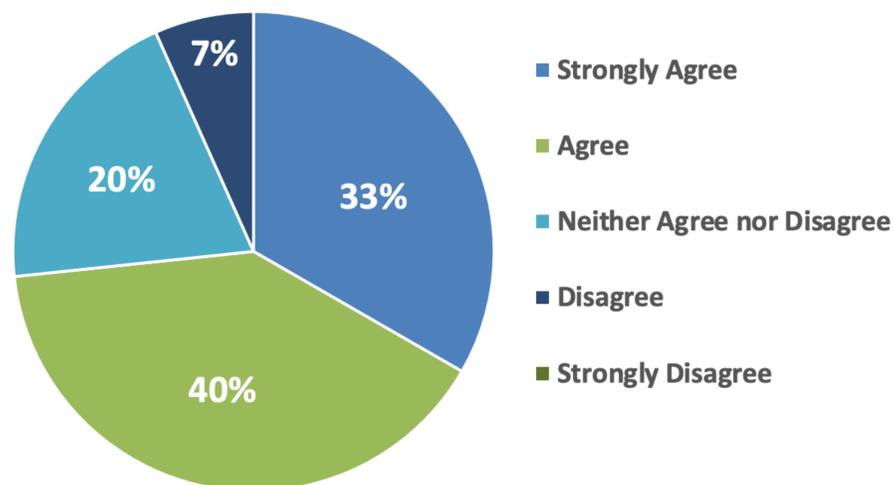


Figure 1. Family physician self-reported confidence initiating OAC for stroke prevention in AF patients ≥ 75 years.

RESULTS

- Factors family physicians considered: Patients' risk of falls, bleeding or stroke (17/20, 85%), patients' health (15/20, 75%), patient preference (12/20, 60%), drug properties (8/20, 40%), drug coverage (4/20, 20%), and laboratory access (4/20, 20%).
- CHADS2VASC (13/14, 93%) and HASBLED (11/15, 73%) were tools used to determine stroke and bleeding risks, respectively.
- When asked whether they felt confident initiating OAC for AF patients ≥ 75 (Figure 1), 73% of participants agreed or strongly agreed, 20% neither agreed nor disagreed, and 6.67% disagreed. Increased education was the most commonly reported factor needed to increase confidence.
- All participants agreed or strongly agreed that their patients participated in SDM to initiate OAC for stroke prevention and understood treatment options, benefits and risks.

“My patients (75 years of age or older)...”

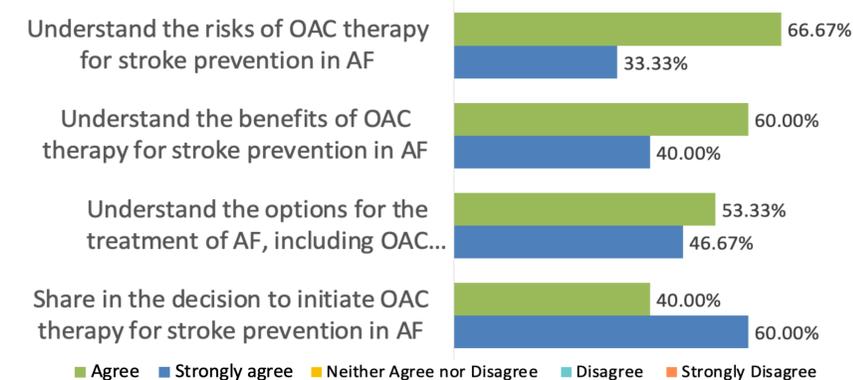


Figure 2. Family Physician perceived use of SDM regarding the use of OAC for stroke prevention in AF.

DISCUSSION

- The risk of falls, stroke and bleeding had the strongest influence on family physicians' decision to start OAC in elderly patients with AF.
- All physicians felt they used SDM and agreed that their patients were educated on the use of OAC for stroke prevention in AF.
 - However, even when physicians believe that they are employing shared decision making when choosing an AC, patients may believe that their physicians were the ones making the decision.
- Family physician confidence in initiating OAC treatment for elderly AF patients was variable.
 - While further exploration is needed to determine additional factors influencing their confidence, increased education may be one key factor to address.

Important Outcomes for Type 2 Diabetes: The Patient's Perspective

Sadasivan C,¹ Zhou H,² Khera S,³ Baergen J,³ Bell N,³ Szafran O³

¹Faculty of Science, University of Alberta (UofA), ²Dept of Educational Psychology, UofA, ³Dept of Family Medicine, UofA

BACKGROUND

1 in 3 Canadians are living with diabetes.

- ▶ increased risk of heart attacks, strokes, kidney damage, and amputations (PHAC 2017).

What are **Patient Important Outcomes**?

- Concept arose from criticism that studies were being designed with outcomes that were relevant to researchers, but not necessarily important to patients.
- Physicians also tend to assume that outcomes relevant to themselves will automatically improve patient important outcomes (Guyatt, Monton, Devereaux, et al, 2004).

So what do patients with type 2 diabetes tell us about which outcomes matter most to them?

- Are these the same as what doctors rank as important outcomes for diabetes?

METHODS

Setting: Family Practice Clinic, Edmonton, AB

Design: Mixed Methods Study

- ▶ Physicians were asked to rank a list of treatment outcomes of diabetes in order of significance.
- ▶ Focus groups were conducted with adult type 2 diabetes mellitus patients, using semi-structured questions.
 - Focus group questions addressed patients' ideas on maintenance of their diabetes, healthy living with diabetes, and important outcomes.

Analysis: Physician responses were analyzed using quantitative descriptive statistics. Patient focus group data was analyzed via qualitative thematic analysis using constant comparative technique.

Patient Important Outcomes are different when you **ask** Patients.

"You don't let the disease control your life."

"...not having the secondary issues, like my vision..."

Not being on "pills of everything in the world"

- According to patients, the outcomes are not necessarily all physiologically defined endpoints in the way they are identified by physicians.
- Patient's emphasized their value of socially-defined outcomes and the process to meet these instead.
- Investigation of how the outcomes of type 2 diabetes management may be positively influenced by the inclusion of the patient voice in the delivery of patient-centred primary care is warranted.

"Being healthy means being able to participate in life."

"We don't want to end up losing legs and getting worse..."

"My fear is it not being maintained"

RESULTS

7 family physicians and 15 patients participated in the study.

Physiologically Defined Outcomes

- Prevention of progression of symptoms (e.g. vision loss, amputation) and avoidance of "all" major and minor morbidity (e.g. organ damage, heart attacks, strokes).
- Meeting A1C goals.

Psychologically & Socially Defined Outcomes

- Maintenance of functional ability.
- Improved quality of life.
- Stress management.
- Better quality of sleep.

Process Highlights

- Healthy doctor-patient relationship (e.g. A1C goal setting with physician).
- Individualized care (e.g. tolerable medication that is tailored to lifestyle, avoid polypharmacy).
- Integrated multifaceted approach with better access to specialists (e.g. nutritionist, mental health, community nurse specialized in diabetes).
- Peer Support Groups.

Acknowledgment: Northern Alberta Academic Family Medicine Fund supported this research project. This project was approved by the Health Research Ethics Board, University of Alberta.

ILLUMINATING THE EVOLVING IMPACTS OF COVID-19 ON ETHNOCULTURAL COMMUNITIES IN EDMONTON: THE ILLUMINATE PROJECT

Nicole N. Ofofu¹, Yvonne Chiu², Badi Jabbour¹, Sauleha Farooq¹, Denise Campbell-Scherer¹

¹Faculty of Medicine and Dentistry, University of Alberta, Edmonton ²Multicultural Health Brokers Coop, Edmonton

CONTEXT

COVID-19 outbreaks in visible minority and racialized communities have exacerbated disparities in poverty, illness and accessing high-quality culturally appropriate information and support. The Illuminate project involves a collaboration between the Multicultural Health Brokers Cooperative of Edmonton, AB and, research and policy partners evolving from previous work to address the needs of these communities.

OBJECTIVE

To generate and feedback real-time synthesised data to help understand and mitigate the evolving impacts of COVID-19.

STUDY DESIGN

Community-based participatory action research using a mixed-methods approach based on complexity science and narrative theory.

Between September-December 2020, 20 cultural health brokers and natural community leaders collected and self-signified in a SenseMaker® platform, real-time micro-narratives on COVID-19 impacts on diverse ethnocultural communities. They also engaged in weekly collaborative discussions on the emerging data.

OUTCOME MEASURES

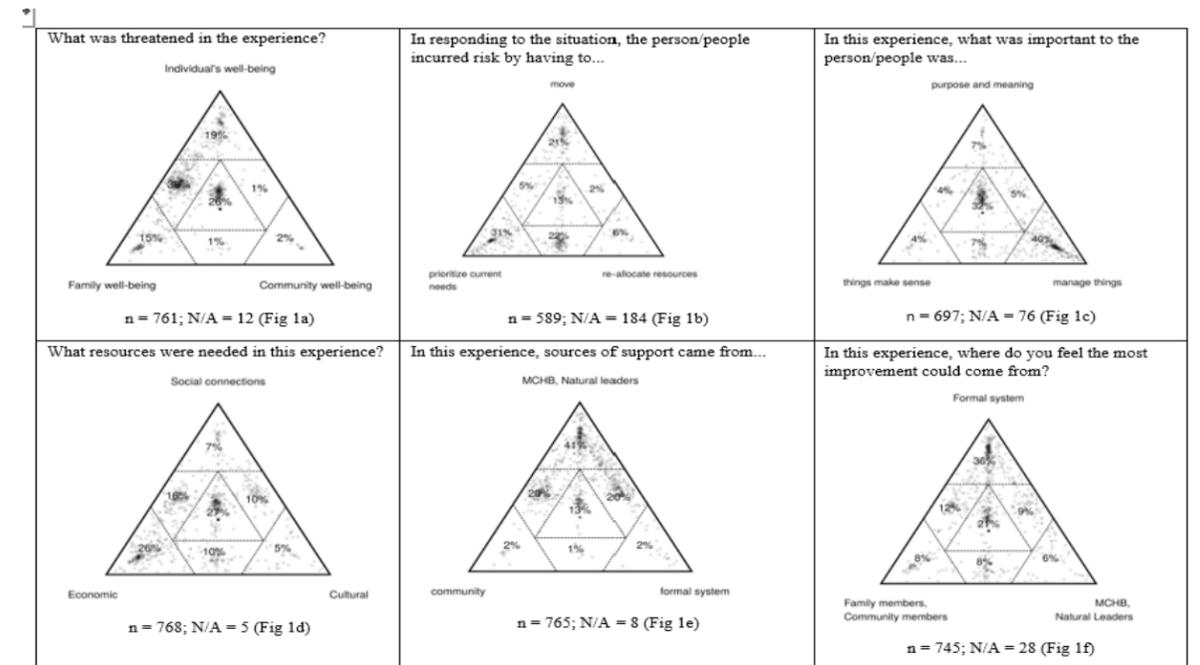
Quantitative description of compositional data, qualitative analysis of the micro-narratives and visualization of outcomes with social network analysis.

RESULTS

- 773 micro-narratives were collected representing lived experiences of individuals and families living in vulnerable circumstances from diverse ethno-cultural communities in Edmonton (Fig 1).
- The resulting narrative patterns illuminate the entanglement of COVID-19 impacts on individuals and families: prevention and management, care of non-COVID acute, chronic and serious illness; maternal care; mental health and triggers of past trauma; financial insecurity; impact on children and youth, and seniors; and legal concerns (Fig 2).
- A core obstacle for COVID-19 holistic management was income instability, a key asset was community social capital.

CONCLUSIONS

The Illuminate Project has made visible the entangled issues with systemic roots that result in poor health in vulnerable members of ethnocultural communities, and the impact of COVID-19 on increasing basic needs and the time and effort needed to mitigate them. We illustrate cultural brokering as a practice to support people through this crisis and propose concrete recommendations to inform policy to reduce harm, and support community resiliency.



NB. Each dot represents a micro-narrative signified by a sensor in the triad
Fig 1 Descriptive patterns in the compositional data.

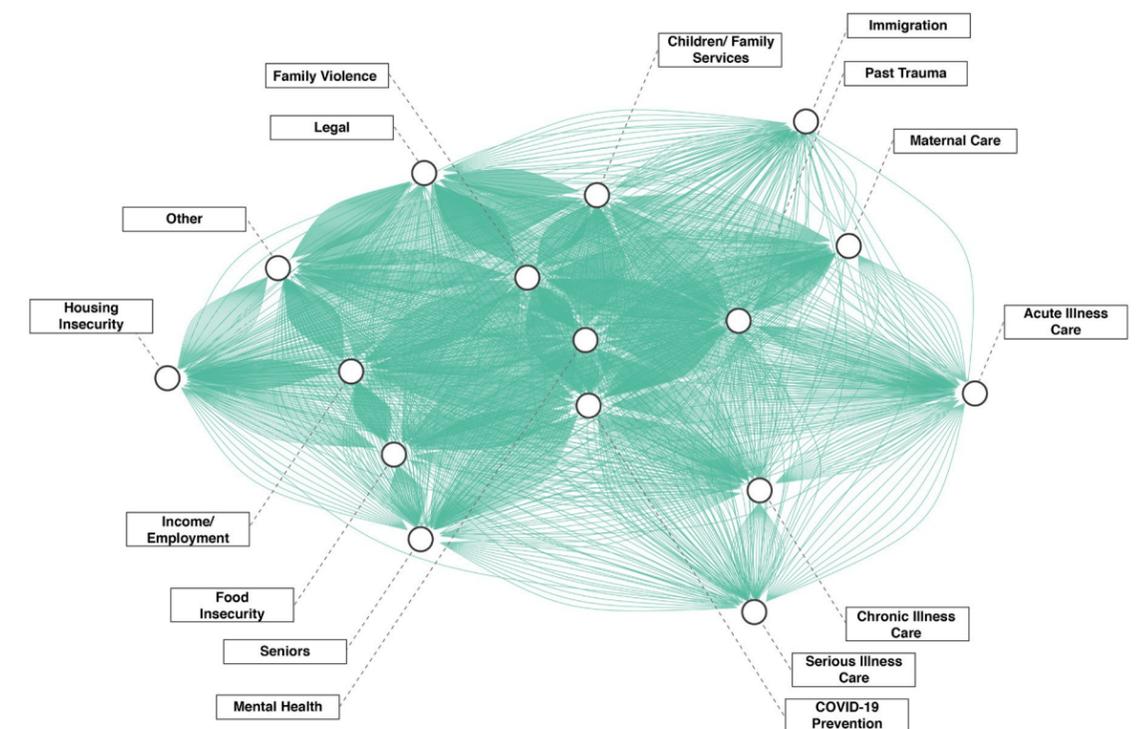


Fig 3. A network view of the identified areas represented as nodes (circles), and the ties that connect them (edge). Each edge represents one micro-narrative that includes issues represented by connected nodes.



Caregiver-Centered Care Education for the Health Workforce: Evaluating the Education

Parmar, J., Anderson, S.D., Poole, L., Charles, L., Pollard, C., Dobbs, B.,

INTRO

Web-based education is a flexible and cost-effective way to deliver health workforce education. We designed an online Caregiver Centered Care Education program to train health providers who interact with family caregivers [FCGS] in the competencies required to provide person-centered care to FCGs. Our goal is to begin to address the gap between what FCGs say they need from healthcare providers and provider’s preparation to support FCGs.

METHODS

Evaluated education at two levels of the Kirkpatrick-Barr Healthcare Education Evaluation Framework:

- **Level 1 Learner’s Reaction:** 5 item Student’s Satisfaction with Education.
- **Level 2 Changes in Learner’s Knowledge:** 10 item Carers Knowledge Assessment Test [CKAT] pre/post the education

TARGET AUDIENCE

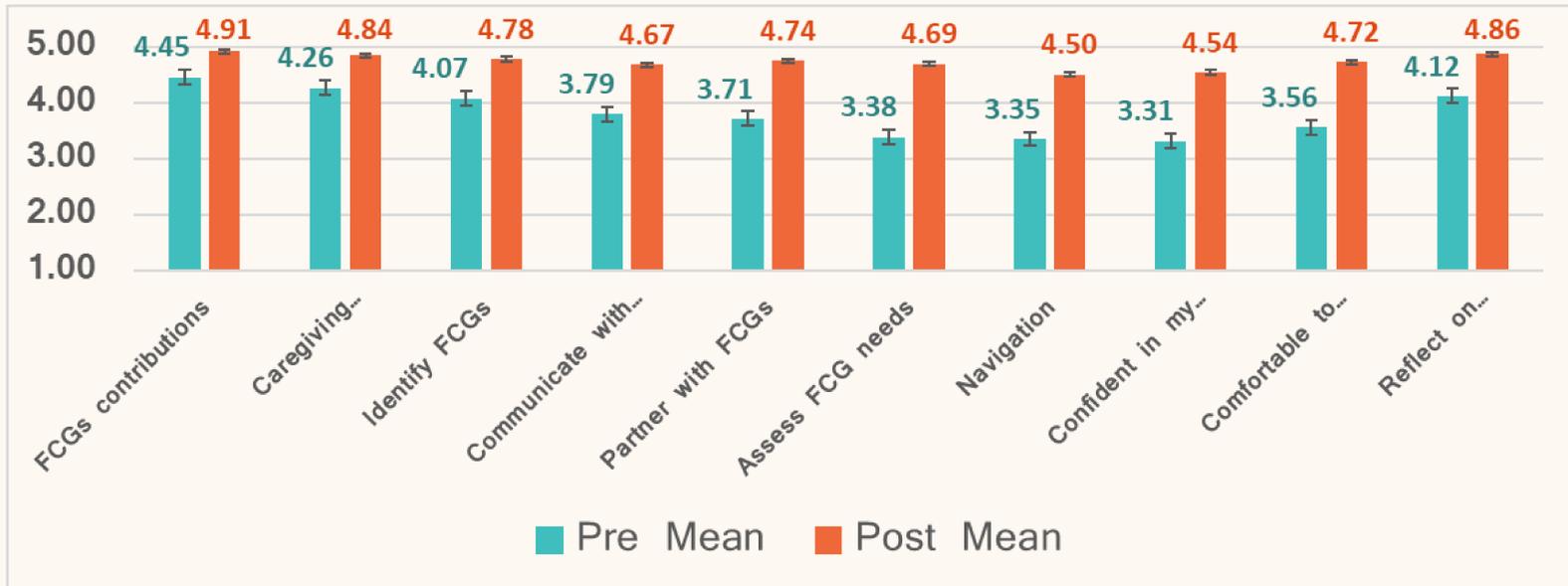
Healthcare trainees and providers who interact with FCGs in five settings primary care, acute care, homecare, supportive living, and long-term care.

Caregiver-Centered Care: Competency-based Education for the Health Workforce

Reaction: Satisfied with the education

- Overall quality of the education (Median 5)
- Quality/utility of the videos (Median 5)
- Interactive exercises (Median 5)
- Motivated to learn more about caring for caregivers (Median 5)

Learners’ Knowledge & Confidence: Significantly* increased



*[CKAT, Level2] Pre (M=38.6, Sd=6.5) to post (M=47.2, SD=3.4) t (69)= -13.0, p<.0005 (two-tailed)

Free online,
Caregivercare.ca
Takes less than an hour

“Very good information for professionals working with caregivers especially relevant to home care, geriatricians, allied health, and others working within the Seniors Health realm. Engaging format that really evokes empathy for caregivers. Well done!”

DISCUSSION

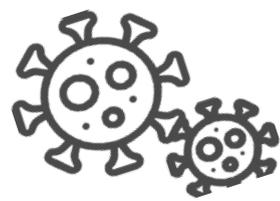
The evidence-based spread of Caregiver-Centered Care Education for the health providers to support family caregivers was needed prior to the COVID-19 Pandemic and is more imperative since.

Contact Us
Dr. Jasneet Parmar
Jasneet.Parmar@ahs.ca
Dr. Sharon Anderson
sanders@ualberta.ca



Sponsors





AUTHORS

Parmar, J., Dobbs, B., Charles, L., Thornberry, C., Tian, P.G., Poole, L., McCaffrey, C., & Anderson, S.D.

CONTEXT

COVID-19 pandemic and the public health protocols have increased the demands of care on FCGs. Prior to the pandemic 43% of family caregivers [FCGs] were lonely and 33% were anxious. There are robust associations between extent of caregiving, stress, anxiety, and loneliness, and poor health.

OBJECTIVE

The aim of this study was to assess the effects of COVID-19 pandemic on Alberta FCGs in terms of care work, anxiety, and loneliness and impact on health.

DESIGN

A cross-sectional, online survey was conducted on the REDCap data collection platform. The survey captured caregiving hours, anxiety [State Anxiety Scale] and loneliness [DeJong-Gierveld Loneliness Scale], retrospectively [Jan 2020] and at the time of the survey (July 2020). We used descriptive statistics, χ^2 , and paired-samples T-tests to examine the data.

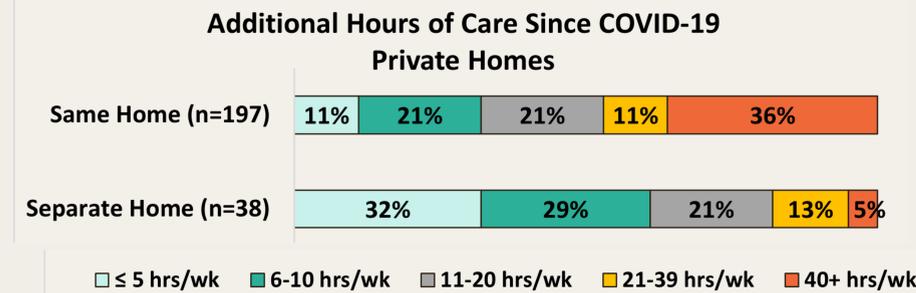
PARTICIPANTS

604 FCGs completed the survey. 85% were female.

A TALE OF TWO SOLITUDES EXPERIENCED BY ALBERTA FAMILY CAREGIVERS DURING THE COVID-19 PANDEMIC

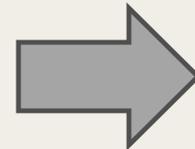


Private homes: Overwhelmed by providing care



Congregate Care: Unable to provide personal or emotional care

Both Solitudes Increased
Anxiety & Loneliness



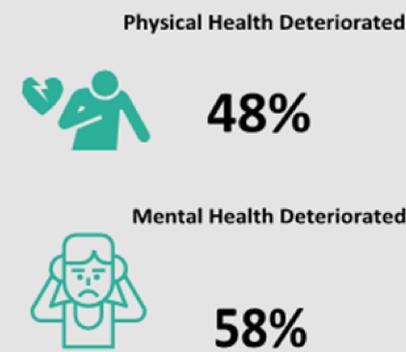
Negative Impacts on Health
and Wellness During COVID-19



78% were Anxious since COVID-19*
*(State Anxiety Scale Tluczek)



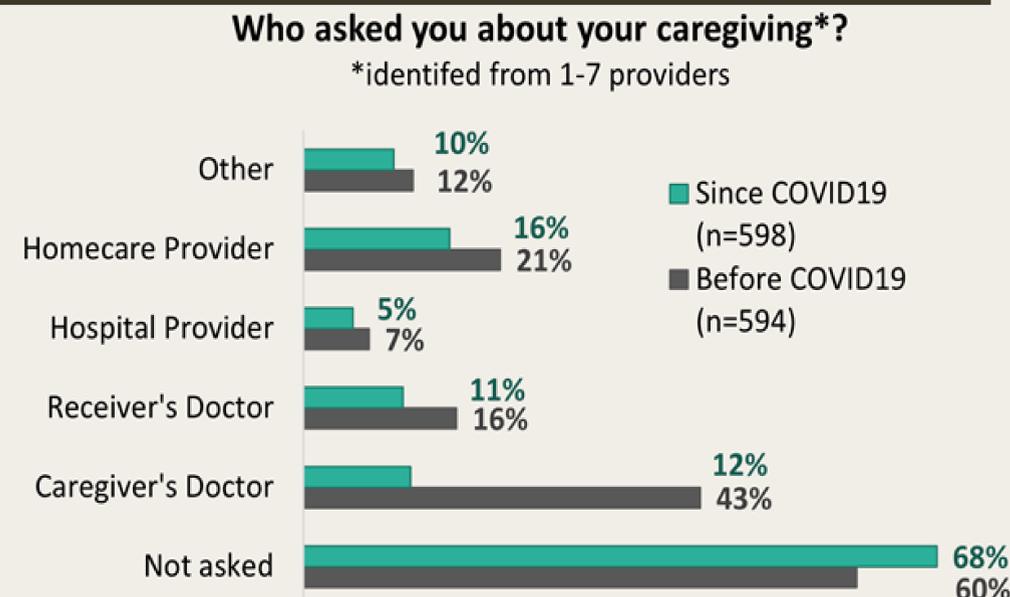
86% are Lonely since COVID-19**
(DeJong Gierveld Loneliness Scale)



Are health providers asking caregivers about their caregiving situation?

40% Before COVID-19

32% Since COVID-19 began



Conclusion

The provision of care by FCGs has been more critical as the result of the COVID-19. The impact of the pandemic on family caregivers caring at home and in congregate care, and their related needs, need immediate attention from both the health and social systems of care. Now is the opportunity to build a better system to support family caregiver's health and wellbeing during their caregiving journey.

Next Steps

Educating and mandating health and community social care providers to identify and support family caregivers is one of the next critical steps.

Contact Us

Dr. Jasneet Parmar
Jasneet.Parmar@ahs.ca
Dr. Sharon Anderson
sdanders@ualberta.ca

Enhanced Home Living Client & Caregiver Supports Pilot Edmonton Zone

Parmar, J., Murphy, A., Lapointe, P., Berans, C., Anderson, S.D.

INTRO

One in 9 of newly admitted long-term care residents have similar needs as those cared for in the community. The barriers to remaining at home are difficulty navigating health systems, out-of-pocket costs, and inflexible homecare delivery.

PROGRAM

Four Edmonton Zone Continuing Care Home Living Teams (inner city, urban, suburban, rural)

- Enhanced support services for clients at risk of LTC admission and distressed caregivers
 - Respite and Instrumental Activities of Daily Living (IADLs)
 - Offer multiple service options (Meaningful to clients/families)
 - Increase service volume and intensity

2. Minimized administrative burden for clients and caregivers (Invoicing Option)

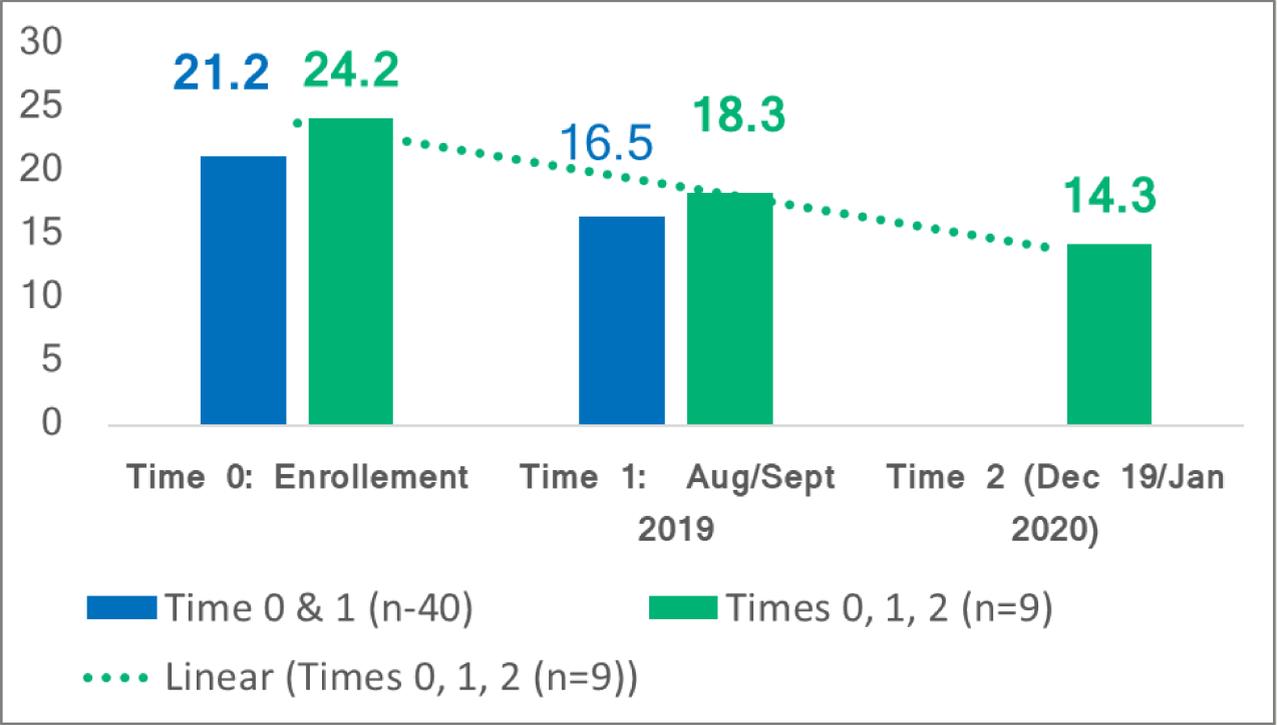
METHODS

We measured: 1) Outcomes--repeated measures of reduced FCG distress (Caregiver Risk Screen Baseline, 3, 6 months), clients at high risk of placement (High/very high MAPLe scores) remaining at home, 2) Process—homecare staff’s perceptions of program (group interviews); 3) Balance- Client/caregiver satisfaction (individual interviews) and health system savings (average annual costs pilot program versus designated supportive living).

Results

Decreased family caregiver distress (Clinically meaningful)

Caregiver Risk Screen Scores (Range 0-30)
Very high risk=23-30; high risk=17-22;



Remained Home

- 98% of Clients /Caregivers reported enhanced supports increased choice to stay in community homes.**
- 57/ 66 clients with MAPLe of 4 (high) or 5 (very high) remained in the community***

***Approximate savings for 57 clients who remain at home compared to Designated Supportive Living equates to \$486,210/year.**

Can Enhanced Home Care services

- Reduce family caregivers distress
- Give clients real choice to stay in their community homes?

PARTICIPANTS

79 clients/caregivers were enrolled from January to September 2019.

Conclusion

The Edmonton Zone Homecare Pilot program created a person-centered and caregiver-centered system of care that focused on assessing the needs of the caregiver as well as the client. It enabled homecare staff to personalize services to client/caregiver needs. It provided a cost benefit which is a primary consideration for health initiatives in times of fiscal restraint.

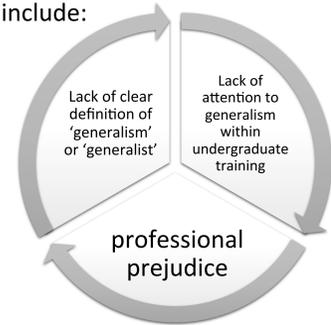
Contact Us

Dr. Jasneet Parmar
Jasneet.Parmar@ahs.ca
 Dr. Sharon Anderson
sdanders@ualberta.ca

CONTEXT

Health systems have a critical need for clinicians with a generalist skill-base. Despite initiatives in medical education to increase the number of generalist-trained doctors, recruitment of generalists is insufficient to meet societal needs in the UK, US and Canada.

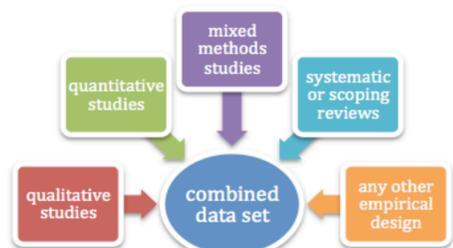
Potential factors for this deficit include:



STUDY OBJECTIVE

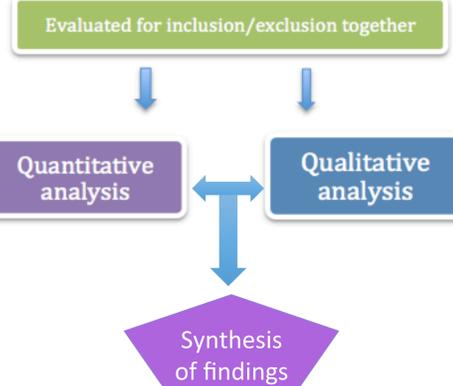
To describe how 'generalism' is operationalized and understood in clinical practice (empirical) literature.

METHODS

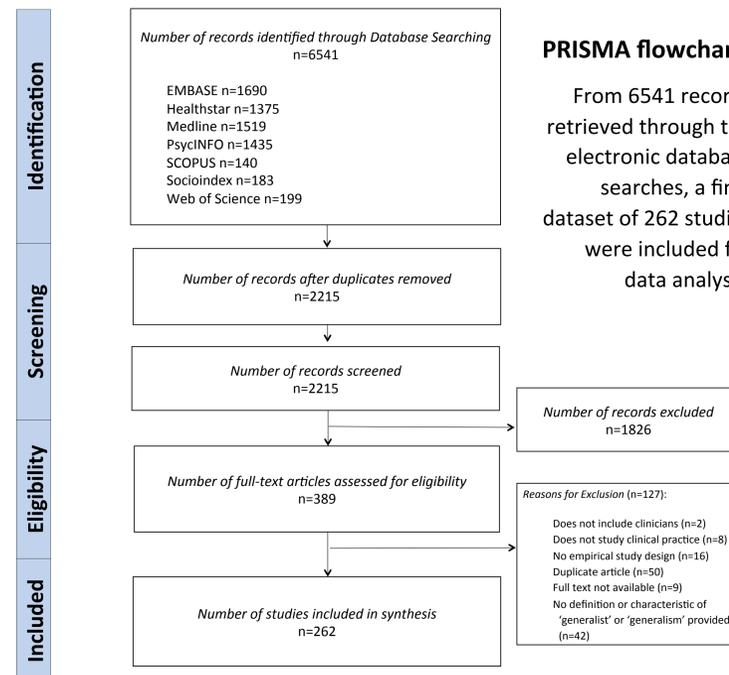


Systematic mixed studies review (SMSR) using a data-based convergent design¹⁻⁴

1. Data are collected together.
2. All data that fulfill inclusion/exclusion criteria qualify to be analyzed through quantitative and qualitative strands.
3. Data from these two strands are explored separately, before being synthesized in the final analysis, where the findings of each contribute to a broader understanding of the core research question.



RESULTS

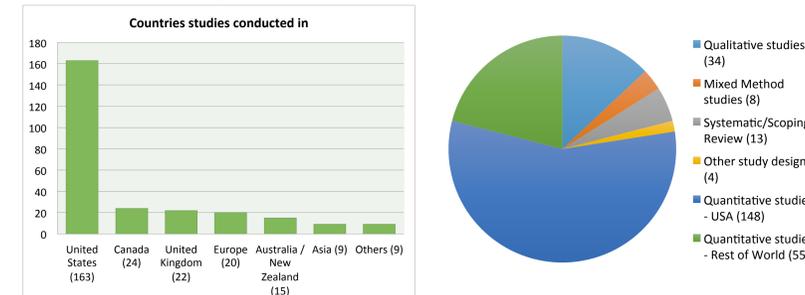


PRISMA flowchart⁵

From 6541 records retrieved through the electronic database searches, a final dataset of 262 studies were included for data analysis.

STUDY CHARACTERISTICS

Studies were overwhelmingly from the United States (62% of included studies). Quantitative studies made up the majority of study types (203), with 148 of these from the United States.

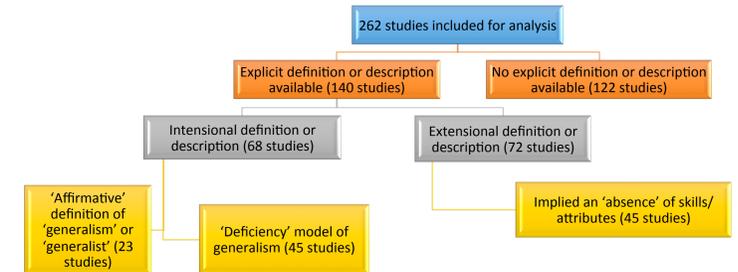


RELEVANCE OF THIS WORK

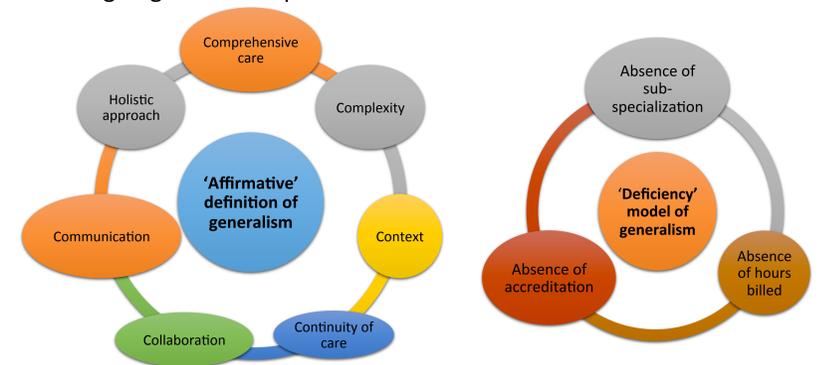
- Identifying similarities and differences between the meaning of 'generalism' and 'generalist' across disciplines and regions will help identify disjunctions between policy initiatives and clinical practice.
- These findings are particularly relevant for medical education and career selection, where the rhetoric for enhanced generalism is not supported by discourses of generalism in clinical practice, which forms the majority of clinical education.

ANALYSIS

We applied heuristics from philosophy to categorize definitions of generalism or generalist practice as *intentional* or *extensional*.^{6,7}



- Of the papers that provided more detail on generalism, whether *intentional* or *extensional*, generalism was presented as an absence of knowledge or training in 64% (90/140) of papers. In the majority of cases, this was reported in contrast to specialists' possession of more in-depth or advanced knowledge.
- Twenty-three studies (9% of the total dataset) outlined specific attributes of generalism, such as provision of holistic care, informed by an in-depth knowledge of the person's context and on-going relationships.



REFERENCES

1. Hong QN, Pluye P, Bujold M, Wassef M. 2017. Convergent and sequential synthesis designs: implications for conducting and reporting systematic reviews of qualitative and quantitative evidence. *Systematic Reviews* 6(1):61.
2. Lizarondo L, Stern C, Carrier J, Godfrey C, Rieger K, Salmond S, et al. 2017. Chapter 8: Mixed methods systematic reviews. In: Aromataris E, Munn Z (Editors). *Joanna Briggs Institute Reviewer's Manual*. [Accessed 2020 Jan 27]. <https://wiki.joannabriggs.org/display/MANUAL/Chapter+8%3A+Mixed+methods+systematic+reviews>
3. Gough D, Thomas J, Oliver S. 2012. Clarifying differences between review designs and methods. *Systematic Reviews* 1. [Accessed 2020 Feb 5]. <http://www.systematicreviewjournal.com/content/1/1/28>
4. Harden A, Health F. 2010. Mixed-Methods Systematic Reviews: Integrating Quantitative and Qualitative Findings. *Focus* 25 [Accessed 2020 Jan 27]. https://ktdrr.org/ktdrr/articles_pubs/ncddrwork/focus/focus25/focus25.pdf
5. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, Shekelle P. 2015. Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) 2015 Statement. *Systematic Reviews* 4. [Accessed 2020 Feb 10]. <https://www.ncbi.nlm.nih.gov/pubmed/25554246>
6. Carnap, R. 1947. *Meaning and Necessity: A Study in Semantics and Model Logic*. Chicago: University of Chicago Press.
7. Frege, G. 1892. "On Sense and Reference" ["Über Sinn und Bedeutung"]. *Zeitschrift für Philosophie und philosophische Kritik* 100: 25–50.



BACKGROUND

Concussions can be classified as **acute** (<90 days to resolution) or chronic **post-concussion syndrome** (PCS; ≥ 90 days to resolution).¹



- PCS can immensely affect the quality of life of individuals suffering from its myriad of chronic symptoms and also poses a great burden to the healthcare system.²
- Current understanding of the progression of acute concussion to PCS remains limited and warrants further investigation.

OBJECTIVE

- To contrast the presentation and subsequent recovery of acute concussion versus PCS injuries seen at the Glen Sather Sports Medicine Clinic (GSSMC), with the goal of identifying potential factors for PCS prevention.

METHODS

Study Design

- This study is a retrospective chart review of patients with concussion seen by sports and exercise medicine physicians (SMPs) at GSSMC between January 2015 and December 2019. Charts were identified by diagnostic code associated with electronic medical records (HealthQuest).
- Concussion injuries were then subdivided into acute or PCS by time from injury to first appointment.

Outcome Measures



RESULTS

A total of **496 patients** (male: 289; female: 207; age: 19.7±9.4 years) presented with **561 concussions** over **1471 visits**.



RESULTS

Demographics

- Individuals who were female (RR=1.4) and/or ≥25 years of age (RR=3.6) were more likely to be diagnosed with PCS.

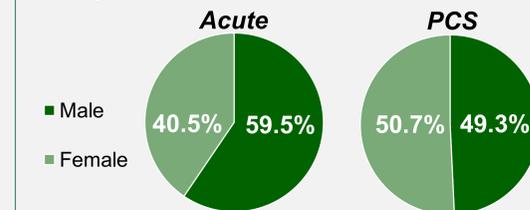


Figure 1. Proportions of patients by sex.

Referral Providers

Table 2. Top 3 referral providers for concussion patients.

Acute	PCS
1. Family Physician (58.1%)	1. Family Physician (76.1%)
2. ER Physician (18.6%)	2. Physiotherapist (9.0%)
3. Physiotherapist (15.8%)	3. SMP (6.0%)

Wait-times

Table 3. Median patient wait-times for SMP referral and first visit. * indicates $p < 0.0001$ in the same row.

Wait-time (days)	Acute	PCS
Injury-SMP Referral	12.0*	134.0*
SMP Referral-SMP Visit	6.0*	15.5*

Injury Mechanisms

- Hockey, football, and soccer were the most common injury mechanisms for both acute concussion and PCS.

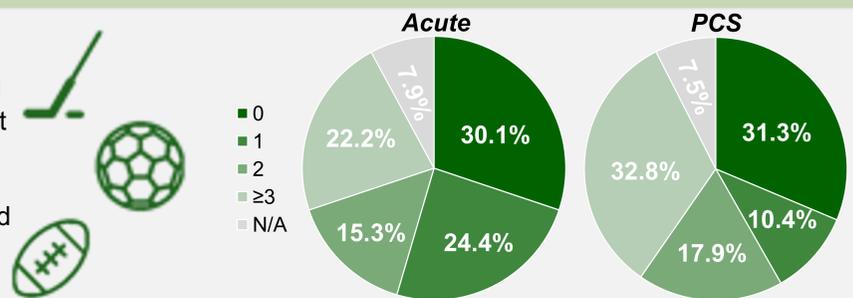


Figure 2. Proportions of patients by number of previous concussions.

Symptom Scores

- Symptomology was assessed by utilizing scores from the Sport Concussion Assessment Tool (SCAT 3/5) which is completed each visit.
- Patients with PCS had significantly higher initial total and symptom scores ($p < 0.001$).

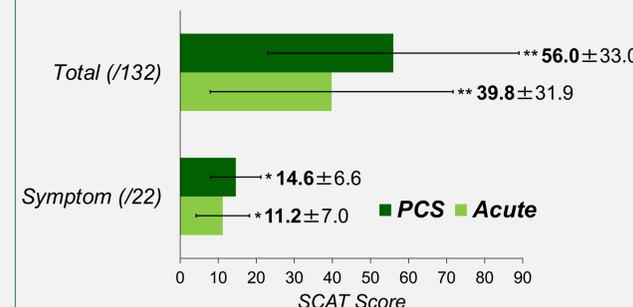


Figure 3. Mean ± SD total and symptom SCAT scores on first SMP visit (Acute n=420 PCS n=63). * $p < 0.0001$, ** $p = 0.0002$.

Table 4. Top 3 SCAT symptoms reported on first SMP visit.

Acute	PCS
1. Headache (73.6%)	1. Difficulty concentrating (84.6%)
2. Fatigue or low energy (68.2%)	2. Difficulty remembering (80.0%)
3. Difficulty concentrating (67.5%)	3. Fatigue or low energy (80.0%)

RESULTS

Management Plans

- Some form of therapy (referral, medication, intervention) was prescribed in 73.1% of all PCS visits, as compared to in 44.2% of acute concussion visits ($\chi^2=88.6, p < 0.0001$).



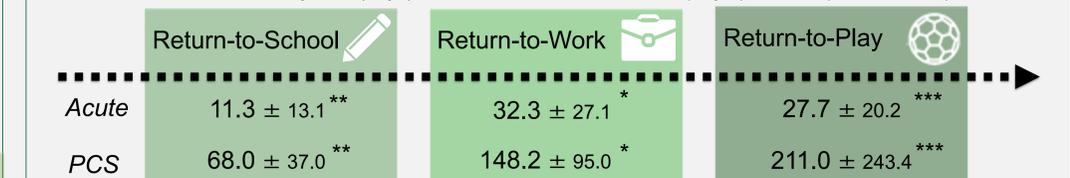
Table 5. Proportion of patients who had imaging ordered prior to SMP referral and/or by SMP at GSSMC visit(s). * indicates $p < 0.0001$ ($\chi^2=24.2$)

Imaging ordered	Acute	PCS
Pre-SMP referral	15.5%*	40.2%*
SMP	4.7%	7.0%

Recovery Timelines

- All recovery times were significantly longer in patients with PCS ($p < 0.01, < 0.05, < 0.0001$).

Table 6. Mean ± SD recovery time (days) for return to school, work, and play. * $p = 0.03$, ** $p = 0.003$, *** $p < 0.0001$.



CONCLUSION

- We gathered a large amount of data to evaluate acute concussion and PCS. Our findings of the incidence and presentation of PCS agree with the current literature.^{1,2}
- The results further reinforce the significant symptomology and delays in school/work/play in patients with PCS.
- Increased recognition of PCS, optimizing initial management, and shortening delays in seeking SMP consultations can be key steps in PCS prevention.
- We make the following recommendations:**



- Next steps include further subgroup analyses and comparison of these results to the Complex Concussion Clinic pathway at the GSSMC.

REFERENCES

- Leddy JL, Baker JG, Willer B. Active rehabilitation of concussion and post-concussion syndrome. *Phys Med Rehabil Clin N Am.* 2016;27(2):437-54
- Dwyer B, Katz DL. Postconcussion syndrome. *Handb Clin Neurol.* 2018;158:163-78.

ACKNOWLEDGEMENTS

We would like to acknowledge the Northern Alberta Academic Family Medicine Fund and Alberta Innovates Summer Studentship for funding support.

Healthy or harmful? A realist review on the impact of health system engagement for people who use drugs

Linda Lam¹, Lawrence Ferguson¹, Hannah Brooks^{1,2}, Sandra Campbell¹, Kari Dumont³, Vanessa Gladue³, Elaine Hyshka^{1,2}, Mark Kratko³, Heather Morris^{1,2}, Lara Nixon⁴, Jane Springett¹, & Ginetta Salvalaggio^{1,2}

¹University of Alberta, ²Inner City Health and Wellness Program, ³Alberta Addicts Who Educate and Advocate Responsibly, ⁴University of Calgary

Context

Engaging people with lived experience in research, health system planning and delivery is emerging as best practice. Benefits to the system are many but less investigated are the personal impacts on participants (Brown 2019). Although it is assumed that people who use drugs (PWUD) will benefit by engaging in the health system beyond receiving services, this population often faces systemic oppression and are at risk of tokenization and stigma, amongst other harms arising from lack of meaningful engagement.

Objective

To understand how, for whom, and under what circumstances health system engagement improves and/or worsens the health and wellbeing of individual PWUD (Program theory).

Design

Population: PWUD (excluding exclusive use of legal substances ie. Alcohol/tobacco/cannabis)

Intervention: Health system engagement – participation in health system planning, delivery, advocacy or research (excluding being a service recipient)

Outcome: Improvements or worsening of personal health and well-being, defined in a holistic sense (physical, emotional, spiritual, and social).

Realist reviews are useful for examining complex social interventions within complex systems. It is an explanatory model that uncovers what, for whom, and under what circumstances give rise to certain outcomes. Using context-mechanism-outcome configurations a program theory is developed which postulates how an intervention works.

Realist Review Methodology

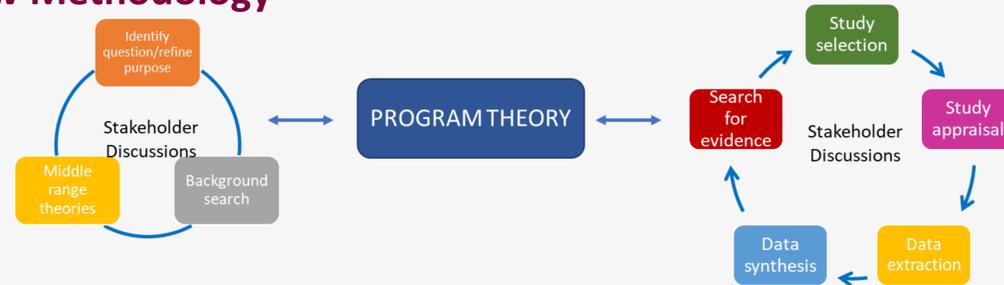


Figure 1. Initial program theory was developed in summer 2020 by our interdisciplinary team, considering relevant literature and existing middle range theories. Through an iterative process, where relevant articles will be searched for, selected, appraised, extracted, and synthesized, along with relevant discussions, the program theory will be refined. We have currently extracted 23 articles, with plans to expand our search to multiple databases.

Preliminary Findings

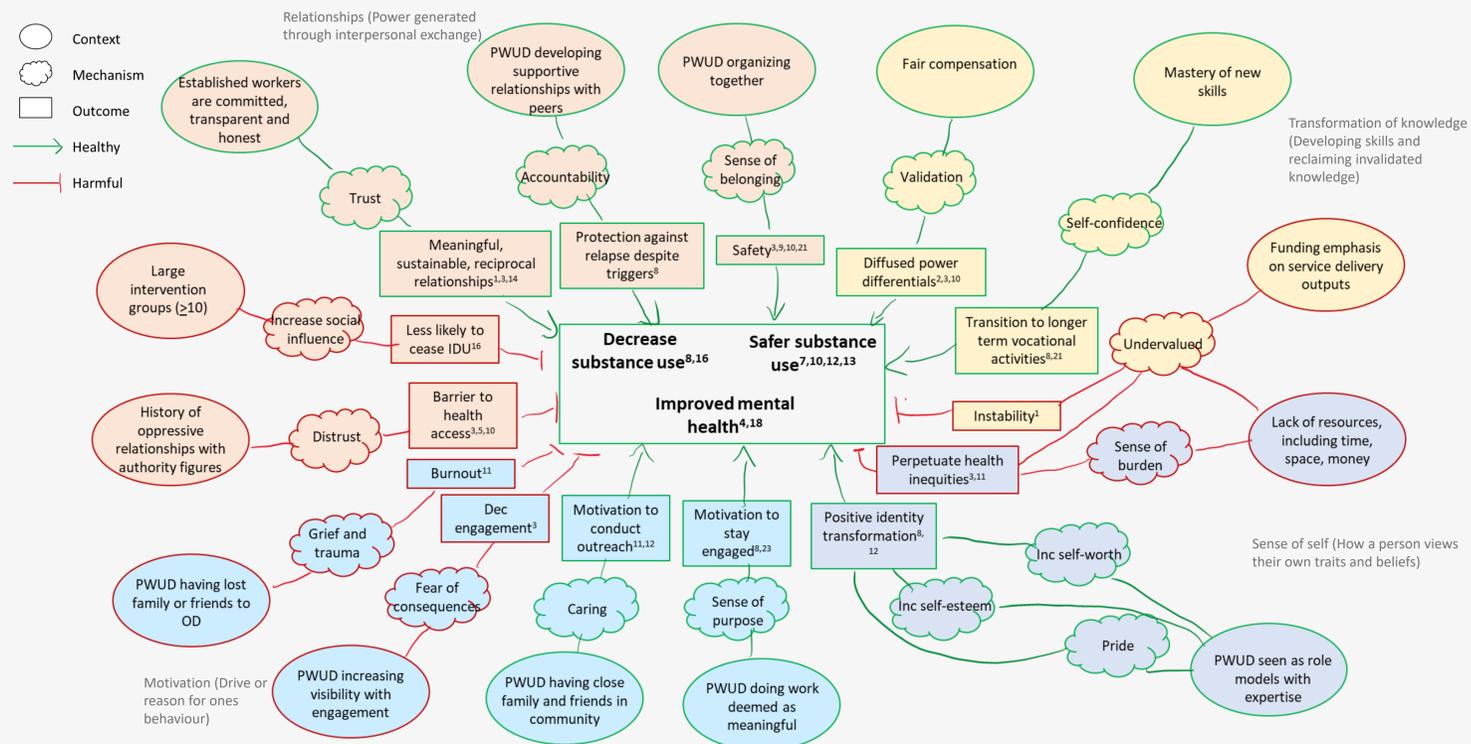


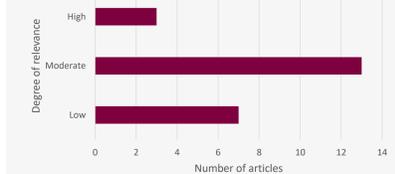
Figure 2. Refined program theory incorporating our preliminary extraction of 23 articles postulating how PWUD participating in health system engagement maybe personally impacted.

Conclusions

Our ongoing research will uncover the nuances of the underlying program theory that explains the health outcomes of PWUD participating in health system engagement. This will serve to inform how their health and wellbeing can be supported, while preventing harms.

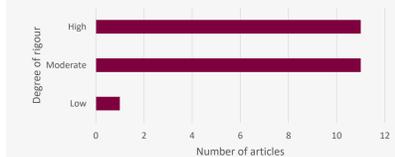
Relevance

Does the study address the theory under review?



Rigor

Are the methods used to generate the relevant data credible and trustworthy?



Study Type

Study Type	Number
Community Based Participatory Research	4
Cohort study	2
Cross Sectional	1
Ethnographic study	3
RCT	2
Descriptive	2
Commentary	2
Review (literature, rapid, systematic, scoping)	5
Project evaluation	1
Other – quasi cohort/cross-sectional	1



Presenter contact
Linda Lam, MD, PGY1 FM
llam5@ualberta.ca



Principal Investigator
Ginetta Salvalaggio, MD
MSc CCFP (AM)
ginetta@ualberta.ca

Inner City Health and Wellness Program
www.ichwp.ca
contact@ichwp.ca

References

<http://bit.ly/HHreferences>

Timelines of concussion symptom recovery and return to participation of patients presenting to a community physiotherapy clinic

Codi Isaac PT^{1,2}; Megan Ogle, MSc. Mec. Eng.^{1,3}; Calla Isaac, BSc^{1,4}; Ann-Marie Przyslupski, MSc.^{2,3}; Constance Lebrun, MDCM, MPE, CCFP(SEM), FCFP, Dip. Sport Med, FACSM^{2,3}
¹Isaac Physiotherapy, ²Glen Sather Sports Medicine Clinic, University of Alberta; ³Department of Family Medicine, Faculty of Medicine & Dentistry, University of Alberta; ⁴Department of Medicine, Faculty of Medicine & Dentistry, University of Alberta

Concussion Injury

- In Canada, It is estimated concussion injury has an annual incidence rate of 1.2%.¹
- Treatment and management encompasses robust return to participation criteria.

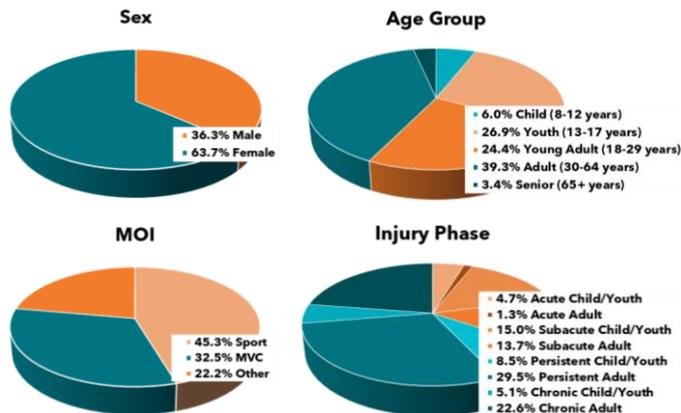
Objective

- To compare patient demographics, mechanism of injury (MOI), injury phase, changes in total symptom severity (TSS), and return to participation (RTP) including work/learn and activity rates to recovery time frames.

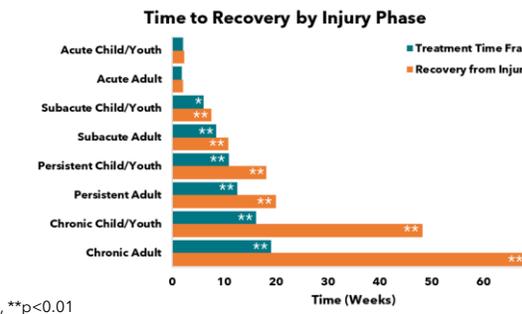
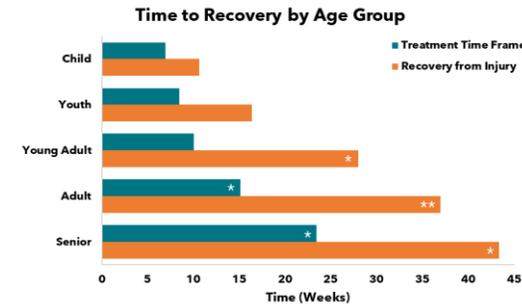
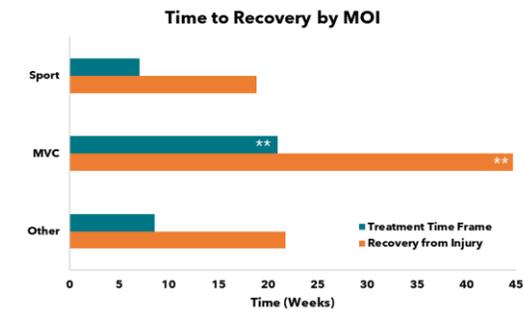
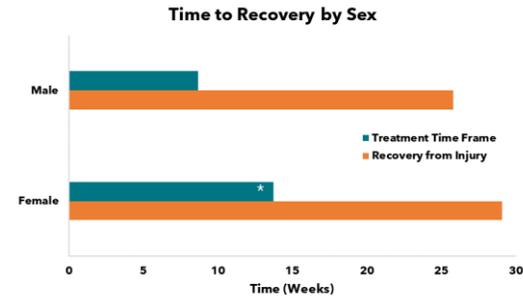
Methodology

- Design:** Retrospective chart review.
- Inclusion Criteria:** All patient charts for those receiving treatment for concussion at Isaac Physiotherapy Inc. from September 1, 2016 to August 31, 2018 (n = 234).
- Intervention:** Multimodal physiotherapy (cervico-vestibular, exertion, education), referral to specialist physician, psychology and/or neuropsychology.
- Outcome measures:** Total treatments received, treatment time frame (weeks), weeks to recovery, return to participation (work/learn and activity).
- Analysis:** Descriptive statistics, paired t-tests, survival analysis.

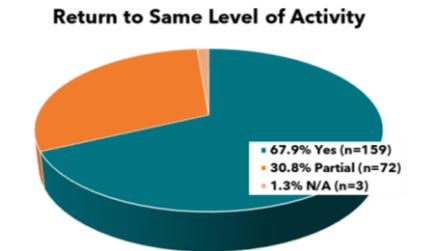
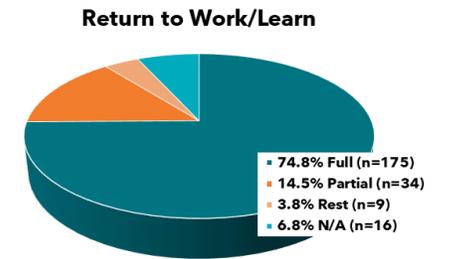
Patient Demographics



Time to Recovery



Return to Participation



Results

- Females attended more treatments over a longer time than males (8.61 treatments over 13.73 treatment weeks; 6.54 treatments over 8.68 treatment weeks, respectively). No difference in weeks to recovery from injury.
- Recovery timelines were shortest for children (6.95 treatment weeks and 10.64 weeks to recovery); longest for seniors (23.48 treatment weeks and 43.36 weeks to recovery).
- Our average time-to-recovery for young adults and adults challenge literature reports of a 10-14 day recovery timeframe.²
- 68% achieved full return to activity (including sport), an additional 30.8% achieved partial return to activity.
- 75% of patients achieved full return to work/learn.
- Motor vehicle collision (MVC) had the longest time-to-recovery (20.95 treatment weeks and 44.70 weeks to recovery); sport and other MOI had statistically the same recovery times (7.02 treatment weeks and 18.87 weeks to recovery; 8.59 treatment weeks and 21.76 weeks to recovery, respectively).
- Outcome measures were longest for the chronic injury phase (19.02 treatment weeks and 48.23 weeks to recovery for chronic child/youth group, 19.02 treatment weeks and 68.19 weeks to recovery for chronic adult group, respectively).
- Average TSS decrease was 19.88-points between intake and discharge.

Conclusions

- Concussion patients seeking community physiotherapy experienced symptom and participation recovery.
- Treatment and recovery time frames were considerably longer than reported in the literature.
- Results will aid in expanding generalizability, appropriateness, implementation of pragmatic physiotherapy interventions for concussion, and post-concussion care management pathways.

References

- [1] Langer et al. (2020) *J Head Trauma Rehabil*. DOI: 10.1097/HTR.0000000000000503
- [2] McCrory et al. (2017) *Br J Sports Med*. 51:838-847.



Trends in fentanyl use and preference for fentanyl: implications for opioid agonist prescribing practices and harm reduction efforts in primary care

A. Weng¹; M. Ferguson²; K. Papamihali²; B. Graham²; J. Buxton^{1,2}
¹University of British Columbia Faculty of Medicine; ²BC Centre for Disease Control

Introduction

- Prevalence of fentanyl in the illicit drug market has increased as the opioid overdose crisis continues to devastate Canada. British Columbia and Alberta have the highest rates of opioid overdose deaths.
- Family physicians, the main prescribers of opioid agonist therapy, need to constantly adapt to the changing patterns of illicit opioid use as they provide treatment and harm reduction support to people who use drugs.

Purpose

- To highlight the **current trends in illicit fentanyl use and preference for fentanyl in BC.**
- To draw attention to how these trends may impact opioid agonist prescribing practices and harm reduction efforts in primary care.

Methods

- This review analyses data from the **2019 Harm Reduction Client Survey** administered by the BC Centre for Disease Control.
- Survey participants were clients that accessed services at the selected harm reduction supply distribution sites in 20 different communities **across BC** in 2019. In total, there were 621 participants (aged 19 to 72; 64% identified as male).
- Descriptive statistics and multivariable logistic regression describe factors pertinent to the objectives of this study.

Results

Table 1. The illicit opioid(s) used and the route(s) of administration in the last three days as reported by survey participants.

DRUG	USED		SMOKED		SNORTED		INJECTED		SWALLOWED		OTHER	
METHADONE	139	22.4%	17	12.2%	1	0.7%	4	2.9%	101	72.7%	0	0.0%
SUBOXONE	25	4.0%	2	8.0%	0	0.0%	1	4.0%	13	52.0%	4	16.0%
DILAUDID	17	2.7%	4	23.5%	5	29.4%	4	23.5%	7	41.2%	0	0.0%
OXYCODONE	6	1.0%	2	33.3%	5	83.3%	3	50.0%	2	33.3%	0	0.0%
MORPHINE	70	11.3%	18	25.7%	8	11.4%	26	37.1%	27	38.6%	1	1.4%
HEROIN	272	43.8%	200	73.5%	19	7.0%	135	49.6%	7	2.6%	2	0.7%
FENTANYL	283	45.6%	190	67.1%	13	4.6%	135	47.7%	6	2.1%	3	1.1%

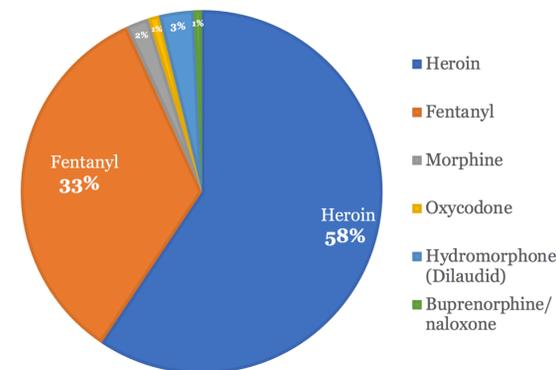


Figure 1. The breakdown of opioid preference amongst participants who reported using illicit opioids.

Table 2. Correlations between opioid preference (fentanyl or heroin) and reported gender, health authority, age, Indigeneity, recent overdose history, and opioid agonist therapy (OAT) use.

N, %	People who prefer to use heroin	People who prefer to use fentanyl	p-value
	234, 63.8	133, 36.2	
Gender			0.127
Woman	85, 63.9	48, 36.1	
Man	140, 62.5	84, 37.5	
Trans & Gender expansive	7, 1.0	0, 0.0	
Health Authority			0.002
Fraser Health	66, 52.4	60, 47.6	
Interior Health	27, 65.8	14, 34.1	
Island Health	46, 72.0	18, 28.1	
Northern Health	47, 81.0	11, 19.0	
Vancouver Coastal	48, 61.5	30, 38.5	
Age			0.002
<30	46, 54.8	38, 45.2	
30-39	75, 58.1	54, 41.9	
40-49	54, 66.7	27, 17.5	
50 or older	52, 82.5	11, 17.5	
Self-identified Indigeneity			0.072
No	113, 58.9	79, 41.1	
Yes	106, 68.9	48, 31.1	
Experienced opioid overdose in the last 6/12			0.066
No	165, 66.5	83, 33.5	
Yes	47, 54.7	39, 45.3	
OAT use			0.082
No	158, 67.2	77, 32.8	
Yes	76, 57.6	56, 42.4	

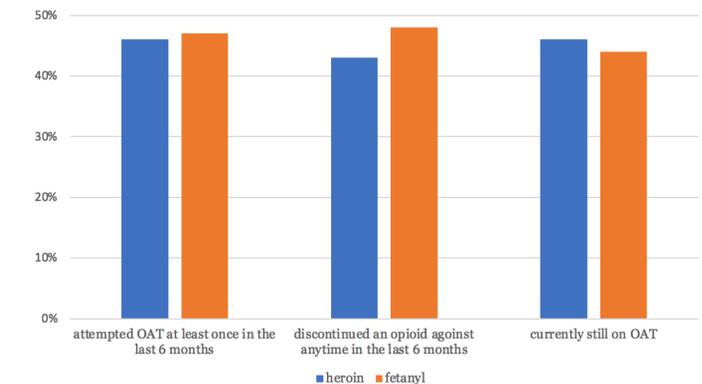


Figure 2. Correlation between opioid preference (fentanyl or heroin) and opioid agonist therapy (OAT) use.

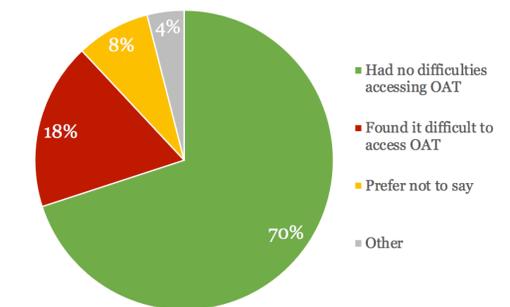


Figure 3. Opioid agonist therapy (OAT) accessibility reported by participants who use illicit opioids. Nearly 20% of participants who tried to access OAT reported difficulties, including challenges with getting to the pharmacy, unable to find a prescribing physician, and not offered their preferred OAT.

Conclusions

- Smoking is the commonest route for people who use illicit opioids.
- From our survey, preference for fentanyl is proportionally higher amongst younger participants.
- We found no significant difference in rates of OAT attempts and discontinuation between people who prefer heroin compared to fentanyl.

Research Implications

1. Physicians should educate patients on risks associated with smoking illicit opioids and advocate for an increase in safer smoking supplies and observed smoking sites.
2. As fentanyl use can be associated with challenging buprenorphine/naloxone induction and patients requiring higher OAT maintenance dose, prescribers may expect to encounter these clinical scenarios more often especially in younger patients.
3. As overall preference for fentanyl grows, more research is needed to develop improved OAT treatment protocols to address the emerging challenges with treating patients who use illicit fentanyl.

