

Evaluation Without Representation: Pediatric Resident Perspectives on Competency-Based Medical Education



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Background

- Pediatric residency programs transitioned in 2021 to a new Royal College assessment model called Competence by Design (CBD).
- CBD represents a fundamental shift in postgraduate medical education, from a time-based system to one based on demonstrating professional competencies through regular observations of the abilities expected of specialists.
- Competencies are integrated into Entrustable Professional Activities (EPAs), which residents must complete to advance through residency.
- Although CBD is intended to be learner-centered, resident voices have been under-represented in its design and delivery.

Study Objectives

In this study, we

1. Explored how pediatric residents perceive CBD as impacting their education and evaluation
2. Identified ideas that pediatric residents have for programs and faculties to improve CBD implementation

Methods

Document analysis of general and program-specific CBD resources



Interviews with program directors and CBD leads at Universities of Alberta (UofA), Toronto, and British Columbia (UBC) (n=6)



Program implementation values and priorities identified, which informed the creation of resident interview framework



Interviews with pediatric residents at UofA and UBC (n=14)



Reflexive, Inductive Thematic Analysis

Acknowledgments

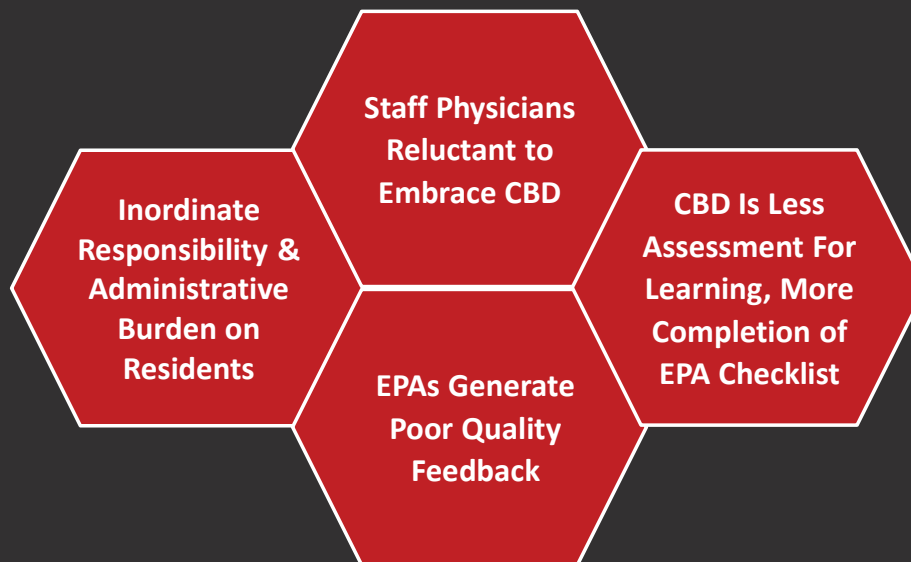
Thank you to all our participants!
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Office of Faculty Development, UBC Faculty of Medicine

Questions?

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Results

Pediatric residents agree with CBD's theory and espoused purpose, yet feel that its potential benefits are significantly hampered in four key ways:



Scan the QR code to View Quotes from Resident Interviews

Resident One Word Descriptions of CBD

Curriculum
Unhelpful
Unsuccessful
Learning-at-a-Cost
EPA Logical-but-Redundant
Assessment Individualized-Learning
Work-in-Progress.
Time-Consuming
Exhausting
Paperwork
Promising

Resident Suggestions for Improvement

- ✓ Decrease total number of EPAs to focus on quality over quantity
- ✓ Revise EPAs with perspectives from senior residents and recent graduates to better represent current pediatric practice and resident learning goals
- ✓ Improve dialogue between residents, preceptors, competency committees, & Royal College to build buy-in/facilitate process improvement
- ✓ Build preceptor engagement with recognition and positive reinforcement
- ✓ Institute formal coaching resources for residents and staff
- ✓ Support customization by competency committee for local context
- ✓ Re-design the O-Score System to better represent stages of training



Implementation of Self-determination Theory in Pediatric Clerkship Academic Half Days

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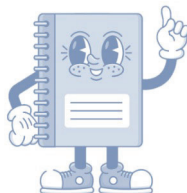
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Introduction

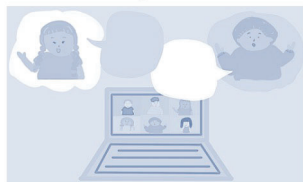
- At our institution, academic half day (AHD) in pediatric clerkship consisted of mandatory didactic lectures with minimal engagement.
- We created a new AHD curriculum based on self-determination theory (SDT).^{1,2}
- SDT emphasizes **autonomy, relatedness and competence** as fundamental needs for intrinsic motivation and success in learning environments.^{1,2}

Methods

Study "roadmap" with suggested resources



Weekly case-based discussions



Survey students using Basic Psychological Need Satisfaction at Work Scale (W-BNS)^{3,4}

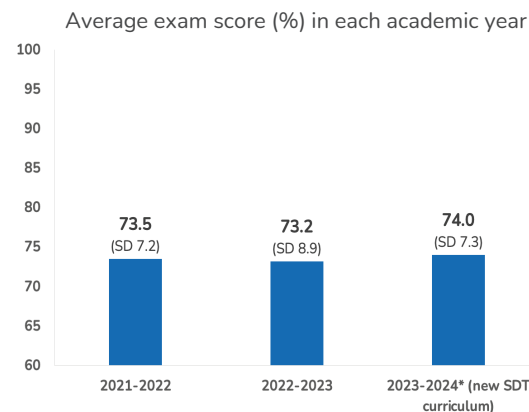
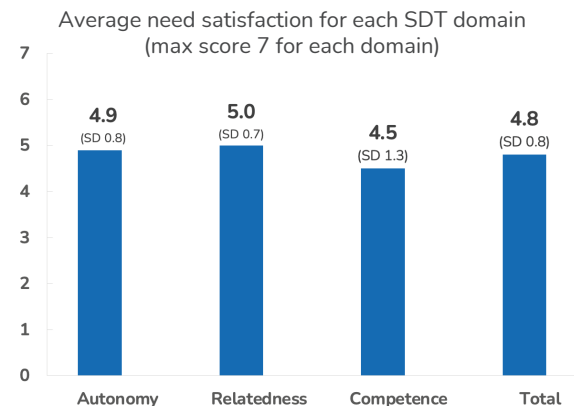


Objectives

- Can the tenets of SDT (autonomy, relatedness and competence) be incorporated into AHDs to increase learner motivation?
- How does an AHD curriculum based on SDT impact performance on exams?

Results

- 18% response rate (n=33)
- Students self-reported **modest autonomy and relatedness satisfaction, lower subjective competency satisfaction.**
- Objectively, no statistically significant difference in average exam scores.



*6 months of exam scores and data for 2023-2024 academic year thus far

Medical students can be motivated through self-directed and collaborative AHD curricula.

- However, students may struggle with *subjective* feelings of competence when introduced to self-determination theory early in clinical training.
- This suggests a need for *gradual* increase in autonomy as learners progress in training and develop intrinsic motivation for life-long learning.

References

- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227 - 268. https://doi.org/10.1207/S15327965PLI1104_01
- Ryan RM, Deci EL. Self-Determination Theory: Basic Psychological Needs in Motivation Development and Wellness. *Guilford Publishing*; 2017
- Deci, E. L., Ryan, R. M., Gagné, M., Leone, D. R., Usunov, J., & Kornazheva, B. P. (2001). Need satisfaction, motivation, and well-being in the work organizations of a former eastern bloc country: A cross-cultural study of self-determination. *Personality & Social Psychology Bulletin*, 27(8), 930-942. <https://doi.org/10.1177/0146167201278002>
- Neufeld, A., Hughton, B., Muhammadzai, J., McKague, M., & Malin, G. (2021). Towards a better understanding of medical students' mentorship needs: a self-determination theory perspective. *Canadian medical education journal*, 12(6), 72-77. <https://doi.org/10.36834/emej.71857>

Residency Letters in the AI Era: Comparing AI and Human-Generated Personal Statements for Pediatric Residency Admissions

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INTRODUCTION

- Personal statements have a substantial role within the application process for the Canadian Resident Matching Service¹
- Despite the widespread requirement for personal letters, limited research exists on their efficacy in ranking applicants, with wide inter-rater variability^{2,3}
- There have been previous studies noting the prevalence of plagiarism in personal letter writing, which has been up to 5.6% in some literature⁴
- In the new generation of artificial intelligence (AI), there is a lack of understanding of how large language models may affect the effectiveness of personal letters in candidate selection



An understanding of the efficacy of AI-generated personal letters compared to human-generated letters in pediatric residency program applications is important to determine the continued relevance of personal letters in an era where AI is readily accessible.

HYPOTHESIS

We hypothesize that AI-generated personal letters will have equivalent scores to human-generated personal letters in pediatric residency program admissions.



METHODS

We will use traits from 30 original CARMS letters to create AI-generated letters using ChatGPT[®]



Program selection members will be randomly assigned to evaluate half of the letters (30), consisting of a mix of AI and human-generated letters.



Letters will be scored using a standardized rubric out of 10 and whether they appear to be AI or human-written.



Paired t-tests will be used to determine whether the letter types yield similar or disparate scores.

OUTCOMES

Primary outcome: Scores of AI-generated personal letters compared to human-generated personal letters.

Secondary outcome: Accuracy of markers determining whether the letter is AI or human-generated

REFERENCES

(1) Whalen, Anthony. *CaRMS*, CaRMS, 6 Oct. 2023. www.carms.ca/.

(2) White, BA, Sadoski, M, Thomas, S, and Shabahang, M. Is the evaluation of the personal statement a reliable component of the General Surgery Residency Application? *Journal of Surgical Education*. 2012. 69(3), 340-343. <https://doi.org/10.1016/j.jssurg.2011.12.003>.

(3) Cleland, J, McLachlan J, Nicholson, S, Patterson, F. Identifying best practice in the selection of medical students. 2022. Obtained from: <https://www.gmc-uk.org/-/media/gmc-site/about/identifyingbestpracticeintheselectionofmedicalstudentspdf51119804.pdf>

(4) Stockman, JA. Plagiarism in residency application essays. *Yearbook of Pediatrics*. 2012. 2012, 323-328. <https://doi.org/10.1016/j.yped.2010.12.095>.



Functional and phenotypic characterization of novel loss-of-function variants in *CTLA4*

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Background

- Cytotoxic T lymphocyte antigen-4 (CTLA-4), a T-cell inhibitory receptor, regulates immune responses by preventing overstimulation of T-cells through competitive binding of CD80/CD86 on antigen presenting cells¹

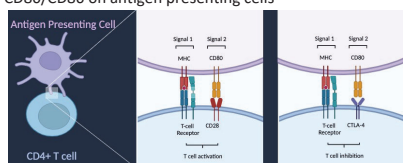


Fig 1. Schematic illustrating T-cell activation (left), whereby CD28 cross-links with CD80, and T-cell inhibition (right), whereby CTLA-4 outcompetes CD28 to bind CD80. Created using Biorender.

- Heterozygous loss-of-function variants in *CTLA4* result in the immune dysregulation disorder termed CTLA-4 Insufficiency²
- Diagnosing CTLA-4 Insufficiency facilitates use of life-saving targeted therapies; however, can be hampered by inconclusive genetic testing results
- Here we report the clinical presentations and functional validation of novel *CTLA4* variants identified at our center

Methods

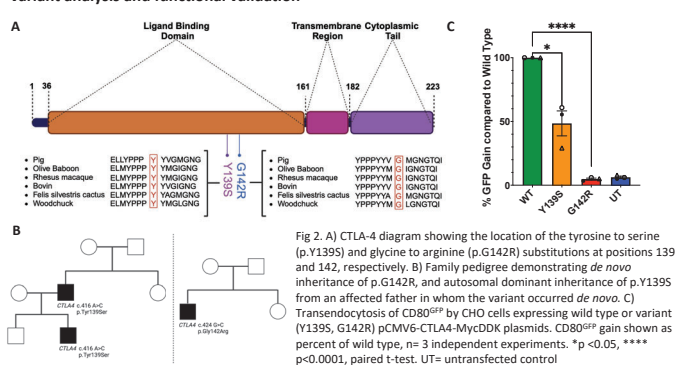
- Patients with variants of uncertain significance (VUS) in *CTLA4* were enrolled in the study
- Variant significance was analyzed by computational analytical tools and by assessing CTLA-4-mediated transendocytosis of its ligand CD80, using plasmids expressing the variants
- Clinical and immunological features were assessed before and after treatment

Results

Case Presentations

	Case 1	Case 2
Presenting history	2-month-old boy with a paternal VUS in <i>CTLA4</i> and paternal phenotype consistent with CTLA-4 insufficiency (recurrent infections, diarrhea, vitiligo, hypogammaglobulinemia, eczema, nodular lymphoid hyperplasia of the liver, and T1DM)	13-year-old male referred for history of recurrent GI infections, refractory Crohn disease, asymptomatic progressive pulmonary nodules, autoimmune cytopenias, and hypogammaglobulinemia, who around the time of genetic diagnosis developed transient expressive aphasia and aphasia on a one-week background of persistent headache
Investigations	Neutropenia ($0.6 \times 10^9/L$), normal IgG & IgM, ↓ IgA level, normal T/B/NK cell subsets & T/B cell memory panels Normal chest X-ray and abdominal ultrasound	Neutropenia ($0.3 \times 10^9/L$), ↓ IgG & IgA, normal IgM, ↓ naive T cells, ↑ PD1+ CD4 T-cells, ↑ CD57+ and TEMRA CD8 T-cells and ↑ CD21low B-cells Brain MRI: several hyperintense lesions (Fig 4)
Genetics	Heterozygous variant in <i>CTLA4</i> c.416A>C, p.(Tyr139Ser)	Heterozygous variant in <i>CTLA4</i> c.424G>C, p.(Gly142Arg)

Variant analysis and functional validation

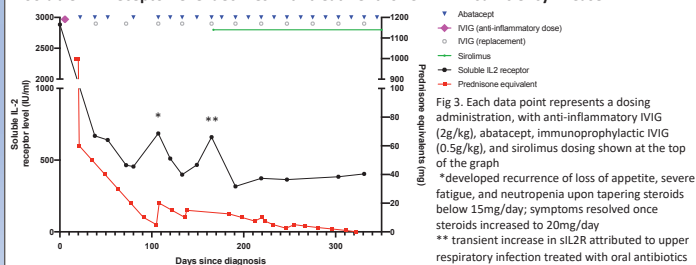


Molecular diagnosis yields personalized therapy

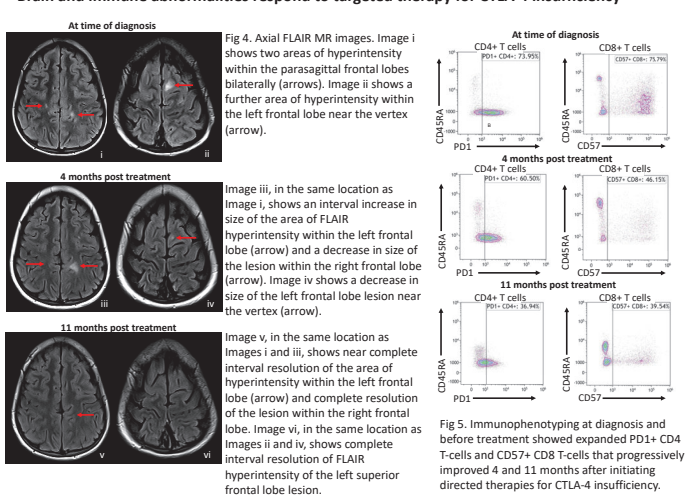
Case 1:

- Diagnosis led to recognition of autoimmune neutropenia, which resolved by age 11 months
 - Now undergoing routine monitoring for complications related to CTLA-4 Insufficiency
- Case 2:
- Upon diagnosis, workup revealed inflammatory brain disease related to CTLA-4 insufficiency; pulmonary nodules identified as granulomatous lymphocytic interstitial lung disease
 - Adalimumab discontinued → transitioned to targeted therapy with the CTLA-4 fusion protein abatacept, which in combination with corticosteroids and sirolimus dramatically improved his multisystem (gastrointestinal, brain, lung, and hematologic) autoimmunity

Soluble IL-2 receptor level declines with treatment for CTLA-4 insufficiency in Case 2



Brain and immune abnormalities respond to targeted therapy for CTLA-4 insufficiency



Conclusions

- We present two previously unreported pathogenic variants in *CTLA4* (supported by clinical phenotypes, *in silico* modeling, and functional validation) and expand the genotypic profile of CTLA-4 Insufficiency
- These two contrasting presentations and outcomes highlight (1) the vast phenotypic profile of CTLA-4 Insufficiency, (2) the importance of considering IEs when evaluating patients with immune dysregulation, and (3) the role of genetic testing when inborn errors of immunity are suspected
- Further studies on the natural history and treatment of CTLA-4 Insufficiency are needed to establish clinical care guidelines for these vulnerable patients

Acknowledgements

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References

- Schubert D, Bode C, Keneff R, Hou TZ, Wing JB, Kennedy A, et al. Autosomal dominant immune dysregulation syndrome in humans with CTLA4 mutations. Nat Med. 2014;20(12):1410-4.
- Kashin IS, Ouyang W, Lo B, Denick EK, Niemi JE, Avery DT, et al. Immune dysregulation in human subjects with heterozygous germline mutations in CTLA4. Science. 2014;345(6204):1623-7.

Enhancing Social Determinants of Health Education for Pediatric Residents

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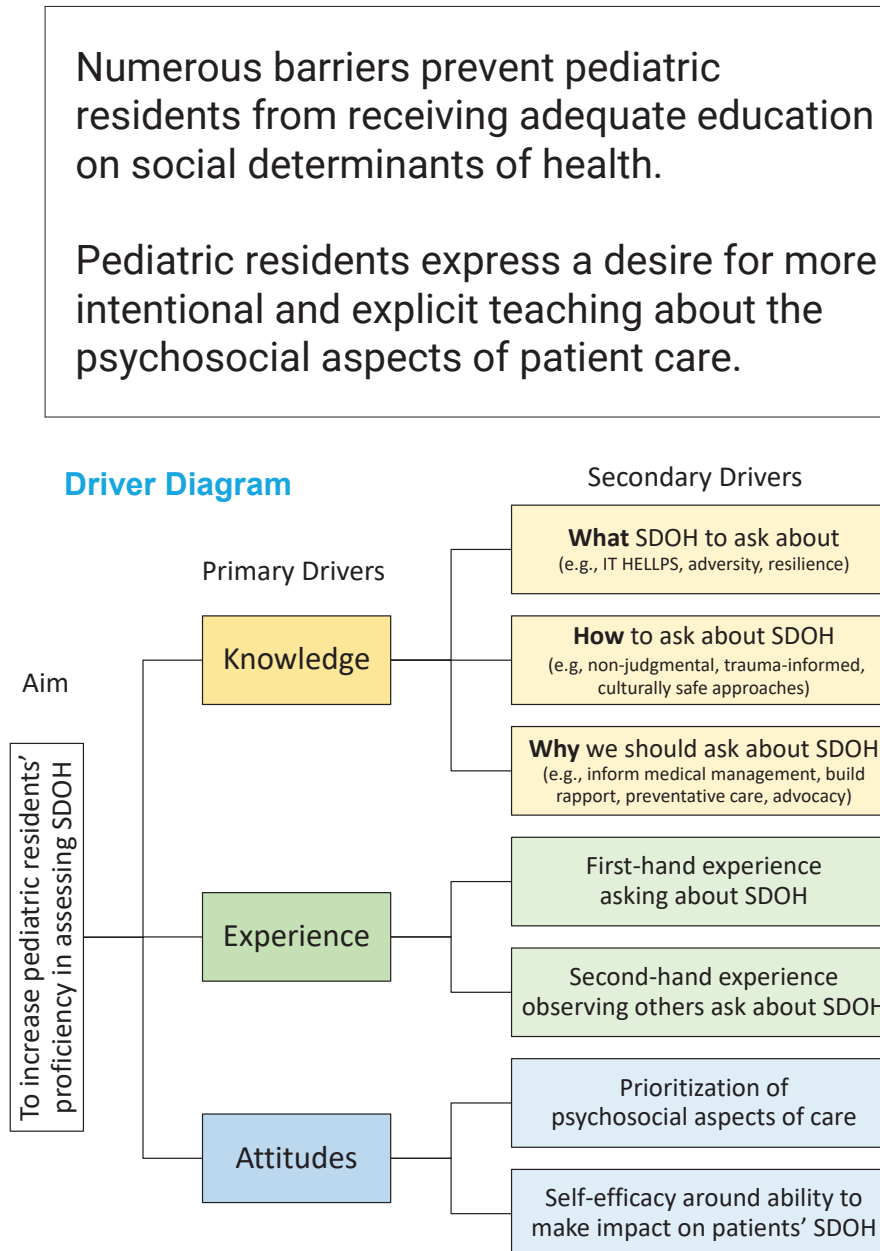
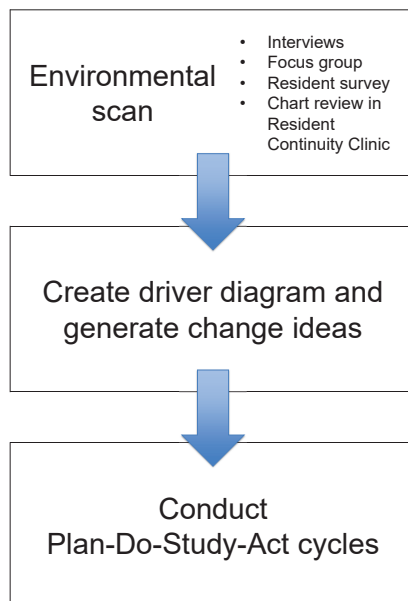
Introduction

Social Determinants of Health (SDOH) account for 30-55% of health outcomes;¹ however, existing medical curricula may not sufficiently equip trainees to address patients' psychosocial needs.

This ongoing quality improvement project aims to increase resident proficiency in assessing and addressing SDOH within UBC's Pediatric Residency Program.

We present our environmental scan of the program's curricular climate surrounding SDOH education. Additionally, we present our driver diagram that informed the interventions for our Plan-Do-Study-Act (PDSA) cycles.

Methods



Results

According to our resident survey (n=14),

- Only 29% felt proficient at assessing SDOH
- Only 36% felt proficient at addressing SDOH

Table 1: Chart review of social histories documented in randomly-selected consultation notes, authored by pediatric residents in BC Children's Hospital's Resident Continuity Clinic (n=20).

Documented Components of Social History	Proportion of Consultations
Any social history taken	100%
Parental work status	85%
Parental occupations	60%
Living situation (ie. who does the patient live with?)	85%
Country of birth	25%
Extended health benefit access	25%
Financial strain	5%
Screen for food insecurity	0%
Screen for housing instability	0%
Screen for transportation needs	0%

Discussion

We selected 3 change ideas for the Social Pediatrics rotation in our PDSA cycles:

- An orientation presentation, which teaches the IT-HELLPS approach to social history-taking.²
- A case workbook on common psychosocial issues in General Pediatrics.
- Structured observations of psychosocial histories taken by healthcare providers experienced in Social Pediatrics.

We plan to study how these interventions affect resident proficiency at assessing and addressing SDOH through our PDSA cycles.

References

1. World Health Organization. Social determinants of health. <https://www.who.int/health-topics/social-determinants-of-health>. Accessed Mar 15, 2023.
2. Fazalulasha F, Taras J, Morinis J, et al. From office tools to community supports: The need for infrastructure to address the social determinants of health in paediatric practice. *Paediatr Child Health* 2014;19(4):195-9.



UNSEEN AND UNHEARD

Medical Student Perspectives on Interpreter Use and the Hidden Curriculum

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BACKGROUND

- A growing number of Canadians are speaking predominantly a language other than English or French at home (1).
- When healthcare and health information is provided in a non-preferred language, adverse outcomes have been noted (2-4).
- Professional interpreter services remain underused by pediatric residents in a variety of clinical situations (5).

OBJECTIVES

- To explore medical students' perceptions of interpreter use in inpatient medicine.
- To investigate the influence of the hidden curriculum on medical students' decision-making regarding interpreter use.
- To examine how the hidden curriculum impacts the professional identity of medical students in their interactions with patients with limited English/French proficiency.

EMERGING THEMES

System efficiency vs patient-centred care:

"It's 6:30 in the morning, you have 20 patients to round on, so you're trying to get through all these patients. I think maybe in those scenarios, you just felt the pressure to quickly see a patient and move on and not really take the time to talk to them."

"If there's no uptake of those services or limited uptake of those services, and it's not expected that your consult might take twice the amount of time because you're having to speak through an interpreter, then you run into barriers as a learner who's being constantly assessed."

Experience shaping future practice:

"Seeing the level of appreciation that parents have to know what's happening to their child- I think it's so huge and you can't replicate it without an interpreter. If you see that enough and get that benefit enough, I think it will totally change your practice."

"From what I have seen, I think it can make such a difference in people's experiences in health care and improve their quality of care. I think it's something that should definitely be addressed and introduced early on."

METHODS

- Primary data collection method: semi-structured interviews.
- Participants: third- and fourth-year medical students at the University of British Columbia
- Data Analysis: Thematic analysis, Braun and Clarke (2006)

DISCUSSION

- We aim to examine if underutilization of interpreter services and the influence of systems limitations are tied to medical students' decision-making.
- The findings may inform targeted interventions to address these issues, enhancing the quality of care for patients with limited English/French proficiency and shaping future healthcare professionals' practice patterns and professional identities.

REFERENCES



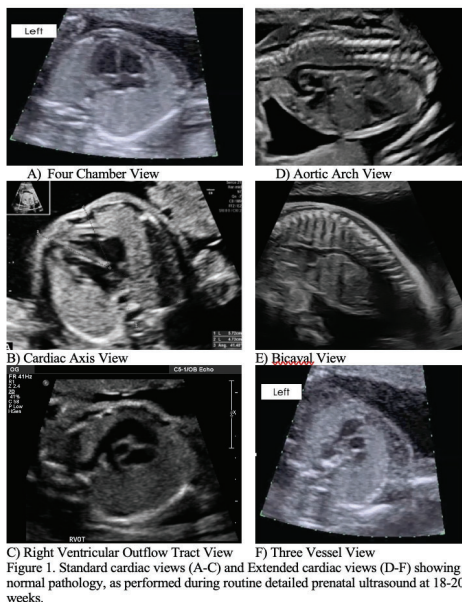


Scanning for Success: comfort levels and perceived barriers to completion of extended cardiac views on prenatal ultrasound before and after a targeted education session

Paige Murphy, MD; Jennifer Lawless, BSc, CRGS; Aisling A Young, MD FRCPC

Introduction

- Congenital heart disease is the most common congenital anomaly, occurring in ~1% of live births.
- 25% of congenital heart defects are defined as critical congenital heart defects (CCHD) which require immediate intervention.
- CCHD can be detected in one of five ways:
 - Prenatal ultrasound
 - Physical exam
 - Postnatal oximetry screening
 - At clinical presentation with cyanosis/shock
 - On autopsy
- Prenatal detection of CCHD with ultrasonography allows appropriate prenatal counseling and decision making, preparation for birth in an appropriate center and early intervention.
- Vancouver Island (under the jurisdiction of Island Health) recommends routine anatomy ultrasounds for all pregnant patients at 18-20 weeks which includes three standard cardiac views which are the **outflow view, 4-chamber view and cardiac axis view**.
- In 2021, Island Health trained sonographers in three additional "extended" cardiac views which include the **3-vessel view, aortic arch view and bicaval view**.
- The goal is for these additional views to be completed for every 20-week anatomy scan, but as they are optional, their completion rates are variable.



Research Objective

- The aim of this quality improvement project is to identify barriers to routine completion of extended cardiac views by sonographers on Vancouver Island.
- We will then review rates of completion and comfort level with each view before and after an educational intervention.
- Ultimately, we hope to increase the number of extended cardiac ultrasound scans to increase our ability to detect CCHD prenatally.

Methods

- This project was developed in consultation with the lead sonographer of Island Health and local stakeholders, after which, ethics approval was completed.
- Current literature on fetal ultrasonography and CCHD detection was reviewed.
- This project was approached using the quality improvement Plan-Do-Study-Act (PDSA) framework.
- A survey assessing the comfort level of sonographers, completion rates and barriers to completion of all cardiac views was developed and distributed to sonographers on Vancouver Island in November 2023 (pre-Intervention).
- A targeted education session performed by a pediatric cardiologist was completed in December 2023. This session reviewed normal fetal echocardiography findings and technique and then used a case-based approach to review abnormal pathology (TGA, AVSD, VSD, coarctation of the aorta).
- The same survey assessing the comfort level and barriers to completion of all cardiac views was again distributed to sonographers in January 2024 (post-Intervention).
- Qualitative data was analyzed using thematic analysis.
- Using the PDSA framework for quality improvement projects, we will aim to tailor our next session to the themes that come out of our survey.
- Statistical analysis of the survey questions was completed to compare the response distribution in Pre- and Post-Intervention groups, including median (IQR) and frequency (percentage) for scores of Likert scales. Pearson χ^2 or Fisher's exact tests were applied to compare pre and post intervention data.



Figure 2. Plan-Do-Study-Act Framework adapted from Institute for Healthcare Improvement workbook. Image from Louisiana Department of Health (Accessed March 2024).

Survey results and Qualitative Analysis

- Our survey was sent to all 125 sonographers employed by Island Health and 42 answered the pre intervention survey, while 38 answered the post intervention survey (response rate: 33.6% and 30.4%, respectively).
- Of the 125 sonographers invited, 45 were able to attend the education session (attendance rate: 36%)
- 87% of post intervention participants noted that the education session increased their comfort level with extended heart views.
- When asked "what training would help you feel more comfortable with extended heart views", answers were analyzed and found to fit within 4 "themes":
 - Hands on training (9/50 responses)
 - General advice for success in fetal echocardiography (9/50 responses)
 - Further education in extended cardiac views (either generally or in specific scans such as the bicaval or aortic arch views) (12/50 responses)
 - Further instruction in abnormal/pathologic images (14/50 responses)
- Specific text examples were chosen below:
 - "Explanation of what abnormalities to look for when assessing bicaval or aortic arch. My difficulty is that I can obtain the image, but I cannot determine if it is normal or not as I do not know what a subtle abnormal aortic arch or abnormal bicaval view would look like--is it subtle, is it obvious?"
 - "I'm comfortable with extended heart views, however any extra training with rounds, specifically showing different pathologies is helpful. So we not only know what normal looks like, but abnormalities that we can look for as well."
 - "More hands on training, seeing abnormalities would be beneficial as we don't see many."
 - "I always find fetal heart rounds helpful...I try for the bicaval and aortic arch but feel that I am less successful every time with both those views...I really enjoy imaging the heart and am always happy for more education. Thank you!"

Statistical analysis

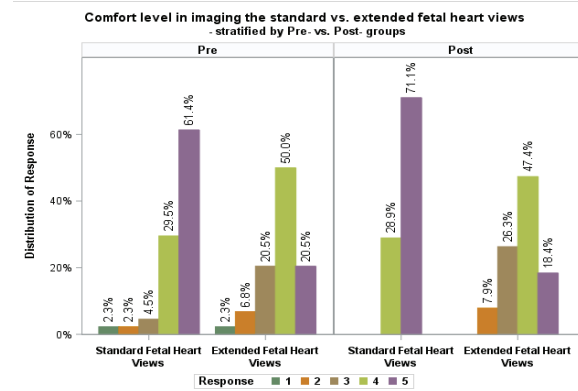


Figure 3. Self reported sonographer comfort level with standard and extended fetal cardiac views before (Pre) and after (Post) an education session. Data was analyzed using Pearson χ^2 or Fisher's exact tests. The McNemar test was applied to take into account the possible dependence between variables. The comfort level when completing extended cardiac views is significantly less than standard cardiac views in both pre and post intervention distributions with a p-value of 0.0099 and 0.0037 respectively.

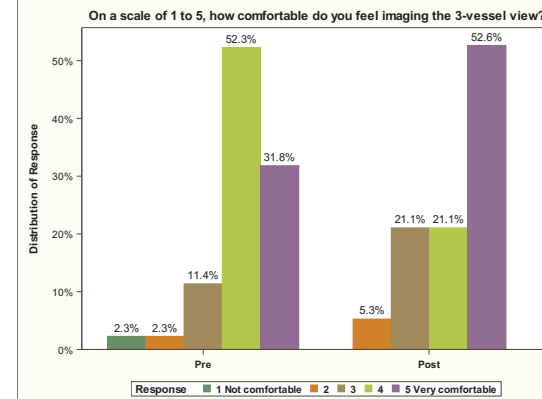


Figure 4. Self reported sonographer technician comfort level with the three-vessel view (an extended cardiac view) before (Pre) and after (Post) an education session. Data was analyzed using Pearson χ^2 or Fisher's exact tests. There is a statistically significant difference between the pre and post intervention values ($p < 0.05$, $p = 0.0201$).

- Data was additionally collected and analyzed for all other standard and extended cardiac views, but was not found to be statistically significant.

Conclusions/Future Directions

- Sonographers report being less comfortable with extended fetal heart views compared to standard fetal heart views (Figure 3).
- An education session is an effective way to improve comfort level with specific ultrasound views, as evidenced by a statistically significant improvement in comfort level with the 3-vessel view post intervention (Figure 4).
- Hands on training and further examples of abnormal pathology would be preferred topics for future education sessions based on qualitative analysis of survey responses.
- We will continue with repeated cycles of intervention with the aim of increasing comfort level and completion rates for all extended heart views using the Plan-Do-Study-Act framework.
- Future directions will include reviewing whether rates of prenatal diagnosis of CCHD are impacted by the implementation and completion of extended fetal cardiac views.

Respiratory outcomes by five years of age among children born preterm: a population-based study using health services data

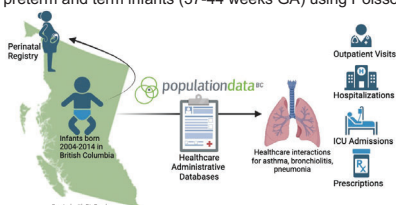
Jacqui van Warmerdam, Ye Shen, Lindsay Richter, Connie Yang, Sarka Lisonkova, Jonathan Wong, Ashley Roberts, Edmond Chan, Jeffrey Bone, Emily Kieran, Joseph Ting

Background

- Neonatal care advancements have led to increased survival of preterm infants, however many experience long-term respiratory complications.
- Preterm infants are at increased risk for long term respiratory morbidity due to incomplete in-utero lung development, and life-sustaining neonatal interventions.
- There is increasing evidence of risk of respiratory morbidity among preterm infants, but late preterm infants continue to be an understudied population.
- Our study uniquely leverages population-based data to characterize rates of respiratory morbidity up to 5 years of age.
- Our study is the first to characterize the rate of healthcare contacts for respiratory causes among preterm infants and provides insight to long term respiratory disease.

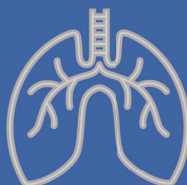
Methods

- A retrospective cohort of infants born in British Columbia between April 1, 2004 to December 31, 2014 were linked to population-based healthcare administrative data.
- Healthcare presentation for bronchiolitis, pneumonia, and asthma in the form of outpatient visits (clinic or emergency department), hospitalizations, and ICU admissions for were tracked using ICD-9 and ICD-10 diagnostic billing codes. Infants were followed to 5 years of age.
- Healthcare visit rate due to asthma, bronchiolitis, and pneumonia were compared between preterm and term infants (37-44 weeks GA) using Poisson regression.



Results

- Over the 10-year period, we followed 413,140 term infants, 33,227 infants born 34-36 weeks GA, 8362 infants 28-33 weeks GA, and 1231 infants 22-27 weeks GA.
- Children born 22-27 weeks GA had the highest rates of hospitalization for asthma [rate ratio (RR) 9.4], bronchiolitis (RR 10.5) and pneumonia (RR 15.9) when compared to term infants. (Table 2)
- Rates of ICU admission for asthma (RR 27.1) and pneumonia (RR 58.1) were highest among those born at 22-27 weeks GA.
- Increased rates persist among children born 34-36 weeks GA, with higher rates of hospitalization for asthma (RR 1.8), bronchiolitis (RR 2.1), and pneumonia (RR 1.8) compared to term infants.



Preterm infants experience **significantly higher rates of healthcare visits, hospitalizations, and ICU admissions** for respiratory causes compared to term infants.

Table 2. Relative rate of healthcare visits for asthma, bronchiolitis, and pneumonia among infants born preterm, compared to term infants (37-44 weeks).

Gestational Age	22-27 weeks	28-33 weeks	34-36 weeks
Asthma	Outpatient Visit (3.34, 3.61)	1.82 (1.78, 1.85)	1.36 (1.35, 1.38)
	Hospitalization (7.91, 11.13)	3.34 (2.99, 3.72)	1.77 (1.64, 1.91)
	ICU admission (17.23, 40.37)	3.72 (2.37, 5.55)	2.22 (1.65, 2.94)
Bronchiolitis	Outpatient Visit (6.32, 7.51)	2.84 (2.70, 2.99)	1.65 (1.60, 1.71)
	Hospitalization (9.26, 11.80)	3.9 (3.62, 4.20)	2.11 (2.0, 2.23)
	ICU admission (20.81, 36.85)	7.92 (6.41, 9.69)	3.53 (2.99, 4.14)
Pneumonia	Outpatient Visit (4.30, 4.84)	1.75 (1.69, 1.82)	1.27 (1.24, 1.30)
	Hospitalization (14.27, 17.73)	3.43 (3.14, 3.74)	1.84 (1.73, 1.96)
	ICU admission (46.56, 71.71)	6.82 (5.37, 8.54)	2.37 (1.93, 2.88)

Rates were highest among extremely preterm infants, but **increased rates persisted among infants born late preterm.**

Table 1. Demographic characteristics, birth data, neonatal interventions, and early respiratory complications of term and late preterm infants in British Columbia, born in 2004-2014.

Birth Data	22-27 weeks, n=1231, n (%)	28-33 weeks, n=8362, n (%)	34-36 weeks, n=33,227, n (%)	37-44 weeks, n=413,140, n (%)
Sex (Male)	649 (52.7)	4581 (54.8)	17,907 (53.9)	211,236 (51.1)
Delivery Method				
C-Section	808 (65.6)	4766 (57.0)	14,097 (42.5)	123,862 (30.0)
Vaginal	423 (34.3)	3596 (43.0)	19,105 (57.5)	289,053 (70.0)
Multiple Birth	349 (28.4)	2482 (29.7)	6140 (18.5)	5207 (1.3)
Birth weight (grams), Median (IQR)	890 (735, 1050)	1870 (1535, 2191)	2735 (2425, 3053)	3465 (3165, 3782)
Small for Gestational Age	63 (5.12)	373 (4.5)	1595 (4.8)	26,426 (6.4)
Large for Gestational Age	174 (14.1)	1185 (14.2)	4530 (13.6)	53,821 (13.0)
APGAR Score at 5min, Median (IQR)	7 (6, 8)	9 (8, 9)	9 (9, 9)	9 (9, 9)
Maternal Demographics				
Age at Delivery (years), Median (IQR)	31.5 (27.2, 35.4)	31.5 (27.3, 35.5)	31.1 (27.0, 35.2)	30.8 (26.9, 34.5)
Smoking in Pregnancy	147 (11.9)	883 (12.4)	3565 (11.8)	35,197 (8.6)
Pre-eclampsia/Hypertension	131 (12.4)	1241 (17.4)	4032 (13.4)	19,098 (4.7)
Diabetes	81 (7.6)	1063 (14.9)	4301 (14.3)	35,116 (8.6)
Geographic Location				
Rural	102 (9.0)	752 (10.6)	3325 (11.0)	44,668 (10.9)
Urban	958 (90.4)	6364 (89.4)	26,826 (89.4)	365,685 (89.1)
Neonatal Interventions & Early Respiratory Outcomes				
Highest Level of Respiratory Support				
Unknown/None	20 (1.6)	3759 (45.0)	29,389 (88.4)	403,476 (97.7)
Oxygen	13 (1.06)	971 (11.6)	2065 (6.2)	5960 (1.4)
NPV	89 (7.2)	1782 (21.3)	985 (3.0)	1929 (0.5)
Mechanical Ventilation	1109 (90.1)	1850 (22.1)	788 (2.4)	1875 (0.5)
Days on Mechanical Ventilation, Median (IQR)	5 (1, 25)	0 (0, 0)	0 (0, 0)	0 (0, 0)
Bronchopulmonary Dysplasia	590 (47.9)	179 (2.1)	<5	<10
Pneumothorax	35 (2.8)	112 (1.3)	166 (0.5)	974 (0.2)
Infant Outpatient Antibiotic Exposure				
6-12 months of life	285 (26.9)	2190 (29.7)	8907 (30.6)	101,820 (28.7)
6-60 months of life	975 (92.2)	6606 (89.5)	25,990 (89.2)	313,674 (88.4)

- Within the study population, the proportion of infants receiving neonatal respiratory interventions increased with decreasing GA. (Table 1)
- Hospitalization for asthma, bronchiolitis, or pneumonia in the first 5 years occurred in 28% of infants born 22-27 weeks GA, 11% of those born at 28-33 weeks GA, 7% of those born 34-36 weeks GA and 4% of infants born at 37-44 weeks GA. (Figure 1)

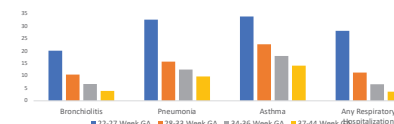


Figure 1. Proportion of infants who were hospitalized for bronchiolitis, pneumonia, or asthma over the 5 year follow up period, by gestational age.

Future Directions

- Account for potential confounders with an adjusted Poisson regression model on the rate of healthcare use for respiratory causes.
- Characterize risk factors associated with increased rates of respiratory outcomes with a multivariate analysis.
- Assess rate of asthma prescription fills among preterm infants.

Serious Bacterial Infections in Young Infants with Acute Respiratory Tract Infections

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INTRODUCTION

Acute respiratory tract infections (RTIs) are a prevalent cause of hospital visits among young infants, a population particularly vulnerable to coexisting serious bacterial infections (SBIs). SBI's such as urinary tract infections, bacteremia, and meningitis substantially elevate the risks of morbidity and mortality in this age group. Prior research has highlighted a low incidence of SBIs in infants with viral RTIs. However, comprehensive research focusing on regional variations in SBI prevalence and associated risk factors is scarce. This study seeks to fill this gap by determining the prevalence of concurrent SBIs and identifying key risk factors in infants aged 90 days or younger diagnosed with acute respiratory tract infections.

METHODS

This was a retrospective, observational cohort study of infants, 90 days or younger admitted to BC Children's Hospital General Pediatric Inpatient Unit or PICU with a clinical diagnosis of a severe acute respiratory illness between July 1, 2022 and June 30, 2023. Cases were identified using ICD-10-CA codes, then manually screened for inclusion. Detailed clinical and demographic information was extracted including clinical outcomes and complications such as length of hospital admission, pediatric intensive care unit (PICU) admission, need for invasive mechanical ventilation, disposition, and death. This subgroup analysis was done from the READAPT-Kids study cohort (Clinical characteristics and outcomes of hospitalized children with Acute respiratory infections.)

PRELIMINARY RESULTS

The study has enrolled 120 infants to date (**Table 1**); of these, 70 (58.3%) are male, and 105 (87.5%) were full-term births. The median (IQR) age at admission was 32.9 days (21.9, 52). The predominant clinical symptoms observed include cough (81%), fever measured in-hospital (16%), and fever reported by parents or caregivers (19%). Other significant symptoms are poor feeding (51%) and apnea (13%). The median (IQR) duration of respiratory symptoms was 3 days (2, 5). Data extraction and analysis is ongoing, will have more results of SBI soon..

CONCLUSION

Understanding the local prevalence of SBI's in infants under 90 days of age admitted with an acute respiratory infection is important to validate previously published literature in our population. In addition, by identifying cases through clinical characteristics associated with ARI's, as well as positive microbiological samples, our dataset provides a unique description of potential risk factors associated with SBI's in this population. By enhancing our understanding of these infections, we aim to reduce unnecessary admissions, improve antimicrobial stewardship and improve overall patient outcomes.

Table 1. Demographics and clinical characteristics of the enrolled patients (N = 120)

Characteristic	Level	n (%)
Sex	Male	70 (58.3)
	Female	50 (41.7)
Gestational Age	Term (≥ 37 weeks)	105 (87.5)
	Preterm (< 37 weeks)	15 (12.5)
Underlying Condition	Healthy	108 (90)
	With co-morbidities	10 (8.3)
	Unknown	2 (1.7)
Symptoms	Fever (reported)	23 (19)
	Fever (measured $\geq 38^{\circ}\text{C}$)	19 (16)
	Cough	97 (81)
	Coryza/nasal congestion	92 (77)
	Shortness of breath	9 (7.5)
	Increased WOB	86 (72)
	Tachypnea	17 (14)
	Apnea	15 (13)
	Cyanosis	7 (5.8)
	Dehydration/ low UOP	17 (14)
	Diarrhea	5 (4.2)
	Fatigue/lethargy	28 (23)
	Irritability	7 (5.8)
	Poor feeding/appetite	61 (51)
	Wheezing	6 (5)
	Vomiting	16 (13)
	Rash (not hand/foot)	3 (2.5)

WOB; work of breathing, UOP; urine output

Autism and Second Language Exposure

Natalia Diaz Pinzon, Sarah M. Hutchison, Tim F. Oberlander, & Grace Iarocci

Background

Autism spectrum disorder (ASD) is characterized by differences in social communication and restrictive-repetitive behaviors that are present during early development and affect everyday functioning.¹

Executive function (EF) are higher cognitive processes such as working memory, inhibition, flexibility, and planning. Children with ASD are more likely to have difficulties in acquiring EF skills compared to their typically developing peers.²

Parents and professionals may be concerned that second language exposure will have a negative impact on EF and language skills in children with ASD.

Research Questions

1. Will parent ratings of language abilities and EF be significantly different between children with and without ASD?
2. Will there be differences between children with ASD who do or do not have an intellectual disability (IQ < 70)?

Knowledge Translation

This information may be useful to parents of children with ASD and clinicians on whether to support second language exposure, especially when there is a presence of an intellectual disability (IQ < 70).

What is the impact of second language exposure on cognitive and language skills in children with and without Autism?



Methods

We are currently analyzing existing data from 396 children (age 6-16 years) with and without ASD that has been collected by Dr. Grace Iarocci and her team at the SFU Autism and Disabilities lab.

We are using the EF and Functional Communication scales from the Behavior Assessment System for Children-Second Edition Parent Report to measure cognitive and language skills.

We are using parent reported measures of second language exposure.

IQ was measured using the English version of the WASI-II during a one-on-one assessment with the child.

References

1. American Psychiatric Association (2013). Diagnostic and statistical manual of mental disorders: DSM-5
2. Iarocci G, Hutchison S, O'toole G. Second Language Exposure, Functional Communication, and Executive Function in Children With and Without Autism Spectrum Disorder J Autism Dev Disord (2017) Jun;47(6):1818-1829.

VinGAIT pilot study: The effect of Vincristine on gait in Children

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Introduction

Vincristine is one of the most used chemotherapy agents in pediatric cancer.

High rate of adverse reactions reported, especially severe peripheral neuropathies.

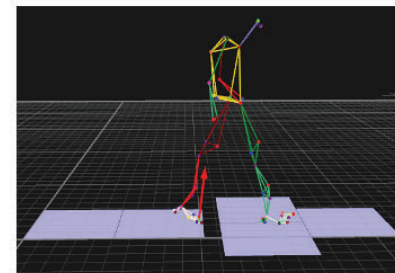
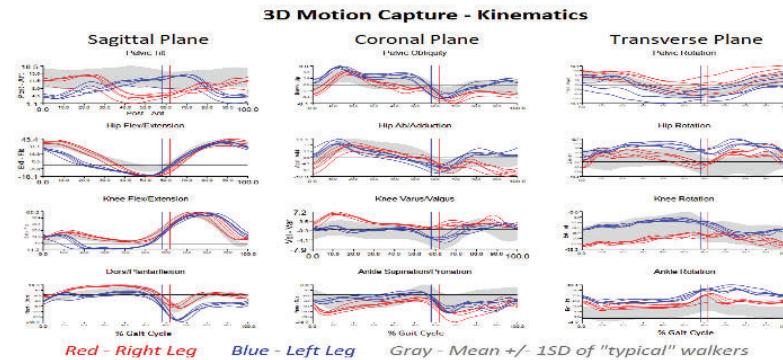
Some patients show long-term residual neuropathy despite symptomatic improvement.

Research shows that neuropathy caused by Vincristine affects walking patterns in children and adolescents.

Lack of research on its long-term effects post-treatment completion, especially in survivors beyond five years.

Methods

- Prospective pilot study
- 20 patients
- Received last dose of VCR > 5 years ago
- Was diagnosed with VIPN



Results

Results will highlight any gait abnormalities that remain years after completion of therapy and whether there are any recurrent patterns of abnormalities when compared to healthy controls.

Conclusions

This pilot study will identify if children who received vincristine are at risk of developing significant long term gait abnormalities and will serve as justification for a larger trial of video gait assessment in long term survivors of childhood cancer.

Background

- Children are at risk to experience trauma in many forms, including developmental or intergenerational, and those who experience childhood trauma are more likely to avoid health interactions (1-3)
- Trauma-informed care is a strengths-based, patient-centered approach that involves promoting cultural safety, establishing trust in relationships, and honoring resiliency (1)
- While many frameworks may exist, current literature shows that providers do not feel prepared to implement these skills
- More importantly, patient and caregiver perspectives are often missing from this research
- As such, the objective of this review is to map perspectives of patients, caregivers, and healthcare providers on trauma-informed care practices for children and youth

Research Questions

- What evidence exists regarding **care provider perspectives** on best practice guidelines for trauma informed care in pediatric settings?
- What evidence exists **patient and/or caregiver perspectives** on best practice guidelines for trauma informed care in pediatric settings?

Eligibility Criteria

- Inclusion criteria:
 - Participants: Perspectives of healthcare providers, pediatric patients (18 years and younger), and their caregivers, receiving care in healthcare settings
 - Concept: Trauma-informed care approaches and best practices
 - Context: Inpatient and/or outpatient healthcare settings of any geographical location and cultural context
- Exclusion Criteria: commentary or opinion articles

Methods & Preliminary Results

- The scoping review will be conducted with the Joanna Briggs Institute methodology
- Databases searched were: MEDLINE, Embase, PsycINFO (EBSCOhost), Scopus, CINAHL (EBSCOhost), Social Work Abstracts (EBSCOhost), Academic Search Complete (EBSCOhost) and Google Scholar
- A total of 1972 articles were identified for initial screening
- Screening and data extraction will occur independently in duplicate. Data will be presented as a narrative summary

Hypothesis

- Our primary hypothesis is that there will be a paucity of evidence outlining patient or caregiver preferences for trauma-informed care in the pediatric population
- We suspect majority of the evidence will be focused on care provider perspectives
- We hypothesize some barriers to implementing trauma-informed care for providers may be inadequate training and limited resources



Significance

- To our knowledge, there has been limited to no published research on patient and caregiver perspectives on this topic
- Actively valuing and including these missing patient and caregiver perspectives have the potential to further guide our understanding of trauma-informed care and ultimately create frameworks that are most relevant to them
- Furthermore, this review can shed light on how the experiences and expertise of individuals who are marginalized and oppressed are often excluded in policy development (6)
- The findings can spark meaningful dialogue and partnerships with vulnerable communities to assess and reform best practice guidelines

References

- Healing Families, Helping Systems. A Trauma-Informed Practice Guide for Working with Children, Youth and Families. 2017.
- McLean S. The effect of trauma on the brain development of children Evidence-based principles for supporting the recovery of children in care. CHILD FAMILY COMMUNITY AUSTRALIA; 2016.
- Felitti VJ, Anda RF, Nordenberg D, Williamson DF, Spitz AM, Edwards V, et al. Relationship of Childhood Abuse and Household Dysfunction to Many of the Leading Causes of Death in Adults. American Journal of Preventive Medicine 1998;14:245-58. [https://doi.org/10.1016/S0273-9608\(98\)00171-8](https://doi.org/10.1016/S0273-9608(98)00171-8)
- 3 Realms of ACEs. PACE Education n.d.
- SAMHSA's Concept of Trauma and Guidance for a Trauma-Informed Approach. Substance Abuse and Mental Health Services Administration; 2014.
- Zewude R, Sharma M. Critical race theory in medicine. CMAJ 2021;193:E739-41. <https://doi.org/10.1503/cmaj.210178>

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This work is conducted on the traditional, ancestral, and unceded territories of the Coast Salish people, including the xʷməθkwəy̓əm (Musqueam), Skwxwú7mesh (Squamish), and səlilwətaʔ (Tseil-Waututh) Nations. This project is funded by the BC Children's Hospital Research Institute Summer Studentship. Special thanks to RICHER Program and partners, including OPSEI, Canadian Pediatric Society, and the UBC Faculty of Medicine Department of Pediatrics for their ongoing mentoring, guidance, and allyship. For more information, please see the QR code below:



RICHER Program

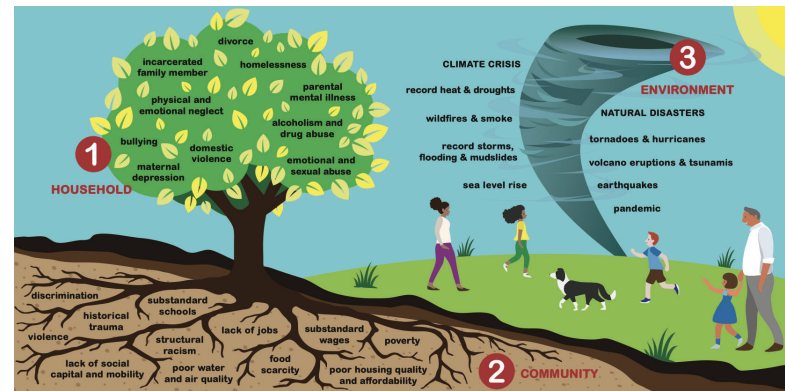


Figure 1 – Realms of different adverse childhood experiences (ACEs) (4). This diagram showcases the different aspects of household, community, and environment factors that can impact a child's health, wellbeing, and development.

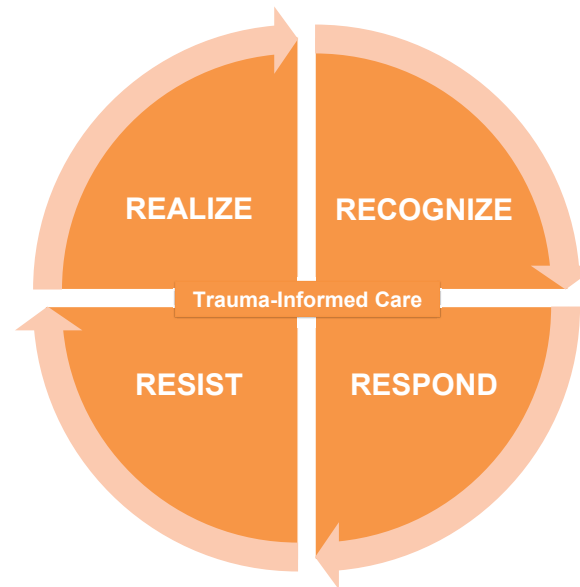


Figure 2 – The Four R's of Trauma Informed Care (5). This model is one example of existing frameworks and focuses on realizing the impacts of trauma and potential paths for recovery, recognizing signs and symptoms of trauma, responding by integrating knowledge into policies and practices, and resisting re-traumatization of patients and their caregivers.



Can we save the Eye? A look back at the intra-arterial chemotherapy experience for retinoblastoma at BCCH



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INTRODUCTION

- Retinoblastoma (RB) is a relatively rare tumor of childhood that accounts for about 3% of the cancers occurring in children younger than 15 years.
- The goals of treatment are first and foremost to achieve cure, to preserve vision and decrease the risk of late sequelae from treatment.
- Intra-arterial chemotherapy (IAC) is the technique of delivering chemotherapy to the local arterial system of the eye. It has been adopted by many tertiary centers as an option for up front treatment, but rates of globe salvage are not well reported.
- This is partly due to heterogeneity in practice as regards the combination of drugs infused, the number of cycles given, and the stage of disease at which this treatment is offered.
- Our objectives were to determine the globe salvage rate after IA chemotherapy for retinoblastoma at BCCH, and to describe the characteristics of the patients whose avoided enucleation.

METHODS

- Database search through Cerner for all BCCH patients who underwent IA chemotherapy from Jan 2007- Dec 2017.
- Chart review was done. Age at diagnosis, hereditary status, stage of disease at diagnosis, the combination of drugs infused, as well as the number of cycles given were reviewed and analyzed
- The International Classification of Retinoblastoma (ICRB) staging classification system was applied. It is based on tumor size, location, and associated seeding, and can reliably predict chemo reduction outcome. ¹

Group A = retinoblastoma up to 3 mm in size

Group B = retinoblastoma more than 3 mm in size, macular location, or minor subretinal fluid

Group C = retinoblastoma with localized seeds

Group D = retinoblastoma with diffuse seeds

Group E = massive retinoblastoma necessitating enucleation

1. Shields CL, Shields JA. Curr Opin Ophthalmol. 2006 Jun

INTRA-ARTERIAL CHEMOTHERAPY DELIVERY

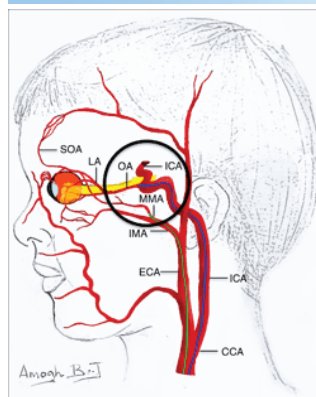


Figure 1: Selective ophthalmic artery chemotherapy is performed by passing the catheter via ICA through the femoral artery into the OA ostium. (route marked in blue) Alternate route is catheterization of MMA via ECA and IMA. (route marked in green) ²

2. Manjandavida, F.P. et al (2019). Indian Journal of Ophthalmology

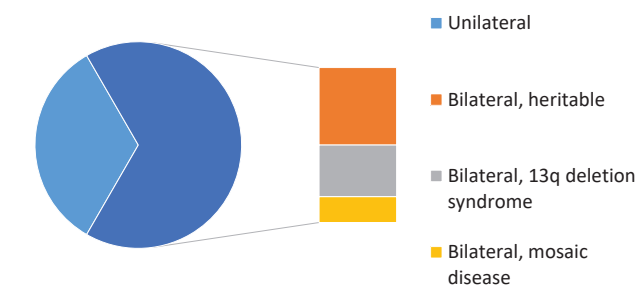
RESULTS

- 9 children diagnosed with retinoblastoma received IA chemotherapy, which was delivered to a total of 10 eyes [one patient with bilateral disease had the procedure done to both eyes]
- Median age of diagnosis was 16 months
- Two thirds of this cohort had bilateral disease
- Overall globe salvage rate of 60%.
- In cases of advanced retinoblastoma (Group D and E), salvage rate was lower at 50%
- In all cases, IAC was used in conjunction with either systemic and/ or further local treatment
- IAC was offered either as single agent melphalan, double agent (melphalan and topotecan) or triple agent (carboplatin, melphalan and topotecan)
- Median of 3 cycles of IA chemotherapy offered

TABLE 1. Stage of Disease, Treatment and Outcome

Stage at Dx	Year of IAC	No. of agents	Cycles	IA Treatment	Eye Salvaged
Group D	2008	1	6	Melphalan x 6	No
Group B	2017	1, then 3	4	Melphalan x 2, x Triple IA x 2	Yes
Group B	2016	1, then 3	6	Melphalan x 2, Triple IA x 4	Yes
Group D	2019	3, then 2	3	Triple IA x 2, Double IA x 1	No
Group B	2020	2	3	Double IA x 3	Yes
Group D	2020	2	3	Double IA x 3	No
Group D	2020	2	3	Double IA x 3	No
Group D	2021	3	1	Triple IA x 1	Yes
Group E	2021	3	3	Triple IA x 3	Yes
Group D	2021	3	3	Triple IA x 3	Yes

Figure 2: Distribution of patients by type of disease



CONCLUSION

- IAC, achieved a globe salvage rate of at least 50%, even in advanced RB, and will likely continue to be an important component of treatment, especially in children with bilateral disease.
- There is need for larger cohort studies with homogenous practice and an adequate follow up period to provide higher level evidence on this treatment modality



THE UNIVERSITY
OF BRITISH COLUMBIA

Ketogenic diets for children and youth with epilepsy: Long-term impact on eating behaviors and quality of life

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INTRODUCTION

Drug-resistant epilepsy (DRE) is defined as failure of adequate trials of two tolerated, appropriately selected, antiepileptic drugs to achieve sustained seizure freedom (1). DRE affects approximately 25- 35% of youth with a diagnosis of epilepsy.

The ketogenic diet (KD), a high-fat, low carbohydrate, and adequate protein diet and is an evidence-based treatment for children and youth experiencing DRE. When followed strictly, the KD can decrease seizure frequency in youth with DRE by more than >70% experiencing 50% reduction (2).

Although the KD can reduce seizure frequency, the strict diet can pose an increased burden on the youth's and families' quality of life (QOL) which may result in discontinuation of the KD (3, 4). Further understanding a family's perspectives, barriers, and beliefs has the potential to enhance pre-KD counselling and supports provided by their healthcare team.

The purpose of our study is to examine the impact of a time-limited dietary intervention for DRE on eating behavior and quality of life.

OBJECTIVE

The aim of our study is to explore families' experiences while supporting their child with a dietary intervention for DRE to examine potential barriers and facilitators to this intervention.

This study was part of a larger study investigating also comparing eating pathology, somatic symptoms, and QOL.

METHODS

Our study is a single center, cross-sectional design using narrative inquiry to explore and examine families' experiences while supporting a youth on the KD for DRE.

We invited participants with DRE who had previous experience with the KD (KD group) or who had not used this dietary intervention (comparison group). We are presenting the results of 12 care-providers describing their family's experience with the KD to treat their child's DRE using open-ended questions (please refer to the QR code to access a list of the questions).

RESULTS

The questionnaires were reviewed as a whole and then organized into entries specific to each family. Themes and categories were drawn and currently being analyzed. Below are examples of family responses:

"We have nothing but positive things to say about keto-it gave us our son back"

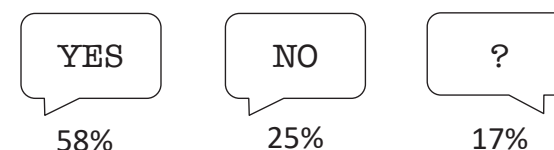
"She did stop getting invites to bday parties because people thought she would feel left out"

"It was overwhelming and was very expensive - meal prep took 3 times longer"

"Prior to the diet she was very adventurous with food and would eat everything...she will go for several months only eating the same food"

Themes/sub-themes under review:

Effects the KD has on QOL, social experiences/ opportunities, relationship with food, physical and emotional aspects, and financial concerns. Many families found the advantages outweighed the disadvantages would be do it again if offered:



NEXT STEPS

Complete the narrative inquiry analysis and finalize the themes highlighting the family experience post-KD for youth with DRE. Share the family experience with the clinic to provide a assess and potentially improve current counselling strategies, teaching, and follow-up guidance prior to starting the KD for youth with DRE.

LIMITATIONS

- It is important to acknowledge the personal biases and life experiences that may impact the qualitative interpretation of a family's expressed experience.
- This study relies on individuals retrospectively reflecting on their experiences potentially resulting in over- and under-reporting.
- The sample size (n=12) for the completed surveys used for the narrative inquiry is small and may not be generalized to a greater population.

CONTRIBUTORS



REFERENCES/ MATERIAL



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