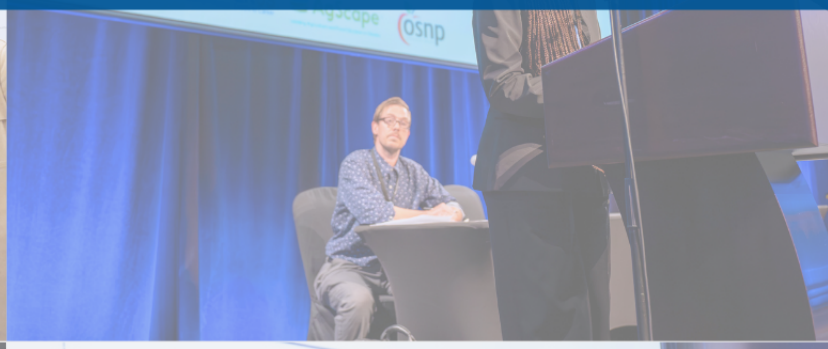
Abstract Guide

HEALTH RESEARCH CONFERENCE

A forum to showcase, connect, and strengthen health research excellence.



March 22nd, 2025

Caesars Windsor Convention Centre

#YQGHealthResearchConference

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WELCOME

Thank you for joining us for the 2025 Health Research Conference. This is the third health research conference that we are hosting in Windsor-Essex (Ontario, Canada). Guest speakers and presenters include a diverse group of researchers, clinicians, students, and community partners representing a wide range of health research areas. We are thrilled that you are here with us to showcase, connect, and strengthen local health research excellence. Welcome!

ABOUT WE-SPARK HEALTH INSTITUTE

WE-SPARK Health Institute is an innovative partnership supported by Erie Shores HealthCare, Hôtel-Dieu Grace Healthcare, St. Clair College, University of Windsor, and Windsor Regional Hospital that brings together health research strengths, expertise, and infrastructure from across the Windsor-Essex region of Ontario, Canada. We are establishing research pipelines to address pressing health issues, advancing discovery, innovation and technology, training and promoting excellence among our health professionals, and engaging our community.

Mission: Enhance the health, well-being, and care of people through transformative research, evidence-based interventions, and knowledge translation.

Vision: A thriving and engaged research community driving innovation and advancements in health.

In Year 6, we look forward to continuing igniting local research and elevating excellence!

Our conference would not have been possible without the support of our sponsors: Caesars Windsor, Integrated Network for the Surveillance of Pathogens (INSPIRE), University of Windsor – Faculty of Human Kinetics & Office of Research & Innovation, St. Clair College Alumni Association, Erie Shores HealthCare, Windsor Regional Hospital, Hôtel Dieu Grace Healthcare, Institute of Electrical and Electronics Engineers – Windsor Section, University of Windsor – Graduate Student Society, and Bear Construction & Engineering. Thank you for supporting local health research!

SCHEDULE OVERVIEW

7:45 AM	Registration & Light Breakfast	LOBBY
8:45 AM	Good Way Opening & Welcome | Lived-Experience Perspective	AUGUSTUS I & II
9:15 AM	Plenary Session **Moderators**: Dr. Trevor Shepherd, Schulich School of Medicine & Dentistry Dr. Andrea Steen, Hôtel-Dieu Grace Healthcare	AUGUSTUS I & II
10:15 AM	Refreshments/Movement Break	LOBBY
10:30 AM	Rapid Fire Session **Moderator**: Dr. Kyle Jackson, St. Clair College	AUGUSTUS I & II
11:00 AM	Poster Session A	AUGUSTUS III
12:00 PM	Lunch	AUGUSTUS I & II
12:45 PM	Poster Session B	AUGUSTUS III
2:00 PM	Concurrent Session A-1 | **Moderator**: Dr. Andrew Hubberstey, University of Windsor	SATURNI
	Concurrent Session A-2 | **Moderator**: Dr. Jennifer Voth, Hôtel-Dieu Grace Healthcare	LUNA
	Concurrent Session A-3 | **Moderator**: Dr. Sindu Kanjeekal, Windsor Regional Hospital	MARTIS
	Concurrent Session A-4 | **Moderator**: Rowena Hill-Ernesto, INSPIRE	MERCURI
3:00 PM	Refreshments/Movement Break	LOBBY
3:15 PM	Concurrent Session B-1 | **Moderator**: Dr. Andrew Hubberstey, University of Windsor	SATURNI
	Concurrent Session B-2 | **Moderator**: Dr. Jennifer Voth, Hôtel-Dieu Grace Healthcare	LUNA
	Concurrent Session B-3 | **Moderator**: Dr. Sindu Kanjeekal, Windsor Regional Hospital	MARTIS
	Concurrent Session B-4 | **Moderator**: Rowena Hill-Ernesto, INSPIRE	MERCURI
4:15 PM	Panel: "Engaging People with Lived-Experience in Research Projects" **Moderator**: Dr. Paula van Wyk, University of Windsor	AUGUSTUS I & II
5:00 PM	Closing Remarks & Awards	AUGUSTUS I & II

25% of this program is dedicated to participant interaction

Overall Learning Objectives:

By the end of this program, participants will be able to:

1. Evaluate different research methodologies to determine their reliability and relevance in guiding evidence-based clinical decision-making.
2. Apply current trends in health research to enhance patient care and optimize treatment strategies in a community setting.
3. Assess the impact of emerging healthcare technologies on patient outcomes and their feasibility for integration into future research projects or community practice.
4. Evaluate their organization's current Diversity, Equity, and Inclusion (DEI) initiatives and recommend evidence-informed strategies to enhance DEI in research and patient care.
5. Integrate patients' lived experiences into clinical decision-making and practice to enhance empathy and promote equitable, patient-centered care

This event is an Accredited Group Learning Activity (Section 1) as defined by the Maintenance of Certification Program of the Royal College of Physicians and Surgeons of Canada, and approved by Continuing Professional Development, Schulich School of Medicine & Dentistry, Western University. You may claim a maximum of 4.25 hours (credits are automatically calculated).

ABSTRACTS

RAPID-FIRE ORAL PRESENTATIONS

ABSTRACT O01

ADVANCING EARLY CANCER DETECTION: A NOVEL DUAL-FREQUENCY ULTRASOUND TECHNOLOGY FOR ENHANCED IMAGING

Yumna Birjis[1], Pavithra Munirathinam[1], Haleh Nazemi[1], and Dr. Arezoo Emadi[1]

[1]Department of Electrical Engineering, University of Windsor

Category: Biomedical Research

Cancer remains a leading cause of mortality worldwide, with early detection being critical for improving patient outcomes. Among various imaging modalities, ultrasound is widely used due to its non-invasive nature, ease of clinical implementation, and routine accessibility. However, conventional ultrasound systems face challenges in achieving high resolution and sufficient imaging depth, limiting their effectiveness in early cancer detection. This study aims to enhance the resolution and imaging depth of next-generation ultrasound transducers by designing and optimizing a Piezoelectric Micromachined Ultrasonic Transducer (PMUT) featuring a rectangular membrane with a tailored electrode configuration for dual-frequency operation. We conducted preliminary investigations using finite element simulations to evaluate the electromechanical performance of the PMUT. Additionally, acoustic pressure analysis was performed in immersion hydrophone testing to validate dual-frequency operation and assess its potential for improved imaging quality. Our findings demonstrate the feasibility of the proposed PMUT design in achieving dual-frequency operation, which can enhance image resolution and penetration depth in ultrasound imaging systems. This innovative approach has the potential to advance ultrasound-based early cancer detection, addressing the current limitations in resolution and imaging accuracy.

ABSTRACT O02

EXPLORING PRINCIPLES OF THE INTERPLAY BETWEEN TUMOUR INITIATING CELLS AND THE ENDOTHELIAL COMPONENT IN GLIOBLASTOMA

Alan Cieslukowski[1], Dorota Lubanska[1], Elizabeth Fidalgo da Silva[1], Mohamed AR Soliman[2,3], Abdalla Shamisa[4], Ana deCarvalho[5], Lisa A. Porter[1,6,7]

[1]Department of Biomedical Sciences, University of Windsor
[2]Department of Neurosurgery, Cairo University
[3]Department of Neurosurgery, Jacobs School of Medicine and Biomedical Sciences
[4]Department of Neurosurgery, Schulich School of Medicine and Dentistry
[5]Department of Neurosurgery, Henry Ford Hospital
[6]St. Joseph's Health Care London
[7]Lawson Research Institute

Category: Biomedical Research

Efficient targeting of multiple components of a tumour might be a successful strategy in aggressive types of cancer such as glioblastoma (GBM), which remains the most common and malignant primary brain tumour with an extremely poor patient survival of less than 15 months. The significant therapeutic challenge posed by GBM stems from its genetic and phenotypic heterogeneity fueled by multiple components of the tumour biology including aggressive and treatment-resistant populations of tumour initiating cells (TICs) and high levels of angiogenesis contributing to tumour evolution, evasion of therapy and recurrence. TICs, which are at the source of GBM patient relapse, thrive in the niches close to the blood vessels where they interact with endothelial cells (ECs), exit the cell cycle, and evade therapies. Targeted antiangiogenic drugs, preventing GBM cells from recruiting new blood vessels, are only effective in 50% of patients and display temporary effectiveness due to acquired secondary resistance by the tumour. Thus, there is an urgent need for new and effective therapeutic strategies. This project will explore the TIC-EC interplay and its role in propagating tumour aggressiveness and therapy resistance. This project will investigate the impact of ECs on the aggressive characteristics of individual, specific populations of TICs using GBM patient-derived systems, including 3D organoid models and zebrafish patient-derived xenografts (PDXs). Elucidating the details of specific cellular populations of aggressive TICs with dependence on the EC component will contribute to the identification of improved therapeutic targets and personalized approaches for treatment of patients with GBM.

ABSTRACT O03

EXPANDING SALIVA SCREENING TO TRACK NEW & EXISTING VIRUSES: STRENGTHENING PUBLIC HEALTH IN THE WINDSOR-ESSEX REGION

Jackie Fong[1], **Maria Badalova[2]**, Cassidy Kost[3], Marissa Rakus[3], Brayden LaBute[2], Farinaz Ziaee[1], Jewels Adair[3], Lisa Porter[2], Yufeng Tong[1], Kendall Soucie[3], Kenneth Ng[1]

[1]Department of Chemistry & Biochemistry, University of Windsor

[2]Department of Biomedical Sciences, University of Windsor

[3]Department of Psychology, University of Windsor

Category: Biomedical Research

The COVID-19 pandemic posed significant global public health and economic challenges, with testing serving as a critical tool to prevent disease spread. Saliva testing emerged as a promising tool as a less invasive, and time- and cost-effective alternative to standard nasopharyngeal swabs. In response, we developed a rapid and inexpensive saliva testing platform on the University of Windsor campus, processing over 1000 samples and identifying approximately 40 COVID-19 cases. We aim to expand this platform to the Windsor-Essex community as a proactive approach to detect and monitor new and existing viruses in this critical border region. However, the methods used to collect saliva samples on campus may not be feasible for a broader participant base. To address this, we surveyed cross-border healthcare workers to identify the conditions that would encourage participation. Key considerations included improving the ease of use of the saliva collection kit, simplifying sample drop-off, and enhancing communication with participants after sample submission. Based on feedback from on-campus participants, we refined the saliva kit instructions and worked with campus staff to set up a secure drop box for sample collection. This expansion offers a promising approach to detect surges in existing or novel viruses, improving disease detection capabilities within the Windsor-Essex region.

ABSTRACT O04

IMPLEMENTATION OF A MEDICAL EDUCATION SERVICE LEARNING PROGRAM CENTRED ON INTERNATIONAL AGRICULTURAL WORKERS (IAWS) IN SOUTHWESTERN ONTARIO

Joshua Garcia-Barrios[1,2], **Rachel-Ann Dixon[1,2]**, Rosa Mikheil[2], Salah Alhajsaleh[2], Mehtaab Dhillon[2], Dr. Caroline Hamm[1,2], Chelsea Ymana[2]

[1]Western University, Schulich School of Medicine and Dentistry

[2]University of Windsor

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

International Agricultural Workers (IAWs) are vital to Canadian agriculture but face significant language and cultural barriers. Windsor-Essex is uniquely situated to support programs serving IAWs, as over 50% of Canada's IAW population resides in this region. An English language support program was established with the University of Windsor (UoW) and Schulich School of Medicine (SsoM) to address barriers exacerbating healthcare challenges. This work seeks to report on the program's implementation and protocols and assess effectiveness in enhancing language proficiency, community integration, and medical student engagement with IAWs. IAWs were recruited from the South Essex Community Council (SECC), and English partners from UoW and SSoM. Following an oral presentation outlining the program, 18 IAWs and 15 medical students enrolled. Participants were paired based on availability and language proficiency. Partners were given a weekly slide deck that guided conversations aligned with IAWs' language lessons. Weekly reflections, monthly meetings, surveys and interviews will be conducted with medical student volunteers to evaluate their experiences and program impact. Preliminary survey and interview results indicate positive outcomes for both IAWs and participating medical students. IAWs reported improved English proficiency and a greater sense of community inclusion. Medical students demonstrated increased cultural awareness and understanding of challenges faced by IAWs, fostering a deeper commitment to addressing inequities in healthcare. This work underscores the potential of a language support program to enhance cultural competency among future healthcare professionals while improving quality of life and access to resources for IAWs.

ABSTRACT O05

IDENTIFYING AND DEVELOPING YOUTH HOMELESSNESS PREVENTION STRATEGIES THROUGH RESPONDENT DRIVEN SAMPLING AND INTERSECTIONALITY

Kyle Jackson[1], Fayssoux Bombardier[1], **Emma Beecroft[2]**, Wafaa Al Rayes[2], Sarah Wilkins[2], Armand Avolio[3], Katoon Wongwilart[3]

[1]Department of Social Justice and Legal Studies, St. Clair College

[2]St. Clair College

[3]University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

Youth experiencing homelessness is an ever-growing issue in our community that we hope to shed light on. St. Clair College's Research and Innovation department is looking into this problem. Headed by Professor Kyle Jackson and Fayssoux Bombardier with students from the Social Justice and Legal Studies degree program, the objective of this study is to better understand the experiences and needs of youth in our community who are currently experiencing homelessness. Using Respondent-Driven Sampling and snowball sampling, we recruited youth who consented to participate in qualitative semi-structured interviews to identify where services are lacking and guide future initiatives focused on preventing and addressing youth homelessness. From these interviews, preliminary themes emerged, including the need for more youth-centered shelters. Our research led to the creation of a deliverable, a map of active organizations in our community, including their location, contact information, and what services they offer. The next steps in our research involve performing a thematic analysis to extract and analyze key themes from the transcripts, which will be published in a report. Equipped with the knowledge following a comprehensive review of the literature and thorough analysis of the themes uncovered in our study, we will then put forth programming proposals to address youth homelessness in our community. Our presentation will focus on the themes that emerged from conducting a preliminary analysis of the transcripts and will elevate the voices of youth by sharing their perspective and experiences in their own words.

ABSTRACT O06

LEVERAGING DATA & COMMUNITY ACTION: STRENGTHENING SAFETY & WELL-BEING IN WINDSOR-ESSEX

Emma Kiessling[1], **Madison Dekok[1]**, Amy Peirone[1]

[1]School of Community Studies, St. Clair College

Category: Social, Cultural, Environmental, and/or Population Health Research

How can we harness data and community engagement to create safer, more connected neighbourhoods? Funded by WE-SPARK and conducted in collaboration with St. Clair College and the City of Windsor's Social Policy & Planning team, this project sought to answer that question. Initially focused on developing a data consortium to support affordable housing, the project evolved based on stakeholder feedback to address two key objectives: (1) assessing the user experience of the Homeless Individuals and Families Information System (HIFIS) to enhance its usability and effectiveness, and (2) developing a Neighbourhood Safety and Crime Prevention Walk Toolkit to equip residents, municipalities, and law enforcement with practical strategies for community-based crime prevention. The HIFIS assessment involved an online survey distributed to 11 organizations, with 46 users providing insights on training needs, system strengths, and challenges. The crime prevention toolkit was co-designed with stakeholders, incorporating Crime Prevention Through Environmental Design (CPTED) principles, and piloted in real-world settings. Survey findings identified critical training and system improvement opportunities, informing targeted recommendations for enhancing HIFIS usability in our local context. The crime prevention toolkit received positive stakeholder feedback, empowering communities to take an active role in fostering community well-being via safer neighborhoods. By combining data insights with community-based safety initiatives, this project lays the groundwork for sustainable improvements in crime prevention, and overall community health, safety, and well-being across Windsor-Essex.

ABSTRACT O07

PRESSING HEALTHCARE NEEDS IN A WINDSOR-BASED SHELTER HEALTH INITIATIVE

Kim Nguyen[1], Karen Michael[1], Temitope Akintola[1], Rose Plantus[2], **Alex Zhou[1]**, Adrian Guta[3], Grace Park[4], Kathy Pfaff[2], Jennifer Voth[5], Jonathan Foster[4], Debbie-Sheppard-Lemoine[2], Hali Sitarz[6], Neelu Seghal[7], David Hallet[8,9], Jennifer Bondy[1,10]

[1]Schulich School of Medicine and Dentistry
[2]Faculty of Nursing, University of Windsor
[3]School of Social Work, University of Windsor
[4]Windsor Regional Hospital
[5]Hôtel-Dieu Grace Healthcare
[6]St. Clair College
[7]Erie Shores HealthCare
[8]WE-SPARK Health Institute
[9]Abbie Inc. Global Epidemiology
[10]Faculty of Biomedical Sciences, University of Windsor

Category: Health Service Research

Windsor Shelter Health (WSH) offers = on-site medical services at shelters and drop-in centres for people experiencing homelessness (PEH) in Windsor, Ontario. PEH face barriers to health, including competing demands that may outweigh their desire for healthcare, transportation barriers, and being lost to follow up. WSH was established to improve healthcare experiences and outcomes for PEH by enhancing access to care that addresses their needs and improves population health. A survey was developed, validated, and distributed to client-facing staff at shelters and drop-in centres to understand the current state of healthcare access for PEH in Windsor and identify unmet healthcare service needs of PEH in Windsor as understood by client-facing workers to enhance the WSH model. Survey results (n = 60) indicated strong support (96.7%) for continuous, ongoing, and direct shelter health supports accessible to PEH. Services felt to be most important included access to physicians for primary care, psychiatric care, addictions medicine, access to harm reduction, wound care, and counselling. Delays in access to care were felt to be due to clients' fear and mistrust of the healthcare system, clients' concerns regarding stigma experienced, and a lack of transportation. Results of the project will serve as a baseline for the development of targeted programs and services to effectively support and improve health care access and outcomes for people experiencing homelessness in Windsor. This may serve as a model for similar jurisdictions on how to build a well-integrated shelter-health model.

ABSTRACT O08

BARRIERS TO ACCESSING MENTAL HEALTH SERVICES THAT IMPACT BLACK CANADIANS: A SCOPING REVIEW AND THEMATIC ANALYSIS

Ibukunoluwa Grace Okusanya[1], Samantha B. Meyer[1]

[1]School of Public Health Sciences, University of Waterloo

Category: Social, Cultural, Environmental and/or Population Health Research

Although experiencing lower levels of mental health compared to the general population of Canada, Black Canadians are less inclined to seek help from mental health services. Thus, the aim of this scoping review is to systematically document the current literature on the barriers in accessing mental health services among Black Canadians. Following PRISMA guidelines, a systematic search of the existing literature was conducted using four databases on September 8, 2024. The final dataset consisted of 20 studies published between 1998 and 2023. Findings were synthesized using the sociobehavioural model of health service use to define the subtypes of barriers and the construct of Mental Health Literacy to guide the thematic analysis of the extracted data. Barriers impacting Black Canadians' access of mental health services included language barriers, difficulties in navigating the mental healthcare system, wait times, the quality of resources, and the lack of mental health services in their communities. Themes identified as barriers of use were Mental Health Literacy, Negative Perceptions of the Mental Healthcare System, and Discrimination. Challenges discussed in this review implicate the importance of a multitargeted approach to increasing the access and usage of mental health services among Black Canadians. This review also provides a foundation for research and practice that aims to investigate and develop strategies to promote the mental health of the Black population in Canada. Accordingly, we identify gaps in research—regarding the mental health perceptions, beliefs, and experiences of Black Canadians, required to properly develop interventions that increase mental health service access.

ABSTRACT O09

SYSTEMIC CHALLENGES, LOCAL SOLUTIONS: HEALTH EQUITY AT THE INTERSECTION OF MEDICAL AND SOCIAL SERVICES SECTORS

Lauren Wan-Sai-Cheong[1,2], Courtney Petruik[2], Katrina Milaney[2]

[1]Department of Psychology, University of Windsor

[2]Department of Community Health Sciences, University of Calgary

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

Previous research highlights many barriers faced by individuals experiencing homelessness and nearing the end of life. Despite years of research examining the gaps in palliative and end-of-life care, people experiencing homelessness remain unsupported by both medical and social services systems. This study examines health equity at the intersection of palliative and non-profit care for individuals experiencing homelessness in Calgary, Canada. We were guided by the Health Equity Framework to interpret our findings. Our aim was to identify actionable solutions within existing systems and explore strategies that can bridge silos between medical and social services. Semi-structured interviews were conducted with seven service users of a mobile palliative care organization and 11 healthcare providers whose work intersected both medical and social services. Using inductive thematic analysis, supported by NVivo 14 software, we identified opportunities for promoting equitable palliative and end-of-life care. Three interconnected themes emerged where shifts in (1) provider attitudes, (2) governance and policy changes, and (3) improved access to resources/streamlined navigation, shaped access to care. This study emphasizes locally adaptable, equity-driven solutions, moving beyond identifying barriers to care. It also contributes to the dialogue on collaboration and inter-systemic reform to better support individuals experiencing homelessness and nearing the end of life. Our findings encourage health care professionals from social work and medical settings to come together to deliver equity-focused care and for accessible sharing and dissemination of information and resources.

POSTER SESSION

Research Focus: Biomedical Research

ABSTRACT P01 - A

THE RELATIONSHIP BETWEEN KINASE PATHWAYS IN PLUROPOTENCY AND CELL CYCLE PROGRESSION

Ali Abdel Raheem[1], Darsh Bhatt[2], Smit Rami[2], Brian DeVeale[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Computer Science, University of Windsor

Pluripotency is the ability of a stem cell to differentiate into any cell type, governed in part by intricate kinase-mediated phosphorylation networks. These regulatory pathways coordinate pluripotency, differentiation, and cell cycle progression. Mouse embryonic stem cells (mESCs) are pluripotent that can proliferate indefinitely as undifferentiated cells in vitro. While previous studies have identified phosphorylation of key pluripotency factors like NANOG, SOX2, and OCT4 by kinases such as Cyclin E-CDK2, the broader interactions between pluripotency-maintaining and differentiation-promoting kinase pathways remain unclear. Using mass spectrometry data from synchronized mESCs collected across distinct cell cycle phases and enriched for phosphorylated peptides using TiO_2, we predicted kinase-substrate relationships that regulate pluripotency and cell cycle progression. Our analysis identified RPS6KB1 as a key regulator of OCT4, suggesting a central role in pluripotency maintenance. We hypothesize that inhibiting key kinases important in pluripotency, such as RPS6KB1, will result in differentiation, while inhibiting key kinases important for differentiation will maintain pluripotency. To test these predictions, we will apply small-molecule inhibitors to mESCs and assess changes in NANOG, SOX2, and OCT4 expression via immunohistochemistry. Additionally, we identified kinases involved in cell cycle transitions, such as PRKAA2, which is predicted to regulate S-phase progression. We predict that inhibition of such kinases will lead to phase-specific cell cycle arrest, which will be validated using flow cytometry to measure DNA content. This research underscores the critical roles of kinase pathways in pluripotency and cell cycle regulation, providing insights into potential therapeutic targets for stem cell-based treatments and cancer therapy.

ABSTRACT P02 - B

INVESTIGATING KAISO AND TGFβ SIGNALING CROSSTALK IN EPITHELIAL-TO-MESENCHYMAL TRANSITION IN TRIPLE-NEGATIVE BREAST CANCER

Hanad Adan[1], Lindyann Lessey[1], Stephanie Ali-Fairbairn[1], Rob Cowan[1], Juliet M. Daniel[1]

[1]Department of Biology, McMaster University

Triple-negative breast cancer (TNBC) is the most difficult-to-treat breast cancer (BCa) subtype due to its aggressive, highly metastatic nature, and lack of targeted therapies. Increasing evidence implicates the transcription factor Kaiso in TNBC's increased metastatic potential. In mouse xenograft models, Kaiso-depleted TNBC cells formed little to no metastatic lesions in the lungs or liver compared to parental Kaiso-expressing TNBC cells. Furthermore, increased nuclear Kaiso localization correlates with tumors of a higher histological grade and poorer survival. Kaiso has been implicated in metastasis by promoting epithelial-to-mesenchymal transition (EMT), a cellular program that is characterized by the loss of cell-to-cell adhesion and the adoption of mesenchymal properties that promote migration and invasion. While characterizing the mechanisms behind Kaiso's role in EMT, we determined that Kaiso regulates the expression of various proteins in the Transforming Growth Factor Beta (TGFβ) signaling pathway, another potent inducer of EMT that also participates in BCa progression. Interestingly, we also observed that TGFβ1 treatment increases Kaiso expression in our TNBC cell lines. Chromatin immunoprecipitation (ChIP)-PCR analysis of the Kaiso promoter revealed that the TGFβ transcription factors SMAD2/3 bind to the Kaiso promoter directly, indicating that in addition to regulating TGFβ signaling proteins, Kaiso is also a downstream target of TGFβ. To further examine Kaiso's role in TNBC aggressiveness and metastasis, we will fully characterize this Kaiso-TGFβ feedback loop and examine Kaiso and TGFβ expression in TNBC tissues to determine if there is a unique Kaiso/TGF-β signature that could be used as diagnostic/prognostic biomarkers for TNBC.

ABSTRACT P03 - A

ESTABLISHING A BIOMARKER DISCOVERY PLATFORM TO TRACK PROGRESSION TO TREATMENT RESISTANT NEUROENDOCRINE PROSTATE CANCER

Samavia Ahmad[1], Bre-Anne Fifield[1], Elizabeth Fidalgo da Silva[1], Lisa Porter[1], Sindu Kanjeekal[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Windsor Regional Hospital

Additional Research Focus: Clinical Research

Triple-negative breast cancer (TNBC) is the most difficult-to-treat breast cancer (BCa) subtype due to its aggressive, highly Prostate cancer (PC) remains the most common cancer among North American men, with many cases progressing to castration-resistant prostate cancer (CRPC) despite androgen-deprivation therapy. A significant subset of these patients further develops neuroendocrine prostate cancer (NEPC), a highly aggressive and treatment-resistant form of the disease. Early identification of NEPC is crucial to improving patient outcomes, yet current diagnostic methods rely on invasive biopsies that are not routinely performed during disease progression. This study aims to establish a biomarker discovery platform to evaluate circulating tumor RNA (ctRNA) as a non-invasive diagnostic tool for tracking the progression from CRPC to NEPC. Using blood, saliva, and urine samples from prostate cancer patients, we will conduct whole transcriptome sequencing (WTS) to assess whether ctRNA accurately reflects tumor RNA profiles. We will specifically analyze molecular signatures associated with NEPC, including key cell cycle regulators, to determine the feasibility of ctRNA-based diagnostics. Preliminary findings suggest that NEPC exhibits a distinct cell cycle signature that we hypothesize can be detected in ctRNA. If successful, this study will justify a large-scale clinical trial to evaluate the use of liquid biopsies for early NEPC detection. Establishing ctRNA as a biomarker could significantly enhance personalized treatment strategies, enabling earlier intervention, improving survival outcomes, and reducing unnecessary treatments. This pilot study represents a critical step toward transforming prostate cancer management through non-invasive biomarker discovery.

ABSTRACT P04 - B

UNDERSTANDING THE DIAGNOSTIC EXPERIENCE OF POSTPARTUM BREAST CANCER PATIENTS

Rabia Ali[1], Isabelle Hinch[2], Dr. Bre-Ann Fifield[2], Dr. Lisa Porter[1,3,4]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Biological Sciences, University of Windsor

[3]St. Joseph's Health Care London

[4]Lawson Research Institute

Postpartum breast cancer (PPBC) is an aggressive subtype of breast cancer diagnosed within 5-10 years after childbirth and is accompanied by increased mortality, disease spread, and recurrence. Young mothers (≤45 years) experience late diagnoses because of dense breast tissue which complicates imaging. They also face lack of inclusion in routine screening programs. Moreover, many of these cases are initially misdiagnosed as benign conditions like clogged ducts, abscesses, or mastitis, further delaying treatment and worsening outcomes. This study aims to explore the diagnosis experience of PPBC patients by (1) understanding how young mothers interpret changes in their breast and decide to seek medical care and (2) identifying challenges in receiving a diagnosis. A mixed-methods research design will be used to incorporate quantitative survey data and insights from qualitative semi-structured interviews. Participants will be recruited using posters in patient groups on social media and will complete a survey to collect demographic and diagnostic information. Participants can also choose to do one-hour virtual interviews focusing on symptom awareness, decision-making, and healthcare interactions. Thematic analysis of interview transcripts will give insights into the narrative around PPBC diagnosis experience. This study will be conducted alongside biomedical research on identifying early PPBC detection markers. By incorporating patient perspectives, findings will contribute to raising awareness among healthcare professionals and young mothers, and also identifying potential points of intervention for improved screening and earlier diagnosis in the postpartum period, ultimately improving PPBC outcomes.

ABSTRACT P05 - A

COLORECTAL CANCER SCREENING WITH FECAL IMMUNOCHEMICAL TEST

Talal Ali[1], Fatima Nadeem[2]

[1]Erie Shores HealthCare

[2]Western University

According to the World Health Organization report, colorectal cancer (CRC) is the third most common cancer worldwide. Several CRC screening methods are available that include stool-based tests to detect blood (guaiac fecal occult blood test and fecal immunochemical test-FIT), endoscopic methods (sigmoidoscopy and colonoscopy), imaging methods (computed tomographic (CT) colonography, video capsule endoscopy), and biomarkers. Since 2019, the recommendation Worldwide for colorectal cancer screening in individuals aged 50 to 74 is a fecal immunochemical test (FIT). Erie Shores Health Care (ESHC) serves rural and remote Canadians spanning the Greater Windsor-Essex County area, located in Ontario, which includes Caldwell First Nation, Migrant Agricultural Workers, the Mennonite community, and the un-documented or documented refugee population. We noticed that many individuals attending the ESHC-Surgery facility for colonoscopy were either unaware of the FIT test or were not offered an FIT test before colonoscopy. The objective is to provide insight into the reasons for the under-utilization of the FIT test for CRC screening and guidance for an effective screening strategy for our region.

An exploration into the utilization of FIT in the Windsor-Essex region with a retrospective data-driven analysis using the region's existing data is the proposed methodology. This study may aid hospital administration and clinicians in visualizing a realistic snapshot of FIT test utilization in the region, prompting the identification of possible barriers to FIT test utilization that are critical for improving uptake of and adherence to CRC screening. The publication will contribute knowledge on FIT test utilization in rural/remote Canadian healthcare systems.

ABSTRACT P06 - B

HIGH KAISO EXPRESSION IS ASSOCIATED WITH INCREASED QUADRUPLE-NEGATIVE BREAST CANCER IN WOMEN OF AFRICAN ANCESTRY

Stephanie Ali Fairbairn[1], Kyle Kim[1], Hanad Adan[1], Danial Mohammadi[1], Lindyann Lessey[1], Salija Golamari[2], Ryan Rattan[2], Robert Cowan[1], Juliet Daniel[1]

[1]McMaster University

[2]South-West Regional Health Authority, San-Fernando, Trinidad and Tobago

Triple-negative breast cancer (TNBC) is a highly aggressive subtype of breast cancer (BCa) that presents with significant therapeutic challenges as it is unresponsive to conventional treatments. This highlights the urgent need for novel biomarkers. The Androgen Receptor (AR) is emerging as a significant therapeutic target, as AR expression is associated with improved survival in some BCa patients. However, 60-80% of TNBC cases with low AR levels are classified as quadruple-negative breast cancer (QNBC) and do not respond well to AR inhibitors, leading to lower overall survival rates. Increasing evidence suggests that women of African ancestry (WAA) experience a disproportionate burden of both TNBC and QNBC. Past studies from our lab showed that the transcription factor Kaiso is more highly expressed in WAA and is associated with poorer survival compared to white women. Remarkably, in silico analysis revealed that high Kaiso and low AR expression correlate with poorer overall survival in BCa patients. Therefore, we hypothesized that high Kaiso contributes to the QNBC subtype in WAA. Using tissue microarrays and immunohistochemistry, we confirmed reduced AR expression in TNBC tissues from WAA compared to white women. Western blot and qRT-PCR analyses showed increased AR expression in response to Kaiso knockout in TNBC cells. Chromatin immunoprecipitation revealed that Kaiso associates with the AR promoter region and may regulate AR gene expression. Current studies aim to determine the effects of Kaiso knockout on TNBC cell susceptibility to AR inhibitors, which may lead to combination treatments that target Kaiso and AR in QNBC patients.

ABSTRACT P07 - A

IDENTIFICATION OF CELL-TYPE-SPECIFIC MRNA TRANSLATIONAL CONTROL MECHANISMS IN SYNAPTIC PLASTICITY AND MEMORY FORMATION

Maria Badalova[1], Rogers Koboji[1], Bromleigh Dobson[1], Daniella Jezdic[1], Vijendra Sharma[1]

[1]Department of Biomedical Sciences, University of Windsor

The formation of long-term memories in the brain requires protein synthesis through mRNA translation. Newly synthesized proteins modify neural networks by strengthening or weakening synaptic connections through synapse alterations across numerous species. In rodents, both spatial and object recognition memory necessitate the activation of long-term depression at specific synapses in the hippocampus. The downstream pathway of long-term depression involves activating the eukaryotic initiation factor 2 (eIF2) pathway and protein synthesis. Phosphorylation of eIF2α plays a critical role in regulating the translation of specific mRNAs. Research indicates that the translation mediated by p-eIF2α is essential and sufficient for long-term depression and its associated learning behaviour. In contrast, blocking p-eIF2α prevents protein synthesis-dependent long-term depression. The cell type-specific cellular and molecular mechanisms by which p-eIF2α-dependent translation promotes synaptic plasticity and memory remain unknown. Different cell types in the brain have unique roles in shaping synaptic function, and identifying the cell-type-specific mechanisms involved in these processes explains how the brain adapts to its environments and experiences. We cross eIF2α knockout mice with inhibitory and excitatory Cre-recombinase-inducing mice by manipulating the expression of genes and signalling pathways. We then perform behavioural tests to investigate long-term depression in mice. The eIF2α knockout mice showed enhanced memories in excitatory Cre-recombinase-inducing mice, but no difference was observed in the inhibitory Cre-recombinase-inducing mice. This study aims to enhance our knowledge of molecular mechanisms of how the brain encodes new information and stores it as long-term memories, which has implications for understanding and treating memory-related disorders.

ABSTRACT P08 - B

EVALUATION OF NOVEL LKB1 INHIBITORS AS NEW THERAPEUTICS AGAINST OVARIAN CANCER HISTOTYPES

Natasha Bruce[1,2], Ahmed Abdelhameed[3], Babu Joseph[3], Methvin Isaac[3], Radek Laufer[3], David E. Uehling[3], Trevor G. Shepherd[1,2,4,5]

[1]The Mary & John Knight Translational Ovarian Cancer Research Unit

[2]Department of Anatomy and Cell Biology, Schulich School of Medicine & Dentistry

[3]Drug Discovery Program, Ontario Institute for Cancer Research

[4]Department of Oncology, Schulich School of Medicine & Dentistry

[5]Department of Obstetrics and Gynecology, Schulich School of Medicine & Dentistry

Epithelial ovarian cancer (EOC) is a highly aggressive disease, with an 80% relapse rate following surgery and combination chemotherapy, highlighting the urgency for more efficacious therapeutic strategies. EOC is classified into five histotypes, each genetically and phenotypically unique, yet all follow a common metastatic mechanism. Malignant cells disseminate from the primary ovarian tumour, form spheroids, and then migrate to secondary sites. Previously our lab demonstrated that Liver Kinase B1 (LKB1) and its downstream target AMP-activated protein kinase (AMPK) are crucial for spheroid survival and metastases. In collaboration with the Ontario Institute for Cancer Research (OICR), we have identified and optimized several LKB1-targeting compounds that we have assessed using in vitro kinase and cell-based assays. We propose that LKB1 inhibition will reduce spheroid viability and metastasis across EOC histotypes, as spheroids are a universal metastatic mechanism. Using EOC cell lines representing three histotypes—high-grade serous, low-grade serous, and clear cell carcinoma—we will generate dose-response curves to assess each compound's effect on spheroid viability. Until now, our cell-based analysis focused only on two high-grade serous lines. On-target activity will be confirmed by immunoblotting for phospho-AMPK T172; we will assess potential off-target activity by evaluating CDK2 substrates. Since LKB1 inhibition may impact tumour cell dormancy and protection from anoikis, apoptotic, and proliferative marker expression will be quantified in drug-treated EOC cells and spheroids. Testing these inhibitors across a range of cell lines from various histotypes will deepen our understanding of their broader therapeutic potential for this complex and deadly disease.

ABSTRACT P09 - A

UNRAVELING COMPLEX ASSOCIATIONS OF GENETIC VARIATION AND TUMOUR MICROENVIRONMENTS FOR CLONAL EXPANSION IN BREAST CANCER WITH METASTASIS

Joseph Butler[1], Cornelia Tolg[2], Kathleen A. Hill[1], Eva A. Turley[2]

[1]Department of Biology, Western University

[2]Cancer Research Laboratory Program, Lawson Health Research Institute

Additional Research Focus: Clinical Research

Breast cancer (BrCa) is highly heterogeneous, with multiple distinct subtypes associated with variable clinical outcomes and high intra-tumor clonal diversity. This clonal diversity is caused by genomic instability, microenvironmental factors, and tumor cell plasticity. Intra-tumor clonal diversity has been linked to poor clinical outcomes including aggressive, recurrent, and treatment resistant tumors and progression to metastases. Somatic mutations that induce transcriptomic alterations and genomic instability, in combination with the harsh tumor microenvironment, shape the heterogeneity and expansion of intra-tumor clones. We identified RHAMM, which has pro-inflammatory functions in response-to-injury processes, as a contributor to BrCA cell heterogeneity. RHAMM is expressed in tumor and host cells and Rhamm-loss in these cell compartments strongly reduces clonal heterogeneity detected by single nucleotide variants used as endogenous barcodes. Our evidence predicts that a RHAMM-ve microenvironment exerts selective pressure permitting the emergence of dominant clones in lung metastases that carry specific oncogenic mutations. Our goal is to probe the interplay between clonal heterogeneity and the tumor microenvironment in the emergence of dominant intra-tumor clones. Next-generation DNA sequencing technologies now offer a two-pronged approach to the analysis of genetic heterogeneity. Long-read genome sequencing enables discovery of large structural variants and short-read, deep sequencing achieves highly accurate detection of ultra-rare single nucleotide variants. The interplay of clonal dynamics and the tumour microenvironments in the development of heterogeneous BrCa tumours can be teased apart to better understand the causative processes underlying the metastatic and treatment-resistant nature of these tumours, with discovery of potential genetic determinants relevant to cancer management.

ABSTRACT P10 - B

UNCOVERING MIR-142 TARGETS REGULATING B-CELL EXPANSION IN NHL

Aqil Butt[1]**,** Jonathan Brisebois[1], Dr. Brian DeVeale[1]

[1]Department of Biomedical Sciences, University of Windsor

Non-Hodgkin's Lymphoma (NHL) is the fifth most prevalent type of cancer in Canada. Diffuse Large B-cell Lymphoma (DLBCL) accounts for 90% of aggressive NHL cases. The microRNA miR-142 is mutated in 20% of DLBCL cases. Additionally, miR-142 -/- B-cells display increased expansion and elevated B-cell Activating Factor Receptor (BAFF-R) expression. However, it remains unclear whether loss of miR-142 directly leads to elevated BAFF-R expression, leading to increased expansion. Mutating the miR-142 target site on BAFF-R and expanding B-cells could help elucidate the regulatory mechanism. If miR-142 target site KO B-cells expand more, it shows that miR-142 directly regulates BAFF-R expression. The miR-142 target site will be deleted using CRISPR. A gRNA targeting the miR-142 binding site on BAFF-R will be cloned into the PX458 plasmid, which contains the cas9 expression cassette. The resulting plasmid will then be transfected into B-cells. The transfected B-cells will then be cultured in vitro under conditions that promote B-cell expansion. The frequency of miR-142 target site mutations will be quantified via sequencing before and after expansion. If mutations are enriched in the expanded population, it would suggest that miR-142 directly regulates BAFF-R. Thus, in miR-142 -/- mice, the lack of regulation by miR-142 would be directly leading to increased levels of BAFF-R, driving increased B-cell expansion. A broader screen targeting all miR-142 targets could help uncover other critical regulators of B-cell expansion. These targets could then be studied further to develop therapeutic strategies for treating DLBCL, given that microRNAs are difficult to mimic therapeutically.

ABSTRACT P11 - A

ESTABLISHING AN ORTHOTOPIC MOUSE MODEL FOR BREAST CANCER USING MMTV-PYVT-DERIVED TUMOUR CELLS

Elizabeth Coleman[1], Karla Alnajm[1], Munir Rahim[1]

[1]Department of Biomedical Sciences, University of Windsor

Mouse models are vital tools for studying the complexities of breast cancer. Both genetically engineered mouse models (GEMs), including transgenic and knockout models, and orthotopic models offer insights into tumourigenesis in the native tissue environment. This study aims to establish and characterize mammary tumour cell lines from a transgenic MMTV-PyVT mouse model, which develops mammary tumours resembling luminal B-type human breast cancer. These cell lines will be used to create an orthotopic breast cancer model to investigate tumour biology, cancer progression, and cancer immunology. We hypothesize that mammary tumour cells from MMTV-PyVT mice will retain key characteristics of Luminal B-type breast cancer when cultured in vitro, and that secondary tumours established through orthotopic transplantation into the mammary fat pad will closely resemble primary tumours. To establish tumour cell lines, MMTV-PyVT tumours were digested enzymatically, and the resulting single cell suspension was cultured to establish cell line clones. Established cell lines will be characterized for the expression of HER2, estrogen and progesterone receptors, and Ki67 using polymerase chain reaction (PCR) and flow cytometry analysis. The characterized cell lines will then be transplanted into the mammary fat pads of secondary mice to establish orthotopic models. Tumour growth and characteristics will be monitored and compared with primary tumours using immunohistochemistry methods. The established tumour cell lines and orthotopic models will be valuable for studying the molecular mechanisms of breast cancer progression and evaluating therapeutic interventions, advancing tumour biology research to guide the development of more effective treatments.

ABSTRACT P12 - B

GENETIC ANALYSIS OF RB FAMILY LOSS IN G2-S TRANSIT REGULATION

Adina Dass[1], Smit Rami[2], Fadya Youssef[3], Brian DeVeale[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Computer Science, University of Windsor

[3]Department of Biological Sciences, University of Windsor

Retinoblastoma (Rb) and its family members, p107 and p130 are tumour suppressor genes that regulate the G1/S restriction point when cells transition from growth factor dependent to independent cell cycle progression. G1 arrest is crucial for cell differentiation during embryonic development. Rb family dysfunction can lead to premature cell cycle entry. Deletion of all three Rb family members causes lethality at ~E9, earlier than lethality at ~E14.5 caused by placental deficit associated with Rb loss. The cause of Rb family lethality at ~E9 remains unknown, as triple knockout (TKO) embryos appear physically normal. The Rb family regulates the interface between proliferation and differentiation across cell types during embryogenesis. To investigate potential causes of lethality in Rb TKO embryos, we analyzed WT and conditional TKO embryos from embryonic days 6.5-9.5 using single cell RNA sequencing and Seurat to identify differences in the cell cycle across embryonic cell types. We will validate cell cycle defects by quantifying EDU incorporation across genotypes. Our analysis suggests that multiple cell types have a higher proportion of cycling cells in the Rb TKO embryos while others show increased G1 arrest. These defects could contribute to early embryonic lethality, providing further insight into the role of Rb genes in development. Since Rb is a tumour suppressor, the study of its loss could also offer clues about cancer initiation specifically in tissues where Rb related cancers arise.

ABSTRACT P13 - A

THE CYCLIN-LIKE PROTEIN SPY1 REGULATES SENESCENCE IN GLIOBLASTOMA (GBM)

Stephanie Dinescu[1], Dorota Lubanska[1], Alan Cieslukowski[1], Adam Bakos[1], Lisa Porter[1,2]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

Glioblastoma (GBM) is a highly aggressive malignant brain tumour with a poor prognosis despite intensive conventional therapies. A key challenge in treating GBM is its ability to resist treatment, with a subset of tumour cells surviving and entering cellular senescence, a state of irreversible cell cycle arrest. While senescence initially halts tumour growth, prolonged senescence can contribute to tumor recurrence. Spy1, a cyclin-like protein, is elevated in GBM and promotes cell cycle progression by activating cyclin-dependent kinases (CDKs) and overriding cell cycle checkpoints. We hypothesize that Spy1 promotes GBM tumour growth and progression by enabling cancerous cells to evade senescence. Using in vitro and ex-vivo systems, this project will explore Spy1's influence on senescence in GBM and assesses whether Spy1 targeting can enhance the effect of therapies targeting senescent cells. Spy1 will first be knocked down in GBM cell lines, and the levels of senescence will be evaluated through senescence-associated β-galactosidase staining and transcriptional analysis of senescence markers. These assessments will be replicated in Spy1-knockdown GBM cell lines subjected to temozolomide, the conventional treatment for GBM. Furthermore, this project will explore the combination of Spy1 inhibition with senolytic drugs, which are designed to eliminate senescent cells. The therapeutic efficacy of this combination will be evaluated through cell viability assays to assess cell death. This research will contribute to the understanding of Spy1's role in GBM and its potential as a novel therapeutic target, potentially paving the way for personalized therapies to prevent GBM progression.

ABSTRACT P14 - B

IDENTIFICATION OF THE CELL-TYPE SPECIFIC MRNA TRANSLATIONAL CONTROL IN LEARNING AND MEMORY FORMATION

Bromleigh Dobson[1], Maria Badalova[1], Daniella Jezdic[1], Vijendra Sharma[1]

[1]Department of Biomedical Sciences, University of Windsor

In response to cellular stress, protein translation is regulated via the phosphorylation state of the α-subunit of eukaryotic translation initiation factor 2 (eIF2α). When phosphorylated, eIF2α reduces general protein synthesis while upregulating specific mRNA translation. De novo protein synthesis is critical for long-term memory consolidation and synaptic plasticity, particularly long-term potentiation and long-term depression (LTD). Translational control by p-eIF2α is implicated in these processes in a way that is cell-type specific; however, in relation to LTD, this cell-type specificity remains largely uncharacterized. The goal of the study is to address the current gap in memory research by examining the cell-type specific role of eIF2α in LTD and long-term memory. Wild-type mice undergo a memory task that requires them to identify a familiar object in a novel location to behaviourally induce LTD. Immunohistochemistry and fluorescence microscopy are used to probe for relative p-eIF2α expression and cell-type specific markers, which is expected to allow for the identification of the brain regions and cell types implicated in LTD through increased p-eIF2α expression. The present study provides the foundation for future work understanding the necessity and sufficiency of a given cell-type in the translational regulation of LTD and long-term memory, which may be targeted by the cell-type specific genetic ablation of p-eIF2α. Ultimately, this will allow for a more comprehensive understanding of memory processes. With a thorough understanding of the pathways and cell types involved in memory processes, effective and targeted treatments can be developed for neurological disorders and diseases affecting memory.

ABSTRACT P15 - A

MICROGLIAL ACTIVATION IN HIGH-GRADE GLIOMAS: A META-ANALYSIS OF IBA1 AND CD68 BIOMARKERS AND THEIR CLINICAL IMPLICATIONS

Mohamed Elbreki[1], Abdurrahim Elashaal[2]

[1]Department of Biological Sciences, University of Windsor

[2]Department of Neurosurgery, Windsor Regional Hospital

Additional Research Focus: Clinical Research

High-grade gliomas (HGGs), including glioblastoma, are aggressive brain tumors with poor prognoses despite multimodal therapy. Microglia, the brain's resident immune cells, play a dual role in HGG progression by either suppressing or promoting tumor growth through neuroinflammatory pathways. However, the relationship between microglial activation markers (IBA1 and CD68) and clinical outcomes remains poorly understood. This meta-analysis aims to evaluate the association between microglial activation (measured by IBA1 and CD68 expression) and clinical outcomes in HGG patients. We hypothesize that elevated IBA1 and CD68 levels correlate with increased neuroinflammation, shorter overall survival, and higher rates of post-surgical complications. A systematic literature search will be conducted using PubMed, Scopus, and Web of Science, following PRISMA guidelines. Studies quantifying IBA1 or CD68 in HGG tissue and reporting clinical outcomes (e.g., survival, recurrence, post-operative complications) will be included. Data will be extracted and analyzed using random-effects meta-analytic models to calculate pooled effect sizes and assess heterogeneity (I^2 statistic). Subgroup analyses will explore tumor grade and treatment history. Findings from this meta-analysis will clarify the prognostic value of microglial activation in HGGs, potentially guiding neurosurgical strategies and post-operative care. Future research could explore targeted therapies to modulate microglial activity, such as CSF1R inhibitors, to improve patient outcomes.

ABSTRACT P16 - B

A MULTIDISCIPLINARY STUDY OF THE CYCLIN-LIKE SPY1, MAMMARY INVOLUTION, AND POSTPARTUM BREAST CANCER

Isabelle Hinch[1], Bre-Anne Fifield[1], Lisa Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

[3]Lawson Research Institute

From puberty to menopause, factors attributed to breast cancer risk fluctuate along with the natural development of the breasts. The postpartum period is particular period of increased breast cancer risk. Postpartum breast cancers patients diagnosed within 5-10 years of childbirth experience increased metastasis, recurrence, and mortality. These aggressive phenotypes may be linked to mammary involution: post lactational gland remodeling. Involution balances high rates of apoptosis and cell regeneration, two processes controlled by the cell cycle and its regulators. The cyclin-like protein Spy1 can promote cell proliferation and override apoptosis. Spy1 levels have been found to be elevated in breast cancer. Interestingly, Spy1 levels peak during involution. We hypothesized that Spy1 protects the cell population necessary for normal mammary gland reconstitution post involution. To address, histological and molecular analysis will be done over an involution time course of the transgenic overexpression MMTV-Spy1 FVB mouse model. The influence of Spy1 overexpression on breast cancer susceptibility will be assessed through mammary carcinogen treatments during the involution of MMTV-Spy1 mice, control mice, and age-matched nulliparous cohorts. Data indicates MMTV-Spy1 mice experience delayed involution marked by significant retention of epithelial content. MMTV-Spy1 mice also show increased hyperplastic nodule formation in the face of damage during involution. This research begins to articulate the role of Spy1 during normal mammary involution in maintaining the survival of epithelial cell populations, and how overexpression could potentially play a role in breast cancer susceptibility. Understanding mammary involution dynamics helps identify potential targets of diagnosis and treatment of postpartum breast cancer.

ABSTRACT P17 - A

ELUCIDATING THE ROLE OF CANCER-ACTIVATED FIBROBLASTS IN REGULATING GLIOBLASTOMA STEM CELLS

Christopher Jaworski[1], Dorota Lubanska[1], Elizabeth Fidalgo da Silva[1], Alan Cieslukowski[1], Sami Alrashed[1], Mohamed AR Soliman[2], Abdalla Shamisa[3], Ana deCarvalho[4], Swati Kulkarni[3], Lisa A. Porter[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Cairo University

[3]Schulich School of Medicine & Dentistry

[4]Henry Ford Hospital

Glioblastoma (GBM) is the most prevalent and aggressive malignant primary brain tumour with a median survival of approximately 15 months despite standard of care treatment. A major barrier to effective treatment is the extensive genetic and phenotypic heterogeneity, fostering tumor resistance and contributes to its aggressive nature. Thus, GSC's can recapitulate the tumour mass resulting in tumour recurrence and patient relapse in over 90% of GBM cases. The microenvironment of glioblastoma includes diverse types of stromal cells which co-exist in close association with tumour cells and have been identified as an important source of secreted factors and cell-to-cell signals that regulate the stemness of GSCs. Within GBM, Cancer-Associated Fibroblasts (CAFs) have emerged as key facilitators of these effects. CAFs are known to promote cell cycle dysregulation, enhance tumor vasculature and secrete various growth factors into the extracellular matrix to promote tumorigenesis. YKL-40 (also known as CHI-3L1) is an abundant glycoprotein that binds to the interleukin-13 receptor 2 (IL-13Rα2) and has been shown to promote growth, angiogenesis, metastasis, and resistance to therapy in diverse types of cancer. Elevated levels of YKL-40 expression have been associated with a poorer prognosis in GBM. Whether CAFs can enhance GBM tumor aggressiveness and support GSC survival through increasing the expression of YKL-40 is not known. We hypothesize that the increased expression of YKL-40, in response to CAFs, plays a pivotal role in GBM aggressiveness and therapy resistance. Understanding these interactions could lead to the development of targeted therapeutic strategies to prevent GBM progression and recurrence.

ABSTRACT P18 - B

CELL-TYPE-SPECIFIC REGULATION OF THE ELF2α PATHWAY IN LONG-TERM MEMORY

Daniella Jezdic[1], Bromleigh Dobson[1], Vijendra Sharma[1], Maria Badalova[1]

[1]Department of Biomedical Sciences, University of Windsor

Long-term memory consolidation results from synaptic plasticity dependent on mRNA translation. One of the translation mechanisms is regulated by eukaryotic translation initiation factor 2 alpha (eIF2α). The phosphorylation of eIF2α leads to a decrease in general translation while inducing the translation of specific mRNA transcripts. While the regulation of protein synthesis through the eIF2α pathway has been shown to influence long-term potentiation, its role in long-term depression (LTD) remains much less explored. Research suggests that phosphorylated eIF2α (p-eIF2α) regulation is cell-type-specific, however this research has focused primarily on long-term potentiation, not LTD. We hypothesize that p-eIF2α levels are differentially regulated across specific cell types during LTD. To investigate this, we will use novel object recognition, a long-term memory task, to induce LTD in mice. Immunohistochemistry will be performed to visualize p-eIF2α and total eIF2α expression across various hippocampal cell types, including excitatory neurons, inhibitory neurons, parvalbumin-expressing interneurons, somatostatin interneurons, astrocytes, vasoactive intestinal peptide-expressing interneurons, and microglia. The kinases regulating p-eIF2α expression (PKR, PERK, GCN2, and MARK) will then be assessed to determine which are upregulated. We expect to identify specific cell types expressing increased p-eIF2α levels following LTD induction, providing insight into cell-type-specific regulation of the eIF2α pathway. Proper regulation of the eIF2α signalling pathway is crucial for synaptic plasticity and memory. Consequently, chronic activation of p-eIF2α is linked to various neurological disorders, highlighting its potential as a therapeutic target and the significance of our research for future health advancements.

ABSTRACT P19 - A

THE EFFECT OF USING THE COMPONENTS OF CANNABIS AND ITS INFLUENCE ON THE SEVERITY AND PROGRESSION OF ANXIETY DISORDERS IN ADULTS

Ayesha Khan

[1]Department of Biomedical Sciences, University of Windsor

Cannabis is a drug that has become widely used around the world. Δ9-tetrahydrocannabinol (THC) and cannabidiol (CBD) are the two important components found in cannabis with contrasting effects on the brain. These components have played crucial roles in benefiting pain relief, appetite and other conditions. THC is known for its psychoactive properties, while CBD is known for its non-psychoactive properties. This article focused on anxiety disorders since it has been on the rise over the last couple of years. A systematic review was conducted using Pubmed and Google Scholar to investigate how CBD and THC influence the severity and progression of anxiety disorders in adults aged 12-65. This study aimed to determine if these components benefit in reducing anxiety. The analysis found, 90% of the articles stated that CBD plays an important role in reducing anxiety whereas 71% of the articles stated THC plays a negative role and increases anxiety. Further research should determine the optimal cannabis dosage for anxiety reduction, focusing on specific anxiety disorders (e.g., social or general anxiety), while analyzing narrower age ranges to assess its impact across different age groups.

ABSTRACT P20 - B

TREATMENT OF AEROSOL BDP FOR MANAGING EXACERBATIONS IN CHRONIC ASTHMATIC PATIENTS, AGES 5-18, AND THOSE WITH CORTICOSTEROID DEPENDENCE

Fatima Khan[1]

[1]Department of Biomedical Sciences, University of Windsor

Pediatric chronic asthma management often requires inhaled corticosteroid use, like beclomethasone dipropionate (BDP). While BDP has been a keystone in asthma treatment for decades, the research assessing its efficacy and safety, particularly in ages 5-18, were conducted between the 1970s to 2005, leaving a significant gap in recent studies. This systematic review evaluates the efficacy of BDP in improving pulmonary function and resolving corticosteroid dependence in chronic asthmatic children, while also assessing its potential side effects. Out of 273 studies, 20 fit the inclusion criteria, encompassing 1495 children, ages 5-18, with chronic asthma and some with corticosteroid dependence. The trials compared the administration of BDP to a placebo, across different timeframes and doses. Pulmonary function metrics (FEV1, PEFR, PEF, and PFR), methacholine tests, and symptom scores, displayed significant improvement in children receiving BDP. Common observed side effects among majority of studies were oropharyngeal candidiasis, rhinitis, and eczema. Though studies display BDP as a beneficial treatment option, advances in asthma treatments and inhaler technology since then have outpaced the available research, making it difficult to assess BDP's current role in childhood chronic asthma management. Conflicting findings on growth suppression and adrenal dysfunction raise concerns about the reliability and certainty of existing data on BDP. This highlights the need for updated, comprehensive studies to resolve these contradictions and clarify BDP's role in managing pediatric asthma, in order to update clinical guidelines.

ABSTRACT P21 - A

IDENTIFICATION OF PATIENT CHARACTERISTICS AFFECTING OUTCOMES IN MONO-IMMUNOTHERAPY VERSUS COMBINATION TREATMENT IN STAGE IV NSCLC

Almas Khan[1], Alexander Mung[2], Swati Kulkarni[3]

[1]Department of Biomedical Sciences, University of Windsor

[2]Schulich School of Medicine & Dentistry

[3]Cancer Program, Windsor Regional Hospital

Additional Research Focus: Clinical Research

Lung cancer remains the most commonly diagnosed cancer and the leading cause of cancer-related deaths worldwide, primarily due to late-stage diagnoses. Non-small cell lung carcinoma (NSCLC) accounts for 85% of cases, with historically poor survival rates in Stage IV disease. While platinum-based chemotherapy has been the standard first-line treatment, immunotherapy targeting PD-1/PD-L1 pathways has shown promise in enhancing immune responses against tumors. Clinical trials support both mono-immunotherapy and combination therapy with chemotherapy, but direct comparisons of their relative efficacies remain limited. This study aims to assess patient-specific factors influencing treatment outcomes and compare the efficacy of mono-immunotherapy versus combination therapy. We hypothesize that patients with high toxicity risk—such as those with advanced age, poor performance status, or comorbidities—will benefit from immunotherapy alone, while younger, healthier patients or immunocompromised individuals may respond better to combination therapy. Using a prospective cohort design, we will recruit 80-100 Stage IV NSCLC patients from Windsor Regional Cancer Centre. Patients receiving either immunotherapy alone or in combination with chemotherapy will be analyzed based on survival, response rates, adverse events, and key demographic and clinical factors. Statistical analyses will determine significant differences in outcomes. By evaluating real-world clinical outcomes and their association with patient characteristics, this study seeks to refine treatment guidelines and promote personalized therapy, ultimately improving prognoses for Stage IV NSCLC patients.

ABSTRACT P22 - B

CELL-TYPE-SPECIFIC MECHANISMS IMPLICATED IN MRNA TRANSLATION AND MEMORY IN ALZHEIMER'S DISEASE

Rogers Koboji[1], Maria Badalova[1], Maya Reeves[1], Vijendra Sharma[1]

[1]Department of Biomedical Sciences, University of Windsor

mRNA translation in the brain is necessary for long-term memory consolidation, and its dysregulation is implicated in memory loss in Alzheimer's disease. Pathological features of Alzheimer's disease include the accumulation of amyloid-beta peptides and hyperphosphorylated tau proteins. The accumulation of these proteins results in many stressors that trigger the integrated stress response, which phosphorylates the α subunit of eukaryotic initiation factor 2 (p-eIF2α), inhibiting general protein synthesis. Prolonged integrated stress response activation in Alzheimer's disease increases p-eIF2α levels, downregulates general protein synthesis, and impairs long-term memory consolidation. p-eIF2α is a key translational control mechanism to bidirectionally control long-term memory in health and disease. Learning stimulates general protein synthesis in a healthy brain by dephosphorylation of p-eIF2α. Cell-type-specific suppression of the integrated stress response in mice models of translation rescued memory deficit. However, the cell-type-specific translation regulation mechanisms are less understood in Alzheimer's disease. Our objectives are to identify the cell-types with dysregulated mRNA translation in Alzheimer's disease and to restore translation in those cell-types to assess there effects on memory in Alzheimer's disease. To this end, Alzheimer's disease mice will be immuno-stained for p-eIF2α and eIF2α in specific cell-types, and eIF2α will be knocked-in to suppress the integrated stress response. Thus far, we introduced knocked-in eIF2α into the Alzheimer's disease mice astrocytes and observed that stimulating translation in astrocytes can rescue memory deficits. Dissecting cell-type-specific translational control mechanisms in Alzheimer's can aid in developing therapeutics to target specific cell populations, potentially leading to better treatment outcomes for Alzheimer's disease.

ABSTRACT P23- A

THE LOSS OF SPY1 ALTERS THE COMPOSITION OF IMMUNE CELLS AND EXPRESSION OF IMMUNE CHECKPOINT PROTEINS

Jalyn Laliberte[1], Nick Philbin[1], Bre-Anne Fifield[1], Lisa A. Porter[1,2]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

Triple Negative Breast Cancer (TNBC) is the most aggressive and heterogeneous subtype of breast cancer, comprising 15–20% of all cases. TNBC is defined by absence of estrogen, progesterone, and HER2 receptors, leaving patients with limited treatment options and poor prognoses. TNBC tumors contain a high population of cancer stem cells (CSCs), which possess enhanced self-renewal, metastatic potential, and resistance to therapies. CSCs contribute to immune evasion through the upregulation of immune checkpoint proteins (ICPs), which inhibit anti-tumor immune responses and create an immunosuppressive environment that promotes tumor survival. The cell cycle has been implicated in the regulation of ICP expression with CDK inhibition leading to increased ICP expression which, in combination with ICP inhibitors, leads to increased patient prognosis. Spy1 is an atypical activator of CDKs which is able to bypass traditional regulatory pathways, promoting proliferation, expanding CSC populations and increasing treatment resistance. Given the unique mechanism of Spy1 mediated CDK activation, it presents the opportunity it may regulate ICP expression, enhancing CSC-mediated immune evasion in TNBC. Understanding the role of Spy1 in this process could reveal novel therapeutic strategies to disrupt the immunosuppressive environment and improve the efficacy of immune checkpoint inhibitors, potentially transforming TNBC treatment outcomes.

ABSTRACT P24 - B

SEX-SPECIFIC DIFFERENCES IN METABOLIC DYSFUNCTION-ASSOCIATED STEATOTIC LIVER DISEASE PROGRESSION: INSIGHTS FROM THE STEATOSITE DATABASE

Amy Llancari[1], Maria Jimenez-Ramos[2], Bre-Anne Fifield[1], Jonathan A. Fallowfield[2], Timothy J. Kendall[2], Lisa A. Porter[1,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]Centre for Inflammation Research, Institute for Regeneration and Repair, University of Edinburgh

[3]St. Joseph's Health Care London

Metabolic dysfunction-associated steatotic liver disease (MASLD) is a growing global health concern, affecting approximately one-third of the population and increasing the risk of severe complications such as cirrhosis and hepatocellular carcinoma (HCC). Despite its prevalence, sex-specific differences in disease progression remain poorly understood. While murine models have provided some insights into physiological differences between sexes, these findings have been largely understudied and have not been extensively explored in human patients. Notably, men exhibit greater susceptibility to MASLD and HCC compared to premenopausal women, though this disparity diminishes post-menopause. This study aimed to investigate sex-specific differences in MASLD progression by leveraging SteatoSITE, the world's first data commons for MASLD. Through collaboration with the University of Edinburgh, we utilized this unique resource, which integrates histopathological, transcriptomic, and electronic health record data, including patient demographics, prescribing history, and clinical outcomes. Bioinformatic analyses were conducted using RStudio, with patients stratified by sex and age to uncover previously unrecognized patterns. Differential gene expression and gene set enrichment analyses were performed to identify key molecular pathways associated with sex-specific disease progression. Our findings revealed distinct differences in gene regulation, disease progression, and pathway enrichment between sexes. Given the scarcity of multimodal datasets in MASLD research, this study provides valuable insights into sex-specific disparities, potentially identifying novel diagnostic markers and therapeutic targets to inform precision medicine approaches.

ABSTRACT P25 - A

THE SEX-SPECIFIC ROLE OF SPY1 IN THE LIVER STRESS RESPONSE AND DISEASE

Milan Lobana[1], Isabelle Hinch[1], Amy Llancari[1], Bre-Anne Fifield[1,2], Lisa A Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]WE-SPARK Health Institute

[3]St. Joseph's Health Care London

Liver cancer is a leading cause of cancer-related mortality, with hepatocellular carcinoma (HCC) comprising 90% of cases. HCC exhibits a notable sex bias, with males being 3.4 times more likely to develop the disease. Although the mechanisms underlying this disparity remain unclear, liver stress responses such as inflammation and oxidative stress are established contributors to HCC progression. These stress responses are regulated by the cell cycle. Spy1, an atypical cyclin-like protein involved in the cell cycle, accelerates cell proliferation and increases susceptibility to HCC. However, its sex-specific role in liver stress responses has not been elucidated. Using a novel Alb-Spy1 mouse model that upregulates Spy1 in both male and female livers, this study investigates the role of Spy1 in the liver stress response induced by the methionine-choline deficient (MCD) diet. We hypothesize that Spy1 overexpression drives sex-specific differences in histopathology, including fat deposition, collagen levels, and inflammation, as well as proliferative and apoptotic markers. Using qRT- PCR, Western Blot, and immunohistochemistry, markers of liver damage and stress will be analyzed. This research aims to provide critical insights into the role of Spy1 in sex-specific liver responses, advancing understanding of HCC development and guiding future therapeutic interventions targeting Spy1-mediated pathways.

ABSTRACT P26 - B

SWITCHABLE AFFINITY STREPTAVIDIN MUTEINS FOR PURIFICATION AND PROTEOMICS APPLICATIONS

Jesse Marangoni[1], Annice Nguyen[2], Domenic Varacalli[1], Amrita Dhindsa[1], Adriana Zutic[1], Sui-Lam Wong[3], Kenneth K.S. Ng[1]

[1]Department of Chemistry and Biochemistry, University of Windsor

[2]Department of Integrative Biology, University of Windsor

[3]Department of Biological Sciences, University of Calgary

Due to the high affinity and high specificity of its interaction with biotin, streptavidin is widely used in basic research and biotechnological applications to capture biotinylated molecules from complex mixtures. However, this high affinity also means that the interaction is essentially irreversible under non-denaturing conditions over practical timescales, precluding its use when recovery of the intact target molecule or reusability of the matrix is required. To overcome this limitation, we have engineered a series of streptavidin muteins in which the reduction of a non-natural disulfide bond can increase the rates of dissociation by up to four orders of magnitude. By screening for increased rates of dissociation for fluorescently labeled biotinylated reporter ligands, we identified muteins that provide for high-affinity capture comparable to wild-type streptavidin under oxidizing conditions but also dissociation within seconds to minutes under reducing conditions. When conjugated to magnetic beads, these mutants can be used to efficiently capture and rapidly release biotinylated peptides, oligonucleotides and proteins under physiological conditions and low temperatures ranging from 4 to 37°C. These switchable-affinity mutants provide valuable new alternatives to previously reported and commercially available biotin-binding proteins and antibodies for applications ranging from protein purification to proteomics to reusable biosensors.

ABSTRACT P27 - A

STUDYING THE CELL CYCLE'S ROLE IN THE TRANSDIFFERENTIATION OF PROSTATE CANCER

Jeffery Martin[1], Christian Kassa[1], Samavia Ahmad[1], Elizabeth Fidalgo Da Silva[1], Sindu Kanjeekal[2], Lisa Porter[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Oncology, Windsor Regional Hospital

Additional Research Focus: Clinical Research

Prostate cancer (PC) is the second most common cancer in men worldwide, affecting 58 men daily in Canada. As treatment options continue to evolve, disease management and overall patient outcomes have improved. While effective, these treatments can sometimes pressure PC cells to transdifferentiate into a more aggressive, treatment resistant type of PC, known as neuroendocrine prostate cancer (NEPC). Treatment options for NEPC are very limited as it is resistant to all current therapies, leading overall prognosis to remain very poor with an estimated survival of less than one year. Further, the mechanism behind the progression of disease to NEPC remains limited, with few markers being used to study progression. Our lab has identified a class of cell cycle regulatory proteins elevated in NEPC, with evidence supporting that these proteins have the potential to drive progression to this drug-resistant form of disease. This project aims to establish a PC to NEPC platform of disease progression to study the specific role of these regulatory proteins during PC transdifferentiation. Further, we will utilize drugs that can block these proteins and test whether these drugs can treat and/or prevent the progression of disease to NEPC. This work will be completed using in vitro and in vivo models, including cells, animal, and human samples. Preventing the progression of disease to NEPC and identifying markers of NEPC remains one of the greatest challenges in this field, and we have strong rationale and data to support this being a promising direction that could make a meaningful impact.

ABSTRACT P28 - B

PHARMACOLOGICAL INHIBITION OF LKB1-NUAK1 SIGNALING IN A SPHEROID MODEL OF OVARIAN CANCER METASTASIS

Sarah McArthur[1,2], Ahmed Abdelhameed[3], Babu Joseph[3], Methvin Isaac[3], Radek Laufer[3], David E. Uehling[3], Trevor G. Shepherd[1,2,4,5]

[1]The Mary & John Knight Translational Ovarian Cancer Research Unit

[2]Department of Anatomy and Cell Biology, Schulich School of Medicine & Dentistry

[3]Drug Discovery Program, Ontario Institute for Cancer Research

[4]Department of Oncology, Schulich School of Medicine & Dentistry

[5]Department of Obstetrics and Gynecology, Schulich School of Medicine & Dentistry

Epithelial ovarian cancer (EOC) is a lethal gynecologic cancer, usually only diagnosed after widespread metastasis. EOC metastasis is unique, spreading through multicellular aggregates or spheroids. Previously, we demonstrated Liver kinase B1 (LKB1)-NUAK1 signalling promotes spheroid integrity, reattachment, and fibronectin production, in response to bioenergetic stress. Using genetics-based CRISPR deletion cell lines, we have solid evidence that LKB1-NUAK1 signalling plays crucial roles in EOC metastasis, therefore providing new therapeutic targets. The compound ON123300 is an established inhibitor for NUAK1, however, there are no known small molecule inhibitors of LKB1. Working with the OICR, we identified ASC-069 and Dinaciclib as lead compounds, which have been modified to improve LKB1 specificity. This research aims to compare the pharmacologic inhibition of LKB1 and NUAK1 focusing on metastatic properties of EOC spheroids. From our previous studies, and its position upstream in the pathway, we hypothesize LKB1 inhibition will have a greater impact on blocking metastatic properties of EOC spheroids as compared with NUAK1 blockade. Spheroid reattachment assays and Transwell migration/invasion assays will be performed to evaluate LKB1 and NUAK1 inhibition on metastatic properties of spheroids in culture. Early results indicate that spheroid viability and dispersion following reattachment are more potently reduced by LKB1 inhibitors compared to ON123300. We will verify on-target LKB1-NUAK1 inhibitory activity in spheroids; we have preliminary data that fibronectin expression is potently reduced following ON123300 treatment of spheroids. We are the first to develop potential small molecule inhibitors against LKB1 which will be important tools for the field as potential anti-cancer therapeutics.

ABSTRACT P29 - A

A PIONEERING BLEND OF SUPERPIXEL GENERATION AND GRAPH NEURAL NETWORKS FOR LUNG NODULE IDENTIFICATION

Sudipta Modak[1], Luis Rueda[2], Esam Abdel-Raheem[1]

[1]Department of Electrical and Computer Engineering, University of Windsor

[2]School of Computer Science, University of Windsor

Lung cancer is currently the most lethal type of cancer, with a low survival rate. It arises from nodules inside the lung parenchyma. Computed tomography (CT) scans are often used to diagnose nodules. However, it is time-consuming for radiologists to review and annotate the image data. Furthermore, many nodules are tiny in size and can be easily missed, leading to false negatives. This misdiagnosis is alarming as it can lead to the advancement of malignancy if present. Additionally, acquiring big datasets that are properly annotated is challenging in the medical field. The key objective of this research is to automatically detect and segment nodules in CT scan images using a deep learning model that can be swiftly trained on scarce medical data while achieving stable training. Furthermore, this research aims to verify the integration of superpixel generation and graph neural networks for model training and applying the trained model for nodule detection. The proposed framework leverages the strength of the novel patchwise selective agglomerative clustering and positional convolution superpixel aggregation network methods to train on nodule patches acquired from the Lung Image Database Consortium and Image Database Resource Initiative database. Similarly, the proposed framework employs the pixel nesting region proposal mechanism and hierarchical agglomerative region merging methods to detect and segment nodules. The conducted experiments showcase the proposed framework's effectiveness, achieving over 95 % true positive rate along with a record reduction in training time and quantity of annotations needed for model training compared to traditional deep learning methods.

ABSTRACT P30 - B

STEPPING INTO THE FUTURE: A NARRATIVE REVIEW OF TECHNOLOGY-ASSISTED DEVICES IN MOTOR REHABILITATION

Samantha Monk[1], Francesco Biondi[1], Sarah Woodruff[1]

[1]Department of Kinesiology, University of Windsor

Motor impairments resulting from stroke, neurodegenerative diseases, and musculoskeletal injuries may present challenges in rehabilitation. While conventional therapeutic approaches are effective, they often lack real-time monitoring, instant feedback, and individualized treatment. Technology-assisted rehabilitation devices (such as wearable sensors, biofeedback systems, robotic exoskeletons, and virtual reality therapies) provide an alternative by facilitating continuous data tracking, increasing patient engagement, and allowing for personalized rehabilitation plans. However, their widespread implementation in clinical settings remains constrained by factors like awareness, cost, and the need for clinician training. The use of technology-assisted rehabilitation devices in motor rehabilitation has the potential to improve patient outcomes. This study seeks to outline their clinical applications and advantages, emphasizing their impact on motor function and providing insights into their integration into rehabilitation programs. Through a narrative review, this study compiles existing research on technology-assisted rehabilitation devices for motor recovery. Peer-reviewed studies and emerging research is explored to provide an overview of their effectiveness and current clinical applications. Technology-assisted rehabilitation devices allow clinicians to develop targeted treatment strategies. For instance, smart insoles and inertial measurement units aid in gait analysis, while biofeedback systems support neuromuscular re-education. Exoskeletons and soft exosuits help restore mobility, especially for stroke survivors and individuals with spinal cord injuries. Additionally, virtual reality and haptic technologies create immersive rehabilitation experiences that enhance patient motivation and therapy adherence. However, widespread adoption is limited by high costs, data security concerns, and the need for specialized clinician training.

ABSTRACT P31 - A

TUBERIN AS A TUMOR SUPPRESSOR AND MOLECULAR INTEGRATOR OF GROWTH SIGNALING AND CELL CYCLE CONTROL

Ali Nadi[1,2], Adam Pillon[1,2], Elizabeth Fidalgo da Silva[1,2], Lisa Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]WE-SPARK Health Institute

[3]St. Joseph's Health Care London

The controlled growth and proliferation of a cell depend on its ability to sense both internal and external conditions and mount appropriate physiological responses. When such regulations go awry, various proliferative diseases may arise, including but not limited to cancers. Central to this control is the cell cycle, a precisely coordinated process that integrates metabolic signals, environmental conditions, and stress responses to maintain cellular homeostasis and ensure proper cell division. The tumour suppressor Tuberin (TSC2) is a key regulator of the cell cycle, yet its role in directly controlling cell proliferation remains poorly understood. Our lab has demonstrated that mitogen and nutrient signaling cascades converge on Tuberin to regulate its interaction with the mitotic cyclin, Cyclin B1 (CCNB1), thereby modulating mitotic entry in a context-dependent manner. Using in vitro ectopic expression and CRISPR/Cas-based approaches, coupled with imaging and cell cycle analysis, we show that weakening Tuberin's interaction with Cyclin B1—either by altering its phosphorylation status or introducing loss-of-function TSC2 mutations—accelerates mitotic entry, increases proliferation, and leads to aberrant cellular phenotypes. By characterizing Tuberin as a non-canonical regulator of mitotic entry, this research provides new insights into how metabolic signaling influences cell cycle progression. Given the frequent dysregulation of TSC2 in cancer and other proliferative disorders, elucidating this mechanism could reveal novel therapeutic targets for controlling aberrant cell division in disease.

ABSTRACT P32 - B

ASSOCIATION BETWEEN SUBOPTIMAL PRENATAL CARE AND PREGNANCY OUTCOMES

Oshiomeghe Kenneth Ogah[1], Catherine Kenneth-Ogah[2]

[1]Erie Shores HealthCare

[2]University of Dundee

The maternal-newborn unit at Erie Shores Healthcare (ESHC) in Leamington serves a diverse population, including migrant agricultural workers and refugee women, many of whom face significant barriers to accessing prenatal care. Suboptimal prenatal care, defined as fewer than ten visits, has been linked to increased caesarean and instrumental deliveries, which carry higher health risks and economic costs compared to vaginal deliveries. This study investigates the association between prenatal care visits and pregnancy outcomes, particularly delivery methods, to optimize resource allocation and improve care delivery. The null hypothesis posits no significant difference in delivery methods between women on prenatal care who attend ten or more prenatal visits (control) and women on prenatal care who attend less than ten visits. Using a retrospective case-control design, the study will analyze five years of perinatal care data from ESHC. A sample size of 458, accounting for missing data, will provide 80% power to detect meaningful differences. Findings will inform resource allocation and guide the development of targeted prenatal care initiatives, including collaborations with the Migrant Worker Community Program. By addressing gaps in care for vulnerable populations, the project aims to reduce adverse pregnancy outcomes and healthcare costs while establishing baseline data for future research to improve maternal health in similar communities.

ABSTRACT P33 - A

ASSESSING THE SEX-SPECIFIC IMPACT OF SPY1 KNOCKOUT IN THE LIVER STRESS RESPONSE

Lauren Oschanney[1], Bre-Anne Fifield[1,2], Lisa Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]WE-SPARK Health Institute

[3]St. Joseph's Health Care London

Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) is the most common form of chronic liver disease, affecting nearly one-third of the global population. It is characterized by excessive hepatic fat accumulation, which can lead to inflammation and cellular damage. If damage progresses into fibrosis or cirrhosis, the likelihood of developing hepatocellular carcinoma (HCC) rises significantly. Sex influences disease prevalence, with MASLD being more common in men, however the molecular mechanisms driving this remain unclear. The liver demonstrates a unique ability to regenerate, where hepatocytes re-enter the cell cycle from a normally quiescent state to promote repair. However, prolonged proliferation elevates tumor susceptibility. To protect against this, hepatocytes cease proliferation and promote fibrosis to preserve structural integrity. Spy1, an atypical cell cycle regulator, promotes proliferation and overrides cell cycle checkpoints. Prior research revealed that male Spy1-overexpressing mice exhibited increased fat accumulation, reduced fibrosis, and heightened tumorigenesis susceptibility. This remains unstudied in females, and no in vivo knockout models have been used to elucidate the essentiality of Spy1 in the liver stress response. The findings of this study are anticipated to reinforce evidence that Spy1 plays a critical role in mediating sex-specific differences in MASLD.

ABSTRACT P34 - B

ADVANCING ORGANIC ELECTRONICS: CARBOHYDRATE-CONTAINING POLYMERS FOR BIOMEDICAL APPLICATIONS AND ENVIRONMENTAL SUSTAINABILITY

Lauren Pandolfi[1], Madison Mooney[2], Simon Rondeau-Gagne[1]

[1]Department of Chemistry and Biochemistry, University of Windsor

[2]Department of Chemical Engineering, Stanford University

Rapid innovation and development in the Biotechnology field is driving an increased production of electronics, which impacts our environment. To reduce these effects and expand upon the field of biocompatible devices, researchers in our group are utilizing a new, exciting approach to conventional electronic device fabrication with organic polymers. Organic Field Effect Transistors are a type of organic electronic device that uses semiconducting materials, such as polymers, as an active layer. OFETS have excellent mechanical and optoelectronic properties and demonstrate high performance with air stability. OFETS are lightweight, stretchable, flexible, and applicable to innovation and design in technology, such as bioelectronics, where they can be used as sensors. These characteristics make OFET devices optimal for biomedical applications, such as disease detection. Biosensors, for example, could be fabricated specifically for the detection of diverse Cancer-related biomarkers. Our research uses isoindigo-based semiconducting polymers with carbohydrate side chains. Isoindigo is a dye with promising potential as a biocompatible polymer-core. Polymers have been developed with enhanced solubility in more environmentally friendly solvents. This yields functionality in a biological system, with hydrogen bonding-capabilities of the carbohydrate sidechains. Current research focuses on improving mechanical properties and electronic performance of carbohydrate-containing semiconducting polymers through a citric-acid crosslinking procedure. Higher performance opens avenues of endless possibility for the application of organic biosensors to play a key role in identifying, preventing, and managing disease. This work on organic electronics bridges the gap between Chemistry and Health Science, targeting ways to improve Biotechnology, while considering environmental sustainability.

ABSTRACT P35 - A

IDENTIFYING THERAPEUTICALLY TARGETABLE TUMOUR-IMMUNE INTERACTIONS IN SMALL CELL LUNG CANCER

Nakul Pandya[1], Raymond Zeng[1], Biren Dave[2], Akram Vasighizaker[3], Swati Kulkarni[4], Ming Pan[2,3,4], Junaid Yousuf[4], Luis Rueda[1]

[1]School of Computer Science, University of Windsor
[2]Schulich School of Medicine & Dentistry
[3]Department of Biomedical Sciences, University of Windsor
[4]Windsor Regional Hospital

Additional Research Focus: Clinical Research

Small cell lung cancer (SCLC) is a highly aggressive metastatic lung cancer, accounting for 15% of all cases with poor survival outcomes revealing the necessity to produce novel therapeutic strategies. Recent studies show that SCLC has significant tumour heterogeneity with varying gene expression, presenting an opportunity to use machine learning-driven algorithms with a promising route to uncover its underlying mechanisms. This study leverages single-cell RNA sequencing (scRNA-seq) datasets, and machine learning (ML) to explore tumour heterogeneity, identify biomarkers predictive of novel therapeutic targets, and generate graphical predictions of tumour-immune interactions in SCLC patients. We will use published datasets to identify the cellular basis of tumour-immune interactions and identify gene expression changes within SCLC cells. Pathway analysis and biological validation will extend the results to molecular signalling pathways. Then we will conduct a literature search for the selected genes that are known to disrupt cellular interactions distinctive of SCLC to be further tested by the lung cancer research team in pre-clinical models. Our preliminary analysis shows promising outcomes producing key biomarkers in SCLC stage and treatment groups across immune and epithelial cell subtypes. Genes including RBP1 and CD74 were identified with strong protective effects and further exploration of these genes can highlight specific-stage molecular drivers to guide the ML models. Incorporating advanced models may yield more accurate predictions and improved biomarker discovery with clinical significance. In summary, this study aims to identify novel biomarker targets and therapeutic strategies that can be validated in pre-clinical models and translated into clinical applications.

ABSTRACT P36 - B

THE UNIQUE ROLE OF SPY1 IN BREAST CANCER STEM CELL (BCSC) REGULATION AND RESIDUAL DISEASE STATES IN TRIPLE NEGATIVE BREAST CANCER (TNBC)

Nick Philbin[1], Ellen M. Laurie[1], Bre-Anne Fifield[1], Lisa A. Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor
[2]WE-SPARK Health Institute
[3]St. Joseph's Health Care London

Triple Negative Breast Cancer (TNBC) occurs in 10-15% of breast cancer diagnoses and has increased incidence, relapse, and subsequent death within three years of primary treatment. This can be attributed to the ineffective nature of chemotherapy selecting for a population enriched in TNBC known as Breast Cancer Stem Cells (BCSCs); a subset of the tumour mass capable of recapitulating a heterogenous tumour. Cell cycle mediators lie at the heart of BCSC regulation. A key protein known as Spy1 provides a promising avenue for investigation as it has been indicated as a poor prognostic indicator for TNBC patients. Importantly, Spy1 can expand stem cell populations in normal and malignant breast tissue. We hypothesize that Spy1 could be driving resistance to treatment in TNBC patients through the expansion of stem-like populations. To address this, reporter constructs and antibodies for common BCSC markers will be used to isolate distinct stem cell populations which will be manipulated to over express Spy1 to determine its ability to regulate these populations and its potential role in chemotherapy resistance leading to residual disease states. In addition, we will determine if down regulation of Spy1 levels increases sensitivity to treatment, a potential avenue for increased prognosis. This work could elucidate the need for the development of a targeted therapeutic agent against Spy1 to increase TNBC patient survival.

ABSTRACT P37 - A

COMPARISON OF HEPATIC GENE EXPRESSION PROFILES BETWEEN CIRRHOTIC AND NON-CIRRHOTIC HCC

Mahsa Rahimi[1], Bre-Anne Fifield[1], Lisa Porter[1]

[1]Department of Integrative Biology, University of Windsor

Hepatocellular carcinoma (HCC) ranks among the leading causes of cancer-related deaths globally. Metabolic Associated Steatotic Liver Disease (MASLD), the most prevalent liver condition, is closely linked to a spectrum of hepatic disorders, including Metabolic Associated Steatohepatitis (MASH), liver cirrhosis, and eventually HCC. While cirrhosis is a well-established precursor to HCC, approximately 20% of HCC cases arise without prior cirrhosis, and the molecular mechanisms driving this subset of non-cirrhotic HCC remain poorly understood. This study employs a comprehensive bioinformatics approach to investigate the distinct molecular drivers of non-cirrhotic HCC compared to cirrhotic HCC. This study analyzed mRNA expression datasets to identify differentially expressed genes (DEGs) in MASLD/MASH versus normal tissue and cirrhotic and non-cirrhotic HCC versus normal tissue. GO analysis revealed that the DEGs were involved in pathways regulating lipid metabolism, cell proliferation, adhesion, migration, and immune responses, highlighting their diverse roles in tumorigenesis. Core genes involved in cell cycle regulation were identified and their expression patterns were systematically compared across MASLD/MASH, cirrhotic HCC, and non-cirrhotic HCC groups. Key genes such as CCNB1, E2F2, CDC25A, CCNE1, CDK1, CDKN2A, and CDKN2B showed significant upregulation in non-cirrhotic HCC compared to cirrhotic HCC, suggesting roles in driving tumorigenesis independent of cirrhosis. This comprehensive bioinformatics analysis identified core genes that mediate the molecular mechanisms underlying MASLD and MASH and their potential roles in non-cirrhotic HCC development. These findings provide a deeper understanding of the molecular basis of non-cirrhotic HCC and highlight promising biomarkers and therapeutic targets for diagnosing and managing this subset of HCC.

ABSTRACT P38 - B

THE ROLE OF ANAPHASE PROMOTING COMPLEX IN DROSOPHILA FEMALE MITOSIS

Rajni Rai[1], Mohammed Bourouh[1], Damien Garrido[2], Eric Bonneil[2], Pierre Thibault[2], Vincent Archambault[2], Andrew Swan[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Institute for Research Immunology and Cancer, Université de Montréal

In eukaryotes, the anaphase promoting complex/cyclosome(APC/C) is a large, multi-subunit ubiquitin protein ligase that targets the destruction of the cell cycle proteins at distinct phases of the cell cycle. The activity of APC/C in mitosis requires interaction with one of two structurally related co-activator subunits Cdc20 and Cdh1. The APC/C is involved in meiosis, but its role is less well understood meiosis. Drosophila offers a great opportunity for understanding the timing and progression of meiosis in oocytes. The immature oocyte is arrested in the early stage of meiosis, prophase I.The release from this arrest leads to a period of oocyte growth until the mature oocyte enters a secondary arrest in metaphase I. APC/C is necessary for the proper continuation and completion of meiosis following secondary arrest. It is known that APC/C activation requires phosphorylation on specific subunits. Cyclin B3(Cyc B3) is essential for anaphase in female meiosis in several animal species. CycB3 is required for the phosphorylation of a site on APC3 to possibly activate APC/C in meiosis. We propose a phospho-relay model for APC/C activation in meiosis CycB3 in association with Cdk1(Cyclin-dependent Kinase) and CKS,(Cdk subunit) initially. Phosphorylates S316, on APC3. This phosphorylation stimulates additional phosphorylation of the loop domain of another subunit of APC/C, APC1. Upon phosphorylation of APC1, the loop loses its inhibitory function, allowing co-activator Fzy to bind for APC/C activation. To test this model, we will perform a rescue experiment with a nonphosphorylatable mutant of APC3. These experiments could deepen our understanding of meiosis coordination.

ABSTRACT P39 - A

CELL-TYPE SPECIFIC ROLE OF THE INTEGRATED STRESS RESPONSE PATHWAY IN AGED BRAIN

Maya Reeves[1], Rogers Koboji[1], Vijendra Sharma[1]

[1]Department of Biomedical Sciences, University of Windsor

Protein synthesis in the brain is required for long-term memory formation, and its dysregulation is implicated in memory decline in aging. Aging is characterized by a decline in various cellular processes that lead to cellular stress. This cellular stress activates the integrated stress response (ISR), which inhibits protein synthesis by the phosphorylation of the alpha subunit of eukaryotic translation initiation factor 2 (eIF2α). Given the role of protein synthesis in long-term memory formation, increases in phosphorylated eIF2α (p-eIF2α) are associated with impairments in memory, which can be rescued through cell-type-specific suppression of the ISR. However, the cell-type-specific role of the ISR pathway is not well understood in relation to aging-related memory decline, which is investigated in the present study. To this end, aged wild-type mice will undergo behavioural tests to assess long-term memory, and immunohistochemistry and fluorescence microscopy will be performed to analyze the expression of p-eIF2α and cell-type specific markers in order to identify the cell-types with elevated p-eIF2α levels. By understanding these mechanisms, our study aims to inform potential therapeutic strategies targeting the ISR in specific cell-types to mitigate the age associated decline in long-term memory.

ABSTRACT P40 - B

INVESTIGATING THE TARGETED EFFECTS OF HA-RHOD CONJUGATED NANOPARTICLES AGAINST GLIOBLASTOMA

Vanessa Riolo[1], Dorota Lubanska[1], Lisa A. Porter[1,2], Simon Rondeau-Gagne[3], Angela Awada[3]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

[3]Department of Chemistry and Biochemistry, University of Windsor

Glioblastoma (GBM), a grade IV malignant brain tumor, is characterized by poor prognosis, with a median survival of approximately 15 months. Despite surgical resection, chemotherapy, and radiation, relapse is common due to the tumor's genetic heterogeneity and the blood-brain barrier (BBB) hindering effective drug delivery. A major contributor to GBM aggressiveness is the presence of Glioma Stem Cells (GSCs), which exhibit stem-like properties, enhance migration, and contribute to treatment resistance. GSCs express surface markers such as CD44, which, when activated by its ligand hyaluronic acid (HA), promotes cancer progression. This project investigates the use of HA-conjugated Rhodamine (RHOD)-functionalized conjugated polymer nanoparticles (CPNs) as a novel therapeutic strategy to target GSCs. Previous studies have shown that HA-CPNs selectively target GSCs, downregulate CD44 expression, and exhibit anti- tumor effects in vivo. In this research, we will use GBM organoid models (GBOs) to further examine the impacts of HA-RHOD-CPNs on GSCs population dynamics, and their ability to downregulate CD44-mediated signaling pathways. We hypothesize that HA-RHOD-CPNs will accumulate within the GBOs, leading to changes in GSC characteristics and reduced tumor progression. These organoids will be analyzed regularly using cytation5 to assess nanoparticle uptake, retention, and organoid size. Additional techniques, including qRT-PCR, will be used to assess the mRNA expression of CD44 and other notable proteins/markers to assess how CPN uptake effects their activity. These findings could provide valuable insights into the potential of nanomedicine to improve treatment outcomes for GBM by targeting heterogeneous tumor populations.

ABSTRACT P41 - A

THE ROLE OF SPY1 IN CDK4/6 INHIBITOR RESISTANCE IN ESTROGEN-RECEPTOR POSITIVE BREAST CANCER

Kiara Roncone[1], Bre-Anne Fifield[1], Lisa A. Porter[1,2]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

Estrogen-receptor positive (ER+) breast cancer is the most common breast cancer subtype, accounting for 70% of breast cancer diagnoses. The standard of care treatment for ER+ breast cancer is endocrine therapy, however 30-50% of patients develop resistance. Palbociclib is a cyclin-dependent kinase (CDK) 4/6 inhibitor that works synergistically with endocrine therapy, yet patients can acquire CDK4/6 inhibitor resistance. Underlying mechanisms in acquiring CDK4/6 inhibitor resistance are still being explored, with data supporting CDK2/Cyclin E hyperactivation as a key driver of resistance. Spy1 (Speedy/RINGO), a cyclin-like protein, promotes cell cycle progression through the G1/S checkpoint. Spy1 directly binds and activates CDK2, irrespective of post-translational modifications required for canonical cyclin-CDK activation. The unique Spy1-CDK2 complex is resistant to p21 and p27 inhibition, thus promoting cell cycle progression. Previous data shows that elevated Spy1 promotes treatment resistance in ER+ breast cancer. Given the unique ability of Spy1 to hyperactivate CDK2 through Spy1-CDK2 complex formation, Spy1-CDK2 activation may give rise to CDK4/6 inhibitor resistance in ER+ breast cancer. This project aims to investigate the role of Spy1 in CDK4/6 inhibitor resistance using the Casper zebrafish model and evaluate the manipulation of Spy1 on the cellular response to palbociclib in ER+ breast cancer.

ABSTRACT P42 - B

FROM LIQUID TO LIFE: REPROGRAMMING URINARY STEM CELLS TO PANCREATIC CELLS

Sohila Sidhu[1], Luis Villa-Diaz[2]

[1]Department of Integrative Biology, University of Windsor

[2]Faculty of Biological Sciences, Oakland University

As of 2024, more than 250 Canadians alone die each year waiting for organ transplants (Canadian Blood Services, 2024). The ability to efficiently differentiate urinary stem cells into pancreatic cells, and form organoids sparks an optimistic approach for patients with diabetes who otherwise require insulin injections on a regular basis. Aim of the study was to identify highly specific transcription factors that play crucial roles in maintenance of cell fate, and promote stage specific differentiation from urinary stem cells to functional pancreatic beta cells. Data mining and literature review allowed for the identification of transcription factors and supporting proteins involved in the differentiation of pancreatic beta cells. These were further refined via analysis of several databases (KEGG, Pathway Commons). NCBI Gene Database was also utilized to determine pancreas tissue specificity for each protein identified. Cytoscape (version 3.10.0) enabled visualization of molecular pathways/gene interactions through different stages of differentiation along with a hierarchical cluster analysis. Subsequent enrichment analysis was conducted on the identified transcription factors and associated proteins using StringAPP (version 2.0.3), facilitating protein-protein interactome analysis. In this pilot study, with findings from Cytoscape and enrichment analysis, novel transcription factors involved in reprogramming of pancreatic beta cells were identified with high statistical confidence. Both transcription factors and supporting ECM proteins were grouped in distinct stages of pancreatic differentiation. Overall, the current study addresses the need of identifying highly specific and efficient differentiation factors essential for successful reprogramming of patient-derived stem cells into pancreatic beta cells.

ABSTRACT P43 - A

EXPLORING THE ROLE OF SPY1 AND MUSASHI-1 IN GLIOBLASTOMA STEM CELL MAINTENANCE AND THERAPY RESISTANCE

Jagdeep Singh[1], Dorota Lubanska[1], Lisa A. Porter[1,2]

[1]Department of Biomedical Sciences, University of Windsor

[2]St. Joseph's Health Care London

Glioblastoma (GBM) is the most aggressive type of brain, and due to its highly infiltrative and heterogeneous nature, GBM poses significant challenges to standard therapies. Glioblastoma is categorized by three genomic subtypes: Proneural, Classical and Mesenchymal, and contains therapy-resistant Glioma Stem Cells (GSCs), contributing to tumor heterogeneity. Cancer cells (including GBM) are characterized by uncontrolled cell proliferation, which is linked to cell cycle dysregulation. The cell cycle, regulated by cyclins, cyclin-dependent kinases (CDKs), and CDK inhibitors, ensures orderly progression in a normal cell. Spy1 (SPDYA/RingoA) is an atypical cell cycle regulator that controls cell proliferation and survival through unique activation of CDKs and promoting the G1/S phase transition. In GBM, elevated levels of Spy1 regulate CDK2 activity and drive clonal expansion of CD133+ GSCs. Spy1-CDK2 can also activate RNA-binding protein, Musashi-1 (Msi1), which plays a critical role in GSC maintenance through post-transcriptional regulation of NUMB and Notch pathway. Musashi-1 supports GSC populations to drive tumor initiation and resistance to differentiation. This study aims to understand the role of Msi1 in maintaining GSC properties and its potential correlation with specific subgroups, and how Msi1 influences GSC self-renewal, proliferation, and response to therapies, with the goal of identifying novel therapeutic strategies to overcome treatment resistance in GBM. The objective is to study the expression of Msi1 in different genetic subtypes of GBM as well as in selected GSC populations and to establish whether Spy1 mediated effects in GBM depend on Msi1 molecular function.

ABSTRACT P44 - B

LOSS OF FREQUENIN1 AND FRQ2 RESULTS IN NOCICEPTIVE HYPERALGESIA

Alexandria St. Louis[1], Jessie Yu[1], Jeffrey Dason[1]

[1]Department of Biomedical Sciences, University of Windsor

Pain is difficult to treat due to a lack of understanding of its molecular mechanisms; however, one cause is calcium dysregulation. Targeting calcium-binding proteins may provide a promising approach to treat pain as opposed to targeting calcium directly. Using a Drosophila thermal nociception model to screen mutants of various calcium-binding proteins, we found that mutants for Synaptotagmin1, Synaptotagmin4, Synaptotagmin7, Synaptotagmin12, Calbindin, and DREAM displayed nociceptive hyposensitivity, whereas mutants for Neurocalcin and Calcineurin had normal nociceptive responses. Loss of Frequenin1 (Frq1) or Frequenin2 (Frq2) resulted in nociceptive hypersensitivity. Neuronal Calcium Sensor-1, the human homologue of Frq1 and Frq2, was previously shown to be reduced by Taxol treatment through Calpain cleavage. We hypothesize Frq regulates nociception through structural and functional mechanisms. We used CRISPR-Cas9 to tag the endogenous frq1 and frq2 genes with a flag epitope and found that both are widely expressed in the nociceptive circuit. Next, we showed that the behavioural sensitization seen in frq1 and frq2 mutants correlated with increased dendritic branching of nociceptors. Currently, we are exploring changes in calcium levels in the nociceptive circuit in frq1 and frq2 mutants. We additionally found that Taxol-treated control larvae phenocopied frq1 and frq2 mutants, and overexpression of Frq prevented nociceptive hypersensitivity. Collectively, our data demonstrates a novel role for Frq1 and Frq2 in nociception and Taxol induced-nociceptive hypersensitivity.

ABSTRACT P45 - A

INVESTIGATING THE ROLE OF NKR-P1C RECEPTOR IN NATURAL KILLER CELL ACTIVATION AND MURINE CYTOMEGALOVIRUS CLEARANCE

Ian M. Strange Seguel[1], Mohamad Alkassab[1], Mir Munir A. Rahim[1]

[1]Department of Biomedical Sciences, University of Windsor

Natural killer (NK) cells play a vital role in the innate immune response by identifying and eliminating infected/stressed cells through activating and inhibitory receptors. While many NK cell receptors are well characterized, the function of activating NKR-P1C receptor encoded by Klrb1c gene in mice during viral infections is not fully understood. NKR-P1C (NK1.1 antigen) was the first receptor identified to be selectively expressed by NK cells. Recent in-vitro studies showed that the murine cytomegalovirus (MCMV) m12 protein binds to NKR-P1C, potentially influencing NK cell activation. This study examines NKR-P1C's role in NK cell-mediated MCMV clearance by measuring viral titers in the spleen and liver of wild-type (WT) and Klrb1c gene knockout (KO) mice infected with MCMV. Viral titers will be determined by quantifying viral immediate early 1 (IE1) gene copy number in the infected tissue by quantitative PCR (qPCR). To generate a standard curve for measuring gene copy number, I cloned the viral IE1 gene from MCMV-infected mouse embryonic fibroblast (MEF) cells into pCR2.1 vector. Using the IE1 gene copy number standard curve, we will quantify MCMV IE1 gene in genomic DNA extracted spleens and livers of MCMV-infected WT and KO mice. Since NKR-P1C is an activating receptor, we expect that KO mice will have higher viral titers than WT mice because of lower NK cell activity. Understanding the role of NKR-P1C in NK cell activation and viral clearance will enhance our understanding of how NK cell responses are regulated during viral infections.

ABSTRACT P46 - B

EXPLORING NOVEL SPEEDY-CDK INTERACTIONS: EXPANDING THE CELL CYCLE REGULATORY NETWORK

Farinaz Ziaee[1], Yufeng Tong[1]

[1]Department of Chemistry and Biochemistry, University of Windsor

The intricate regulation of the cell cycle is crucial for normal cellular function, with dysregulation often leading to diseases such as cancer. While cyclin-dependent kinases (CDKs) are well-established regulators of cell cycle progression, the SPEEDY/RINGO family has emerged as an atypical activator of CDKs. To date, interactions have been identified only between a few SPEEDY proteins and CDK1/CDK2. However, the CDK family comprises more than 20 members, while the SPEEDY family includes nearly a dozen members, most of which remain unstudied. This study aims to elucidate the interactions between different SPEEDY family members and CDKs using an integrated bioinformatics and experimental approach. We employ protein-protein docking simulations and interface analysis to predict potential binding pairs. To validate our computational predictions, we perform biochemical testing including pull-down assays and co-expression studies. Furthermore, we use Isothermal Titration Calorimetry (ITC) to quantitatively measure the thermodynamic properties of these interactions, including binding affinity, stoichiometry, and enthalpy. Our findings reveal novel potential binding pairs between SPEEDY and CDK family members, highlighting the functional role of underexplored SPEEDY family members in cell cycle regulation. This comprehensive approach provides new perspectives on the complex interplay between these families in cell cycle control. Our results offer valuable insights into cell cycle regulation mechanisms and potentially uncover new drug targets for cancer therapeutics.

Research Focus: Clinical Research

ABSTRACT P47 - A

A QUALITY IMPROVEMENT INITIATIVE TO MITIGATE IMMUNOTHERAPY-RELATED TOXICITIES AMONG PATIENTS RECEIVING IMMUNOTHERAPY USING A NOVEL GRADE 2 T

Laurice Arayan[1], Emmanuel Joren Boujeke[2], Terek Elfiki[1], Tina Alice Joseph[2], Tiffany Gowanlock[3], Mina Djuketic[4], Caroline Hamm[1]

[1]Department of Oncology, Windsor Regional Hospital
[2]Schulich School of Medicine and Dentistry
[3]Windsor Regional Hospital
[4]University of Windsor

Immune checkpoint inhibitors have significantly improved outcomes in triple-negative breast cancer, but immune-related toxicities (IRT) remain a major concern. This study aimed to develop and evaluate a grade 2 immunotherapy toxicity screening tool designed to identify and prevent progression of IRTs before they result in hospitalization or irreversible organ damage. The tool was created using patient and healthcare provider handouts adapted from the Cancer Care Ontario Immune Checkpoint Inhibitor Toxicity Management Clinical Practice Guideline. A Plan-Do-Study-Act (PDSA) cycle was employed to test, refine, and implement the tool, with iterative changes based on feedback from healthcare providers and patients. Healthcare providers were engaged through team presentations, and the Patient and Family Advisory Committee was consulted for feedback. Handouts were distributed to patients and healthcare providers and displayed in chemotherapy suites and clinics. The intervention's effectiveness was assessed through surveys distributed to both groups six months after implementation to gather perceptions and identify barriers to use. There were 71 survey participants in total, 43 healthcare providers and 28 patients. Results revealed that both patients and healthcare providers found the tool easy to follow and would recommend its continued use. However, some patients reported that they did not receive the tool during its rollout. Despite this, the tool was considered helpful by both groups in managing IRTs. Ongoing assessment is necessary to evaluate whether the tool effectively reduces the progression of IRTs leading to hospitalization and organ damage, and further refinements may be needed based on continuous feedback from stakeholders.

ABSTRACT P48 - B

CLINICAL SIGNIFICANCE OF GRADE 1 TRIPLE NEGATIVE BREAST CANCER: A RETROSPECTIVE COHORT ANALYSIS

Laurice Arayan[1], Neya Ramanan[2], Mah-noor Malik[2], Sarang Upneja[2], Haniya Farooq[3], Swati Kulkarni[1], Rasna Gupta[1], John Mathews[1], Abdullah Nasser[1], Alina Bocicariu[4], Lisa Porter[5], Bre-Anne Fifield[5], Rong Luo[6], Muriel Brackstone[7], Caroline Hamm[1]

[1]Department of Oncology, Windsor Regional Hospital
[2]Schulich School of Medicine and Dentistry
[3]School of Medicine, University College Dublin
[4]Department of Pathology, Windsor Regional Hospital
[5]Department of Biomedical Sciences, University of Windsor
[6]Department of Mathematics, University of Windsor
[7]University of Western Ontario

Grade 1 TNBCs comprise of histologically low-grade lesions whose natural histories, molecular features, and optimal therapy vary from those of high-grade TNBCs. Here, we describe the clinopathologic features and outcomes of patients with Grade 1 TNBC. This is a retrospective cohort study on Grade 1 TNBC patients from two separate Regional Cancer Programs in Canada seen from January 1, 2004 to December 31, 2022. Demographic data, tumor characteristics, treatment and outcome of patients with TNBC from the two institutions were collected and analyzed. We identified a different pattern of histology for Grade 1 TNBC where 17 of 19 (89.4%) patients had infiltrating ductal disease, in contrast to literature which reported either carcinoma with salivary gland like morphology or low grade lesions considered benign as the more common histology pattern. Five had breast cancer recurrence indicating a recurrence rate of 26.3%. Out of the 5 patients with recurrence, one was stage 3, three were stage 2 and one was stage 3. All three patients (15.7%) who died from cancer were stage 2. TNBC patients with grade 1 tumors in this study were shown to have a different histology from that reported in literature and more similar to other grades of TNBC. The study also showed recurrence rate in more than a quarter of the cases. The relapse pattern is not dissimilar to other grades of TNBC and according to this study does not represent a unique subset of TNBC.

ABSTRACT P49 - A

REAL-WORLD ANALYSIS OF IMMUNOTHERAPY RELATED TOXICITIES IN PATIENTS WITH TRIPLE NEGATIVE BREAST CANCER RECEIVING THERAPY PER KEYNOTE-522

Emmanuel Boujeke[1], Mina Djuketic[2], Rasna Gupta[3], Swati Kulkarni[3], Abdullah Nasser[3], John Mathews[3], Caroline Hamm[3], Muriel Brackstone[4]

[1]Schulich School of Medicine and Dentistry

[2]Faculty of Science, University of Windsor

[3]Department of Oncology, Windsor Regional Hospital

[4]Department of Surgery, London Health Sciences Centre

Early-stage triple-negative breast cancer (TNBC) carries a high risk of early recurrence and is associated with elevated mortality and morbidity. The KEYNOTE-522 trial, a randomized phase I study, investigated the efficacy of pembrolizumab, an immunotherapy agent, combined with chemotherapy in treating TNBC (Schmid et al., 2022). The trial demonstrated a pathological complete response rate of 64.8% in the chemotherapy-immunotherapy group compared to 51.2% in the chemotherapy-placebo group. Following these findings, pembrolizumab with neoadjuvant chemotherapy received Health Canada approval and has since become the standard of care for TNBC. While the KEYNOTE-522 trial provided pivotal insights, real-world data on the adverse events and toxicities of this regimen remain limited but are perceived significant (Marhold et al., n.d.). Emerging evidence suggests that toxicity rates in clinical practice may exceed those reported in the trial (SABCS 2022, n.d.). In this study, we retrospectively analyzed data from patients treated according to the KEYNOTE-522 protocol, examining demographic characteristics, treatment outcomes, and rates of immunotherapy-related toxicities to compare with trial data. Our analysis identified higher rates of grade 1, 2, and 3 toxicities in our cohort than those reported in KEYNOTE-522. Furthermore, a significant proportion of patients required discontinuation of immunotherapy due to adverse events. These findings highlight the challenges of translating clinical trial protocols into real-world practice, as well as the need for robust toxicity monitoring tools to optimize patient outcomes. Future research will focus on implementing an intuitive reporting tool to assist patients and healthcare providers in promptly identifying and managing grade 2 toxicities.

ABSTRACT P50 - B

PROMOTING BREAST MILK FEEDING IN PRETERM INFANTS AT THE WINDSOR REGIONAL HOSPITAL NEONATAL INTENSTIVE CARE UNIT

Grace Butler[1], **Kividi Samaraweera[1]**, **Olivia Youssef[1]**, **Shauna Halliday[1]**, Laura Simons[2], Andrea Frezell[2], Tammy Warkentin[2], Telford Yeung[2], Judy Seesahai[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Pediatrics, Windsor Regional Hospital

Infants born premature benefit significantly from maternal breast milk with decreased risk of sepsis and necrotizing enterocolitis; however, breast feeding can be challenging in the Neonatal Intensive Care Unit (NICU) due to a number of factors including parental stress and inconsistent breastfeeding support. An informal parental survey done at the Windsor Regional Hospital (WRH) found that 44% of parents discontinued breastfeeding by the time of discharge from the NICU, and switched to alternative feeding methods such as using formula milk. To encourage parents to breastfeed their preterm infants, we developed an information pamphlet to address commonly asked questions about breastmilk feeding. This study aims to assess the impact of this information pamphlet on exclusive breast milk feeding rates of infants, born less than 33 weeks, in the WRH NICU. We will conduct a retrospective chart review to establish baseline exclusive breastfeeding rates among NICU infants at WRH. Following this, a mixed-methods study will assess the impact of the breastfeeding information pamphlet on exclusive breastfeeding rates in this population. Exclusive breast milk trends over the course of the intervention will be displayed using a run chart. A semi-structured survey of participating parents will be used to assess parental knowledge and attitudes towards breastmilk feeding after implementation. Evaluating the pamphlet's effectiveness is essential to determine its potential as a standard NICU resource. This initiative aims to enhance parental knowledge, confidence, and breastfeeding practices, improving health outcomes for preterm infants.

ABSTRACT P51 - A

LEVERAGING LIVED EXPERIENCE FOR A PROPOSED SELF-GUIDED, INTERNET-DELIVERED DIALECTICAL BEHAVIOUR THERAPY INTERVENTION

Brooke Dupuis[1], Sara Pratt[1], Leonie Glueck[1], Riad El-Karout[1], Alexander R. Daros[1]

[1]Department of Psychology, University of Windsor

Access to mental health services is often limited by financial, geographic, and systemic barriers. Self-guided, internet-delivered interventions are a low-barrier alternative proven to improve mental health symptoms. Dialectical behaviour therapy (DBT) was originally developed as an in-person treatment for complex mental health needs, but researchers have begun to test shorter, internet-delivered versions (i.e., iDBT) to target more individuals. We developed a new e-learning course to deliver self-guided iDBT. The primary goals of this study were to assess its credibility and acceptability among adults with lived experience of mental health needs and collect qualitative feedback on the proposed intervention. We hypothesized that feedback would support the feasibility of iDBT and that participants would report the intervention as credible and acceptable as per standard measures. We expect to recruit 20 adults to attend a 60–90-minute interview. Participants will be shown the iDBT intervention, answer semi-structured interview questions, and complete self-report measures of credibility and acceptability. Upon data analysis, we expect participants to identify beneficial elements and areas for improvement to enhance iDBT implementation, while also rating the iDBT intervention as credible and acceptable. In the Windsor-Essex region, DBT is available only to individuals with moderate-to-severe symptoms in outpatient settings. Our iDBT e-learning option could address accessibility by offering a low-barrier treatment to those with low-to-moderate symptoms. By equipping individuals with DBT skills, this intervention could improve mental health outcomes, enhance quality of life, and reduce strain on traditional mental health services.

ABSTRACT P52 - B

THE USE OF DIGITAL MOBILE TECHNOLOGY FOR RAPID ASSESSMENT OF TREATMENT INDUCED COGNITIVE DEFICITS IN MULTIPLE MYELOMA PATIENTS

Madeline Garlatti[1], Sahar Khan[2], Pravallika Baka[1], Chaeyoung Lee[3], Chatherine Kwe-ae Lee[3], Christopher Abeare[4], Caroline Hamm[2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Oncology, Windsor Regional Hospital

[3]Schulich School of Medicine and Dentistry

[4]Department of Psychology, University of Windsor

Additional Research Focus: Biomedical Research

Patients with multiple myeloma may experience subjective changes in baseline cognitive function, which can span across various cognitive domains. Currently, there is limited data about the nature, severity, and temporal evolution of these deficits, as well as their relationship with disease and treatment-related factors. While advances in multiple myeloma treatments continue, few prospective trials have evaluated their impact on cognitive function and quality of life. The objective of this retrospective, cross sectional study is to assess potential cognitive changes in multiple myeloma patients undergoing therapy. This study aims to recruit approximately 60 participants, with 16 presently enrolled. To identify incidence and patterns of cognitive change, patients undergo comprehensive cognitive evaluations such as the International Cognition and Cancer Task Force (ICCTF) battery, National Institute of Health Toolbox (NIB-TB), and the five-minute Montreal Cognitive Assessment screener (MoCA). Data collection and preliminary analysis on 16 participants (median age 72 years, 10/16 on first-line therapy) has revealed global cognitive impairment in 5/16 patients using the ICCTF battery and the NIH-TB, with verbal learning and memory, and executive function being the most affected domains. Future initiatives of this research will focus on expanding study population with the aim to validate preliminary trends in a larger cohort. Larger numbers will allow exploration of correlations between subjective and objective cognitive performance, and the potential differential impact of classes of treatment agents on cognitive function. Results from this study may yield hypotheses for future evaluation and validation in larger, prospective trials.

ABSTRACT P53 - A

THE USE OF PANTOPRAZOLE PRIOR TO FROZEN EMBRYO TRANSFER: A CLINICAL TRIAL

Brianna Grandi[1], Melanie Trifan[1], Jeannette Vanier[1], Nadia Pedri[1], Isabella Arthur[2], Sira Jaffri[3], Kenan Kassas[3], Rahi Victory[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Victory Reproductive Care

[3]School of Medicine, St. George's University

Additional Research Focus: Biomedical Research

Infertility affects approximately 1 in 6 Canadian couples, with in-vitro fertilization (IVF) being a viable solution. Frozen Embryo Transfer (FET), an integral procedure in IVF, involves the implantation of a cryopreserved embryo into the uterus. Although relatively successful, complications such as miscarriage, ectopic pregnancy, and preterm birth remain concerns. Research has shown that uterine contraction at the time of FET

negatively impacts implantation success. Therefore, taking a medication with uterine relaxing effects, such as Pantoprazole, during FET may facilitate successful implantation. Pantoprazole is a proton pump inhibitor used in the management of gastroesophageal reflux disease (GERD) and is a pregnancy category B drug with no significant risk of pregnancy complications including preterm delivery, spontaneous abortion, or major congenital birth defects. Emerging data suggests that Pantoprazole relaxes the uterine walls. This study aims to evaluate the efficacy of pantoprazole improving implantation during FET procedures. In this single-blind randomized controlled trial, 200 participants undergoing FET at Victory Reproductive Care (VRC) will be recruited and randomized into an experimental or control group. The experimental group will take oral pantoprazole (40mg, daily) for 7 consecutive days, starting 3 days prior to FET. The control group will not receive pantoprazole. The frequency of biochemical pregnancy, clinical pregnancy, miscarriage, and ectopic pregnancy will be recorded and analyzed to determine if Pantoprazole improves FET outcomes. The results of this novel study may help advance

standardized FET procedures to improve fertility outcomes.

ABSTRACT P54 - B

MINDFULNESS FOR ALL? DIFFERENCES IN ENGAGEMENT AND TREATMENT OUTCOMES FOR SEXUAL MINORITY PEOPLE DURING A MINDFULNESS APP CLINICAL TRIAL

Olive Chung-Hui Huang[1], Alina Patel[2], Alexander R. Daros[1], Bechara Saab[3], Lena C. Quilty[2,4]

[1]Department of Psychology, University of Windsor

[2]Centre for Addiction and Mental Health, Toronto

[3]Schulich Mobio Interactive, Inc

[4]Department of Psychiatry, University of Toronto

Sexual minority individuals experience higher rates of mental health problems, but often have unmet service needs due to stigma, discrimination, and socioeconomic burdens. Online mental health interventions are cost-efficient and can minimize stigma, with some studies suggesting better treatment outcomes in sexual minorities compared to heterosexual individuals. While mindfulness-based apps have demonstrated efficacy in improving mental health in the general population, less is known about the engagement and response of sexual minority, compared to heterosexual, individuals. Using data from a non-randomized clinical trial of a mindfulness app (AmDTx), this secondary analysis aims to examine whether sexual minority status predicts app engagement and treatment outcomes. We hypothesize that sexual minority individuals (vs. heterosexual) will adopt and engage with the app to a greater degree and report improved treatment outcomes over time. Treatment-seeking adults (N=183) received access to AmDTx and reported treatment outcomes at 2, 4, 8, and 12 weeks. Linear regression and multilevel models will evaluate sexual minority status as a predictor of adoption (attempted meditation); attrition (time spent in study); and app engagement (total meditation hours, number of activities completed); and as a moderator of treatment outcomes (functional disability, depression, anxiety, stress) over time. Covariates will include sex and gender. Sexual minority individuals experience poorer mental health and face greater difficulties accessing mental health care compared to their heterosexual counterparts. Identifying whether mindfulness apps hold a potential advantage in improving mental health in sexual minority populations can facilitate treatment access and outcomes in underserved populations.

ABSTRACT P55 - A

PSYCHOSOCIAL FACTORS AND OUTCOMES IN ADOLESCENTS WITH TYPE 1 DIABETES: A BASELINE ANALYSIS FROM THE DIABETES JOURNEY PROJECT

Mayah Huggins[1], Jessica C Kichler[1]

[1]Department of Psychology, University of Windsor

Children and adolescents with type 1 diabetes (T1D) often face physical and emotional challenges due to the daily demands of managing this chronic condition. These challenges can impact outcomes such as quality of life (QOL), barriers to diabetes adherence (BDA), and blood glucose levels (measured by HbA1c). This proposal focuses on understanding how different psychosocial factors (depression, diabetes distress, fear of hypoglycemia, family conflict, sleep patterns, COVID-19 stressors, and problems with executive functioning) affect the outcome variables. Baseline data from the Diabetes Journey Project will be analyzed to find relationships between these variables through bivariate correlations and regression analyses. The findings from this study aim to inform interventions that address psychosocial challenges, ultimately improving diabetes management and quality of life for children and adolescents with T1D.

ABSTRACT P56 - B

WINDSOR ARITHMETIC COGNITION TEST (WACT): USING ARITHMETIC ABILITY TO TRACK CLINICAL RECOVERY AFTER TRAUMATIC BRAIN INJURY

Deven Jhawar[1], Retage Al Bader[2], Juhi Maraj[1], Isha Suri[2], Hamza Mahdi[2], Balraj Jhawar[1,2,3]

[1]University of Western Ontario

[2]Schulich School of Medicine and Dentistry

[3]Windsor Regional Hospital

Traumatic Brain Injury (TBI) is an important cause of disability, with increasing hospitalization trends and long-term implications on quality of life and cognitive functions. Accurate assessment of recovery is essential for improved care, better use of resources, and determining readiness to return to normal activities and employment. Consequently, there is great interest in accurate and reliable assessments of cognitive function. The ability to perform simple arithmetic has been shown to involve numerous brain regions in both hemispheres. The ability to add numbers requires working memory (prefrontal cortex) and other areas such as the intraparietal sulcus and supramarginal gyrus. Consequently, we believe it is reasonable to assume that when the brain is injured there would be an impairment of mathematical ability. The Windsor Arithmetic Cognition Test (WACT) tool is a bedside arithmetic based measure of cognitive capacity and working memory. Our objective is to evaluate WACT scores as patients recover from TBI by assessing the WACT reliability and validity against existing tools such, such as the MoCa and COGLOG. We hypothesize that the WACT scores are accurate and relatively precise quantitative measures of brain cognitive capacity. Patients who are admitted to the adult neurosurgical service (in WRH Ouellette Campus) following a mild or moderate traumatic brain injury will be considered for participation. The study has received REB ethics approval and is currently in the data collection phase. We have collected data for 18 patients thus far.

ABSTRACT P57 - A

ARTIFICIAL INTELLIGENCE FOR SELF-DIAGNOSIS AND TREATMENT: EVALUATING LARGE LANGUAGE MODELS IN LUMBAR SPINAL CONDITIONS

Deven Jhawar[1], Abdul Naeem[1,2], Hamza Mahdi[3], Balraj Jhawar[1,2]

[1]Western University

[2]University of Windsor

[3]Schulich School of Medicine and Dentistry

Lumbar spine disorders are a leading cause of disability, affecting millions worldwide. Long wait times for specialist consultations drive patients to seek alternative ways to interpret their MRI reports, often turning to Large Language Models (LLMs). This study evaluates the accuracy, safety, and clinical utility of LLMs in providing lumbar spine recommendations based solely on MRI reports. A retrospective analysis was conducted on ten de-identified MRI reports from patients referred to a neurosurgical practice in 2024. Three LLMs (ChatGPT, Gemini, DeepSeek) generated recommendations, which were compared to real-life clinical assessments incorporating history, examination, and imaging. A structured framework evaluated diagnostic accuracy, treatment recommendations, and safety concerns. LLMs provided recommendations largely consistent with real-life clinical decision-making, correctly identifying major MRI findings. However, conservative treatment options such as lifestyle modifications, workplace restrictions, aquatherapy, traction, TENS therapy, and ultrasound were often omitted. LLMs also had a lower threshold for ordering additional imaging and specialist referrals. Crucially, they failed to proactively inquire about red flags like bowel/bladder dysfunction and unexplained weight loss. When given additional clinical information, their recommendations improved. While LLMs demonstrated overall accuracy and safety, their limitations highlight the need for refinement, particularly in conservative management and recognizing critical symptoms. Real-life consultations also had deficiencies, underscoring the potential for AI integration in clinical workflows. As these models evolve, ensuring their responsible and structured implementation will be essential for safe and effective patient self-diagnosis and physician support.

ABSTRACT P58 - B

LISA VS INSURE IN PRETERM RESPIRATORY DISTRESS SYNDROME: A THREE-YEAR EXPERIENCE AT WINDSOR REGIONAL HOSPITAL NICU (WRH)

Sang Ho (Sean) Kim[1], Trish Szekely[2], Sajit Augustine[3]

[1]Schulich School of Medicine and Dentistry

[2]Department of Respiratory Therapy, Windsor Regional Hospital

[3]Department of Pediatrics, Windsor Regional Hospital

Respiratory distress syndrome (RDS) is a leading cause of morbidity in preterm infants due to insufficient surfactant production. Surfactant therapy is the standard of care, with two primary administration methods: Less Invasive Surfactant Administration (LISA) and INtubation-SURfactant-Extubation (INSURE). This study compares the efficacy of these methods in a Level II community neonatal intensive care unit (NICU). A retrospective chart review was conducted on preterm infants (<34 weeks gestation) who received surfactant between 2021 and 2023. The primary outcome measure was incidence of intubation within first 7 days of life, and secondary outcome measures were number of surfactants administered, as well as # of days of hospitalization and # of days on any type of respiratory support. LISA usage trends were also analyzed as part of a local quality improvement initiative. A total of 28 infants (9 in Insure and 19 in LISA) were included. The need for intubation was lower in the LISA group (16%) compared to INSURE (22%). LISA was associated with a slightly higher number of surfactant doses but a shorter hospitalization and respiratory support duration, though these differences were not statistically significant. Regarding LISA usage, all eligible infants (6/6) received surfactant via LISA in 2021; however, usage declined significantly in 2022 (5/11), followed by a rebound in 2023 (8/12). LISA may reduce the incidence of mechanical ventilation in spontaneously breathing preterm infants without significantly affecting hospitalization length or surfactant needs. Further data collection and staff education initiatives are necessary to enhance LISA adoption and improve neonatal outcomes.

ABSTRACT P59 - A

BARRIERS AND FACILITATORS TO IMPLEMENTING THE CLINICAL TRIAL NAVIGATOR PROGRAM: A QUALITATIVE ANALYSIS

Anthony Luginaah[1], Salah Alhajsaleh[2], Gregory Charalambos Anagnostopoulos[1], Caroline M. Hamm[3], Milica Paunic[4], Dana Morgan Inglis[5], Renee Nassar[6], Depen Sharma[7], Olla Hilal[8], Pratham Gupta[8], Christina Trieu[2], Laurice Togonon Arayan[3], Govana Sadik[2], Roaa Hirmiz[2], Lee McGrath[9], Mahmoud Hossami[2], Michael Touma[10], Han Chen[11], Swati Kalia[12], Anaam Jaet[2], Emmanuel Boujeke[1], Megan E Delisle[13]

[1]Schulich School of Medicine and Dentistry
[2]University of Windsor
[3]Department of Oncology, Windsor Regional Hospital
[4]Temerty Faculty Of Medicine, University Of Toronto
[5]Max Rady College of Medicine, University of Manitoba
[6]Windsor Regional Hospital
[7]Faculty of Medicine, University of Ottawa
[8]Western University
[9]Invest Windsor Essex
[10]School of Medicine, Griffith Universit
[11]University of Manitoba
[12]Department of Oncology, Western University
[13]Department of Surgery, University of Manitoba

Additional Research Focus: Health Service Research

The Clinical Trials Navigator (CTN) Program was launched in 2019 to increase enrollment in cancer clinical trials. It is free for all Canadians, and over 550 people have participated. This study has the objective of assessing the perspectives of people with cancer regarding the implementation of clinical trial navigation in Canada. People with cancer and their caregivers (n=21) were recruited from across Canada to participate in a 30–60-minute semi-structured interview. Based on the Consolidated Framework for Implementation Research (CFIR) domains, we assessed the facilitators, and barriers to access clinical trial navigation in Canada. Thematic analyses were performed by two independent researchers in duplicate using inductive and deductive coding. 10 Interviewees had contacted the CTN Program (Pre-CTN) but had not yet received navigation for clinical trials, 10 had never contacted the CTN Program (Non-CTN) and 1 completed the CTN Program (Post-CTN). The results indicate participants valued early and direct access to information trials and perceived the CTN Program as a unique, trustworthy resource created by Canadians. Participants reported a sense of relief knowing they can find a trial when needed. Not all oncologists provided information for identifying clinical trials, and the CTN Program was therefore perceived as an important solution. Our results illustrate the gaps in the Canadian clinical trial ecosystem and emphasize the value of the CTN Program. The CTN Program addresses issues such as the timeliness and legitimacy of clinical trials information, increases patient sense of control and alleviates the burden of unexplored options.

ABSTRACT P60 - B

TOWARD A STANDARDIZED SCORING SYSTEM FOR LUMBAR MRI: DEVELOPMENT, VALIDATION, AND FUTURE AI INTEGRATION

Hamza Mahdi[1,2], Abdul Naeem[1], Deven Jhawar[3], Balraj Jhawar`

[1]Windsor Regional Hospital
[2]Schulich School of Medicine and Dentistry
[3]Western University

Back and leg pain are among the most common medical complaints, with treatment largely dependent on lumbar MRI evaluation. However, the literature documents significant variability in interpretation, with both inter-rater and intra-rater reliability concerns. This inconsistency impacts diagnostic accuracy and treatment decisions. Our study aims to develop a standardized scoring system for lumbar MRI assessment, designed by a multidisciplinary team of neurosurgeons, radiologists, and spine care specialists. By synthesizing insights from established grading systems, including the Pfirrmann and Modic classifications, we are creating an objective, reliable, and reproducible evaluation framework. Calibration will be conducted using a subset of MRI images, followed by validation on 150 diverse scans. Inter-rater reliability will be assessed using Cohen's Kappa statistic. A larger dataset of 1,000 MRI images is being assembled for future convolutional neural network (CNN) training. The goal is to establish a validated system that enhances diagnostic consistency and accuracy. Future CNN integration is expected to further improve reliability and efficiency, ultimately optimizing clinical decision-making in spine care.

ABSTRACT P61 - A

MACHINE LEARNING FOR PREDICTING NEUROSURGICAL POSTOPERATIVE COGNITIVE DECLINE

Ahmed Mohamed[1], Frank Mazza[1], Abdul H Naeem[2]

[1]Schulich School of Medicine and Dentistry

[2]Windsor Regional Hospital

Postoperative cognitive decline (POCD) in common in neurosurgical patients and significantly impacts functional independence. Several factors correlate to exacerbated POCD, including age, preoperative brain activity, and anesthesia type. However, little research has explored the use of artificial intelligence (AI) to predict POCD, which may personalize and improve patient treatment. This study aims to develop an AI tool which predicts POCD from neurosurgical patients based on patient and procedure characteristics for improved treatment outcomes. We hypothesize that an AI tool trained on patient characteristics before and after surgery, along with procedure factors, may predict POCD. An AI tool will be trained and validated on neurosurgical case data to predict POCD risk and cognitive score (n = 200). Training data will include patient factors (demographics, blood test results, cognitive scores, lesion type) and procedure factors (anesthesia type, neurosurgical intervention). Cognitive score will be assessed using standard MoCA and MMSE tests. The tool will predict 7- and 30-day post-operative MoCA and MMSE score. We will validate the tool using a subset of patients (n = 50) and will assess model accuracy. AI-driven POCD prediction offers a cost-effective approach to personalized patient care. Integrating these tools into clinical workflows may better equip healthcare service providers to identify high risk patients, assess surgical risk, and adjust management, ultimately improving patient outcomes.

ABSTRACT P62 - B

UNDERSTANDING INTRA-OPERATIVE MORTALITY IN CANADIAN NEUROSURGERY: A SURVEY-BASED ANALYSIS

Abdul Naeem[1], Devin Jhawar[2], Juhi Maraj[3], Abdulrahman Hamdoon[3], Balraj Jhawar[1]

[1]Windsor Regional Hospital

[2]University of Western Ontario

[3]University of Windsor

Intra-operative mortality in neurosurgery is a rare but profoundly impactful event with significant consequences for patient outcomes, surgical teams, and healthcare systems. Despite advancements in surgical techniques, neurosurgical procedures inherently carry high risks due to the complexity of brain and spinal cord operations. While previous studies have explored patient comorbidities and team dynamics as contributors to surgical outcomes, limited research exists on how these factors influence intra-operative mortality and the coping mechanisms of surgeons following such events. This study aims to analyze intra-operative mortality in Canadian neurosurgery by identifying contributing factors related to patient characteristics, surgeon experience, and team dynamics. Additionally, it seeks to evaluate the emotional and professional impact of these events on neurosurgeons. A cross-sectional survey will be distributed to neurosurgeons across Canada, assessing demographic data, patient risk factors, surgical circumstances, and surgeon/team dynamics associated with intra-operative deaths. The survey will also explore how surgeons cope with these incidents and whether such experiences influence future decision-making. Data will be collected anonymously via REDCap and analyzed using descriptive and inferential statistical methods. Findings from this study will provide valuable insights into modifiable risk factors, inform surgical training programs, and guide institutional support strategies for neurosurgeons dealing with intra-operative mortality. Understanding these elements will contribute to enhanced patient safety, improved surgical decision-making, and better psychological support mechanisms for neurosurgeons.

ABSTRACT P63 - A

REAL-WORLD EVIDENCE STUDY OF NALTREXONE/BUPROPION FOR ACHIEVING CLINICALLY SIGNIFICANT WEIGHT LOSS

Rishi Naidu[1], Mansi Arora[2], Shruti Rajasekharan[2], Pallavi Rohela[3], RajanPaul Sandhu[1], Rong Lou[1], Caroline Hamm[1,3,4], Padmaja Naidu[4]

[1]University of Windsor

[2]Temerty Faculty of Medicine, University of Toronto

[3]WE-SARPK Health Institute

[4]Windsor Regional Hospital

Naltrexone/Bupropion (NB) was approved as an anti-obesity medication (AOM) based on the Contrave Obesity Research (COR) trials, which assessed weight loss at weeks 28 and 56. Prior research suggests that weight loss within three months of AOM treatment predicts long-term success. This study evaluates the real-world effectiveness of NB in achieving clinically significant weight loss after three months of adherence and compares long-term outcomes to the COR trials. A retrospective chart review was conducted at a Canadian community clinic. Patients were included if they had obesity (class I–III), adhered to NB for at least three months, were treated solely with NB (June 2019–March 2023), and were ≥18 years old. Weight loss was calculated from baseline at three months, and for those with longer adherence (26, 52, and 104 weeks). Among 125 patients completing three months of NB, the mean weight loss was 4.9% (clinically significant). Of those continuing NB, 57.6% had already lost ≥5% by three months. At six months (n=72), weight loss was 8.6%. At 52 weeks (n=33), it was 11.3%, and at 104 weeks (n=11), it reached 11.8%. NB effectively achieves clinically significant weight loss within three months. Longer-term real-world outcomes align with COR trial findings, supporting NB's sustained effectiveness in obesity treatment.

ABSTRACT P64 - B

THE BIOPSYCHOSOCIAL IMPACT OF A NUTRITION FOLLOW-UP PROGRAM ON FAMILIES DISCHARGED FROM THE NICU WITH A NASOGASTRIC FEEDING TUBE

Rufina Ning[1], Mona Charif[2], Caitlin Sullivan[2], Laura Simons[3], Andrea Frezell[3], Jessica Kichler[4], Telford Yeung[2,3]

[1]Schulich School of Medicine and Dentistry

[2]Department of Biomedical Sciences, University of Windsor

[3]Department of Neonatology, Windsor Regional Hospital

[4]Department of Psychology, University of Windsor

Infants admitted to the neonatal intensive care unit (NICU) often have complex medical conditions requiring prolonged hospitalization to achieve independent oral feeding. Home nasogastric tube feeding (NGTF) programs can facilitate earlier NICU discharge, reducing family stress and hospital resource utilization. Our objective was to explore and compare the biopsychosocial impact on the families of infants discharged with or without home NGTF from the NICU. We assessed caregiver readiness for a NICU discharge with or without home NGTF and the impact on their social, emotional, and physical functioning. A mixed-methods survey was administered to caregivers of infants discharged between June 2021 to June 2024, with or without home NGTF. Conventional content analysis was used to identify the inductive codes and key themes experienced by families. Our results show that caregivers felt prepared at the time of discharge. Both NGTF and control groups shared similar perceptions regarding the negative impact on their social (76% vs 61%) and emotional (59% vs 47%) functioning at home and viewed their infant as medically fragile (65% vs 68%). However, the home NGTF group reported a more positive impact from caring for their infant at home (88% vs 66%), less of a negative impact on physical functioning (29% vs 63%), and greater feelings of internalized stigma as a caregiver (24% vs 11%) and stress related to a prolonged NICU stay (65% vs 11%) compared to the control group. The functional impact of this home NGTF program identified areas for improving structured discharge and follow-up programs.

ABSTRACT P65 - A

CLINICIAN PERSPECTIVES OF BENZODIAZEPINE RECEPTOR AGONISTS (BRZA) PRESCRIBING AND DEPRESCRIBING IN ONTARIO

Arani Sivakumar[1], Paula M. van Wyk[2]
[1]Schulich School of Medicine and Dentistry
[2]Department of Kinesiology, University of Windsor

Additional Research Focus: Social, Cultural, Environmental and/or Population Health Research

BZRAs are commonly prescribed to older adults for the acute treatment of insomnia and anxiety, despite evidence-based recommendations cautioning against it due to an increased risk for falls/fractures, cognitive impairment and dependence, coupled with the added risk from inappropriate polypharmacy. Deprescribing BZRAs among older adults is challenging due to the many stakeholders involved (i.e., patient, clinicians, environment). Further, the prescribing/deprescribing landscape of BZRAs within smaller mixed urban-rural regions such as Southwestern Ontario has yet to be thoroughly investigated where access to resources and care coordination may differ. This study aims to explore clinician perspectives influencing BZRA prescribing/deprescribing practices within smaller mixed urban-rural regions in Ontario. This study employs a qualitative research design. Clinicians (primary care physicians, geriatricians, nurse practitioners) providing care to older adults within smaller mixed urban-rural regions in Ontario are invited to participate in a 30-45-minute semi-structured interview. Participants are asked about their rationale and perceived indications for prescribing BZRAs, the BZRA prescribing process and deprescribing efforts (including challenges/enablers). A directed content analysis using the Theoretical Domains Framework will be used for data analysis to identify emerging patterns and themes. Findings may demonstrate a theoretical understanding of factors influencing BZRA prescribing/deprescribing practices among clinicians in smaller mixed urban-rural regions of Ontario. This study will provide a preliminary contextual understanding critical to developing BZRA prescribing initiatives that account for the health and social complexities within these understudied regions of Ontario.

ABSTRACT P66 - B

REGIONAL DISPARITIES IN CANCER BIOMARKER KNOWLEDGE AND ACCESS ACROSS CANADA

Depen Sharma[1], Ria Patel[2], Salah Alhajsaleh[2], Christina Trieu[2], Anaa Jaet[2], Anthony Luginaah[3], Pratham Gupta[2], Olla Hilal[2], Laurice Togonon Arayan[4], Mahmoud Hossami[2], Renee Nassar[4], Megan E. Delisle[5], Milica Paunic[6], Roaa Hirmiz[2], Swati Kalia[2], Michael Touma[2], Govana Sadik[2]
[1]Faculty of Medicine, University of Ottawa
[2]University of Windsor
[3]Schulich School of Medicine and Dentistry
[4]Windsor Regional Hospital
[5]University of Manitoba
[6]Temerty Faculty of Medicine, University of Toronto

Clinical trials are critical for advancing cancer therapies, yet patient enrollment remains below 5%. The Clinical Trials Navigator (CTN) program identified gaps in biomarker knowledge and accessibility as significant barriers in Canada. Between May and October of 2024, an electronic survey assessed 36 Canadian oncologists' biomarker knowledge and regional accessibility using a Cancer Care Ontario-approved list. Respondents were asked to identify biomarkers accessible in their regions. Significant disparities in biomarker knowledge and accessibility were evident. Common biomarkers for breast cancer (ER, PR, HER2) were consistently identified by all 18 physicians surveyed. Similarly, colorectal cancer biomarkers (MLH1, MSH2, MSH6) were widely recognized and accessible, with 100% of respondents reporting knowledge and access. In contrast, knowledge of biomarkers for rare cancers, including adrenal, penile, and stomach, was significantly lower, with only one, out of six, biomarkers (HPV) identified by a group of 11 physicians. Geographic differences were also evident. Newfoundland and Labrador reported the highest biomarker accessibility (86%), although this was based on a single respondent. Ontario, with the largest sample (21), showed a 60% knowledge rate, reflecting gaps in knowledge rather than access. British Columbia (67%), Manitoba (77%), and Nova Scotia (85%) demonstrated higher knowledge, though sample sizes were small. Alberta had the lowest rates for both (54%). Our survey highlighted significant regional disparities in biomarker knowledge and access across Canada, particularly for rare cancers. Targeted education and resource allocation are critical to addressing these gaps, improving clinical trial enrollment, and advancing cancer care outcomes.

Research Focus: Health Service Research

ABSTRACT P67 - A

ROLE OF THE ER IN INITIAL DIAGNOSTIC PATHWAY OF MULTIPLE MYELOMA PATIENTS: A RETROSPECTIVE REVIEW OF 80 PRESENTATIONS AT A REGIONAL HOSPITAL

Sophia Campana[1], Pravallika Baka[1], Sarah Bernstein[1], Moutasem Seifi[1], Sahar Khan[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Oncology, Windsor Regional Hospital

Additional Research Focus: Clinical Research; Social, Cultural, Environmental and/or Population Health Research

Delayed diagnosis is a common challenge in multiple myeloma and can significantly impact patient quality of life, outcomes, and potentially survival. Although multiple myeloma often first presents in primary care, research indicates that a substantial proportion of cases follow complex diagnostic pathways, with nearly one-third diagnosed in acute care or emergency room (ER) settings. Moreover, socially vulnerable and/or isolated populations may be disproportionately diagnosed in these acute care environments. Such diagnostic delays may exacerbate progressive bone disease, fractures, chronic disability, and pain, ultimately reducing patients' quality of life and prognosis. Hence, our study aims to determine the proportion of multiple myeloma patients presenting to the ER at or before initial diagnosis and assess the nature of both acute and sub-acute presentations. We will conduct a retrospective chart review of multiple myeloma patients with a histopathological diagnosis within 5 years of study initiation who presented through the Windsor Regional Cancer Center, targeting a sample of 60–70 patients with single or multiple ER visits. Key factors to be analyzed include demographics, symptomatology, reasons for presentation, number of visits, ER disposition, disease progression, and changes in clinical status between the time of initial presentation and diagnosis. Through this study, we aim to identify the nature of emergent presentations in newly diagnosed multiple myeloma patients, while defining demographic and disease-related characteristics that may serve as associated risk factors. In doing so, we strive to facilitate strategies for more timely diagnosis to enhance patient outcomes and quality of life.

ABSTRACT P68 - B

REPRODUCTIVE HEALTH MANAGEMENT AND TRANSFORMATIVE BUSINESS PRACTICE; A LITERATURE REVIEW AND FUTURE AVENUES FOR RESEARCH

Hajar Fatemi[1], Goktug Bender[2], Laurette Dube[2]

[1]Odette School of Business, University of Windsor

[2]Desautels Faculty of Management, McGill University

A major reproductive health issue affecting millions globally is infertility (Zhang et al., 2022). Currently, in Canada, around 16% of women experience infertility (CFAS, 2022). The infertility treatment market generated $1,770.6 million in 2023 (Ghosh, 2024) and is projected to grow to 62.8 billion in 10 years (The Lancet, 2024). Despite the prevalence and high monetary, physiological, and psychological costs of infertility, studies in business, including consumer psychology, examining infertility/fertility preservation are scarce and is limited to qualitative studies. We aim to systematically review research on the fertility industry, including infertility treatments and fertility preservation, to assess the current state of research, identify the gaps in the literature, and explore potential future directions within the areas of consumer psychology and decision-making. Using a systematic domain-based review approach (Snyder, 2019; Paul & Criado, 2020), we analyzed articles on the Scopus and Business Source Complete databases. We reviewed 449 articles based on their title, abstract, and keywords. Our results, including final 39 articles, unveil various themes of research on the influence of physiological, psychological, socioeconomic, financial, career, legal, and technological factors, as well as access to information, on fertility preservation and treatment decisions. Furthermore, we evaluate the psychological, relational, and career outcomes associated with these factors and discuss their implications for business and for health systems. We suggest future research directions and areas for improvement to guide subsequent studies in this field. This literature review is the first to explore fertility healthcare services through the lens of consumer psychology and business research.

ABSTRACT P69 - A

EVALUATING THE IMPACT OF PATIENT NAVIGATOR SUPPORT ON VISION-RELATED QUALITY OF LIFE AND MENTAL HEALTH IN A COMMUNITY RETINA CLINIC

Hasan Ghafoor[1], Mehtaab Dhillon[1], Omer Elkidhir[1], Alishba Malik[1], Sami Tayfour[2], Vivian Rajeswaren[3], Deepa Yoganathan[3]

[1]Faculty of Science, University of Windsor

[2]Schulich School of Medicine and Dentistry

[3]Kresge Eye Institute

Additional Research Focus: Clinical Research; Social, Cultural, Environmental and/or Population Health Research

Untreated comorbidities and socio-clinical factors accompanying retinal disorders significantly impact patient quality of life and mental health, representing a major health disparity. This study aims to address this unmet need by integrating a patient navigator program into a community retina clinic. The primary objective of this study is to evaluate the effectiveness of patient navigator support in improving vision-related quality of life and mental health outcomes. The secondary objective includes developing a multidisciplinary resource framework to address barriers to care for retinal patients. Semi-structured interviews were conducted with participants to identify barriers to accessing eye care and to inform targeted interventions. Subsequently, baseline measures were collected via VFQ-25, IVI, GAD-7, and PHQ-9 questionnaires. Following a three-month intervention period, surveys were re-administered to evaluate changes in vision-related quality of life, mental health, and overall satisfaction. Five retinal patients with visual impairments participated in a 60-minute preliminary interview to reveal the following common themes related to unmet health needs: 1) lack of PCP support, 2) transportation difficulties, 3) management of comorbidities, 4) low health literacy, and 5) emotional distress. 363 participants completed preliminary surveys: 43 reported difficulty accessing their PCP, 36 expressed transportation difficulties; 129 were diabetic, 37 had difficulty with disease management, 52 reported difficulty with health literacy, and 89 expressed eye-related anxiety. Preliminary findings demonstrate significant barriers to care among retinal patients, indicating a need for tailored interventions. This study indicates that a patient navigator program can address these obstacles by improving patient education and facilitating access to healthcare resources.

ABSTRACT P70 - B

UNDERSTANDING PRIMARY HEALTHCARE WITH AN OPEN SOURCE AI

Braedon Hendy[1]

[1]Erie Shores HealthCare

Primary care practitioners have been experiencing adverse effects, such as burnout, due to the task load they have daily. In response to the growing administrative and cognitive burdens on primary care practitioners, this project introduces an open-source artificial intelligence (AI) platform designed to act as a real-time partner during patient encounters. The system innovates beyond traditional digital scribing by providing proactive, customizable assistance to reduce cognitive load, streamline documentation, and optimize interactions with electronic health records (EHRs). A collaboration between Conestoga College's SMART Centre and Ontario physician leaders, the platform aims to address physician burnout and workflow inefficiencies exacerbated by electronic health records (EHRs). Key objectives include ensuring security, privacy, scalability, and adaptability through open-source licensing to foster transparency and collaboration. This pilot project will employ a mixed-methods approach, collecting data on practitioners' time management and job satisfaction to evaluate the platform's impact. Descriptive statistics and thematic analysis will guide the assessment of efficiency gains and satisfaction improvements. This AI platform seeks to mitigate the adverse effects of EHR usability issues, which contribute significantly to clinician burnout and diminished patient care quality. By providing ethical, non-intrusive, and equitable solutions, the initiative prioritizes clinician well-being and enhanced patient outcomes. It represents a scalable, innovative approach to transforming primary healthcare delivery while maintaining a commitment to transparency and security.

ABSTRACT P71 - A

CONNECTING CLINICAL TRIALS WITH PATIENTS USING PATIENT NAVIGATION: A SCOPING REVIEW

Olla Hilal[1], Yvonne Paglicauan[2], Ria Patel[3], Pratham Gupta[1], Leena Moshref[4], Nicole Askin[5], Carla Epp[5], Anthony Luginaah[6], Renee Nassar[7], Roaa Hirmiz[7], Milica Paunic[8], Mahmoud Hossami[7], Rhonda Abdel-Nabi[6], Kayla Touma[7], Depen Sharma[9], Rija Fatima[7], Emmanuel Akingbade[7], Ibrahim Mohamed[6], Swati Kalia[7], Michael Touma[7], Govana Sadik[3], Laurice Arayan[7], Salah Alhajsaleh[3], Anaam Jaet[3], Christina Trieu[3], Megan Delisle[4,10], Caroline Hamm[3,6,7]

[1]Department of Medical Sciences, Western University
[2]University of Manitoba
[3]University of Windsor
[4]Department of Surgery, University of Manitoba
[5]WRHA Virtual Library, University of Manitoba
[6]Schulich School of Medicine and Dentistry
[7]Windsor Regional Hospital
[8]Temerty Faculty of Medicine, University of Toronto
[9]Faculty of Medicine, University of Ottawa
[10]Paul Albrechtsen CancerCare Manitoba Research Institute

Patient navigation is a promising strategy to improve access to cancer care, but the evidence supporting its role in increasing access to cancer clinical trials has not been systematically evaluated. This scoping review aims to critically appraise, synthesize, and present the available evidence on the use of patient navigation to increase cancer clinical trial enrollment. Nine databases were searched for English peer-reviewed articles from inception through December 21, 2023. Two independent researchers screened titles, abstracts, and full texts and extracted data using standardized forms. Among the 23 included articles, 18 (78.3%) were observational studies, and 5 (21.7%) were randomized trials. Thirteen (56.5%) focused on equity, all addressing racial/ethnic groups. Seven (30.4%) articles used patient navigation for clinical trials for all cancer types; 14 (60.9%) focused on specific cancers, with 12 (85.7%) primarily addressing breast cancer. Among 21 studies describing navigator qualifications, 4 (17.4%) required professional training, while 17 (73.9%) used community representatives. The interventions used most frequently by navigators included education in 19 articles (82.6%) and care coordination in 17 articles (73.9%). Direct clinical trial referrals were unmentioned; logistical and financial assistance appeared in only 2 articles each (8.7%). In 7 (30.4%) studies, navigators directed patients to trials within and outside their center; 16 (69.6%) navigated patients only within their center. Future research should employ more rigorous designs to evaluate different patient navigation approaches and assess their impact on clinical trial enrollment across a wider range of cancers and patient populations.

ABSTRACT P72 – B

ASSESSING HEALTH INFORMATION NEEDS IN CLL/INDOLENT NHL PATIENTS ON SURVEILLANCE

Brett Humphrey[1], Sahar Khan[2]

[1]Department of Biomedical Sciences, University of Windsor
[2]Windsor Regional Hospital

Additional Research Focus: Clinical Research

Chronic Lymphocytic Leukemia (CLL) and Indolent non-Hodgkin Lymphomas (iNHL) are slow-progressing B-cell malignancies often diagnosed incidentally. The watch-and-wait approach, a common management strategy for patients who do not meet treatment initiation criteria, can contribute to psychological distress, uncertainty, and information gaps. Patients may experience increased anxiety and depressive symptoms due to a lack of understanding of their condition and infrequent clinical interactions. This mixed-methods study aims to assess patient-reported understanding of disease processes, patterns of information gathering, and the perceived adequacy of healthcare interactions in meeting informational and psychological needs. The study will enrol adults diagnosed with CLL or iNHL who have not yet required treatment. The qualitative component will explore patients' primary information sources, financial barriers to accessing information, and gaps in knowledge. The quantitative component will evaluate how patient-reported understanding correlates with anxiety, depression, and coping. Logistic regression will assess the association between disease comprehension and psychological well-being. Findings from this study will help identify key areas where patient education and healthcare communication can be improved. Addressing information gaps may reduce uncertainty, enhance patient empowerment, and ultimately improve the quality of life for individuals on active surveillance.

ABSTRACT P73 - A

THE PROSPECT OF SUPPORT SCROLLING: A CONTENT ANALYSIS ON TYPE 1 DIABETES ADVOCACY, TECHNOLOGY, AND SUPPORT ON SOCIAL MEDIA

Cristian Iannicello[1], Andy Tannous[2], Kira Voelker[3], Dana Albright[3], Jessica Pater[3], Jessica C Kichler[1]
[1]Department of Psychology, University of Windsor
[2]School of Social Work, University of Windsor
[3]Parkview Research Centre, Fort Wayne, Indiana

Type 1 diabetes (T1D) is marked by a deficiency in insulin secretion caused by an autoimmune destruction of the insulin-producing beta cells in the pancreas. As a result, individuals typically follow a complex regimen of carbohydrate counting, checking blood glucose levels regularly, and calculating insulin doses daily. As such, it is imperative for these individuals to feel connected to and cared for by those around them. Therefore, the use of social media as a vehicle to connect individuals with T1D to interact with and support one another is groundbreaking. The main purpose of the proposed study is to investigate the potential positive aspects of social media for a community of individuals with T1D, such as the ability for these platforms to equalize access to current diabetes healthcare knowledge, including technology advances, so that people with T1D who experience support online are better able to advocate for their healthcare needs. The study uses archival data previously collected as part of a parent study (Type 1 Diabetes on Social Media: A thematic analysis of publicly posted content across social media platforms). Due to the amount of data collected, the technology and advocacy primary codes will undergo further qualitative examination through a secondary content analysis. The study aims to inform on the many layers of the T1D healthcare advocacy ecosystem as well as the potential role of social media networking in building self-management skills for those with chronic conditions, like T1D.

ABSTRACT P74 - B

IMPACT OF CLINICAL TRIAL NAVIGATORS ON CLINICAL TRIAL ACCRUAL THROUGH MULTIDISCIPLINARY CASE CONFERENCES: A PRE- & POST-IMPLEMENTATION STUDY

Anaam Jaet[1], Christina Trieu[1], Salah Alhajsaleh[1], Renee Nassar[2], Mahmoud Hossami[1], Laurice Togonon Arayan[2], Swati Kalia[1], Depen Sharma[3], Roaa Hirmiz[1], Milica Paunic[4], Olla Hilal[5], Anthony Luginaah[6], Michael Touma[2], Govana Sadik[1], Ria Patel[1], Pratham Gupta[5], Megan Delisle[7], Gregory Charalambos Anagnostopoulos[6], Lee McGrath[8], Han Chen[7], Caroline Hamm[2]
[1]University of Windsor
[2]Windsor Regional Hospital
[3]Faculty of Medicine, University of Ottawa
[4]Temerty Faculty of Medicine, University of Toronto
[5]Department of Medical Sciences, Western University
[6]Schulich School of Medicine and Dentistry
[7]University of Manitoba
[8]Invest Windsor Essex

Clinical trial accrual improves cancer outcomes but remains limited due to systemic barriers, with only ~3% of adult cancer patients participating. Integrating Clinical Trial Navigators (CTNs) into Multidisciplinary Case Conferences (MCCs) has demonstrated potential to enhance trial discussions, increase referrals, and streamline enrollment. This study evaluates the impact of CTNs on trial accrual, implementation effectiveness, and workflow optimization. We hypothesize that CTN integration into MCCs will increase referral and accrual rates while improving clinical trial integration efficiency. This hybrid effectiveness-implementation study focuses on breast, glioblastoma, and colorectal cancers at the Windsor Cancer Centre. Baseline referral and enrollment rates are established through observational chart reviews, while CTNs use updated Master Lists and the “Look Up Trials” app during MCCs to identify trial options. Surveys and structured interviews with MCC participants provide qualitative feedback on barriers and facilitators. Data are analyzed using descriptive statistics for quantitative measures and thematic analysis for qualitative responses. Although research ethics delays have postponed final results, anticipated outcomes from prior studies include a 25% referral rate and an 8% accrual rate among 168 patients and 60 physicians. Secondary outcomes target iterative process improvements and evaluate the app’s effectiveness in streamlining trial matching. Preliminary feedback suggests potential for enhanced physician satisfaction and optimized workflows.
Integrating CTNs into MCCs shows promise in improving clinical trial referrals and accruals while reducing physician burden. Future research should explore scalability across additional cancer types and healthcare systems to further enhance clinical trial engagement and oncology care delivery.

ABSTRACT P75 - A

DEVELOPING A ROBUST DISEASE SURVEILLANCE PLATFORM TO DETECT EMERGING VIRUSES IN THE WINDSOR-ESSEX REGION

Cassidy Kost[1], Jackie Fong[2], Marissa Rakus[1], Jewels Adair[1], Brayden LaBute[3], Maria Badalova[3], Farinaz Ziaee[2], Sarvnaz Sadeghi[4], Farzaneh Jouyandeh[4], Ana Maria Podadera Gonazlez[2], Yufeng Tong[2], Pooya Moradian Zadeh[4], Lisa Porter[3], Ken Ng[2], Mike McKay[5], Kendall Soucie[1]

[1]Department of Psychology, University of Windsor

[2]Department of Chemistry and Biochemistry, University of Windsor

[3]Department of Biomedical Sciences, University of Windsor

[4]School of Computer Science, University of Windsor

[5]Great Lakes Institute for Environmental Research

Additional Research Focus: Biomedical Research; Clinical Research; Social, Cultural, Environmental and/or Population Health Research

Challenges that emerged in the Windsor-Essex region during the COVID-19 pandemic were inequities in surveillance, including (a) the deployment of rapid screening and detection of COVID-19 and its variants, and (b) open access to evidence-based and user-friendly educational resources to engage the public. To meet these challenges, our research team designed and deployed a robust, and integrative surveillance platform, which included wastewater surveillance and individual-level saliva-screening to prevent outbreaks on our university campus. Our platform was co-designed with perspectives from our campus community and modified based on participant-led satisfaction and program evaluation data. Our goal is to adapt our surveillance detection platform to the needs of vulnerable communities in our region that are most susceptible to viral outbreaks, including cross-border healthcare workers (CBHWs) through our various community partnerships. First, we conducted two uptake surveys to capture local CBHWs interest in screening and prevention (Summer, 2023, & Fall, 2024 Ns=74 and 44 respectively). Across both survey administrations, approximately 61% were willing to participate in saliva testing to monitor the spread future viruses; however, concern regarding future public health emergencies did decline over time. Motivations for continued testing were having acute symptoms, protecting family, friends, and co-workers, and ease of use, accessibility and flexibility of the testing site. Participants also preferred timely and secure communication of results through email along with local community trends via a dashboard. This integrative data will continue to inform the deployment and evaluation of a sample dropbox site located at UWindsor for the broader community.

ABSTRACT P76 - B

DEFINING THE BASELINE: NORMATIVE DATA FOR THE V-8 NEUROPSYCHOLOGICAL ASSESSMENT

Deborah A. Laze[1], Laszlo Erdodi[1], Christopher Abeare[1]

[1]Department of Psychology, University of Windsor

Additional Research Focus: Clinical Research

Concussions are by far the most common type of traumatic brain injuries (TBIs) and are especially prevalent in athlete populations. Currently, there is a need to optimize and accelerate sports-related concussion testing without significantly sacrificing accuracy. Therefore, we propose the use of the 8-Variable Psychiatric Screener (V-8), an 8-item symptom-based questionnaire that employs the visual analog scale and takes under a minute to administer: the symptoms assessed include energy, depression, anxiety, fatigue, pain, happiness, stress, and motivation. To generate clinically relevant normative data for the V-8, descriptive statistics (i.e. means, standards deviations and quartiles) will be calculated for all individual item scores for times 1 and 2, the average time and the change score and stratified by sex, number of past concussions and pre-existing health conditions (i.e. anxiety, ADHD and/or learning disorders). Based on the literature, we hypothesize that higher baseline symptom severity scores for depression, anxiety, fatigue and pain will be associated with being female, the presence of previous concussions and the presence of pre-existing conditions. Additionally, we hypothesize that being female and having a history of previous concussions will both be negatively associated with the baseline symptom severity score for energy and that a history of previous concussions and pre-existing conditions will be positively associated with the baseline symptom severity score for stress. The findings of this study may inform new concussion assessment protocols as the implementation of the V-8 may improve concussion patients' prognosis by quickening the diagnostic process and connecting them with suitable, individualized treatments sooner.

ABSTRACT P77 - A

ACHIEVING PATIENT CARE EXCELLENCE WITH EMOTIONAL INTELLIGENCE

Bryce Leontowicz[1]

[1]Erie Shores HealthCare

The idea of Emotional Intelligence (EI) was first introduced in the 90s, defining it as "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and action." Studies revealed that patient satisfaction is affected by the patient–clinician relationship, and the clinician's happiness positively impacts patient satisfaction with care. Interestingly, the North American healthcare system delivery has not explored the idea extensively. To foster patient care excellence in the Windsor-Essex region, we would like to evaluate the impact of EI on patient–clinician relationships. We will conduct a mixed-method study where the quantitative component is a case study with clinicians (population) using EI consultation (intervention) to achieve patient satisfaction (outcome). The intervention will be provided for six months. We will use a Likert scale to evaluate patient satisfaction before and after the intervention and interpret data with a t-test. The qualitative component will explore clinicians' perceptions of patient care after receiving the EI consultation grounded in interpretive description theory. The study will contribute to knowledge generation on EI and its possible impact on patient–clinician relationships. The results from the study will also aid Erie Shores Health Care in achieving patient care excellence.

ABSTRACT P78 - B

PLANNING AND DEVELOPING A YOUTH ACT TEAM FOR YOUNGER CHILDREN IN ONTARIO, CANADA

DJ MacNeil[1], Leslee Ward[2,3], **Jennifer Voth[2]**, Kyle Williamson[1], Kara Hayes[1], Rame Marie[1], Heidi Cox[1], Kelly Massender[1]

[1]Regional Children's Centre, Hôtel-Dieu Grace Healthcare

[2]Research and Evaluation Services, Hôtel-Dieu Grace Healthcare

[3]Department of Kinesiology, University of Windsor

Complex mental health needs of children, youth, and their families are on the rise in Ontario. More specifically, in Windsor, Ontario, approximately 25% of children and youth eligible for services have complex mental health needs. The highest intensity service available for this cohort in Windsor is Intensive Treatment Services (ITS). ITS treatment is dedicated to reducing the severity of mental health through counselling and therapy. However, ITS, for children aged six to 12 years, has been experiencing a high demand and growing wait-list. Assertive Community Treatment (ACT) is a program effective in youth models in European countries to treat growing complex mental health needs. Our children's mental health centre is the first in Ontario to adapt the ACT model for younger children and their families in an effort to support complex mental health challenges while reducing the demand for expensive, institutionally-based care. This multidisciplinary team is responsible for providing individual and family therapy, treatment plans, evaluations, connecting with additional community supports and team huddles. A robust process and outcome evaluation is being conducted to understand, document, and evaluate the implementation and impact of the program. To date, the IOT program has supported 55 families in which the majority of the children identify as male (76%) with an average age of 9 years old. Over half of the families (52%) require high level support with the top three presenting concerns as behavioural issues, lack of emotional regulation, and aggression. Lessons learned and next steps will be discussed.

ABSTRACT P79 - A

COMPARING EMERGENCY DEPARTMENT NEEDS AMONGST PEOPLE WHO ARE HOUSED AND PEOPLE EXPERIENCING HOMELESSNESS (PEH) IN WINDSOR, ONTARIO

Kim Nguyen[1], Temitope Akintola[1], Jennifer Voth[2], Adrian Guta[3], Grace Park[4], Jennifer Bondy[5,6]
[1]Schulich School of Medicine and Dentistry
[2]Hôtel-Dieu Grace Healthcare
[3]School of Social Work, University of Windsor
[4]Windsor Regional Hospital
[5]Family Medicine, Schulich School of Medicine and Dentistry
[6]Faculty of Biomedical Sciences, University of Windsor

Additional Research Focus: Clinical Research

People experiencing homelessness (PEH) disproportionately rely on emergency departments (EDs) due to barriers in access. Windsor Shelter Health (WSH) aims to improve healthcare access for PEH by offering medical services tailored to their unique needs. This study examines ED utilization trends among housed and unhoused individuals in Windsor, ON to understand the clinical reasons PEH visit EDs and to identify alternative care pathways. A retrospective cohort study was conducted using patient charts from Windsor Regional Hospital's ED. Descriptive statistics and bivariate analyses were employed to identify differences between housed and unhoused groups. Factors explored included acuity, presenting complaints, final diagnoses, and the appropriateness of presentation for primary care. ED utilization patterns significantly differed between housed and unhoused individuals, with PEH showing higher ED utilization and more frequent visits. PEH were more likely to present with lower acuity issues and common presenting complaints included substance misuse/intoxication, "bizarre behaviors", and wound checks. The most frequent diagnoses were mental and behavioral disorders, fentanyl poisoning, and lower limb pain. Additionally, PEH had a higher prevalence of mental health and skin-related presentations that could be managed effectively in primary care settings. The study identified potential intervention points for WSH to provide preventive care for the unhoused, focusing on conditions more appropriate for community-based care. There is a particular need for upstream approaches that offer psychiatric support and primary care services. The results also provide evidence for advocacy efforts for shelter health initiatives, emphasizing the importance of accessible primary healthcare for unhoused individuals.

ABSTRACT P80 - B

IMPLEMENTING A CLINICAL TRIAL NAVIGATOR PROGRAM FOR CANCER PATIENTS: BARRIERS & FACILITATORS IDENTIFIED THROUGH STAKEHOLDER PERSPECTIVES

Milica Paunic[1], Dana Inglis[2], **Renee Nassar[3]**, Mahmoud Hossami[3], Rhonda Abdel-Nabi[4], Depen Sharma[5], Rija Fatima[3], Emmanuel Akingbade[3], Salah Alhajsaleh[6], Anthony Luginaah[4], Swati Kalia[3], Michael Touma[3], Govana Sadik[6], Olla Hilal[7], Ria Patel[6], Pratham Gupta[7], Roaa Hirmiz[3], Laurice Arayan[3], Christina Trieu[6], Megan Delisle[2,8], Caroline Hamm[3,4,6]
[1]Temerty Faculty of Medicine, University of Toronto
[2]University of Manitoba
[3]Windsor Regional Hospital
[4]Schulich School of Medicine and Dentistry
[5]Faculty of Medicine, University of Ottawa
[6]University of Windsor
[7]Department of Medical Sciences, Western University
[8]Paul Albrechtsen CancerCare Manitoba Research Institute

Patient navigation has been highlighted as a solution to improve clinical trial access. The Clinical Trial Navigator (CTN) Program is a Canadian cancer clinical trial navigation program that can be accessed online by patients or healthcare professionals (HCP). Trained individuals search and provide patients and/or oncologists a report of potentially eligible trials for free. Over 550 patients have used the Program since its launch in 2019, but systemic implementation within cancer centers has yet to occur. We aimed to identify facilitators and barriers to implementing the CTN Program in Canadian cancer centers through stakeholder insights. We conducted 33 virtual, semi-structured interviews (45 min each) with healthcare/clinical research professionals (n=9) and patient-focused stakeholders (n=24). Interviews were guided by the Consolidated Framework for Implementation Research (CFIR) and analyzed using thematic analysis with deductive and inductive coding. Participants emphasized patient navigation as a key solution to identifying and accessing clinical trials, reducing oncologist workload. Key barriers included financial and logistical stress for patients enrolling in trials at different institutions and challenges in obtaining required medical information for effective searches. When patients initiated searches, they often needed additional support discussing results with their oncologist. Findings highlight critical considerations for implementing the CTN Program in Canadian cancer centers. Planned program adaptations aim to address these barriers, with future evaluation on uptake and effectiveness.

ABSTRACT P81 - A

EXAMINING FACTORS AFFECTING CLINICAL TRIAL ENROLMENT IN THE CLINICAL TRIALS NAVIGATOR PROGRAM

Govana Sadik[1], Michael Touma[2], Renee Nassar[2], Milica Paunic[3], Mahmoud Hossami[2], Olla Hilal[4], Roaa Hirmiz[1], Depen Sharma[5], Anthony Luginaah[6], Pratham Gupta[4], Swati Kalia[2], Christina Trieu[1], Salah Alhajsaleh[1], Anaam Jaet[1], Ria Patel[1], Gregory Charalambos Anagnostopoulos[1], Megan Delisle[7,8], Laurice Togonon Arayan[2], Caroline Hamm[1,2,10]

[1]Department of Biological Sciences, University of Windsor
[2]Windsor Regional Hospital
[3]Temerty Faculty of Medicine, University of Toronto
[4]Department of Medical Sciences, Western University
[5]Faculty of Medicine, University of Ottawa
[6]Faculty of Medicine, Western University
[7]Department of Surgery, University of Manitoba
[8]Paul Albrechtsen CancerCare Manitoba Research Institute
[10]Department of Oncology, Schulich School of Medicine and Dentistry

Oncology clinical trial accrual rates are estimated to be around 5%. The Clinical Trials Navigator (CTN) Program helps oncology patients identify clinical trials. We analyzed program and patient characteristics to determine features of successful enrolment. A retrospective study was conducted, analyzing 411 CTN records from March 2019 to April 2024. 73 were referred to a clinical trial, with 14 successfully enrolled. Demographic and program characteristics were analyzed for the enrolled and non-enrolled. The reason for non-enrolment was recorded. For the enrolled, trial characteristics were recorded. All comparative values were analyzed using a Welch's T-test. The average age for the enrolled group was 61 years, and non-enrolled 57 years (p=0.154). The mean distance from home center to clinical trial site was 332.9 kilometers (km) for enrolled and 407.6 km for non-enrolled (p= 0.152). The CTN processing time for the enrolled group had a mean time of 4.1 days and the non-enrolled had a mean time of 12.5 days (p= 0.002). The mean time of initial CTN application to death for the enrolled group was 17.4 months and the non-enrolled was 7.9 months. (p= 0.0051). The reason for non-enrolment was found to be either or centre specific (60.1%) or patient specific (39.9%). Patient enrolment by trial phase: three phase I (21%), two phase I/II (14%), three phase II (21%), one phase II/III (7%), one phase III (7%), and four NGS (29%). These findings highlight some of the unique barriers and opportunities for patients in patient-centered clinical trials enrolment.

ABSTRACT P82 - B

EMERGENCY DEPARTMENT NURSES' PERSPECTIVES ON COMPLETING SEPSIS CARE

Georgia Scholl[1], Dr. Gina Pittman[1]

[1]Faculty of Nursing, University of Windsor

Sepsis is a life-threatening emergency and a common presentation in the emergency department (ED) and is often where the first medical contact for patients occurs. The ED staff play an essential role in the early phases of identifying and managing patients with sepsis. Within the ED, nurses are uniquely positioned to identify sepsis at its earliest possible time because of the time spent at the bedside monitoring patients. There has been a recent progression in the best practice of sepsis care and new interventions that can be implemented to aid healthcare workers in caring for patients with sepsis. However, there is a lack of research that focuses on investigating the barriers that nurses face when using these aids when caring for patients with sepsis. This study investigates the perceived barriers and facilitators that influence ED nurses when completing sepsis care. Sample and setting: Registered nurses (n = 102) with at least one year of ED experience working in five ED campuses across a health system in Michigan. Comparative descriptive cross-sectional research methodology using a quantitative survey for data collection. The survey includes questions designed to measure the extent of identified barriers and facilitators experienced by nurses in sepsis care implementation. The survey was accessed through an online link utilizing the Qualtrics® platform. Data collection was completed in October 2024. Data analysis is currently underway. The results and implications will be ready for presentation by the conference date.

ABSTRACT P83 - A

EVALUATING THE IMPORTANCE OF METAL IONS ON INHIBITOR SCREENING FOR THE SARS-COV-2 RNA REPLICATION COMPLEX

Sehar Sidhu[1], Ana Podadera[1], Lucas Campo[1], Salah Alhajsaleh[1], Kenneth K.S. Ng[1]

[1]Faculty of Chemistry and Biochemistry, University of Windsor

Additional Research Focus: Biomedical Research; Clinical Research

The dramatic impact of the COVID-19 pandemic on public health highlights the importance of developing a better understanding of the basic mechanisms of viral replication and the discovery of more effective antiviral therapeutics for coronaviruses and other emerging viral pathogens. Because the virally encoded RNA-dependent RNA polymerase plays a critical function in replicating the genome of all RNA viruses, it is one of the most attractive targets for developing direct-acting antiviral therapeutics. Divalent cations like magnesium ions play key roles as essential cofactors for the nucleotidyl-transfer reaction in DNA and RNA polymerases. Using a previously developed system to produce enzymatically active core replication complexes for SARS-CoV-2 and to measure RNA synthesis activities using in vitro primer extension assays, we have evaluated the effects of magnesium ions on RNA synthesis in the presence and absence of inhibitors. Our preliminary results reveal interesting patterns of sensitivity to magnesium ion concentration that vary depending on the presence and absence of different types of inhibitors. These preliminary findings suggest future directions for research into understanding the potential roles of magnesium and other metal ions in the structure and function of viral polymerases, as well as for understanding the effects of metal ions on the mechanisms of small-molecule inhibitors.

ABSTRACT P84 - B

EVALUATION AND IMPACT OF AN ORAL HEALTH EDUCATION PROGRAM IN AN IN-PATIENT SETTING

Jaclyn Sorge[1], **Connor Ranieri**[1], Luke DiPaolo[2], Margo Reilly[3], Jennifer Ridsdale[3], Rio Anzolin[2], Nesya Walls[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Mental and Allied Health, Windsor Regional Hospital

[3]Windsor Family Health Team

Oral health (OH) is a critical determinant of overall health and quality of life, yet it is disproportionately poor among individuals with mental health (MH) disorders. Contributing factors include adverse effects of psychotropic medications, substance use, systemic barriers to accessing dental care, and implications of hospitalization. While the integration of OH care within MH settings is widely acknowledged, substantial gaps persist in delivering tailored, evidence-based, and patient-centered interventions for inpatients. This study, delivered by the Windsor Family Health Team, aims to evaluate the impact and effectiveness of a MH in-patient OH education program at Windsor Regional Hospital in improving OH outcomes, addressing care disparities, and needs of a diverse patient population. The program is anticipated to enhance patients' dental literacy, foster optimal oral hygiene practices and to place greater value on OH. Using a longitudinal, quasi-experimental design, this study follows a cohort of MH inpatients over nine months. Data will be collected at baseline, seven, 30-, and 90-days post OH education appointment using the standardized OHRQoL tool (OHIP-14) and questionnaire assessments. Key measures include changes in OH knowledge, behaviours, quality of life, and patient satisfaction. Sociodemographic factors and medical history will be analyzed to determine correlations with OH outcomes. Findings will address key gaps in colocation and referral pathways in the integration of OH and MH care, offering strategies that enhance patient outcomes and quality of life. Findings aim to advance interdisciplinary care models, reduce OH disparities, and support development of sustainable OH programs tailored to needs of MH patients.

ABSTRACT P85 - A

EXPLORING THE PERCEIVED COMPETENCE AND SELF-EFFICACY OF ONTARIO'S HOME CARE NURSES IN PALLIATIVE CARE DELIVERY

Joanne Ta[1], Joanne Tay[1], Kathryn Pfaff[1]

[1]Department of Nursing, University of Windsor

With the aging population and rise in comorbidities, the demand for palliative care (PC) continues to grow globally. PC adopts a holistic approach to supporting individuals with life-limiting illnesses by focusing on symptom management, maximizing comfort, and prioritizing quality of life. Integrating PC within the community enables patients to receive care in the comfort of their homes, promotes family involvement, and offers cost-effective solutions. Despite its benefits, home care providers report challenges in their ability to provide competent and effective PC which may impact the overall quality of care delivered to patients and their families. Limited research has explored how nurses perceive their own competence and self-efficacy in PC delivery, particularly in home care settings. This cross-sectional study explored Ontario home care nurses' perceived level of competence and self-efficacy in PC delivery. An online survey was created using two validated scales and additional questions based on the literature. Study information was disseminated by home care and professional nursing organizations in December 2024. Inclusion criteria included 1) RNs or RPNs, 2) currently working as a home care nurse in Ontario, 3) had at least six months of nursing experience, and 4) had provided PC in patients' homes. This study will contribute to the expanding body of research on palliative home care and may guide the direction of future research. Highlighting nurses' educational needs underscores the importance of targeted training to enhance confidence, improve quality of care, and support the retention of nurses in the community.

ABSTRACT P86 - B

SHAPING THE FUTURE OF YOUTH CANCER CARE IN WINDSOR-ESSEX REGION: INSIGHTS AND RECOMMENDATIONS BASED ON SYSTEM STRENGTHS AND CHALLENGES

Joanne Tay[1], Melissa Miljanovski[2], Brianna Grandi[3], Mohammad Jarrar[4], Telford Yeung[5], Jessica C. Kichler[2]

[1]Faculty of Nursing, University of Windsor

[2]Department of Psychology, University of Windsor

[3]Department of Biomedical Sciences, University of Windsor

[4]Department of Pediatrics, Windsor Regional Hospital

[5]Department of Pediatrics, University of Calgary

Despite the advancements in oncology care, systemic barriers to care persist, affecting the experiences and outcomes of youths with cancer, their caregivers, and healthcare providers. Youth with cancer and their caregivers often report feeling underserved by healthcare systems, particularly in psychosocial support and aftercare. Healthcare providers experience parallel challenges, including limited resources and support, which hinder their ability to provide high-quality oncology care. The availability of cancer care services and experiences of youth with cancer in smaller communities remain underexplored, leaving potential gaps in support systems and healthcare accessibility. This study examined the strengths and challenges of the current oncology care practices from the viewpoints of youth with cancer, caregivers, and healthcare providers living and practicing in the Windsor-Essex region as well as explored their recommendations for development of effective care. Semi-structured interviews were conducted with youths with cancer (n=2), caregivers (n=6), and local healthcare providers (n=6). Interviews were transcribed and analyzed using a qualitative thematic analysis approach. The key strengths and challenges identified were: 1) the Value of holistic support services, 2) the Availability of resources, and 3) the Quality and support of youth oncology care and services. Recommendations generated from participants were: 1) Enhancing equitable supportive care for youth in oncology and 2) Strengthening cancer care capacity and collaboration. The findings highlight the need to enhance supportive services and strengthen infrastructure for sustainable, high-quality youth cancer care. Future research should focus on developing care models that integrate holistic, age-appropriate supports alongside medical treatment.

ABSTRACT P87 - A

PERSPECTIVES OF YOUTHS, CAREGIVERS, AND HEALTHCARE PROVIDERS: EXPLORING VARIOUS CANCER CARE EXPERIENCES IN WINDSOR-ESSEX REGION

Joanne Tay[1], Melissa Miljanovski[2], Brianna Grandi[3], Mohammad Jarrar[4], Telford Yeung[5], Jessica C. Kichler[2]

[1]Faculty of Nursing, University of Windsor
[2]Department of Psychology, University of Windsor
[3]Department of Biomedical Sciences, University of Windsor
[4]Department of Pediatrics, Windsor Regional Hospital
[5]Department of Pediatrics, University of Calgary

Living with cancer presents significant obstacles during a time when youth are starting to navigate relationships, develop independence, and shape their identities. Beyond these challenges, accessing age-appropriate care is difficult, especially in regions with limited specialized youth cancer programs and services. Research also indicates that youth involvement in cancer care decision-making is often limited, leading to feelings of disempowerment. Additionally, caregiver and provider perspectives on cancer care remain underexplored. Addressing these gaps is crucial to improving support for youth, caregivers, and healthcare providers. This study explored the lived experiences of youths and their caregivers as they received cancer care in the Windsor-Essex Region while also incorporating the perspectives of local healthcare providers caring for youths with cancer. Semi-structured interviews were conducted with youths with cancer (n=2), caregivers (n=6), and local healthcare providers (n=6). Interviews were transcribed and analyzed using a qualitative thematic analysis approach. Six overarching themes were generated from this study, including: (1) Impact of treatment on physical wellbeing of youths; (2) Impact of treatment on psychosocial wellbeing of youths and caregivers; (3) Quality of interrelationships amongst youths, caregivers, and providers; (4) Caregivers' realities in supporting youths through treatment; (5) Caregivers' perspectives on cancer care while supporting youths during treatment; and (6) Importance of providing youth-focused care and beyond. These findings can inform the development of youth-centric models of cancer care and promote age-appropriate resources to support youths with cancer, their caregivers and healthcare providers.

ABSTRACT P88 - B

FILLING THE GAP IN PEDIATRIC COMMUNITY CARE THROUGH WEECARE

Megan Walker[1]

[1]WeeCare Pediatric Home Health Care

Children with complex medical needs require specialized pediatric care, yet existing home and community care models often lack expertise and consistency. In Ontario, approximately 15,771 children have medical complexity, with 11.8% relying on life-sustaining technology. Despite representing a small percentage of the population, these children account for one-third of pediatric healthcare spending, yet over 70% of home care needs remain unmet, leading to unnecessary hospitalizations. WeeCare Pediatric Home Health Care was founded to address these gaps by providing specialized, family-centered pediatric care across home, school, and community settings. WeeCare bridges pediatric home care gaps through multidisciplinary teams trained to support children with medical complexity. Caregivers receive specialized education in ventilator care, enteral feeding, and seizure management. Personalized intake assessments ensure continuity of care, while the AlayaCare platform facilitates real-time updates and data-driven decisions. Partnerships with SickKids, McMaster Children's Hospital, and community organizations enable seamless hospital-to-home transitions and integrated developmental support. WeeCare has significantly improved outcomes: 97% of families report increased confidence in managing care, 78% note fewer hospitalizations, and 92% of children can now participate in school or community activities. A parent shared, "WeeCare has given us the stability we never thought possible." Expanding this model could reduce hospital costs while improving quality of life for medically complex children. By integrating WeeCare's specialized, technology-supported, and advocacy-driven approach into healthcare systems, Ontario can enhance access to home and community care while alleviating strain on hospitals.

ABSTRACT P89 - A

EXPLORING THE DEVELOPMENT OF A HOME NASOGASTRIC FEEDING PROGRAM TO FACILITATE EARLY DISCHARGE OF INFANTS FROM THE NICU

Olivia Youssef[1], Shauna Halliday[1], Grace Butler[1], Kividi Samaraweera[1], Rufina Ning[2], Laura Simons[2], Andrea Frezell[2], Jessica Kichler[2], Judy Seesahai[2], Telford Yeung[2]

[1]Department of Biomedical Sciences, University of Windsor

[2]Department of Pediatrics, Windsor Regional Hospital

Additional Research Focus: Clinical Research

Discharge of infants from the neonatal intensive care unit (NICU) depends on the growth and ability of the neonate to feed orally. However, achieving these goals may cause significant stress on families, prolong discharge timing, and strain hospital resources. NICU's in other countries have shown success in early discharging before full oral feeding using a nasogastric feeding tube. Home gavage feeding, however, is not common in Canada due to multiple reasons including a lack of resources. Windsor Regional Hospital's NICU has the capacity to implement such a program offering out-patient follow-ups to closely monitor feeding and growth, as well out-patient dietician expertise for nutritional support. To ensure the safety and efficacy before implementing the program, a retrospective chart review will be conducted to determine the emergency room visit and readmission rates of neonates discharged with an NG-tube. Additionally, a prospective cohort will be surveyed to assess the impact of the program on family stress and their quality of life. This study will determine the feasibility of this program as well as short and long term impacts of the home gavage feeding on neonates and their families. Doing so will facilitate local implementation of the study, decreasing hospital stays, resource consumption, and family strain.

Research Focus: Social, Cultural, Environmental and/or Population Health Research

ABSTRACT P90 - B

REAL-WORLD EFFECTIVENESS OF SEMAGLUTIDE FOR WEIGHT LOSS OUTCOMES IN A COMMUNITY CLINIC

Aran Singh Bains[1], Arani Sivakumar[1], Rishi Naidu[2], Gowri Jayaram[3], Pallavi Rohela[4], Alexander Klas[1], Caroline Hamm[1,2,3], Padmaja Naidu[1,2,3]

[1]Schulich School of Medicine and Dentistry

[2]University of Windsor

[3]Windsor Regional Hospital

[4]WE-SPARK Health Institute

Additional Research Focus: Clinical Research

The use of Semaglutide, commonly known as Ozempic, has faced public scrutiny in recent years with many viewing it as an expedient strategy for weight loss compared to lifestyle modifications (i.e., diet, exercise). However, research has shown its effectiveness in the treatment of obesity as it slows down gastric emptying, signals the brain to feel satiated, thereby reducing appetite and increasing weight loss. Most studies have investigated the 2.4mg formulation of Semaglutide for weight loss. However, other formulations (e.g., 0.25 and 1.0mg) have not been thoroughly studied within this context, yet may have better implications for patients (e.g., cost, accessibility). This study aims to investigate the real-world effectiveness of Semaglutide 1.0mg for weight loss in a community clinic primarily focused on obesity care. It is hypothesized that Semaglutide 1.0mg will facilitate clinically meaningful weight loss in patients with obesity at specified intervals of 3-, 6-, 12-, and 24-months. This study will employ a retrospective chart review methodology. Participants were included if they were prescribed Semaglutide and adhered to the maximally tolerated dose of up to 1.0mg for at least 12 weeks between January 2021 and March 2023. Clinically relevant variables will be extracted. Changes in BMI and percent change in weight will be analyzed at the specified intervals after initiating Semaglutide. These findings may support using Semaglutide 1.0mg as a cost-effective, accessible alternative for obesity management. This study could inform clinical guidelines and policies, address accessibility barriers, and promote equitable obesity care.

ABSTRACT P91 - A

IMPLEMENTING AND ENHANCING THE PEER MENTOR NETWORK (PMN) IN UNDERGRADUATE RESEARCH EDUCATION

Adam Bakos[1,2], Noah Cleary[1,2], Dorota Lubanska[1], Lisa A. Porter[1,2,3,4]
[1]Department of Biomedical Sciences, University of Windsor
[2]WE-SPARK Health Institute
[3]St. Joseph's Health Care London
[4]Lawson Research Institute

Additional Research Focus: Biomedical Research

During the SARS-CoV-2 pandemic, the reliance on face-to-face training in research education was identified as a significant weakness; this resulted in a gap in student's understanding of lab procedure and methodology. To combat this setback, Porter Lab has developed an e-learning peer mentor network for undergraduate students to share knowledge among different research proficiency levels. This platform aims to enhance students' understanding of scientific research (both theoretical and practical) while also fostering improved feedback and collaborative abilities. This presentation offers an overview of the mentoring model and its effectiveness based on direct feedback from the students involved. Results indicated that peer-led delivery of lab-oriented concepts, including experiments and scientific presentations, not only reduced the need for training and staff assistance, but also accelerated students' independence and heightened their interest in research. The peer mentor network model has proven to be a customizable and effective tool for supplementing undergraduate research training, with benefits extending beyond the pandemic context.

ABSTRACT P92 - B

WASTEWATER-BASED SURVEILLANCE OF RESPIRATORY SYNCYTIAL VIRUS REVEALS A TEMPORAL DISCONNECT IN DISEASE TRAJECTORY ACROSS AN ACTIVE INTERNATIONAL LAND BORDER

Mackenzie Beach[1], Ryland Corchis-Scott[1], Qiudi Geng[1], Ana M. Podadera Gonzalez[2], Owen Corchis-Scott[1], Ethan Harrop[1], John Norton[3], Andrea Busch[3], Russell A. Faust[4,5], Bridget Irwin[6,7], Mehdi Aloosh[6,8], Kenneth K.S. Ng[2], and Robert M. McKay[1,9,10]
[1]Great Lakes Institute for Environmental Research, University of Windsor
[2]Department of Chemistry and Biochemistry, University of Windsor
[3]Great Lakes Water Authority, Detroit
[4]Oakland County Health Division, Oakland County
[5]Public Health Informatics, University of Illinois
[6]Windsor-Essex County Health Unit, Windsor, ON N9A 4J8 Canada
[7]BC Centre for Disease Control
[8]Department of Health Research Methods, Evidence, and Impact, McMaster University, Hamilton, ON L8S 4L8 Canada
[9]Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403 USA
[10]Great Lakes Center for Fresh Waters and Human Health, University of Michigan, Ann Arbor, MI 48109 USA

Conventional metrics for tracking infectious diseases, including case and outbreak data and syndromic surveillance can be resource-intensive, misleading, and comparatively slow with prolonged data collection, analysis and authentication. This study examined the 2022-2023 Respiratory Syncytial Virus (RSV) season in a contiguous metropolitan area connected by an active international land border, affording an opportunity for comparison of the respiratory virus season spanning two independent public health jurisdictions. Time-lagged cross correlation and qualitative examination of the wastewater signals showed that the peak of the Detroit (MI, USA) RSV season predated the peak in Windsor (ON, Canada) by approximately five weeks. A strong positive relationship was observed between RSV N-gene concentrations in wastewater and hospitalization rates in Windsor-Essex (Kendall's $\tau = 0.539$, $p \leq 0.001$, Spearman's $\rho = 0.713$, $p \leq 0.001$) as well as Detroit (Kendall's $\tau = 0.739$, $p \leq 0.001$, Spearman's $\rho = 0.888$, $p \leq 0.001$). This study demonstrated that wastewater surveillance can reveal regional differences in infection dynamics between communities and can provide an independent measure of the prevalence of RSV, an underreported disease. These findings support the use of wastewater surveillance as a cost-effective tool in monitoring of RSV to enhance existing surveillance systems and to better inform public health disease mitigation strategies.

ABSTRACT P93 - A

UNDERSTANDING THE IMPACT OF THE COVID-19 PANDEMIC ON CHILD DEVELOPMENT COMPARED TO ESTABLISHED AGE-MATCHED STANDARDS

Omayma Al Jabiry[1], **Camile Cardinal[1]**, Caroline Hamm[1,4], Rong Luo[2], Sira Jaffri[1,3], Mahtab Naeini Malakian[4], Megan Noble[4], Tarquin Opperman[4], Ryan Palazzolo[1,5], RajanPaul Sandhu[1], Hema Gangam[4]

[1]Faculty of Biomedical Sciences, University of Windsor

[2]Leddy Library, University of Windsor

[3]St. George School of Medicine, St. George's University

[4]Schulich School of Medicine and Dentistry

[5]School of Medicine, Wayne State University

Additional Research Focus: Clinical Research

COVID-19 caused a significant reduction in social interactions, raising concerns about its impact on childhood development, particularly among preschool aged children (3 to 5 years). Prior research suggests that inadequate social exposure may hinder children in achieving developmental milestones. The primary objective of this study is to identify which areas of childhood development were most significantly affected by the social isolation caused by the COVID-19 pandemic. Additionally, the study aims to examine relationships between developmental scores and secondary factors, such as gestational age and number of siblings. This study assessed developmental milestones in children at 15, 18, and 24 months through a cohort analysis conducted across multi-site pediatric practices in the Windsor region. Retrospective chart reviews were performed for children born between January 9, 2019, and December 12, 2023. Data on cognitive, social-emotional, speech and language, fine motor, and gross motor skills were collected at 6, 9, 12, and 15 months. Developmental scores were compared to established benchmarks in existing literature. This study is currently undergoing data review, and analysis. Preliminary results indicate that the developmental milestones of children at 15, 18, and 24 months were not significantly affected by reduced social interactions. This may be attributed to the catch-up phenomenon, highlighting the adaptability and resilience of children in the face of adversity. By investigating potential developmental delays and understanding these differences, tailored educational and healthcare interventions can be designed to address potential developmental challenges and promote resilience as children adapt to a post-pandemic world.

ABSTRACT P94 - B

APPLICATION OF WASTEWATER AND ENVIRONMENTAL SURVEILLANCE FOR PATHOGENIC AGENTS DURING THE 2024 NFL DRAFT IN DETROIT, MICHIGAN

Ryland Corchis-Scott[1], Ethan Harrop[1], Qiudi Geng[1], Mackenzie Beach[1], John Norton[2], Andrea Busch[2], Russell A. Faust[3], Mehdi Aloosh[4], R. Michael McKay[1]

[1]Great Lakes Institute for Environmental Research, University of Windsor

[2]Great Lakes Water Authority

[3]Oakland County Health Division

[4]Windsor-Essex County Health Unit

Wastewater surveillance (WS) has emerged as a powerful tool for monitoring public health at the population level. Applications of WS continue to evolve with some recent efforts as aligned with monitoring the transmission of pathogens during mass gatherings. Mass gatherings are of concern to public health as they are associated with crowds, increased social interaction, and travel, all of which can facilitate the spread of infectious disease. Here we applied WS for pathogen surveillance during the 2024 National Football League (NFL) Draft in Detroit, Michigan, a large-scale sporting event that attracted an estimated 775,000 individuals to the Detroit riverfront from across the United States and beyond. Wastewater and environmental samples were assayed using RT-qPCR and nanofluidic qPCR to measure the concentration of a diversity of clinically relevant pathogens and antimicrobial resistance genes (ARGs). The data produced allowed for an overview of pathogen prevalence prior to, during and after a large-scale gathering, showing how WS may be implemented to warn of emerging health risk in near real time. This research shows WS has the potential to capture pathogen transmission dynamics during mass gatherings and provide public health authorities information needed to implement outbreak mitigation strategies in advance.

ABSTRACT P95 - A

BLACK MATERNAL MORTALITY AND SOCIAL MEDIA: USING INSTAGRAM TO EXAMINE REACTIONS TO AMERICAN TRACK ATHLETE TORI BOWIE'S DEATH

Paige Coyne[1,2,3], Maya Zreik[2], Tessa Kramer[2,4], Ann Pegoraro[5], Sara Santarossa[1,2,3]

[1]Department of Public Health Sciences, Henry Ford Health

[2]Henry Ford Health + Michigan State University Health Sciences

[3]College of Human Medicine, Michigan State University

[4]Department of Psychology, Grand Valley State University

[5]Gordon S. Lang School of Business and Economics, University of Guelph

Olympic track star Tori Bowie's death from labor complications sparked renewed conversation about the United States's maternal mortality rates, which are disproportionately higher for Black birthing people. Recent decades have seen social media become an invaluable platform for spreading health-related information and resources, particularly among marginalized populations. The aim of this study was to examine the types of messaging that emerged on Instagram following Bowie's death. Comments were exported from four Instagram posts regarding Bowie's death, posted by the official Instagram accounts of Allyson Felix and Tianna Madison (Bowie's teammates), ESPN with ESPNW, and People Magazine. The most frequently mentioned words in each dataset were identified and summated through computer coding conducted in NVivo. Hand coding was used to identify prominent frames under which comments could be coded. "Black," "thank," "women," and "sad" were the most frequently used words across the four datasets. Human coding identified Community, Responsibility, (In)equity, Advocacy, and Denial as prominent frames, with Community encompassing the majority of comments (<57%) in all datasets except ESPN with ESPNW. This same dataset had the highest frequency of Denial (36.26%) compared with the other datasets (>3.13%). Instagram commenters used Tori Bowie's death as a platform to express their grief, condolences to her teammates, and share their own experiences of pregnancy complications. The findings of the study highlight the areas in which maternal healthcare is lacking, particularly for marginalized populations, and emphasize the importance of patient voices in clinical care.

ABSTRACT P96 - B

TRAUMA-INFORMED CARE IN UNDERGRADUATE NURSING EDUCATION: AN INTEGRATIVE REVIEW

Rachel Elliott[1], Natalie Giannotti[1], Kathryn Pfaff[1], Edward Cruz[1]

[1]Faculty of Nursing, University of Windsor

Additional Research Focus: Health Service Research

Trauma-informed care (TIC) requires healthcare providers and organizations to provide care in a way that assumes everyone has a trauma history (Hopper et al., 2010). Recent studies indicate that both registered nurses and advanced practice nurses, while open to the concept of being trauma-informed, often lack the knowledge, tools, and confidence to address trauma in patient care effectively (Maybe et al., 2017). Despite awareness of a knowledge and practice gap, nursing has continued to trail other healthcare disciplines in integrating TIC into nursing education (Li et al., 2019). An integrative review examined current approaches and methods for integrating trauma-informed care (TIC) into undergraduate nursing education. Methods: An integrative review following Whittemore and Knafl (2005) procedures synthesized the literature related to TIC in undergraduate nursing education. The quality of the empirical studies was assessed using the Mixed Methods Appraisal Tool (MMAT), as outlined by Hong et al. (2018). Data analysis involved a four-step process based on Miles and Huberman's (1994) data analysis components. Five themes surfaced: (1) Isolated TIC Integration in Undergraduate Courses, (2) TIC for Safe Learning Environments, (3) Inconsistent TIC Definitions in Nursing Education, (4) Prerequisite Nurse Educator Training, and (5) Students Recognizing an Implementation Gap and Seeking Solutions. This review highlights TIC integration challenges in nursing education, emphasizing the need for ongoing research, training, and collaboration. These efforts are vital to equipping future nursing professionals with the skills to provide high-quality, trauma-informed care, benefiting students, patients, and healthcare delivery

ABSTRACT P97 - A

APPLICATIONS OF WASTEWATER-BASED SURVEILLANCE OF HOSPITAL EFFLUENT TO AID DISEASE TRACKING AND TRAJECTORY

Ethan Harrop[1], Ryland Corchis-Scott[1], Qiudi Geng(1), Mackenzie Beach[1], Owen Corchis-Scott[1], Isidora Sekaric[2], Ana Podadera[2], Kenneth K.S. Ng[2], R. Michael McKay[1]

[1]Great Lakes Institute for Environmental Research, University of Windsor

[2]Department of Chemistry and Biochemistry, University of Windsor

During the COVID-19 pandemic wastewater-based surveillance (WBS) grew in popularity due to its cost effective and rapid ability to track disease trajectory in real time providing warnings in advance of traditional clinical metrics. WBS is typically employed at wastewater treatment plants (WWTPs) to monitor disease prevalence of a whole community. However, when used upstream it can increase spatial granularity and prevent possible outbreaks at sites of interest such as airports, hospitals, or congregate living facilities. Here, we present the results of tracking three major respiratory viruses in the effluent of two urban hospitals from September 2023, to present. We show that WBS of hospital effluent can be used to track viruses effectively and accurately to complement clinical metrics in providing early surge warnings. WBS at hospitals allows for a multitude of other benefits. Since there is a known number of patients infected with the monitored diseases, hospitals can be used to estimate how fecal shedding rates translate to wastewater signals. Additionally, hospitals are more likely to treat patients presenting with symptoms diagnostic of infections and can be used to validate new assays or methods to be used elsewhere. Upstream WBS also provides a fresh source of nucleic acid for downstream applications. Amplicon sequences from hospitals have been shown to be higher quality and have longer reads than those from WWTP, likely related to longer transit time and sample degradation associated with the latter. Each component of WBS has practical applications to aid public health decision making and response to disease.

ABSTRACT P98 - B

MONITORING SPATIOTEMPORAL DIFFERENCES IN ANTIMICROBIAL RESISTANCE GENES USING WASTEWATER-BASED SURVEILLANCE

Ethan Harrop[1], Ryland Corchis-Scott[1], Qiudi Geng[1], Mackenzie Beach[1], Owen Corchis-Scott[1], R. Michael McKay[1]

[1]Great Lakes Institute for Environmental Research, University of Windsor

The widespread misuse of antibiotics has resulted in the development and global dissemination of antimicrobial resistance (AMR) amongst bacterial pathogens. This has caught the attention of governments worldwide, including Canada, who have released action plans to combat AMR. One major objective of these action plans is to understand the prevalence of AMR through surveillance. Wastewater-based surveillance (WBS) to detect viral pathogens gained popularity during the COVID-19 pandemic. Since then, WBS has been applied to other pathogens including bacteria hosting antimicrobial resistance genes (ARGs). However, few studies have used this approach for long term monitoring of AMR. Here, we used WBS to monitor five carbapenemase genes of critical concern at five municipalities over a one-year period. 24-hour composite samples were collected from wastewater treatment plants at each municipality and qPCR was used to quantify absolute abundance of ARGs. Each target exhibited seasonal differences at one or more of the municipalities, but seasonality for each target was not congruent across sites. Principal component analysis of ARGs alongside physiochemical and environmental factors revealed geographical and seasonal clustering. The work presented here provides a baseline for the abundance of ARGs, making strides towards the goals of the Pan-Canadian Action Plan on Antimicrobial Resistance. Additionally, we show that carbapenemase genes express differences in abundance based on location and season. These findings can be used to evaluate future changes in AMR abundance and efficacy of implemented AMR stewardship programs.

ABSTRACT P99 - A

AMR SURVEILLANCE AND DISCOVERY USING FUNCTIONAL METAGENOMICS IN ONTARIO WASTEWATER

Yemurayi Hungwe[1], Shiv Naik[1], Aranksha Thakor[1], Shirley Wong[1], Jenn Knapp[1], Samran Prasla[1], ZiYu Kuang[1], Alyssa Overton[1], Julie Hernandez-Salmeron[1], Sherry Azeez [1], Zjardyn Liera-Hood[1], Delaney Nash[1], Sharujan Satheeswaran[1], Ria Menon[1], Trevor Charles[1]

[1]Department of Biology, University of Waterloo

Additional Research Focus: Health Service Research

Antimicrobial resistance (AMR) is an increasing challenge in health care. Wastewater sampling provides a chance to survey regional AMR in a non-invasive way for the contributing population. In this study, functional metagenomic libraries were constructed from total DNA using the mosaic ends tagmentation approach (METa), and the cosmid library construction method, yielding average insert sizes of 2kb and 20-30kb respectively. Shotgun metagenomics is performed in parallel on the wastewater samples to screen for known AMR genes. This approach seeks to determine the current antimicrobial resistance gene (ARG) landscape in the populations reflected by the regional wastewater and, in combination with functional metagenomics, to potentially discover new ARGs. Our research looks at ARG resistance towards some common antibiotics such as Kanamycin, Ampicillin, and Tetracycline while also targeting two carbapenems, Meropenem (MP) and Imipenem (IP). Beta-Lactam antibiotics are a well prescribed and diverse family of antibiotics. IP and MP specifically are used as final interventions for Gram-negative bacteria with other beta-lactam resistance that cause pulmonary infections in cystic fibrosis patients, meningitis, sepsis, and others. Therefore, the initial hosts of choice for these libraries were E. coli and P. putida. In further studies, using other hosts of interest, namely Moraxella catarrhalis and Bacillus subtilis, different ARGs not expressed in P. putida and E. coli can be identified. Clones which contain no known resistance genes will be sub-cloned using transposon mutagenesis to determine the location of the resistance gene and ORFs will be predicted as a first step in investigating potentially novel ARGs.

ABSTRACT P100 - B

NEW FRONTIERS RESEARCH PROJECT - COVID AND IPV

Tori Lewis[1], Amaar El Hajj[1], Mehak Warring[1], Betty Jo Barrett[1], Srinivasan Chokkanathan[2], Johannes John-Langba[3], Jayashree Mohanty[1]

[1]School of Social Work, University of Windsor

[2]Department of Social Work, National University of Singapore

[3]School of Applied Sciences, University of KwaZulu-Natal

Globally one in three, or over 700 million, women experience violence perpetrated by an intimate partner. During the COVID-19 pandemic, a higher incidence and severity of IPV has been reported. Government-directed restrictions including stay-at home orders, physical distancing, and other pandemic-related measures forced many IPV organizations to roll back, adapt, or discontinue programs. While some community organizations developed new remote-service programs, others adapted existing models, and IPV organizations continue to provide virtual interventions to IPV survivors post-lockdown. The overall objective of this study is to examine the innovative practices employed by community-based organizations that responded to intimate partner violence (IPV) and to assess the effectiveness of these services during the pandemic and pandemic recovery. Our study employs a mixed-method research design. The first and current phase involves in-depth interviews with frontline service providers and administrators of IPV service organizations across three countries (Canada, India, and South Africa). Interviews were audio-recorded and transcribed verbatim. Thematic analysis will be utilized. The second phase of this project includes a survey of service-engaged and non-service-engaged survivors in each country. As our study is in progress, suggested future directions include: 1) gathering insight that will inform future contingency plans for IPV service organizations during community-level disasters, such as COVID-19, 2) assessing the effectiveness of IPV existing and adapted interventions during the pandemic, and 3) to understand the resiliencies exhibited by IPV survivors with help-seeking during and following the COVID-19 pandemic.

ABSTRACT P101 - A

GENDER-BASED VIOLENCE (GBV) AND THE IMPACT OF VIOLENCE ON HEALTH AND THE ROLE OF TRAUMA

Tori Lewis[1], Ananya Sood[2], Kylie Pazner[2], Kylee Madison[3], Amilia Noftall[3], Kendall Soucie[3]

[1]School of Social Work, University of Windsor

[2]Department of Integrative Biology, University of Windsor

[3]Department of Psychology, University of Windsor

Additional Research Focus: Health Service Research

Gender-based violence (GBV) is a growing and pressing public health issue. Intimate partner violence (IPV), one kind of GBV, has been declared an epidemic locally in Windsor-Essex County, joining 96 other municipalities across Ontario who have recognized the severity of this concern. We conducted a scoping review (SR) to better understand the impact that trauma resulting from violence has on health outcomes of GBV survivors. Our SR serves to conceptualize the discussion of trauma as it relates to health and GBV in research contexts. Empirical research investigating trauma and health outcomes resulting from violence is lacking, which our SR seeks to address through improving the knowledge base and conceptualization of these topics from the literature. The literature search was completed in September 2024, where the key information sources included six academic databases (e.g. MEDLINE via Ovid, Scopus, etc.). Solely peer-reviewed studies published since 2010, that discuss GBV, women's health, and trauma-related outcomes were included. Extracted data was tabulated and accompanied with descriptive qualitative data analysis. Emerging themes include but are not limited to: the role of trauma and violence being cyclical, various health consequences (e.g., reproductive health challenges, chronic pain, substance use, etc.), how survivors cope with adverse violence-induced outcomes. Findings will help inform policy and practice implications, such as a need for accessible mental health and medical care, trauma and violence informed care, and sensitivity training about women's lived experiences. Our SR emphasizes that health care professionals and organizations supporting survivors must be responsive to survivor's needs.

ABSTRACT P102 - B

A SYSTEMATIC REVIEW OF MENTAL HEALTH HELP-SEEKING BEHAVIOURS IN YOUNG MEN

Krista Lucier[1], Jessica Kichler[1], Onawa LaBelle[1]

[1]Department of Psychology, University of Windsor

Additional Research Focus: Health Service Research

Young men face significant mental health challenges, with male suicide rates accounting for 80% of suicide-related deaths (Bilsker et al., 2018). Despite this, men are less likely to seek mental health support due to stigma, self-reliance, and adherence to traditional masculine norms (Chatmon, 2020; Brown et al., 2019). This systematic review explored theoretical frameworks, barriers, facilitators, and strategies to improve mental health help-seeking among young men, guided by Chan's theory of help-seeking (2013) and social identity theory (Tajfel & Turner, 2004). A systematic review of 189 studies identified several theories, with the theory of planned behaviour (Ajzen, 2011) and masculine gender role conformity (Addis & Mahalik, 2003) being most prevalent. However, findings revealed theory to be underutilized, with most studies lacking theoretical grounding entirely. Thematic analyses highlighted four key barriers: traditional masculine norms, low mental health literacy, stigma, and service-related challenges. Five facilitators emerged: reframing masculine norms, improved literacy, male-centric service adaptations, social support, and individual characteristics. Content analyses of 21 intervention programs revealed gaps, including limited theoretical foundations, inconsistent participant feedback, and underutilized strategies such as targeted education and stigma reduction. Findings underscore the need for prevention efforts, such as tailored mental health literacy workshops emphasizing coping skills and dismantling gendered stigma. Effective marketing strategies, including male-friendly language and role models, could improve program uptake. Interventions should include professional training and male-specific adaptations to ensure comfort and accessibility. Future initiatives must integrate these findings into evidence-based, gender-sensitive frameworks to better support young men's mental health and foster help-seeking behaviours.

ABSTRACT P103 - A

DETERMINING THE PREVALENCE OF NUTRITION RISK IN OLDER ADULTS IN WINDSOR-ESSEX COUNTY, ON: A CROSS-SECTIONAL SURVEY-BASED STUDY

Emma S McGinnis[1], Julianna Charles[1], Ram Patel[1], Chris Wellington[2], Ross Lepera[2]

[1]Schulich School of Medicine and Dentistry

[2]Department of Biomedical Sciences, University of Windsor

Additional Research Focus: Health Service Research

Nutrition risk, which is the presence of risk factors and social determinants that may lead to malnutrition, increases healthcare usage, morbidity and mortality in older adults. Nutrition risk is common in Canadian older adults, with the most recent nationwide study reporting a prevalence of 35.6%. Though primary care is a key setting for its early identification and management, nutrition assessments are often overlooked by primary care physicians. Objectives: To understand the relevance of screening for nutrition risk in our community, we aimed to establish the prevalence of nutrition risk among older adults in Windsor-Essex County primary care practices. The validated SCREEN-8© nutrition risk screening tool was administered to community-dwelling older adults (≥65 years) registered with five primary care physicians across Windsor-Essex County. This tool produces a continuous score with a maximum of 48 points to dichotomize individuals into high or low nutrition risk groups. Subgroup analyses were conducted using participants' demographic information. A total of 301 participants, with a mean age of 74.5 years (SD=6.6), completed the survey. Sixty-two percent of participants scored at high nutrition risk, with a mean SCREEN-8© score of 34.6 (SD = 7.3). The mean score of those living in a home alone (M=31.3, SD = 8.06) was significantly lower than of those living with others (M=39.5, SD = 6.99), $t(277) = -3.76$, $p>0.001$. The high prevalence of older adult nutrition risk within our local primary care practices highlights the importance of nutrition risk screening and management within this setting.

ABSTRACT P104 - B

POLICY REFORM ADVOCACY FOR THE HEALTHCARE RIGHTS OF CRITICALLY ILL INTERNATIONAL AGRICULTURAL WORKERS

Rosa Mikheil[1], Salah Alhajsaleh[1], Mehtaab Dhillon[1], Chelsea Ymana[1], Rachel Dixon[2], Joshua Garcia Barrios[2], Caroline Hamm[3]

[1]Department of Biomedical Sciences, University of Windsor

[2]Schulich School of Medicine and Dentistry

[3]Department of Oncology, Windsor Regional Hospital

International agricultural workers (IAWs) are vital to Canada's agricultural sector and economy, yet their healthcare rights remain precarious. Despite contributing to health insurance during their employment, many IAWs lose access to healthcare when they become critically ill due to systemic barriers. The problem lies in the lack of clarity over jurisdiction: IAWs are brought in through a federal program, but healthcare delivery falls under provincial authority. This gap underscores an urgent need for policy reform to guarantee continuity of healthcare access for IAWs. Our project advocates for a policy that provides critically ill IAWs access to their insurance. Using the EPIC method, we contacted eight government officials, engaging six in meaningful discussions, with one committing to support our proposed policy. These involved officials whose party was familiar with our agenda but also those who were not. We presented our proposal that indicated how providing healthcare would not financially strain Canada's healthcare system. Furthermore, ensuring healthcare access for IAWs aligns with Canada's core values of equity and compassion. These efforts were supported by collaborations with community leaders to gain insights into the lived experiences of IAWs and to broaden our support network. Due to the nature of advocacy, this process remains ongoing until the goal of policy change has been achieved. This work underscores the importance of structured, empathetic advocacy in addressing systemic inequities. By combining targeted outreach to policymakers with community-driven insights, our research presents a replicable model for achieving impactful and sustainable policy change in support of vulnerable populations.

ABSTRACT P105 - A

"IT'S NOT USABLE FOR HIM": AN EXPLORATION OF DIVERSE USERS' EXPERIENCES OF ACCESSIBILITY, USABILITY, AND INCLUSION IN GYMS

Fallon R. Mitchell[1], Sean Horton[1], Sara Scharoun Benson[1], Veronika Mogyorody[2], Paula M van Wyk[1]

[1]Department of Kinesiology, University of Windsor

[2]School of Creative Arts, Visual Arts and the Built Environment, University of Windsor

Gym-based exercise is associated with many health benefits, including enhanced physical functioning, improved mental well-being, and reduced morbidity. Such benefits may be of particular interest to people with a disability (PWD) who are at twice the risk of developing conditions, such as depression, diabetes, and stroke. Health disparities among PWD arise from discriminatory environments, which limit their opportunity to access resources. Little effort has been made to advance equitable exercise opportunities among PWD in gyms. Accessibility assessments often focus on quantifiable characteristics of the built environment, overlooking cognitive and social accessibility, and the value of lived experience. A think aloud protocol involving a series of tasks completed within two gyms was adopted to gain an understanding of diverse participants' perceptions and experiences of accessibility, usability, and inclusion. Directed content analyses of think aloud transcripts were guided by the Universal Design-based framework. The framework consists of a category for physical-spatial, sensorial-cognitive, and social environments, ensuring analyses yielded results across environmental domains. Thirty-nine participants (15 male, 23 female) between 18 and 68 years completed the study. Nineteen participants (~49%) had a disability and/or impairment. Five themes illustrated how participants maneuvered, understood, and felt within the gyms, reflecting physical (e.g., amount of equipment), cognitive (e.g., accessible information), and social factors (e.g., interpersonal interactions). Identifying environmental domain specific factors provided an understanding of how design and fitness professionals, scholars, and policymakers could develop functionally inclusive gyms for people with and without a disability to support participation in exercise and health for all.

ABSTRACT P106 - B

EXPLORATORY ANALYSIS OF HEALTHCARE WORKER EXPERIENCE WITH INTERNATIONAL AGRICULTURAL WORKERS (IAWS) IN WINDSOR-ESSEX COUNTY

Ryan Palazzolo[1], Mehtaab Dhillon[2], Salah Alhajsaleh[2], Chelsea Ymana[2], Kaitlyn St. Pierre[2], Genesis Flores[2], Aya El-Hashemi[2], Rachel Nixon[4], Joshua Barrios[4], Rosa Mikheil[2], Megan Cheng[4], Gabrielle Jacobson[4], Indryas Woldie[3], Caroline Hamm[3]

[1]School of Medicine, Wayne State University

[2]Department of Biomedical Sciences, University of Windsor

[3]Department of Oncology, Windsor Regional Hospital

[4]Schulich School of Medicine and Dentistry

International Agricultural Workers (IAWs) in Windsor-Essex face numerous barriers when accessing healthcare, including language and cultural barriers, poor health literacy, insufficient time and transportation, and lack of confidentiality. These barriers put strain on our healthcare workers (HCWs) by interfering with their ability to care for IAWs, leading to moral distress. This study uses Wocial's Moral Distress Thermometer to explore HCWs' experiences caring for IAWs, and how systemic barriers may lead to moral distress. Semi-structured interviews were conducted with various HCWs, including social workers, physicians, nurses, etc., who have identified these barriers as significant in their clinical experience with IAWs. HCWs report feelings of guilt, helplessness, burnout, and frustration as a result of these barriers. Interviews are ongoing, and thematic analysis will be complete to identify key themes leading to HCW moral distress. This study aims to shed light on the complex situation surrounding the healthcare of IAWs and the challenges faced by HCWs, in hopes of informing training, resources, and policies to improve these circumstances.

ABSTRACT P107 - A

LITERACY IN EARLY CHILDHOOD EDUCATION: INCORPORATING LITERACY THROUGH PLAY BASED LEARNING UTILIZING AN ENGLISH LANGUAGE LEARNER LENS

Michaela Reid[1], Alexandra Fuentes Atencio[1], Emma Mineau[2], Gelsea Pizzuto Serra[3]

[1]Department of Social Justic and Legal Studies, St. Clair College

[2]St. Clair College

[3]Reserach Department, St. Clair College

Canada has seen a steady regression in literacy skills, evidenced most recently in the Progress in International Reading Literacy Study (PIRLS) assessment, which saw Canada drop from a global ranking of 12th to 18th. Canadian children continue to enter the school system with weak literacy skills. Specifically, English Language Learners (ELL), have struggled in Ontario to achieve provincial baselines; coupled with their unique learning needs, ELLs make up a large percentage of Ontario student composition. One evidence-based method for supporting the learning needs of ELL students in the primary grades is through Play-Based Learning (PBL). This approach allows students to explore language, develop vocabulary, and enhance their comprehension skills, all of which are essential components of literacy. This three-year tri-funded project is conducting a feasibility study, in collaboration with a local school board, to evaluate the viability of an in-school PBL program that is tailored to the learning needs of ELL students. To address the need for relevant, meaningful PBL material, the research team will take a novel approach by utilizing LEGO, a common manipulative in a kindergarten classroom with a high ELL population. Researchers will measure the impact on student literacy development using evidence-based methods and evaluate educators' understandings of and confidence implementing PBL pre- and post-test. The overall goal is to advocate for elements of the program to be embedded on a provincial and national scale through ELL literacy educator training, resource sourcing and allocation, and impact measurement/assessment.

ABSTRACT P108 - B

WASTEWATER-BASED SURVEILLANCE OF RESPIRATORY SYNCYTIAL VIRUS (RSV) GENOME SEQUENCE VARIATIONS IN THE WINDSOR-ESSEX BORDER REGION

Isidora Sekaric[1], Ana Podadera[1], Mackenzie Beach[2], Ryland Corchis-Scott[2], Ethan Harrop[2], Qiudi Geng[2], R. Michael McKay[2], Kenneth K.S. Ng[1]

[1]Department of Chemistry and Biochemistry, University of Windsor

[2]Great Lakes Institute for Environmental Research, University of Windsor

Respiratory syncytial virus (RSV) is a leading cause of respiratory tract infections in both pediatric and elderly populations. RSV is an enveloped, negative-sense, single-stranded RNA virus that belongs to the Pneumoviridae family. In addition to the variation seen in the two antigenically distinct subtypes of RSV, A and B, previous genomic sequencing studies on clinical samples show particular variability in the sequences of the attachment protein G and fusion protein F. To more thoroughly evaluate the amount of variation in RSV genomic sequences in the Windsor-Essex border region, we are in the process of developing a robust tiled amplicon sequencing method that targets the G and F genes for RSV subtypes A and B. Our method uses primer sequences from the ARTIC network, R10.4.1 flow cells on the Oxford Nanopore MinION platform, and data processing and bioinformatics analysis from the Galaxy Suite. Preliminary results indicate that high levels of sequence coverage and redundancy can be obtained for the complete G gene and part of the F gene of RSV A and B from many of wastewater samples collected from hospitals, student residence halls, and wastewater plants. Improvements in sample preparation, primer design and the conditions for multiplex amplification are currently being explored to further improve the reliability and sensitivity of our novel genomic surveillance method for monitoring the evolution of sequence variations over time, including the emergence of novel variants of concern.

ABSTRACT P109 - A

ACHIEVING LONG-TERM EFFECTIVENESS OF NUTRITION COUNSELING FOR INDIGENOUS OLDER ADULTS WITH TYPE 2 DIABETES

Vikesh Maraj[1], Danica McPhee[1], **Munira Sultana[1]**

[1]Erie Shores HealthCare

The prevalence of diabetes has sharply increased after the age of 40 years since 2008/09. The prevalence of type 2 diabetes (T2DM) in the Indigenous population is 17.2% higher compared to the non-Indigenous population in Canada. Canadian Indigenous older adults are disproportionately affected by nutrition-related chronic diseases. The socio-cultural, biological, environmental, and lifestyle changes seen in this population group in the last half-century have contributed significantly to increased rates of T2DM and its complications. Ongoing lifestyle optimization including nutrition counselling and healthy eating patterns is essential for all patients with diabetes. The objectives of the study is to co-create a culturally safe nutrition plan. We will invite the older adults from Caldwell First nation (target population) to focus group discussions to co-create the intervention following social constructivist approach. It is the intention of our study to respect and uphold traditional beliefs about Indigenous wholistic wellness – that our emotional, spiritual, physical and mental selves are not separate and that there can be no good health in one area if there remains sickness in another. A culturally sensitive nutrition counselling education material offers a promising strategy for improving the access to nutrition knowledge that may sustain a positive behavior change in older adults from Caldwell First Nation.

ABSTRACT P110 - B

END-OF-LIFE CARE AT ERIE SHORES HEALTHCARE

Holly Whitehead[1], Emma Wright[1]

[1]Erie Shores HealthCare

Residential palliative care in Windsor-Essex County is limited to 45 beds across three providers: Windsor Essex Hospice, Hôtel-Dieu Grace Healthcare, and Journey Home Hospice. Barriers such as a shortage of palliative beds, policies excluding those in long-term care homes or homeless, and travel instability often force individuals to spend their final days in hospitals. In Ontario, about 60% of deaths occur in hospitals, costing $1,100 per day compared to $460 per day for hospice care. A palliative care program at Erie Shores HealthCare would reduce travel burden and healthcare costs and improve patient, family, and caregiver experience. The project aims to 1) provide equitable end-of-life care in a hospital setting, 2) offer loved ones the opportunity for positive final moments, 3) ensure access to bereavement support, 4) reduce stigma around the dying process, and 5) offer holistic care including pain management, psychosocial, and spiritual support to promote dignity in dying. The project will offer social work support, palliative rooms, a comfort cart with community partners, and end-of-life materials. Family feedback will guide the project to ensure it addresses community needs. Erie Shores HealthCare's end-of-life program will offer private rooms, bereavement support, social services, and legacy-building activities to ensure comprehensive care and support for patients and their families during this difficult time.

ABSTRACT P111 - A

EXPLORING THE ROLE OF THE TUMOUR SUPPRESSOR TUBERIN IN DNA REPAIR MECHANISMS

Hannah Ferasol[1], Ria Patel[1], Elizabeth Fidalgo Da Silva[1,2], Lisa A. Porter[1,2,3]

[1]Department of Biomedical Sciences, University of Windsor

[2]WE-SPARK Health Institute

[3]St.Joseph's Health Care London

Additional Research Focus: Biomedical Research

Tuberin is a key component of the trimeric Tuberous Sclerosis Complex, a tumour suppressor protein that regulates cell cycle and protein synthesis. Mutations in the Tuberin gene (TSC2) lead to Tuberous Sclerosis Complex, a disease which causes benign tumors in multiple organs. Our lab has discovered that Tuberin regulates the G2/M checkpoint by binding Cyclin B1, the main human mitotic cyclin, controlling its nuclear transport and delaying mitosis onset in response to nutrients availability. At the moment Tuberin's role in the G2/M DNA damage checkpoint and DNA repair is unknown. My project focuses on understanding the role of Tuberin during the G2/M transition of the cell cycle in the presence of DNA damage repair. Crispr-Cas9 editing technology was used in our lab to create a human TSC2-/- cell line (U2OS). Etoposide, a topoisomerase II drug is used to induce double-stranded DNA damage. Techniques such as flow cytometry, Annexin assay and western blot are being used to analyze cell cycle profiles, apoptotic levels, and protein expression and function during DNA damage and DNA repair in U2OS WT and U2OS TSC2-/- cell lines. This project will aid to clarify the role of Tuberin in DNA repair at mitotic onset, allowing a better understanding of the mechanisms of tumour formation after DNA damage.

Rapid Fire Presenters

ABSTRACT P112

ADVANCING EARLY CANCER DETECTION: A NOVEL DUAL-FREQUENCY ULTRASOUND TECHNOLOGY FOR ENHANCED IMAGING

Yumna Birjis[1], Pavithra Munirathinam[1], Haleh Nazemi[1], and Dr. Arezoo Emadi[1]
[1]Department of Electrical Engineering, University of Windsor

Category: Biomedical Research

Cancer remains a leading cause of mortality worldwide, with early detection being critical for improving patient outcomes. Among various imaging modalities, ultrasound is widely used due to its non-invasive nature, ease of clinical implementation, and routine accessibility. However, conventional ultrasound systems face challenges in achieving high resolution and sufficient imaging depth, limiting their effectiveness in early cancer detection. This study aims to enhance the resolution and imaging depth of next-generation ultrasound transducers by designing and optimizing a Piezoelectric Micromachined Ultrasonic Transducer (PMUT) featuring a rectangular membrane with a tailored electrode configuration for dual-frequency operation. We conducted preliminary investigations using finite element simulations to evaluate the electromechanical performance of the PMUT. Additionally, acoustic pressure analysis was performed in immersion hydrophone testing to validate dual-frequency operation and assess its potential for improved imaging quality. Our findings demonstrate the feasibility of the proposed PMUT design in achieving dual-frequency operation, which can enhance image resolution and penetration depth in ultrasound imaging systems. This innovative approach has the potential to advance ultrasound-based early cancer detection, addressing the current limitations in resolution and imaging accuracy.

ABSTRACT P113

EXPLORING PRINCIPLES OF THE INTERPLAY BETWEEN TUMOUR INITIATING CELLS AND THE ENDOTHELIAL COMPONENT IN GLIOBLASTOMA

Alan Cieslukowski[1], Dorota Lubanska[1], Elizabeth Fidalgo da Silva[1], Mohamed AR Soliman[2,3], Abdalla Shamisa[4], Ana deCarvalho[5], Lisa A. Porter[1,6,7]
[1]Department of Biomedical Sciences, University of Windsor
[2]Department of Neurosurgery, Cairo University
[3]Department of Neurosurgery, Jacobs School of Medicine and Biomedical Sciences
[4]Department of Neurosurgery, Schulich School of Medicine and Dentistry
[5]Department of Neurosurgery, Henry Ford Hospital
[6]St. Joseph's Health Care London
[7]Lawson Research Institute

Category: Biomedical Research

Efficient targeting of multiple components of a tumour might be a successful strategy in aggressive types of cancer such as glioblastoma (GBM), which remains the most common and malignant primary brain tumour with an extremely poor patient survival of less than 15 months. The significant therapeutic challenge posed by GBM stems from its genetic and phenotypic heterogeneity fueled by multiple components of the tumour biology including aggressive and treatment-resistant populations of tumour initiating cells (TICs) and high levels of angiogenesis contributing to tumour evolution, evasion of therapy and recurrence. TICs, which are at the source of GBM patient relapse, thrive in the niches close to the blood vessels where they interact with endothelial cells (ECs), exit the cell cycle, and evade therapies. Targeted antiangiogenic drugs, preventing GBM cells from recruiting new blood vessels, are only effective in 50% of patients and display temporary effectiveness due to acquired secondary resistance by the tumour. Thus, there is an urgent need for new and effective therapeutic strategies. This project will explore the TIC-EC interplay and its role in propagating tumour aggressiveness and therapy resistance. This project will investigate the impact of ECs on the aggressive characteristics of individual, specific populations of TICs using GBM patient-derived systems, including 3D organoid models and zebrafish patient-derived xenografts (PDXs). Elucidating the details of specific cellular populations of aggressive TICs with dependence on the EC component will contribute to the identification of improved therapeutic targets and personalized approaches for treatment of patients with GBM.

ABSTRACT P114

EXPANDING SALIVA SCREENING TO TRACK NEW & EXISTING VIRUSES: STRENGTHENING PUBLIC HEALTH IN THE WINDSOR-ESSEX REGION

Jackie Fong[1], Maria Badalova[2], Cassidy Kost[3], Marissa Rakus[3], Brayden LaBute[2], Farinaz Ziaee[1], Jewels Adair[3], Lisa Porter[2], Yufeng Tong[1], Kendall Soucie[3], Kenneth Ng[1]

[1]Department of Chemistry & Biochemistry, University of Windsor

[2]Department of Biomedical Sciences, University of Windsor

[3]Department of Psychology, University of Windsor

Category: Biomedical Research

The COVID-19 pandemic posed significant global public health and economic challenges, with testing serving as a critical tool to prevent disease spread. Saliva testing emerged as a promising tool as a less invasive, and time- and cost-effective alternative to standard nasopharyngeal swabs. In response, we developed a rapid and inexpensive saliva testing platform on the University of Windsor campus, processing over 1000 samples and identifying approximately 40 COVID-19 cases. We aim to expand this platform to the Windsor-Essex community as a proactive approach to detect and monitor new and existing viruses in this critical border region. However, the methods used to collect saliva samples on campus may not be feasible for a broader participant base. To address this, we surveyed cross-border healthcare workers to identify the conditions that would encourage participation. Key considerations included improving the ease of use of the saliva collection kit, simplifying sample drop-off, and enhancing communication with participants after sample submission. Based on feedback from on-campus participants, we refined the saliva kit instructions and worked with campus staff to set up a secure drop box for sample collection. This expansion offers a promising approach to detect surges in existing or novel viruses, improving disease detection capabilities within the Windsor-Essex region.

ABSTRACT P115

IMPLEMENTATION OF A MEDICAL EDUCATION SERVICE LEARNING PROGRAM CENTRED ON INTERNATIONAL AGRICULTURAL WORKERS (IAWS) IN SOUTHWESTERN ONTARIO

Joshua Garcia-Barrios[1,2], **Rachel-Ann Dixon**[1,2], Rosa Mikheil[2], Salah Alhajsaleh[2], Mehtaab Dhillon[2], Dr. Caroline Hamm[1,2], Chelsea Ymana[2]

[1]Western University, Schulich School of Medicine

[2]University of Windsor

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

International Agricultural Workers (IAWs) are vital to Canadian agriculture but face significant language and cultural barriers. Windsor-Essex is uniquely situated to support programs serving IAWs, as over 50% of Canada's IAW population resides in this region. An English language support program was established with the University of Windsor (UoW) and Schulich School of Medicine (SsoM) to address barriers exacerbating healthcare challenges. This work seeks to report on the program's implementation and protocols and assess effectiveness in enhancing language proficiency, community integration, and medical student engagement with IAWs. IAWs were recruited from the South Essex Community Council (SECC), and English partners from UoW and SSoM. Following an oral presentation outlining the program, 18 IAWs and 15 medical students enrolled. Participants were paired based on availability and language proficiency. Partners were given a weekly slide deck that guided conversations aligned with IAWs' language lessons. Weekly reflections, monthly meetings, surveys and interviews will be conducted with medical student volunteers to evaluate their experiences and program impact. Preliminary survey and interview results indicate positive outcomes for both IAWs and participating medical students. IAWs reported improved English proficiency and a greater sense of community inclusion. Medical students demonstrated increased cultural awareness and understanding of challenges faced by IAWs, fostering a deeper commitment to addressing inequities in healthcare. This work underscores the potential of a language support program to enhance cultural competency among future healthcare professionals while improving quality of life and access to resources for IAWs.

ABSTRACT P116

IDENTIFYING AND DEVELOPING YOUTH HOMELESSNESS PREVENTION STRATEGIES THROUGH RESPONDENT DRIVEN SAMPLING AND INTERSECTIONALITY

Kyle Jackson[1], Fayssoux Bombardier[1], **Emma Beecroft[2]**, Wafaa Al Rayes[2], Sarah Wilkins[2], Armand Avolio[3], Katoon Wongwilart[3]

[1]Department of Social Justice and Legal Studies, St. Clair College

[2]St. Clair College

[3]University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

Youth experiencing homelessness is an ever-growing issue in our community that we hope to shed light on. St. Clair College's Research and Innovation department is looking into this problem. Headed by Professor Kyle Jackson and Fayssoux Bombardier with students from the Social Justice and Legal Studies degree program, the objective of this study is to better understand the experiences and needs of youth in our community who are currently experiencing homelessness. Using Respondent-Driven Sampling and snowball sampling, we recruited youth who consented to participate in qualitative semi-structured interviews to identify where services are lacking and guide future initiatives focused on preventing and addressing youth homelessness. From these interviews, preliminary themes emerged, including the need for more youth-centered shelters. Our research led to the creation of a deliverable, a map of active organizations in our community, including their location, contact information, and what services they offer. The next steps in our research involve performing a thematic analysis to extract and analyze key themes from the transcripts, which will be published in a report. Equipped with the knowledge following a comprehensive review of the literature and thorough analysis of the themes uncovered in our study, we will then put forth programming proposals to address youth homelessness in our community. Our presentation will focus on the themes that emerged from conducting a preliminary analysis of the transcripts and will elevate the voices of youth by sharing their perspective and experiences in their own words.

ABSTRACT P117

LEVERAGING DATA & COMMUNITY ACTION: STRENGTHENING SAFETY & WELL-BEING IN WINDSOR-ESSEX

Emma Kiessling[1], **Madison Dekok**[1], Amy Peirone[1]

[1]School of Community Studies, St. Clair College

Category: Social, Cultural, Environmental, and/or Population Health Research

How can we harness data and community engagement to create safer, more connected neighbourhoods? Funded by WE-SPARK and conducted in collaboration with St. Clair College and the City of Windsor's Social Policy & Planning team, this project sought to answer that question. Initially focused on developing a data consortium to support affordable housing, the project evolved based on stakeholder feedback to address two key objectives: (1) assessing the user experience of the Homeless Individuals and Families Information System (HIFIS) to enhance its usability and effectiveness, and (2) developing a Neighbourhood Safety and Crime Prevention Walk Toolkit to equip residents, municipalities, and law enforcement with practical strategies for community-based crime prevention. The HIFIS assessment involved an online survey distributed to 11 organizations, with 46 users providing insights on training needs, system strengths, and challenges. The crime prevention toolkit was co-designed with stakeholders, incorporating Crime Prevention Through Environmental Design (CPTED) principles, and piloted in real-world settings. Survey findings identified critical training and system improvement opportunities, informing targeted recommendations for enhancing HIFIS usability in our local context. The crime prevention toolkit received positive stakeholder feedback, empowering communities to take an active role in fostering community well-being via safer neighborhoods. By combining data insights with community-based safety initiatives, this project lays the groundwork for sustainable improvements in crime prevention, and overall community health, safety, and well-being across Windsor-Essex.

ABSTRACT P118

PRESSING HEALTHCARE NEEDS IN A WINDSOR-BASED SHELTER HEALTH INITIATIVE

Kim Nguyen[1], Karen Michael[1], Temitope Akintola[1], Rose Plantus[2], **Alex Zhou[1]**, Adrian Guta[3], Grace Park[4], Kathy Pfaff[2], Jennifer Voth[5], Jonathan Foster[4], Debbie-Sheppard-Lemoine[2], Hali Sitarz[6], Neelu Seghal[7], David Hallet[8,9], Jennifer Bondy[1,10]

[1]Schulich School of medicine & Dentistry
[2]Faculty of Nursing, University of Windsor
[3]School of Social Work, University of Windsor
[4]Windsor Regional Hospital
[5]Hôtel-Dieu Grace Healthcare
[6]St. Clair College
[7]Erie Shores HealthCare
[8]WE-SPARK Health Institute
[9]Abbie Inc. Global Epidemiology
[10]Faculty of Biomedical Sciences, University of Windsor

Category: Health Service Research

Windsor Shelter Health (WSH) offers = on-site medical services at shelters and drop-in centres for people experiencing homelessness (PEH) in Windsor, Ontario. PEH face barriers to health, including competing demands that may outweigh their desire for healthcare, transportation barriers, and being lost to follow up. WSH was established to improve healthcare experiences and outcomes for PEH by enhancing access to care that addresses their needs and improves population health. A survey was developed, validated, and distributed to client-facing staff at shelters and drop-in centres to understand the current state of healthcare access for PEH in Windsor and identify unmet healthcare service needs of PEH in Windsor as understood by client-facing workers to enhance the WSH model. Survey results (n = 60) indicated strong support (96.7%) for continuous, ongoing, and direct shelter health supports accessible to PEH. Services felt to be most important included access to physicians for primary care, psychiatric care, addictions medicine, access to harm reduction, wound care, and counselling. Delays in access to care were felt to be due to clients' fear and mistrust of the healthcare system, clients' concerns regarding stigma experienced, and a lack of transportation. Results of the project will serve as a baseline for the development of targeted programs and services to effectively support and improve health care access and outcomes for people experiencing homelessness in Windsor. This may serve as a model for similar jurisdictions on how to build a well-integrated shelter-health model.

ABSTRACT P119

BARRIERS TO ACCESSING MENTAL HEALTH SERVICES THAT IMPACT BLACK CANADIANS: A SCOPING REVIEW AND THEMATIC ANALYSIS

Ibukunoluwa Grace Okusanya[1], Samantha B. Meyer[1]

[1]School of Public Health Sciences, University of Waterloo

Category: Social, Cultural, Environmental, and/or Population Health Research

Although experiencing lower levels of mental health compared to the general population of Canada, Black Canadians are less inclined to seek help from mental health services. Thus, the aim of this scoping review is to systematically document the current literature on the barriers in accessing mental health services among Black Canadians. Following PRISMA guidelines, a systematic search of the existing literature was conducted using four databases on September 8, 2024. The final dataset consisted of 20 studies published between 1998 and 2023. Findings were synthesized using the sociobehavioural model of health service use to define the subtypes of barriers and the construct of Mental Health Literacy to guide the thematic analysis of the extracted data. Barriers impacting Black Canadians' access of mental health services included language barriers, difficulties in navigating the mental healthcare system, wait times, the quality of resources, and the lack of mental health services in their communities. Themes identified as barriers of use were Mental Health Literacy, Negative Perceptions of the Mental Healthcare System, and Discrimination. Challenges discussed in this review implicate the importance of a multitargeted approach to increasing the access and usage of mental health services among Black Canadians. This review also provides a foundation for research and practice that aims to investigate and develop strategies to promote the mental health of the Black population in Canada. Accordingly, we identify gaps in research—regarding the mental health perceptions, beliefs, and experiences of Black Canadians, required to properly develop interventions that increase mental health service access.

ABSTRACT P120

SYSTEMIC CHALLENGES, LOCAL SOLUTIONS: HEALTH EQUITY AT THE INTERSECTION OF MEDICAL AND SOCIAL SERVICES SECTORS

Lauren Wan-Sai-Cheong[1,2], Courtney Petruik[2], Katrina Milaney[2]

[1]Department of Psychology, University of Windsor

[2]Department of Community Health Sciences, University of Calgary

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

Previous research highlights many barriers faced by individuals experiencing homelessness and nearing the end of life. Despite years of research examining the gaps in palliative and end-of-life care, people experiencing homelessness remain unsupported by both medical and social services systems. This study examines health equity at the intersection of palliative and non-profit care for individuals experiencing homelessness in Calgary, Canada. We were guided by the Health Equity Framework to interpret our findings. Our aim was to identify actionable solutions within existing systems and explore strategies that can bridge silos between medical and social services. Semi-structured interviews were conducted with seven service users of a mobile palliative care organization and 11 healthcare providers whose work intersected both medical and social services. Using inductive thematic analysis, supported by NVivo 14 software, we identified opportunities for promoting equitable palliative and end-of-life care. Three interconnected themes emerged where shifts in (1) provider attitudes, (2) governance and policy changes, and (3) improved access to resources/streamlined navigation, shaped access to care. This study emphasizes locally adaptable, equity-driven solutions, moving beyond identifying barriers to care. It also contributes to the dialogue on collaboration and inter-systemic reform to better support individuals experiencing homelessness and nearing the end of life. Our findings encourage health care professionals from social work and medical settings to come together to deliver equity-focused care and for accessible sharing and dissemination of information and resources.

CONCURRENT SESSIONS

A-1: Advancements in Cancer Research & Treatment

Moderator: Dr. Andrew Hubberstey, University of Windsor

ABSTRACT O10

CASE REPORT: UNUSUAL CLINICAL RESPONSE TO TRASTUZUMAB AND PERTUZUMAB IN METASTATIC HER-2 LOW BREAST CANCER

Charvi Gupta[1], Laurice Arayan[2], **Rasna Gupta[2]**

[1]Academie Ste Cecile.

[2]Department of Oncology, Windsor Regional Hospital

Category: Clinical Research; Health Service Research

HER2-low breast cancer represents a biologically distinct subset of breast cancer currently underserved by targeted therapies. In this case report, we describe the clinical course of a patient with metastatic HER2-low breast cancer who exhibited an exceptional response to first-line combination therapy with Pertuzumab, Trastuzumab and Paclitaxel. A 32 year old female with a history of stage III HER2 positive breast cancer, previously treated with neoadjuvant HER2 targeted therapy and chemotherapy, presented with progressive disease involving liver, lung, bone and brain metastases. Due to urgent need to start treatment she was treated with Her-2 targeted therapy based on her original biopsy. Subsequent biopsies from the metastatic disease in liver showed that patient had Her-2-low disease. Her liver function tests normalized after 1 cycle of treatment. After three cycles of treatment, the patient demonstrated a marked reduction in tumor burden as assessed by radiologic imaging and reported a significant improvement in her quality of life, with minimal adverse events. Tumor heterogeneity, which can lead to variations in HER2 expression across different metastatic sites, presents a significant challenge in predicting treatment responses. This case highlights the importance of integrating clinical judgement with pathological findings when tailoring treatment. This case highlights potential benefit of Pertuzumab and Trastuzumab in Her-2-low tumors. Pertuzumab and Trastuzumab are not established as standard of care treatments for HER2-low breast cancer; this case suggests potential role in metastatic disease. Further research is necessary to elucidate the molecular mechanisms underlying this subgroup and optimize therapeutic strategies.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community,
2. Analyze current trends in health research and apply relevant findings to their own research or practice,
3. Assess the potential of emerging technologies to advance their research or improve patient outcomes.

ABSTRACT O11

SPY1-MEDIATED CELL CYCLE REGULATION AS A TARGET TO OVERCOME GSC-INDUCED THERAPY RESISTANCE IN GLIOBLASTOMA

Hema Priya Mahendran[1,2], Dorota Lubanska[1,2], Mohamed Soliman[3,4], Ana deCarvalho[5], Lisa A Porter[1,2,6,7]

[1]Department of Biomedical Sciences, University of Windsor
[2]WE-SPARK Health Institute
[3]Neurosurgery Department, Cairo University
[4]Neurosurgery Department, University at Buffalo
[5]Henry Ford Hospital System
[6]St. Joseph's Health Care London
[7]Lawson Research Institute

Category: Biomedical Research

Glioblastoma (GBM) is an extremely lethal type of brain tumour that evades all intricate attempts of modern therapies. Extensive genetic analyses of GBM have indicated a variety of deregulated molecular pathways involved in DNA repair, apoptosis, cell migrationadhesion, and cell cycle regulation. Brain tumour-initiating cells (BTICs) aid in the initiation, progression, and therapy resistance of the heterogenous mass of glioblastoma and are responsible for post-therapy tumour recurrence. BTICs share properties with normal neural stem cells (NSCs), including the ability to self-renew and give rise to differentiated progeny. Previously, our lab established that the levels of an atypical cell cycle protein, SPY1 (RINGO; gene SPDYA) are elevated in malignant human glioma and its upregulation correlates with poor prognosis of patients with GBM. SPY1 is responsible for the symmetric division of BTICs in subsets of high-grade glioma leading to aberrant expansion of those aggressive populations of cells. Spy1 activates Cyclin-Dependent Kinases (CDK) and has been demonstrated to override protective cell cycle checkpoints. We hypothesize that selected targeting of SPY1-CDKs is effective in eliminating BTIC populations and could contribute to more improved therapeutic intervention for subsets of GBM patients in the future. My research project will validate the potential of SPY1-CDK2 targeting for better control over the growth and progression of GBM. The objectives of my study will allow for the evaluation of GBM biology in the face of SPY1 depletion and functional assessment utilizing GBM patient-derived neurosphere cultures and in vivo zebrafish-derived Xenograft (PDX) screening platform.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice., Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O12

INVESTIGATION OF ULK1 AND AUTOPHAGY AS THERAPEUTIC TARGETS IN ADVANCED EPITHELIAL OVARIAN CANCER

Jack D. Webb[1,2], Tiffany P. A. Johnston[1,2], Matthew J. Borrelli[1,2], Adrian Buensuceso[1], Emily J. Tomas[1,2], Yudith Ramos Valdes[1], Bipradeb Singha[1,2], Lauren Viola[2], Aine Pucchio[1], Owen F. J. Hovey[3], Shawn S.-C. Li[3,4], **Trevor G. Shepherd[1,2,4,5]**

[1]The Mary & John Knight Translational Ovarian Cancer Research Unit
[2]Department of Anatomy & Cell Biology, Western University
[3]Department of Biochemistry, Western University
[4]Department of Oncology, Western University
[5]Department of Obstetrics & Gynaecology, Western University

Category: Biomedical Research

Epithelial ovarian cancer (EOC) is the deadliest gynecologic cancer due to late-stage diagnosis and frequent chemoresistance. EOC spreads by dissemination into the peritoneum as cell clusters (spheroids), which promote metastasis and chemoresistance through stress adaptation, including autophagy. Unc51-like kinase 1 (ULK1) initiates autophagy in EOC spheroids; therefore, we hypothesized that ULK1 is required for EOC metastasis. We employed in vitro spheroid and in vivo xenograft models using CRISPR-mediated ULK1 knockout cell lines and pharmacologic inhibition by MRT-68921. ULK1 loss in OVCAR8 and HEYA8 cell lines reduced autophagy activation, which resulted in decreased spheroid cell viability. ULK1KO cells had reduced tumour growth and diminished metastatic dissemination in xenografted mice; however, overall survival between ULK1KO cells or their controls was equivocal. We postulated whether ULK1 and autophagy blockade may sensitize spheroids to other therapeutics to overcome this challenge. Standard first-line chemotherapeutics carboplatin and paclitaxel yielded no beneficial effect in this context, which forced us to identify alternative strategies. Proteomic analysis of OVCAR8 spheroids with or without ULK1 yielded several altered pathways, including reduced MEK-ERK and PI3K-mTOR, which were confirmed by immunoblotting. Pharmacologic inhibition of MEK (trametinib) or mTORC1/2 (AZD8055) resulted in enhanced ULK1KO spheroid cell killing. This dual therapeutic approach was tested in additional EOC cell lines using MRT-68921 with receptor tyrosine kinase inhibitor afatinib, which ablates MEK-ERK and PI3K-mTOR pathways simultaneously. Although MRT-68921 alone displayed potent activity to reduce EOC spheroid viability, there is evidence for dose combinations yielding synergism to test in pre-clinical applications, particularly in our new patient-derived organoids.

Learning Objectives – By the end of this session, participants will be able to:

1. Appreciate the implications of intracellular stress signalling and autophagy in ovarian cancer metastasis
2. explain several experimental methods used to model ovarian cancer metastasis
3. understand how new targeted therapeutic approaches may improve future ovarian cancer treatment by overcoming tumour dormancy and chemoresistance

ABSTRACT O13

EFFICACY OF PARP INHIBITORS ON EPITHELIAL OVARIAN CANCER SPHEROIDS AND ORGANOIDS

Emily Tomas[1,2], Yudith Ramos Valdes[1], Jennifer Davis[1], Gabriel E DiMattia[1,3,4], Trevor G Shepherd[1,2,3,5]

[1]The Mary & John Knight Translational Ovarian Cancer Research Unit

[2]Department of Anatomy & Cell Biology, Western University

[3]Department of Oncology, Western University

[4]Department of Biochemistry, Western University

[5]Department of Obstetrics & Gynaecology, Western University

Category: Biomedical Research

Epithelial ovarian cancer (EOC) is a deadly malignancy, characterized by high recurrence of chemoresistant disease. PARP inhibitors (PARPi) are new targeted agents that exploit homologous recombination repair deficiencies (HRD), which are present in over 50% of high-grade serous ovarian cancer (HGSOC) cases. Currently, Olaparib is approved as maintenance therapy for BRCA1/2-mutated HGSOC, and Niraparib for platinum-sensitive recurrent disease, but researchers are expanding their potential as front-line neoadjuvant agents. This study aims to evaluate the efficacy of PARPi as a combination therapy with carboplatin, a standard EOC chemotherapeutic. We hypothesize that drug sensitivities will differ among heterogeneous HGSOC samples, yet specific sequencing of these drug combinations will yield greater efficacy. The adherent IC50 values for Olaparib and Niraparib varied across our ascites-derived immortalized cell lines, with a BRCA1 mutant line exhibiting high sensitivity to both PARPi. To mimic tumour growth and metastasis in vitro, we cultured these lines as spheroids and organoids, followed by various drug treatments. A direct combination of carboplatin with Olaparib or Niraparib enhanced cell killing, but to similar viability levels of carboplatin alone. With sequential treatments, carboplatin followed by PARPi or vice versa, using both agents showed no significant difference in cell viability to carboplatin alone. We plan to assess HRD in these cell lines to identify biomarkers to optimize PARPi and carboplatin sequencing. Overall, we hope to determine the ideal regimen of PARPi for HGSOC patients, and using our patient-derived tumor models may provide critical insights for clinical trials, ultimately improving therapeutic outcomes.

Learning Objectives – By the end of this session, participants will be able to:

1. Assess the potential of emerging technologies to advance their research or improve patient outcomes.
2. Analyze current trends in health research and apply relevant findings to their own research or practice.,
3. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.

A-2: Building Resilient Communities: Mental Health & Well-Being

Moderator: Dr. Jennifer Voth, Hôtel-Dieu Grace Healtcare

ABSTRACT O14

EXAMINING INFLUENCES OF REJECTION SENSITIVITY AMONG PERSONS WITH MENTAL ILLNESS

Sebastian Gyamfi[1,2], Cheryl Forchuk (2), Richard Booth[3], Isaac Luginaah[4]

[1]Faculty of Nursing, University of Windsor

[2]Black Scholars Institute, University of Windsor

[3]Arthur Labatt School of Nursing, Western University

[4]Department of Geography, Western University

Category: Social, Cultural, Environmental and/or Population Health Research

Rejection sensitivity presents a significant barrier to healthcare access and contributes to adverse mental health outcomes. The perception of rejection is shaped by an individual's coping strategies and sensitivity to discriminatory behaviors embedded within stigma and social injustice. This study investigates the extent to which internalized stigma, anticipated discrimination, and structural violence (extreme social injustice) influence rejection sensitivity among persons with mental illness (PWMI). A quantitative, non-experimental cross-sectional design was employed to examine how anticipated discrimination, internalized stigma, and experiences of injustice impact rejection sensitivity among PWMIs. The study surveyed 330 outpatients receiving care at two public psychiatric hospitals in Southern Ghana. Hierarchical multiple linear regression analysis revealed that anticipated discrimination was not significantly associated with rejection sensitivity ($\beta = .015$, $p = .775$, 95% CI: -0.789 – 1.057). However, internalized stigma ($\beta = .148$, $p = .029$, 95% CI: 0.119 – 2.146) and structural violence ($\beta = .165$, $p = .015$, 95% CI: 0.014 – 0.134) were both significant predictors of rejection sensitivity. While social interactions can exacerbate distress for individuals with high rejection sensitivity, supportive social environments serve as crucial mechanisms for fostering inclusion and empowerment. These findings highlight important public health considerations for policymakers, healthcare providers, and social welfare systems, emphasizing the need for effective stigma reduction initiatives and mental health policy reforms.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Discuss the implications of health disparities and identify actionable steps to address these disparities in their own research or practice.,
3. Reflect on the importance of research to shape policies and practices.,
4. Identify health challenges and related solutions, trends, emerging issues and gaps.,
5. Explain the importance of collaboration in addressing health problems.

ABSTRACT O15

EVALUATION OF OUTCOMES AND IDENTIFIED BARRIERS FOR INDIVIDUALS SEEKING MENTAL HEALTH CRISIS CARE AT A LOCAL COMMUNITY HOSPITAL

Emma Mineau[1], Munira Sultana[2], Troy Hector[1], Shehneet Kaur[1], Neelu Seghal[2], Matthew Bessey[2]

[1]Department of Research and Innovation, St. Clair College

[2]Erie Shores HealthCare

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

This project aimed to analyze trends in mental health-related emergency department (ED) visits at Erie Shores Healthcare (ESHC) from January 2019 to December 2022. The study involved retrospective chart reviews, collecting demographic data (age, race, language, housing status) and clinical characteristics (visit dates, length, transportation mode, discharge status, final diagnosis) to identify patterns among patients seeking mental health care in the ED. Results indicated that over 2,400 individuals made nearly 3,500 visits, with anxiety disorders, depression, and alcohol use disorders being the most common diagnoses. The study highlights the need for enhanced community-based mental health services, as the majority of patients were discharged to their homes with limited follow-up care. Furthermore, transportation barriers and lack of culturally sensitive services were significant challenges for Leamington residents. This research contributes valuable insights for addressing mental health gaps in rural communities, suggesting the need for targeted interventions and improved ED staff training. In collaboration with local and provincial stakeholders, ESHC plans to develop recommendations for mental health care strategies tailored to the unique needs of Leamington's diverse population, with a goal of securing funding for broader initiatives to support mental health outcomes in rural Ontario.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Analyze current trends in health research and apply relevant findings to their own research or practice.,
3. Discuss the implications of health disparities and identify actionable steps to address these disparities in their own research or practice.,
4. Reflect on the importance of research to shape policies and practices.,
5. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O16

RESILIENCE AND MENTAL HEALTH OF NEWCOMER YOUTH

Jayashree Mohanty[1], Jane Ku[2], **Amaar El Haj**[1]

[1]School of Social Work, University of Windsor

[2]Department of Sociology, University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

Research has shown that exposure to multiple risks increases the vulnerability of newcomer youth to mental health challenges such as complicated grief, disrupted sense of identity, low self-esteem, and post-traumatic stress disorder. However, not all newcomer youth experience detrimental psychosocial and health outcomes. A small body of literature suggests that newcomer immigrant and refugee youth navigate successfully through these adversities and display a remarkable amount of resilience. This study aimed to examine how cumulative risk and resilience factors relate to psychosocial and behavioral outcomes of newcomer immigrant and refugee youth. We adopted mixed-method research, embracing both qualitative and quantitative techniques. We conducted 26 in-depth interviews and 215 surveys with newcomer immigrant and refugee youths in Windsor-Essex. The research team recruited participants for this study in collaboration with many community organizations providing services to newcomer youth in Windsor-Essex. Measurements used in this study are the Strengths and Difficulties Questionnaire, the 4-item Perceived Stress Scale, and the Child and Youth Resilience Measure. On average, we found mental health problems are about two-and-one-half times more prevalent in this population: emotional difficulties, conduct difficulties, and peer problems. Female newcomer youth experienced more than twice the mental health challenges in the clinical category than their male counterparts. While higher resilience contributed to lower mental health challenges, risk factors increased mental health issues. Implications include providing culture-specific mental health programs and services to newcomer youth that consider reducing risk factors and simultaneously enhancing protective factors.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on the importance of research to shape policies and practices.,
2. Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O17

BARRIERS TO TREATMENT PARTICIPATION AND RETENTION IN MENTAL HEALTH SERVICES AT THE REGIONAL CHILDREN'S CENTRE

Leslee Ward[1,2], Bailey Csabai[1,2], DJ MacNeil[1], Kara Hayes[1], Tammy Calic[1], Stacey Slobodnick[1], Jennifer Voth[1,2], Counselling and Therapy Staff[1]

[1]Hôtel-Dieu Grace Healthcare

[2]University of Windsor

Category: Health Service Research

The Regional Children's Centre (RCC) observed an increase in no-shows and same-day cancellations among families seeking mental health services in 2022. Research on treatment retention indicates that these issues are prevalent, suggesting that families receive less than 50% of prescribed interventions. This study aimed to identify barriers to treatment participation and develop strategies to promote engagement in treatment. Objectives included: 1) understanding treatment barriers from families' and staff perspectives, 2) designing and implementing strategies to address the identified barriers, and 3) evaluating the effectiveness of the implemented strategies. A multi-method study was undertaken which included an administrative chart review, a survey with families, and a focus group with staff. The chart review explored factors to low treatment participation within families (N = 31) from April- October 2022. The Barriers to Treatment Participation Scale was distributed to identify the barriers encountered by families receiving services (N = 35, 48% response). The focus group with staff (N = 26) included designing strategies and then prioritizing those strategies using the "PICK" Quality Improvement Method. Chosen strategies were implemented and evaluated using a retrospective and prospective chart review and a Staff Satisfaction Strategy Survey to assess the perceived effectiveness of the strategies. Key strategies implemented included: 1) automated appointment reminders, 2) psychoeducation resources, and 3) new service agreements. Overall, post-implementation data demonstrated a 46% reduction in missed appointments and a 44% decrease in no-shows and same-day cancellations. Efforts are ongoing to spread these practices to other programs within the RCC.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Reflect on the importance of research to shape policies and practices.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

A-3: Innovations in Health Care

Moderator: Dr. Sindu Kanjeekal, Windsor Regional Hospital

ABSTRACT O18

A SCALABLE MODEL FOR ADVANCING INVESTIGATOR-INITIATED RESEARCH: THE SUCCESS OF THE TANNER RESEARCH GROUP AT THE VFCC

Morgan Black[1], Dr. Eric Winquist[1], Dr. Stephen Welch[1]

[1]Department of Oncology, London Health Sciences Centre

Category: Health Service Research

Investigator-initiated research (IIR) is essential for advancing scientific discovery and improving patient outcomes. However, limited infrastructure, administrative burdens, and funding constraints often hinder clinicians from leading successful research programs. To address these barriers, our institution developed the Tanner Research Group (TRG), a centralized research support team within the Division of Medical Oncology (DMO) at the VFCC. We hypothesize that a dedicated research support infrastructure enhances IIR by reducing administrative burdens, facilitating funding acquisition, and fostering collaboration. Our objective is to evaluate TRG's impact on research productivity, grant success rates, and mentorship. Over seven years, TRG expanded from a single research associate supporting 20+ principal investigators to a 20-member multidisciplinary team. The group provides study design, ethics submissions, grant applications, data management, participant recruitment, student mentorship, and manuscript preparation thus enabling clinicians to pursue research without administrative obstacles. TRG has facilitated the approval of 80+ investigator-initiated studies, supported 30+ student learners in research, and submitted 70+ grant applications, securing over $2.25M in project funding. Additionally, the TRG has established a scalable model for research capacity building within a clinical setting, demonstrating its effectiveness in advancing IIR. The TRG model demonstrates the feasibility and impact of a dedicated research support infrastructure in advancing IIR. By reducing administrative burdens, providing mentorship, and securing funding, this approach has significantly enhanced the research output of the DMO. This scalable model can serve as a blueprint for other academic and clinical institutions aiming to strengthen their research portfolios.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O19

CRITICAL CARE OUTREACH TEAM (CCOT) PROGRAM IN A RURAL HOSPITAL SETTING

Angela Ciotoli[1]

[1]Erie Shores HealthCare

Category: Health Service Research

Erie Shores Healthcare (ESHC), a 72-bed rural hospital in Leamington, Ontario, faced challenges in recognizing and addressing clinical deterioration, leading to delays in critical care. To improve response times, ESHC implemented a nurse-led nighttime Critical Care Outreach Team (CCOT) program. This initiative aimed to enhance early recognition of clinical decline and streamline ICU transfers. We analyzed retrospective and post-implementation data on ICU transfers, focusing on response time metrics. The CCOT program led to a 64.5% reduction in time to place ICU transfer orders, a 72.4% decrease in time to move patients to an ICU bed, and a 56% reduction in time to receive critical care interventions. Additionally, a post-implementation survey showed that over 80% of nursing staff valued the program's impact on their work. Our experience highlights the benefits of a nurse-led CCOT model in improving critical care response in rural hospitals. We hope to inspire other healthcare facilities to adopt similar strategies to enhance patient care.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Outline an innovative adaptation that addresses the current needs of the community.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.,
4. Explain the importance of collaboration in addressing health problems.

ABSTRACT O20

RELIEVING THE STRAIN ON HOSPITAL RESOURCES BY IMPLEMENTING AN ADMISSION DISCHARGE UNIT (ADU) AT ESHC

Holly Kettle[1], Patti Fields[1]

[1]Erie Shores HealthCare

Category: Health Service Research

The Admission Discharge Unit (ADU) project, designed to significantly relieve the strain on hospital resources, effectively addressing the demands of the emergency department was introduced in January 2024. 1) To learn how we can reduce emergency congestion through faster patient transfers and discharges, enabling us to offer more essential services, 2) to demonstrate how the ADU is a vital transition point for focused patient care, improving overall access relevant to the hospital leadership. A specialized team managing admissions and discharges, dedicated family spaces, and clear discharge instructions were established. Staffing needs have been addressed also since nurses can focus more on direct patient care, improving discharge education, medication reviews, and reducing readmission risks. Furthermore, adding a Patient and Family Liaison role with the dedicated spaces ensures that patients and visitors receive vital support, enriching their overall experience and embodying Patient Voice. The ADU led to enhanced patient outcomes and increased operational efficiency resulting in a 32% increase in patient discharge satisfaction (from 59% to 91%) between January and December 2024. The staff retention was good, with no staff leaving the unit since January 2024. Financially, the ADU represents a significant cost-saving opportunity for the hospital, potentially saving $2.1 million annually while efficiently managing nine patient beds without compromising care quality. Since the ADU's launch, the average bed idle time has been reduced by 7.4 hours per patient, allowing quicker admissions and enhanced bed utilization.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Outline an innovative adaptation that addresses the current needs of the community.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O21

IS IT POSSIBLE TO JOIN A NATIONAL MULTI-CENTER CLINICAL TRIAL DURING CYBERATTACK?

Ming Pan[1,2], Josephine Piazza[2], Donna Clinansmith[2], Laura D'Alimonte[2], Cynthia Ménard[3], Glenn Bauman[1]

[1]Schulich School of Medicine and Dentistry

[2]Department of Oncology, Windsor Regional Hospital

[3]Department of Oncology, Université de Montréal

Category: Clinical Research

In October 2023, our hospital encountered a major cyberattack resulting in temporary loss of institutional electronic medical record (EMR) and networks. However, we opened PATRON trial (ClinicalTrials.gov NCT # 04557501) to determine if PSMA PET/CT guided intensification of therapy is superior to standard of care (SOC) for high-risk prostate cancer. It is possible to join a national multi-center phase III trial during cyberattack. An interprofessional team worked closely to screen patients and obtain informed consents. Patients randomized into the PET arm were subsequently referred to the closest cancer facility to have PSMA-PET scan (2-hour drive each way). All clinical data were documented in paper-based format and entered into EMR after the hospital recovered from the cyberattack. During 3 months, 21 patients were screened, 10 eligible for the PATRON trial, and 5 signed consents. Two were randomized to have PET scans. One had no metastasis on PET and received SOC, along with 3 patients in control arm. The other patient had PET finding of oligometastases in one single lymph node and received same SOC plus 14Gy boost. As a comparison, a total of 794 patients in Canada were recruited from 19 institutions during 3.5 years. Our institution's quarterly recruiting rate was much higher than the national average (5 vs 3.2). Cyberattacks are potentially catastrophic especially in cancer patients enrolled in clinical trials. Our institutional experience suggested that collaboration with another cancer center nearby could successfully enroll eligible patients into a large multi-center phase III trial.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Assess the potential of emerging technologies to advance their research or improve patient outcomes.,
3. Explain the importance of collaboration in addressing health problems.

A-4: INSPIRE Room

Moderator: Rowena Hill-Ernesto, INSPIRE

ABSTRACT O22

POST PANDEMIC SPREAD OF INFLUENZA AND RSV IN A CHILDCARE FACILITY IN ONTARIO IN THE PRESENCE OF VACCINATION

Monica Cojocaru[1], Darren Flynn-Primrose[2], **Bridgette Amoako[1]**
[1]University of Guelph
[2]McGill University

Category: Social, Cultural, Environmental and/or Population Health Research

We present a mathematical model of a daycare center in Ontario to investigate interactions and pathogen transmission among two types of agents: students (ages 1.5 to 4 years) and teachers. The model simulates detailed movements and interactions within a structured childcare environment, enabling analysis of pathogen exposure, infection rates, and transmission dynamics. Simulations incorporate empirical contact data collected from an Ontario daycare facility, literature-based epidemiological parameters, and publicly available health statistics, while also accounting for pathogens introduced from external environments. We explore scenarios reflecting current vaccination coverage, as well as the potential introduction of a novel RSV vaccine. The model provides estimates of infection rates within the childcare facility. Results derived from the model further explore the impact of existing and hypothetical vaccination strategies on disease transmission.

Learning Objectives – By the end of this session, participants will be able to:

1. Understand the application of agent-based modeling (ABM) for analyzing infectious disease spread in daycare settings.
2. Analyze transmission dynamics of multiple pathogens (influenza and RSV) within structured environments to identify potential interactions and combined effects.
3. Identify factors influencing pathogen spread, including vaccination status, symptomatic versus asymptomatic infection, and interaction patterns among daycare populations.

ABSTRACT O23

A DATA DASHBOARD FOR INFORMED HEALTHCARE DECISIONS

Kiana Lesan Pezeshki[1], Sepinood Haghighi[1], Pooya Moradian Zadeh[1]
[1]School of Computer Science, University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

In recent years, public health surveillance systems have played an important role in tracking health trends, detecting outbreaks early, and protecting communities. With a vast amount of available data, effective visualization tools can simplify the identification of patterns and trends, empowering healthcare specialists to make informed decisions. Our work focuses on developing a comprehensive pandemic surveillance dashboard tailored for healthcare specialists. The dashboard leverages multiple data sources, including wastewater surveillance data, public health data from the Public Health Ontario, Google News for recent news on respiratory diseases, and sentiment analysis of social media engagement on COVID-19 topics in Ontario. These diverse datasets provide a multifaceted perspective on the pandemic's progression. We implemented the dashboard using Power BI to automate data visualization and enable users to explore trends through interactive charts and real-time updates. This tool aims to assist healthcare specialists in monitoring outbreaks, evaluating the impact of interventions, and predicting potential surges in cases. Future studies will focus on correlating trends observed across datasets, such as linking wastewater viral loads with public health metrics and analyzing sentiment analysis data for early outbreak indicators. These efforts aim to further enhance the dashboard's predictive capabilities and its role in pandemic preparedness. By integrating data from multiple sources and presenting them in an intuitive format, this dashboard serves as a vital tool for public health professionals in their ongoing fight against respiratory pandemics.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Assess the potential of emerging technologies to advance their research or improve patient outcomes., Reflect on the importance of research to shape policies and practices.,
4. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O24

DEVELOPING A PLATFORM TO MONITOR HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI) VIRUS SEQUENCES IN WASTEWATER AND ENVIRONMENTAL SAMPLES

Ana Podadera[1], Ethan Harrop[2], Cameron Chevalier[3], Ryland Corchis-Scott[2], Qiudi Geng[2], Daniel J. Mennill[3], R. Michael McKay[2], Kenneth K.S. Ng[1]

[1]Department of Chemistry and Biochemistry, University of Windsor

[2]Great Lakes Institute for Environmental Research, University of Windsor

[3]Department of Integrative Biology, University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

Since its introduction to North America in late 2021, highly pathogenic avian influenza (HPAI) H5N1 clade 2.3.4.4b has had serious and widespread effects on wild and domesticated birds. In early 2024, spillover infections were detected for the first time in dairy cattle, leading to an ongoing outbreak affecting ~1000 herds across 16 states. Spillover infections into mammalian hosts like cats, foxes and humans can lead to very severe symptoms including death, although human-to-human transmission is fortunately inefficient at present. To overcome some of the limitations of current approaches to monitor HPAI infections in wild bird, domesticated animal and human populations, we have developed a novel and comprehensive platform to quantify and sequence HPAI viruses from wastewater and environmental samples. Our interdisciplinary team of ornithologists, environmental microbiologists and biochemists have created and optimized a pipeline that (1) identifies productive sites and methods for sampling, (2) efficiently concentrates and extracts viral RNA from complex samples, (3) quantifies viral RNA copies using RT-qPCR and (4) sequences amplicons targeting the genes encoding hemagglutinin, neuraminidase and polymerase subunits. Preliminary results indicate that the HPAI virus sequences detected in the wastewater samples from Detroit, as well as from rural sites frequented by waterfowl share genetic features characteristic of viruses adapted to avian hosts. As the HPAI pandemic continues to develop, we expect that our surveillance platform will play an important role to monitor the evolution of genomic sequences in HPAI viruses associated with higher levels of pathogenicity and transmissibility in avian and mammalian hosts.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Analyze current trends in health research and apply relevant findings to their own research or practice.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O25

ENHANCING WASTEWATER SURVEILLANCE: OPTIMIZING EUKARYOTIC ENRICHMENT FOR IMPROVED PATHOGEN DETECTION

Shahrzad Zahedifar[1], Trevor Charles[2], Andrew Doxey[1]

[1]Biology Department, University of Waterloo

[2]Waterloo Centre for Microbial Research, University of Waterloo

Category: Social, Cultural, Environmental and/or Population Health Research

Wastewater surveillance is a valuable tool for detecting viral pathogens in communities, providing early warning signs of outbreaks. Shotgun metagenomics is a powerful approach for pathogen detection in wastewater, but critical pathogens such as viruses are often low in abundance, making detection challenging. Standard sequencing approaches primarily capture bacterial DNA, limiting the recovery of eukaryotic and viral genetic material. Furthermore, a significant gap remains in mapping interactions between viruses and their eukaryotic hosts, which is crucial for understanding transmission pathways and zoonotic risks. To address this, we developed a method for targeted enrichment of eukaryotic cells from wastewater to enhance the detection of viruses and their hosts. Objectives: 1. Optimize an enrichment method combining size filtration and enzymatic treatment to increase eukaryotic cell recovery, 2. Quantify enrichment efficiency using shotgun sequencing, 3. Assess applications of this method for improving wastewater-based pathogen surveillance. Wastewater samples underwent two-step filtration, starting with layered cheesecloth filtration to remove large debris, followed by 0.5 µm paper filtration using a vacuum pump to selectively capture eukaryotic cells. A subset of samples was treated with lysozyme to lyse bacterial cells. DNA was extracted and sequenced using shotgun metagenomics, with microbial composition analyzed to assess enrichment efficiency. Our method increased eukaryotic DNA content from 8% to 25%, demonstrating significant enrichment. This approach enhances pathogen detection and has future applications for ligation sequencing, improving the identification of host-virus interactions in wastewater and addressing a key gap in surveillance.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Assess the potential of emerging technologies to advance their research or improve patient outcomes.,

B-1: Putting Patients First: Innovations in Care & Engagement

Moderator: Dr. Andrew Hubberstey, University of Windsor

ABSTRACT O26

EQUITY-FOCUSED BARRIERS AND FACILITATORS TO IMPLEMENTING A PRENATAL YOGA INTERVENTION IN A HEALTH SYSTEM: PATIENT AND PROVIDER PERSPECTIVES

Paige Coyne[1,2,3], Erin N. Haley[4], Celeste Pappas[4], Sara Santarossa[1,2,5], Amy Loree[1,2,5], Laurel M. Hicks[6], Jordan M. Braciszewski[1,2,7], Lisa R. Miller-Matero[1,2,8], Maya Zreik[1]

[1]Department of Public Health Sciences, Henry Ford Health
[2]Henry Ford Health & Michigan State University
[3]Department of Epidemiology and Biostatistics, Michigan State University
[4]Center for Health Policy & Health Services Research, Henry Ford Health
[5]Department of Obstetrics, Gynecology and Reproductive Biology, Michigan State University
[6]Renée Crown Wellness Institute, University of Colorado Boulder
[7]Department of Pediatrics and Human Development, Michigan State University
[8]Department of Psychiatry, Michigan State University

Category: Clinical Research; Social, Cultural, Environmental and/or Population Health Research

History of depression is a risk factor for the development of postpartum depression (PPD). Racial/ethnic minorities have higher rates of PPD and are less likely to initiate treatment. Prenatal yoga presents a promising avenue for preventing PPD among individuals from diverse racial/ethnic backgrounds. The purpose of this study was to gather feedback from pregnant individuals and healthcare professionals to identify facilitators and barriers to the equitable implementation of an 8-week prenatal yoga intervention to prevent PPD. Equity-based framework for Implementation Research (EquIR) informed data collection and analysis. Four virtual focus groups with pregnant individuals (N=18) and interviews with healthcare professionals (N=11) were conducted. Participants were given an overview of the intervention and invited to provide feedback on the design/study procedures. Pregnant individuals also participated in an abbreviated intervention. The Framework Method was used to analyze transcripts. Facilitators/barriers were grouped into themes aligned with EquiR outcomes: 1) knowledge/attitudes; 2) logistics; 3) content/instructor; 4) cost; and 5) advertising. Facilitators included: recognizing the benefits of prenatal yoga (Theme 1), the option to participate virtually (Theme 2), and providing relevant modifications (Theme 3). Barriers included safety concerns (Theme 1), time constraints (Theme 2), and potential discomfort when participating (no prior experience, physical limitations, or limited diversity reflected in the group) (Theme 3). This study represents an important step towards optimizing the equitable implementation of a prenatal yoga intervention to prevent PPD for those at risk. Future work will test the feasibility, acceptability, and effectiveness of the intervention to prevent PPD.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Discuss the implications of health disparities and identify actionable steps to address these disparities in their own research or practice.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O27

ENHANCING RESEARCH IMPACT THROUGH INCLUSIVE PATIENT ENGAGEMENT: LESSONS FROM THE PEIR-IDEAS PROJECT

Ashley Redding[1], Leah Copeland[1], Dana Murphy[1], Asraa Alhawli[2], Maureen Bennett[3], Martina Caldwell[4], Karen Clemmons-Lloyd[5], Kimberly Cummings[5], John Doyle[5], Sandy Kesavan[5], Karen Kippen[1], VeRonica Mitchell[5], Angela Murphy[3], Deyal Riley[5], Linda Stechison[5], **Sara Santarossa[1,6]**

[1]Public Health Sciences, Henry Ford Health
[2]Arab Community Center for Economic and Social Services
[3]Care Experience, Henry Ford Health
[4]Department of Emergency Medicine, Henry Ford Health
[5]Patient Advisor Program, Patient Engaged Research Center, Henry Ford Health
[6]Department of Obstetrics, Gynecology and Reproductive Biology, College of Human Medicine, Michigan State University

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

Meaningfully engaging patients in research ensures studies are aligned with patient-centered priorities and enhances the real-world impact of findings. The Patient Engaged Research Center at Henry Ford Health specializes in integrating the patient voice into the research process. We will demonstrate effective patient engagement at all research stages with the example of our PCORI-funded project (SOE-2022C2-28911), Patient-Engaged Validation of the PEIR Survey Enhanced by Inclusion, Diversity, Equity, Acceptance and Safety (PEIR-IDEAS) and its stakeholder team, the Science of EnAgement Team (SEAT). The SEAT (N = 17) consists of researchers, community members, a physician, health system staff who engage patients in their work, and patients, and meets monthly. We have broken the research process down into 5 steps and meaningfully engaged the SEAT along the way. Step 1. Refining the research question – literature review; Step 2. Selecting the study approach – creating an engagement plan; Step 3. Designing the study and collecting data – choosing recruitment strategies, conducting focus groups; Step 4. Analyzing data – analysis of focus group data, return of aggregate results plan; Step 5. Reporting findings – co-creating a dissemination plan, co-authoring publications and abstracts. Patient engagement in our study led to a myriad of successes, such as including diverse voices into the study and applying new lenses to data analysis. The project resulted in PEIR-IDEAS, a validated scale to measure patient engagement in research. This tool can be disseminated broadly and used to assess and improve patient-centered initiatives.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Explain the importance of collaboration in addressing health problems.,
3. Provide specific examples of how to incorporate patients' diverse perspectives into the research cycle.

ABSTRACT O28

MAPPING JOURNEYS OF CARE: THE IMPACT OF ARTS-INFORMED STORYTELLING APPROACHES IN IMPROVING DIAGNOSIS AND CARE IN WOMEN WITH PCOS

Kendall Soucie[1], Noelle Citron[1], Kenzie Tapp[1], Jasmine Kobrosli[1], Carly Biderman[1], Marissa Rakus, Chloe Curran[1], Jeannette Vanier[2], Andy Tannous[3], Emma Getty[1], Christa Arundine[4], Jana Mohamad[1], Ava Wright[1], Jessica Kichler[1], Patti Fritz[1], Suzanne McMurphy[5], Jen Rinaldi[6]

[1]Department of Psychology, University of Windsor
[2]Department of Biomedical Sciences, University of Windsor
[3]Department of Social Work, University of Windsor.
[4]Faculty of Nursing, University of Windsor
[5]Department of Sociology, Anthropology and Criminology, University of Windsor
[6]Legal Studies, Ontario Tech University

Category: Health Service Research

Polycystic Ovary Syndrome (PCOS) is the most common endocrine syndrome in people assigned female at birth, affecting up to 25% of individuals worldwide. Symptoms fall into three specific clusters: reproductive, metabolic, and mental health impacts. Reproductive symptoms include ovarian cysts, menstrual irregularities, and fertility-related concerns, and high testosterone. Excess androgen results in changes to one's physical appearance, namely hirsutism and alopecia. Metabolic concerns are insulin-resistance, high body mass index, and dyslipidemia. Higher rates of anxiety, depression, body image disturbances, and a lower quality of life are also reported in PCOS patients. PCOS also increases the risk of type 2 diabetes, cardiovascular disease, endometrial cancer, and non-alcoholic fatty liver disease. Early detection is crucial in mitigating these risks. However, PCOS remains misunderstood, misdiagnosed, and neglected as a chronic health condition, and diagnosis and treatment lags are common worldwide. To understand these delays, and amplify patient-centered research goals, we merged life story approaches with artistic expression to capture and understand diverse patients' lived experiences seeking diagnosis, care, and treatment for PCOS in Canada. Participants first sketched out the chapters of their PCOS story, filled in the details with events/scenes in health care settings that were memorable, and then reflected on their experience holistically, along with their goals for care in the future. In this talk, we will share themes constructed from patients' life stories that capture their intersecting and complex journeys with the health care system. This work illuminates the value of multimethod qualitative approaches to foster health equity in women's health.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O29

‘NAVIGATING THE COMPLEXITIES OF HOME HEALTH CARE FOR MY CHILD’: INSIGHTS FROM PARENTS OF CHILDREN WITH COMPLEX MEDICAL CONDITIONS (CMCS)

Joanne Tay[1,2], Adam Rapoport[3,4,5], Jamie Crawley[1], Joanne Ta[1], Jessica Kichler[5]

[1]Faculty of Nursing, University of Windsor

[2]Emily’s House Children’s Hospice

[3]Paediatric Advanced Care Team, The Hospital for Sick Children

[4]Departments of Paediatrics and Family & Community Medicine, University of Toronto

[5]Department of Psychology, University of Windsor

Category: Health Service Research

CMCs represent a growing population of individuals living with complex medical conditions who require significant support in their medical care and activities of daily living. Pediatric home health care (PHHC) provides individualized care to CMCs within their own homes, helping them achieve a better quality of life. Existing care models include traditional home care, where agencies assign staff based on the families’ needs, and Family Managed Home Care, which empowers parents to arrange care themselves. Despite the availability of different home care options, current gaps in funding and services continue to raise concerns about the accessibility and adequacy of PHC support. This descriptive qualitative study 1) explored parents' experiences accessing PHHC for their CMCs, 2) identified gaps in PHHC, and 3) examined the impact of navigating PHHC systems on parents’ quality of life. Semi-structured interviews were conducted with 15 parents of CMCs. The interviews were transcribed and analyzed using a thematic analysis approach. The interviews highlighted challenges parents face in accessing consistent, high-quality home care, often at the expense of the CMC’s health and family’s well-being. Four overarching themes were generated from the interviews: 1) adapting to the variations in the quality of care provided by home care providers, 2) navigating the complex PHC eligibility assessment process, 3) relying on respite and unpaid caregiving, and 4) experiencing reduced quality of life. The current gaps in PHHC revealed systemic challenges that leave parents feeling trapped and unsupported, underscoring the need for improved support and streamlined processes.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on the importance of research to shape policies and practices.,
2. Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

B-2: Emerging Topics in Healthcare

Moderator: Dr. Jennifer Voth, Hôtel-Dieu Grace Healthcare

ABSTRACT O30

ASSESSING THE TRIAGING AND DIAGNOSTIC ACCURACY OF CHATGPT IN NEUROSURGICAL CASES

Frank Mazza[1], Abdul Naeem[2]

[1]Schulich School of Medicine and Dentistry

[2]Department of Neurosurgery, Windsor Regional Hospital

Category: Clinical Research; Health Service Research

ChatGPT's role in healthcare is expanding, particularly in medical triage. It has passed the American Board of Neurological Surgery exam and shown promise in interpreting radiological reports and supporting adjuvant therapy decisions. In resource-limited settings, ChatGPT may serve as a valuable decision-support tool for neurosurgical triage and diagnosis. However, research on its effectiveness in general neurosurgical triage remains limited. This study aims to comprehensively assess ChatGPT's triaging and diagnostic accuracy by comparing its output to expert neurosurgical opinions at Windsor Regional Hospital (WRH). The primary objective is to assess ChatGPT's diagnostic and triaging accuracy using a representative sample of neurological cases at WRH. The secondary objective is to identify factors influencing its performance, including case and patient characteristics, available tests, and hallucinations. Given that neurosurgical triage follows a standardized system with clear urgency ratings, we hypothesize that ChatGPT will perform comparably to surgeons in straightforward cases but may deviate more in complex cases with multiple comorbidities. We will present 50 anonymized clinical vignettes to ChatGPT, including history of presenting illness, past medical history, and family history. We will evaluate ChatGPT's accuracy in differential diagnosis, triage urgency, red flag identification, test selection, and hallucinations. Statistical analysis will include Cohen's kappa to assess agreement with neurosurgeons. Diagnostic accuracy will be measured using sensitivity, specificity, and accuracy. Chi-square tests will examine performance variations based on patient and case characteristics. Automated decision-support tools like ChatGPT may greatly enhance triage efficiency while reducing administrative burden, benefiting both patients and hospitals.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Assess the potential of emerging technologies to advance their research or improve patient outcomes.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O31

KAISO AT THE CROSSROADS: UNDERSTANDING THE TRANSITION FROM INFLAMMATORY BOWEL DISEASE TO COLORECTAL CANCER

Danial Mohammadi[1], Lindyann R Lessey[1], Robert W Cowan[1], Juliet M Daniel[1]

[1]Centre for Discovery in Cancer Research, McMaster University

Category: Biomedical Research

Individuals diagnosed with inflammatory bowel disease (IBD) experience chronic intestinal inflammation and are at increased risk of developing colitis-associated colorectal cancer (CAC). However, as the mechanisms involved in the IBD-to-CAC transition are not fully elucidated, it is necessary to identify key molecular pathways involved in IBD. Colon biopsies derived from IBD patients, along with primary and metastatic colorectal cancer tumours display elevated expression of the transcription factor Kaiso. Notably, Kaiso over-expressing mice (KaisoTg/+) exhibit altered morphology and chronic intestinal inflammation. RNA-sequencing revealed dysregulated expression of genes linked to immune response in 6 weeks old KaisoTg/+ mice, which were subsequently examined for other factors contributing to inflammation. Immunohistochemical staining of KaisoTg/+ mouse intestines showed unaltered expression of proliferative, apoptotic, and neutrophil protein markers compared to non-transgenic (NonTg) mice. In addition, Gram staining revealed that there was no notable bacterial infiltration into the lamina propria that could explain the inflammatory phenotype. Collectively, our findings implicate Kaiso's transcriptional activity as the key driver of the inflammatory phenotype, positioning KaisoTg/+ mice as a pivotal model to unravel the IBD-to-CAC transition.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Discuss the implications of health disparities and identify actionable steps to address these disparities in their own research or practice.

ABSTRACT O32

WEIGHT LOSS OUTCOMES OF OPTIFAST® TOTAL VS PARTIAL MEAL REPLACEMENT PROGRAMS IN A COMMUNITY CLINIC

Padmaja Naidu[1], Rishi Naidu[2], Alex Klas[3], Daniel Lupas[3], Mihir Modi[2], Rong Lou[2], Caroline Hamm[1]

[1]Windsor Regional Hospital

[2]University of Windsor

[3]Schulich School of Medicine and Dentistry

Category: Biomedical Research; Clinical Research

The aim of the study was to compare the effectiveness of the total Optifast program (OP), an evidence-based total meal replacement program, with a partial OP, for weight loss in a community-based setting. This is a study of real-world data primarily examining total weight loss, % weight loss, and change in BMI following 12-14 weeks of the total and partial OP. Participants were selected from a community obesity clinic in Windsor, within November 2019 to June 2022. Participants were selected sequentially based on at least 12 weeks of adherence to the total OP (4 packets/day, with no meals, at least 80% of the time) or partial OP (1-3 packets/day, replacing one or more meals). Participants were examined for changes in BMI and % change in weight at a 12-14 week follow-up. A total of 73 participants made up the total (n=47; baseline weight = 270.6 ± 63.9 lbs) and partial (n=26; baseline weight = 254.1 ± 58.5 lbs) OP groups. Compared to baseline, absolute weight loss across 12 weeks was 37.4 ± 13.2 lbs (p<0.001) and 20.3 ± 10.7 lbs (p<0.001) in the total and partial OP groups, respectively.
The % weight change at 12 weeks was significantly greater in the total (13.8 ± 3.6%) compared to the partial (8.2 ± 3.9%) OP group (p<0.001). After 12-14 weeks, significant weight loss was achieved in both the total and partial OP groups, with the total OP showing significantly greater weight loss than the partial OP group.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Analyze current trends in health research and apply relevant findings to their own research or practice.,
3. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.

ABSTRACT O33

FROM AWARENESS TO ACTION: SHAPING A UNIFIED RESPONSE TO INTIMATE PARTNER VIOLENCE (IPV) AND FEMICIDE IN WINDSOR-ESSEX

Amy Peirone[1], Betty Barrett[2], **Darien Pare[1], Debra Levitt[1],** Mataya Elem[1]

[1]School of Community Studies, St. Clair College

[2]School of Social Work, University of Windsor

Category: Social, Cultural, Environmental and/or Population Health Research

Despite growing awareness, Intimate Partner Violence (IPV) remains a pressing public health crisis in Canada. Declared an epidemic in Windsor-Essex and over 90 municipalities across Ontario, IPV leads to devastating social and health consequences, including femicide. Over the past three years, in Ontario alone, there has been an average of one or more femicides per week (OAITH, 2024). Research confirms that cross-sector collaboration is essential to addressing the multi-dimensional health impacts of IPV, as coordinated responses across healthcare, social services, law enforcement, and community organizations improve outcomes for survivors (Brown et al., 2023; Douglas & Hines, 2011). However, fragmented training, siloed approaches, inconsistent use of risk identification tools, and sector-specific service differences limit these efforts (Aarons et al., 2014). Consultations with the Windsor-Essex IPV/GBV Leadership Table, comprised of diverse sector representatives identified a critical need for shared language, standardized risk assessment tools, and cross-sector training to enhance coordination. To avoid reinventing the wheel, this project, aligns with the Violence Against Women Coordinating Committee's approach by adapting an existing public health framework originally developed for coordinated suicide prevention, and integrates publicly available IPV awareness materials to create a scalable, evidence-based training module. This presentation will share stakeholder insights and the module's development to date, demonstrating how public health strategies enhance IPV training and prevention efforts. By co-developing a standardized, cross-sector training framework, this initiative strengthens multi-agency collaboration, ensuring every frontline service provider is equipped to respond effectively.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on the importance of research to shape policies and practices.,
2. Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

B-3: Empowering the Future of Nursing & Healthcare

Moderator: Dr. Sindu Kanjeekal, Windsor Regional Hospital

ABSTRACT O34

"I'M ALWAYS GONNA BE FISH OUT OF WATER" – A QUALITATIVE EXPLORATION OF PHILIPPINE-EDUCATED NURSES IN ONTARIO, CANADA

Edward V. Cruz[1], Kristoffer Romero[2]

[1]Faculty of Nursing, University of Windsor

[2]Department of Psychology, Faculty of Arts, Humanities, and Social Sciences, University of Windsor

Category: Health Service Research

Filipinos are amongst the fastest growing visible minority groups in Canada (Laquian & Ma, 2021). Despite the huge number of highly-educated professionals from the Philippines in general, and the great number of Philippine-educated nurses (PENs) working within Canada's healthcare system, we are not aware of any literature that specifically explored PENs' experiences with workplace transitions or their employment trajectory and how these have impacted their labour outcomes. Using PENs as our case study, our objective is to explore the employment trajectory of these IENs within Ontario's labour landscape. Following receipt of research ethics clearance from the University of Windsor Research Ethics Board, we conducted in-depth interviews with 15 PENs. All interviews were audio-recorded and transcribed verbatim. Data was managed using ATLAS.ti 23, and analyzed using Braun and Clarke's (2019) framework for thematic analysis. Four themes were identified from participant interviews: 1) adversity and workplace challenges; 2) preparing for work and bridging education; 3) microaggression, stereotyping, discrimination, racism; and, 4) planning for the future. PENs encountered challenges starting their nursing career in Canada. With the ongoing global nursing shortage and the competition amongst high-income countries to recruit internationally educated nurses, there is an urgent need for governments and employers to provide sufficient and appropriate supports to this group of nurses to address the othering experienced by these nurses, to promote their retention in the workplace, and to avoid brain waste. Internationally educated nurses, broadly, should be encouraged in supported in advancing their careers in Canada.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on their organization's current Diversity, Equity, and Inclusion (DEI) activities, and propose one actionable change to improve inclusivity.,
2. Reflect on the importance of research to shape policies and practices.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O35

NURSE EDUCATORS' PERCEPTIONS OF TRAUMA-INFORMED CARE (TIC) IN BACCALAUREATE NURSING EDUCATION: AN INTERPRETIVE DESCRIPTIVE STUDY

Rachel Elliott[1], Kathryn Pfaff[1], Edward Cruz[1], Sherry Morrell[1]

[1]Faculty of Nursing, University of Windsor

Category: Health Service Research; Social, Cultural, Environmental and/or Population Health Research

Trauma-informed care (TIC) is an important practice approach that aims to meet the needs of trauma survivors by understanding the effects of trauma and its close links to health (Wathen et al., 2021). Registered nurses are especially well-positioned to implement a trauma-informed approach to care (Stokes et al., 2017). However, undergraduate students receive limited or no access to TIC education (Li et al., 2019). Although there has been a recent rise in the investigation of TIC within various nursing specialties, the perceptions of nurse educators and students remain largely understudied. This interpretive descriptive (ID) study aims to understand the individual, relational and structural or organizational contextual factors that influence nurse educators' understanding of TIC and their ability to incorporate it effectively into undergraduate nursing curriculum. ID offers an accessible and theoretically flexible applied qualitative approach for producing knowledge to create change (Thorne et al., 2016). Participants will initially complete an online survey with two validated instruments to assess educator knowledge, attitudes, and practices related to TIC. Quantitative data will be analyzed using basic descriptive analyses. Qualitative data analysis will occur concurrently with data collection and involve Braun and Clarke's (2012) six-phase reflexive thematic processes. Despite calls to action for trauma awareness in nursing education (Goddard et al., 2021), no standardized TIC curriculum exists. Educators must understand and implement the principles of TIC to equip nursing students with the skills to address the needs of trauma survivors.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on the importance of research to shape policies and practices.,
2. Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

ABSTRACT O36

DETERMINANTS OF HEALTHCARE WORKERS' JOB RETENTION DURING THE GLOBAL HEALTH CRISIS: INSIGHTS FROM A NATIONAL SURVEY IN CANADA

Nazim Habibov[1], Alena Auchynnikava[1], Yunhong Lyu[2]

[1]School of Social Work, University of Windsor

[2]Department of Mathematics, Trent University

Category: Health Service Research

The purpose of this study is to investigate the determinants of job retention intention among healthcare workers in Canada during the COVID-19 pandemic. Data are from a large nationally representative cross-sectional survey conducted by the Canadian National Statistics Agency. Ordered logistic regression is estimated to find an association between job retention and its main determinants as gleaned from the literature while controlling for a wide range of pertinent covariates. Odds and standardized odds are reported and discussed. The results suggest that worsening working conditions, changes in health and well-being, and lack of organizational support weaken intentions regarding job retention. Being employed rather than self-employed and working as a nurse also weakens job retention. This is the first research on the determinants of intentions regarding job retention in Canada using nationally representative data. It allows us to test and confirm the results of previous studies on a large sample of Canadian healthcare workers. The paper also discusses the implications of the findings for health management and administration.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Discuss the implications of health disparities and identify actionable steps to address these disparities in their own research or practice.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O37

IMPACT OF DEDICATED NURSING EDUCATION DAYS ON NURSE JOB SATISFACTION AND RETENTION

Catherine Taylor[1]

[1]Erie Shores HealthCare

Category: Health Service Research

The recent pandemic has exacerbated the existing challenges in nursing retention due to heightened stress and burnout. This study aims to determine whether there is an association between dedicated nursing education days and nurse satisfaction and retention at ESHC. Erie Shores HealthCare nurses (n=44) were consulted through email and gave input on the design and implementation of workshops for nurse consumption. Post-consultation nurses participated in 8-hour-long education days. A voluntary, anonymous survey of 113 nurses participating in various educational days at Erie Shores HealthCare in Leamington, Ontario, Canada, between December 2023 and April 2024 was conducted. Around 73% of participants reported that the education workshops were useful to their practice and competency as nurses in Ontario and 71% expressed that the knowledge gained would be used within their practices. Approximately 73% would recommend education workshops to other hospitals and organizations for ongoing nurse training in Ontario. The survey result underscores the urgent need for action in addressing the effects of implementing and executing multiple dedicated nursing education days. Outcomes from the study have led to proposed education days on an ongoing basis and developing out to other professions such as physicians and allied health professionals. This learning is crucial in understanding and addressing the broader issue of the national nursing shortage and ongoing problems with work-life balance and should motivate us all to take immediate action.

Learning Objectives – By the end of this session, participants will be able to:

1. Reflect on the importance of research to shape policies and practices.,
2. Identify health challenges and related solutions, trends, emerging issues and gaps.,
3. Explain the importance of collaboration in addressing health problems.

B-4: Bridging Sciences & Clinical Practice for Infection Control

Moderator: Rowena Hill-Ernesto, INSPIRE

ABSTRACT O38

PREFERENTIAL EXPANSION OF NK CELLS LACKING NKR-P1A (CD161) RECEPTOR EXPRESSION DURING HUMAN CYTOMEGALOVIRUS INFECTION

Mohamad Basem Alkassab[1], Fareeha Shaikh[1], Caroline Hamm[2,3], Mir Munir A. Rahim[1]

[1]Department of Biomedical Sciences, University of Windsor

[2]Division of Medical Oncology, Western University

[3]Windsor Cancer Centre, Windsor Regional Hospital

Category: Biomedical Research; Clinical Research

Natural killer (NK) cells are essential for immunity against human cytomegalovirus (HCMV). NK cell receptors (NKR) play a key role in anti-HCMV responses, and HCMV infection selectively shapes the NKR repertoire. NKR-P1A (CD161) is an inhibitory receptor, whose expression is lost during HCMV infection, but its role in NK cell responses during HCMV infection is not known. We analyzed peripheral blood mononuclear cells (PBMCs) from healthy individuals and hematopoietic stem cell transplant (HSCT) patients with latent and active HCMV infections, respectively, to assess the impact of NKR-P1A on NK cell function. Our findings reveal a significant increase in NKR-P1A– NK cells, particularly in clonally expanded NKG2C+ and CD57+ memory NK cells, but not in NKG2C– or CD16+ subsets. A larger proportion of NKR-P1A– NK cells from HCMV-infected individuals exhibited an activated (granzyme B+) and proliferating (Ki-67+) phenotype compared to NKR-P1A+ NK cells. However, NK cells maintained their ability to activate and proliferate in response to in vitro stimulation regardless of NKR-P1A expression. Additionally, HCMV infection did not impair cytokine-induced NKR-P1A upregulation. Analysis of publicly available single-cell RNA sequencing datasets showed that only NKR-P1A– NK cells in HCMV-seropositive individuals exhibited transcriptomic signatures associated with adaptive NK cells that expand during HCMV infection. These findings suggest that lower activation and proliferation of NKR-P1A+ NK cells contribute to the accumulation of NKR-P1A– NK cells, highlighting the inhibitory role of NKR-P1A during HCMV infection and further demonstrating how HCMV shapes the NK cell repertoire.

Learning Objectives – By the end of this session, participants will be able to:

1. Outline an innovative adaptation that addresses the current needs of the community.,
2. Assess the potential of emerging technologies to advance their research or improve patient outcomes.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps

ABSTRACT O39

INVESTIGATING THE EFFECTS OF THE COVID-19 LOCKDOWN ON CANCER PATIENT SELF-REPORTED SYMPTOM INTENSITY IN A SOUTHWESTERN ONTARIO CANCER CENTER

Jiil Chung[1], Laurie Freeman[2]

[1]Schulich School of Medicine and Dentistry

[2]Department of Nursing, University of Windsor

Category: Clinical Research

The longitudinal impact of the COVID-19 pandemic on patient-reported outcomes (PRO) in the cancer patient population is an important and under-investigated issue that can inform comprehensive care. Reduced access to medical care was problematic for cancer patients, as they require frequent treatments and appointments. PROs of cancer patients measured through the Edmonton Symptom Assessment Scale Revised (ESAS-r) would be negatively impacted during the lockdown, followed by recovery to baseline once measures lifted. To trend PROs in cancer patients, we anonymized ESAS-r data collected at a southwestern regional Cancer Program from January 2019 to December 2023 (n=45,896). Contrary to our hypothesis patients reported less severe symptoms (mIQR=13(22)) during the pandemic compared to before (mIQR=15(24), $P<0.001$) or once the lockdown was lifted (mIQR=16(24), $p<0.001$). Upon subsetting the data to surveys completed at home (n=4,820) versus in-clinic (n=29,858), individuals' scores gathered during lockdown in-clinic were comparable to baseline ($p=0.64$). These results suggest that patients perceived less severe symptoms at home during the lockdown, which could be due to feeling safer, not having to go out, and being more physically comfortable. Whereas more ill patients needed to visit the clinic to receive care. Although this study was limited to a single setting, it demonstrated the unpredictable effects COVID-19 had, highlighting the importance of further exploring the lasting impact of the global crisis on cancer patients.

Learning Objectives – By the end of this session, participants will be able to:

1. Provide specific examples of how to incorporate patients' lived experiences into daily practice.,
2. Analyze current trends in health research and apply relevant findings to their own research or practice., Reflect on the importance of research to shape policies and practices.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O40

PRECISION PROBIOTIC DOSAGE SCREENING IN BREAST CANCER THERAPY USING A NOVEL MICROFLUIDIC PLATFORM

Ali Salehi[1,2], Parvaneh Naserzadeh[3], Parastoo Tarighi[4], Elham Afjeh-Dana[1], Amir Jafari[2], Pooyan Mackvandi[2,5], Behnaz Ashtari[1,2,6], Masoud Mozafari[7], **Masoud Akhshik[8,9]**

[1]Radiation Biology Research Centre, Iran University of Medical Sciences
[2]Department of Medical Nanotechnology, Faculty of Advanced Technologies in Medicine, Iran University of Medical Sciences
[3]Endocrine Research Center, Institute of Endocrinology and Metabolism, Iran University of Medical Sciences
[4]Department of Medical Biotechnology, Faculty of Allied Medicine, Iran University of Medical Sciences
[5]Centre for Materials Interfaces, Istituto Italiano di Tecnologia
[6]Cellular and Molecular Research Center, Iran University of Medical Sciences
[7]Research Unit of Medical Imaging, Physics and Technology, Faculty of Medicine, University of Oulu
[8]St. Clair College, Department of Research and Innovation
[9]Department of Biology, University of Toronto

Category: Clinical Research

Breast cancer remains an urgent health concern worldwide, highlighting the need for innovative and patient-focused treatment strategies. In collaboration with the WE-SPARK Health Institute, we have created a PDMS-based microfluidic platform that enables high-throughput, real-time screening of probiotic supernatants against MCF-7 breast cancer cells. Unlike static culture methods, this system supplies continuous nutrients and generates dynamic concentration gradients, making it more representative of physiological conditions. In our experiments, the most effective inhibitory concentration of probiotic supernatant—7.8 mg/mL—was notably lower than the 12 mg/mL identified in conventional assays, indicating increased precision and sensitivity. Flow cytometry revealed that both apoptosis and necrosis were triggered in a time- and dose-dependent fashion, with reactive oxygen species (ROS) playing an essential role. By offering a more clinically relevant environment for drug testing, this microfluidic approach can guide improved dosing strategies and potentially lessen treatment side effects. These findings advance WE-SPARK's mission of transforming health research and underscore the potential of personalized therapeutics in both the Windsor-Essex region and the broader healthcare community. This original research has been published in https://doi.org/10.1016/j.tranon.2023.101674.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Compare and contrast different methodologies used in health research studies and determine which methodologies could be applied to support their own evidence-based practice.,
3. Assess the potential of emerging technologies to advance their research or improve patient outcomes.,
4. Identify health challenges and related solutions, trends, emerging issues and gaps.

ABSTRACT O41

FACTORS INFLUENCING NURSE PRACTITIONERS' INFLUENZA VACCINE RECOMMENDATIONS

Caitlyn Wilpstra[1], Gina Pittman[1], Jody Ralph[1], Edward Cruz[1], Todd Loughead[2]

[1]Faculty of Nursing, University of Windsor

[2]Faculty of Human Kinetics, University of Windsor

Category: Health Service Research

Nurse practitioners (NPs) routinely recommend and administer influenza vaccines. While healthcare providers' recommendations are a key factor influencing patients' influenza vaccine uptake, little is known about how NPs recommend the influenza vaccine to patients. The purpose of this study was to describe the influenza vaccine recommendation practices of primary care NPs in Ontario and to identify provider-specific factors affecting the quality of their recommendations. An explanatory sequential mixed-methods study was undertaken. Ninety-two NPs completed the survey, and 13 NPs participated in follow-up interviews. NPs' vaccine recommendations were examined in relation to their frequency (68.5% "always" recommend), strength (50.0% "strongly" recommend), approach (79.3% recommend conversationally), urgency (75.0% recommend same-day vaccination), immediate persistency (65.2% soften their initial recommendation when patients refuse vaccination), and future persistency (46.7% are "somewhat likely" to recommend vaccination again after previous refusal). In multivariate analysis, NPs who had higher personal vaccine uptake, demonstrated increased confidence in their recommendations, had more clinical experience, managed higher patient loads, and practiced in rural settings were more likely to employ high-quality influenza vaccine recommendation strategies. Analysis of participant interviews further indicated that the sum of NPs' experiences with influenza/influenza vaccination was the most important factor influencing their vaccine recommendations. These findings can help healthcare leaders support NPs in delivering high-quality influenza vaccine recommendations. Healthcare leaders should strongly promote influenza vaccine uptake among NPs and advocate for timely access to vaccines each fall. NPs may also benefit from vaccination communication training to develop confident recommendations.

Learning Objectives – By the end of this session, participants will be able to:

1. Analyze current trends in health research and apply relevant findings to their own research or practice.,
2. Reflect on the importance of research to shape policies and practices.,
3. Identify health challenges and related solutions, trends, emerging issues and gaps.

THANK YOU

Thank you to all the registrants, speakers, students, sponsors, and community members for joining us for the 2025 Health Research Conference. It was through your support, commitment, and participation that we were able to hold the third health research conference in Windsor-Essex. We look forward to connecting at future events and highlight the positive impact of health research in our region.