CASE WESTERN RESERVE UNIVERSITY
School of Medicine

Master of Public Health Program

Fall 2025 Public Health Innovations Conference

Student capstone presentation abstracts

Tuesday, November 18th
Midtown Collaboration Center

8:30am

Presenter: Noreen Vokic, MSN, APRN-CNP

Perioperative Pain Perceptions in Patients Undergoing Thoracic Surgery

Abstract:

Background: Lung cancer is the leading cause of cancer death in the United States. Early intervention, including surgical resection, is a key component in managing this potentially lethal disease. Effective post-operative pain management, which traditionally relied on narcotic analgesia, is a fundamental aspect of surgical care that can have many influences on overall outcomes, but can also pose significant risks which include dependency and adverse reactions.

Objectives: To characterize lung-cancer patients' pain priorities and experiences after surgery, including attitudes toward opioids, and to explore whether perceived clinician understanding relates to satisfaction with pain treatment.

Methods: This was a cross-sectional survey study that assessed perceptions of pain management and opioid use among individuals affected by lung cancer and their caregivers.

Results: A total of 66 respondents completed the survey. Respondents reported high satisfaction with pain treatment (72% agreed) overall, however there was a significant minority of survey respondents that emphasized the desire for comfort, functional independence, and rapid pain control. Participants highlighted the need for responsive communication, timely medication adjustments, and balanced use of opioids when appropriate. Several respondents noted the importance of individualized pain plans and early palliative care involvement.

Conclusions: Patients emphasize post operative pain treatments that are effective, cost conscious and that preserve function. Many report pain exceeding expectations in severity/duration, and one third do not feel fully understood by clinicians. Opioid aversion is not a dominant driver, suggesting room for shared, nuanced counseling. Programs that set expectations, monitor early, and deliver team-based, individualized pain plans may better align with patient priorities.

9:00am

Presenter: Arya Patel

Factors Associated with Mohs Micrographic Surgery Utilization for Extramammary Paget's Disease in the United States: NCDB 2004-2022 Analysis

Abstract

Introduction: Extramammary Paget's disease (EMPD) is a rare adnexal malignancy for which Mohs micrographic surgery (MMS) offers superior margin control and lower recurrence compared with wide local excision (WLE). Despite these advantages, MMS remains underused, and factors influencing treatment selection are poorly characterized nationally.

Methods: Using the National Cancer Database (NCDB, 2004–2022), we examined sociodemographic, tumor, and institutional predictors of MMS receipt among adults with EMPD undergoing definitive surgical management. Patients without surgery or treated with procedures other than WLE or MMS were excluded. Multivariable logistic regression with Firth correction assessed predictors of MMS versus WLE.

Results: Among 4,993 eligible cases, MMS was performed in 2.9%. In adjusted analyses, primary tumor site showed the strongest association with MMS use. Head and neck tumors had markedly increased odds of MMS (OR 6.96, 95% CI 2.99–16.19), while anogenital tumors had significantly lower odds (OR 0.02, 95% CI 0.01–0.05). Male patients were more likely to undergo MMS (OR 3.51, 95% CI 2.26–5.61), whereas nonwhite patients had lower odds (OR 0.50, 95% CI 0.30–0.98). Institutional factors contributed substantially: treatment at academic centers (OR 3.41, 95% CI 2.22–5.39) and residence in the Western United States (OR 1.73, 95% CI 1.05–2.84) were associated with higher MMS use, while treatment in the South was associated with lower use (OR 0.56, 95% CI 0.33–0.95). MMS utilization increased over time (OR 1.65, 95% CI 1.12–2.45 for 2014–2022 vs. 2004–2013).

Discussion: MMS use for EMPD remains rare, with significant disparities by sex, race, tumor site, and institutional context. These findings suggest that both clinical and structural factors influence access to margin-controlled surgery and highlight the need for targeted efforts to ensure equitable implementation of MMS for EMPD.

9:30am

Presenter: Rihab Ali

The Health Effects of Vinyl Chloride in Adults and Children: A Systematic Review

Abstract

Vinyl chloride is a high-volume monomer used to produce polyvinyl chloride (PVC) plastics and building materials. It is classified as a human carcinogen known to have multiple health effects on people of all age groups, particularly in occupational cohorts. Many studies have delineated the risks of vinyl chloride. This systematic review used PubMed Medical Subject Headings (MeSH) to identify English-language, peer-reviewed journal articles that were published between 1990-2025 and presented empirical data describing the health effects of vinyl chloride and differences in the results between children and adults. Seven articles met the

inclusion criteria. The carcinogen can cause hepatic angiosarcoma and increase risk of lung cancer, chromosomal damage, renal dysfunction , insulin resistance, altered adiponectin levels, and cause multiple liver diseases, including elevation of liver cancer mortality, hepatocellular carcinoma (HCC), and nonalcoholic fatty liver disease (NAFLD). Few studies involving health effects of vinyl chloride on children have been published, but there may be differences between children and adults in the effects of vinyl chloride on the urinary thiodiglycolic acid (TDGA) levels and risk of nonalcoholic fatty liver disease. Accordingly, vinyl chloride has multiple health effects, especially on the liver. Despite its value, exposure to the toxicant is associated with serious adverse health outcomes.

10:15am

Presenter: Kunmin Kim

Assessing Implementation Fidelity of Malawi's National Antimicrobial Resistance (AMR) Strategy: A Cross-sectoral Qualitative Study

Abstract

Background:
Antimicrobial resistance (AMR) poses a critical global health challenge, particularly in low- and middle-income countries. Malawi's first National AMR Strategy (2017–2022), aligned with the WHO Global Action Plan, aimed to apply the One Health approach across sectors. However, evidence on how faithfully it was implemented across sectors has been limited.

Methods:
A qualitative assessment was conducted in Lilongwe, Malawi, to evaluate the implementation fidelity of the national strategy. Data sources included a desk review of key policy documents and 21 interviews, 12 key informants and 9 in-depth, with participants from human, animal, and environmental health sectors. Interview questions were developed to minimize bias, focusing on enablers and barriers. Thematic analysis in NVivo was guided by an implementation fidelity framework.

Results:
Findings indicate partial but uneven implementation. Surveillance and coordination showed notable progress, largely supported by external partners. However, limited domestic funding, unstable staffing, and limited engagement from the environmental sector made it difficult to sustain implementation efforts.

Conclusions:
While Malawi's AMR response has strengthened coordination and surveillance, progress remains donor-dependent and institutionally fragile. To ensure stronger and more sustainable implementation under the upcoming AMR Strategic Plan (2025–2030), Malawi will need to build greater national ownership and secure stable staffing.

10:45am

Presenter: Heather Pilch-Cooper

Suicide Trends in Cuyahoga County, Ohio 2003-2023

Abstract
The Centers for Disease Control and Prevention (CDC) lists suicide as one of the leading causes of death in the United States and over 49,000 people died by suicide in 2023, the highest number ever recorded. Firearms are the most common method of suicide accounting for 55.33% of suicides in 2023 followed by suffocation, poisoning, and all other methods. While Ohio recorded a slight decline (1%) in all suicides between 2022 and 2023, increases were seen in Cuyahoga County (21.0%) and Cleveland (50.0%). Firearm suicides in Ohio declined slightly (1.4%) between 2022 and 2023 but increased in both Cuyahoga County (22.9%) and Cleveland (40.7%). Suicide and suicide attempts are serious public health challenges and by examining trends in suicide, policies to lower the risk may be enacted to prevent self-harm.

While looking at demographic trends in suicides is important so interventions can be tailored appropriately, a closer look at certain characteristics of firearms suicides themselves might be equally important. By collecting data from law enforcement and Medical Examiner case files regarding firearm suicides in Cuyahoga County, including firearm type, registered owner and relationship to the decedent, as well as firearm serial number, important information can be learned and used to help drive policy initiatives for gun safety. Data collected from this analysis along with historical Ohio firearm policy was used to select three firearm laws, Firearm Purchaser Licensing, Firearm Safe Storage, and the Repeal of Firearm Preemption Laws, for a detailed policy analysis in order to inform potential future interventions.

11:15am

Presenter: Kiara Williams, BSPH

Advancing Equity Through Community Voice: Developing the 2026–2028 Lorain County Community Health Improvement Plan (CHIP)

Abstract
Background: The 2026–2028 Lorain County Community Health Improvement Plan (CHIP) was developed to fulfill Public Health Accreditation Board (PHAB) requirements and advance health equity across the county. Evidence shows that CHIPs are most effective when community voices shape priorities. This capstone centers resident experiences to guide countywide health strategies.

Objectives: The project aimed to:

1. Determine whether the 2025 CHA findings reflect residents' lived experiences;
2. Identify community-driven health priorities across Behavioral Health, Chronic Disease, and Maternal & Child Health; and
3. Align proposed strategies with partner capacity, resources, and equity considerations.

Methods: Lorain County Public Health (LCPH) led a mixed-methods, participatory process guided by the MAPP framework. Engagement included 201 in-person interviews and conversations at community events, 92 online surveys, and feedback from 66 youth through a teen survey. Additional input came from 8 stakeholder focus groups, 3 community

collaboratives, and 5 CHIP subcommittees. Qualitative data were analyzed using a modified grounded theory approach with phenomenological elements. Themes were cross-referenced with CHA quantitative data. Draft strategies were prioritized using a rubric adapted from Alexandria Health Department (2020), considering equity, feasibility, evidence base, and social determinants of health.

Results: Residents emphasized mental health and substance use supports, access to healthy food and safe physical activity, and maternal and child health resources. Barriers included transportation, cost, and stigma. These insights directly informed CHIP strategies, with clear objectives, measurable indicators, and lead agencies.

Conclusions: This participatory, equity-focused process produced a data-driven, community-informed, and action-oriented CHIP, ensuring strategies reflect resident priorities and foster cross-sector collaboration to improve health outcomes in Lorain County.

2:15pm

Presenter: Ashleigh M. Fletcher, BS

How Effective Are Asthma Interventions? A Meta-Analysis of Changes in Asthma Control Questionnaire (ACQ) Scores in Control and Intervention Groups

Abstract

Asthma remains a major public health burden despite advances in therapy. The Asthma Control Questionnaire (ACQ) is a validated patient-reported measure of control. This meta-analysis synthesized randomized controlled trials (RCTs) published 2020–2025 that reported arm-level ACQ change. 17 RCTs (n = 3,709) were included. A random-effects model (REML; Hartung–Knapp) found a small but statistically significant standardized mean difference favoring interventions over controls (Hedges' g = −0.20, 95% CI [−0.37, −0.02], p = .027). Heterogeneity was moderate (I^2 = 57.8%, τ^2 = 0.0471). Results provide a contemporary benchmark for ACQ-based improvement across pharmacologic, biologic, behavioral, and device-based interventions

2:45pm

Presenter: Honey Bell Bey

Understanding the Impact of Adverse Childhood Experiences (ACEs) on African American Women Living with HIV: A Quality Improvement Initiative through Community and Provider Workshops

Abstract

Background: African American women represent approximately 13% of the U.S. female population but account for nearly 55% of new HIV diagnoses among women. This disparity

highlights the interconnected influence of trauma, Adverse Childhood Experiences (ACEs), and structural inequities on health outcomes. Research indicates that unaddressed trauma contributes to HIV vulnerability, care disengagement, risky behavior and mental health challenges. Guided by the trauma-informed framework presented in *What Happened to You?* by Dr. Bruce Perry, this practicum project explored the relationship between trauma and HIV among African American women and examined whether educational interventions could improve public health knowledge and awareness across communities and provider networks.

Methods:
In response to this project, a conceptual framework, the Trauma-Responsive Social-Ecological Model (T-SEM), was developed to integrate theory with community-based practice. The T-SEM positions trauma and resilience within five levels of influence: individual, interpersonal, community, organizational, and policy. Three workshops/ information sessions were designed and implemented in consideration of the model: one for African American women living with HIV, one for African American women representing the general public; and another for physicians and healthcare professionals who treat and or engage with the population. Each session emphasized trauma-informed education, reflection and culturally grounded dialogue around the ACE's (Adverse Childhood Experiences). A (Healing) trauma-informed toolkit was designed and distributed to each participant in the workshops, offering tangible, non-traditional tools designed to inspire, educate and promote discussion around Adverse Childhood Experiences and healing.

Results:
Process evaluation findings revealed that participants across all three groups perceived strong correlations between ACEs, trauma, and HIV vulnerability. Participants described the sessions as informative, validating, and safe spaces for self-reflection. Providers expressed enhanced empathy and readiness to further discussions around the integration of trauma-informed approaches into service delivery.

Conclusions:
Integrating the T-SEM framework and toolkit-based interventions demonstrates how trauma-informed education can deepen understanding of ACEs, strengthen provider–patient relationships, and advance equitable, healing-centered HIV prevention and care for African American women.

3:15pm

Presenter: Anastassia Idov, MPA

How Effective Are Asthma Interventions? A Meta-Analysis of Changes in Asthma Control Questionnaire (ACQ) Scores in Control and Intervention Groups

Abstract
Background: Cisgender women account for 20% of new HIV infections annually, with Black females carrying a disproportionate burden of the disease. Pre-exposure prophylaxis (PrEP), is a highly effective HIV prevention medication that is underutilized by cisgender women due to PrEP stigma, misinformation, and low levels of perceived risk of HIV. Medical providers under-

prescribe PrEP to women due to a lack of training, discomfort discussing sexual health, concerns about patient adherence, and provider bias. Currently there is no published research that specifically addresses the issue in the Northeast Ohio region.

Objectives:

1. To explore attitudes, beliefs, and barriers that exist among Black cisgender women of Northeast Ohio as they relate to the utilization of PrEP as an HIV prevention strategy.
2. To explore PrEP prescribing practices and the barriers associated with these practices among OB/GYN providers in Northeast Ohio.

Methods:

Health Belief Model was used as a theoretical framework for the study.

This mixed-method study included three arms:

1. Focus group discussion about sexual health with Black cisgender women
2. Surveys administered to local OB/GYN providers to assess their PrEP awareness and PrEP prescribing practices.
3. The analysis of de-identified patient data from Epic COSMOS to examine the characteristics of female patients on PrEP compared to those not on PrEP.

The results were conveyed through content analysis and descriptive statistics.

Results:

Cisgender women need accurate information about PrEP and safe stigma-free environment to discuss it. OB/GYN providers require training on PrEP clinical guidelines and strategies to integrate PrEP discussions into routine reproductive health care. Developing trusting relationships with their female patients may counteract the adverse effects of PrEP stigma.

Conclusions

The study has implications for local cisgender patients, their medical providers, and public health as a field. Efforts to end the HIV epidemic in the U.S. should include reducing barriers to preventative HIV care for cisgender women and normalizing conversations about PrEP.

3:45pm

Presenter: Atticus Kenny

ICU Hand Hygiene Quality Improvement Project

Abstract

Leveraging continuous improvement principles, a quality improvement (QI) project was developed in an ICU at University Hospitals located in Northeast Ohio. The goal of the project was to increase the hand hygiene compliance rate of staff in accordance with established policies and practices. Two different forms of initiatives were implemented, including adding additional hand sanitizer units (engineered) and a month-long staff educational initiative (administrative).

Prior to the start of the project, baseline data were collected, and compliance rates were found to be 34.6%; at the conclusion of the project hand hygiene rates on the unit were 50.19%. This resulted in a probability risk difference compared to the baseline of -0.1572 (-0.2340, -0.0781) and a calculated relative risk of 0.6868 (0.5690, 0.8290) with an exact p-value of 0.0001, providing evidence of a significant change in compliance. Furthermore, observations and data analysis from the QI project provided impactful insight into the behaviors of healthcare personnel (HCP) as they pertain to Hand hygiene. This QI project could serve as a model to be used in any healthcare system to help promote hand hygiene which plays an important role in reducing hospital acquired infections, reducing cost, and building a culture built on providing safe and comprehensive care.