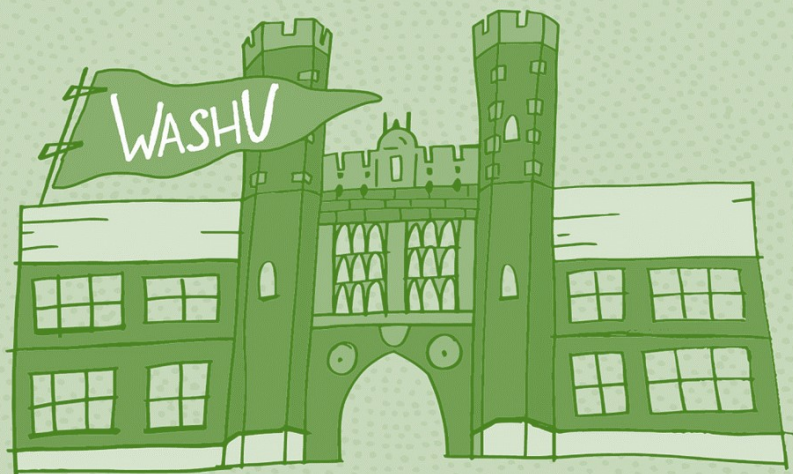




Symposium

2022 Summer Research Program Public and Global Health Track Friday, July 29, 2022



Washington University in St. Louis

INSTITUTE FOR PUBLIC HEALTH

**Institute for Public Health Summer Program
Public and Global Health Track
2022 Symposium**

- 10:00 am WELCOME**
- 10:05 am KEYNOTE**
Caline Mattar, MD | Associate Professor, Division of Infectious Diseases & Internal Medicine, Department of Medicine, Washington University School of Medicine
North-South: From Divide to Partnership and Beyond
Q&A
- 10:45 am BREAK**
- 10:50 am Theodore (Theo) Hanson | University College Dublin School of Medicine**
Systematic Review of the Classification of Gastrointestinal Tract Neuroendocrine Neoplasms
- 11:05 am Niamh Simmons | University College Dublin School of Medicine**
Missed Opportunities in the Diagnosis of Tuberculosis Meningitis
- 11:20 am Mihai Dumbrava | Mayo Clinic School of Medicine**
Impact of Complement Activation on Immune Cells in Systemic Lupus Erythematosus
- 11:35 am Mahadevan (Madhu) Subramanian | Brown University**
Adapting Family-Based Behavioral Treatment for Childhood Survivors of Acute Lymphoblastic Leukemia
- 11:50 am Kianna Zucker | Washington University in St. Louis**
Development of a Social Networking Component for Post-Acute Treatment of Anorexia Nervosa
- 12:05 pm Alexandra (Alex) Dent | University of South Florida**
Gender Differences in Discrimination among African-Americans
- 12:20 pm Maya Patel | Washington University in St. Louis**
Assessing the Impact of the COVID-19 Pandemic on STI Clinical Services in St. Louis
- 12:35 pm Jessica (Jess) Li | Washington State University Elson S. Floyd School of Medicine**
Impact of COVID-19 Pandemic on STI Management & Treatment in St. Louis Emergency Departments
- 12:50 pm BREAK**

**Institute for Public Health Summer Program
Public and Global Health Track
2022 Symposium**

- 1:00 pm David Rosene | Washington University in St. Louis**
Impact of the COVID-19 Pandemic on People's Engagement with HIV Care
- 1:15 pm Jada Phillips | University of Missouri-Columbia School of Medicine**
Biomarkers of Mammographic Breast Density: Systematic Review
- 1:30 pm Victoria (Tori) Wright | Washington University in St. Louis**
Prevention of Child Maltreatment Recidivism among Infants and Toddlers in Court Custody
- 1:45 pm Isha Yardi | University of Maryland**
Exploring the Impact of Work Requirements on Medicaid Eligibility in Missouri
- 2:00 pm Rida Qureshi | Washington University in St. Louis**
Racial & Ethnic Differences in Comorbid Opioid Use and Psychiatric Disorders
- 2:15 pm Gabriella Schmidt-Grimminger | Saint Louis University**
Investigating Factors Determining the Sustainability of Evidence-Based Interventions among Resource-Limited Hospitals in Central & South America
- 2:30 pm Clarissa Gaona Romero | Washington University in St. Louis**
Implementing an Occupational Therapy Intervention to Support Young Caregivers
- 2:45 pm Casey Allen | Saint Louis University**
PHRAME: Photographing Health by Rural Adolescents in the MidwEst
- 3:00 pm CLOSING CEREMONY**

Institute for Public Health Summer Research Program – Public and Global Health Track Leadership Team

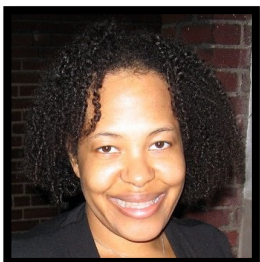


Victoria Anwuri, MPH

Associate Director, Institute for Public Health

Ms. Anwuri is charged with implementing the strategic plan and programs of the Institute in collaboration with Institute leaders to achieve the overarching mission and vision of the Institute. She has extensive experience in public health research and programming. Prior to joining the Institute, Ms.

Anwuri managed and coordinated program operations for multiple large-scale, nationally-funded health initiatives related to energetics and cancer, cancer health disparities, diabetes self-management and heart disease and stroke prevention.



Ericka Hayes, MD

Associate Professor, Department of Pediatrics, Division of Infectious Diseases; Medical Director, Pediatric and Adolescent HIV Program; Medical Director, Infection Prevention

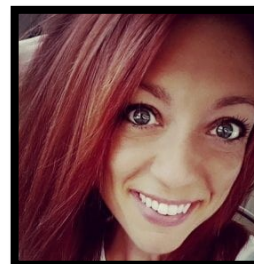
Dr. Hayes's past research projects have focused on metabolic complications and drug dosing of HIV medicines in severely malnourished children; implementation and optimization of universal HIV testing programs for adolescents and young adults and sexually transmitted infection diagnosis and treatment in youth. She also serves Saint Louis Children's Hospital as medical director of Infection Prevention. Dr. Hayes' other passion is medical education; she is the co-course director of the second year pediatrics course at the School of Medicine and the co-chair of the pediatric infectious diseases education committee.



Jacaranda van Rheenen, PhD

Manager, Global Health Center, Institute for Public Health

Dr. van Rheenen is the organizational lead on the Global Health Center's initiatives, including the annual conference, Summer Research Program, Global Health Mentoring Program, and other research and educational activities. Dr. van Rheenen's international background has made her passionate about global health. She is co-founder of the Women in Global Health-Midwest Chapter.



Katie Crowder, MHA

Coordinator, Global Health Center, Institute for Public Health

Mrs. Crowder is new to the Global Health Center as of February 2022. She coordinates the Institute for Public Health Summer Research Program – Public & Global Health Track, helps to synergize all research-related activities and provides administrative support for the center's many initiatives. She holds her undergrad in mass communications & journalism and her master's degree in health care administration.



Jeanie Bryant, BSEd, BSAG

Coordinator, Global Health Center, Institute for Public Health

Ms. Bryant is retiring in August after assisting the Global Health Center in planning and implementing the 2022 Summer Research Program – Public and Global Health Track for several years. She enjoyed a long career with the Missouri Department of Health and Senior Services before joining the Institute for Public Health in 2017.

KEYNOTE SPEAKER



Caline Mattar, MD

Associate Professor, Division of Infectious Diseases & Internal Medicine, Department of Medicine, Washington University School of Medicine

Dr. Mattar is an Associate Professor of Medicine at Washington University in St Louis. She serves as advisor on infectious diseases, public health and Antimicrobial Resistance for the Junior Doctors Network of the World Medical Association. Her research focuses on dissemination and implementation of infection prevention and antimicrobial resistance interventions in resources limited settings. She chairs the Expert Advisory Group of the Global Antimicrobial Resistance Research and Development Hub in Berlin. She has a special interest in Human Resources for Health. She has chaired the Global Health Workforce Network Youth hub at WHO since 2019. At WUSTL, she directs various programs for Global Health Education for students and postgraduate trainees. She is co-founder of the Women in Global Health-Midwest Chapter.



Casey Allen, BA | Graduate Student
*Summer Pediatric Research In Global Health
Translation (SPRIGHT) Scholar*

Mentor: Jean Hunleth, PhD, MPH
Assistant Professor, Department of Surgery &
Anthropology, Division of Public Health Sciences,
School of Medicine

PHRAME: Photographing Health by Rural Adolescents

in the MidwEst

Authors: Casey Allen, BA, MPH Candidate at Saint Louis University, Eric Wiedenman, PhD, MPH, MS, Washington University in St. Louis, Sienna Ruiz, BA, Washington University in St. Louis, Clarissa Gaona Romero, Washington University in St. Louis, Jean Hunleth, PhD, MPH, Washington University in St. Louis

Background: Researchers rarely consider children's perspectives and agency during intervention design or implementation, even though they play a crucial role in shaping family and community health. This is especially true for marginalized children and those from underrepresented backgrounds. This study addresses this gap by focusing on children living in Geographically Underserved Areas (GUAs) of the southern Illinois region. **Objectives:** The aims of this study are 1) to examine and clarify young people's health agency in their families in a rural setting from their perspectives and experiences and 2) to identify young people's health priorities and disseminate these priorities to people and organizations in positions of power. **Methods:** Photo-elicitation interviews were conducted with 15 children aged 8-14 years from GUAs in southern Illinois. Three Zoom interviews were conducted with each participant using the photovoice method. Thematic and narrative methods were used to analyze data. Geospatial mapping was used alongside other formats for dissemination. **Results:** Several preliminary themes related to care and health were identified through data analysis including children's care work, physical activity, nutrition, nature, family and school. These themes will be displayed via an ArcGIS Story Map which will display complimentary quantitative and qualitative data simultaneously. Recruitment for this study is ongoing. **Conclusion:** The photographs and themes will be used to share the value of research with children while also contextualizing experiences of health and care. Complimenting qualitative data findings with quantitative health data will provide a more well-rounded dissemination product that can help to inform health intervention and implementation.



Alexandra Dent, BS | Graduate Student
*Centene Institute for Advanced Health Education
Scholar*

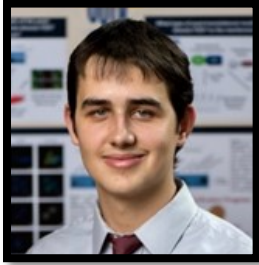
Mentor: Darrell Hudson, PhD, MPH
Co-Director, Collaboration on Race, Inequality, and
Social Mobility in America, Center for Social
Development; Associate Professor, Brown School

Gender Differences in Discrimination among African-

Americans

Authors: Alexandra Dent, BSPH, CPH, University of South Florida; Akilah Collins-Anderson, MPH, Washington University in St. Louis; Darrell Hudson, PhD, MPH, Washington University in St. Louis

Background: Compared to their white counterparts, African Americans report greater levels of discrimination at every level of age, gender, education, and income. There is a research gap in examination of gender differences with African Americans in response to racial discrimination among those who are upwardly mobile. Experiences of discrimination has been linked to decreased access and quality of health care services as well as health outcomes (e.g., diabetes). **Objective:** This study investigated whether there are gender differences in the experience and health impact of racial discrimination among upwardly mobile African American people. **Methods:** Data were drawn from the 2021 Gold Does not Always Glitter Study, an online survey drawn from college-educated African Americans throughout the United States. Our team investigated whether there were gender differences across experiences of major discrimination and their domains, such as incidents in educational settings or unfair interactions with the police, based on the Major Experiences in Discrimination scale. Multivariable regression was used with key sociodemographic variables. The present study observed a final analytic sample of 522 individuals. Covariates included age, income, and class. **Results:** Women reported that gender was the main reason for their experience of discrimination (68%) while men reported that their main reason was their race/ethnicity (57%). In addition, men reported a higher level of police discrimination (57%). After adjusting for all sociodemographic and health variables, findings indicated that men and women experienced the same level of overall discrimination (AOR 0.94; 95% CL: 0.85-1.04). Women are 0.42 times more likely to not experience police discrimination (AOR 0.42; 95% CL: 0.28-0.63); however, they are 1.2 times more likely to experience job discrimination when it comes to promotions (AOR 1.2; 95% CL: 0.74-1.7). **Conclusion:** Given the perverseness of race-related stress, there is strong implications to investigate its connection to health outcomes as race and gender coupled result in an excess in exposure and vulnerability to discrimination.



Mihai Dumbrava, BMSc | MD/PhD Student
Schilsky Family Summer Research Scholar

Mentor: Alfred Kim, MD, PhD

Assistant Professor, Division of Rheumatology, School of Medicine

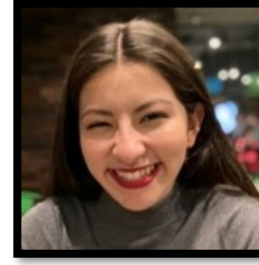
Impact of Complement Activation on Immune Cells in Human Systemic Lupus Erythematosus

Authors: Mihai Dumbrava, BMSc, Mayo Clinic School of Medicine; Elisha Roberson, Washington University

School of Medicine; Lily McMorrow; Washington University School of Medicine; Rebecca Schriefer, Washington University School of Medicine; Alfred Kim, MD, PhD, Washington University School of Medicine

Background: Complement activation is a hallmark of systemic lupus erythematosus (SLE) pathophysiology. As complement components become activated, they are proteolytically processed to smaller peptides, termed complement activation products (CAPs). While some are soluble, the remainder are covalently attached to cells, called cell-bound CAPs (CB-CAPs). Prior work shows that B-cells from flaring patients with SLE possess the greatest load of CB-CAPs, specifically C4d, Bb, C3d, and C5, compared to T-cells and monocytes. Importantly, these were absent during remission from SLE. The presence of CB-CAPs likely represents the passage of a cell in an inflammatory milieu, which can confer functional changes on that cell which may be pathologic. Elucidating the transcriptional profiles of CB-CAP-bearing B-cells may provide insight into the link between the complement cascade and the onset of SLE.

Objectives: We aim to determine the transcriptional profiles unique to B-cell bound C4d, Bb, C3d, and C5 in paired flaring vs. remission patients. Further, we aim to perform subanalyses of specific B cells subsets (such as age-associated B-cells) that are highly associated with SLE, as each subset may differentially respond to the presence of CB-CAPs. **Methods:** Paired PBMC samples were obtained from three consented subjects with classified SLE in a flare then subsequently in remission from the Washington University Lupus Clinic. We used cellular indexing of transcriptomes and epitopes (CITE) to detect CB-CAP-bearing cells and then single-cell RNA-seq to determine the transcriptomes. We clustered data using Seurat and used canonical cell markers to classify the cell type that each cluster represents. We compared the differentially expressed genes (DEGs) and pathways between CB-CAP-positive vs -negative cells in flaring samples, and also between flaring and remission samples. **Results and Conclusions:** We identified 2 clusters of cells that highly expressed B-cell markers CD20 and CD79A and performed gene ontology and DEG analysis between the cells of flaring and remission SLE patients. Several pathways were enriched in flare cells, including regulation of anti-inflammatory cytokines, superoxide generation, immune cell localization within lymph nodes, and T-cell activation. Combining the gene expression changes between flare versus remission SLE patients with CB-CAP binding to B-cells will further elucidate the link between the complement cascade and the onset of SLE.



Clarissa Gaona Romero | Undergraduate Student
Summer Pediatric Research In Global Health Translation (SPRIGHT) Scholar

Mentor: Jean Hunleth, PhD, MPH

Assistant Professor, Department of Surgery & Anthropology, Division of Public Health Sciences, School of Medicine

Implementing an Occupational Therapy Intervention to Support Young Caregivers

Authors: Clarissa Gaona Romero, Washington University in St. Louis; Sienna Ruiz, BA, Washington University in St. Louis; Lindsey Kaufman, Washington University in St. Louis; Janet Njelesani, PhD, OTR/L, FAOTA, New York University; Jean Hunleth, PhD, MPH, Washington University in St. Louis

Background: In 2021, there were nearly 17 million cancer survivors in the U.S. (NCI 2021), projected to continue increasing (IOM and NRC 2006). Over 1.4 million young people in the U.S. are caregivers (Hunt et al. 2005), thus there are likely many young caregivers (between ages 13-18) for cancer survivors. Young caregivers often assist with daily life activities without adequate training or support (Kavanaugh et al., 2019). **Objectives:** To include young caregivers in occupational therapy cancer practice to improve caregiver wellbeing by 1) adapting the content of YCare, an evidence-based intervention, to an occupational therapy cancer practice setting and 2) evaluating its implementation. **Methods:** This study consists of three phases: elicitation, adaptation, and implementation and evaluation. First, narrative interviews, qualitative interviews and arts-based methods, and semi-structured interviews will be conducted with cancer survivors, young caregivers, and occupational therapists respectively. Next, YCare content will be adapted. Lastly, it will be implemented and young caregivers and occupational therapists will complete questionnaires and interviews. **Results & Conclusion:** The study officially began on July 1, 2022, after receiving IRB approval from both partnering universities. Given the burden of cancer in the U.S., it is reasonable to expect many young caregivers in need of appropriate support. Recruitment will begin in July, and we expect the data to provide valuable insights on how YCare can be utilized in a cancer setting to improve caregiver health.



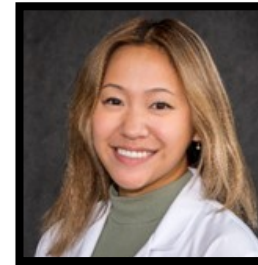
Theodore Hanson, BSc | Medical Student
University College Dublin Scholar

Mentor: Chet Hammill, MD, MS, MCR
Associate Professor, Department of Surgery, School of Medicine

A Systematic Review of the Classification of Gastrointestinal Tract Neuroendocrine Neoplasms in Studies that Utilize the Surveillance, Epidemiology, and End Results Program and the National Cancer Database

Authors: Theo Hanson, BSc, University College Dublin School of Medicine; Margaret Hua, Washington University in St. Louis; Lauren H. Yaeger, MA, MLIS, Washington University in St. Louis; Jorge Zarate Rodriguez, MD, Washington University School of Medicine; Chet Hammill, MD, MCR, FACS, Washington University School of Medicine

Background: Neuroendocrine neoplasms are a rare, heterogeneous group of malignancies, which affect neuroendocrine cells. Until recently, the system used to classify NENs varied across anatomical region and evolved constantly, causing confusion amongst researchers and clinicians. To resolve this, in 2018, the World Health Organisation developed a more consistent and uniform framework for classifying NENs. However, both the earlier and updated frameworks do not align well with how these tumours are categorised in national cancer registries such as SEER and the NCDB. Based on this, it is possible that studies utilising these databases to research NENs have significant flaws in them. Supporting this, previous analysis by our laboratory has found substantial misclassification in pancreatic NEN data in the NCDB. **Objective:** This systematic review aims to determine whether the classification of neuroendocrine neoplasms (NENs) of the gastrointestinal tract is applied correctly in scientific literature that utilise the Surveillance, Epidemiology, and End Results (SEER) Program and the National Cancer Database (NCDB). **Methods:** A medical librarian performed a search of the Embase, Ovid, Scopus, CENTRAL, CDSR and Clinicaltrials.gov databases using the concepts of 'neuroendocrine neoplasms', 'Surveillance Epidemiology End Results', and 'The National Cancer Database'. 1639 results were returned. 560 duplicates were removed, and an additional researcher-performed screen removed a further 608 studies and 42 duplicates. **Results:** Preliminary analysis found that in some studies, over 50% of NEN patients are included for analysis in the incorrect tumour designation. **Conclusion:** Misuse of NEN nomenclature has significant implications for academics, clinicians, and patients. Further study is required to determine the extent of misclassification in the literature.



Jessica Li, BS | Medical Student
Summer Pediatric Research In Global Health Translation (SPRIGHT) Scholar

Mentor: Hilary Reno, MD, PhD
Medical Director, St. Louis County STI/HIV Prevention Training Center; Associate Professor, Divisions of Infectious Diseases, School of Medicine

Impact of COVID-19 Pandemic on STI Management & Treatment in St. Louis Emergency Departments

Authors: Jessica Li, BS, Elson S. Floyd College of Medicine at Washington State University; Nicholas Cardoza, BSc, Washington University in St. Louis; Anne Trolard, MPH, Washington University in St. Louis; Hilary Reno, MD, PhD, Washington University in St. Louis

Background: *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infection rates continue to increase in St. Louis. Untreated or improperly treated STIs could lead to severe conditions such as pelvic inflammatory disease and infertility. The COVID-19 pandemic has disrupted the US healthcare system for routine prevention and non-emergent care like sexual health services. **Objective:** Describing the COVID-19 pandemic impact on the use of antibiotics in the ED.

Methods: Utilizing BJH emergency room electronic medical records from January 2019 through March 2022, we assessed chlamydia and gonorrhea testing rates and prevalence in monthly increments. Rates of antibiotic overtreatment and under treatment of STIs were also examined. **Results:** During the study period, BJH ED tested 17,323 patients for gonorrhea and chlamydia and 13.09% of these patients were positive for gonorrhea, chlamydia, or both with the highest positive rates seen in May 2020. In 2019, 647 patients were over treated with antibiotics and 495 patients were undertreated. In March through June 2020, overtreatment rates increased and proper treatment decreased. **Conclusions:** We observed an increase in positive test rates between March to May 2020 likely when patients with symptoms were presenting for care but routine STI care was reduced at the start of the pandemic. There was a change in overtreatment of STIs likely motivated by a desire to reduce ED times during the pandemic. In the next stage of this study, we will stratify data by social determinants of health and characterize barriers to quality sexual healthcare to improve in the future.



Maya Patel | Undergraduate Student
*Summer Pediatric Research In Global Health
Translation (SPRIGHT) Scholar*

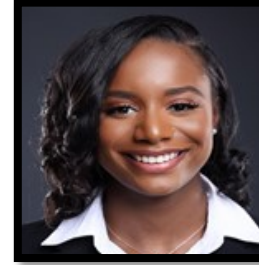
Mentor: Hilary Reno, MD, PhD
Medical Director, St. Louis County STI/HIV Prevention
Training Center; Associate Professor, Divisions of
Infectious Diseases, School of Medicine

Assessing the Impact of the COVID-19 Pandemic on STI Clinical Services in St. Louis

Authors: Maya Patel, Washington University in St. Louis; Hilary Reno, MD, PhD, Washington University in St. Louis

Background: The COVID-19 pandemic reduced the general accessibility of health services and deterred people from seeking care. Many STI testing and treatment sites modified services (e.g., reduced hours, limited walk-in availability, decreased testing capacity) with the potential of permanent change in STI service availability. At the same time, many healthcare providers were driven to innovate services in ways that may benefit their clinic and its patients.

Objective: To describe how the COVID-19 pandemic changed sexually transmitted infection (STI) clinical services, with a focus on long-term impacts. **Methods:** A 5-10 minute phone survey was designed to assess clinical services for STIs at the 104 STI testing and treatment providers in the St. Louis Metropolitan Area. STI testing providers included STI clinics, primary care clinics that cater to a broad population, and community-based organizations, and excludes emergency departments and stand-alone urgent care centers. In most cases, the survey was completed by a clinic manager, medical director, or member of the nursing staff. **Results & Conclusions:** Of the 75 locations that were reached successfully, 12 (16%) have not returned to pre-pandemic capacity and operations. Five sites have shut down completely since the pandemic began, three of which are in the same northwestern region of the St. Louis Area. This finding suggests resources should be allocated to support STI testing infrastructure in areas with greater clinic closures and modifications. 41 (58.6%) of the open clinics have added telehealth appointments, which removed barriers to accessing care and indicates one positive lasting effect.



Jada Phillips, BS | Medical Student
James A. Harding Scholar

Mentor: Adetunji Toriola, MD, PhD, MPH
Professor, Division of Public Health Sciences, School of
Medicine

Biomarkers of Mammographic Breast Density: Systematic Review

Authors: Jada Phillips, BS, University of Missouri-Columbia School of Medicine; Kayla Getz, PhD, MPH, Washington University School of Medicine; Michelle Doering, Washington University School of Medicine; Adetunji Toriola, MD, PhD, MPH, Washington University School of Medicine

Background: Increased mammographic breast density (MBD) is a well-established risk factor for breast cancer. Women with denser breasts are 4-6x more likely to develop breast cancer than those without. However, biomarkers that contribute to an increase in MBD are not well known. **Objective:** Provide a comprehensive overview of biological pathways driving MBD. The biomarkers included in this review are hormones, growth factors, inflammatory markers, and several other markers that are measured in biospecimen. **Methods:** We searched published literature for human studies on circulating biomarkers, and MBD using established protocol. The search was completed on May 26, 2022 in the databases Ovid Medline 1946-, PubMed 1946-, Embase.com 1947-, Web of Science 1960-, and Clinicaltrials.gov. Conference abstracts were excluded. The review was managed using Covidence. **Results:** A total of 1255 citations were identified and exported to Endnote. 592 duplicates were accurately identified in Covidence and removed for a total of 663 unique citations. 158 articles were eligible for full text review, 44 articles have been reviewed by the two reviewers (JP and KG), 36 articles were selected for data extraction, 6 were excluded due to wrong exposure and 2 were excluded due to wrong study design. **Conclusion:** This systematic review can help identify specific biomarkers and biological pathways that are associated with MBD, and can substantially contribute to our understanding of breast cancer development.



Rida Quershi | Undergraduate Student
Gold Family Summer Research Scholar

Mentor: Matthew Ellis, PhD, MPE
Research Instructor, Department of Psychiatry, School of Medicine

Racial & Ethnic Differences in Comorbid Opioid Use and Psychiatric Disorders

Authors: Rida Quershi, Washington University in St. Louis; Matthew S. Ellis, PhD, MPE, Washington University in St. Louis; Zachary A. Kasper, MPH, Washington University in St. Louis

Background: In 2020, 91,800 Americans died of drug overdoses, an all-time high driven by opioid misuse and concentrated within communities of color. Among those with OUD, comorbid psychiatric illnesses are linked to poor treatment outcomes and mortality. The Minority Stress Model suggests that discrimination may worsen mental health and increase OUD mortality, but no study to date has considered racial/ethnic differences in PC. **Objective:** This study will analyze race-based differences in diagnosed psychiatric comorbidity (PC), self-medication behaviors, and demographic/social determinants among new entrants into opioid use disorder (OUD) treatment programs. **Methods:** The Survey of Key Informants' (SKIP) is an anonymous survey of adults newly entering OUD treatment programs. The study sample will include 25,221 SKIP respondents entering 122 programs across 40 US states between 2011-2021. **Results:** Compared to White respondents with OUD, Multiracial individuals were 1.58 times more likely to report lifetime diagnosis of a psychiatric condition, whereas African American, Latinx, and Native American respondents were significantly less likely. Multiracial respondents were also 1.5-1.8 times more likely than White respondents to endorse mental-health related motivators for opioid use, whereas all other minorities were consistently less likely to endorse any motivator. Regression analysis suggests that the likelihood of PC is greater in association to healthcare coverage, source of income, chronic pain, and past sexual assault. **Conclusions:** To address growing overdose mortality among minorities, treatment programs must prioritize mental healthcare that is sensitive to race and socioeconomic status. Further work must be done to ensure PC measurements can accurately capture the lived realities of patients of color.



David Rosene, BA | Graduate Student
Summer Pediatric Research In Global Health Translation (SPRIGHT) Scholar

Mentor: Shanti Parikh, PhD
Chair & Professor of African and African-American Studies; Professor, Anthropology, Arts & Sciences

Impact of the COVID-19 Pandemic on People's Engagement with HIV Care in St. Louis, United States and Campinas, Brazil

Authors: David Rosene, BA, Washington University in St. Louis; Shanti Parikh, PhD, Washington University in St. Louis; Julia López, PhD, MPH, LCSW, Washington University in St. Louis; Zeles Vargas, Washington University in St. Louis; Khadijah Kareem, Washington University in St. Louis; Trisha Bose, Washington University in St. Louis

Background: The COVID-19 pandemic continues to reshape healthcare in countries around the world, including in the United States and Brazil. People living with HIV (PLWH) may be at an increased risk of disparity during COVID-19 because of pre-existing conditions, immune response factors, and social determinants of health. Current research helps understand the lives of PLWH during COVID-19. **Objective:** This research uses a mixed methods approach to analyze HIV outcome data, lived experiences in the HIV care network, and differences in experience due to identities a person holds to better understand how the COVID-19 pandemic influenced PLWH in St Louis, United States and Campinas, Brazil. **Methods:** The quantitative aspect analyzes PLWH viral load samples and healthcare access rates. The qualitative aspect consists of semi-structured, open-ended interviews conducted with PLWH in both cities. Interviews were transcribed and coded to determine themes. Patterns based on race, gender, and other identities were determined as well. **Results & Conclusions:** Preliminary results indicate minimal change in care quality during the COVID-19 pandemic, though the social support aspect of HIV care decreased. Quantitative data shows no difference in viral load samples pre-pandemic versus during the pandemic. Interviews indicate the ability for PLWH to seek healthcare in the new form of telemedicine, but in-person HIV care was still functional and preferred. Social services, such as HIV support groups and case managers, were also online but harder to interact with. Virtual services decreased social interaction for PLWH which coincided with increased loneliness and mental health issues for many.



Gabriella Schmidt- Grimminger, MPH | Graduate Student

James A Harding Scholar

Mentor: Virginia McKay, PhD, MA

Research Assistant Professor; Assistant Director for Research, Center for Public Health Systems Science, Brown School

Investigating Factors Determining the Sustainability of Evidence-Based Interventions among Resource-

Limited Hospitals in Central & South America

Authors: Gabriella Schmidt-Grimminger, MPH, CPH, Saint Louis University; Asya Agulnik, MD, MPH, St. Jude Children's Research Hospital ; Virginia McKay, PhD, Washington University in St. Louis

Background: Evidence-based intervention sustainability, or the continued use of interventions for long-term patient benefit, is the least studied aspect of implementation science. In this study, we evaluate the sustainability of a Pediatric Early Warning System (PEWS), an evidence-based intervention, in low-resource settings. **Objective:** To evaluate the Clinical Capacity for Sustainability Framework (CCS) for conceptualizing sustainability determinants, or factors that would promote or challenge PEWS sustainability, in a real-world setting.

Methods: We conducted semi-structured interviews with PEWS implementation leaders and hospital directors at 5 Latin American pediatric oncology centers sustaining PEWS. Interviews were conducted virtually in Spanish from June to August 2020, then professionally transcribed and translated into English. We conducted thematic content analysis on coded segments to identify participant perception about the importance of PEWS sustainability, sustainability successes and challenges, and overall assessment of PEWS sustainability. To evaluate its applicability, identified sustainability successes and challenges were mapped to the CCS. **Results:** We interviewed 71 staff including physicians (45%), nurses (45%), and administrators (10%). Participants emphasized the importance of sustaining PEWS for continued patient benefit and identified multiple critical factors, including supportive leadership, beneficial outcomes that encourage ongoing interest and perceived value of PEWS among staff, integrating PEWS into the workflow for routine patient care, staff turnover creating training challenges, and adequate material resources to promote PEWS use. While many of these identified factors mapped to the CCS, COVID-19 emerged as an external stressor and additional challenge to sustainability in these hospitals. Together, these challenges resulted in multiple impacts on intervention sustainment, ranging from a small reduction in PEWS quality to complete disruption of PEWS use and subsequent loss of benefits to patient outcomes. **Conclusion:** Identified factors mapped well to the CCS. However, external factors, such as the COVID pandemic, may additionally affect clinical capacity for sustainability. This work highlights an urgent need for rigorous development of theoretically driven, empirically informed strategies to support sustainable implementation of evidence-based interventions in a range of clinical settings and resource-levels.



Niamh Simmons, BSc | Medical Student
Summer Pediatric Research In Global Health Translation (SPRIGHT) Scholar

Mentor: Carlos Mejia, MD

Medical Director, Outpatient Parental Antimicrobial Therapy Program; Assistant Professor, Division of Infectious Diseases, School of Medicine

Missed Opportunities in the Diagnosis of

Tuberculosis Meningitis

Authors: Niamh Simmons, BSc, University College Dublin School of Medicine; Margaret A. Olsen, PhD, Washington University School of Medicine; Joanna Reale, MPH, Washington University School of Medicine; Thomas Bailey, MD, Washington University School of Medicine; Carlos Mejia-Chew, MD, Washington University School of Medicine

Background: Tuberculosis (TB) meningitis continuously has high morbidity and mortality. Early recognition and treatment is pivotal to improve prognosis. Declining TB incidence in the US has resulted in decreased clinical awareness; increasing potential risk of diagnostic delays. **Objectives:** To determine the impact a missed opportunity (MO) for diagnosing TB meningitis has on 90-day mortality and cost of healthcare utilization. Secondly, identify factors associated with a MO and predictors of 90-day mortality. **Methods:** Retrospective cohort of adult patients with central nervous system TB identified in the Healthcare Cost and Utilization Project, State Inpatient and State Emergency Department Databases from eight states, using ICD-9 diagnosis code 013.X. MO was defined as signs, symptoms, and/or procedures suggestive of TB meningitis 6 months prior to the diagnosis. Univariate analysis of demographics, comorbidities, admission characteristics, and mortality was used to compare between-group differences. **Results:** Of 893 patients with TB meningitis, 61.3% were male, 20.3% were white, 13.1% died within 90-days of diagnosis, and 44.0% had a MO. Comparing those with and without a MO, 90-day mortality (12.0% vs 14.0%; $p=0.37$) and mean cost of healthcare utilization (\$83,416 vs \$78,625; $p=0.54$) did not differ. 90-day mortality was higher with older mean age (60.1 vs 49.5; $p<.001$), sepsis (41.9% vs 12.8%; $p<0.001$), and receiving mechanical ventilation (50.4% vs 12.4%; $p<0.001$) during the index admission. **Conclusions:** Increased 90-day mortality was associated with older age, sepsis and mechanical ventilation during the index admission for TB meningitis. Having a MO had no impact on mortality. Multivariable analysis would help adjust for confounders of these findings.



Mahadevan Subramanian | Undergraduate Student
*Summer Pediatric Research In Global Health
Translation (SPRIGHT) Scholar*

Mentor: Denise Wilfley, PhD

Scott Rudolph University Professor of Psychiatry, Medicine, Pediatrics and Psychology, Department of Psychiatry, School of Medicine

Adapting Family-Based Behavioral Treatment for Childhood Survivors of Acute Lymphoblastic Leukemia

Authors: Mahadevan Subramanian, Brown University; Jessica Jakubiak, MA, Washington University in St. Louis; Denise Wilfley, PhD, Washington University in St. Louis

Background: Childhood survivors of ALL have a higher risk of developing obesity, leading to comorbidities such as cardiovascular disease and diabetes. FBT helps families develop healthy eating and exercise habits, tight-knit social networks, and a strong sense of body image. On average, over the course of treatment, parents lose 20 pounds and children lose 9 units or more in relative percentage overweight.

Objective: The aim of this clinical trial is to investigate an adaptation of family-based behavioral treatment (FBT) for weight loss in childhood survivors of acute lymphoblastic leukemia (ALL) and their families. It would be the first to establish feasibility of FBT in this patient population.

Methods: A single-arm, non-randomized clinical trial will be implemented in a group of 40 survivors between the ages of 5-18 and their families. Treatment will consist of 26 individual and group sessions over four months on Zoom. Participant weight will be measured weekly to establish intervention efficacy.

Results & Conclusions: Based on past focus groups, FBT was adapted to include topics such as the perception of excess weight as protective, influence of treatment on eating habits, mental health concerns, and parental concerns about their child's ability to exercise. Recruitment is slated to begin in July. We expect to see a decrease in weight among both parents and children, in line with previous research.



Victoria Wright | Undergraduate Student
*Summer Pediatric Research In Global Health
Translation (SPRIGHT) Scholar*

Mentor: John Constantino, MD

Psychiatrist-In-Chief, Director of the Division of Child & Adolescent Psychiatry, St. Louis Children's Hospital; Co-Director, Intellectual & Developmental Disabilities Research Center, School of Medicine

Mentor: Mini Tandon, DO, Associate Professor, Department of Psychiatry, School of Medicine

Prevention of Child Maltreatment Recidivism among Infants and Toddlers in Child Welfare

Authors: Victoria Wright, Washington University in St. Louis; Gretchen Buchanan, PhD, Washington University in St. Louis; Mini Tandon, DO, Washington University in St. Louis; Melissa Jonson-Reid, PhD, Washington University School of Medicine; John N. Constantino MD, Washington University School of Medicine

Background: Child maltreatment recidivism rates are estimated to be approximately 15-30%. Recidivism or the recurrence of maltreatment and re-entry into child welfare, places children at increased risk for enduring mental health impairment. The SYNCHRONY project is a clinical program addressing the unmet mental health needs of young children and families at risk for maltreatment recidivism. The project integrates the efforts of clinical experts in infancy and early childhood with community family support and social service teams. The project aims to successfully reunify families if and when ready to prevent further mental health impacts. **Objective:** This proposal aims to explore the impact of the SYNCHRONY project in reducing the risk of child maltreatment recidivism in a high-risk population. **Methods:** An anonymized dataset of re-referral to any court in the State of Missouri following the disposition of a SYNCHRONY case (n=576) was examined. Both adjusted and unadjusted re-entry rates were examined preliminarily and compared to the 2019 Children's Bureau CM re-entry rate for the state of Missouri (16.2%). **Results:** There were 272 children returned to guardianship. Of the 272 children, 15 (5.5%) re-entered the court system. Enrollees of the SYNCHRONY project experienced a lower rate of re-entry into the court system by threefold. **Conclusions:** The SYNCHRONY project reduces the rate of child maltreatment recidivism. Given the results of the SYNCHRONY project, a significant public health impact is possible with the implementation of similar programs.



Isha Yardi | Undergraduate Student
Colonel Carol A. Ockert Scholar

Mentor: Timothy McBride, PhD, MS
Co-Director, Center for Health Economics and Policy,
Institute for Public Health; Professor, Brown School

Mentor: Leah Kemper, MPH, Manager, Center for
Health Economics and Policy, Institute for Public
Health

Exploring the Impact of Work Requirements on Medicaid Eligibility in Missouri

Authors: Isha Yardi, University of Maryland; Abigail Barker, PhD, Washington University in St. Louis; Eliot Jost, MPH, Washington University in St. Louis; Leah Kemper, MPH, Washington University in St. Louis; Timothy McBride, PhD, Washington University in St. Louis

Background: This past legislative session, House Joint Resolution 117 was introduced into the Missouri House of Representatives to institute an 80-hour-per-month work and community engagement requirement for individuals seeking Medicaid coverage. The bill ultimately did not move past the Senate Committee on Governmental Accountability and Fiscal Oversight. **Objective:** The goal of this project is to characterize who will be affected by enacting work requirements for Medicaid eligibility in Missouri. **Methods:** Data from the 2019, 2020, and 2021 Current Population Survey March supplements was used to explore whom the institution of work requirements in Missouri will affect. Language from the original legislation was used to identify both individuals who will be required to report and exempt from reporting work hours should the legislation pass. Data was weighted and restricted to only include individuals who would be eligible for Medicaid in Missouri. **Results:** 49.68% of those eligible for Medicaid coverage were already engaged in some form of work, while 50.32% were unemployed. Of those who were unemployed, 39.28% reported an illness or disability that limits their ability to work, while 12.73% were attending high school or a degree-seeking program. **Conclusions:** A large proportion of those eligible for Medicaid are already engaged in some form of work. Policymakers should consider whether the objectives of instituting work requirements to promote employment are met by this legislation, as well as administrative barriers work requirements will create to Medicaid access in Missouri.



Kianna Zucker | Undergraduate Student
Stephanie and Chris Doerr Summer Research Scholar

Mentor: Ellen Fitzsimmons-Craft, PhD, FAED, LP
Associate Director, Center for Healthy Weight and
Wellness; Associate Professor, Department of
Psychiatry, School of Medicine

Development of a Social Networking Component Alongside a Cognitive-behavioral Therapy-based Mobile App for Post-acute Treatment of Anorexia Nervosa

Authors: Kianna Zucker, Washington University in St. Louis; Aggie Laboe, Washington University in St. Louis; Claire McGinnis, Washington University in St. Louis; Ellen Fitzsimmons-Craft, PhD, Washington University in St. Louis

Background: AN has one of the highest mortality rates of any psychiatric disorder. Patients are often treated in the acute setting (e.g., inpatient, residential). However, relapse rates after acute treatment are high. Prior literature has found that social support is crucial for AN recovery. Online “pro-eating disorder” spaces also exist, and while these groups can encourage unhelpful behaviors, users also report benefiting from these groups’ support and connecting with others with shared experiences. This highlights the potential benefit of a recovery-focused SN group moderated by a trained professional. **Objective:** Develop and refine a social networking (SN) feature to supplement a coached, cognitive-behavioral therapy-based app to support women with anorexia nervosa (AN) in the post-acute treatment period. **Methods:** To develop content for the SN group, we conducted a literature review of benefits and harms that individuals with AN have experienced on social media or as part of eating disorder-focused SN groups. To refine the feature, we will begin usability testing with adult females who have recently undergone intensive treatment. **Results & Conclusion:** Reviewing literature revealed that a Facebook group would be most beneficial platform for our SN component. We expect results to show that the SN component can be an effective tool for recovery by building a community and engaging participants with interactive, emotional, and informational content. After refining our approach to the group, we will perform a randomized controlled trial and predict that a recovery-focused SN group can improve clinical outcomes for post-acute treatment of AN.

Acknowledgements

We would like to thank the Institute for Public Health Summer Research Program—Public and Global Health Track mentors for their guidance and support of the students.

We are very grateful to the staff at the Institute for Public Health for their tremendous logistical support including Emily Hickner, event coordinator and communications assistant and Kim Furlow, communications manager.

Funders

The program is supported by the Institute for Public Health; Global Health Center; the Department of Pediatrics, Washington University School of Medicine; Children's Discovery Institute of Washington University and St. Louis Children's Hospital; and the following donors, Centene Institute for Advanced Health Education, Stephanie and Chris Doerr, Janice and Mark Gold, James A. Harding, Genevieve and Carroll Ockert, and the Schilsky Family.



publichealth.wustl.edu/summer