

Tuesday, April 5, 2022

17<sup>th</sup> Annual CCTS Spring Conference

Gatton Student Center

# Abstracts

**College of Public Health Research Day**

**Posters 121 - 127**

**Oral Presentations Abstracts**

# Abstracts

Poster Number 121

**Title: Factors Related to the Increase in Opioid Overdose Fatalities in Kentucky During the COVID-19 Pandemic**

**Authors:** S. Nigam, Department of Biostatistics, College of Public Health, U of Kentucky, P. M. Westgate, Department of Biostatistics, College of Public Health, U of Kentucky, S. Slavova, Department of Biostatistics, College of Public Health, U of Kentucky, K. L. Thompson, Department of Statistics, College of Arts and Sciences, U of Kentucky, R. Vickers-Smith, Department of Epidemiology, College of Public Health, U of Kentucky

**Abstract: Background:** Kentucky has one of the highest opioid overdose fatality rates in the United States, which has increased significantly from 2019 to 2020, with rates increasing from 29.5 to 42.6 deaths per 100,000 ([2021, JAMA Network Open, Vol. 4, No. 7](#)). We aim to identify factors associated with increases in opioid overdose fatalities in Kentucky. **Methods:** We highlight three periods of interest: March 2019 - February 2020 (Before COVID-19), March 2020 - May 2020 (During the onset of COVID-19), and June 2020 - May 2021 (After the onset of COVID-19). County-level data from all 120 Kentucky counties are used to conduct cluster-level summary linear regression modeling to identify factors associated with increases in opioid overdose fatality rates. **Results:** Opioid overdose fatalities increased from period 1 to period 2 (RR: 1.81). While opioid overdose fatalities decreased in period 3, they remained higher than in period 1 (RR: 1.64). Mental health providers per 1,000 residents and % ethnic minority were associated with the increase in opioid overdose fatalities from period 1 to period 2. % Residents over 65, adjacent-to-metropolitan status, and Appalachian status were associated with the maintained change in fatalities from period 1 to period 3. **Conclusions:** There are several factors associated with the changes in opioid overdose fatalities in Kentucky during COVID-19. Future studies should investigate additional factors related to COVID-19 as well the lasting effects of the pandemic on the landscape of opioid overdose in Kentucky.

**Funding:** College of Public Health's Biostatistics Department

**Presenter:** Nigam, S. [srni225@g.uky.edu](mailto:srni225@g.uky.edu)

# Abstracts

## Poster Number 122

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**Title: Effects of the COVID-19 Pandemic on the Wellbeing and Hearing Healthcare of Children who are Deaf or Hard of Hearing and their Families**

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**Authors:** C. K. Moraska, U of Kentucky, L. Bellnier, MPH, Department of Otolaryngology, U of Kentucky, M. Schuh, MPH, Department of Otolaryngology, U of Kentucky, J. A. Jacobs, MPH, Department of Otolaryngology, U of Kentucky, C. R. Studts, PhD, Department of Pediatrics-General, U of Colorado

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**Abstract:** Using quantitative and qualitative methods, our research team examined the impact of the COVID-19 pandemic on children in Kentucky who are deaf or hard of hearing (DHH) and their families. Beginning in September 2020, we launched an online survey (n=132) composed of clinically validated measures of parent and child wellbeing, including the COVID-19 Exposure and Family Impact Survey (CEFIS), Pediatric Symptom Checklist-17 (PSC-17), and the Parental Stress Scale (PSS). We also assessed parents' experiences with hearing healthcare and telehealth during the pandemic. Parents (n=111) repeated the survey 6-7 months later (April-June 2021). Next, we completed in-depth interviews with 30 parents who represented a range of quantitative survey outcomes. A semi-structured interview guide was developed to further explore the main domains of the survey. Rapid content analysis, which is an emerging approach that provides an understanding of qualitative data through systematic classification, coding, and theme identification, was then used to analyze the parent interviews. This presentation will explore factors associated with child and family health outcomes, experiences with hearing healthcare services, and attitudes towards telehealth services in the wake of the COVID-19 pandemic.

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**Funding:** NIH R01DC016957-04S1, CCTS NIH UL1TR001998.

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**Presenter:** Moraska, C. K. \callihan.moraska@uky.edu

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# Abstracts

## Poster Number 123

**Title: BIN1 Association with Neuritic Plaques Is Mediated by Neurofibrillary Tangle Pathology: A Multi-Trait Genome-Wide Association Study of Neuropathology in Four Autopsy Cohorts**

**Authors:** L. M. P. Shade, Department of Biostatistics, U of Kentucky, Y. Katsumata, Department of Biostatistics, U of Kentucky, P. T. Nelson, Sanders-Brown Center on Aging, U of Kentucky, D. W. Fardo, Department of Biostatistics, U of Kentucky

**Abstract: Introduction:** Genome-wide association studies (GWAS) have to date identified over 70 genetic risk loci for Alzheimer's Disease (AD). Most AD GWAS have focused on clinical AD; however, clinical AD does not always correspond with AD neuropathology and vice-versa. We hypothesized that investigating the genetic architecture of neuropathology-based endophenotypes (NPE) would localize AD genetic risk to specific NPE and identify novel genetic risk for NPE. **Methods:** We performed multi-trait GWAS of NPE in a combined data set of four aged genotyped autopsy cohorts: National Alzheimer's Coordinating Center (NACC), Religious Orders Study and the Memory and Aging Project (ROSMAP), Adult Changes in Thought (ACT), and the AD Neuroimaging Initiative (ADNI). Follow-up conditional and mediation analyses were performed to investigate findings within a causal framework. **Results:** In total, nine NPE were available across all four data sources, and sample sizes analyzed ranged from 6223 to 7285. rs6733839, a *BIN1* intronic variant, was significantly associated with both neurofibrillary tangles (NFT, as measured by Braak stage) (OR = 1.22,  $p = 1.2 \times 10^{-10}$ ) and neuritic plaques (NP, as measured by CERAD score) (OR = 1.21,  $p = 3.7 \times 10^{-8}$ ). In conditional analyses, rs6733839 remained nominally associated with NFT (OR = 1.14,  $p = 2.0 \times 10^{-5}$ ) but not NP (OR = 1.03,  $p = 0.48$ ). Mediation analyses found evidence that the effect of rs6733839 on NP was mediated by NFT. **Conclusions:** We provide evidence that the association between *BIN1*, a known AD risk gene, and NP is mediated by NFT. Future work will further contextualize NPE genetic risk.

**Funding:** NIH R56AG057191

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# Abstracts

## Poster Number 124

**Title:** Engagement, Support and Future Outlook of K-12 School Staff during the COVID-19 pandemic

**Authors:** M. N. Dunfee, Epidemiology-Biostatistics PhD Program, U of Kentucky, H. Bush, Department of Biostatistics, U of Kentucky, E. Haynes, Department of Epidemiology, and Preventive Medicine and Environmental Health, U of Kentucky

**Abstract:** **Background:** Throughout the COVID-19 pandemic, K-12 school staff quickly implemented novel strategies to meet the changing needs of students and families. **Methods:** The longitudinal School Staff Health and Wellness Study has surveyed school staff about their experiences throughout the COVID-19 pandemic beginning in Fall 2020. To date, more than 5,500 school staff have participated, predominantly from Indiana, Kentucky and Ohio. We describe school staff members' engagement in decision making, perceived support and outlook concerning their careers and school-based professions at large. **Results:** Most school staff reported minimal involvement in COVID-19 related decision-making (75%) and indicated feeling unheard by decision makers (27%). School staff were mostly satisfied with support of family (82%) and friends (76%) and were least satisfied with the support from the community (23%) and the school board (23%). School staff satisfaction with support from the superintendent (34%), school board (26%), local school administration (44%), union (59%), school parents (34%) and community (27%) peaked in Spring 2021. Likewise, the percentage of school staff planning to continue working in a school system and to recommend their profession to the next generation, also peaked to 84% and 22%, respectively. **Conclusion:** During the COVID-19 pandemic, school staff had limited engagement in decision making and limited support from professional sources. Concurrently, commitment to working in a school system and recommending their profession to future generations has decreased. To ensure the availability of school staff for future students, research is needed to foster school staff members' engagement in decision making and perceived support.

**Funding:** CCTS NIH UL1TR001997

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# Abstracts

## Poster Number 125

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**Title: Patterns of Referral and Attendance for Diabetes Self-Management Education and Support Among Patients with Diabetes at University of Kentucky HealthCare: 2016-2019**

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**Authors:** G. Bryant, Department of Epidemiology, University of Kentucky J. Keck, Family and Community Medicine, University of Kentucky M. Lacy, Department of Epidemiology, University of Kentucky

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**Abstract: Background:** Diabetes self-management education and support (DSMES) services are an effective tool for improving diabetes control and reducing complications. Despite strong evidence regarding effectiveness, <10% of eligible patients receive DSMES. In this study, we examined rates of referral and attendance to DSMES at University of Kentucky HealthCare (UKHC). **Methods:** We analyzed patterns of DSMES referrals and attendance at UKHC from 1/1/2016-12/31/2019 among adult patients (aged  $\geq 18$ ) with diabetes (ICD-10: E08-E13) receiving primary or diabetes care at UKHC with  $\geq 365$  days of follow-up. **Results:** Among 22,068 patients with diabetes (mean (SD) age=56.4 (13.9); 50.1% female), 7.3% (n=1,620) were referred for DSMES. Non-Hispanic Black patients were more likely to be referred than non-Hispanic Whites (11.1% vs 6.3% |  $p < 0.001$ ); females more likely than males (8.7% vs 6.0%;  $p < 0.001$ ); obese patients more likely than non-obese patients (8.2% vs 5.8%;  $p < 0.001$ ); those taking insulin (10.6%) more likely than those on oral medications (6.3%) or those not taking diabetes medications (2.3%;  $p < 0.0001$ ); and, younger patients more likely than older patients (14.5% in age 18-24 vs 3.5% in age 65+;  $p < 0.0001$ ). Of the 1,620 patients who were referred to DSMES, 41.1% attended DSMES at UKHC. **Conclusions:** In our study, only 7.3% of eligible patients were referred to DSMES, yet, of those who were referred, >40% attended DSMES classes. This highlights the importance of identifying and referring as many eligible patients as possible and suggests the need for increased awareness from providers and attention at the health system level to refer more eligible patients to DSMES.

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**Funding:** CCTS NIH UL1TR000117, UL1TR001998, KL2TR001996

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# Abstracts

Poster Number 126

**Title: Perspectives of Key Informants on the Attitudes and Beliefs of Black Adults Toward HPV Vaccination**

**Authors:** O. Obielodan, College of Public Health, U of Kentucky, A. Adegboyega, College of Nursing, U of Kentucky

**Abstract: Background:** HPV vaccine has the potential to reduce the burden of cervical cancer. However, low HPV vaccine uptake rates have been reported in the Black population. Therefore, we consulted with key informants who are knowledgeable about the health of the Black community to seek their perspective on how to increase HPV vaccination and cervical cancer screening among eligible Black adults and Black women respectively. The purpose of this study was to use the perspective of key informants to describe the attitudes and beliefs of Black adults toward HPV vaccination and cervical cancer screening. **Methods:** This was a qualitative descriptive study. All twenty-three key informants were recruited from an urban mid-size city in southeastern U.S with heterogeneous population. Data was gathered through in-depth individual interviews held and recorded via zoom. Data was transcribed and analyzed using content analysis of the transcripts. **Results:** Twelve of the 23 key informants interviewed were female. Eighteen identified as Black. The mean age was  $50 \pm 4.1$  years. Key informants included healthcare providers, community members, and church leaders. The emerging themes include limited knowledge about HPV, health care provider recommendations, social and cultural influences, accessibility and availability of services, and HPV vaccine mandates. **Conclusion:** Strategies to improve HPV vaccination and screening uptake among the Black population include community awareness campaigns, addressing healthcare mistrust, and policies mandating HPV vaccine uptake.

**Funding:** NIH 3P30CA177558-08S1

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# Abstracts

## Poster Number 127

**Title:** A Review of the Great Kids Inc Home Visitor Trainee Satisfaction Survey Results

**Authors:** C. Coffey, College of Public Health, U of Kentucky

**Abstract:** **Introduction:** This study is a comparative analysis of three home visitor training programs administered by Great Kids Inc. All training courses were one week in length, with one occurring in-person and two offered virtually. The study assesses the strengths and weaknesses of each training model. We also explore home visitors perceived knowledge and readiness to teach the Growing Great Kids curriculum to families. **Methods:** The study included 3,241 participants who completed a five-day home visitor training program which prepares trainees to administer home visitation curriculum to prenatal women and families with children up to the age of three. The training groups completed one of three home visitor training modalities. A total of 2,132 participants completed the classic in-person training and 1,109 participants completed one of the two virtual trainings: Next Generation (n=484) and Classic Virtual(n=625). **Results:** Home visitors who completed the classic in-person training reported higher levels of satisfaction across the majority of areas assessed. Home visitors who completed the virtual training types reported significantly lower levels of satisfaction in the categories of overall satisfaction in training with 68% of Next Generation participants reporting very satisfied as compared to 87% of classic in-person participants. In regard to job preparedness, 64% of Next Generation participants strongly agreeing that they feel prepared as compared to 79% of classic in-person participants. **Future Recommendations:** It is recommended that the Great Kids Inc. team continues to evaluate and strengthen virtual training modalities and potentially incorporate additional synchronous training content to mimic in person training experiences.

**Funding:** College of Public Health Summer Research Fellowship Grant

**Presenter:** Coffey, C. \caroline.coffey@uky.edu



# Abstracts

## Oral Presentation

**Title: The Intersection of Sensemaking and Municipal Water Quality: A Case Study in One Rural Kentucky Community.**

**Authors:** Anna Hoover, Department of Preventive and Environmental Health Beverly May, College of Public Health, U of Kentucky Nina McCoy, Martin County Concerned Citizens Kathy Rademacher, College of Nursing, U of Kentucky H. Dan O'Hair, College of Communication, U of Kentucky Laura Fischer, Department of Agricultural Education and Communications, Texas Tech University Annie Koempel, Department of Dietetics and Nutrition, U of Kentucky Whitney Beckett, College of Nursing, U of Kentucky Kristian Wagner, College of Nursing, U of Kentucky Wayne Sanderson, Department of Biosystems and Agricultural Engineering, U of Kentucky Jason Unrine, Department of Plant and Soil Sciences, U of Kentucky Ellen Hahn, College of Nursing, U of Kentucky

**Abstract:** This mixed-method case study uses risk communication frameworks and organizational communications theory to explore perceptions of municipal water quality, accessibility, and affordability in Martin County, Kentucky, an Appalachian community with a complex history of environmental challenges. First, a convenience sample of residents ( $n = 9$ ) participated in open-ended key informant interviews that explored water-related health concerns and possible solutions. Next, a stratified random sample of 73 water district customers responded to seven open-ended survey questions focused on communication. Transcripts were iteratively coded and analyzed for emergent themes using NVivo 12 (QRS International) software. Interview respondents perceived municipal water as poor quality, expensive, and a potential source of health problems. Survey respondents described using varied sources to access water-related information but expressed that they felt insufficiently knowledgeable about tap water. This study points to opportunities to rebuild public trust through multidirectional risk communication and stakeholder engagement in targeted sensemaking processes.

**Funding:** NIHP30ES026529, 5P30ES026529-02, RO1ES032396, NLM G08LM013185-01

**Presenter:** Hoover, A. \ajhoov2@uky.edu

# Abstracts

## Oral Presentation

**Title: PFAS Incineration and Environmental Justice in East Liverpool, Ohio**

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**Authors:** K. Vollet Martin, College of Public Health, U of Kentucky, T. J. Hilbert, College of Medicine, U of Cincinnati, M. Reilly, Michael Reilly Environmental, Health and Safety Services, Inc., McKeesport, Pennsylvania, W. J. Christian, College of Public Health, U of Kentucky, A. Hoover, College of Public Health, U of Kentucky, K. G. Pennell, College of Engineering, U of Kentucky, Q. Ding, Kent State University, E. N. Haynes, College of Public Health, U of Kentucky

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**Abstract:** Per- and polyfluoroalkyl substances (PFAS) are a class of synthetic compounds widely used in industrial and consumer products. While PFAS provide product durability, these chemicals are ubiquitous, persistent, bioaccumulative, and toxic. These characteristics make the ultimate disposal of PFAS a challenge. One current disposal method is incineration; however, there is little research on the safety and effectiveness of PFAS incineration. The characteristics of communities with hazardous waste incinerators that have received PFAS shipments indicate that more individuals with lower incomes and individuals with less education than the US average are at higher risk of exposure, which presents important environmental justice and health equity concerns. Situated in eastern Ohio, East Liverpool is an Appalachian community that is home to a large hazardous-waste incinerator that began accepting PFAS in 2019. Residents are concerned that the disposal lacks the research necessary to assure safety for the residents. Due to both community interest and data gaps regarding PFAS incineration, our research team conducted a pilot study in 2021 to examine the distribution and concentration of PFAS in soil samples surrounding the incinerator. All 35 soil samples had measurable amounts of PFAS including Perfluorooctanesulfonic Acid (PFOS), Perfluorooctanoic Acid (PFOA), and Hexafluoropropylene oxide dimer acid (HFPO-DA)/GenX. HFPO-DA/GenX was measurable in 12 samples with concentrations up to 1,500 ng/Kg. To our knowledge, this is the first study to investigate soil deposition near PFAS incinerators. Further research on incineration safety will advance knowledge and action related to regulatory requirements, ultimately improving individual and community protections and health equity.

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**Funding:** P42ES007380, P30 ES026529 and R24ES030904.

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**Presenter:** Martin, Kaitlin Vollet\kaitlin.vollet.martin@uky.edu

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# Abstracts

## Oral Presentation

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**Title: Recharge Moments: A Pilot Study to Improve Mindfulness in the Workplace**

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**Authors:** K. K. Kumar, Department of Preventive Medicine and College of Public Health, U of Kentucky, S. K. Keel, Department of Preventive Medicine and College of Public Health, U of Kentucky

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**Abstract: Background:** Mindfulness has been shown to be a protective factor against poor physical and mental health. Few studies have investigated the effectiveness of brief mindfulness-based interventions (MBIs) in the workplace. This pilot study aimed to assess the feasibility and acceptability of a workplace-based intervention consisting of brief MBIs in improving physical and mental well-being. **Methods:** This quasi-experimental study used a one-group pretest-posttest design. A convenience sample of volunteer participants currently employed by the Lexington-Fayette County Health Department (LFCHD) completed self-administered questionnaires pre-intervention (n=90) and post-intervention (n=43) containing 10-item scales and other questions to assess quantitatively and qualitatively break-time tendencies and burnout factors. The 12-week program was designed for use during designated work hours between October 2020 and January 2021. Participants were sent weekly e-mails with instructions for daily mindfulness activities, intended to be 10-minute breaks during the workday (“Recharge Moments”). Data were analyzed with multivariable regression models. **Results:** Participants showed improvements in break-time tendencies, specifically decreased utilization of breaks to perform work-related tasks ( $p=0.05$ ), or to think about/discuss work ( $p=0.0016$ ). Increased program participation correlated with improved break-time habits ( $p<0.001$ ) and reduction in burnout factors ( $p<0.001$ ). Activities most practiced were walking (67.57%) and stretching (67.57%), while least practiced were origami (5.41%) and jigsaw puzzles (8.11%). **Limitations:** Major weakness of this study included participant attrition, sample size, and unidentifiable data precluded demographic assessments. **Conclusions:** Brief MBIs may be a cost-effective way to reduce stress in the workplace. **Next Steps:** Further research with tracked measurements is needed.

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**Funding:** Lexington-Fayette County Department of Health

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