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Attitudes Toward the SARS-CoV-2 Vaccine in BIPOC Populations in Los Angeles County

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OBJECTIVES/GOALS: Our research has three main aims: 1. Measure attitudes toward a SARS-CoV-2 vaccine among BIPOC. 2. Assess the effectiveness of race-conscious public health messages in changing attitudes toward a SARS-CoV-2 vaccine. 3. Test the efficacy of financial incentives to increase uptake of a SARS-CoV-2 vaccine. **METHODS/STUDY POPULATION:** We surveyed 784 unvaccinated residents of L.A. County. To recruit participants, we collaborated with Qualtrics. The survey randomized participants to one of three public health messages, as well as one of two financial compensation schemes. Twenty-five participants completed semi-structured interviews via Zoom or telephone. Interviews were audio recorded, translated into English if needed, and transcribed. The inductive, semi-structured interview guide focused on three domains: i) concerns and distrust toward a COVID vaccine, ii) policy interventions and/or government action related to a COVID vaccine, iii) non-pharmacological policy interventions related to the COVID-19 pandemic. Major emergent themes were identified and analyzed using Watkins (2012) team analysis of qualitative data steps. **RESULTS/ANTICIPATED RESULTS:** Many BIPOC remain vaccine hesitant: 2/3 of the survey respondents stated that they did not intend to or were not sure if they planned to get vaccinated. Follow-up interviews show that fear of vaccine side effects, bodily autonomy in choosing to get vaccinated are major concerns. However, public health measures like masking and physical distancing remain preferred safety methods for BIPOC residents. Misinformation and overcommunication in public health messaging concerning vaccine eligibility may be a major barrier to vaccine uptake among BIPOC. **DISCUSSION/SIGNIFICANCE:** Real world financial compensation mechanisms need to provide large enough compensation to avoid a crowding out of altruistic vaccination motivations and to effectively incentivize increased vaccine uptake. Additionally, short race-conscious public health messages were ineffective at improving vaccine attitudes.

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Private or Public Health Insurance and Infant Outcomes in the United States*

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OBJECTIVES/GOALS: Health insurance status is associated with differences in access to healthcare and health outcomes. The objective of this study was to test the hypothesis that among infants born in the United States, maternal private insurance compared with public Medicaid insurance would be associated with a lower infant mortality rate (IMR). **METHODS/STUDY POPULATION:** This

ecological study used data from the Center for Disease Control and Prevention (CDC) WONDER expanded linked birth and infant death records database 2017-2018. We included hospital-born infants from 20 to 42 weeks of gestational age (wga) if the mother had either private or Medicaid insurance. We excluded infants with congenital anomalies and infants who died due to congenital anomalies. We used negative-binomial regression adjusted for race, sex, multiple birth, and any maternal pregnancy risk factors (as defined by the CDC) to determine the difference in IMR between private and Medicaid insurance. Chi-square or Fishers exact test was used to compare differences in categorical variables between groups. **RESULTS/ANTICIPATED RESULTS:** We included 6,901,328 infants; 53.6% had private insurance and 46.4% were insured by Medicaid. Privately insured infants had a lower IMR compared with Medicaid insured infants (2.84/1000 vs. 5.32/1000; adjusted relative risk (aRR) 0.71; 95% confidence intervals (CI) 0.62 to 0.81; $p < .0001$). The privately insured had higher rates of 1st trimester prenatal care compared to those with Medicaid (85.6% vs. 66.6%; $p < .00001$). Rates of infant morbidity and maternal morbidity (per CDC definitions) were lower among the privately insured compared to those with Medicaid (both $p < .00001$). The privately insured had lower rates of preterm (9.1% vs. 11.0%), extremely preterm (0.5% vs. 0.7%), low birth weight (7.1% vs. 9.6%), and extremely low birth weight (0.5% vs. 0.7%) births compared to those with Medicaid (all $p < .001$). **DISCUSSION/SIGNIFICANCE:** Private insurance is associated with a lower IMR compared to Medicaid insurance. Privately insured pregnancies also have higher rates of early prenatal care, less morbidity, and less preterm and low birth weight births. There may be opportunities to improve access to care and pregnancy outcomes among Medicaid insured pregnancies in the United States.

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Better Together: Community Engagement During COVID-19

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OBJECTIVES/GOALS: The Penn State CTSI has been working diligently to help communities in their fight against COVID-19. As the rapidly evolving COVID-19 situation has unfolded the Penn State CTSI has been able to provide support to our community stakeholders. As our communities have and are faced with unprecedented challenges, our CTSI has been there every step of the way. **METHODS/STUDY POPULATION:** The Penn State CTSI is unique as it sits in rural Pennsylvania that not only spans a wide catchment area but also many diverse communities. The Penn State CTSI connected with our communities throughout the pandemic to bring timely and culturally appropriate information about the novel COVID-19 pandemic through our own institution and in partnership with community leaders. Stakeholder boards were formed to hear from various communities about hardships and challenges that were and are being faced due to COVID-19. **RESULTS/ANTICIPATED RESULTS:** The Penn State CTSI provided our communities with information through various different platforms to ensure that needs were being met in dissemination of pertinent information related to COVID-19. Not only was information tailored to the specific needs that were discussed during stakeholder boards, the information was provided in different languages and platforms in order to meet cultural and other needs to ensure health equity and literacy were met. **DISCUSSION/SIGNIFICANCE:** Not only did the Penn State CTSI provide these services to our current

community partners new partnerships were formed to create stronger alliances amongst those being served. Members of the Penn State CTSI were invited to serve on state and local advisory boards and became trusted messengers in our communities.

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Rates of SGLT2 Inhibitor Use in Patients With Diabetes and Heart Failure in the Southeastern United States

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OBJECTIVES/GOALS: Clinical trials of SGLT2 inhibitors in patients with heart failure (HF) have confirmed a reduction in hospitalization and death. Adoption of novel therapeutics has been slower in Black and female patients. We investigated utilization of SGLT2 inhibitor in patients with HF and type 2 diabetes and if there were utilization differences by race or gender. **METHODS/STUDY POPULATION:** We created a retrospective cohort of outpatients with HF at Emory Healthcare from 2015 to 2020. Additional inclusion criteria included presence of heart failure and a diagnosis of T2D. SGLT2 inhibitor use was identified by a presence of SGLT2 inhibitor prescription at the time of the clinic visit. We estimated differences in prescription of SGLT2 inhibitors by race and gender using Chi-square analysis. **RESULTS/ANTICIPATED RESULTS:** The cohort included 5829 patients, age 69.47 years \pm 13.44, 47.67 % female, 54.62% Black. Overall prescription of SGLT2 inhibitors was low but increased over time (1.4% in 2015 to 5.6% in 2020; $p < 0.0001$). On average, SGLT2 inhibitor use increased annually by 44.77%. From 2015 to 2020, fewer female than male patients were on an SGLT2 inhibitor (1.94% vs. 2.73%, $p = 0.0033$). A similar percentage of Black and non-Black patients were on an SGLT2 inhibitor (2.13% vs. 2.64%, $p = 0.0591$). **DISCUSSION/SIGNIFICANCE:** Prescription rates of SGLT2 inhibitors remain low in patients with T2D and HF, especially for female patients, despite evidence of their benefit on hospitalizations and mortality. Implementing use of SGLT2 inhibitors in this population represent an opportunity to improve cardiovascular outcomes.

Precision Medicine/Health

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Predicting 30 Day Return Hospital Admissions in Patients with COVID-19 Discharged from the Emergency Department: A national retrospective cohort study

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OBJECTIVES/GOALS: Identification of COVID-19 patients at risk for deterioration following discharge from the emergency department (ED) remains a clinical challenge. Our objective was to develop a prediction model that identifies COVID-19 patients at risk for return and hospital admission within 30 days of ED discharge. **METHODS/STUDY POPULATION:** We performed a retrospective cohort study of discharged adult ED patients ($n = 7,529$) with SARS-CoV-2 infection from 116 unique hospitals contributing to the national REgistry of suspected COVID-19 in EmeRgency care

(RECOVER). The primary outcome was return hospital admission within 30 days. Models were developed using Classification and Regression Tree (CART), Gradient Boosted Machine (GBM), Random Forest (RF), and least absolute shrinkage and selection (LASSO) approaches. **RESULTS/ANTICIPATED RESULTS:** Among COVID-19 patients discharged from the ED on their index encounter, 571 (7.6%) returned for hospital admission within 30 days. The machine learning (ML) models (GBM, RF, and LASSO) performed similarly. The RF model yielded a test AUC of 0.74 (95% confidence interval [CI] 0.71–0.78) with a sensitivity of 0.46 (0.39–0.54) and specificity of 0.84 (0.82–0.85). Predictive variables including: lowest oxygen saturation, temperature; or history of hypertension; diabetes, hyperlipidemia, or obesity, were common to all ML models. **DISCUSSION/SIGNIFICANCE:** A predictive model identifying adult ED patients with COVID-19 at risk for return hospital admission within 30 days is feasible. Ensemble/bootstrapped classification methods outperform the single tree CART method. Future efforts may focus on the application of ML models in the hospital setting to optimize allocation of follow up resources.

Regulatory Science

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Implementing a Community Researcher IRB Certification Through a Community-Engaged Approach

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OBJECTIVES/GOALS: A collaboration among Indiana CTSI community health partnerships (ChEP), bioethics, and regulatory programs identified and reviewed human research protection training programs targeting community engaged research, and pilot tested CIRTification with community partners working across a range of contexts. **METHODS/STUDY POPULATION:** We searched community human research protection training programs from across the county, identified three, examined each based upon criteria identified by community partners (time, relevance, online delivery) and our Human Research Protection Program (HRPP), and selected CIRTification (CIRT) to pilot. Ten community research partners volunteered to complete CIRT and a debriefing interview. Four completed CITI training previously. Participants included local and state-wide organizations, a resident, a state agency, and a hospital, and came from rural and urban communities. Interviews covered practical issues (ease of use, language, time), relevance, and comparison to CITI. Results were shared with HRPP for approval. **RESULTS/ANTICIPATED RESULTS:** Most felt CIRT was easy to navigate and engaging, and those who had done CITI felt CIRT was more relevant and engaging. The sections on historical background and recruitment were cited as most valuable. Suggestions were made to increase the diversity of examples beyond health care research. Community members mentioned several applications for CIRT including: (1) helping their own community work; (2) empowering them to be an advocate; (3) referring others to CIRT; (4) influencing approaches to recruitment and community engagement; and (5) applying ethics principles to their other community work. The Human Research Protection Program approved CIRT in place of CITI for community researchers. **DISCUSSION/SIGNIFICANCE:** Our process represents collaboration across the Indiana CTSI, HRPP and community partners, and use of best practices. Exemplifying “nothing about us without us”, actions were based on direct input from community