community partners new partnerships were formed to create stronger alliances amongst those being serve. Members of the Penn State CTSI were invited to serve on state and local advisory bords 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 Â± 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/boot-strapped 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

partners, with the goal of decreasing barriers to engaging communities in research.

Workforce Development

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Removing Barriers and Facilitating Career Pathways of Hispanic Research Workforce

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OBJECTIVES/GOALS: The Hispanic-In-Research Capability Endowment Phase (HiREC) Phase I Award supports research academic formation of researchers in Puerto Rico. Since 2011, HiREC provided critical infrastructure resources to develop the Clinical and Translational Research (CTR) workforce. We explored the awardees research career advancements and outcomes. METHODS/STUDY POPULATION: The target population of Phase I Award was young faculty and early-career investigators admitted to the Postdoctoral Master of Science in CTR Program. Eleven awardees were supported from 2011to 2020. A survey was administered via REDCap platform and all awardees were invited by email to participate. Data was collected from 03/15/21 to 05/15/21, including weekly follow-up by email and text messages to increase response rate and 100% responded. Descriptive analyses were performed in SPSS VS 27. The 63.6% was female and 54.6% MD. Most were Hispanic faculty and investigators (36.4%) or were at the clinical practice (36.4%). The 45.5% were affiliated to an academic institution or healthcare entrepreneur RESULTS/ANTICIPATED RESULTS: Awardees top career goals were: combine research & teaching-faculty (36.4%), clinical practice (36.4%) and Principal Investigator (PI) in a research institution (36.4%). The 81.8% of awardees achieved those goals and 18.2% are working-on it. A total of 57 grants were submitted (M=10, SD=10.9) and 42.1% funded. Most awardees submitted grants as PI (45.6%) or Co-I (42.1%). Additional outcomes were: 49 peer-reviewed publications, 67 posters and 21 oral presentations. Awardees expressed that this award: provided resources and necessary tools to support the research career pathway; served to develop essential research capabilities, knowledge and skills; and was a unique opportunity to protected-time for research. DISCUSSION/SIGNIFICANCE: HiREC provided resources, opportunities, and tools to remove barriers and facilitate career pathways of Hispanic investigators. Awardees achieved their career goals, their grant success rate was over 40%; received R-grants awards and published over 45 articles. This award model developed promising Hispanic researchers.

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Perceptions of Relevance and Delivery Modes of Research Best Practices Training for Community Health Workers and Promotoras.

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OBJECTIVES/GOALS: Researchers include community health workers and promotoras (CHW/Ps) on research teams to increase community engagement; however, no formal training on research best practices exists for this group. Study objectives were to examine perceived relevance of a new culturally and linguistically appropriate CHW/P training and optimal delivery modes. METHODS/STUDY POPULATION: We conducted six focus groups (FGs), three each in English and Spanish, at three study sites, University of Florida, University of Michigan, and University of California Davis from February to August 2021. The CHWs/Ps were purposively selected to include diverse age, race/ethnicity, educational level, and work experience. Separate FGs were conducted for CHWs/Ps in English and Spanish as appropriate. All FGs were audio recorded, translated to English from Spanish, transcribed and analyzed using RADaR (Rigorous and Accelerated Data Reduction) technique. RESULTS/ANTICIPATED RESULTS: Forty CHWs/Ps (95% women, mean age 45) participated, with the majority (58%) identifying as Hispanic/Latino. Of the sample, most identified as White (50%) or Black (25%). The proposed training was mentioned as relevant and would help them to be confident, comfortable, knowledgeable and effective in the community. Online training, though advantageous due to its flexibility also reportedly had barriers such as internet access, computer availability and technological know-how of CHWs/Ps. A hybrid training approach, online plus peer-led, was recommended due to the importance of personal guidance by an experienced CHW/P' especially for a newly recruited CHW/P. DISCUSSION/SIGNIFICANCE: Findings indicated that a culturally and linguistically appropriate CHW/P training that is flexible and easily accessible in its mode of delivery is relevant and useful. In-person guidance to a new CHW/P was reported as an important training component. Poster will include the detailed quotes on relevance, usefulness, and mode of delivery of training.

Other

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Factors affecting rural residents intentions to receive the COVID-19 vaccine

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OBJECTIVES/GOALS: Vaccination for COVID-19 is a primary public health strategy to control the pandemic. In this study, we examined how various sociodemographic variables influence rural residents intentions to receive the COVID-19 vaccine. We also examined the role of distrust in healthcare organizations in these intentions. METHODS/STUDY POPULATION: sing the electronic medical records of an academic healthcare institution in central Pennsylvania, we obtained names and addresses of patients who had been an inpatient or outpatient within the prior three years, were 18 years or older, and who resided in a community defined as rural by the Commonwealth of Pennsylvania. The survey included three statements about the intent to receive the COVID-19 vaccine, an open-ended question about concerns regarding the vaccine, and validated scales for general trust and for distrust in healthcare organizations. All study variables were summarized to determine their distributions, and then bivariate binomial logistic regression analyses were conducted. Responses to the open-ended question were coded and used as variables in the bivariate analysis. RESULTS/ANTICIPATED RESULTS: Respondents reporting conservative political views were more likely (compared to those liberal political