Examining the Effects of A Hybrid Communication Coaching Intervention on Fathers’ Responsive Strategy Use with Children with Autism Spectrum Disorder
Michelle Flippin
1University of Rhode Island

OBJECTIVES/GOALS: This investigation aimed to mitigate barriers to father involvement in communication intervention for children with ASD and contribute to clinical practice by examining the effects of a hybrid parent coaching intervention for fathers of children with ASD that is tailored to fit both father’s interaction and communication styles as well as individual child characteristics. The Hybrid Father Communication Coaching (HFCC) combined online parent coaching lessons with in-person father-child aquatics sessions in order to increase father’s use of responsive verbal and play strategies. Distal effects on child communication were also investigated.

METHODS/STUDY POPULATION: A single subject, multiple baselines across strategies experiment was conducted with one dyad (i.e., father, child with ASD). In the present study, a hybrid father coaching model was used. Parent communication coaching sessions were delivered online, and weekly, father-child aquatics sessions were conducted in person, to provide opportunities for the father to use three targeted responsive strategies (i.e., follow-in comments, follow-in directives, responsive object play) during father-child physical activity. Collateral measures of child communication skills were also investigated. Single subject designs are particularly suitable for autism interventions, as they allow for experimental control with participants who are from heterogeneous populations (McReynolds and Kearn, 1983). The child participant was 5 years, 6 months at the start of intervention and had previously received a community diagnosis of ASD. Throughout the duration of the study, the child attended full-time kindergarten and received in-school speech-language therapy, as well as 18-20 hours per week of Applied Behavioral Analysis intervention, occupational therapy, physical therapy and speech-language therapy after school. The participating father was a biological parent who resided with the child continuously since birth. The participating father had no other formal parent training in communication intervention before participating.

RESULTS/ANTICIPATED RESULTS: The hybrid father communication coaching program (HFCC) yielded positive results for both father and child participant. The father quickly achieved a high level of competency using two of the three, targeted strategies (i.e., follow-in comments, follow-in directives). However, use of a third strategy (i.e., responsive object play) was not maintained above baseline levels. The follow-in comments strategy was used by the participating father more frequently than the follow-in directives strategy. Small increases were documented for child use of spontaneous single words across intervention phases and increased single word use over was maintained eight weeks following intervention.

DISCUSSION/SIGNIFICANCE OF IMPACT: The present study provided information regarding the efficacy of a clinically relevant hybrid parent-coaching program, tailored to both father and child characteristics, to enhance fathers’ use of responsive strategies and increase communication skills for children with ASD.
Carpenter has received consulting honoraria from Pfizer. All other authors have no conflicts to disclose.

4339
Exploring Physician Investigator Clinical Trials Training and Quality Management Systems and its Implementation in Medical School Curriculums
Sukhmani Kaur1, Advaita Chandramohan, and Eunjoo Pacifi1
University of Southern California

OBJECTIVES/GOALS: Although many physicians conduct clinical trials as Principle Investigators, a systematic training is often lacking. Instead, most receive on-site training, potentially compromising data quality and human subject safety. This research assesses the landscape for physician training through medical school curriculums. METHODS/STUDY POPULATION: This project explored training programs for physician researchers, specifically in the emerging field of quality management systems (QMS). To understand the scope of academic research available for QMS and Good Clinical Practice (GCP) training and lack of clinical trial training implemented in medical school curricula, a literature review was conducted. Available training for physicians was assessed through existing training programs from the FDA, NIH, DIAMOND, ACRP, and Google for accessibility in terms of costs, completion timelines and certification, format (online vs. in-person), and inclusion of GCP and QMS training in the curriculum. RESULTS/ANTICIPATED RESULTS: Literature review revealed that most researchers do not include QMS training beyond the institutional requirement for minimal GCP review. Examination of select medical school curriculum also discovered a lack of clinical trial training for students interested in clinical research. Furthermore, existing training programs and modules available for physicians are limited as their syllabi do not include QMS training. In addition, these programs commonly have inaccessible registration links, are expensive, and have significant time commitments for in-person courses. These findings support the need for more accessible and effective training and certification tools for physician researchers. DISCUSSION/SIGNIFICANCE OF IMPACT: QMS training is not included in medical school curricula or programs for physician researchers, potentially compromising data integrity and subject protection. This research supports the development of essential QMS training concepts and practical approaches for physician researcher clinical trials.

4536
Identification of the most salient risk factors of preterm birth in the US using geospatial mapping
Alexander J Layden1, and Janet Catov, PhD, MS1
University of Pittsburgh

OBJECTIVES/GOALS: Preterm birth is the most common birth complication in the United States. To date, there are no effective public health strategies to reduce the burden of prematurity. Using geographic information system (GIS) mapping, we identified the most salient risk factors of preterm birth across US counties targetable for future interventions. METHODS/STUDY POPULATION: Risk factors of preterm birth were identified from the perinatal health nonprofit organization, March of Dimes, and included factors such as obesity, smoking, insurance coverage and poverty. US 2013 county-level data on sociodemographic characteristics, behavioral risk factors and preterm birth were extracted and combined from the American Census, Center for Disease Control, and US Health Resources and Services Administration. Spatial autocorrelation and multivariate spatial regression were used to determine the risk factors most strongly associated with preterm birth. These models were adjusted for race, given well-documented race disparities for preterm birth. As a case-study comparison, we mapped risk factors in the two states with the highest and lowest proportion of preterm births in 2013. RESULTS/ANTICIPATED RESULTS: In our preliminary analysis, obesity was the factor most strongly associated with preterm birth (ß = 7.32, SE: 1.13, p<0.001) at the US county-level. Surprisingly, smoking was not found to be significantly associated with preterm birth. In 2013, Vermont had the lowest prevalence of preterm birth at 7.6% and Mississippi had the highest prevalence of preterm birth at 13.1%. Health insurance coverage and obesity were the two risk factors that differed between Vermont and Mississippi. The median proportion of uninsured individuals in Mississippi counties was four times higher than that of Vermont counties (26.3% vs 10.9%, p<0.01). Similarly, the median obesity prevalence in Mississippi counties was significantly higher than the median obesity prevalence in Vermont counties (38.8% vs. 25.2%). DISCUSSION/SIGNIFICANCE OF IMPACT: Public health efforts aimed at reducing obesity and increasing health insurance coverage may have the greatest impact at addressing the US burden of preterm birth. Further, geospatial mapping is a powerful tool for identifying targetable risk factors for future interventions.