

The PRECISE-DYAD protocol: linking maternal and infant health trajectories in sub-Saharan Africa

Rachel Craik, Marie-Laure Volvert, Angela Koech, Hawanatu Jah, Kelly Pickerill, Amina Abubakar, Umberto D'Alessandro, Benjamin Barratt, Hannah Blencowe, Jeffrey N Bone, Jaya Chandna, Melissa J. Gladstone, Asma Khalil, Larry Li, Laura A Magee, Liberty Makacha, Hiten D Mistry, Sophie E. Moore, Anna Roca, Tatiana T Salisbury, Marleen Temmerman, Danielle Toudup, Marianne Vidler, Peter von Dadelszen, and the PRECISE-DYAD Network

Abstract

Background

PRECISE-DYAD is an observational cohort study of mother-child dyads running in urban and rural communities in The Gambia and Kenya. The cohort is being followed for two years and includes uncomplicated pregnancies and those that suffered pregnancy hypertension, fetal growth restriction, preterm birth, and/or stillbirth.

Methods

The PRECISE-DYAD study will follow up ~4200 women and their children recruited into the original PRECISE study. The study will add to the detailed pregnancy information and samples in PRECISE, collecting additional biological samples and clinical information on both the maternal and child health.

Women will be asked about both their and their child's health, their diets as well as undertaking a basic cardiology assessment. Using a case-control approach, some mothers will be asked about their mental health, their experiences of care during labour in the healthcare facility. In a subgroup, data on financial expenditure during antenatal, intrapartum, and postnatal periods will also be collected. Child development will be assessed using a range of tools, including neurodevelopment assessments, and evaluating their home environment and quality of life. In the event developmental milestones are not met, additional assessments to assess vision and their risk of autism spectrum disorders will be conducted. Finally, a personal environmental exposure model for the full cohort will be created based on air and water quality data, combined with geographical, demographic, and behavioural variables.

Conclusions

The PRECISE-DYAD study will provide a greater epidemiological and mechanistic understanding of health and disease pathways in two sub-Saharan African countries, following healthy and complicated pregnancies. We are seeking additional funding to maintain this cohort and to gain an understanding of the effects of pregnancies outcome on longer-term health trajectories in mothers and their children.