



RACP Foundation Research Awards

FINAL REPORT

Project / Program Title		Newborn Health in Papua New Guinea
Name		Dr Michelle Scoullar
Award Received		2018 Basser Research Entry Scholarship
Report Date		1 June 2019
Chief Investigator / Supervisor		Professor James Beeson
Administering Institution		Burnet Institute
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PROJECT SUMMARY

Being born small is the single biggest risk factor for newborn mortality and stunting, yet the nature and relative importance of key drivers of reduced birth weight in Papua New Guinea (PNG) are largely unknown. To go some way to addressing this knowledge gap we conducted a longitudinal cohort study of pregnant women quantify major causes of poor health in pregnant women with a focus on identify major drivers of reduced birth weight. Women were enrolled at their first antenatal clinic visit (ANC1) and then seen again following childbirth and at 1, 6 and 12-months post-partum. We are investigating the relationships between different illnesses and risk factors during pregnancy and the outcomes for mother and baby at birth, and during the first year of life.

PROJECT AIMS / OBJECTIVES

AIM: To identify the major determinants of poor newborn outcomes in East New Britain Province, Papua New Guinea.

OBJECTIVES:

1. Determine the prevalence of nutritional deficiencies, anaemia, and major infections (including malaria, sexually transmitted and reproductive tract infections) among women at first antenatal care visit, at delivery and in their newborns
2. Determine the prevalence of adverse pregnancy outcomes
3. Identify the major preventable causes of low birth weight and poor growth at one month of age

The following outcomes have been completed:

- All women and their infants have now been followed up to 12 months postpartum, completed December 2018

Maternal Outcomes:

- Prevalence of anaemia at ANC1, delivery and 1-month postpartum.
- Prevalence of malaria by rapid diagnostic test (RDT) and PCR in women at ANC1 and delivery (RDT only at this stage)
- Prevalence of RTIs in women at ANC1 and delivery (Chlamydia trachomatis, Neisseria gonorrhoea, Trichomonas vaginalis, syphilis, bacterial vaginosis, candidiasis, Mycoplasma genitalium)
- Prevalence of maternal Group B Streptococcus colonisation at delivery
- Risk factor analysis for having a reproductive tract infection (RTI)
- Sensitivity and specificity analysis for clinical symptoms (abnormal vaginal discharge) as a marker of an RTI

Infant Outcomes:

- Prevalence of anaemia in newborns at birth and 1 month
- Cleaning of birthweight data and assessment of prevalence of low birth weight
- Incidence of stillbirth and neonatal death
- Anthropometric measurements at birth and 1 month

SIGNIFICANCE AND OUTCOMES

This study addresses major gaps in our knowledge of maternal and newborn health in PNG. A longitudinal study such as this provides a powerful opportunity to identify major predictors of LBW and poor newborn and infant outcomes.

Little is known about interactions between major morbidities and their combined impact on LBW or other newborn outcomes. Many women have multiple co-morbidities, therefore assessing these together in the same woman is important. Emerging evidence suggests the interaction between these factors is complex, raising important questions for routine care in pregnancy and infancy. There are very few studies globally that have examined co-infection of malaria and STIs in resource-constrained settings, and there are no published studies in PNG.

This study addresses many of the top 20 priorities in PNG's national health and HIV research agenda. A broad range of academic and government collaborators have been engaged from the early stages of designing this study. This has already enabled significant engagement with this research and will facilitate robust discussion and dissemination of results. Findings from these studies will be valuable for informing national policy on management and prevention of major causes of maternal, newborn morbidity and death. This research will provide an analysis of where the most efficient gains in maternal and newborn health could be made through focused input in prevention of adverse outcomes, and improvements in quality of care. This will be used to inform the development of novel interventions for maternal and newborn health in PNG.

PUBLICATIONS / PRESENTATIONS

2019:

A manuscript is near completion describing the burden of sexually transmitted infections in pregnant women in East New Britain Province, PNG.

3 conference abstracts have been submitted outcomes of which are not yet known.

International Conferences:

2018 Scoullar, MJL, P Boeuf, C Bradshaw, G Fehler, S Erskine, E Peach, C Morgan, W Pomat, P Siba, E Kennedy, S Luchters, F Fowkes, A Vallely, S Badman, B Crabb, and JG Beeson. 2018. 'High rates of Mycoplasma genitalium, but no macrolide resistance, among pregnant women in Papua New Guinea.', oral Presentation, IUSTI AP Sexual Health Congress, New

Zealand.

2018 Scoullar, MJL, P Boeuf, E Peach, C Bradshaw, G Fehler, R Fidelis, P Siba, W Pomat, C Morgan, F Fowkes, L Robinson, A Vallely, S Badman, L Vallely, BS Crabb, and JG Beeson. 2018. 'Quantifying the burden of Reproductive Tract Infections in pregnant women: an analysis from the Healthy Mothers Healthy Babies cohort in East New Britain', Oral Presentation, PNG Medical Symposium.

2018 Scoullar, MJL, P Boeuf, E Peach, C Bradshaw, G Fehler, W Pomat, P Siba, C Morgan, F Fowkes, A Vallely, S Badman, BS Crabb, and JG Beeson. 2018. 'Previously unreported infections emerge as an important risk for maternal and newborn health in East New Britain, PNG', Oral Presentation, PNG Medical Symposium.