Aspects of an Australian Aboriginal birth cohort: a unique resource for a life course study of an Indigenous population

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Background – Between January 1987 and March 1990, 686 singleton infants born at Royal Darwin Hospital to women recorded as Aboriginal in the Delivery Suite Register were recruited into the cohort. Data collected at birth included infant and maternal characteristics and risk factors and assessment of gestational age using the Dubowitz method. Royal Darwin Hospital functions as the local hospital for the western Top End (the former Darwin Health Region) and as the tertiary referral centre for a larger area extending from the Kimberley region in WA to the NT/Queensland border.

Objective – To follow up the children and observe disease incidence over their lives. A particular focus is on testing the foetal origins hypothesis that small size at birth followed by overweight in later life will increase the risk of chronic disease. Subsidiary questions relate to describing the prevalence of various conditions among the subset who are from the former Darwin Health Region.

Design – A cohort study with sequential cross-sectional follow-up at different points in time.

Outcomes – Among those with mothers living in the Darwin Health Region, the mean birth weight was 3083g, 13% were low birth weight, 7% preterm and 25% were small for gestational age. A partial follow-up was undertaken at age 4 years, and a full follow-up at mean age 11.4 years. Out of 572 living in the Darwin Health Regional, 482 were successfully seen, including 105 urban children and 412 children living in remote communities. Remote community residents were shorter than urban residents and had lower body mass index and haemoglobin level. Some, but not all, potential markers of adult chronic disease were higher in urban than remote children. These results warn against generalising results from surveys conducted in remote communities to urban Aboriginal populations. Markers of future disease, such as blood pressure, were more strongly related to childhood size than they were to infant size, although it is notable that the group were not overweight. In 2006, we commenced the next wave of follow-up. We have included red cell folate and urinary iodine measurements because mandatory fortification with these nutrients is mooted and so the population-based subset in the cohort can provide useful baseline and monitoring data for assessing the impact of these interventions.

Conclusion – A population-based cohort study can contribute information over and beyond that related to assessing the particular research questions of interest to the investigators. Astute researchers can contribute useful prevalence data on hard-to-reach groups such as adolescents for local health departments and also data related to nationwide issues.