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Understanding the impact of micronutrient deficiencies on birth outcomes in Vanuatu and in the wider Western Pacific

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Abstract

Background: Micronutrient deficiencies (MDs) refer to suboptimal dietary intake of micronutrients such as vitamin A, folic acid (folate) and iron. MDs during pregnancy are associated with higher risks of birth defects (BDs) which are linked to stillbirths, neonatal and infant deaths (SNIDs). SNID risk is on average seven times greater for children born in Pacific Island Countries and Territories (PICTs) relative to those born in neighbouring countries (Australia and New Zealand). This study aimed to map and identify key concepts and gaps in MDs and BD research in PICTs to better understand the basis for increased SNIDs risk in the Western Pacific.

Methods: Scoping reviews were undertaken to establish current knowledge relating to MDs and BDs in Vanuatu and 15 other PICTs (defined by WHO). Published research was collected through PubMed, Medline and OVID search engines using internationally recognised scoping review guidelines (PRISMA-ScR). Grey literature was omitted. Thematic analysis was performed using Covidence software to generate descriptive numerical summaries of all identified research.

Results: We identified 95 peer-reviewed studies published across the last 52 years focusing on MDs or BDs in PICTs. Most research focused on Papua New Guinea (48%) or the Solomon Islands (10%). In this time, Vanuatu was represented in 7 research studies focusing on MDs and has never been represented in any peer-reviewed BD research. Our data further shows that while research into MDs in PICTs has increased over the last two decades, BD research in PICTs has not increased in the last 20 years.

Discussion: PICTs are underrepresented in global BD and MD research. It is critical that we endeavour to understand more about the impact of MD associated BDs on SNID rates in PICTs to empower local communities to safeguard the health and wellbeing of all children born in Vanuatu and the wider Western Pacific.