Quantifying the antenatal care, maternal and perinatal outcomes at the second largest hospital in Solomon Islands (2014-2016)

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Introduction:

The Solomon Islands is a lower middle income Pacific nation that ranks 156/188 on the United Nation's Human Development Index[1]. The maternal mortality ratio in the Solomon Islands is 114 per 100,000[2]. To improve maternal and perinatal outcomes the World Health Organization (WHO) recommends eight antenatal-care (ANC) visits and first trimester contact[3]. Clinical data from provincial areas, where 80% of the population reside, is lacking. This study sought to address this by assessing outcomes at the country's second largest hospital, Gizo Hospital, and to compare findings with national data, namely from the Demographic Health Survey (DHS)[4].

Results:

Maternal & Perinatal Outcomes

	Gizo Hospital	*DHS 2015[4]*
Mean Maternal Age (yrs)	**26.7**	-
Mean age primips (yrs)	21.7	22.1
Extremes of maternal age (%)	27.1	27.4
Mean Parity	**1.8**	
Increased parity (%)	9.4	13.6
Marital Status		
Married/defacto (%)	77.4	65.2^
Unpartnered (%)	22.4	34.9^
- including single, widowed, divorced		
Mode of Delivery		
Caesarean section (%)	6.7	6
Mean Gestation (wks)	40.2	-
Preterm (%)	9.5	-
Low birth weight (%)	12.6	14.3
Perinatal Mortality (per 1000 births)	**42**	**14**
Still-birth rate	32	6.5+
Neonatal mortality rate (per 1000 *live* births)	10	10

^DHS data; martial status for the general female population of reproductive age.
+Still birth rate calculated from data provided

From January 2014 to December 2016 2246 women delivered 2284 babies (95.8% live) at the Gizo Hospital.

High risk pregnancies included 27.1% of women with extremes of maternal age and 9.4% with increased parity. Data pertaining to maternal mortality and morbidity (e.g. pre-eclampsia, gestational diabetes etc.) was not consistently recorded and thus not included in analysis.

Of the 2284 births there were 37 sets of twins and one set of triplets. The mean gestation of birth was 40.2 weeks.

Methods:

A retrospective audit of the Ministry of Health Birth Registry was conducted at the Gizo Hospital from 2014-2016 (HRE 032/17). Maternal demographics, antenatal data and perinatal outcomes were of interest.

All live births and still-births meeting WHO criteria; i.e. born ≥28 weeks gestation (or ≥1000g or ≥35cm in length)[5] were included (2284 births). It was not possible to delineate between fresh and macerated stillbirths[5]. Perinatal deaths included stillbirths and all neonatal deaths within the first 30 days[5], and the mortality rate was per 1000 total births.

Extremes of maternal age were defined as ≤19 or ≥35 years and increased parity as ≥5 to align with DHS comparisons[4]. Preterm birth was defined as live births <37 weeks gestation[5]. Low birth weight included all babies born less than 2,500g[5].

Antenatal Care

Booking Trimester	*1st*	*2nd*	*3rd*	*Total (%)*
No. of ANC visits				
1-4	8	211	287	**506 (22.5)**
5-7	28	542	217	**787 (34)**
8+	107	543	104	**752 (33.5)**
Total (%)	**144 (6.4)**	**1307 (58.2)**	**610 (27.2)**	

ANC was limited, with 6.4% of women presenting in the first trimester and 4.8% of women meeting WHO recommendations. The mean gestation of presentation was ~4.2 months (16.7 weeks) compared to 5.6 months[4] for national data.

The majority of women received some ANC (91%). There were 30 women (1.3%) unbooked at the time of delivery, however another 171 (7.6%) had ANC data missing. Comparatively, national data reports that 94% receive ANC, with 5% receiving no care[4].

Discussion:

This was the first study to use clinical data to assess maternal and perinatal outcomes in the Gizo region, Solomon Islands. Demographics in the study group were comparable to national figures. The caesarean section rate was much lower than the WHO recommendation of 10-15%[6]. Although 91% of women received some ANC, only 4.8% of women are meeting WHO targets. The perinatal mortality rate was three times the national rate, a discrepancy likely driven by increased stillbirths. Notably, the DHS also found an increased proportion of stillbirths between surveys, however the overall perinatal mortality rate was stable.

Conclusion:

The study showed insufficient ANC attendance and thus the region may benefit from targeted family planning programs to reduce high-risk pregnancies, increase ANC and improve perinatal outcomes.

References:

[1] *United Nations Statistics Division, 2015, United Nations data - Solomon Islands 2015.* [2] *World Health Organisation, 2015, Trends in Maternal Mortality (WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division), (http://www.who.int/gho/maternal_health/countries/slb.pdf?ua=1, accessed January 2018).* [3] *World Health Organisation, 2016, WHO recommendations on antenatal care for a positive birth experience. Geneva, (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/anc-positive-pregnancy-experience/en/, accessed December 2017).* [4] *Solomon Islands National Statistics Office, Solomon Islands Ministry of Health and Medical Services and the Pacific Community, 2017, Solomon Islands Demographic and Health Survey, 2015.* [5] *World Health Organisation, 2016, Making every baby count: audit and review of stillbirths and neonatal deaths, Geneva, (http://www.who.int/maternal_child_adolescent/documents/stillbirth-neonatal-death-review/en/, accessed November 2017).* [6] *World Health Organisation, 2015, WHO Statement on caesarean section rates, Geneva, (http://www.who.int/reproductivehealth/publications/maternal_perinatal_health/cs-statement/en/, accessed November 2017). Top right image adapted from: https://daisi.com.au/gizo-hospital-western-province/ All other images author's own.*