A PROSPECTIVE STUDY OF LOW BIRTH WEIGHT BABIES IN VANUATU

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INTRODUCTION

- LBW is defined as a weight at birth of less than 2500g (WHO)[1]
- I5 – 20% of all births globally or more than 20 million newborn annually are low birth weight (LBW) infants[2]
- LBW is a significant public health indicator of maternal health, nutrition, healthcare delivery and poverty[1]
- At PMGH, similar study done by Dr Mayline Kariko (2019) on the outcome of LBW babies

BACKGROUND

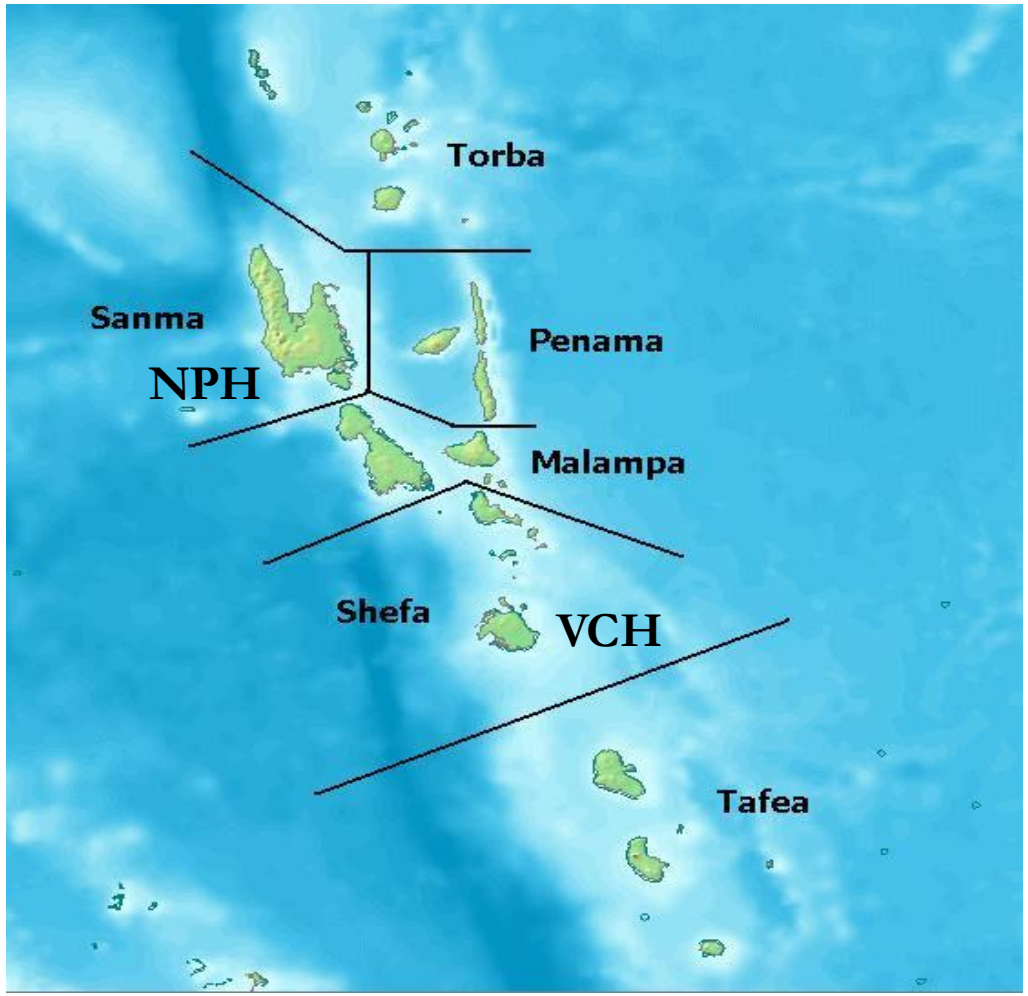


Figure 1. Map of provinces of Vanuatu

- Care of the newborn in Vanuatu
- About 6 to 10% babies are LBW
- In 2021, at Vila Central Hospital (VCH) prematurity and LBW
  - 2nd leading cause of admission to Special Care Nursery (SCN)
  - 1st cause of death among newborns
  - top leading cause of referrals (43%)

RESEARCH QUESTION

- What happens to low birth weight babies after discharge from special care nursery?
- What is the mother's experience in looking after a low birth baby?

AIMS

1. To document outcomes of low birth weight babies admitted to Special Care Nursery (SCN) of Vila Central Hospital (VCH) and Northern Provincial Hospital (NPH) at 6 months and 12 months post discharge

- Death post discharge
- Survival post discharge
- Lost to follow up
- Anthropometry measurements – weight (cm), height (cm), head circumference (cm)
- Retinopathy of Prematurity assessment
- Assessment of Anaemia
- Vaccination status
- Identification of other comorbidities
- Developmental milestones
- Head ultrasound imaging

AIMS

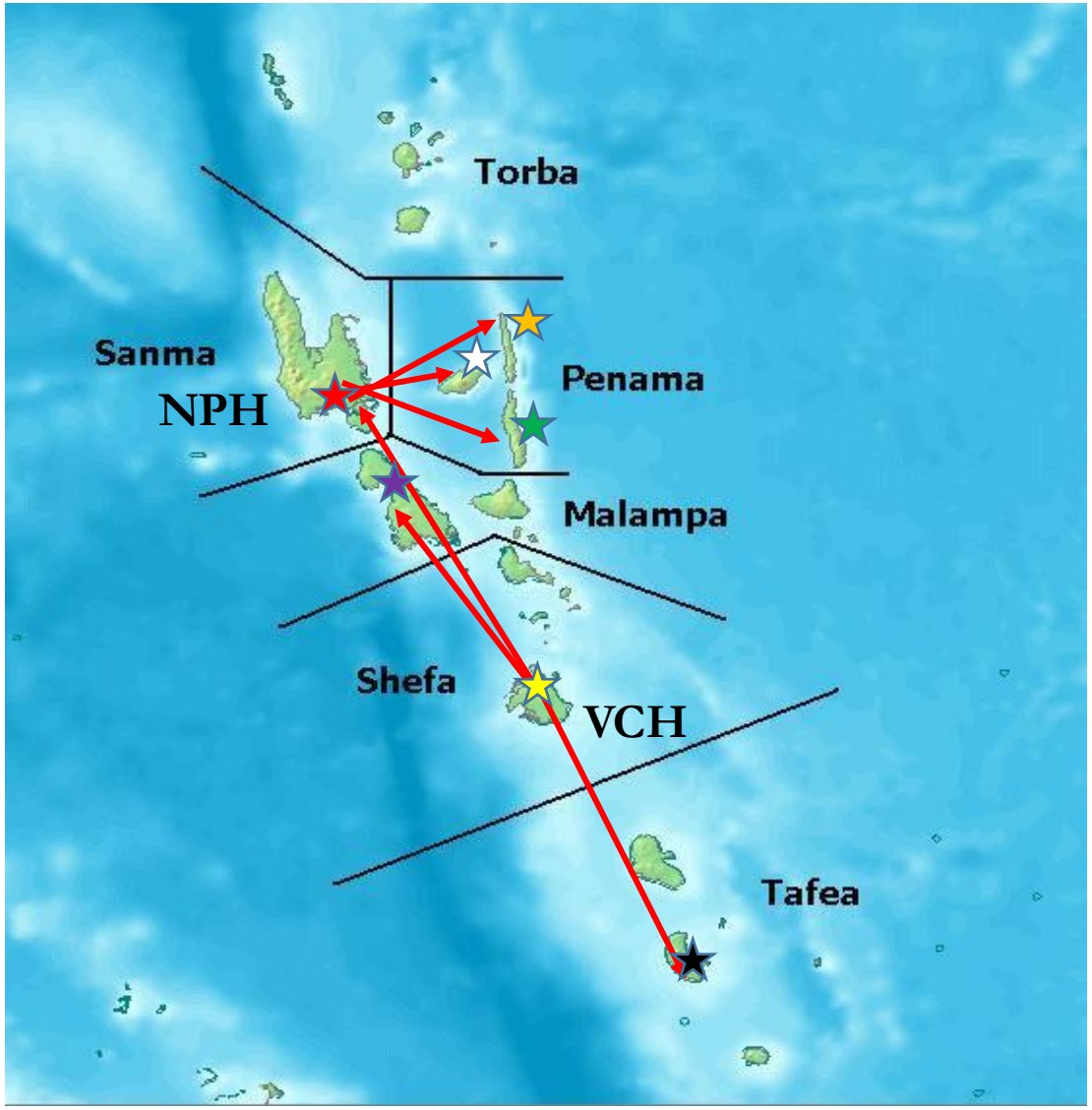
2. To explore the impact of a preterm delivery and caring for a low birth weight baby on the mother's wellbeing

METHODOLOGY

Study Design	1. Prospective descriptive observational cohort 2. Qualitative
Study Timeline	May 2019 – August 2020
Study Population	*Inclusion*: All babies weighing less than 2.5 kg admitted to SCN at VCH and NPH, regardless of gestational age *Exclusion*: Babies weighing more than 2.5kg
Method of collection	Individual patient and mother questionnaire
Study Analysis	MS Excel and Identification of themes

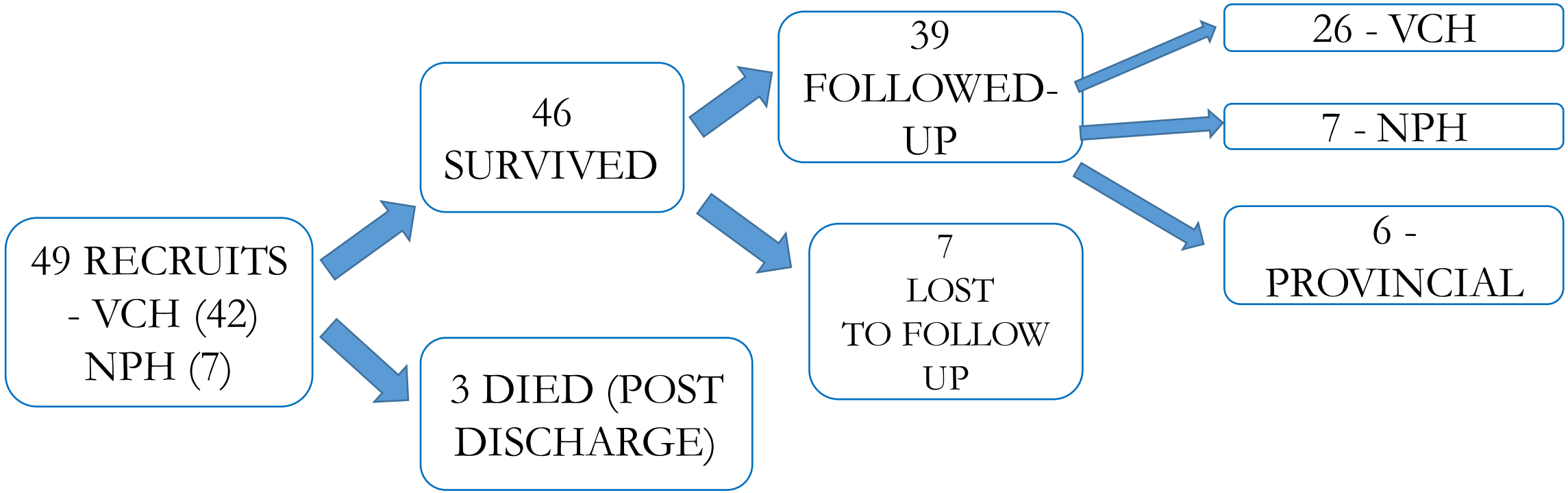
METHODOLOGY

(n)	Island	Mode(s)of travel	Study sites of recruit and follow up
2	Malekula ★	Airplane Truck/Boat	Provincial Hospital Clinic
1	Pentecost ★	Airplane/Boat	Clinic/Village
1	Ambae ☆	Airplane Boat	Home village Provincial Visit
1	Maewo ★	Airplane Truck Boat	Home village
1	Tanna ★	Airplane Truck	Provincial Hospital



RESULTS

RESULTS


49 RECRUITS
- VCH (42)
NPH (7)
46
SURVIVED
3 DIED (POST
DISCHARGE)
39
FOLLOWED-
UP
7
LOST
TO FOLLOW
UP
26 - VCH
7 - NPH
6 -
PROVINCIAL

RESULTS

Data	Number (n)	Percentage (%)
Gender Male	21	43
Female	28	57
Median weight at birth	1804g (IQR 1560 – 1940g)	-
Median gestational age	35 weeks (IQR 31 -39 weeks)	-
Gestational age categories	16 (>37 weeks)	32
	20 (34 – 36 weeks)	41
	8 (32 – 33weeks)	16
	5 (32 weeks)	1

RESULTS

Data	Number (n)	Percentage (%)
Weight categories	< 1kg (ELBW)	1 (2%)
	1 – 1.499kg (VLBW)	9 (18%)
	1.5 – 1.999kg (LBW)	34 (69%)
	2 – 2.499kg (LBW)	5 (10%)
Average Length of Hospital Stay	26 days	

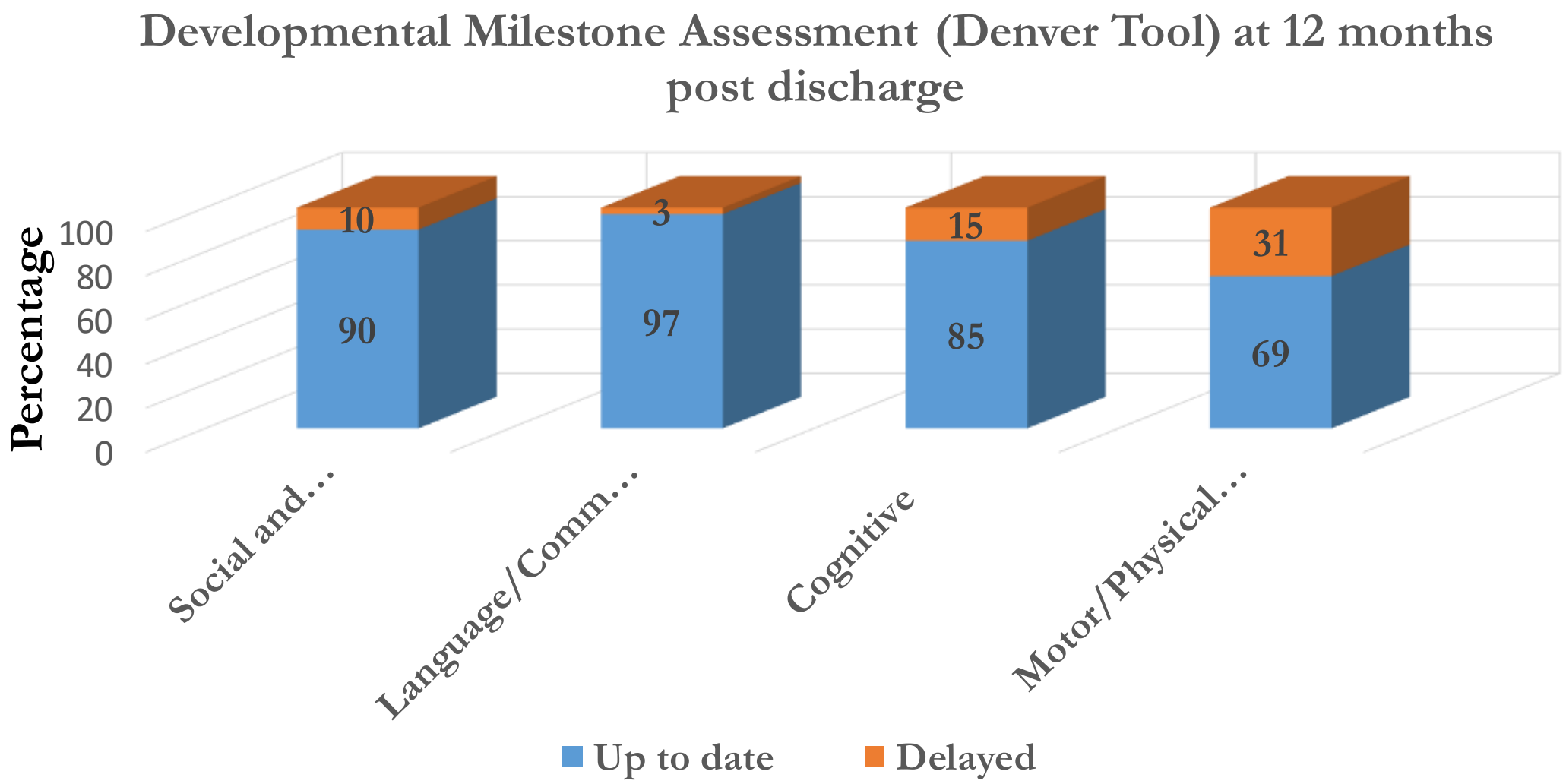
RESULTS

6 months post discharge
• 34 patients followed up
• 3 died
• Median weekly weight gain : 170g/week (IQR: 139 - 207g/week)
• 4 partially immunized
• 15 babies had pallor
• 30 babies had been screened for ROP & 1 baby had retinal detachment

RESULTS

12 months post discharge
• 39 patients followed up
• Median weekly weight gain was 68g / week (IQR: 49 – 78g/week)
• 22 /39 babies still had not received their 1 year vaccination
• 19/39 babies had pallor
• Only 17 babies underwent head ultrasound. All ultrasound were normal

RESULTS


Developmental Milestone Assessment (Denver Tool) at 12 months post discharge
Percentage
100
80
60
40
20
0
10
90
3
97
15
85
31
69
Social and…
Language/Comm…
Cognitive
Motor/Physical…
Up to date
Delayed

RESULTS of Interviews with Mothers

Question	Themes identified
1. Why do you think your baby was born early?	• **Stress** - " mekem tumas wok – cleaning up, laundry, gardening' - "stress blo wok" - 1 mother reported movement during disaster (volcanic eruption) as a cause of her preterm delivery • **Domestic violence** • **Medical problems**

RESULTS

Question	Themes identified
What are the struggles faced during admission?	• **Environment** - Dirty toilets/washroom, waking up and walking to SCN to feed every 3 hours • **Social support** - felt alone at times no families visited, got hungry after hours because dinner served so early
Who is helping you look after baby?	• maternal grandmother • no-one • father of baby • extended family

DISCUSSION

- Babies were thriving well in the 1st 6 months post discharge but more slower in the 2nd 6 months most likely due to introduction of the supplementary feeding

- 1 out of 30 babies screened showed complications of ROP . This was evident in a very low birth infant [3]

- Motor/physical development was more delayed compared to other components of the milestones.

- Normal ultrasound findings in those screened does not rule out long term neurological impairment

DISCUSSION

- Access to vaccines remains an issue
- Psychological stress is associated with preterm delivery and caring for low birth babies
- Three (3) deaths are most likely preventable and highlights a need for discharge check list for the high risk mothers and support after discharge.

LIMITATIONS

- Small study
- Shorter duration
- Logistical Support
- Follow up of patients
- Bias – Interviewer Bias

RECOMMENDATIONS

- Ensuring affordable, accessible, and appropriate health care for mothers and their newborns
- Strengthen continuous training in Kangaroo Mother Care, Early essential newborn care, Neonatal resuscitation
- Develop national guidelines for management for low birth weight babies and a registry
- Establish in-hospital social welfare and counselling support for mothers and families
- Seek partnerships that focus on helping high risk mothers
- Education and advocacy for families and communities
- Further research in this area is essential

CONCLUSION

- Low birth weight babies continue to remain a huge challenge for pediatric services in Vanuatu

- Better management and more accessible services for high risk newborns may contribute to better outcomes

- Mothers of low birth babies need support and counselling

ACKNOWLEDGEMENTS

- Almighty God
- My patients and their families
- My sponsors NZAID, MOH, Ross Trust Fund, Leomala Medical
- Supervisors – Dr Caleb Vangana, Dr Orelly Thyna, Dr Pulsan, Prof T.Duke, Prof Vince
- Colleagues throughout the sites who helped collect data and follow up patients

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