



Assessment of Kangaroo Mother Care amongst Preterm and Low Birth Weight Neonates at Modilon General Hospital

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Introduction

- According to Global Health Observatory,
- Global <5mortality rates have declined by 58% in 2017
- Neonatal deaths(NND) accounted for 47% of the deaths under 5 years and one of leading causes of death under 5 years in 2017 was preterm births.
- Every Newborn An Action Plan To End Preventable Deaths (WHO/UNICEF, 2014)
- Action Plan for the Healthy Newborns in the Western Pacific Region (2014-2020)





- Simple low-cost interventions and health care focused on birth and the first 3 days of life with particular emphasis on intrapartum care period and the first 24 hours after birth
- Early Essential Newborn Care and Kangaroo Mother Care (KMC)





- According to the PNG Annual Child Morbidity and Mortality Report(2018), 30.9% were neonatal admissions of all 24,960 paediatric admissions in 18 hospitals (6).
Case fatality of 8.32%
- For Modilon General Hospital (MGH) neonatal admissions 26.1%(346) of all 1324 paediatric admissions with a CFR 8.7%
- In the Child Health Report from MGH (2018); 29.3% were Special Care Nursery (SCN) admissions and 46% of deaths (7).
- 41.2% of neonatal admission were LBW and accounted for 67.3% of NND.

Newborn Health Policy 2014

PNG Department of Health



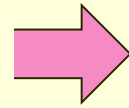
What is Early Essential Newborn Care?



ALL BABIES



Immediate and thorough drying



Immediate skin-to-skin contact



Appropriately timed clamping and cutting of the cord



Exclusive breastfeeding

90 min



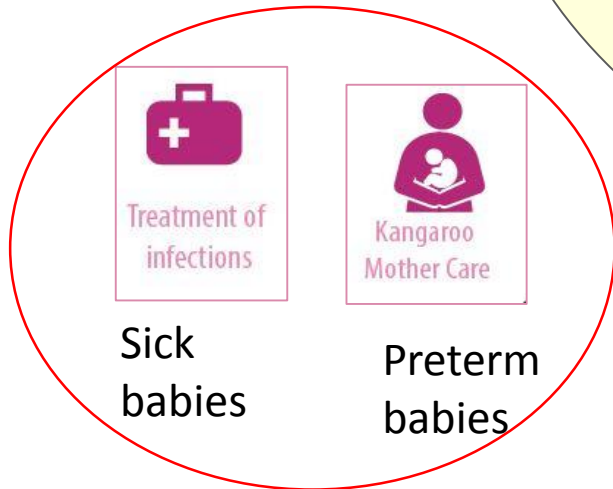
Treatment of infections

Sick babies



Kangaroo Mother Care

Preterm babies





Module 4 Kangaroo Mother Care for Preterm and Low Birthweight Infants



World Health Organization (WHO) recommends routine (KMC) for clinically stable newborns with birth weight < 2000 g, often initiated in health care facilities (1, 2).



Aim and Objective

Aim

- To assess the impact of intermittent Kangaroo Mother Care on preterm and low birth weight newborns on type of discharge outcomes.

Objective

1. To assess the impact of intermittent KMC on planned and unplanned discharge.



Methods

- **Study Site:** Modilon General Hospital
- **Study duration:** March to July, 2019
- **Study population and design**
 - ✓ In this prospective study, neonates delivered with a birth weight between 1200 to 2000 g, admitted under SCN, clinically stable and then received intermittent KMC, had no congenital abnormalities, have a mother who is alive were considered.
- **Data collection and analysis**
 - ✓ Neonates who met the above criteria had their medical charts kept, data manually entered in logbook, Microsoft Excel then analyzed using Stata 11



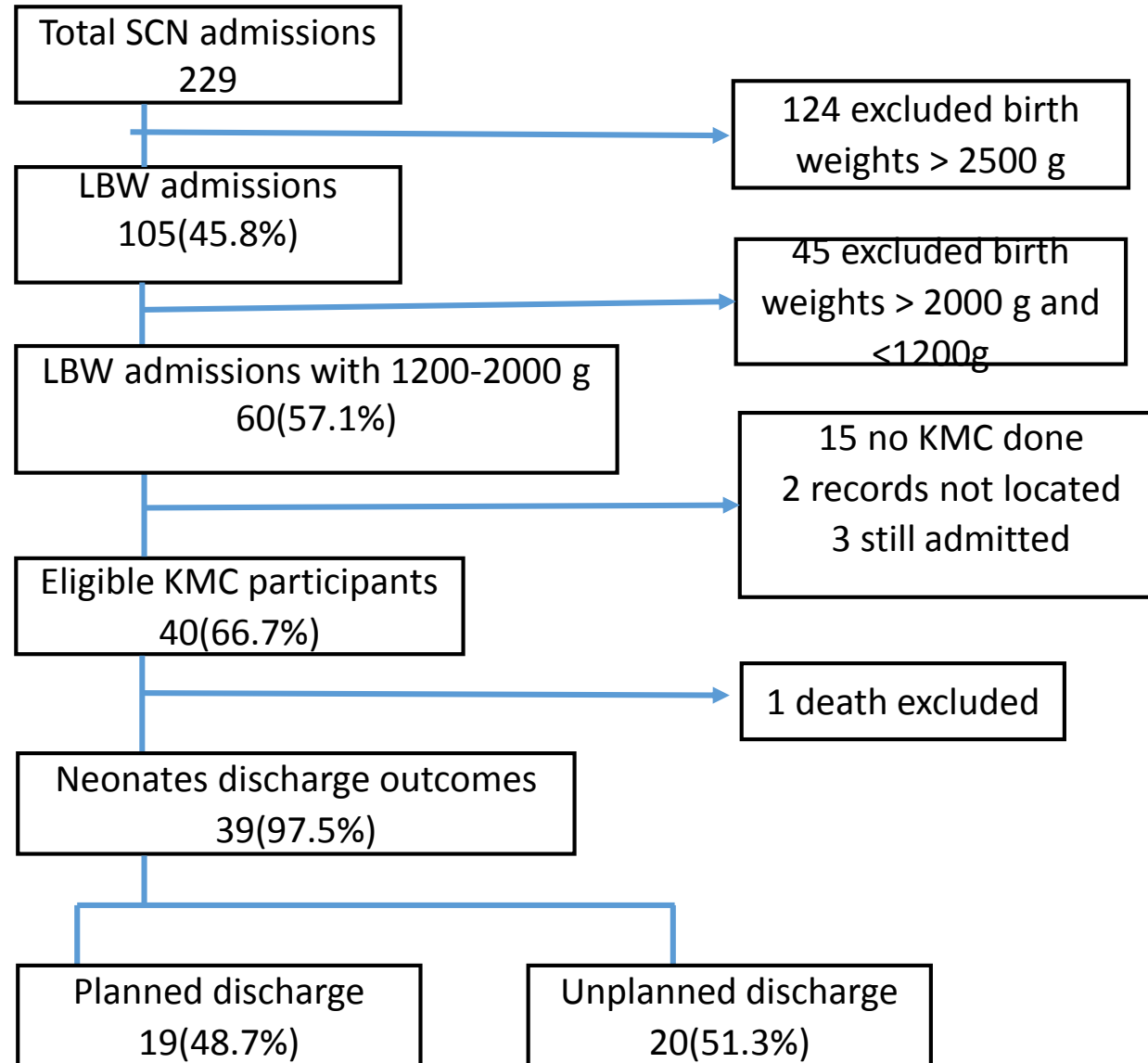
Health Education



- KMC awareness to all 10 SCN staff:
5 Nursing Officers, 5 Community Health Workers
- KMC awareness to mothers, tied to mother
- KMC bundles given



Results



Selected baseline characteristics



Characteristics		Percentage or Mean \pm Standard deviation
Neonatal demographic	N	
Gender		
<i>Female</i>	23/39	59.0
Preterm	31/39	79.5
Place of birth		
<i>Modilon hospital</i>	24/39	61.5
<i>Other health facilities</i>	6/39	15.4
<i>Born before arrival</i>	9/39	23.1
Age KMC initiated (days)	39	4.9 \pm 2.8
Maternal demographic		
Age (years)	34	25.0 \pm 5.9
Place of residence		
<i>Rural</i>	34/39	87.2
Parity		
<i>Primipara</i>	12/38	31.6
Neonatal clinical		
Hypothermic ^o <36.5C admission	28/39	71.8
All observations done in 1 st 24 hrs	13/39	33.3
Birthweight attained at 10-14 days	9/19	47.4
Weight gain (g/kg/day) on discharge		
>10	17/39	43.6
5-10	10/39	25.6
< 5	12/39	30.8
Length of stay	39	11.3 \pm 7.6
Vaccine up to date	34/36	94.4



Selected Neonatal characteristics associated with types of discharged outcomes

Characteristics	N	Types of discharge outcomes		
		Planned	Unplanned	P value
Neonatal demographic				
Place of birth				
<i>Modilon hospital</i>	24/39	13	11	0.81
<i>Other health facilities</i>	6/39	3	3	> 0.99
<i>Born before arrival</i>	9/39	3	6	0.68
Age on KMC (days)	39	4.9 ± 3.5	4.9 ± 2.0	0.92
Mum rural residence	5/39	3	2	>0.99
Mum urban residence	34/39	16	18	0.84
Stable on admission	23/39	9	14	0.45
Sick on admission	16/39	10	6	0.54
Temperature (°C) on admission				
<i>Normal</i>	6/39	3	3	> 0.99
<i>Hypothermic</i>	28/39	13	15	0.82
Birthweight attained on Day 10-14	9/19	6	3	0.68
Weight gain (g/kg/day) on discharge				
<i>>10</i>	17/39	12	5	0.23
<i>5-10</i>	10/39	6	4	0.71
<i>< 5</i>	12/39	1	11	0.03
Length of hospital stay (days)	39	13.8 ± 8.2	9.3 ± 6.3	0.06

Study limitations

- Human factor-HR: Health team, Nursing staff, willing mother, supportive families
- Time factor-sample size
- Facilities: Health care worker/Mother-friendly environment
- Inadequate Equipment and supplies
- Missing data/medical charts
- SCN & KMC protocols, KMC register, IEC materials

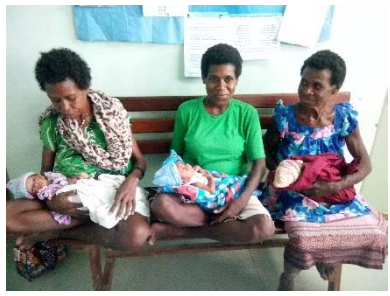




Conclusions



- In this study, neonatal weight gain < 5 g/kg/day was significantly associated with planned and unplanned discharged outcomes
- 91.7% of neonates with weight gain < 5 g/kg/day had an unplanned discharged
- Also a higher proportion of neonates in the planned category had weight gain of >10 g/kg/day and 5-10g/kg/day
- The clinical and public health significance is relevant to improving EENC/KMC practices at Modilon General Hospital



Recommendations



1. Access to skilled birth attendants in quality obstetric care and practicing EENC will improve neonatal morbidity and mortality at Modilon General Hospital
 - Refresher EMNOC and EENC
 - MBFHI and the power of 1000 day initiative
2. An enabling health care provider-mother- baby friendly environment with adequate resources would improve the implementation of intermittent KMC and a more favorable planned discharge outcome at the Modilon General Hospital.
 - KMC training
 - KMC protocols, IEC materials
3. A well designed larger sample sized study will need to be undertaken



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References



1. WHO/Kangaroo mother care to reduce morbidity and mortality in low birth weight infants. Available at www.who.int/elena/titles/kangaroo_care_infants/en/
2. World Health Organization (2003). Kangaroo mother care: A practical guide. Geneva, Switzerland: Author retrieved from http://www.who.int/making_pregnancy_safer/documents/9241590351/en/
3. Lawn J.E, Mwansa-Kambafwife J., Horta B.L., Barros F.C., Cousens S. (2010). 'Kangaroo mother care' to prevent neonatal deaths due to preterm birth complications. International Journal of Epidemiology, 39:144-154.
4. Boundy E.O., Dastjerdi R., Spiegelman D., Faozi W.W., Missmer S.A., Lieberman E., Chan G.J (2016). Kangaroo mother care and neonatal outcome: A meta-analysis. Paediatrics, 137(1).
5. PAPUA NEW GUINEA CHILD HEALTH POLICY AND PLAN 2009-2020. Updated edition 2015.
6. PNG Department of Health Child Morbidity and Mortality 9th Annual report 2018, Child Health Advisory Committee, PNG National Department of Health, PNG Paediatric Society.
7. Aipit.J (2019). Child Health Report 1st January to 31st December 2018.
8. PNG Newborn Health Policy 2014.
9. World Health Organization (2018). EENC Module 4. Introducing and sustaining EENC in hospitals: Kangaroo Mother Care for preterm and low-birthweight infants
10. Nagai.M (2018). Early Essential Newborn Care power point presentation.