Optimising Breastfeeding to treat nutritionally vulnerable Infants under 6 months – A pilot study

Dr Mwangome Martha
• Acute malnutrition: Low anthropometry (WFLZ), poor weight gain and ineffective breastfeeding (observed)

Admit infants with acute malnutrition with clinical complication

• Management: Support to establish or re-establish exclusive breastfeeding

• Discharge: Weight gain of at least 5g/kg/day on breastmilk only for 3 consecutive days

Strong recommendation, very low quality evidence
Objectives:

• To implement WHO treatment guidelines rigorously
  ✓ Evaluate what would be needed, practicality and acceptability
  ✓ Meeting the guidelines nutritional discharge criteria

• Collect pilot data on breastfeeding, growth and readmission 6 wks after discharge

Qualitative and Quantitative methods
Inclusion criteria

- Age 4 – 16 Weeks
- Low MUAC/WLZ/WAZ
- No congenital abnormality
- Possibility to breastfeed

Sample size: 51
To implement WHO nutritional rehabilitation guidelines?

- Identified and standardised a set of activities using an SOP
- Identified, trained and supported BFPS to apply the SOP under supervision
- Developed tools and processes to assess and evaluate success
Step 1: Evaluation and assessment

- Breastfeeding history
- Breast assessment
- Breastfeeding techniques
- Diagnose main breastfeeding challenges (Checklist)
- Recommend Lactation plan

Step 2: Review to exclusive breastfeeding

- Full application of the lactation plan
- Increased milk output
- Consistent weight gain
- Recommendation

Step 3: Review for discharge

- Sufficient weight gain on breastmilk alone for 3 consecutive days (>5g/kg/day)
- Caregiver confident with breastmilk output
- Lactation failure: Intensive support for 14 days
Evidence for using peer supporters

Exclusive breastfeeding promotion by peer counsellors in sub-Saharan Africa (PROMISE-EBF): a cluster-randomised trial


- Qualifications
  - Equivalent to CHWs
  - Experience in breastfeeding
  - Local

- Training
  - 5 day introduction to lactation
  - Trainers from UNICEF and MoH
  - Theory and practical sessions
  - IEC materials and Breastfeeding Videos
  - Mixed group of health workers
Identification

33% (35/106) had congenital malformation

6% (3/55) had no possibility to breastfeed

Low birth weight 43% (22/51)
Management

14% inpatient mortality

2% post discharge mortality

Morbidity 1 month after discharge

10/41 = 24%
Increase proportion of infants exclusively breastfeeding BY 17%

From 55% at admission to 72% at discharge
Meeting the discharge criteria

Discharge on Exclusive breastfeeding

- YES
- NO

Average weight velocity 3 days b4 discharge

- >5g/kg/day

- Yes, meet WHO discharge criteria
- No, because not exclusive
- No, poor growth

68% in infants discharged alive met WHO discharge criteria
Key Messages

- Strategy to use peer supporters to support breastfeeding in an inpatient setting is acceptable and effective to re-establish exclusive breastfeeding in a large percentage of infants admitted with acute malnutrition.

- On average infants receiving breastfeeding support gained weight and MUAC after discharge but this was not sufficient to improve WAZ and WLZ scores.

- Future studies should focus on improving diagnosis, adoption of WHO guidelines, mechanisms to improve catch up growth after discharge.
Many Thanks

IBAMI study team

Kilifi County Hospital

Study participants
Limitations/challenges

• Missed opportunities to collect breastmilk and evaluate quality

• 24hr recall Breastfeeding assessment

• Short follow-up infants up to 6 months of age (Transition age)

• Paediatricians definition of cure does not include “breastfeeding”

• Health workers strikes
2. Pilot data on breastfeeding, growth and readmission

**MOTHERS**

Median age (IQR): 28 years (23 to 33)

Parity: 3 children (IQR 1 to 5)

Primary Education: 49%

Occupation (labourer): 53%

BMI: 20.9 (IQR 18.7 to 23.2)

MUAC: 24.3 (IQR 23.1 to 26.4)

**INFANTS**

Median age (IQR): 52 (36-68 days)

Hospital birth: 75%

Low birth weight: 43%

Length of stay: 7 days (IQR 5 to 11)

BCG: 84%

Pneumonia: 74%
What are the observed breastfeeding Challenges?
Reported feeding practices

• Pre-lacteal feeds - 39%
  ✓ Sugar water – 18%
  ✓ Animal milk – 12%
  ✓ Formulae – 6%

• Mixed feeding liquids - 47%
  ✓ Sweetened water – 15%
  ✓ Cows milk – 11%
  ✓ Water – 7%

• Mixed feeding behaviours persists
Pending analysis

- SEE
- Maternal mental health
- WASH
- Social support

- Qualitative data
  - Mothers at discharge (N=20)
  - Mothers one month post discharge (N=20)
  - Health workers and peer supporters (N=9)
SIBs: **Strategies to Integrate Breastfeeding Peer Supporters in the health system**

**Funder:** Global Health Trials – Health Systems Research Research initiative (HSRI) Foundation Grant

**Objective:** To explore health system factors to consider in integrating BFPS into the public health system
Rationale & Questions

Strategy would be acceptable and applicable under routine conditions with less supervision and organised and managed within routine hospital settings.

Can BPS be effectively be integrated into inpatient malnourished infants nutritional rehabilitation strategies in Kenyan Hospitals?

• How might they be organised and managed in hospitals
• What might they cost and who and how might they be funded
• Who are the key stakeholders central to decision about the introduction of this potential new cadre into Kenyan hospitals
Employing PS as a way to instigate discussions

• 1 PS per hospital (Mariakani and Malindi sub county hospitals)

✓ Situation analysis
✓ Initiate PS in hospitals
✓ Perception of key stakeholders at hospital, county and national level
✓ System requirement (governance, regulatory..) and cost

• Investigators: Nutrition, health system governance and human resources, health economics and social science
Stakeholders mapping and analysis at national level

**Engagement**
- Confirm the hospitals/hospital visits
- County, sub-county, Hospital and Health workers engagement (Director of health, Health Administrative Officer, Head of HR, County Nutritionist, County Nursing Officer, and County Research Coordinator)
- Strategy development (county public service board, directorate of personnel management)

**Implementation**
- Situation analysis (*Practice and records*)
- Identification of PS recruitment and training
- Deployment

**Evaluation**
- Quarterly participatory meetings
- Costing
- End of project review
- Stakeholders review
- Reflective sessions
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What we borrow from IBAMI

• Revised Job Description
  ✓ Lowered qualification
  ✓ Negotiate for cadre
  ✓ Pay role

• Revised Lactation form
  ✓ Documentation for lactation support
  ✓ Documentation of work load
  ✓ Additional management task required of the nutrition
Our collaborations with UNICEF and MoH

Lactation Training for PS and health workers (June?)
✓ Revised content
✓ Refresher
✓ Certification & Referencing materials

National Stakeholders forum (End of year?)
✓ Identification
✓ Participation
Other studies...

**AREF Fellowship**: Incorporate stable isotope techniques in future studies

**CHAIN sub-Study**: Breast milk assessment

**NeoNuNet**: Network for neonatal nutrition (Baseline data to identify gaps)

Demonstrates what is achievable if WHO treatment guidelines for nutritionally vulnerable infants under 6 months are applied optimally (Baseline data from which intervention studies can be initiated to improve the guidelines).
Breastfeeding Terminologies

• **Relactation**: Re-initiate feeding on breastmilk in infants not on any breastmilk

• **Re-establish exclusive breastfeeding**: Increase quality and quantity of breastfeeding
• Emphasis on weight based admission (poor weight gain, recent weight loss or failure to gain weight)

• No clear phases (stabilization, transition or rehabilitation)

• Emphasize on optimizing exclusive breastmilk (re-establish exclusive breastfeeding)

• Discharge when weight gain (growth velocity g/kg/day) is on breastmilk alone more important than Z scores (growth charts)
What activities to be implemented?

Types of activities: Standard and personalised

Approach: Borrowed from studies in therapeutic care centres

Tools for assessment and evaluation: Borrowed from breastfeeding documentation

Develop SOP
Peer supporters

• Qualifications
  ✓ Equivalent to CHWs
  ✓ Experience in breastfeeding
  ✓ Local

• Training
  ✓ 5 day introduction to lactation
  ✓ Trainers from UNICEF and MoH
  ✓ Theory and practical sessions
  ✓ IEC materials and Breastfeeding Videos
  ✓ Mixed group of health workers
# Study team and responsibilities

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<td>Nutritionists</td>
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<td>Technical experts in management of malnourished children</td>
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<td>Conduct all 3 formal evaluation</td>
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<td>Recommend lactation plan</td>
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<td>Complete lactation forms i.e. calculate the weight velocities</td>
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<td>Supervise peer supporters</td>
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<td>Peer supporters</td>
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<td>Routine activities: weight, MUAC, supervising timely feeding, ensure hygiene handling of milk and equipment</td>
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<td>Work in shifts to effect the lactation plan (counselling sessions) audio visual, discussions, demonstrations)</td>
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<td>Log activities in study form and handing over book</td>
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<td>Field worker</td>
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<td>Screening and consenting</td>
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<td>Data collection (CRF) at enrolment, discharge, follow-up</td>
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<td>Follow-up/community tracing</td>
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<td>Assistant Research officer</td>
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<td>Qualitative data collection (interviews at discharge and 4th week visit)</td>
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<td>Co-ordinating follow-ups (phone reminders, bus fares, reorganizing visits)</td>
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Inclusion criteria

- Age 4 – 16 Weeks
- Low MUAC/WLZ/WAZ
- No congenital abnormality
- Possibility to breastfeed

Sample size: 51
Mortality, morbidity and Re-admissions

- Inpatient mortality 7/51 = 14%
  ✓ Median age at admission 36 days (IQR 32 to 90)
  ✓ Median birth weight 2.75kg (IQR 2.5 to 3.0)
  ✓ Complete lactation failure in 1/7 (14%)
  ✓ Median stay 5 days (IQR 3 to 8 days)

- Post discharge mortality 1/42 = 3%
- Infants unwell 1 month after discharge 10/41 = 24%
  ✓ Fever 5/10
  ✓ Cough 10/10
  ✓ Diarrhoea 2/10

- Readmission 1 month post discharge 5/10 = 50%