Strengthening Multidisciplinary and Referral Pathways in Maternal and Child nutrition care.

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BIBLIOGRAPHY

- **DrJackson P. Mukemba, MD, MMED PGPN, IPPN** is a pediatrician, academic, researcher, conference speaker, and senior lecturer with extensive experience in child health, nutrition, neonatal care, infectious diseases, and medical education.
- He has served in both clinical and academic leadership roles in Eswatini and Tanzania, including appointments at the former Hubert Kairuki Memorial University (now Kairuki University) and government health facilities in Eswatini.
- Dr. Mukemba has contributed to pediatric clinical practice, undergraduate and postgraduate medical training, and health policy development.
- He participated in the development of several national guidelines including neonatal care, IMAM, IMNCI,Malaria ,pediatric cancers,pediatrics palliative care for Eswatini and has been involved in strengthening maternal, infant, and young child nutrition (MIYCN), neonatal care, malaria management, and child survival initiatives.
- His research interests include: •
  - Severe and cerebral malaria •
  - Neonatal medicine
  - Child nutrition and growth
  - Pediatric infectious diseases • Medical education
  - Health systems strengthening • Maternal, Infant and Young Child Nutrition (MIYCN)

Presentation Objectives

- Review the evidence supporting multidisciplinary aproaches in MIYCN.
- Define the roles of healthcare providers and community stekeholders in nutrition care.
- Identify gaps and challenges in current referral systems.
- Present effective refferal and counter-referral pathways from community to facility level.
- Explore strategies to improve coordination,communication,and continuity of care.
- Discuss monitoring indicators and best practices for improving nutrition outtcomes.

Introduction

- Maternal and child nutrition outcomes improve significantly when multiple disciplines work together in **a coordinated and family-centered approach**.
- **Malnutrition is multifactorial and influenced by** :
    - **Health**
    - **Food security**
    - **Education**
    - **Social protection**
    - **Sanitation,**
    - **Culture and Economic conditions.**
- A multidisciplinary approach **integrates expertise** from healthcare workers, community health workers, agricultural officers, educators and policymakers to improve MIYCN.

Key Members of the Team

- Community health workers
- Social workers
- Agricultural and public health officers
- Nutritionists
- Dietitians and nutritionists
- Nurses and midwives
- Pharmacists
- Doctors and Pediatricians

Roles to play

- Screening and nutrition assessment
- Breastfeeding counseling and support
- Micronutrient supplementation
- Community follow-up and health education
- Addressing social determinants and food insecurity
- Management of severe acute malnutrition

MIYCN Referral pathway

- **A strong MIYCN referral pathway** ensures that pregnant women, lacting mothers, infants, and young children receive the **right nutrition services** at the **right level of care** ,with **feedback** and **follow-up** between **facilities** and **communities.**
- **WHO** emphasizes continuity of care from pregnancy through the first 1000 days of life.

ESWATINI NATIONAL REFERRAL PATHWAY

Right Care, Right Place, Right Time

1. COMMUNITY LEVEL

Rural Health Motivators (RHMs)
Community Health Workers
Outreach / Mobile Clinics

FUNCTIONS

- Health promotion
- Early identification of illness
- Nutrition screening
- HIV / TB screening
- Basic health education
- Referral to clinics

REFER WHEN:

- Danger signs identified
- Chronic disease needs further management
- Maternal / neonatal complications
- Severe malnutrition or acute illness
- Not improving /worsening

2. PRIMARY HEALTH CARE LEVEL (First Contact / Gatekeeper)

Clinics • Health Centres
Public Health Units
Mission Clinics

FUNCTIONS

- Basic outpatient care
- ANC / PNC services
- Immunization
- Management of uncomplicated conditions
- Initial stabilization
- Health education & prevention

REFER UPWARD FOR:

- Severe infections
- Obstetric emergencies
- Surgical conditions
- Severe acute malnutrition with complications
- Neonatal emergencies
- Advanced diagnostic needs
- Conditions beyond capacity

3. SECONDARY LEVEL (REGIONAL HOSPITALS)

Examples: Hlathikulu, Raleigh Fitkin Memorial, Piggs Peak Government Hospitals

FUNCTIONS

- Inpatient services
- Emergency care
- Surgery (general)
- Obstetric care
- Paediatrics
- Basic specialist services
- Nutrition rehabilitation
- Diagnostic imaging & laboratory support

REFER UPWARD FOR:

- ICU / HDU care needed
- Specialist paediatric / surgical management
- Complex neonatal care
- Oncology or advanced imaging
- Conditions beyond capacity

4. TERTIARY / NATIONAL REFERRAL LEVEL

Mbabane Government Hospital
Mankayane Government Hospital
(National Referral Hospitals)

FUNCTIONS

- Specialist paediatrics
- Neonatology
- Internal medicine specialties
- Orthopaedics
- Advanced surgery
- ICU services
- Advanced diagnostics
- Referral coordination
- Training & teaching

REFER OUT WHEN:

- Services not available locally
- Highly specialized procedures required
- Radiotherapy / oncology services
- Neurosurgery / cardiac surgery
- Advanced subspecialty care

5. EXTERNAL REFERRAL (When Unavailable Locally)

Refer outside the country, mainly to South Africa (Phalala Fund System)

COMMON REFERRALS

- Oncology / Radiotherapy
- Neurosurgery
- Cardiac surgery
- Advanced imaging
- Complex paediatric subspecialties
- Other highly specialized services

TYPICAL PATIENT FLOW

Community → Clinic / Health Centre → Regional Hospital → National Referral Hospital → South Africa (if unavailable locally)

COUNTER-REFERRAL (FEEDBACK)

After management at a higher level, patient is returned to the referring facility for:

- ✓ Follow-up care
- ✓ Chronic disease management
- ✓ Continued rehabilitation
- ✓ Health education
- ✓ Nutrition support
- ✓ ANC/PNC & child health services

Information and treatment plan sent back to the referring facility

KEY REFERRAL PRINCIPLES

- Stabilize before referral
- Use standard referral form
- Communicate with receiving facility
- Ensure safe transport
- Send clinical notes & results
- Ensure counter-referral & follow-up

COMPONENTS OF AN EFFECTIVE REFERRAL SYSTEM

- **Standardized Referral Forms** — Complete, accurate and legible
- **Communication** — Call ahead and share key patient information
- **Transport & Ambulance Coordination** — Timely & safe patient transfer
- **Clinical Information & Investigation** — Send relevant notes, results & treatment given
- **Sample / Specimen Referral System** — Timely transport of specimens & results
- **Linkage & Tracking Systems** — Follow referral outcomes & reduce loss to follow-up
- **Telemedicine Support** — Consultation & decision support

STABILIZE BEFORE REFERRAL

- **A** Airway – ensure patent
- **B** Breathing – support as needed
- **C** Circulation – IV access, fluids if needed
- **D** Drugs – give emergency medications
- **E** Evaluate – check glucose, vitals, other needs
- **F** Fill – complete referral form & communicate

All referrals must be patient-centered, timely, safe and appropriate to ensure continuum of quality care across all levels of the health system in Eswatini.

MIYCN REFERRAL PATHWAY

(Maternal, Infant and Young Child Nutrition)

1. CLIENT

Pregnant woman / Mother / Child < 5 years

2. SCREENING

Nutrition screening at ANC, PNC, OPD, Under-5 Clinic, Community Outreach, EPI

3. IS A NUTRITION PROBLEM FOUND?

NO → **ROUTINE CARE**

Routine MIYCN counselling + Follow-up at next visit → END

YES

4. IDENTIFY TYPE OF NUTRITION PROBLEM

A. PREGNANT / LACTATING MALNUTRITION

(Undernutrition, Anaemia, Inadequate weight gain)

Nutrition counselling + supplements (Iron–Folic acid, Calcium, others as appropriate)

Assess improvement at follow-up

- IMPROVING → Continue routine care
- NOT IMPROVING

B. INFANT FEEDING PROBLEMS

(Breastfeeding, Complementary feeding, Feeding difficulties)

MIYCN counselling and support

Follow-up visit

C. ACUTE MALNUTRITION

(Wasting, Oedema, Low MUAC)

Assess severity

SAM or medical complications?

- YES → **5. REFER URGENTLY TO:**
  - Nutrition Unit
  - Hospital
  - Stabilization Centre
  - Paediatrician

- NO → **6. TREATMENT & FOLLOW-UP**

7. FEEDBACK TO REFERRING POINT

KEY REFERRAL TRIGGERS – REFER IMMEDIATELY

SEVERE ACUTE MALNUTRITION (SAM)

- Bilateral pitting oedema
- MUAC < 11.5 cm (6–59 months)
- Weight-for-height Z-score < -3

MEDICAL COMPLICATIONS

- Severe pneumonia
- Persistent vomiting
- Severe dehydration
- Altered consciousness
- High fever

PREGNANT / LACTATING WOMEN

- Severe undernutrition
- Severe anaemia
- Failure to gain weight appropriately

INFANT FEEDING PROBLEMS

- Failure to breastfeed
- Poor weight gain
- Feeding difficulties in HIV-exposed infants

REMEMBER: SCREEN → IDENTIFY → COUNSEL / TREAT → REFER IF SEVERE → FOLLOW UP → FEEDBACK

LEVELS OF CARE

LEVEL 1 COMMUNITY

- Community health volunteers
- Community outreaches
- Health education
- Identify & refer

(First contact)

LEVEL 2 PRIMARY HEALTH CARE

- ANC, PNC, Under-5 Clinic, OPD, EPI
- Screening & assessment
- Counselling & supplements
- Manage uncomplicated cases
- Refer if needed

(First level facility)

LEVEL 3 SECONDARY CARE

- Inpatient care
- Management of complicated cases
- Stabilization
- Specialized support

(District/General Hospital)

LEVEL 4 TERTIARY CARE

- Advanced management
- Intensive care
- Specialist services
- Training & supervision

(Teaching/Referral Hospital)

Benefits of a Functional MIYCN referral pathway

- **Early identification of nutrition problems**
  - Detects malnutrition before complications develop.
  - Reduces morbidity and mortality.
- **Continuity of care**
  - Ensures mothers and child receive ongoing support from pregnancy through early childhood.
  - Prevent loss of follow-up.
- **Improved breastfeeding outcomes**
  - Timely referral of breastfeeding difficulties.
  - Increased exclusive breastfeeding rates.
  - Better infant growth.

Benefits of a Functional MIYCN referral pathway

- **Better management of SAM**
  - Rapid referral of severe cases
  - reduce complications and hospital admissions
  - improve recovery rates
- **Strengthning Community-Facility Linkages**
  - Community wokers identify and refer cases.
  - Facility provide treatment and feedback.
  - Community workers support follow-up and adherence.
- **Improve Data and Accountability**
  - Referral forms and feedback loops improve tracking.
  - Better monitoring of nutrition outcomes.
- **Reduce Child Mortality**
  - Early detection and treatment significantly reduce under 5 mortality,

Key Indicators for Monitoring Community MIYCN Programs

- Early initiation of breastfeeding.
- Exclusive breastfeeding rate (<6 months).
- Continued breastfeeding at 1 and 2 years.
- Minimum Dietary Diversity (MDD).
- Minimum Meal Frequency (MMF).
- Minimum Acceptable Diet (MAD).
- Coverage of growth monitoring.
- MUAC screening coverage.

KEY REFERRAL TRIGGERS

Infant and Young child

- Severe acute malnutrition with complications
- Failure to thrive
- Low birth weight and prematurity
- Persistent feeding difficulties
- Breastfeeding problems
- Severe anemia or micronutrient deficiencies
- Children with chronic illnesses affecting nutrition

Pregnant and Lacting Women

- MUAC less than 23CM
- Severe anaemia
- Excessive weight loss
- Poor dietary intake
- Adolescent pragnancy
- Multiple pregnancy
- Medical complication affecting nutrition,

Core Component/Barriers to Effective Collaboration and Referral

- Standardized referral criteria.
- Referral and counter-referral forms / Weak referral documentation systems
- Poor communication between facilities
- Limited nutrition workforce
- Transportation and financial barriers
- Inconsistent nutrition counseling
- Poor follow-up after discharge
- Lack of Multidisciplinary team spirit

Strategies to Strengthen Multidisciplinary Collaboration

- Regular multidisciplinary meetings
- Shared clinical protocols and guidelines
- Integrated nutrition documentation
- Continuous professional development
- Task sharing and mentorship
- Digital referral and tracking systems

Community-Based Strengthening Strategies for MIYCN

- **Community-based approaches** are essential for improving nutrition during pregnancy, breastfeeding, infancy, and early childhood, especially in resource-limited settings.
- **The following evidence-based strategies are recommended by the World Health Organization and UNICEF**
- 1. **Strengthen Community Health Worker (CHW) Programs**
  - Train CHWs on MIYCN counseling and support.
  - Conduct regular home visits during pregnancy and the first 2 years of life.
  - Screen for malnutrition, feeding difficulties, and growth faltering.
  - Refer high-risk mothers and children to health facilities.

- 2. **Establish Mother-to-Mother Support Groups**
  - Create community breastfeeding support groups.
  - Use experienced mothers as peer counselors.
  - Discuss breastfeeding challenges, complementary feeding, and maternal nutrition.
- 3. **Community Growth Monitoring and Promotion**
  - Regular weighing and measurement of children under 5 years.
  - Plot growth on growth charts.
  - Provide tailored counseling based on growth trends.
- 4. Promote **Exclusive Breastfeeding Key messages:**
  - Initiate breastfeeding within one hour of birth.
  - Exclusive breastfeeding for the first 6 months.
  - Continue breastfeeding up to 2 years and beyond.
  - **Community actions:** • Breastfeeding champions. • Community awareness campaigns. • Male partner involvement

- 5. **Improve Complementary Feeding Practices For children 6–23 months:**
    - Ensure minimum dietary diversity.
    - Promote age-appropriate meal frequency.
    - Use locally available nutritious foods.
    - Demonstrate food preparation through cooking sessions.
- 6. **Engage Fathers and Family Members**
    - Include fathers, grandmothers, and caregivers in nutrition education.
    - Address cultural beliefs that affect feeding practices.
    - Encourage shared childcare responsibilities.
- 7. **Community-Based Management of Acute Malnutrition (CMAM)**
    - Active case finding for wasting.
    - MUAC screening by CHWs.
    - Community follow-up of children receiving treatment.
    - Strengthen referral pathways for complicated cases.

- 8 **Social and Behaviour Change Communication (SBCC)**
  - Community dialogues.
  - Radio programs.
  - Drama and storytelling.
  - Mobile phone messaging.
- 9. **Strengthen Referral Pathways** Develop clear referral systems between**:** • *Community → Clinic → Health Centre → Regional Hospital → Tertiary Hospital Include feedback mechanisms.*

- 10. **Multisectoral Community Engagement Collaborate with**:
  - Agriculture extension workers
  - Social welfare services
  - Education sector
  - Community leaders
  - Faith-based organizations

This helps address food security, poverty, and nutrition simultaneously.

Expected Outcomes of Strong Referral Systems

- **Service delivery**
  - increased community awareness and knowlegde
  - improved counseling and support capacity health workers
- **Behavior change**
  - increase attendance at :ANC,PNC,GM
  - Referral systems
- **Improved identification and referral of:**
  - Malnourished children
  - High-risk pregnancies
  - Breast feeding difficulties
  - Mucronutrient deficiencies

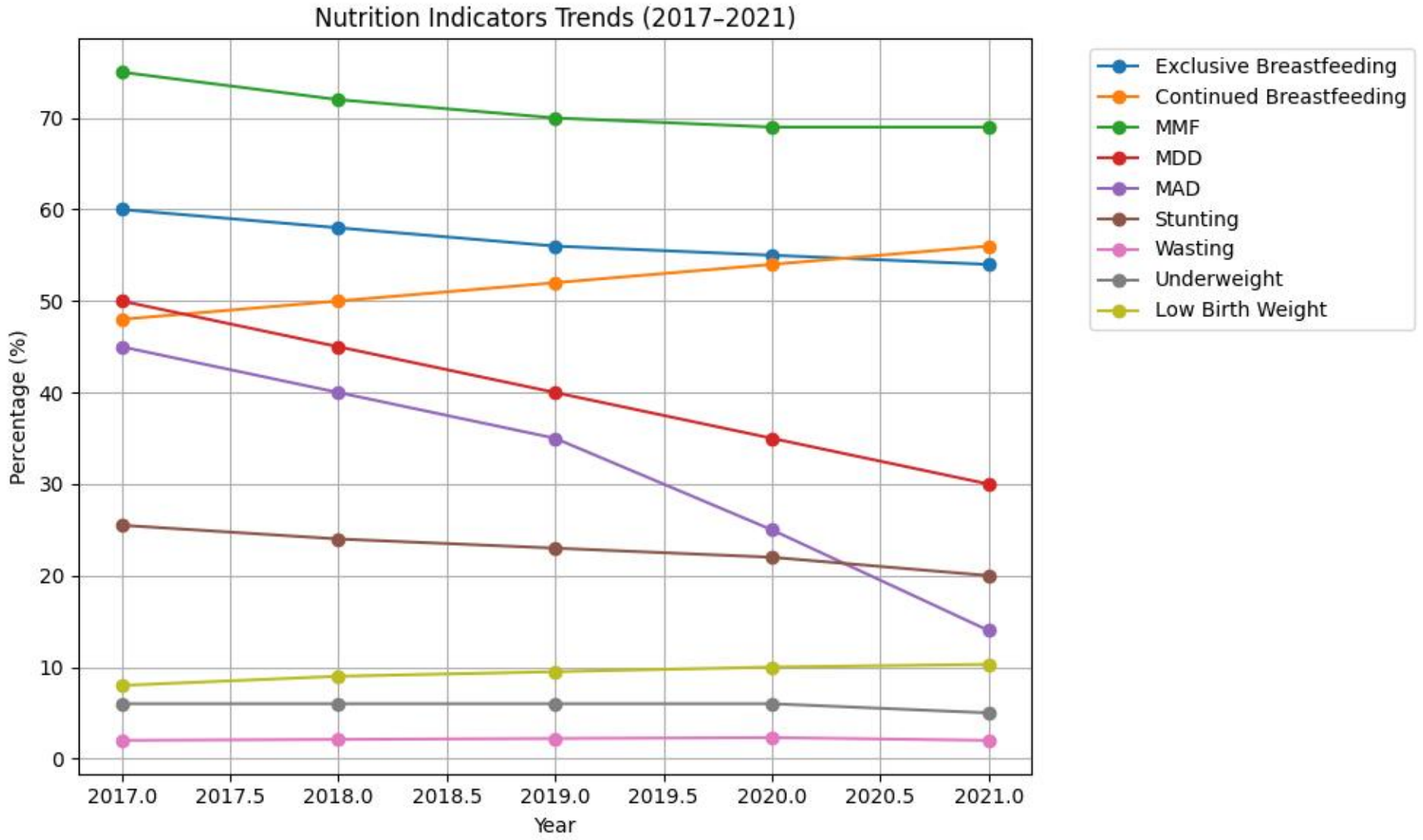
Expected Outcomes of Strong Referral Systems

- **Nutrition impact pillars**
  - Increase rates of breast feedings
  - Improved complementary feeding practices :
    - **M**inimum **D**iatery **D**iversity
    - **M**inimum **M**eal **F**requency
    - **M**inumum **A**cceptable **D**iet
  - Reduce harmful feeding practices and nutrition myths

Key indicators to measure success

- % of infants breastfed with 1hour of birth
- %of infants exclusively breastfed under 6 months
- % 0f 6 to 23 months receiving MAD
- Coverage of growth monitoring services
- Number and completion rate of nutrition referrals
- Prevalence of stunting,wasting, and underweight among under 5

Eswatini MIYCN Situation Analysis (MICS 2021)



Eswatini MIYCN Situation Analysis (MICS 2021)

Progress Achieved

Key Findings

- Stunting reduced from 25.5% (2017) to 20.0% (2021)
- Continued breastfeeding (12–23 months) increased from 48% to 56%
- Underweight decreased from 6% to 5%
- Wasting remained low and stable at 2%

Areas Requiring Urgent Action

Key Findings

Exclusive breastfeeding declined from **60%** to **54%**

- Minimum Dietary Diversity (MDD) decreased from **50%** to **30%**
- Minimum Acceptable Diet (MAD) declined dramatically from **45%** to **14%**
- Low birth weight increased from **8.0%** to **10.3%**
- Maternal anaemia remained high at **30.7%**

Implications for MIYCN Programming

- Strengthen breastfeeding counselling and support
- Improve complementary feeding practices and dietary diversity
- Enhance maternal nutrition interventions
- Strengthen community-facility referral pathways
- Improve multisectoral coordination among health, nutrition, agriculture, and social protection sectors

Key Message

While Eswatini has reduced chronic undernutrition, declining complementary feeding indicators and persistent maternal nutrition challenges highlight the need for strengthened multidisciplinary MIYCN services and referral systems.

WAY FORWARD

EVERY MOTHER AND CHILD SHOULD HAVE ACCESS TO THE RIGHT NUTRITION SUPPORT, AT THE RIGHT TIME,THROUGH A COORDINATED MULTIDISCIPLINARY SYSTEM THAT LEAVES NO ONE BIHIND.

References

- World Health Organization (WHO)
- UNICEF Infant and Young Child Feeding Guidelines
- The Lancet Maternal and Child Nutrition Series
- Integrated Management of Acute Malnutrition (IMAM) Guidelines
- MIYCN Guidelines
- MOH stategic plan.