



Medical Protocols for the Home-based Treatment of Childhood Malnutrition using *Medika Mamba* (MM), a Ready-to-Use Therapeutic Food (RUTF)

Program Objectives

Our experience in program implementation in Haiti is that the following are reasonable outcomes for treatment of acute malnutrition with Medika Mamba. Please also refer to MSPP National Protocols for more detailed information.

1. Achieve the following recovery rates:
 - a. 75% of children admitted with a Weight-for-Height (W/H) \leq -2SD will achieve W/H \geq -1SD in 8 weeks
 - b. 75% of children admitted with a W/H \leq -3SD will achieve W/H \geq -1SD in 12 weeks
2. Children enrolled in the program will increase their body weight at least 4 grams for every kilogram that they weigh every day that they are in the program (\geq 4g/kg/day).

Necessary Equipment

1. Height and length board(s) (stadiometer)
2. Two MUAC bracelets and a marker.
3. Hanging baby scale (preferred by WHO). A floor scale may be helpful for bigger children and mothers holding infants.
4. A rodent and insect proof cupboard (preferably metal) that can be locked to store the Medika Mamba.
5. Large tablespoon and small cup (to hold 100ml water) to demonstrate MM program to parents.
6. Tongue depressors or plastic spoons to demonstrate appetite.
7. Copies of patient contracts.
8. Copies of patient intake forms.
9. Amoxicillin suspension, Albendazole (or Mebendazole) chewable tables, suggest also adding Clorox for treating water.
10. Protocols, height and weight charts, dispensing guide, measurement guide, pen, permanent marker

The accompanying documents to this protocol can be requested from MFK, or downloaded from the following site: <https://mfkhaiti.org/medika-mamba-guidelines-protocols/>

- Guide for taking anthropometric measurements
- Admission and Discharge Criteria (Weight for Height Charts)
- Weight gain tables
- Dispensing Guide for MM
- Contract in Haitian Creole
- Medical form for patient records

Admission Criteria

- Child is ≥ 6 months AND ≤ 59 months

AND meets at least one of the following criteria:

- MUAC ≤ 125 mm (12.5 cm) in the field and referral sites
- OR*
- W/H ≤ 2 SD
- OR*
- Oedema 1+ or 2+ (not 3+)
- AND*
- Child is able to and will eat MM
 - Absence of Serious Complications (see below)

Definition of Serious Complications

- 3+ bilateral pitting oedema
- Anorexia
- Lower respiratory tract infection
- High fever
- Severe dehydration
- Severe anemia, pallor
- Not Alert
- Hypoglycemia
- Hypothermia

Grading Oedema

1 cm imprint on lower leg or feet = pitting oedema

- Absent
- Mild: 1+ Both feet/ankles
- Moderate: 2+ Both feet, including lower legs, hands or lower arms
- Severe : 3+ Generalized oedema including both feet, legs, hands, arms and face

Procedure if Failure to Gain Weight

- If patient losing weight after 2 consecutive visits (after having received MM), refer to Inpatient Care (Hospital) and refer to test for HIV and TB. (However, all kwashiorkor / oedematous children will lose weight at the beginning of treatment before gaining.)
- If patient does not gain weight after 4 weeks of MM, refer to healthcare facility where testing for HIV and TB can occur.
- If positive HIV or TB, refer to hospital
- If negative HIV or TB, but is not W/H < -2.5 SD, patient will be discharged after 8 weeks (assumption that patient is not receiving the MM.)

Discharge Criteria

1. Reach the Goal Weight of $W/H \geq -1SD$ (92%) in acceptable amount of time.
 - a. What does this mean? We aim to discharge children only after they reach the stage of “mild” malnutrition, and so are least at risk of relapse. Please note that this discharge criterion is not universally accepted: some nutrition programs, for example, discharge their patients at $\geq -2SD$ (moderate malnutrition). However, we believe that children look substantially healthier at $\geq -1SD$.
2. Failure to reach Goal Weight after 12 weeks of MM (if admitted with $W/H < -3SD$ or with oedema / kwashiorkor)
 - a. Next step:
 - i. Refer to inpatient care if child’s condition did not improve sufficiently
 - ii. Refer child to health facility to be tested for HIV and TB
3. Failure to reach Goal Weight after 8 weeks of MM (if admitted with $W/H \leq -2$ and $\geq -3 SD$ / no oedema)
 - a. Next step:
 - i. Refer child to health facility to be tested for HIV and TB
4. Failure to gain weight after 3 weeks into the program, two warnings and no other health issues, discharge child on suspicion of not receiving required amount of MM.
5. Default: 2 or more missed appointments.
 - a. Next step:
 - i. May stay in the program only if the nurse decides that the child had good reason for missing appointments and/or would be adversely affected by discharge.
6. Referred to Inpatient Care (Hospital) for Malnutrition
 - a. At any point during the MM program, a child should be referred to Inpatient Care (Hospital) if condition deteriorates or the nurse determines this is best course of action
7. Referred to Inpatient Care (Hospital) for reasons other than malnutrition
 - a. At any point during the MM program, a child should be referred to Inpatient Care (Hospital) if condition deteriorates or the nurse determines this is best course of action (e.g. pneumonia, malaria, high fever, dehydration etc.)
8. Death

Activities

Visit #1 (Admission)

- Ask caretaker to present Referral Card from the Agent Santé or documentation verifying child's age, e.g. vaccine card.
- Confirm child's age is ≥ 6 months AND ≤ 59 months
 - *IMPORTANT: If caretaker does not present documentation that verifies child's age, ask her to bring documentation to the next visit.*
- Weigh child
 - *IMPORTANT: Take measurement two times. If results are different, take the child's weight a third time.*
- Measure child's height (standing up) or length (lying down)
 - If child is less than 2 yrs old, take measurement lying down.
 - If child is more than 2 yrs old, take measurement standing up.
 - *IMPORTANT: Take measurement two times. If results are different, take the child's height a third time.*
- Confirm that child meets one or more of the following entry criteria:
 - $W/H \leq -2SD$
 - Consult "Poids/Taille- Couche" if child was lying down to determine height
 - Consult "Poids/Taille- Debout" if child was standing up to determine height
 - $MUAC \leq 125mm$ (12.5 cm)
 - Oedema (1+ or 2+)
- Confirm that child does not have serious complications or oedema 3+
 - *IMPORTANT: If child has serious complications or has oedema 3+, provide caretaker with a Referral Card and refer child to nearest inpatient facility.*
- Determine child's Goal Weight ($W/H 2 -1SD$) by consulting "Critere d'admission"
 - Consult "Poids/Taille- Couche" if child was lying down to determine height
 - Consult "Poids/Taille- Debout" if child was standing up to determine height
- Determine maximum # of weeks child should be in program
 - If $W/H \leq -2SD$, 6-8 weeks from date of 1st ration of MM
 - If $W/H \leq -3SD$, 10-12 weeks from date of 1st ration of MM
- Perform an appetite test using a small amount of MM on a plastic spoon or tongue depressor. If the child can and will eat MM, continue enrollment. If child refuses, determine if this is medical inability or behavioral problem.
- Nurse completes "Patient Intake" (front side of health form)
- Nurse completes "Visit 1 Consultation" (first column on back side of health form)
- Caretaker receives education regarding Clorox and amoxicillin
- Child receives Amoxicillin
- Caretaker may receive Clorox for water treatment and education re: Clorox and amoxicillin
- Read the "contract" with the caretaker, ensure that they understand the instructions and ask them to sign it.
- Possible to give MM this day if child very weak and hungry or family lives a long distance but may be better to wait 1 week for MM because it may be too confusing to also give direction regarding dose and timing of Amoxicillin.
- NOTE: Do not give albendazole until after 1 to 2 weeks of Medika Mamba therapy, to prevent over-absorption of potentially toxic dose.

Visit #2

- Weigh child
 - *IMPORTANT: Take measurement two times. If results are different, take the child's weight a third time.*
- Complete "Visit 2 Consultation" (on health form)
- Consult "Weight Gain Schedule"
 - Did the patient gain at least 4 gm/kg/day since the last visit?
 - If not, why not?
 - Repeat instructions from the first visit
 - Give patient first warning if it is suspected program protocols are not being followed
 - Everyone who is not seriously ill and who eats all the MM gains weight
- Child receives albendazole or mebendazole
- Provide ration of Medika Mamba (either one or two weeks depending on program)
 - Consult "MM Dispensing Guide" to determine quantity of MM needed
 - Instruct caretaker to put the appropriate number of tablespoons of Medika Mamba into a cup each day and to feed that amount to child in 6 – 8 feedings per day, plus drink 100ml of clean water 6 – 8 times per day.

Subsequent visits

- Weigh child
 - *IMPORTANT: Take measurement two times. If results are different, take the child's weight a third time.*
- Consult "Weight Gain Schedule"
 - Did the patient gain 4 gm/kg/day since the last visit?
 - If not, inquire about why child did not gain sufficient weight.
 - Repeat instructions from the first visit
 - Give patient second warning if suspect that protocols are not being followed on the third visit.
 - If the child doesn't not gain weight on the fourth visit, he/she is discharged from the program (please see page 2 for more details)
 - Everyone who is not seriously ill and who eats all the MM gains weight
- Provide ration of Medika Mamba (either one or two weeks depending on program)
 - Consult "MM Dispensing Guide" to determine quantity of MM needed
 - Instruct caretaker to separate appropriate number of tablespoons of Medika Mamba each day and to feed that amount to child

Last visit:

- Weigh child
 - *IMPORTANT: Take measurement two times. If results are different, take the child's weight a third time.*
- Measure child's height (standing up) or length (lying down)

o *IMPORTANT: Take measurement two times. If results are different, take the child's height a third time.*

- Complete “Visit X Consultation”
- Complete “Discharge Information” (front side of health form)

Medications

Visit #1 (Admission)

- Amoxicillin
 - Administer for children diagnosed with Severe Acute Malnutrition, the current guidelines do not recommend the use of
 - Treat children with Amoxicillin according to the following schedule:

Class de Poids KG	Amoxicillin en Suspension	
	125 mg / 5 ml	250 mg / 5 ml
3-6 Kg	2.5 ml x 3 fois par jour	1.25 ml x 3 fois par jour
6-9 Kg	5 ml x 3 fois par jour	2.5 ml x 3 fois par jour
10-14 Kg	10 ml x 3 fois par jour	5 ml x 3 fois par jour
15-19 Kg	15 ml x 3 fois par jour	7.5 ml x 3 fois par jour
20-30 Kg	20 ml x 3 fois par jour	10 ml x 3 fois par jour
30+ Kg	30 ml x 3 fois par jour	15 ml x 3 fois par jour

- Clorox
 - Give Clorox to treat the water along with education for the caretaker about how to use it.
 - 5 gtts (drops) for every gallon
- Oral Rehydration Salts (ORS)
 - If patient has diarrhea at admission, treat with ORS for 3 days. Do not stop giving Medika Mamba.

Second Visit:

- Albendazole/Mebendazole
 - All patients are treated with albendazole or mebendazole at the second or third visit (whether this is 1 or 2 weeks later)
 - Do not administer albendazole before the second week
 - Albendazole (Give once only)
 - < 1 year : no treatment
 - 12-23 months: 200 mg once

- >2years: 400 mg once
- Mebendazole
 - <1 year: no treatment
 - 12-23 months: 250 mg once or 50 mg 2 times day for 3 days
 - >2 years : 500 mg once or 100mg 2 times a day for 3 days

Subsequent Visit:

- Metronidazole
 - If patient persists with diarrhea after both amoxicillin and albendazole treatment, treat with metronidazole.
 - 35- 50 mg/kg/day in 2 divided doses for 10 days and ORS (1 liter/day) for 3 days.
 - Continue to feed MM and other food

Educational Messages

Visit #1

1. Importance of clean water
 - a. Treat water with Clorox or Aquatabs or boil the water
2. Feed child MM 8 times a day
 - a. # large tablespoons of MM per day
 - b. Who will do this if mother not home?
3. Keep MM out of the sun.
4. Keep MM out of reach of other children.
 - a. Do you have a place where you can keep the MM secure?
5. Give amoxicillin correctly
6. MM is medicine, not food. It contains peanuts, powdered milk, sugar, oil and vitamins and minerals. Do not feed to anyone but this child. The child must eat all of the MM.
7. No other food is necessary but MM. Always give MM before any other food.
8. Give 100 ml of treated water or ORS 8 times per day with the MM
9. Sign contract
10. If child develops a rash, acute shortness of breath, or becomes extremely weak, may be allergic to MM. Stop the MM and go to the nearest health facility as soon as possible.

Visit #2

1. Some causes of malnutrition
 - a. not enough protein
 - b. not enough food
 - c. not enough Vitamin A containing food
 - d. not enough iron
 - e. not enough folic acid
2. Lists of protein containing food
 - a. Best = meat, fish, eggs, milk, peanuts, cashews
 - b. OK but not the best = beans
3. List of Vitamin A containing food- papaya, mango, carrots, squash
4. List of iron containing food- meat, fish, green leaves
5. List of folic acid containing food- vegetables, fruit
6. List of Vitamin E containing food- oil, peanuts, cashews, avocados

Visit #3

1. Dirty water-treat water
2. Dirty food- cook food or wash well with soap and clean water
3. Dirty hands- wash hands with soap and water
4. Not wearing shoes- wear shoes at all times

Visit #4 (*Repeat main points above*)

1. Get measles vaccination as soon as possible
2. Praise the mother for doing a good job and give her ideas for how to prepare cheap, and nutritious meals so that the child stays well nourished.